Outlook

Messages & Communications Doc. No. 38GL-26-2651.

From 38th Committee On Rules <committeeonrules@guamlegislature.gov>
Date Tue 7/28/2026 2:18 PM
To Guam Legislature Clerks <clerks@guamlegislature.gov>
Cc Frank Blas Jr. <speakerblas@guamlegislature.gov>

Håfa Adai Clerks Office,

Please see attached, **Messages & Communications Doc. No. 38GL-26-2651** for processing:

√	**38GL-26-2651**	Office of the Governor of Guam	Formal Submission of the Guahan 2050 Sustainability Plan.

Please retrieve Doc. No. 38GL-26-2651 from link below:

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Kindly reply to this email.

Si Yu'os ma'åse',

Kamarin J. A. Nelson

Committee on Rules Director

COMMITTEE ON RULES

Vice Speaker V. Anthony Ada, Chairperson

I Mina'trentai Ocho Na Liheslaturan Guåhan

38th Guam Legislature

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Messages and Communications 38GL-26-2651.

2 messages

Speaker Frank Blas Jr. <speakerblas@guamlegislature.gov> Mon, Jul 27, 2026 at 1:40 PM
To: 38th Committee On Rules <committeeonrules@guamlegislature.gov>, Sabrina Salas Matanane <office.senatorbri@guamlegislature.gov>

Håfa adai,

Please see attached M&C Doc. No. 38GL-26-2651

38GL-26-2651	Office of the Governor of Guam	Formal Submission of the Guahan 2050 Sustainability Plan.

Si Yu'os Ma'åse'

Bernice Rivera

Administrative Assistant

Office of Speaker Frank F. Blas, Jr.

I Mina'trentai Ocho na Liheslaturan Guåhan 38th Guam Legislature

Guam Congress Building, 163 Chalan Santo Papa, Hagatña

(671)969-6456
speakerblas@guamlegislature.gov

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38GL-26-2651.pdf

38th Committee On Rules <committeeonrules@guamlegislature.gov> Mon, Jul 27, 2026 at 2:02 PM
To: "Speaker Frank Blas Jr." <speakerblas@guamlegislature.gov>

Håfa Adai,

Received, and thank you.

Si Yu'os ma'åse',

Marie Crisostomo

Committee on Rules Assistant

COMMITTEE ON RULES

Vice Speaker V. Anthony Ada, Chairperson

I Mina'trentai Ocho Na Liheslaturan Guåhan

38th Guam Legislature

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LOURDES A. LEON GUERRERO
GOVERNOR

JOSHUA F. TENORIO
LT. GOVERNOR

UFISINAN I MAGA'HÅGAN GUÅHAN
OFFICE OF THE GOVERNOR OF GUAM

38GL-26-2651
OFFICE OF THE SPEAKER
FRANK F. BLAS JR.
JUL 24 2026
Time: 4:26pm
Received:

July 24, 2026

THE HON. FRANK BLAS, JR., *Speaker*
I Mina'trentai Ocho Na Liheslaturan Guåhan
Guam Congress Building
163 Chalan Santo Papa
Hagåtña, Guam 96910

RE: FORMAL SUBMISSION OF THE GUAHAN 2050 SUSTAINABILITY PLAN

Dear Speaker Blas:

Buenas Yan Håfa Adai! Pursuant to my authority as Governor of Guam, I am formally transmitting the Bureau of Statistics and Plans (BSP) Guåhan 2050 Sustainability Plan (Plan) for official adoption by I Liheslaturan Guåhan.

Mandated by Title 5 GCA §1205 and §1206, the BSP's Guåhan 2050 Sustainability Plan underwent a comprehensive public review process. In preparation of the planning process for the development of this Plan, a Community Readiness Survey involving multiple components was conducted over different timeframes in 2022 to establish a baseline measure of public awareness regarding the importance of planning, while gathering insights into community values and vision for Guam's sustainable future. In addition, as part of the early community engagement, three village charrettes were conducted at the Inalajan Community Center on June 18, 2024, the University of Guam School of Business on June 19, 2024, and the Dededo Community Center on June 20, 2024, providing residents with the opportunities to provide input into the plan development that will directly influence the policies and initiatives that will guide Guam's development over the next 25 years. Furthermore, a Guåhan 2050 Sustainability Plan Residential Survey was conducted from December 2024 to January 2026 to "measure community residents" perspectives on Guam's economy, environment, culture, and village sustainability. The measures were used to guide land use policy recommendations and to establish a vision for development and sustainability.

Prior to the Plan's availability for public review, the BSP, through its Contractor, Lynker Corporation, coordinated and solicited comments from various government agencies and groups. Upon the draft development of the Plan, the document was issued once more to stakeholders for additional review and edit. Stakeholder comments were assessed and the Plan was updated and

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then issued on January 26, 2026 for public comment. Two public hearings were held on February 12, 2026 and February 25, 2026 at the Hågat Mayor's Office and Dededo Mayor's Office, respectively, from 6pm to 8pm. In light of stakeholder requests for additional Plan review time and impacts from Typhoon Sinlaku, the Plan was extended twice with a final comment end date of May 22, 2026. Recognizing impacts from the widespread cyber incident involving cPanel-hosted platforms globally, the BSP provided alternative instructions to ensure all residents and stakeholders have access to the Plan documents and submit feedback without interruption. Comments from nine individuals were dissected and reviewed with relative updates to the Plan.

Pursuant to Public Law 35-110, the BSP was mandated to update Guam's Comprehensive Development Plan, recognizing the pressures faced today, including climate change, population changes, cultural shifts, and new economic demands. Recognizing our finite and precious resources, this Plan clearly identifies the facts of the island's conditions today. The BSP had the tremendous responsibility to identify those conditions and to establish a plan of what Guam should look like socially, economically, culturally, and environmentally. The central goal of this Plan is to integrate environmental responsibility, economic opportunity, and cultural heritage into all major development choices.

Public Law 35-110 identified twenty critical elements, such as land use, housing, transportation, natural resources, cultural preservation, economic development, public health, climate resilience, and more. These interconnected elements are brought together in this Plan through an integrated land-use framework that supports sustainable growth while protecting the island's cultural and environmental integrity.

The record of the Plan's development is attached.

I have reviewed the submitted documents and approve The Guåhan Sustainability Plan pursuant to 5 GCA §§ 1206 and 9303(a)(4). I appreciate your partnership in prioritizing Guam's future where our island thrives as a resilient, sustainable, and culturally vibrant community.

Senseramente,

LOURDES A. LEON GUERRERO
I Maga'hågan Guahan
Governor of Guam

38GL-26-2651
Messages and Communications
RECEIVED
COMMITTEE ON RULES
July 27, 2026
1:40 p.m.
Marie Crisostomo

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LOLA E. LEON GUERRERO
Director
MATTHEW C. SANTOS
Deputy Director

BUREAU OF STATISTICS AND PLANS

Sagan Planu Siha Yan Emfotmasion

LOURDES A. LEON GUERRERO
Governor of Guam
JOSHUA F. TENORIO
Lieutenant Governor

July 24, 2026

The Honorable Speaker Frank Blas, Jr.
I Mina'trentai Ocho Na Liheslaturan Guåhan
Guam Congress Building
163 Chalan Santo Papa
Hagatna, Guam 96910

Re: Transmittal of the Guåhan 2050 Sustainability Plan

Buenas yan Håfa Adai! Pursuant to 5GCA, Chapter 1, § 1206, the Bureau of Statistics and Plans (BSP) is pleased to submit The Guåhan 2050 Sustainability Plan (Plan) to the 38th Guam Legislature for adoption. Guided by Public Law 35-110, this Plan serves as Guam's roadmap to ensure development decisions respect the limits of our island, balance competing needs, renew our natural resources, ensure equity, and engage our community in shaping the future.

Highlights of the Plan

Feedback from the **community meetings and the random phone survey** (conducted in 2024/2025) directly established the plan's "Core Principles" and "Big Ideas." The plan explicitly states it was developed "from the bottom up" based on this data.

- **Infrastructure First:** Residents overwhelmingly (nearly all) stated that it was very important that water, sewer, and power be installed *before* any new development is approved. This shaped the strict **"Adequate Public Services" (Policy SC-7)** requirement, which forbids occupancy until services are in place.
- **Aquifer Protection:** With 73% of residents supporting restrictions on development over the Northern Guam Lens Aquifer, the plan includes **Policy SC-10**, which prohibits subdivisions over the aquifer if they rely on septic tanks and cannot connect to public sewer or comply with EPA discharge requirements.
- **Housing vs. Sprawl:** While residents want affordable housing (87% support), they also prioritized conservation over new commercial sprawl. This shaped the plan's focus on **"Redevelopment"** of existing blighted buildings rather than clearing new land.

The **Urban-Rural Boundary (Policy SC-2)** is designed to stop "sprawl" and protect the water supply by strictly defining where high-density projects can go.

- **Where Projects Will Go:** Over the next decade, you would see new housing and commercial projects concentrated in **designated "Urban Areas"** (like Dededo, Tamuning, and village centers) that already have sewer and road capacity. The plan prioritizes "mixed-use" corridors (e.g., Upper Tumon, North Marine Drive) for economic expansion.
- **Where They Won't Go:** In areas designated **"Rural"**, large subdivisions will be restricted. The plan sets a **minimum lot size of 1 acre** for Rural Lands to prevent density.

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The Plan highlights Resource Conservation areas such as the Bolanos Conservation Area (savanna/ravine forest in the south), the Cotal Conservation Area, and the Anao coastal reserve.

What is Off-Limits: These areas are designated for **"Resource Conservation" (RC)**. In these zones, large-scale clearing, grading, and intensive development are effectively off-limits. The plan prioritizes **habitat protection** (e.g., for the limestone forest or threatened species like the *Slevin's skink*). Unlike today, where piecemeal construction might occur, future use would be restricted to low-impact activities like research, traditional practices, or limited eco-tourism that does not degrade the habitat.

The plan acknowledges a collision between affordable housing development and environmental protection, particularly regarding the **Northern Guam Lens Aquifer**. The tension is most acute where the need for housing meets the need to stop septic tank contamination of the water supply.

- **The Resolution:** The plan resolves this through **"Redevelopment and Infill"** rather than expansion. Instead of clearing jungles for new subdivisions (which hurts the environment), the plan focuses on:
    1. **Revitalizing Abandoned Buildings:** Using the many derelict structures and vacant lots in existing villages for housing.
    2. **Upzoning Urban Centers:** Allowing higher density (multi-family units) and **Accessory Dwelling Units (ADUs)** in places that *already* have sewer lines. *Key Policy:* **Policy SC-10** explicitly prohibits new subdivisions over the aquifer unless they have public sewer or comply with EPA discharge requirements, incentivizing development into safer, serviced areas.

If implemented, residents would notice changes designed to reinforce **social cohesion** and **CHamoru identity**:

- **Streetscapes & Signage:** You would see a standardization of **street names** and signage using the **CHamoru language** and traditional place names, adhering to the orthography established by the Kumisión.
- **Architecture:** New public and commercial buildings would be encouraged to adopt **"CHamoru and Pacific architectural styles"** (e.g., designs referencing *latte* structures or open-air concepts) rather than generic concrete blocks.
- **Traditional Spaces:** You would likely see more designated areas for **traditional practices** within villages, such as spaces specifically zoned for community farming, fishing access, or weaving.

Additional highlights of the Plan include the following efforts to address the many social, economic, environmental, and cultural aspects of Guam's future:

- **Agricultural Land Protection.** Another reason to concentrate new development in urban areas is to protect agricultural land and support the expansion of Guam's traditional agricultural heritage. The plan includes land use policies to identify and protect land with potential for agricultural use, including to support local food production and sustainability.
- **Watershed Protection for land and marine resources.** The plan recognizes that erosion and unsustainable land use practices affects both sensitive land and the coral reef habitats surrounding the island. Policies are proposed to enhance protection of the reef and coastal environments, as well as sensitive wetlands and riparian areas.

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- **Climate Change and Natural Hazards**. The plan acknowledges increasing vulnerability to climate change, including sea level rise and extreme weather events. The plan includes policies to minimize risks to new development from flooding, erosion, wildfire, and other natural hazards.
- **Recreation and Public Health.** The plan protects and promotes Guam's incredible recreational and aesthetic resources, including to promote public health. The plan focuses on social equity and the need to assure that all residents have equal opportunity to enjoy Guam's incredible natural heritage for generations to come.

Formal Review Process

Pursuant to 5 GCA, Title 5, Chapter 1, Article 2, § 1205 – 1205.2, the BSP initiated the formal public review process for the adoption of the BSP's Guåhan 2050 Sustainability Plan. The specific actions taken by the BSP regarding the Plan's development, community and stakeholder engagement, public comment assessments, and final updates are detailed below.

Community Readiness Survey

From January to September 2022, a comprehensive stakeholder engagement effort was conducted to support Guam's sustainability planning. This included interviews with local subject matter experts, focus groups with residents and business owners, and an island-wide quantitative survey of residents. The primary objective of the survey was to establish a baseline measure of public awareness regarding the importance of planning, while gathering insights into community values and vision for Guam's sustainable future. The final report of these exercises is attached. (Attachment A)

Development of the Plan – Government and Community Engagement:

Government Engagement

August 2023 – October 2023 – The BSP's contractor, Lynker Corporation, met with several government agencies and groups to gather input, feedback, or information relative to the Plan. The Office of Infrastructure Policy & Development, Department of Labor, Guam Housing Corporation, Guam Housing & Urban Renewal Authority, Department of Agriculture/Coral Reef Initiative, Guam Visitors Bureau, Guam Economic Development Authority, Department of Public Works, Guam Power Authority, Guam Waterworks Authority, Guam Energy Office, Department of Land Management, Chamorro Land Trust Commission, BSP's Coastal Zone Management, Guam Ancestral Lands Commission, Department of Parks & Recreation, Guam Solid Waste Authority, Guam Environmental Protection Agency, Department of Public Health and Social Services, Guam Behavioral Health and Wellness Center, Department of Chamorro Affairs, and University of Guam G3. The Contractor also engaged participants of the Land Use Summit, the 7th Planners Symposium, and the 8th Planners Symposium as part of the information gathering phase. Depending on the topic and question, there were anywhere from 15 to 80 responses. Input was gathered on the economy, infrastructure-water and power, infrastructure-telecommunications and transportation, land use, environment-marine, environment-terrestrial, public safety, education and community, culture and traditions, and public health. (Attachment B)

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December 2023 – Lynker Corporation conducted two roundtable discussions with agency stakeholders on the objectives of the Plan and how the agency's functions work into the Plan. (Attachment C)

February 2024 – April 2024 – Lynker Corporation held stakeholder engagement meetings with all the 19 village mayoral offices. Village mayors and vice mayors were interviewed to solicit feedback regarding issues within their respective village as well as how the charrettes may be set up. (Attachment D)

Community Engagement

Community Charrettes - The BSP's Contractor, Lynker Corporation, conducted three public community charrettes on June 18, 19, and 20, 2024, from 6:00 pm to 8:00 pm, at the Inalåhan Mayor's Office, University of Guam School of Business and Public Administration, and the Dededo Mayor's Office. (Attachment E)

Residential Surveys – Mobile and fixed line telephone numbers were used to randomly collect 702 interviews among adults on Guam over the age of 18 from December 4, 2024 to January 28, 2025. The objective of the survey was to measure community residents' perspectives on Guam's economy, environment, culture, and village sustainability. The measures were used to guide land use policy recommendations and to establish a vision for development and sustainability. The purpose of the survey was to gather resident's attitudes regarding key topics including Guam's environment, culture, economy, and village sustainability. (Attachment F)

Draft Plan Review:

September 2, 2025 – Before publicly advertising the Plan, the BSP sent a notice to all Department Agency Heads, including the Guam Waterworks Authority, Guam Power Authority, Guam Community College, University of Guam, and Mayors Council of Guam. Public comments were received by the Guam Housing and Urban Renewal Authority, Department of Agriculture, Guam Housing Corporation, University of Guam G3, Department of Chamorro Affairs, Guam Solid Waste Authority, Guam Waterworks Authority, Guam Environmental Protection Agency, Port Authority of Guam, Department of Land Management, Guam Economic Development Authority, Guam Visitors Bureau, Guam Power Authority, Department of Public Works, Department of Youth Affairs, Bureau of Women's Affairs, Hagatna Restoration and Redevelopment Authority, University of Guam Soil & Water Conservation Districts, Bureau and Budget Management Research, Department of Integrated Services for Individuals with Disabilities, Guam Energy Office, Kumision I Fino' CHamoru, Department of Public Health and Social Services, and Department of Parks and Recreation. These comments were assessed and the Plan was updated. (Attachment G)

Public Review Period:

January 26, 2026 – Following the review of the agency comments and respective updates to the Plan, the Plan was made available for public review. The public comment deadline was extended twice to accommodate the request of government agencies and the public. The BSP published ads on the Guam Pacific Daily News (PDN) and Guam Daily Post (Post) on January 26,

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February 2, February 11, February 15, and February 24, notifying the public of the public hearing dates, times, and locations, as well as the public comment deadline of March 11, 2026. Additionally, the BSP issued a Memorandum to all agency heads that the Plan is available for public review and comment. Notices were also posted on the BSP's website and the Public Notices Portal. (Attachment H)

March 11, 2026 – On March 11, 2026, the BSP issued a press release via email to various media outlets of the extension to the public comment period for the 2050 Guåhan Sustainability Plan to now end on April 25, 2026. Additionally, notices to the public were printed on the Guam PDN on March 12, 2026 and April 4, 2026; as well as on March 14, 2026 and April 4, 2026 on the Post. (Attachment I)

April 24, 2026 – Following impacts from Typhoon Sinlaku, the BSP issued another extension to the public comment period with a new deadline of May 22, 2026. On April 24, 2026, the BSP issued a press release to various media outlets via email. Additionally, the BSP published a a public notice on May 1, 2026 on the PDN and on May 5, 2026 on the Post. (Attachment J)

May 6, 2026 – Due to the widespread cyber-attack incident involving the cPanel-hosted platforms globally, the BSP's website was compromised. Recognizing access to the Plan materials were impacted, the BSP issued a press release notifying various media outlets of alternative instructions to ensure all residents and stakeholders can continue to access the Plan documents and submit feedback without interruption. The BSP established a Google link drive of the Plan materials:

https://drive.google.com/drive/folders/1yq5WukuX3iWDGR0SdRxGO_SNItS2muq-?usp=drive_link

The BSP issued an ad on the PDN on May 8, 2026 and on the Post on May 12, 2026 notifying the public of the Google drive access link, as well as instructions on sending comments. These notices also served as a reminder of the comment deadline of May 22, 2026. (Attachment K)

Public Hearings:

In preparation for the public hearing in accordance with 5GCA Ch.1 Article 2 § 1205, the BSP issued ten (10) ads published on the Guam Daily Post and Guam Pacific Daily News. These ads were published on January 26, 2026, February 2, 2026, February 11, 2026, February 15, 2026, and February 24, 2026. Additionally, the BSP issued press releases to various local news media networks. Notices of the Plan's availability for public review were shared with the BSP's website and the GovGuam Public Notices Portal. Two public hearings were held on February 12, 2026 at the Hågat Mayor's Office and on February 25, 2026 at the Dededo Mayor's Office from 6:00 pm to 8:00 pm. The sign in sheets and power point presentations is attached. (Attachment L)

Public Comments:

A total of nine (9) individuals and organizations provided public comments. In total, over 140 pieces of comments were received and assessed. Based on our assessment, there were no major amendments to the Plan that warranted an additional public review. Each comment received were

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assessed individually with a final recommendation for plan revision or action taken. (Attachment M)

Determination

This Plan articulates a vision for 2050, describing what Guam should look like socially, economically, culturally, and environmentally. This vision is grounded in the mandate established under Public Law 35-110, which requires the creation of a comprehensive sustainability plan for the island. Through this mandate, the Plan's central goal is to integrate environmental responsibility, economic opportunity, and cultural heritage into all major development choices. This Plan directly addresses the pressures Guam faces today, including climate change, population changes, cultural shifts, and new economic trends. These challenges make long-term planning essential to keep Guam both livable and culturally grounded. This Plan meets the requirements of Public Law 35-110 that addresses twenty critical elements focusing on land use, housing, transportation, natural resources, cultural preservation, economic development, public health, climate resilience, and more.

Our office respectfully requests at least a three weeks' advance notice of any scheduled legislative public hearings. This will allow our contractor sufficient time to arrange travel to Guam, fulfilling their contractual obligation to present the Plan.

Furthermore, recognizing the contract between the BSP and Lynker Corporation is set to expire on March 31, 2027, we respectfully request the legislative hearings be scheduled well in advance of this date.

Should you have any questions regarding this matter, please do not hesitate to contact Ms. April Trinidad, Chief Planner or me at april.trinidad@bsp.guam.gov or lolalg@bsp.guam.gov, respectfully. Si Yu'os Ma'åse'.

Lola E. Leon Guerrero

LOLA E. LEON GUERRERO
Director

Attachments

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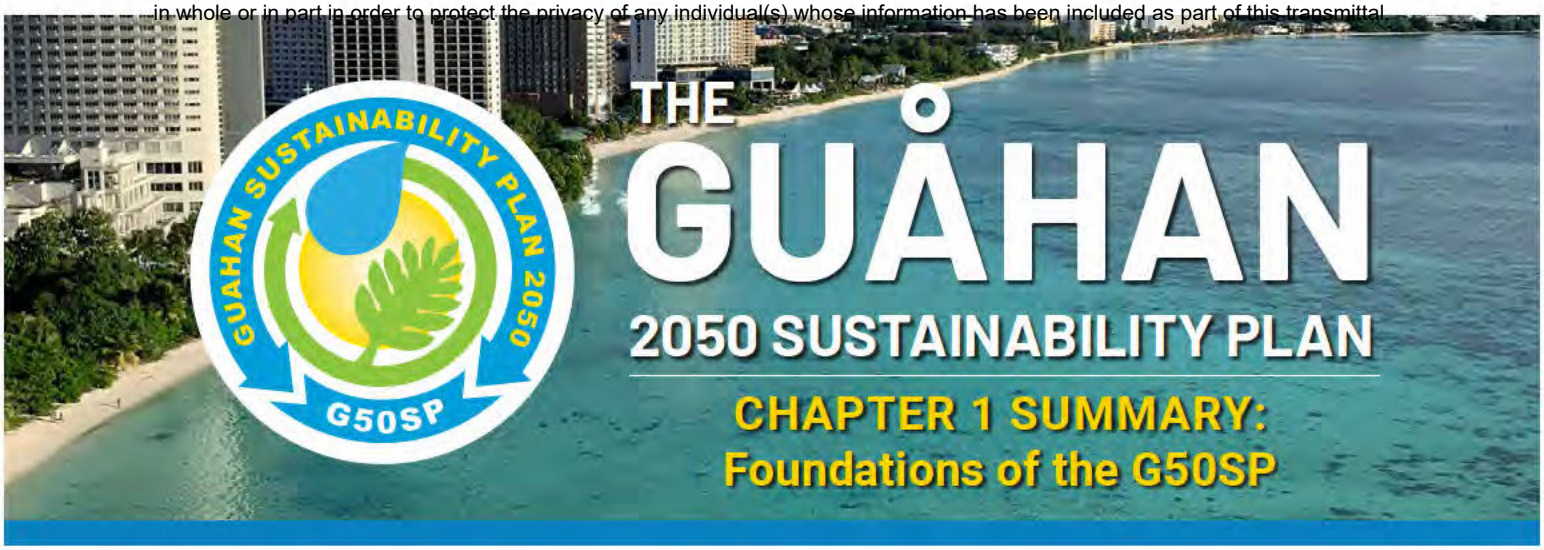

THE GUÅHAN 2050 SUSTAINABILITY PLAN

CHAPTER 1 SUMMARY: Foundations of the G50SP

Chapter 1 establishes the purpose, guiding principles, and overarching framework for the Guåhan 2050 Sustainability Plan (G50SP). Mandated by Public Law 35-110, the Plan updates Guam's comprehensive land use strategy to address the island's most pressing long-term challenges—climate change, infrastructure constraints, housing affordability, economic transition, cultural preservation, and population change—while ensuring that decisions made today do not compromise the ability of future generations to thrive. The chapter makes clear that sustainability on a small island is not an abstract concept, but a practical necessity rooted in Guam's finite land base, fragile ecosystems, cultural heritage, and interconnected communities.

A central premise of Chapter 1 is that Guam's economy, environment, culture, and community well-being are interdependent systems, not competing interests. Land use decisions inevitably shape all four, and effective planning must therefore integrate them rather than treat them in isolation. The G50SP is framed not simply as a regulatory document, but as a long-range governance framework to guide coordinated decision-making across agencies, sectors, and villages over the next 25 years.

Community engagement is foundational to this framework. Chapter 1 emphasizes that the G50SP was built through an extensive, multi-stage engagement process involving professional experts, government agencies, village leaders, nonprofits, and residents. Through interviews, roundtables, focus groups, and two island-wide surveys conducted in 2022 and again in 2024/2025, the Plan documents remarkable consistency in public priorities over time. Across villages and demographic groups, residents repeatedly identified five core concerns: reliable infrastructure, affordable housing, economic stability, protection of environmental and cultural resources, and preservation of village identity. The persistence of these priorities underscores that they are not short-term reactions, but deeply held values that should anchor long-term planning.

Chapter 1 explains that the remainder of the Plan is organized around five thematic areas, each representing a critical dimension of sustainability and forming the structure for Chapters 3 through 7:

- **Sustainable Communities** focuses on compact, service-ready development; safe and resilient infrastructure; expanded housing options; and protection of agricultural lands and the Northern Guam Lens Aquifer.
- **Prosperous Economy** emphasizes redevelopment over sprawl, mixed-use growth, economic diversification, right-sized tourism, infrastructure renewal, and village-scale economic opportunity.
- **Thriving Environment** advances a ridge-to-reef approach to environmental stewardship, including watershed and aquifer protection, habitat conservation, green infrastructure, and climate adaptation across land and coastal systems.
- **Vibrant Culture** centers CHamoru values, cultural landscapes, historic sites, traditional practices, public access to shorelines and parks, and community spaces that support physical, cultural, and spiritual well-being.
- **Village Sustainability** provides tailored strategies for each of Guam's nineteen villages, recognizing differences in geography, scale, needs, and heritage while promoting equitable access to services and facilities.

These thematic chapters are grounded in five core sustainability principles introduced in Chapter 1: *limits, balance, renewal, equity, and engagement*. Together, they articulate a vision in which development respects ecological and infrastructure capacity, integrates economic and cultural objectives,

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prioritizes reinvestment and restoration, ensures fairness in access to opportunity and resources, and meaningfully includes communities in decision-making. The chapter emphasizes that sustainability requires acknowledging constraints, making tradeoffs transparently, and centering social well-being in land use policy.

Chapter 1 also introduces the Plan's governance and implementation framing, highlighting the need for coordinated land use review, multi-agency alignment, and clear accountability. Illustrated through an integrated sustainability governance framework, the chapter stresses that successful implementation depends on aligning public laws, agency programs, capital investments, and regulatory decisions with the G50SP's goals and policies. Incremental or ad hoc zoning changes are cautioned against; instead, land use decisions should be made within a coherent, long-term strategy informed by the Plan.

The chapter concludes with a single, unifying policy that reinforces these commitments:

GOV-1: Community Engagement and Plan Implementation

The Government of Guam shall assure maximum community engagement and shared governance in G50SP implementation, through regular village and neighborhood-level participation and engagement—especially with vulnerable populations, indigenous groups,elders, local business owners, renters, and other community members that may be impacted by new development, redevelopment, and other land use changes and challenges. Support transparent decision processes and communication of land use decisions through public dashboards addressing objectives, financing, and plan implementation outcomes.

Together, Chapter 1 sets the ethical, procedural, and conceptual foundation for the G50SP—establishing sustainability as a shared responsibility, grounded in community values, and carried forward through coordinated, transparent governance.



Core components and principles of the Guåhan 2050 Sustainability Plan.

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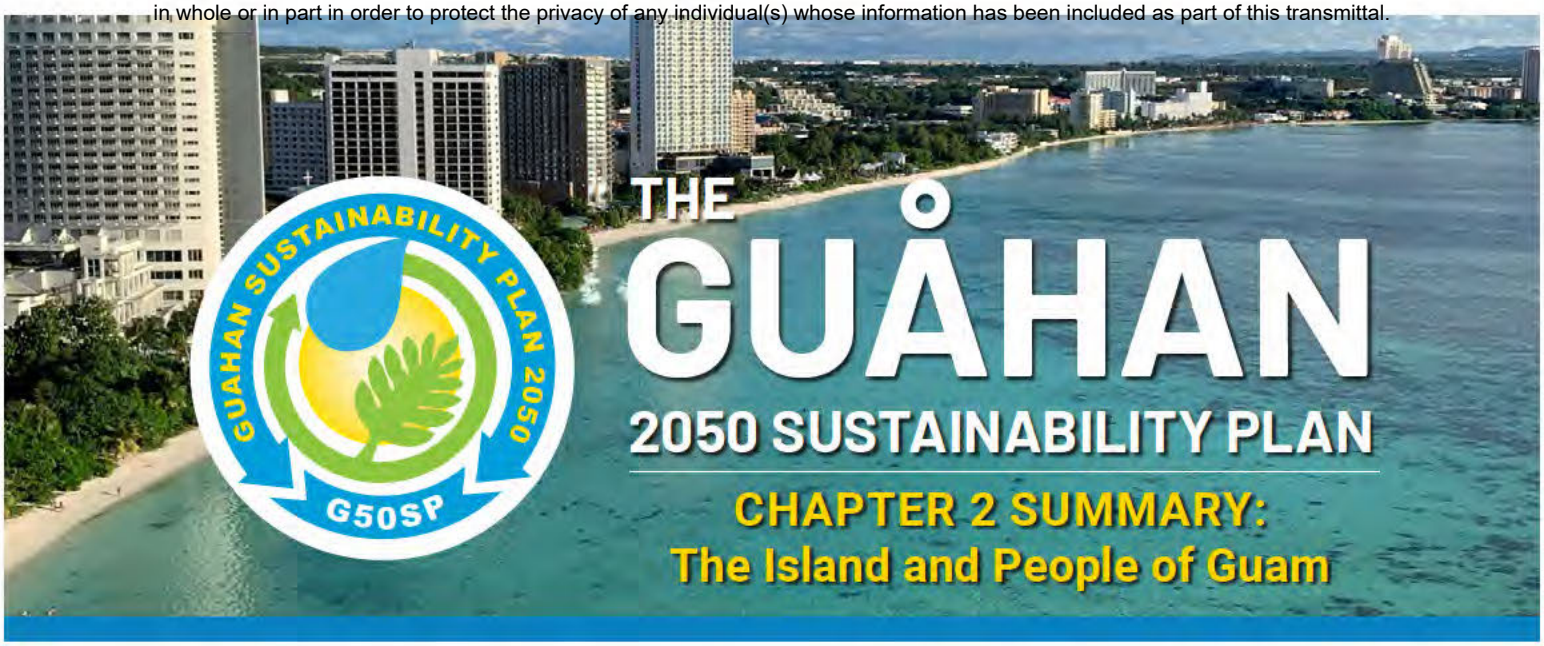

THE GUÅHAN 2050 SUSTAINABILITY PLAN

CHAPTER 2 SUMMARY: The Island and People of Guam

Chapter 2 explains how Guam's geography, population, and relationship with the U.S. military shape every aspect of long-term sustainability. It frames the land use goal to plan for population and growth that supports the island's ecological limits and cultural integrity and establishes three objectives: (1) use the best population data, (2) coordinate with the Department of Defense (DOD), and (3) apply federal consistency review to the federal government's plans, projects, and permitted activities.

Guam's Setting and Climate Risks

Guåhan is a small but diverse island—limestone plateau in the north, mountains in the south, and coral reefs along most of its shore. A tropical climate brings heat, heavy rains, and periodic typhoons. Climate change is expected to increase extreme rainfall, raise temperatures, and intensify the strongest storms, amplifying pressures on infrastructure, natural systems, and communities.

Population Trends

Guam's population has grown over the past century, though recent census counts show slowing or uncertain growth. U.N. projections assume a gradual population increase to around 196,000 by 2050, with a rapidly aging population. Guam is also increasingly multicultural: CHamorus now represent about 32.7% of residents. Most people live in the northern villages such as Dededo, Yigo, and Tamuning, while southern villages remain smaller and more rural.

Military Expansion

Chapter 2 highlights the major role of the U.S. military in shaping population change. Military-related residents numbered about 21,700 in 2020 and are expected to reach about 35,000 by 2037, driven by the relocation of Marines from Okinawa and ongoing construction. This growth will significantly affect housing demand, land availability, infrastructure needs, workforce capacity, and community life, underscoring the need for strong coordination between the Government of Guam and the federal DOD, including having clear expectations concerning planned development, infrastructure needs, resource protection, and mitigation of impacts to Guam's unique social and environmental resources.

Key Policies

- Maintain the Bureau of Statistics and Plans (BSP) as the demographic data clearinghouse.
- Plan for a population that can be sustained within environmental, cultural, and infrastructure limits.
- Strengthen coordination with the DOD on land use, population, and impacts.
- Seek impact mitigation funding for housing, infrastructure, environment, and culture.
- Use the CZMA federal consistency review process to align federal actions with the Guåhan 2050 Sustainability Plan.

Sustainable growth requires aligning population trends with Guam's limited land base, aging infrastructure, environmental constraints, and cultural priorities. DOD-related growth adds urgency to improving housing options, expanding services, and planning for potential land use conflicts. Federal consistency review offers a powerful tool to ensure federal actions support—not undermine—Guam's sustainability goals.

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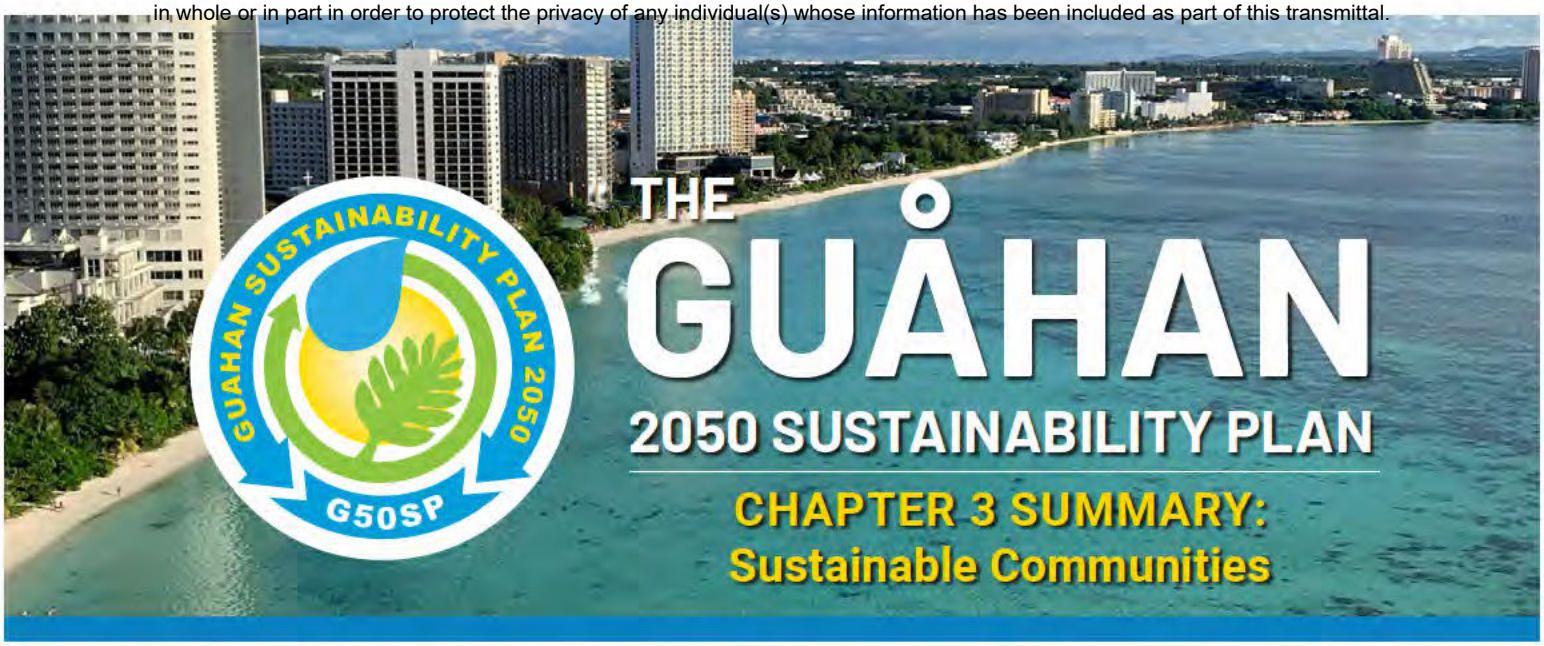
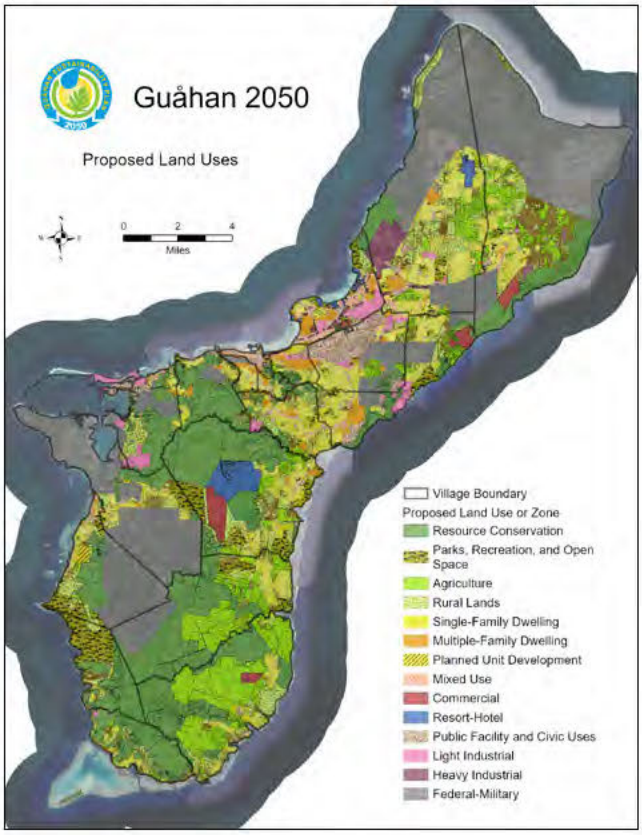


THE GUÅHAN 2050 SUSTAINABILITY PLAN

CHAPTER 3 SUMMARY: Sustainable Communities

Chapter 3 presents a land use strategy to guide how Guam grows, builds, and protects its communities through 2050. It explains how sustainable development can support economic opportunity, cultural identity, resilient housing, and safe infrastructure while preserving the island's natural and rural landscapes. The chapter covers six interconnected land use systems—general land use, public services, housing, priority economic development, rural and agricultural lands, and natural hazard resilience—and provides the goals, objectives, and policy directions that together form the foundation of the Guåhan 2050 Sustainability Plan.



Planning for the Limits of a Small Island

Guam's geography and land ownership patterns shape everything that is possible. The maps of Chapter 3 show that about one half of the island is either public or federal land, with major military holdings in the north and center sections of the island. Most development is concentrated on the northern limestone plateau, while southern villages remain rural and coastal. Much of the south consists of steep, mountainous terrain. With so little developable land, the chapter emphasizes the need to direct island growth strategically, avoid fragmentation of rural and agricultural areas, and protect sensitive ecosystems such as watersheds, limestone forests, and especially the Northern Guam Lens Aquifer – the major source of Guam's drinking water.

Organizing Land Use for Sustainability

General Land Use (Section 3.2) establishes the islandwide spatial strategy: concentrating new development in existing urban areas and protect rural, agricultural, and sensitive natural lands. It introduces tools such as urban–rural boundaries, mixed-use zones, resource conservation areas, and designations to safeguard aquifers, forests, watersheds, and coastlines. The chapter stresses that Guam must maximize existing serviced areas, reduce sprawl, and revitalize built-up places while respecting cultural landscapes and traditional village form. Policies in this chapter support compact growth, redevelopment, village centers, and potential transfer of development rights to shift development pressure away from the Northern Guam Lens Aquifer.

Aligning Public Infrastructure and Growth

Public Services (Section 3.3) emphasizes that no development should proceed without adequate water, sewer, stormwater, energy, transportation, and

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communications infrastructure. New infrastructure must be sized to support planned, not speculative, growth. Chapter 3 identifies critical infrastructure vulnerabilities—including aging water systems, high non-revenue water, limits on wastewater capacity, stormwater flooding, and the need for modern communications. It also highlights the importance of protecting the Northern Guam Lens Aquifer by requiring sewered development where feasible, managing stormwater with green infrastructure, and improving resilience of water and wastewater facilities. Expanded renewable energy systems, multi-modal transportation options, and better coordination of development and planning around underground utilities are also central themes.

Housing: Expanding Affordable, Well-Located, Resilient Homes

The Housing section (3.4) addresses rising housing costs, limited supply, and the need for climate-safe neighborhoods. It promotes higher-density housing, mixed-use development, and infill as primary strategies for affordability and sustainability. Policies encourage multifamily zoning, accessory dwelling units (ADUs), reuse of vacant buildings, and diverse housing types that support extended families. The chapter stresses linking housing growth with hazard data—steering new development away from flood- and typhoon-prone areas and promoting updated building practices for resilience. Village-centered housing is emphasized to preserve cultural identity and reduce vehicle dependence.

Promoting Context-sensitive Commercial, Industrial, and Priority Development

Section 3.5 focuses on ensuring that land is available for economic opportunity without degrading community character or the environment. It supports redevelopment of already urbanized areas, the growth of mixed-use commercial corridors, and land protections for priority economic sectors such as agriculture, fisheries, telecommunications, manufacturing, and eco-cultural tourism. Industrial development is directed to appropriate zones with adequate services to avoid conflicts with homes and sensitive resources. Policies also strengthen village-scale employment and entrepreneurship, helping keep economic benefits local.

Rural and Agricultural Lands: Protecting Heritage, Food Security, and Open Space

Section 3.6 reinforces the importance of Guam's rural and agricultural lands to cultural identity, environmental health, and food security. The chapter directs the preservation of open space and the promotion of both traditional and commercial agriculture. It supports minimum lot sizes, limits on subdivision, and infrastructure investments that are appropriate for rural settings. A potential Transfer of Development Rights (TDR) program could shift development away from agricultural and aquifer-protection areas. Policies also recognize the importance of CHamoru land stewardship, highlighting opportunities for conservation, cultural restoration, and community farming in partnership with the CHamoru Land Trust, Guam Ancestral Lands Commission, and Department of CHamoru Affairs.

Natural Hazards: Planning for a Climate-Ready Island

Natural Hazards (Section 3.7) integrates climate resilience into every other land use category. The plan calls for hazard overlays, risk-based zoning, and nature-based shoreline protection such as living shorelines. It links hazard mitigation with land use, transportation, housing, and infrastructure decisions. Policies steer development away from high-risk areas vulnerable to typhoons, erosion, flooding, landslides, and sea level rise, and expand the use of green infrastructure and watershed protections. Resilience is framed as essential not only to safety, but also to protecting the island's cultural resources and long-term economic vitality.

Key Policy Areas

Chapter 3 includes 143 proposed policies across six policy areas. They address many specific planning and development issues through these unifying principles:

- **Guide Growth** to appropriate locations.
- **Ensure Public Infrastructure** and services before authorizing new development.
- **Protect Critical Resources** including Guam's aquifer, coral reefs, and limestone forests.
- **Expand Housing** supply and affordability.
- **Promote Economic Opportunity**.
- **Preserve Agricultural Lands**.
- **Promote Cultural Landscapes** and CHamoru Heritage.
- **Reduce Climate Risk and Natural Hazards** through science-based land use.



Collectively, these policies advance key U.N. Sustainable Development Goals—particularly SDG 6 (Clean Water), SDG 7 (Clean Energy), SDG 11 (Sustainable Communities), and SDG 13 (Climate Action).

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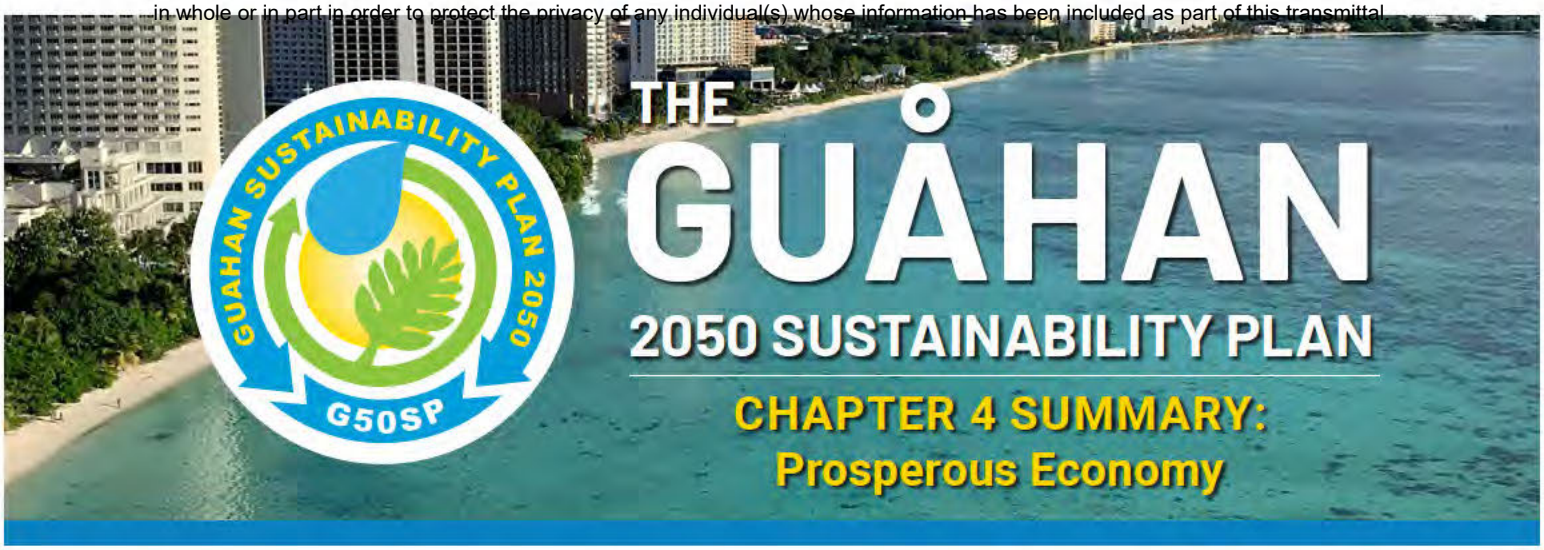

THE GUÅHAN 2050 SUSTAINABILITY PLAN

CHAPTER 4 SUMMARY: Prosperous Economy

Chapter 4 outlines Guam's land use strategy for building a resilient, diversified, and culturally grounded economy. It emphasizes that economic prosperity is inseparable from environmental stewardship, community well-being, and the responsible use of Guam's limited land and water resources. The policy goal is to foster economic resilience while supporting village vitality, protecting natural systems, and ensuring equitable opportunity.

Economic Conditions and Land Use Drivers. Guam's economy remains heavily shaped by tourism, defense, and construction, each creating distinctive land use pressures. Pre-pandemic tourism generated $1.85 billion annually, but arrivals plunged 54% in 2020. In 2025, visitor activity is rebounding, though still below 2019 levels. Recovery now emphasizes ecotourism, cultural tourism, and redevelopment rather than hotel expansion. Defense spending—over $2.5 billion annually—and the activation of Marine Corps Base Camp Blaz continues to drive construction, population shifts, and infrastructure demands. With $1.46 billion in recent revenue, construction is a major sector connected to both civilian and military projects.

Tourism Trends and Opportunities. Tourism is important to Guam's economy, but its future depends on aligning growth with environmental limits and community values. Chapter 4 highlights opportunity in ecotourism, heritage tourism (e.g., Hagåtña's cultural revitalization), and education tourism, while emphasizing the need to right-size new development, especially near sensitive coastal and scenic areas. The Guam Tourism Recovery Plan calls for rebranding around CHamoru culture, improving governance coordination, and prioritizing redevelopment of aging tourism properties.

Diversification and Emerging Sectors. Guam's economic expansion can include agriculture, aquaculture, and additive manufacturing (AM). A recent aquaculture feasibility study identified high import dependence, strong local demand, and land use needs for hatcheries and commercial operations. AM, supported by the G3 Makerspace & Innovation Hub, provides new pathways for entrepreneurship.

Village-Based Economic Development. Economic activity is highly uneven: Tamuning generates 59% of commercial revenue, while southern villages support far smaller economies. Community surveys show strong resident support for village-center revitalization, small businesses, mixed-use development, agriculture, and improved public transportation. Village-scale economic planning and place-appropriate development standards are central to a more equitable economy.

Key Policies

- Expand commercial and industrial land capacity to support future employment and living-wage jobs.
- Promote mixed-use economic zones that integrate housing, retail, and workplaces.
- Focus growth in priority corridors such as Upper Tumon, Route 3, and North Marine Corps Drive.
- Strengthen the workforce through university, vocational, and technical training facilities.
- Co-locate and streamline industrial uses to improve efficiency and reduce off-site impacts.
- Reserve land for priority economic functions, like coastal-dependent uses and renewable energy.
- Revitalize village centers with pedestrian-oriented, culturally grounded local business districts.
- Protect prime agricultural lands and support commercial, community, and subsistence farming.
- Align economic expansion with sustainability goals, including climate resilience, equity, and the SDGs.

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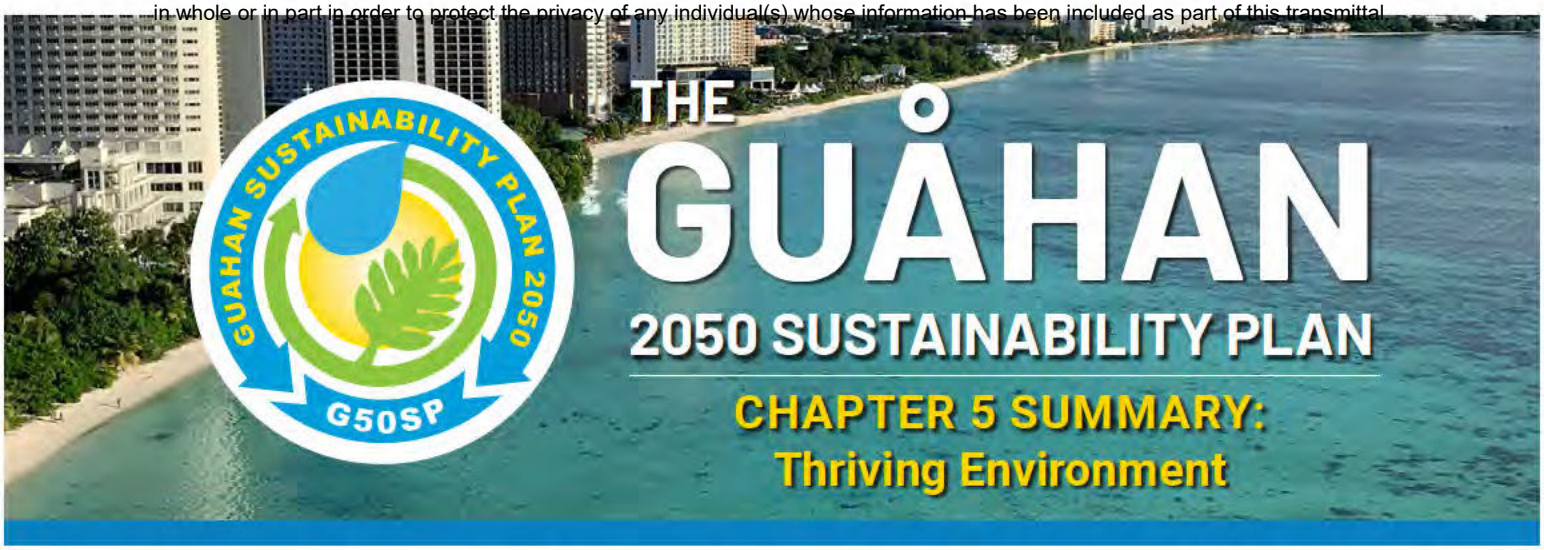


THE GUÅHAN 2050 SUSTAINABILITY PLAN

CHAPTER 5 SUMMARY: Thriving Environment

Chapter 5 establishes a comprehensive framework for protecting Guam's land and marine environments while strengthening resilience to climate change. It recognizes that Guam's natural systems—its watersheds, aquifers, reefs, forests, and wetlands—are the foundation of public health, cultural heritage, food security, economic vitality, and overall quality of life. As a small island with limited land and freshwater, Guam faces disproportionate risks from climate change, development pressure, and resource degradation. This chapter integrates environmental protection directly into land use planning as a central sustainability strategy.

The chapter's overarching goal is to conserve Guam's terrestrial and marine environments while strengthening climate resilience through integrated land use and ecosystem planning. To achieve this, the chapter organizes policies around climate resilience, watershed and water resource protection, habitat conservation, coastal and marine management, and adaptive governance.

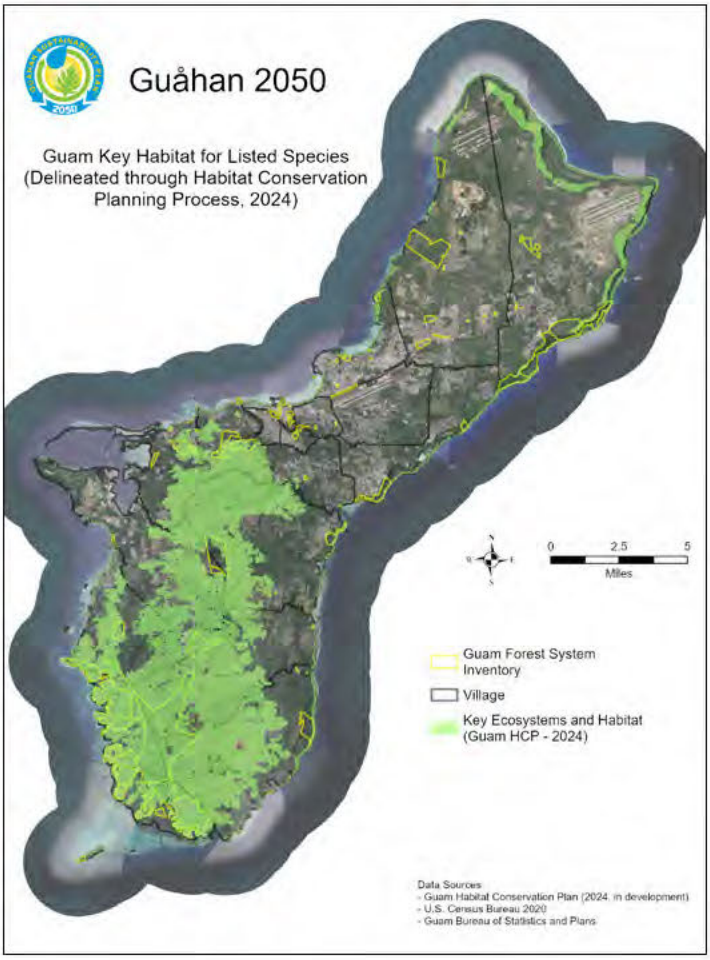
Climate Change and Land Use as a Unifying Framework

Climate change is presented as the most significant long-term environmental threat facing Guam. Rising temperatures, increasing extreme rainfall, stronger typhoons, sea level rise, coastal erosion, drought, and saltwater intrusion affect not only ecosystems, but also housing, infrastructure, water supply, food systems, and cultural resources. The chapter emphasizes that climate resilience must be embedded in land use decisions across all sectors, rather than treated as a standalone issue.

Key resilience strategies include coastal risk reduction, hazard avoidance, and nature-based solutions. Coastal setbacks are emphasized to reduce exposure to flooding and erosion, particularly as sea levels around Guam have already risen approximately four inches since the early 1990s. Updated hazard mapping is essential to guide development away from high-risk areas, while mangroves and coral reefs are highlighted as highly effective natural defenses that reduce wave energy, erosion, and storm surge impacts.

Green Infrastructure and Resilient Development

Green infrastructure is a central land use tool for managing climate impacts, particularly in urban areas. The chapter highlights permeable pavements, rain gardens, bioswales, bioretention systems, green roofs, and expanded tree canopy as strategies to reduce flooding, improve water quality, and mitigate urban heat. Tree-lined streets and urban green spaces



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are shown to reduce local temperatures by up to nine degrees Fahrenheit, making them critical public health infrastructure as temperatures rise.

New infrastructure and development are expected to incorporate climate-resilient design, including flood-resistant materials, elevated roadways, energy efficiency, and renewable energy integration. Disaster-resilient housing standards are emphasized, especially in light of recent typhoons such as Typhoon Mawar, which caused over $100 million in damage. Retrofitting older housing stock and integrating solar energy and battery storage are framed as essential for long-term safety and energy security.

Water Resources, Watersheds, and the Northern Guam Lens Aquifer

Water protection is a dominant theme throughout the chapter. Guam's freshwater supply depends primarily on the Northern Guam Lens Aquifer (NGLA) and the Fena Valley Reservoir, both of which are increasingly vulnerable to climate change, over-extraction, pollution, and land use impacts. The chapter explains the unique geology of Guam's limestone plateau, which allows rapid groundwater recharge—but also makes the aquifer extremely vulnerable to contamination from surface activities.

Policies emphasize watershed protection, reduced deforestation, riparian buffers, erosion control, and strict regulation of wastewater and stormwater discharges. The chapter identifies sedimentation as the single greatest threat to coral reefs, driven by erosion, wildfires, invasive species, development, and poorly managed runoff. Integrated stormwater management—using low-impact development and green infrastructure—is framed as essential to protecting both groundwater and nearshore marine ecosystems.

Wetlands, Habitats, and Ridge-to-Reef Connectivity

Wetlands, riparian corridors, limestone forests, mangroves, coral reefs, and seagrass beds are treated as interconnected systems that provide flood control, water filtration, habitat, shoreline protection, and cultural value. The chapter documents extensive loss and degradation of wetlands due to filling, development, and polluted runoff, resulting in increased flooding, water quality degradation, and reef damage.

A strong emphasis is placed on no net loss of wetland function, improved wetland evaluation methods, functional-based mitigation ratios, and regulated vegetated buffers. Mangroves are highlighted as especially valuable, providing fish habitat, shoreline stabilization, and storm protection while filtering pollutants before they reach reefs.

Climate-Smart Agriculture and Renewable Energy

Food security is framed as both an environmental and resilience issue, given Guam's reliance on imported food. Climate-smart agriculture, agroforestry, soil health improvement, and water-efficient irrigation are promoted to increase local production while reducing emissions and vulnerability to climate disruptions.

Renewable energy integration is another cornerstone of environmental resilience. Guam currently relies on imported fossil fuels for nearly 90% of its energy. The chapter highlights strong public support for renewable energy, including solar, wind, microgrids, and potentially offshore wind, while emphasizing careful land use planning to balance conservation and energy development.

Adaptive Management, Education, and Long-Term Stewardship

Finally, the chapter stresses that environmental planning must be adaptive. Climate impacts are uncertain in timing and magnitude, requiring continuous monitoring, updated hazard mapping, and regular policy adjustments. Community engagement, education, and community-led adaptation projects—such as shoreline restoration and tree planting—are essential to building long-term stewardship and resilience. Chapter 5 thus provides a science-based, land-use-driven framework for protecting Guam's environment while adapting to a changing climate.

Key Policies

- Protect the Northern Guam Lens Aquifer by limiting development intensity, requiring sewer connections, and managing groundwater withdrawals within sustainable yield.
- Apply a ridge-to-reef planning framework to integrate watershed protection, stormwater management, reef health, and coastal resilience.
- Prioritize conservation of sensitive lands and habitats, including forests, wetlands, reefs, and wildlife corridors, through zoning, overlays, and land acquisition.
- Reduce pollution at the source by strengthening wastewater, stormwater, and solid waste systems and minimizing runoff and sedimentation.
- Expand green infrastructure and nature-based solutions to manage flooding, heat, erosion, and coastal hazards.
- Guide development away from high-risk hazard areas, using updated flood, erosion, sea-level rise, and landslide mapping.

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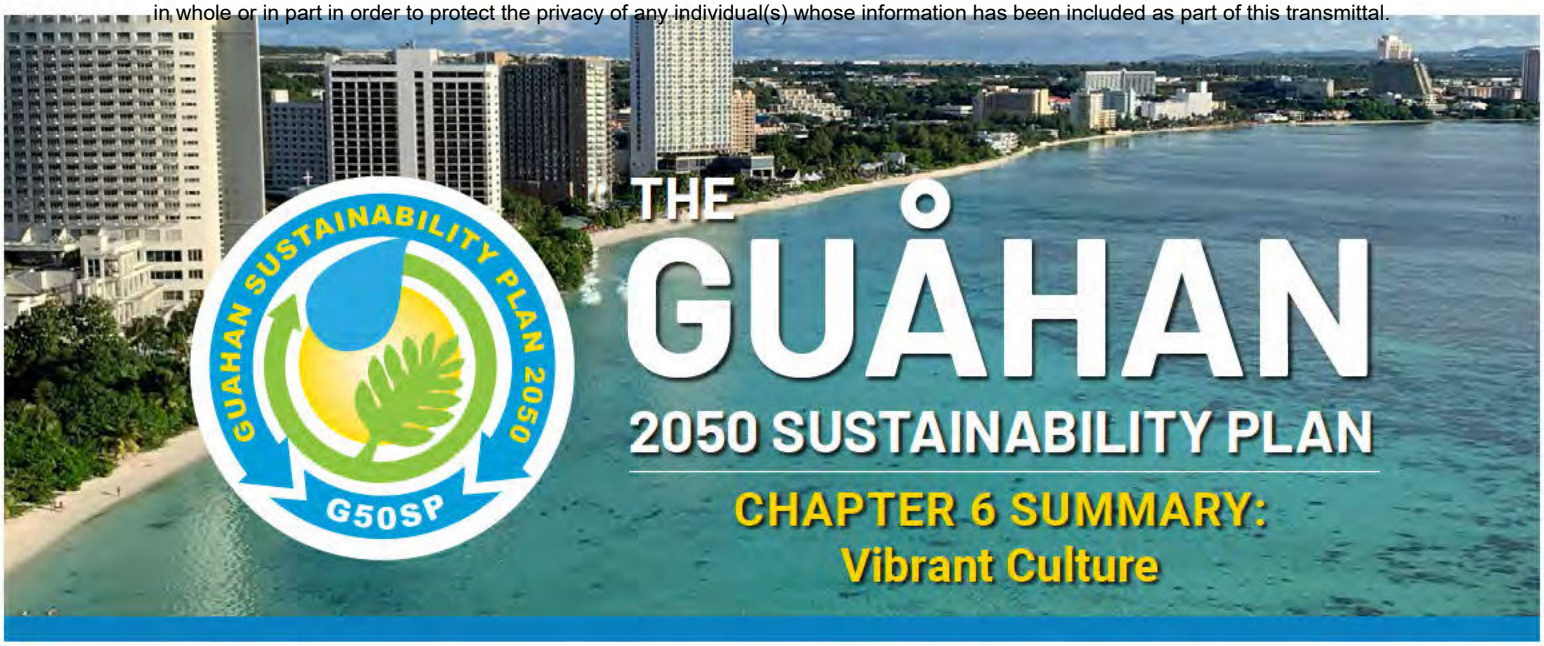

THE GUÅHAN 2050 SUSTAINABILITY PLAN

CHAPTER 6 SUMMARY: Vibrant Culture

Chapter 6 establishes culture as a core pillar of the Guåhan 2050 Sustainability Plan, affirming that land use planning is inseparable from identity, history, and community well-being. Rather than treating culture as an amenity or overlay, the chapter positions it as a living, dynamic system—expressed through land and seascapes, language, village form, sacred and historic sites, traditional practices, and everyday social life. The chapter underscores that CHamoru culture and ancestral relationships to land and sea, alongside Guam's deeply multicultural character, must actively shape how the island grows and changes through 2050.

History, Land, and Justice

A central theme of Chapter 6 is the lasting influence of colonization, war, militarization, and land dispossession on Guam's contemporary land use patterns. Spanish reducciones, U.S. territorial governance, World War II devastation, and postwar military land takings fundamentally reshaped village locations, land tenure systems, access to ancestral lands, and relationships between people and place. These historic forces are not relegated to the past; they continue to influence development pressures, patterns of ownership, cultural erasure, and persistent inequities. As a result, the chapter frames land use planning not only as a tool for managing growth, but as a pathway toward cultural justice, restoration, and healing.

The chapter emphasizes that acknowledging history is essential to responsible planning. Decisions about zoning, infrastructure, conservation, and development inevitably carry cultural consequences—either reinforcing past harms or contributing to repair and renewal.



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Protecting Cultural and Historic Resources

Chapter 6 calls for proactive and systematic protection of Guam's cultural and historic resources, including ancestral sites, burial grounds, latte villages, cultural landscapes, historic buildings, and traditional place names. It highlights the critical roles of the Guam Historic Preservation Office, Guam Preservation Trust, Department of CHamoru Affairs, and the Kumisión i Fino' CHamoru in documentation, education, review, and culturally grounded guidance.

The chapter identifies practical land use tools—such as cultural resource mapping, zoning overlays, buffers, and development review requirements—as essential mechanisms to ensure that growth does not inadvertently erase irreplaceable heritage. Adaptive reuse of historic structures is encouraged as a way to maintain cultural continuity while supporting economic vitality and community use.

Land Return and Culturally Grounded Development

Special attention is given to the CHamoru Land Trust Commission (CLTC) and the Guam Ancestral Lands Commission (GALC). These programs represent decades-long efforts to restore land to CHamoru families and communities, yet implementation has often been constrained by infrastructure gaps, access limitations, zoning conflicts, and limited agency capacity. Chapter 6 identifies a critical opportunity to move beyond parcel-by-parcel land return toward a more integrated, planning-based approach.

The chapter envisions trust and ancestral lands as central to Guam's sustainability future—supporting housing, agriculture, village development, food security, cultural practices, and environmental stewardship. Coordinated infrastructure investment, land use alignment, and interagency planning are identified as necessary steps to unlock the full potential of these lands while protecting sensitive resources such as aquifers and cultural landscapes.

Culture, Health, and Community Well-Being

Chapter 6 explicitly links culture to physical, mental, and social health. Land use decisions shape access to parks, recreation, childcare, health services, cultural spaces, and local food systems. The chapter documents uneven access to parks and green space across villages and calls for more equitable distribution of recreational and cultural amenities. Parks, historic sites, trails, and cultural landscapes are framed as essential community infrastructure, supporting resilience, social cohesion, intergenerational knowledge transfer, and everyday well-being.

Cultural spaces—both formal and informal—are recognized as vital to sustaining language, practices, ceremonies, and community connections, particularly in the face of climate change, economic stress, and population shifts.

Overall Vision and Policy Direction

Overall, Chapter 6 advances a vision of restorative, culturally grounded land use planning—one that ensures Guam's future growth strengthens rather than diminishes the island's living cultural landscape. Culture is not treated as static or symbolic, but as an evolving system that must be supported through intentional planning, design, and governance.

Key Policies

- Protecting ancestral, historic, and cultural sites through zoning, overlays, buffers, and development review
- Creating integrated GIS mapping of cultural, historic, trust, and ancestral lands
- Prioritizing infrastructure investment on CLTC and GALC lands where appropriate
- Requiring cultural and historical impact assessments for major development
- Encouraging adaptive reuse of historic structures
- Supporting village-based cultural spaces, festivals, and traditional practices
- Promoting culturally grounded building and urban design
- Expanding equitable access to parks, open space, and community facilities

Together, these policies reinforce the chapter's central message: a sustainable Guåhan is one where land use decisions honor history, sustain living culture, and support the health and dignity of all communities—now and into the future.

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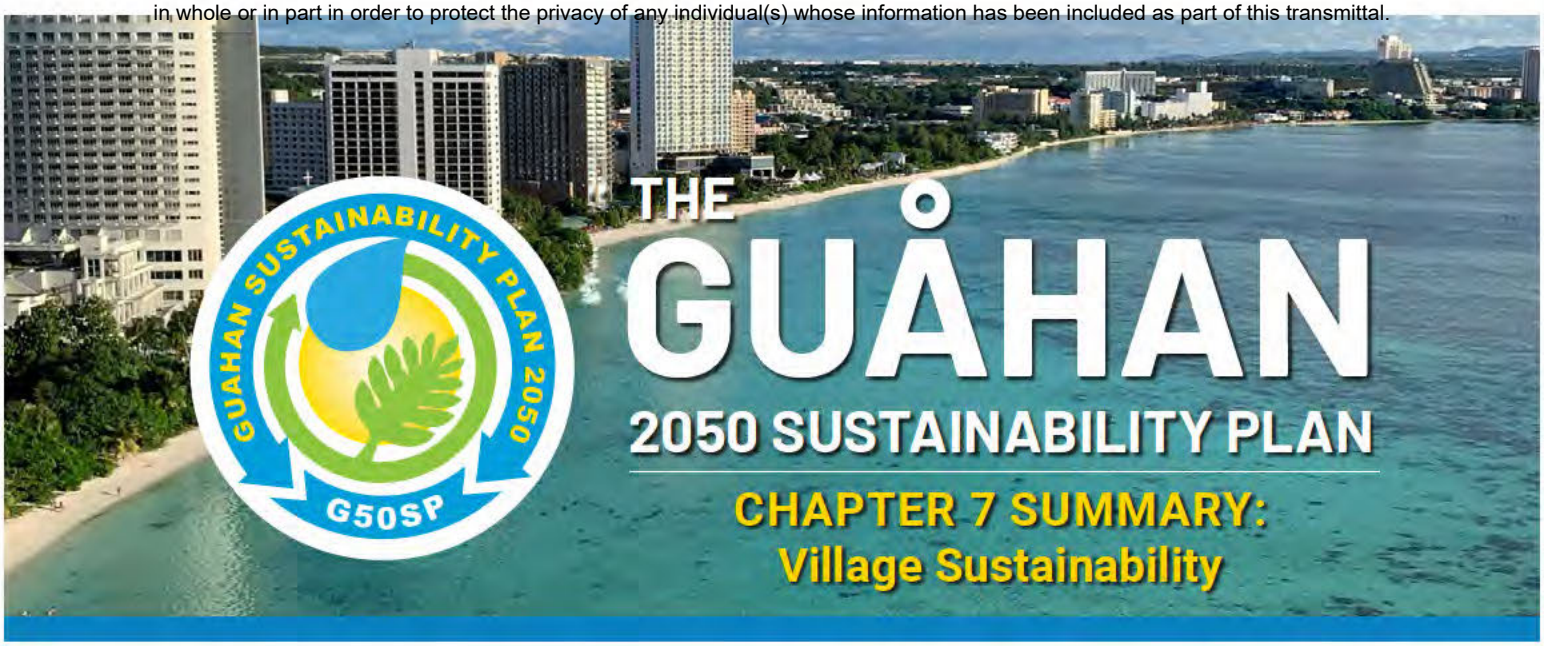

THE GUÅHAN 2050 SUSTAINABILITY PLAN

CHAPTER 7 SUMMARY: Village Sustainability

Chapter 7 of the Guåhan 2050 Sustainability Plan positions Guam's nineteen villages as the social, cultural, and spatial foundation of the island's future. While each village reflects distinct histories, landscapes, and development patterns, the chapter emphasizes that village diversity is a strength rather than a constraint. The central planning challenge is to support this diversity through context-sensitive land use policies that protect village character, strengthen community life, and increase resilience to environmental, infrastructure, and social pressures.

Village Diversity and Shared Challenges

The chapter underscores that villages differ widely in scale, function, and setting—from dense commercial hubs like Dededo and Tamuning to rural coastal and southern communities such as Malesso' and Humåtak. Despite these differences, villages share common challenges: aging and inadequate infrastructure, flooding and stormwater issues, vulnerability to climate change, loss of agricultural land, limited access to parks and civic spaces, and pressures from urban sprawl and military activity. These shared conditions justify an island-wide policy framework that allows local tailoring while maintaining consistency across jurisdictions.



Village Centers and Walkable Community Life

A key planning theme is the revitalization and creation of village centers as walkable, mixed-use hubs that combine housing, civic uses, small-scale commerce, and public gathering spaces. The chapter emphasizes pedestrian-scale development, complete streets, and accessible sidewalks as tools to strengthen social cohesion, reduce vehicle dependence, and reinforce village identity. Civic spaces—such as village greens, plazas, and markets—are highlighted as essential infrastructure for cultural events, fiestas, and daily community interaction.

Infrastructure, Services, and Equity

Ensuring that every village has access to core public services is a central equity objective. Policies call for improved and adequately scaled community facilities, including mayor's offices, libraries, multipurpose centers, parks, and recreational fields. The chapter recognizes that uneven infrastructure investment has contributed to disparities in quality of life across villages, particularly in low- and moderate-income communities. Addressing sewer, water, road, drainage, and emergency preparedness infrastructure is framed not only as a technical necessity, but as a matter of social equity and public health.

Environmental Stewardship and Climate Resilience

Village-level planning is closely linked to environmental protection and climate adaptation. The chapter emphasizes safeguarding aquifers,

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wetlands, forests, coastlines, and culturally significant landscapes through smart land use decisions. Policies promote green buffers, conservation areas, and integration of natural features into development patterns. Hazard resilience—particularly related to flooding, typhoons, shoreline erosion, and sea level rise—is identified as a universal concern. Villages are encouraged to incorporate climate adaptation strategies, disaster preparedness, and resilient infrastructure into land use planning, rather than treating hazards as isolated issues.

Cultural Identity and Heritage Protection

Cultural continuity is a defining theme of the chapter. Villages are recognized as living expressions of CHamoru history, colonial legacies, and contemporary cultural revival. Policies emphasize protecting traditional land use patterns, cultural sites, latte stones, historic buildings, and sacred landscapes. Development that erodes village identity or displaces cultural practices is discouraged. The chapter also highlights the importance of supporting cultural programming, intergenerational knowledge transfer, and community-led stewardship as part of sustainable land use planning.

Governance and Community Engagement

Effective village sustainability depends on inclusive governance and local participation. The chapter stresses the role of mayors, municipal planning councils, and residents in shaping development decisions. Community engagement is framed as an ongoing process that builds trust, reflects local priorities, and improves implementation outcomes. Village-level planning is intended to complement island-wide policies, not replace them, reinforcing coordination among agencies while honoring local knowledge.

Policy Framework and Global Alignment

The chapter's island-wide village policies establish a coherent framework that supports village diversity, character, public facilities, recreation, civic life, environmental protection, and climate resilience. These policies align closely with several United Nations Sustainable Development Goals, including Sustainable Cities and Communities (SDG 11), Climate Action (SDG 13), Life on Land and Below Water (SDGs 14 and 15), Reduced Inequalities (SDG 10), and Strong Institutions (SDG 16). By translating global sustainability principles into village-scale land use guidance, the chapter bridges international commitments with local realities.

Overall Planning Direction

Overall, Chapter 7 articulates a vision of Guam's villages as resilient, vibrant, and culturally grounded communities. Rather than promoting uniform growth, the chapter calls for tailored development that respects place, strengthens community life, protects natural and cultural resources, and prepares villages for future environmental and social change. The policies provide a foundation for village-level planning that is locally responsive yet island-wide in purpose, reinforcing villages as the heart of Guåhan's sustainable future.

Key Policies

- Strengthen village centers as walkable hubs for civic life, small businesses, housing, and cultural activities.
- Preserve village character and identity through context-sensitive land use, design standards, and scale-appropriate development.
- Improve equitable access to community facilities, including parks, recreation, libraries, and multipurpose centers.
- Align infrastructure investment with village needs, prioritizing water, sewer, drainage, roads, and emergency services.
- Integrate climate resilience into village planning, including flood mitigation, heat reduction, and disaster preparedness.
- Protect culturally and environmentally significant lands, such as wetlands, aquifers, historic sites, and coastal areas.
- Support village-based economic activity, including local markets, home-based businesses, and cultural enterprises.

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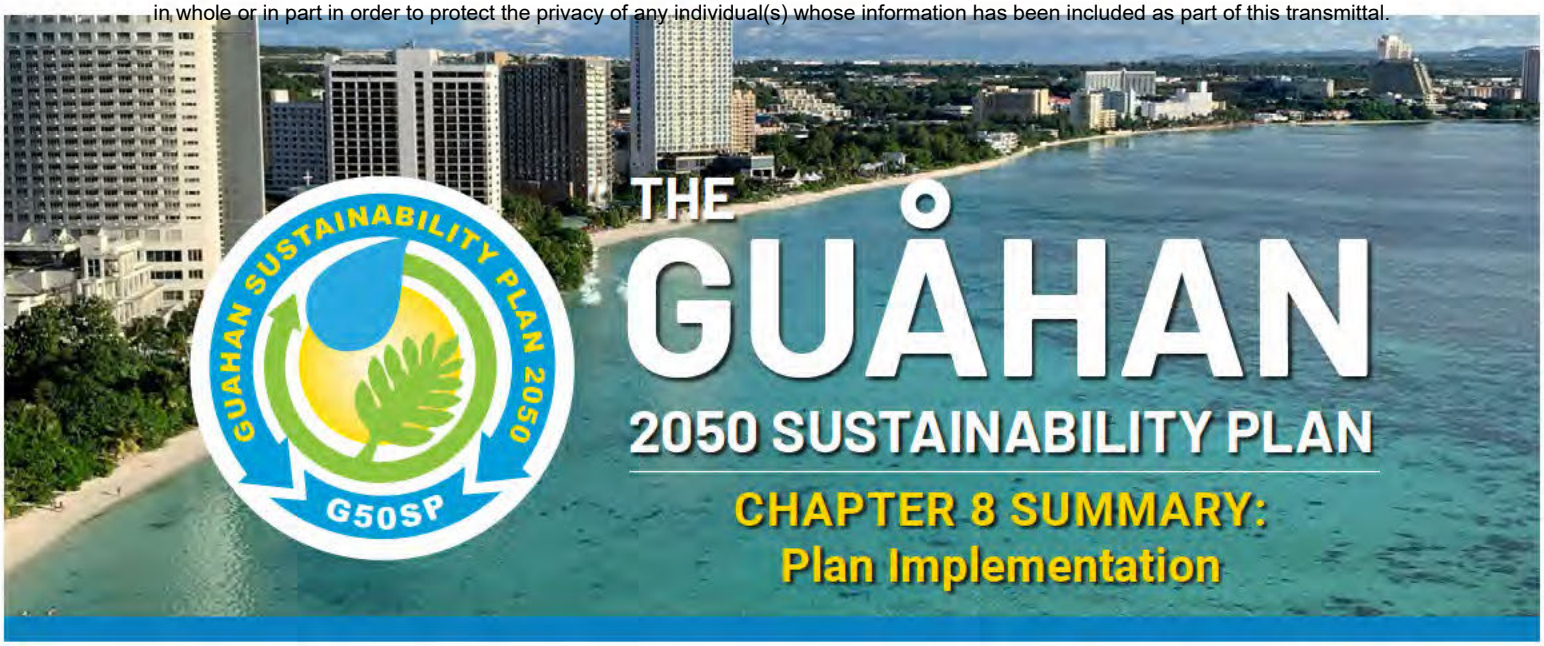

Chapter 8 translates the Guåhan 2050 Sustainability Plan (G50SP) from vision to action. It establishes a coordinated, accountable, and adaptive system for implementation that integrates land use planning, regulation, capital investment, and community engagement over the next 25 years. Grounded in the mandate of Public Law 35-110, the chapter emphasizes that the success of the plan depends not only on sound policy, but on sustained institutional alignment, transparent decision-making, and measurable progress.

Implementation Goal and Guiding Principles

The overarching goal of Chapter 8 is to create a unified framework that turns the G50SP into a living, operational plan. Implementation is guided by the plan's five sustainability principles—Limits, Balance, Renewal, Equity, and Engagement—which shape how decisions are prioritized, evaluated, and adjusted over time. These principles are applied pragmatically, informing where growth is encouraged, where development is constrained, and how benefits and burdens are distributed across communities.

Leadership, Coordination, and Accountability

A central feature of the implementation framework is the designation of the Bureau of Statistics and Plans (BSP) as the lead coordinating agency for the G50SP. BSP is tasked with guiding implementation, monitoring progress, supporting interagency coordination, and reporting outcomes. Within the first year of adoption, the plan calls for the establishment of a Sustainability Plan Implementation Task Force, bringing together key government agencies to clarify roles, align timelines, and develop protocols for collaboration.

Accountability is reinforced through clear assignment of responsibilities, performance indicators, and regular reporting. The chapter emphasizes that implementation must be transparent and inclusive, with ongoing engagement of village leaders, community organizations, landowners, and residents—not only during planning, but throughout execution and monitoring.

Phased Implementation Over Time

Chapter 8 organizes implementation into three overlapping time horizons:

- **Short-term (2025–2030)**: Focused on foundational actions, including legal and regulatory alignment, establishment of governance structures, priority infrastructure upgrades, affordable housing zoning, hazard mitigation, and development of monitoring systems.
- **Mid-term (2030–2040)**: Emphasizes scaling successful strategies, refining zoning and permitting frameworks, expanding mixed-use redevelopment, restoring ecosystems, and integrating climate adaptation across sectors.
- **Long-term (2040–2050)**: Aims to fully realize the plan's vision of compact, resilient communities, restored natural systems, clean energy transformation, and equitable access to land and services.

This phased approach allows the plan to remain flexible and responsive while maintaining a clear long-term trajectory.

Tools, Processes, and Plan Alignment

Implementation relies on a suite of practical tools, including zoning and land use updates, development review processes, capital improvement planning, GIS-based land use monitoring, performance dashboards, and regulatory enforcement. A key priority is plan

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alignment—ensuring that existing sectoral plans (e.g., transportation, water, housing, environmental protection, cultural preservation) are consistent with the G50SP. BSP is charged with inventorying and coordinating these plans to reduce duplication, resolve conflicts, and strengthen coherence across government actions.

The Application Review Committee (ARC) plays a critical role in operationalizing consistency, ensuring that development proposals are reviewed against the G50SP's land use designations and sustainability objectives early in the permitting process.

Implementation Action Matrix

At the heart of Chapter 8 is a detailed Implementation Action Matrix, organized by thematic policy areas. The matrix identifies specific actions, lead agencies, partners, timeframes, resource needs, and performance indicators. It serves as a practical management tool to coordinate efforts across sectors such as governance, land use, housing, economy, environment, culture, and village sustainability, while enabling progress tracking and adaptive management.

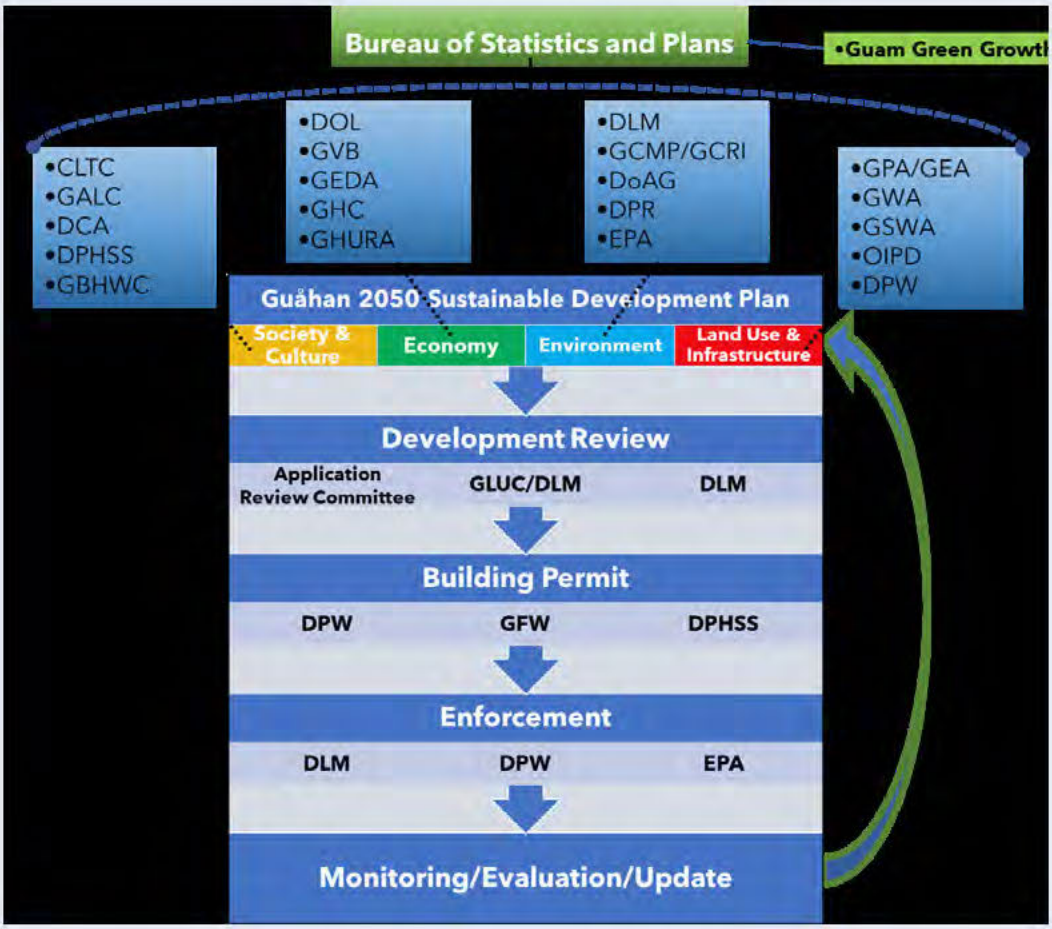
Financing and Investment Strategy

The chapter recognizes that implementation requires sustained and diversified funding. It calls for development of a Sustainability Strategic Financing Plan within the first two years, identifying federal, territorial, private, and innovative funding sources. Potential mechanisms include federal infrastructure and resilience grants, Department of Defense investments, Department of the Interior programs, public-private partnerships, impact fees, green bonds, and other local revenue tools.

Importantly, financing is framed as a strategic activity—not just a technical one—requiring coordination across agencies and alignment with sustainability priorities.

Adaptive Management and Continuous Improvement

Finally, Chapter 8 emphasizes that implementation is not static. Regular five-year reviews, performance monitoring, and plan updates are built into the framework to ensure responsiveness to changing conditions, new data, and community input. This adaptive approach ensures that the G50SP remains relevant, accountable, and effective through 2050.



G50SP Integrated Framework for Agency Collaboration and Development Decisions.

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THE GUÅHAN 2050 SUSTAINABILITY PLAN

AN UPDATE TO THE "GUAM COMPREHENSIVE DEVELOPMENT PLAN"

Doc. No. 38GL-26-2651.*

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The Guåhan 2050 Sustainability Plan

An Update to the Guam Comprehensive Development Plan

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Letter from the Director

LOLA E. LEON GUERRERO
Director
MATTHEW C. SANTOS
Deputy Director

BUREAU OF STATISTICS AND PLANS

Sagan Planu Siha Yan Emfotmasion

LOURDES A. LEON GUERRERO
Governor of Guam
JOSHUA F. TENORIO
Lieutenant Governor

MESSAGE FROM THE DIRECTOR

***BuenasyanHåfa Adai*!**



On behalf of the Bureau of Statistics and Plans (BSP), I am pleased to present The Guåhan 2050 Sustainability Plan (Plan). Guided by Public Law 35-110, this Plan serves as Guam's roadmap to ensure development decisions respect the limits of our island, balance competing needs, renew our natural resources, ensure equity, and engage our community in shaping the future.

The Guåhan 2050 Sustainability Plan articulates a long-term vision for Guam's social, economic, cultural, and environmental landscape. Mandated by Public Law 35-110, the Plan's central goal is to integrate environmental stewardship, economic opportunity, and cultural heritage into all future development decisions. By directly addressing modern pressures—such as climate change, population shifts, cultural evolution, and emerging economic trends—the Plan establishes a strategic framework to keep Guam livable and culturally grounded. Furthermore, it fulfills the requirements of P.L. 35-110 by comprehensively addressing 20 critical elements, including land use, housing, transportation, natural resources, public health, and climate resilience.

Recognizing Guam's finite and precious resources, the Plan establishes clear boundaries to concentrate development within areas supported by existing water, sewer, and power infrastructure, effectively preventing urban sprawl while safeguarding the rural landscape and the vital Northern Guam Lens Aquifer. It prioritizes affordable housing and the revitalization of underutilized urban zones to ensure equitable housing options for a growing population. Furthermore, the Plan designates protected status for sensitive habitats, limestone forests, and critical watersheds, and mandates the integration of modern hazard data—such up f maps and sea-level rise projections—to guide safe development. Finally, this framework elevates CHamoru heritage, traditional practices, and historic sites, ensuring that future land-use decisions honor and preserve Guam's unique cultural identity.

On behalf of the BSP, I want to express my sincere gratitude to our government stakeholders and community members for their invaluable input in shaping this Plan. We invite the public to visit the BSP's website at www.bsp.guam.gov to access additional Plan resources. Yu'osMa'åse'.

Lola E. Leon Guerrero

LOLA E. LEON GUERRERO
Director

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Letter from the Governor

LOURDES A. LEON GUERRERO
GOVERNOR

JOSHUA F. TENORIO
LT. GOVERNOR

UFISINAN I MAGA'HÅGAN GUÅHAN
OFFICE OF THE GOVERNOR OF GUAM

June 29, 2026

MESSAGE FROM THE GOVERNOR OF GUAM

Buenas yan Hafa Adai!

I support the Bureau of Statistics and Plans (BSP) Guahan 2050 Sustainability Plan. Public Law 35-110 tasked the BSP with updating Guam's Comprehensive Development Plan, addressing twenty critical elements spanning land use, housing, transportation, natural resources, public health, climate resilience and more. This Plan reflects the current conditions and pressures our island faces from climate change population and cultural shifts and emerging economic demands. Successfully navigating these pressures requires thoughtful, deliberate planning to ensure Guam's resources are protected for future generations.

The Guahan 2050 Sustainability Plan serves as a comprehensive, long-term roadmap for balancing economic growth, environmental stewardship, and cultural preservation. Designed as a living document, it outlines a resilient, sustainable, and culturally vibrant future for our island. By establishing strategic partnerships across all government sectors and the people of Guam, the Plan forged a unified commitment to Guam's prosperity. This Plan is a community-led initiative driven by resident surveys that established our shared goals and values.

While continued development is essential to improve the quality of life on Guam, it must occur within responsible thresholds. We must adapt to environmental changes that are often beyond our control. As we safeguard our ecological systems, we must also advance economic opportunity and cultural continuity. This Plan strikes that critical balance.

I extend my sincere appreciation to the Bureau of Statistics and Plans for leading this effort. I am confident that this framework provides the guidance necessary to secure the future of the island we are proud to call home.

Senseramente,

LOURDES A. LEON GUERRERO
I Maga'hågan Guahan
Governor of Guam

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Guam Association of Realtors
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Guam Chamber of Commerce
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Guam Environmental Protection Agency
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Guam Housing Corporation
Guam Power Authority
Guam Premier Outlets
Guam Solid Waste Authority
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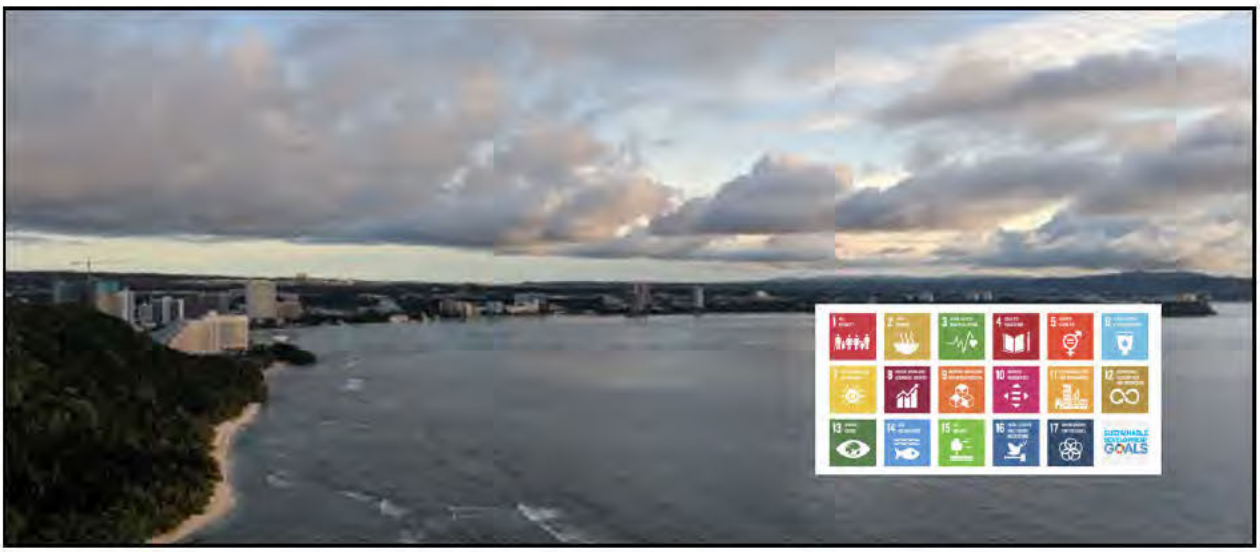
Executive Summary

The Guåhan 2050 Sustainability Plan is not simply a land use map—it is a living commitment to the people of Guam. It recognizes that every decision about where and how we build, protect, and invest has consequences for generations. By integrating environmental stewardship, economic opportunity, and cultural preservation, the plan charts a path that is both ambitious and grounded in community priorities.

Guam's Choice for the Future

By 2050, Guam can be a place where vibrant villages, a prosperous economy, a thriving environment, and a celebrated culture reinforce one another—where development decisions respect the limits of our island, balance competing needs, renew our natural resources, ensure equity, and engage everyone in shaping the future.

We face converging challenges: climate change bringing hotter days, rising seas, and stronger storms; global economic forces impacting tourism, defense, and local industries; rapid population and land use pressures from military expansion and urban growth; and cultural change that risks eroding CHamoru heritage and community life.



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Core Values and Principles

The G50SP is guided by five core principles that serve as a compass for all its policies:

1. **Limits** – Respect ecological and infrastructure thresholds.
2. **Balance** – Integrate environmental, economic, and cultural needs.
3. **Renewal** – Revitalize the built environment; restore degraded lands, waters, and heritage.
4. **Equity** – Ensure fairness in access to land, resources, and opportunity.
5. **Engagement** – Include all voices in decisions and implementation.

These principles are embedded within five thematic goals of the G50SP: Sustainable Communities, Prosperous Economy, Thriving Environment, Vibrant Culture, and Village Sustainability. Each goal has a dedicated chapter in the plan, with policies and objectives that respond to Guam's unique challenges and opportunities.



Big Ideas and Policies

The G50SP's land use policy framework is the backbone of the plan. It organizes many hundreds of interrelated policies across the five thematic chapters into a coherent system designed to guide development, conservation, and infrastructure investments through 2050.

At its core, the framework:

- **Sets clear spatial priorities** – Urban growth is directed to areas with existing infrastructure, while rural landscapes, watersheds, aquifers, and cultural heritage sites are conserved through protective zoning and overlays. Green infrastructure and coastal resiliency are prioritized by plan policies.
- **Integrates hazard and climate data** – Flood maps, sea level rise projections, and hazard overlays shape where and how building can occur, reducing long-term risk.
- **Connects land use to infrastructure** – Development approvals are tied to the capacity and resilience of water, wastewater, stormwater, energy, and transportation systems.

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- **Balances economic and cultural objectives** – Policies encourage redevelopment of underused urban areas, support small business and eco-cultural tourism, and protect agricultural lands to strengthen food security.
- **Elevates village planning** – Each village's character, priorities, and needs are reflected in context-specific land use policies, ensuring growth supports rather than erodes local identity.



This integrated approach replaces fragmented, sector-by-sector decision-making with a shared, island-wide framework that still leaves room for village-level flexibility. By embedding environmental stewardship, cultural preservation, and economic opportunity into the same decision process, the framework helps avoid conflicts, streamline permitting, and ensure cumulative gains toward sustainability.

From Plan to Action – Integrated Governance for a Sustainable Guam

Turning the vision into reality will depend on how Guam governs its land and resources over time. The G50SP implementation will be coordinated by the Bureau of Statistics and Plans, supported by a Sustainability Plan Implementation Task Force. Actions are phased into short-term (2025–2030), mid-term (2030–2040), and long-term (2040–2050) horizons. The G50SP implementation roadmap emphasizes more *integrated* governance that is:

- **Coordinated** – Aligning the actions of agencies responsible for planning, infrastructure, environment, and cultural heritage so decisions reinforce rather than conflict with one another.
- **Accountable** – Assigning clear responsibility for outcomes, tracking performance against measurable indicators, and reporting results to the public, the Legislature, and village leaders.
- **Transparent** – Making planning data, maps, and progress reports publicly accessible and understandable.
- **Inclusive** – Engaging village mayors, the Municipal Planning Councils, cultural organizations, and residents—recognizing tribal and indigenous governance roles as equal partners in decision-making.

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- **Adaptive** – Reviewing policies regularly, learning from results, and updating approaches in response to new challenges, science, and community priorities.

This governance-centered approach ensures that land use planning is not a one-time exercise, but an ongoing process of balancing competing needs in a way that builds trust, reduces uncertainty, and strengthens Guam's resilience. The G50SP is as much about *how* decisions are made as it is about *what* decisions are made, recognizing that strong institutions and sustained community partnerships are essential to securing the island's shared future.

Ultimately, it will be up to the people of Guam, working together and with an enduring commitment to a common purpose, to realize the vision of a sustainable, equitable Guåhan for present and future generations.



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Table of Contents

Acknowledgements i
Letter from the Director ii
Letter from the Governor iii
Executive Summary iv
Table of Contents viii
List of Abbreviations xiii
Chapter 1: G50SP 1-1
1.1 Introduction 1-1
1.2. G50SP Core Land Use Policies 1-12
1.3 Governance and the Path Forward for G50SP 1-23
Chapter 2: The Island and People of Guam 2-1
2.1. The Island of Guåhan 2-1
2.2. Coordination with the Department of Defense 2-11
2.3. Land Use and Sustainability for the Island and People 2-12
Chapter 3: Sustainable Communities 3-1
3.1. Introduction 3-1
3.2. Land Use on Guam 3-4
3.3. Public Services 3-23
3.4. Housing 3-83
3.5. Commercial, Industrial, and Priority Development 3-97
3.6. Rural and Agricultural Lands 3-111
3.7 Natural Hazards 3-122
Chapter 4: Prosperous Economy 4-1
4.1. Introduction 4-1
4.2. Economic Conditions and Land Use 4-2
4.3. Economic Activity Across Guam 4-15
4.4. Economic Diversification and Land Use Implications 4-19
4.5. Redevelopment and Revitalization 4-21
4.6. Economic Opportunity and Land Use Planning 4-22
Chapter 5: Thriving Environment 5-1
5.1. Climate Change and Environmental Sustainability 5-1
5.2. Climate Resilience and Land Use Planning 5-3
5.3. Watershed Protection 5-14

Note that the Legislature has taken steps to ensure that any protected personal identifying information has been redacted or excluded in whole or in part in order to protect the privacy of any individual(s) whose information has been included as part of this transmittal.

5.4. Sensitive Habitats and Species....5-42
5.5. Coastal and Marine Habitats....5-70
Chapter 6: Vibrant Culture....6-1
6.1. Guam's Cultural Land Use Context....6-2
6.2. Cultural Heritage and Indigenous Connections....6-4
6.3. Community Mental Health, Physical Health and Well-being....6-26
Chapter 7: Village Sustainability....7-1
7.1. Village Diversity and Sustainability....7-1
7.2. The Villages of Guam....7-6
Chapter 8: Implementation....8-1
8.1. Introduction....8-1
8.2. Implementation Framework....8-6
8.3. Implementation Action Strategy....8-9
8.4. Plan Implementation Monitoring and Evaluation....8-41
8.5. Public Engagement and Transparency....8-42
Glossary of Key Terms....Glossary-1
References....References-1
Appendix A: Residential Survey Results....Appendix A-1

List of Tables

Table 1-1. Required Elements of P.L. 35-110 and G50SP Plan Sections and Policies. 1-25
Table 1-2. Recent Planning Efforts in Guam....1-27
Table 2-1. Guam's Villages and Populations from 2020 U.S. Census. 2-6
Table 3-1. Land Ownership on Guahan. 3-9
Table 3-2: SC-1 Island Land Use Designations with Changes Shown 3-15
Table 3-3. Road Improvement Projects and Investments.....3-45
Table 5-1. ESA-listed threatened or endangered terrestrial species found in Guam. 5-52
Table 5-2. Ecosystem associations for threatened and endangered species on Guam. 5-59
Table 5-3. ESA-listed threatened or endangered marine species found in Guam/Mariana Islands. 5-74
Table 5-4. ESA-Listed Sea Turtle Critical Habitat in Guam/Mariana Islands. 5-76
Table 6-1. Parks, Recreation, and Green Space on Guam.....6-33
Table 6-2. Significant Views and Scenic Resources on Guam.....6-40
Table 8-1. Sustainability Plan Action Matrix. 8-10
Table 8-2. Five-Year Priority Action Schedule. 8-15

Note that the Legislature has taken steps to ensure that any protected personal identifying information has been redacted or excluded in whole or in part in order to protect the privacy of any individual(s) whose information has been included as part of this transmittal.

List of Figures

Figure 1-1. Island-wide Engagement Survey Results by Village of Residence. 1-4
Figure 1-2. Distribution of Respondents by Region of Residence. 1-5
Figure 1-3. Resident Support for Affordable Housing in Their Villages. 1-6
Figure 1-4. Respondent's Satisfaction with Current Economic State. 1-7
Figure 1-5. Prioritization of Environment and Development Across Respondents. 1-7
Figure 1-6. Public Support for Development Over the Aquifer. 1-8
Figure 1-7. Importance of Protection of Historical and Cultural Sites to the Public. 1-8
Figure 1-8. Parks and Open Space Corridor. 1-13
Figure 1-9. Integrated Framework for Sustainability Governance 1-24
Figure 1-10. Institutional Architecture Envisioned for BSP 1-30
Figure 2-1. Guam Global Location Map. 2-2
Figure 2-2. Guam Population, 1900 to Present (U.S. Census; CIA, 2024). 2-4
Figure 2-3. Guam's Racial Composition, 1920, 1950 and 2020. 2-5
Figure 2-4. Guam's Population Density by Village. 2-7
Figure 2-5. Guam Projected Population, United Nations 2-8
Figure 2-6. U.N. Population Projections for Guam by Age Groups. 2-9
Figure 2-7 Military Related Population Projections 2-10
Figure 2-8. Military Construction Funding ($ billions) for Guam and CNMI from FY15-FY23, and Projected Funding Through FY28. 2-10
Figure 3-1. Current Developed and Vegetated Land Cover on Guam. 3-6
Figure 3-2. Map of Land Ownership and Management. 3-8
Figure 3-3. G50SP Land Use Designations for Guam. 3-14
Figure 3-4. Public Agreement with Construction Restriction Types Over the Aquifer. 3-25
Figure 3-5. Public Agreement with Development Over the Aquifer. 3-25
Figure 3-6. Conservation Land Use Over the NGLA in Previous Guam Development Plans. 3-26
Figure 3-7. Parks and Open Space Corridor. 3-27
Figure 3-8. Public Satisfaction with Basic Human Needs. 3-30
Figure 3-9. Public Satisfaction with Water Supply. 3-30
Figure 3-10. Water System Supply Map (Brown and Caldwell, 2018). 3-31
Figure 3-11. Existing and Future Wastewater Flow Summary (Brown and Caldwell, 2018). 3-36
Figure 3-12. Public Satisfaction with Sewer Services 3-37
Figure 3-13. Transportation Network 3-42
Figure 3-14. Projected Traffic Congestion with Military Build-Up (2030 Transportation Plan) 3-43
Figure 3-15. Public Satisfaction with Availability of Roadways to Support Sustainable Growth 3-45
Figure 3-16. Public Satisfaction with Availability of Storm Drainage 3-52

Note that the Legislature has taken steps to ensure that any protected personal identifying information has been redacted or excluded in whole or in part in order to protect the privacy of any individual(s) whose information has been included as part of this transmittal.

Figure 3-17. Guam's 2022 Waste Disposal and Diversion. 3-55
Figure 3-18. Forecasted Population and Predicted Waste Disposal (ISWMP, 2023).....3-56
Figure 3-19. Results of Guam 2019 Waste Composition Study (Jacobs, 2023).....3-58
Figure 3-20. Recycled Material by Tons (Jacobs, 2023).....3-59
Figure 3-21. GPA Islandwide Power System: 2028 Guam's Energy Future.....3-66
Figure 3-22. Guam Internet Prices (Office of Infrastructure Policy and Development, 2023). 3-68
Figure 3-23. Runway Protection Zone and Existing Development. 3-70
Figure 3-24. Forecasted 2029 Noise Exposure Map for Antonio B. Won Pat International Airport (Antonio B. Won Pat International Airport Master Plan Update).....3-71
Figure 3-25. Port Authority of Guam Land Use Designations 3-73
Figure 3-26. Median Household Income, Home Price and Ratio 3-86
Figure 3-27. Public Response to Available Affordable Housing. 3-87
Figure 3-28. Public Response to Housing Needs.....3-88
Figure 3-29. Mixed-Use Corridors (Yellow) in North and Central Guam.....3-90
Figure 3-30. Attitudes Towards Agriculture and Land Conservation. 3-114
Figure 3-31. Decline in Guam's Agricultural Land Over the Decades.....3-115
Figure 3-32. Agricultural and Rural Lands: Prime Farm Land 3-117
Figure 3-33. Typhoon Tracks Near Guam, 1948-Present (NOAA, 2025). 3-125
Figure 3-34. Map of Coastal Hazards and Flood Zones on Guam. 3-130
Figure 3-35. Flood Areas in Hagåtña.....3-131
Figure 3-36. APRA Harbor Sea Level Rise Projections (NASA, 2024). 3-132
Figure 3-37. Guam Shoreline Atlas Shoreline Status, Tamuning. 3-134
Figure 3-38. Public Response to Sea Level Rise and Coastal Development.....3-135
Figure 3-39. Guam Wildfire Hazards and Steep Terrain.....3-141
Figure 4-1. Gross Domestic Product Between 2002 and 2019. 4-2
Figure 4-2. Real Gross Domestic Product Percent Change. 4-3
Figure 4-3. Tourist Arrivals and Hotel Occupancy in Guam 2000 - 2024. 4-5
Figure 4-4. Economic Opportunity Zones in Guam. 4-18
Figure 4-5. Results from the G50SP Community Engagement Survey. 4-24
Figure 4-6. Results from the G50SP Community Engagement Survey. 4-24
Figure 4-7. Results from the G50SP Community Engagement Survey. 4-25
Figure 4-8. Results from the G50SP Community Engagement Survey. 4-26
Figure 4-9. Results from the G50SP Community Engagement Survey. 4-26
Figure 4-10. Results from the G50SP Community Engagement Survey. 4-27
Figure 5-1. Public Support for Renewable Energy.....5-6
Figure 5-2. Support for Renewable Energy Projects in Conservation Areas. 5-9
Figure 5-3. Guam Watersheds and Hydrography. 5-16

Note that the Legislature has taken steps to ensure that any protected personal identifying information has been redacted or excluded in whole or in part in order to protect the privacy of any individual(s) whose information has been included as part of this transmittal.

Figure 5-4. Northern Guam Lens Aquifer. 5-18
Figure 5-5. Map of (1) NGLA composition and (2) Groundwater Protection Zone. 5-20
Figure 5-6. Map of Guam's surface hydrology features and impervious surfaces. 5-23
Figure 5-7. Stormwater Management for Proposed Development Sites (from CNMI and Guam Stormwater Management Manual). 5-26
Figure 5-8. Map of Guam Wetlands by Type. 5-28
Figure 5-9. Map of Guam Vegetation and Landcover. 5-46
Figure 5-10. Guam Land Cover Composition by Acreage, as mapped by ICF International Inc. and Guam Department of Agriculture (2023). 5-48
Figure 5-11. A Decade of Increases in Impervious Surface Cover in Guam's Watersheds from 2005-2016. 5-51
Figure 5-12. Map of Protected Spaces and Conservation Areas. 5-62
Figure 5-13. Map of key HCP ecosystems and habitat. 5-65
Figure 5 14. Map of Guam's Marine Preserves and Coral Environment. 5-73
Figure 6-1. CHamoru Land Trust Commission Lands. 6-7
Figure 6-2. Ancestral Lands Commission Lands. 6-9
Figure 6-3. National Historic Register Sites, Districts and Structures 6-20
Figure 6-4. Social Vulnerability of Guam's Villages (Guam Homeland Security, 2024). 6-29
Figure 6-5. Parks and Recreation Areas on Guam. 6-32
Figure 6-6. Green Space Coverage by Village (Data Sources: Guam Department of Parks and Recreation, Guam Department of Agriculture, National Park Service, Guam Bureau of Statistics and Plans). 6-34
Figure 6-7. Recreation and Park Space per Person by Village 6-35
Figure 6-8. Map Highlighting Village Access to Parks and Recreation as a Ratio of Population to Area, Including Guam DPR Facilities NPS National Historic Park Units. 6-36
Figure 6-9. Visual Resources Map. 6-42
Figure 7-1. The Villages of Guam. 7-3
Figure 7-2. Land Use Planning for Yigo: Opportunities and Constraints 7-14
Figure 7-3. Assan-Ma'ina 7-20
Figure 7-4. Hagåtña 2005 Master Plan Land Use Map. 7-30
Figure 7-5. Site for the USACE East Hagåtña Shoreline Protection Project. 7-31
Figure 7-6. Rivers in Namo River Basin, Agat and Santa Rita Villages (USACE, 2020, p. 27). 7-63
Figure 7-7. Upstream Flooding Areas, Namo River (USACE, 2020, p. 36.). 7-64
Figure 8-1. Agency Coordination of G50SP Implementation. 8-4

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List of Abbreviations

AFB	Air Force Base
ALC	Ancestral Lands Commission
ARC	Application Review Committee
BMP	Best Management Practices
BSP	Bureau of Statistics and Plans
BTS	Brown tree snakes
CCU	Consolidated Commission on Utilities
CIPs	Capital Improvement Plans
CLTC	Chamorro Land Trust Commission
CNMI	Commonwealth of Northern Mariana Islands
Cpv	Channel protection volume
CZMA	Coastal Zone Management Act
DOAG	Department of Agriculture
DLM	Department of Land Management
DPR	Department of Parks and Recreation
DPS	Distinct Population segment
DPW	Department of Public Works
ESA	Endangered Species Act
EEZ	Exclusive Economic Zone
FIA	Forest Inventory Analysis
FENA	US Navy Water System
HMU	Habitat Management Unit
INRMP	Integrated Natural Resources Management Plan
JRM	Joint Region Marianas
G3	Guam Green Growth
GAPCSR	Guam Air Pollution Control Standards and Regulations
GEPA	Guam Environmental Protection Agency
GHURA	Guam Housing and Urban Renewal Authority
GLUC	Guam Land Use Commission
GPZ	Groundwater Protection Zone
GISC	The Guam Invasive Species Council
GRSS	Guam Coral Reef Resilience Strategy
G50SP	Guam Sustainability Plan 2050
GPA	Guam Power Authority
GWA	Guam Waterworks Authority
HCP	Habitat Conservation Plan
G3	Guam Green Growth
LFTRC	Live-Fire Training Range Complex

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MC	Micronesia Challenge
MOUs	Memorandum of Understanding
NAAQS	National Ambient Air Quality Standards
NCTS	Naval Computer and Telecommunication Station
NFIP	National Flood Insurance Program
NGLA	Northern Guam Lens Aquifer
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NSAA	Naval Support Activity Anderson
NWI	National Wetlands Inventory
NWR	National Wildlife Refuge
NOAA	National Oceanic and Atmospheric Administration
OHWM	Ordinary high-water mark
RAS	Recirculating aquaculture systems
Rev	Recharge volume
RMI	Republic of Marshall Islands
SDGs	United Nations Sustainable Development Goals
SIDS	Small Island Developing States
TSS	Total Suspended Solids
T&E	Threatened and Endangered
SIP	State Implementation Plan
SDGs	Sustainable Development Goals
SPREP	South Pacific Regional Environmental Programme
SWCDs	Soil and Water Conservation Districts
UN	United Nations
USFWS	United States Fish and Wildlife Service
USDA	United States Department of Agriculture
WesPacFIN	Western Pacific Fisheries Council
WQv	Water quality volume

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Chapter 1: **G50SP**

1.1 Introduction

In 2025, Guam is facing challenges from climate change, global economic forces, and the social and environmental stress of a major military buildup. In such times, the people of Guam have recognized the central importance of sustainability to a shared and prosperous island future.

This Guåhan 2050 Sustainability Plan (G50SP) was mandated by Public Law 35-110 (Akto Para i 2050 Maga'planun Mina'ok Lina'la' Guåhan) to address the "imperative [to] better meet the needs of the present without compromising the ability of future generations to meet their needs." In the legislature's view, the pathway for achieving this was to update Guam's comprehensive development plan in order to address the many sectors of life on Guam that are affected by land use, including its villages, economy, environment, and culture. The legislature also recognized that achieving sustainability depends not on a singular sector but on maintaining a healthy, balanced relationship between all of them. Each is important, each must be respected.

With the guidance of the Bureau of Statistics and Plans (BSP), the G50SP was developed by assessing land use trends, challenges, and opportunities for a sustainable island future on Guam. Importantly, the plan was also built around extensive community engagement, including interviews with government agencies and the village mayors, focus groups, and an island-wide survey. This engagement confirmed that the people of Guam envision a prosperous future that preserves the island's environment and culture. Above all, the people desire a future that reflects the cherished values and sense of community and social cohesion that make Guam unique.

1.1.1. Sustainable Development is Key



Public Law 35-110 directs that the G50SP consider Guam's economy, environment, and culture in relation to the United Nations' Sustainable Development Goals (SDGs) and the U.N. Program of Action for Small Island Developing States. The seventeen SDGs and the experiences of other small islands jurisdictions are markers to help guide Guam toward a more sustainable future. They address poverty, clean water and energy, and climate action. They focus on "life on land," "life below water," and sustainable

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communities. They set out fundamental sustainability goals such as reducing inequality and achieving social justice.

The U.N. SDGs are recognized as central measures of the people's health and welfare, cultural preservation, and protection of Guam's special environment. Aligned with the United Nations Sustainable Development Goals, Governor Lourdes Leon Guerrero and Lt. Governor Joshua Tenorio promulgated Executive Order 2019-23 establishing Guam Green Growth – a public-private partnership between the Government of Guam and the University of Guam Center for Island Sustainability – to actively develop tangible solutions addressing the sustainability challenges that Guam faces, such as building a green economy (see section 1.3).

GUAM GREEN GROWTH
An island-led movement for sustainability

As a comprehensive land use and development plan, the G50SP includes sustainability principles and land use objectives and policies to help Guam realize the U.N. SDGs. The plan seeks to guide the responsible use of Guam's land and resources for the next twenty-five years in order to achieve a more sustainable Guam, with shared prosperity for its residents.

The plan is organized around five themes – *Sustainable Communities, Prosperous Economy, Thriving Environment, Vibrant Culture,* and *Village Sustainability*. Each theme has its own chapter, with goals, objectives, and land use policies addressing island-wide land use and sustainability challenges. Chapter Seven of the G50SP also considers more specific land use and sustainability issues in Guam's nineteen villages. The villages of Guam share many concerns, such as the need for sustainable drinking water supply and preserving the island's special cultural heritage, but each also has land use needs unique to their settings.

Chapter 8 of G50SP frames a strategy for implementing the plan. The intention is that this plan will help guide Guam to prosperity for all its residents, by meeting the needs of both present and future generations. The key to success will be the degree to which the Government of Guam, Guam's residents, and their leaders commit to the plan's goals and policies. This includes taking decisive action now for the sake of the future. As the legislature observed:

> *It is clear that our stewardship of Guam's resources is not just a responsibility for the future, and we must act now to protect our economy, our island way of life, and our culture.*



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1.1.2. Community Engagement and the G50SP

Under BSP's guidance, the G50SP reflects the input of professional land use and technical experts, Government of Guam agency representatives, and the community itself. This input was critical first and foremost to the development of certain key principles framing the plan, as well as to development of the land use policies and programs for each of the plan's sections. Community engagement was and will continue to be an important component of the plan, especially in on-going implementation, as discussed in Chapter Eight.

Community Engagement

Effective land use plans reflect the desires and aspirations of the people. An extensive outreach program was crafted and implemented for the G50SP to ensure that the plan was developed from the bottom up as much as from the top down. This engagement program had five stages.



Subject Matter Expert Interviews: In-depth interviews were held with agency subject matter experts and primary stakeholder groups in Guam. These helped establish the land use priorities and concerns of community influencers and policy makers, as well as issues people feel must be addressed to achieve the goals and objectives of the G50SP. The interviews provide an excellent archive of how those involved in shaping policy, growing the economy, overseeing the island's villages and preserving Guam's environment, culture and history view Guam's journey to achieve a more sustainable future.

Roundtables: The stakeholders, policy makers, and subject matter experts were then brought together to participate in two round table meetings where the views of those that were interviewed were shared and discussed to understand collectively how they believed sustainability should best be pursued. Each round table consisted of 12 representatives. The sessions were video recorded, and transcripts and summary notes were prepared to assist with the research.

Focus Groups: A need to understand how stakeholders, policy makers and key influencers perceive sustainability for Guam led to several focus group sessions. Four formal focus group sessions brought together residents and businesses to co-determine how the community perceives the pursuit of sustainability. Specifically, they discussed how to define a prosperous economy, thriving environment, vibrant culture, and sustainable community for Guam. As with

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all of the other qualitative research efforts, video recordings, transcripts and summary notes were prepared to aid analysis.

Regional Meetings: Building on insights from the focus groups and qualitative, semi-structured interviews as well as project research; three regional public meetings were held (south, central, and northern Guam). In preparation, Mayors of each village were interviewed to assess and receive guidance on meeting organization (location, included villages, etc.). In each meeting, land use issues and concepts were organized by four focus areas: economy, environment, culture and sustainable development. Residents were asked to identify the location of their concerns or important elements they believed needed attention on large maps depicting the villages in the north, central and southern regions, as well as on a map of the entire island. All attendees were also invited to complete an online survey to share their perceptions and priorities for achieving a sustainable Guam. The attendance, and results from the mapping exercise, and the online survey as well as the transcripts of each of the interviews with the mayors along with summary notes are included in the G50SP background files.

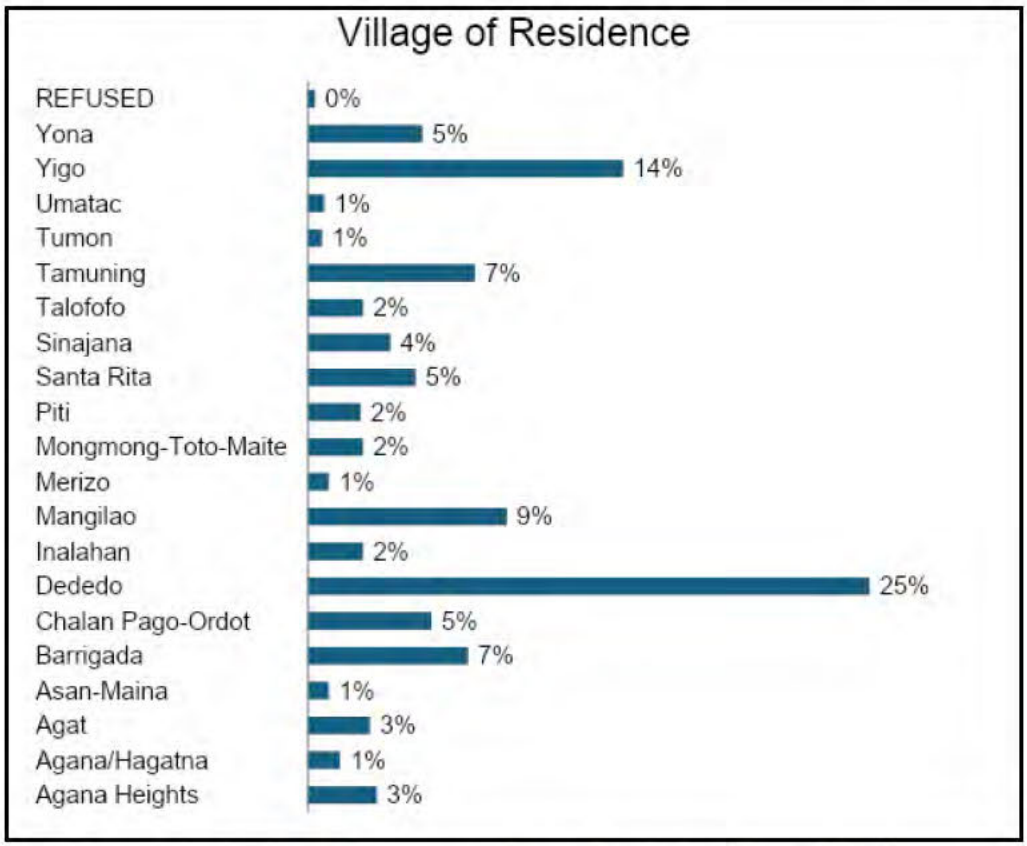

Figure 1-1. Island-Wide Engagement Survey Results by Village of Residence.

Island-wide Telephone Survey: Based upon the considerable body of qualitative information gathered throughout Guam, a quantitative, island-wide, telephone survey was conducted to gather evidence of the attitudes, concerns and prescriptions for sustainability that had been identified. Just over seven hundred (702) randomly selected residents participated in the survey,

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providing information that is accurate to within +/- 4.2%. The survey was administered to residents over the age of 18, and the sample was like those identified in the 2020 U.S. Census and thus is deemed to provide an accurate representation of the attitudes of the people of Guam. A report of the significant findings of the survey can be found in Appendix A.

As discussed in Chapter 2, population distribution reflects strong clustering in key urban and suburban villages. The Island-wide engagement survey supports demographic analysis. Dededo, for instance, accounts for the largest share of respondents (25%), followed by Yigo (14%), and Mangilao (9%), presented in Figure 1-1. Figure 1-2 shows that 47% of respondents live in the Central Region, followed by 38% in the North, and 14% in the South. This distribution highlights the centrality of core villages such as Tamuning and Mangilao in regional planning, while also drawing attention to the lower population density—and greater infrastructure challenges—in southern villages.

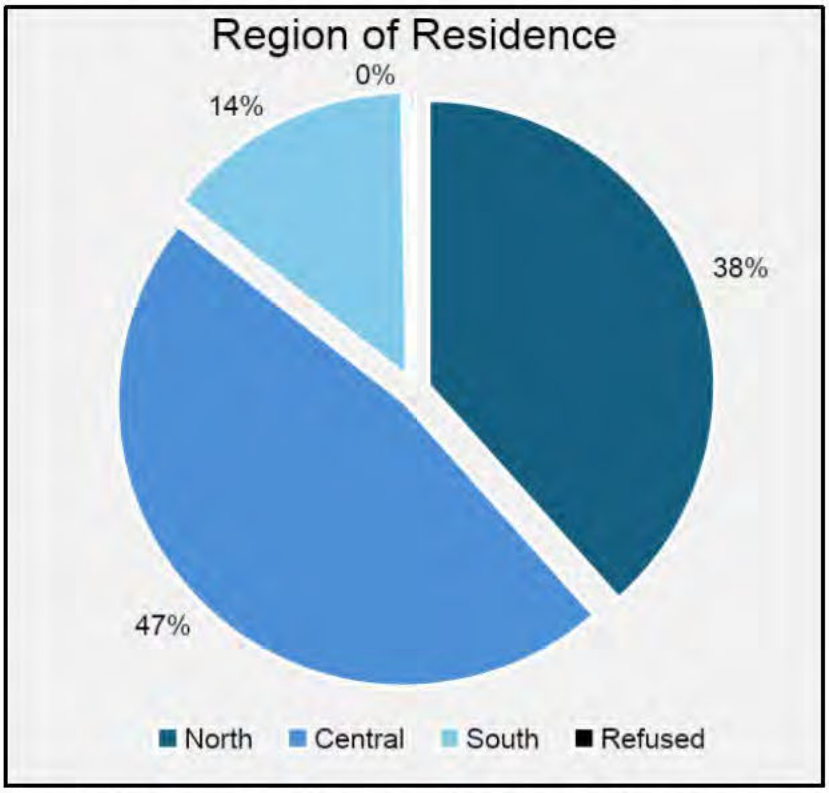

Figure 1-2. Distribution of Respondents by Region of Residence.

The G50SP is grounded in the values and concerns of the people of Guam, from the legislature to agencies and village mayors, to community members. Government voices were critical to identifying important land use challenges and how to improve the governance of land use on the island. Guam is doing important planning work across many agencies, each of which acknowledge the need for collaboration and the integration of government programs that affect land use. Likewise, the mayors have shared challenges, from maintaining village infrastructure to providing important services. Each also expressed land use concerns specific to their village that need to be addressed through the land use plan. And when the residents of Guam were given the chance to share their views, clear and distinct opinions emerged about sustaining a prosperous economy, preserving Guam's thriving environment, maintaining sustainable villages,

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and preserving its history and culture. These views, summarized below, help to form the foundation and key sustainability principles of the G50SP.

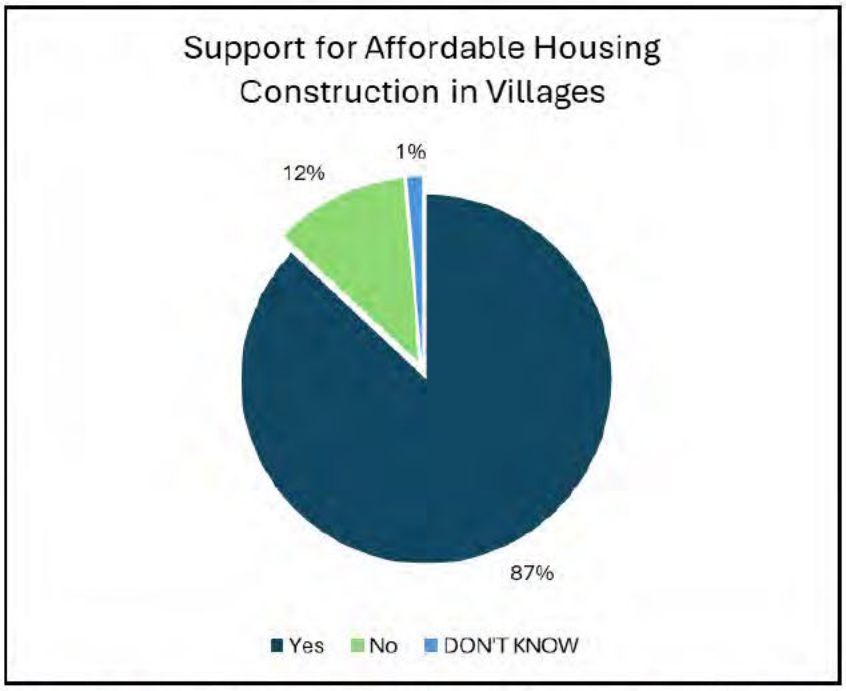

Figure 1-3. Resident Support for Affordable Housing in Their Villages.

Sustainable Communities. The availability and condition of Guam's physical infrastructure were generally considered the most important components for creating sustainable communities. Nearly all residents felt that the installation of water, sewer, and power services, as well as roads, must be completed before any development is approved by the government. While the number of recreational areas within each community was deemed sufficient, their maintenance, safety, and the activities offered were less than acceptable. Residents preferred walking paths and communal areas over more sports fields. Most felt that conservation areas should be preserved or expanded rather than developing new recreational areas.

Another critical component of sustainability was the need for affordable housing (Figure 1-3). Residents were open to both multi-family and single-family housing in their villages. The cost and lack of housing were viewed as primary reasons for the exodus of young families from Guam. Residents were somewhat less concerned about retail development in the village, with about six in ten indicating that they did not feel there should be more businesses within walking distance of their homes.

The Economy. Residents believe that both the government and the community have a responsibility to foster economic growth. They emphasized the need for economic diversity to create sustainability and reduce the economy's fragility. Residents want policies that ensure long-term prosperity without sacrificing future generations for short-term gains. A long-term economic development plan is essential, despite concerns about the political will to adhere to such a vision. This plan is critical for the island's future.

Residents are dissatisfied with the current economic direction and worry that urbanization is eroding Guam's character (Figure 1-4). They feel that capital investment often overshadows the need to preserve family, community, and heritage, which are the essence of life in Guam. While

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tourism is important, they suggest renovating existing hotels instead of building new ones and investing in attractions that showcase the island's authentic character.

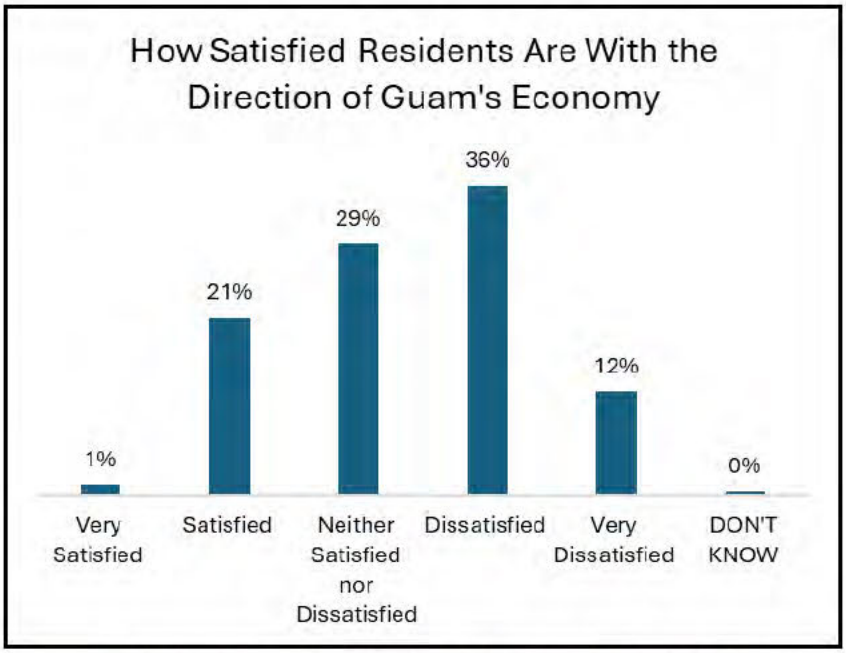

Figure 1-4. Respondent's Satisfaction with Current Economic State.

The high cost of living, lack of affordable housing, and scarcity of well-paying jobs are forcing families to consider sending their children to the U.S. mainland for better opportunities. The primary concern is the cost of power. Renewable energy and energy efficiency are seen as the most immediate and viable solutions to reduce electricity costs. They are also environmentally sustainable, and renewable energy is preferred over fossil fuel generators. Residents believe that aligning with global sustainability trends can bring real economic benefits, such as higher-paying, long-term employment opportunities.

The Environment. Residents prioritized environmental conservation over development, including housing development (Figure 1-5). While some agricultural and renewable energy uses were considered appropriate in conservation areas, restricting development in these areas was deemed critical to preserving the island's scenic beauty. Nearly three-quarters of residents surveyed supported restricting development over Guam's northern aquifer (Figure 1-6).

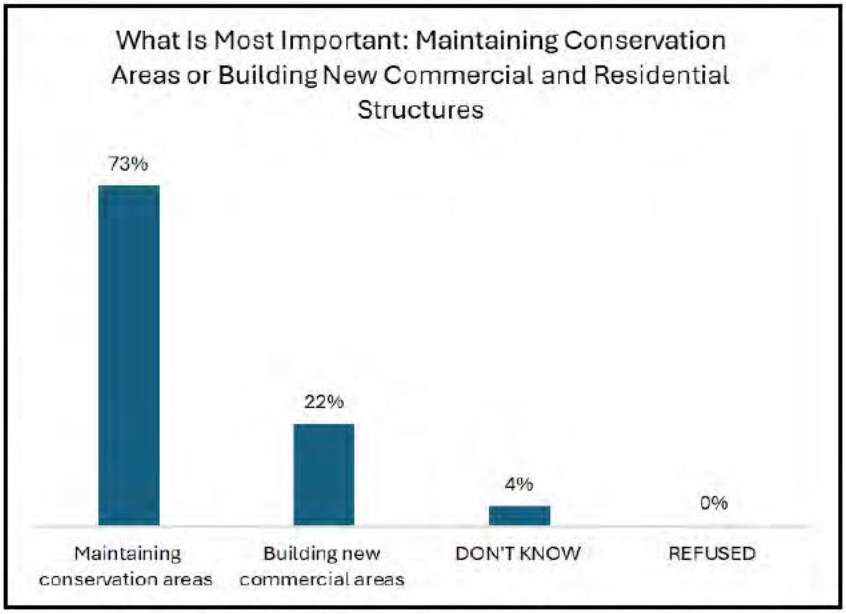

Figure 1-5. Prioritization of Environment and Development Across Respondents.

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However, opinions on how to restrict development varied. A plurality believed development should only be allowed if a sewer system was installed first. Meanwhile, those who felt development should be allowed with septic systems or without any restrictions made up a similar proportion when combined.

Residents also viewed climate change as impacting Guam. They felt the island was getting warmer, rainfall was less plentiful, and storms and typhoons had become more extreme. About two-thirds expressed concerns about sea level rise, believing that development should be restricted along the shoreline, particularly in the central part of the island.

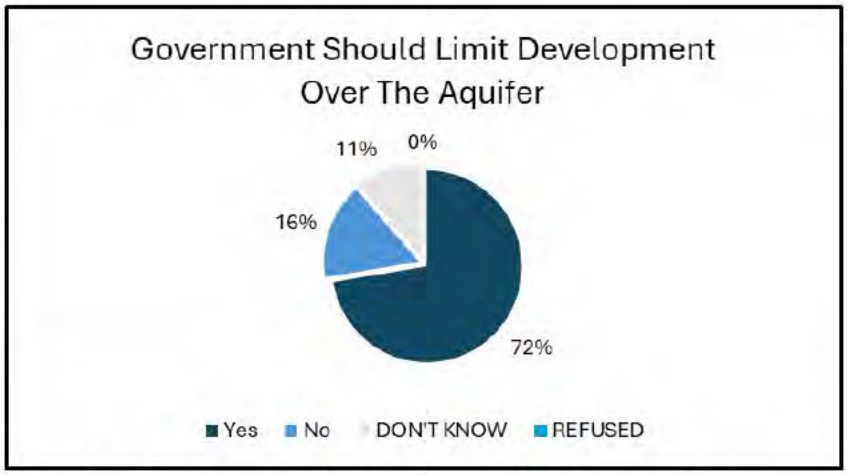

Figure 1-6. Public Support for Development Over the Aquifer.

Culture. Residents overwhelmingly believe that protecting cultural and historical sites should be a priority for both the government and the community (Figure 1-7). The promotion and preservation of the CHamoru culture, along with the management of cultural sites and ancestral lands, are seen as essential to maintaining the island's character. The loss of values inherent in Guam's culture and history is perceived as an existential threat to the community. Two-thirds of residents wish there were more cultural and historical sites, and just as many want existing sites to be expanded. The loss of cultural identity is viewed as a core reason for the breakdown of families in the community, contributing to crime and homelessness.

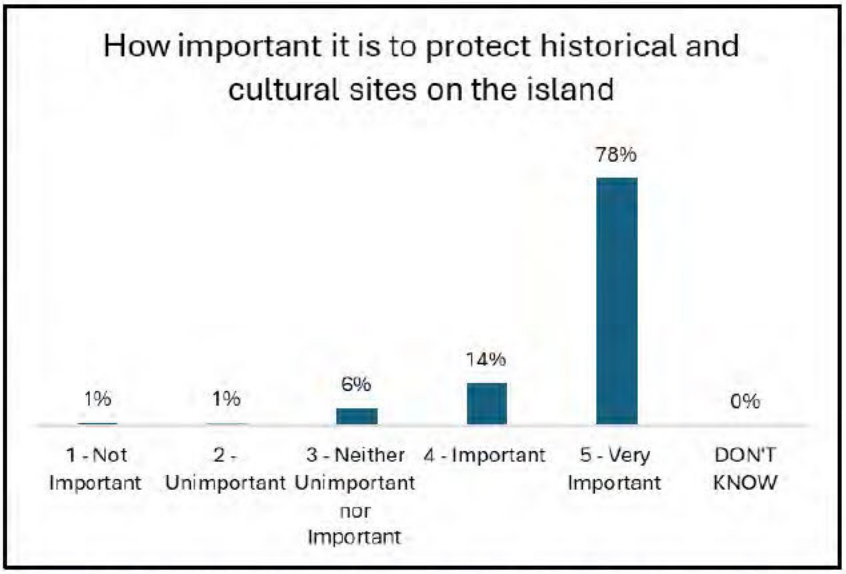

Figure 1-7. Importance of Protection of Historical and Cultural Sites to the Public.

The community-wide survey establishes a foundation for certain key principles that guide the G50SP. These principles provide a direction for the policies and programs in the plan that also align with the principles of sustainability and the UN SDGs.

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Stability of Community Perspectives Over Time

Two comprehensive surveys, one conducted in 2022 and another in 2024/2025, provide insight into how Guam's residents view the island's future. The results revealed priorities that have remained consistent over time, as well as notable changes in emphasis.

Enduring Concerns and Priorities. Across both surveys, residents consistently identified infrastructure as a central concern. In 2022, approximately 74% of respondents considered it a major issue. In the 2024/2025 survey, the priority remained with reliable and affordable power, high living costs, and inadequate housing among the most frequently cited challenges.

Economic stability was also a recurring concern. In 2022, 69% of respondents expressed unease about Guam's economic trajectory. In the 2024/2025 survey, 48% expressed dissatisfaction with the direction of the economy. In 2022, there was some optimism, with 60% believing that economic conditions would improve over time, an outlook less apparent in the later survey.

Tourism's role in the economy was important in both periods, but perspectives evolved. In 2022, 76% supported increasing tourism as a primary strategy for economic growth. By 2024/2025, there was a stronger interest in managing tourism expansion. A majority preferred rehabilitating and improving existing hotels rather than building new ones (92%) and supported developing additional tourist-serving attractions and optional tours (77%).

Environmental protection remained a high priority. In 2022, 96% of respondents valued clean air and water, and 80% identified climate change and sea-level rise as significant threats. In 2024/2025, these concerns persisted, with greater focus on renewable energy and conservation as solutions.

Cultural preservation also showed consistency. In 2022, 62% of respondents emphasized the importance of protecting Chamorro heritage. Similar views were expressed in the 2024/2025 survey.

Public safety and social well-being were continuing concerns. In 2022, 56% reported that crime had worsened, and 51% believed Guam was not doing enough to address homelessness. By 2024/2025, attention shifted more toward solutions. 87% supported affordable housing construction in their villages, and 11% linked residential development to improved economic prosperity in their community.

Evolving Emphases and Differences. While the main themes were consistent, certain shifts in emphasis were evident. Sustainability was recognized as a priority in both surveys, but understanding of the concept differed. In 2022, only 56% were familiar with the term and just 27% defined it as meeting present needs without compromising the ability of future generations to meet theirs. The 2024/2025 survey reflected a more operational focus on renewal energy and conservation, suggesting a more developed public understanding.

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Some topics in 2022 received less attention in 2024/2025. The role of the U.S. military was examined in greater detail in 2022, with 57% viewing it positively for job creation and economic benefits, while 15% expressed concerns related to land restrictions, cultural impacts, and social issues. This topic was not explored to the same extent in the later survey.

Education and healthcare concerns persisted but were framed differently. In 2022, specific issues such as school maintenance (84%) and teacher pay (76%) were highlighted. Healthcare concerns included high costs (90%), a shortage of doctors (87%), and long wait times (83%). In 2024/2025, these topics were discussed in more general terms without the same level of detail.

Capital improvement priorities also differed. In 2022, the highest priorities included building a new hospital and medical campus (37%) and repairing K-12 schools (30%). The 2024/2025 survey did not identify capital improvement projects as a distinct category.

Overall, the two surveys show a community with stable priorities around infrastructure, economic resilience, environmental health, cultural preservation, and public safety, but with evolving perspectives on how to address them. While the vision for Guam's future continues to be shaped by long-standing concerns, the strategies favored by residents are adapting in response to changing conditions and a deepening understanding of the challenges and opportunities ahead.

1.1.3. Key Principles of G50SP

The G50SP is founded on five key sustainability principles.

Limits. Sustainability means understanding that there are limits to development, especially on a small island. If all of Guam was developed for housing or military defense, for example, the natural resources, beauty, and cultural heritage that are fundamental to the island would be significantly impacted, if not lost. Development is important, but sustainability demands establishing appropriate development locations, types, and intensity to conserve other important island values.

Balance. Sustainability also entails balance and tradeoffs between the objectives of the five sustainability sectors. Just as it is important to protect the environment, it is also important to provide economic investment and growth. The people of Guam need housing and local economic activity, supported by strong education, health, and welfare systems, to thrive. Tourism will continue to be central to the island, but it must also respect local culture.

Renewal. Sustainability involves the renewal of existing investments, resources, and infrastructure. The legislature recognized this when adopting Public Law 35-110 and expressed it through the concept of *replenishing* existing systems, as opposed to reliance on increasing consumption, to meet the needs of coming generations. The future must not be sacrificed on the altar of ever-expanding consumption that would necessarily deplete Guam's assets:

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> *In a sustainable society, systems replenish themselves. By ensuring that we are not overly reliant upon the consumption of our economic, social, and environmental assets and that our systems replenish themselves, we are more responsibly assuring the survival of the Guåhan that we grew up with, if not a better one, for ourselves, our children, and our grandchildren.*

Equity. Sustainability cannot be achieved without social equity and environmental justice. How can Guam sustain the island, including its special environment and cultural resources, in the face of the military buildup, if there are not enough affordable homes to live in or good jobs for all of Guam's residents? How can Guam thrive if it does not invest in each of the villages to support a vibrant culture of island stewardship and care?



Engagement. The legislature recognized that the success of the G50SP will require an "unprecedented level of a coordinated effort by the community, the private sector, academic research organizations, and institutions of the government of Guam to reach across their divides and work together to develop long-term integrated approaches" (Bill 167-35 (COR), Sec. 2). In short, engagement is key, and sustainability will require that everyone's voice has a chance to be heard.

1.1.4. Social Cohesion – A Touchstone for Sustainability

Guam's long-term sustainability rests not only on protecting its natural resources and infrastructure, but also on supporting socially cohesive, equitable, and culturally grounded communities. *Social cohesion*—the strength of relationships, shared identity, and mutual trust among individuals and groups—is increasingly challenged by trends such as outmigration, economic inequality, intergenerational caregiving demands, and inadequate access to essential services. These dynamics are shaped in part by land use decisions, including the availability and location of affordable housing, schools, health and senior care facilities, and public spaces. As these pressures grow, particularly in the face of climate change and evolving economic conditions, Guåhan must plan intentionally for inclusive, connected communities where cultural values, family structures, and social well-being can be sustained across generations.

The Guåhan 2050 Sustainability Plan responds to these challenges by integrating social equity and cultural sustainability into its land use policies and infrastructure planning. As explained below, the plan promotes compact, walkable, and transit-accessible development to ensure all residents—especially elders, individuals with disabilities, youth, and lower-income households—can access education, health care, recreation, and support services. It encourages the co-location of schools, clinics, childcare, and social service facilities within village centers and mixed-use neighborhoods. Policies also support diverse housing options, including multi-

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generational and accessible designs, and prioritize the preservation of cultural spaces, community gathering areas, and village-scale identity. They also promote the preservation of Guam's unique environment and island beauty – essential to Guam's way of life. By aligning land use planning with social and cultural needs, the plan seeks to strengthen the social fabric of Guåhan and ensure that future growth supports inclusive, resilient, and culturally vibrant communities.

1.2. G50SP Core Land Use Policies

The Guåhan 2050 Sustainability Plan is a road map for future land use and development to help Guam meet the needs of both present and future generations. At its core, the G50SP proposes land use goals, objectives and policies to address five sectors of life in Guam: community, economy, environment, culture, and village life. Together with a comprehensive land use map for the island, the policies determine the kinds and intensities of development appropriate for different parts of Guam. They also establish basic requirements to assure that new development is sustainable, safe, equitable, and supportive of Guam's special natural resources, beauty, and cultural heritage.

1.2.1. Sustainable Communities: Compact Development, Affordable, Safe Housing, Viable Agriculture, and Aquifer Protection



The core sustainability principles of limits, balance, renewal, and equity provide a foundation for land use designations and policies to promote sustainable communities, including compact urban development patterns supported with essential services, safe and affordable housing for Guam's residents, and preservation of rural agricultural lands, parks, and sensitive natural resources. G50SP policies also build on important predecessor Government of Guam planning efforts, such as the 1965 Territory of Guam Master Plan, 1978

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Kabales Na Planu Para Guåhan, comprehensive land use plan, the *I Tano'-Ta* planning update in the 1990s, and the North and Central Guam Land Use Plan (2009).



Figure 1-8. Parks and Open Space Corridor.

Sustainable Urban Development. The G50SP directs that new development be concentrated in the already "urbanized" areas of Guam that have public services, especially wastewater collection, and to the core developed areas of the smaller villages of Guam. Adequate public infrastructure, including water, sewer, roads, drainage control, and power will also need to be planned and assured *before* new construction is authorized as existing infrastructure often does not provide adequate capacity for additional new development. The land use plan also calls for mixed used areas and pedestrian-scale designs, to promote walkable, vibrant urban areas.

In the alternative, the plan calls for maintaining the undeveloped character of most rural and agricultural areas, especially where there are no services. This land use strategy will minimize the construction of new septic systems over the Northern Guam Lens Aquifer to ensure a safe drinking water supply. It has the additional benefit of protecting agricultural opportunities and promoting recreational open space and the conservation of sensitive habitats, such as the endemic Limestone Forest. Strict limits on new subdivisions coupled with minimum parcel sizes in rural areas also will support the implementation of a transfer of development program to encourage the relocation of potential development entitlements to existing urban areas. Harkening back to the 1978 comprehensive development plan, G50SP imagines the eventual creation of a parks and recreational corridor across northern Guam, preserving sustainable agriculture, activating community health, and promoting cultural and environmental heritage.



Resilient, Affordable Housing. The G50SP Sustainable Communities policies also

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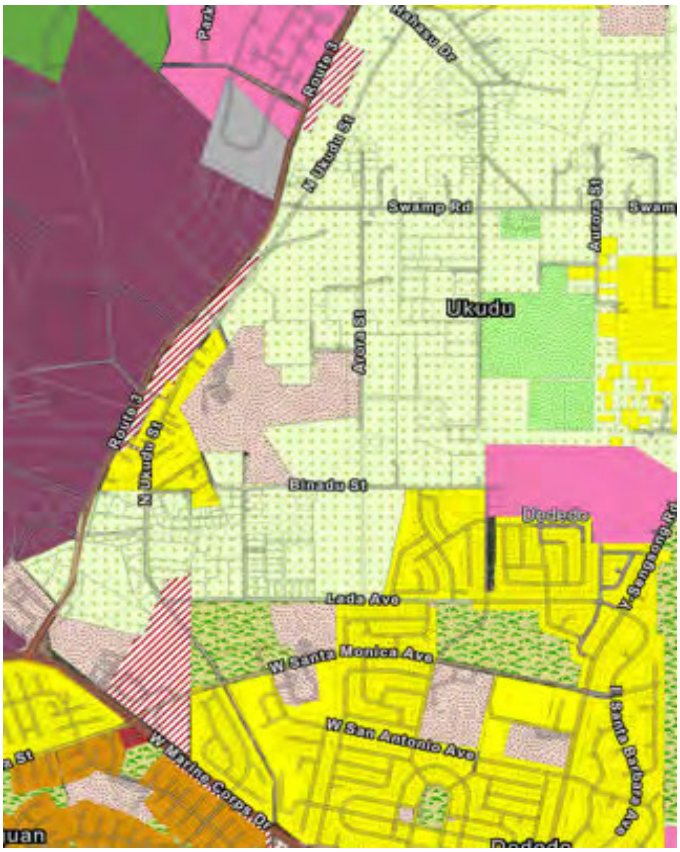
assure that new development will be located and designed to be resilient to extreme events, coastal flooding and erosion, wildfire, and other natural hazards. New development will be served by adequate stormwater drainage plans and facilities, and existing development will need to conform to resilient designs, such as elevating habitable structures above flood levels through the redevelopment process. To address climate readiness and existing development, the plan calls for the development of neighborhood-scale climate adaptation management plans, including through nature-based infrastructure and "living shorelines" to decrease community vulnerability and increase resilience for future generations.

Other G50SP policies provide for priority community development, such as renewable energy and telecommunications infrastructure, and fishing and boating facilities. Most importantly, the plan prioritizes affordable housing, including identifying areas for higher density multifamily zoning and promoting the construction of accessory dwelling units in existing residential areas. Providing adequate worker housing and assuring that it is located and designed to be smart, long-term investments in Guam's housing stock is also addressed in plan policies. The objective is to plan and construct housing that looks beyond the immediate pressures of the military buildout to provide for future generations of the island.

1.2.2. Prosperous Economy: Redevelopment, Mixed-Use, and Right-sized Expansion

The Sustainable Communities land use strategy is a foundation for additional land use designations and policies that will promote a prosperous economy founded on the principle of *replenishment.* The G50SP policies provide for increased opportunity zoning, rejuvenation of Guam's economy through redevelopment, and support for the tourism sector through right-sized expansion and investment in diverse opportunities across the island.



Economic Opportunity. The G50SP is designed to provide economic opportunities through a diverse mix of commercial and industrial land use designations strategically located in and around Guam's villages. This includes mixed-use development zones where commercial and retail development compatible with residential neighborhoods may provide easy access to jobs, shopping,

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and activities. The plan also encourages pedestrian-scale developments and identifies priority areas and transportation corridors for expansion, such as the Upper Tumon area along Route 3 and North Marine Drive.

Priority Uses and Agriculture. The G50SP contains policies and land use designations to ensure that priority economic development is supported, but in the right places to maximize social and community benefits. For example, the plan prioritizes coastal-dependent uses such as boating and fishing facilities, and critical infrastructure, like sustainable energy facilities (e.g., solar farms) and telecommunications facilities (e.g., cable landings), but in compatible locations. The plan also requires the protection of Guam's most productive soils and large undeveloped areas capable of supporting both commercial agriculture and small-scale subsistence farming. Other plan sections seek to minimize any adverse impacts of new military defense and energy developments.



Redevelopment and Renewal. Economic prosperity may also flow from investments in the already-built environment through redevelopment and refurbishment of existing buildings. New hotel and commercial development can be important, but the G50SP also calls for the renewal and upgrading of existing hotels, especially in the major tourist and hotel areas adjacent to Tumon and Hagåtña Bay. The same approach is taken with housing. Namely, the redevelopment of existing structures and blighted properties should be considered for use as affordable housing, in addition to investing in urban infill areas with adequate public services. Infrastructure improvements are also central to the revitalization strategy of the G50SP, and policies require enhancement of infrastructure in conjunction with new commercial development as well as investments in public transportation and infrastructure projects that support both affordable housing and economic activity, such as ports, airports, and renewable energy facilities.



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Sustainable Village-Scale Eco-Cultural Tourism. The G50SP economic development strategy emphasizes new tourism-related development and activities in all of the villages of Guam. This will promote and share the wealth of Guam's tourism economy. Importantly, the plan calls for *appropriately scaled* development, sensitive to each village setting. Taller, resort hotels work in Tumon, but the southern villages need smaller-scale buildings designed to harmonize their more rural, natural settings. Related, the plan promotes tourism that is more closely tied to Guam's environment and culture with policies calling for diverse cultural, nature-based, and recreational tourism developments, attractions, and experiences. This could include agricultural tourism, connecting visitors to unique local, small-scale agriculture.



Community engagement is key to smart economic development in villages. The G50SP will support economic development that respects local settings by engaging residents in the planning process, ensuring that developments meet their needs and preserve cultural heritage through appropriate siting and design. Policies will also support small businesses and local artisans by enabling markets, workshops, and co-ops that capture and express Guam's cultural heritage, including for visiting tourists. This type of tourism also complements other plan components. It strikes a balance with environmental conservation, protects cultural and historical resources, and activates the villages with pedestrian-scale, engaging commerce. The strategy will benefit all of Guam, connecting north to south through environmental and cultural appreciation.

1.2.3. Thriving Environment - Climate Resilience, Watershed Protection, Habitat Conservation



From ridge to reef, Guam's natural environment is special and must be conserved and protected through comprehensive land use planning. The island's limestone forest is unique, but only a small amount remains. Guam's rich coral reefs and coastal waters are impacted by climate change, land-based pollution, invasive species, and sediment washing out from steep watershed hillsides. The island's remaining open spaces and natural lands provide important recreational areas for people, for use, enjoyment, and relaxation. The G50SP includes policies to protect Guam's ecology for present and future generations by preserving its most important environmental resources and building Guam's resilience in the face of climate change.

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Climate Resilience. The G50SP addresses climate change through coastal zone management policies, including measures to protect new development from coastal storms and hazards, and promote nature-based shoreline protection. The plan also calls for maximum use of green infrastructure in urban areas, such as incorporating permeable surfaces, green roofs, and rain gardens into development projects to reduce urban heat and manage stormwater runoff. New housing must also be designed and constructed to withstand extreme weather events, and incorporate renewable energy systems, such as solar panels and battery storage, where feasible.

Other climate resilience policies address water resource management, including through enforcement of land use regulations that protect watershed areas and limit deforestation, and by buffering aquifers and water sources to prevent both contamination and over-extraction of drinking water supplies. Land use policies that protect agriculture contribute to food security and resilience to climate variability. Supporting sustainable farming practices may improve soil health and reduce greenhouse gas emissions through increased carbon sequestration. The G50SP also supports renewable energy systems and projects, directs a full community education and engagement effort around climate resilience, and establishes adaptive management goals, including funding, monitoring, and periodic updating of plans to adapt to on-going climate changes.



Watershed Protection. Guam's environment cannot thrive without land use policies to protect watershed resources. The G50SP includes standards to protect the Northern Guam Lens Aquifer and other important groundwater resources, including a requirement for development to connect to the public wastewater system whenever feasible. Development using private wastewater systems must comply with all applicable policies and regulations of the Guam Environmental Protection Agency. Other policies address polluted runoff through the implementation of construction and post-construction of best management practices and green infrastructure, such as limiting impervious surfaces and retaining and treating stormwater runoff. This will also benefit aquifer recharge.

The G50SP also protects Guam's important wetland and riparian resources through development policies that require setting development back from the edge of identified watercourses and wetlands. Filling of wetlands is strictly prohibited except for certain uses, such as restoration, boating and coastal-dependent industrial uses, and necessary incidental public services. Development in riparian corridors is also limited to such uses as education and research, consumptive uses, habitat restoration and necessary water supply projects.

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Forest and Terrestrial Habitats. The terrestrial lands of Guam provide important habitat areas for many unique, endemic, and threatened species. The G50SP policies will protect these habitats through a new *resource conservation of* land designation for the most important areas. For example, this designation covers large blocks of contiguous limestone forest – one of Guam's most distinctive and unique terrestrial habitats, as well as much of the steep, forested, scenic mountain areas in southern Guam. The plan also requires the identification of sensitive terrestrial habitats that may be impacted by development through the best available biological science. The plan builds on and requires coordination with implementation of the Guam Habitat Conservation Plan. This will support mitigation policies in the G50SP also, assuring that habitats will be protected even while development goes forward.



Coastal and Marine Waters. The G50SP policies also express Guam's recognition of the vital connection between land and sea and continue the island's long participation in NOAA's coastal zone management program under the Coastal Zone Management Act of 1972. The plan requires that marine resources be maintained, enhanced, and where feasible, restored. Special protection must be given to areas and species of special biological or economic significance, and use of the marine environment must be carried out in a manner that will sustain the biological productivity of coastal waters. The plan reinforces protections for the coral reef, such as effective watershed management, and directs increased enforcement of environmental land use policies. Policies also restrict new development in the Seashore Reserve to those uses that enhance, are compatible with, or do not generally detract from the surrounding coastal area's aesthetic and environmental quality; or to those that can demonstrate dependence on a seashore location and that lack a feasible alternative.

1.2.4. Vibrant Culture – Preserving Heritage, Parks and Recreation, Community Health

Guam's culture is diverse and rooted in a rich history. It is welcoming to all who visit and appreciate its intrinsic value. The CHamoru culture is strong and enduring, despite the injustices of Guam's colonial past. Maintaining and enhancing Guam's culture for present and future generations is a fundamental goal of the G50SP.

The plan includes policies to protect cultural and historic resources and promote cultural expression and connections between people and places, including through a multitude of parks and recreational spaces. Land use policies also promote community health by assuring that all of Guam's residents have access to essential community services and public facilities.

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Cultural Heritage and Indigenous Connections. The G50SP policies require the protection of historical and cultural resources, including designated significant sites, to ensure Guam's cultural heritage is preserved and not adversely impacted by new growth and development. Like protection of the natural environment, policies require identifying and surveying resources, conducting impact assessments, and avoiding and/or buffering sensitive locations. The plan also calls for preserving traditional practices and knowledge through the designation of areas for the continuation of traditional CHamoru cultural practices, such as farming, fishing, and weaving. Other policies support public spaces for cultural festivals, educational programs and workshops, and other village activities that preserve and celebrate Guam's heritage.

The G50SP also recognizes that Guam's culture may be preserved and partially expressed through the built environment, economic activities, and tourism. The plan encourages the rehabilitation and adaptive reuse of historic buildings for modern purposes while maintaining their cultural integrity. This includes continuing to implement historic preservation plans such as the Hagåtña Master Plan and the Inalåhan Historic District Revitalization Plan. For new development, the plan encourages innovative building designs and construction that will create 'people places' based on architectural designs from pre-WWII era Guam and other Pacific nations.



In tandem with the plan's economic development policies, the G50SP also encourages tourism activities that respect and highlight Guam's cultural heritage without causing degradation to historical sites, natural areas, and Guam's inherent beauty. Tourism will be supported by the development of heritage trails and cultural centers to enhance visitor experiences while protecting sensitive areas. Future land use plans and development projects must incorporate measures to protect cultural landscapes, archaeological sites, and traditional CHamoru practices.

Finally, G50SP recognizes that community collaboration is central to cultural preservation. The plan calls for strong partnerships between the Guam State Historic Preservation Office, village communities, the Guam Preservation Trust, and other community members and organizations

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interested in furthering the preservation of Guam's cultural heritage. It also directs collaboration with and between BSP and the Hagåtña Restoration and Redevelopment Authority, Ancestral Lands Commission, Department of CHamoru Affairs and the CHamoru Land Trust Commission.

Community Health and Well-Being. A vibrant culture in Guam requires a land use plan that assures the equitable distribution of facilities and resources to support the health and well-being of residents. The G50SP designates multiple locations around Guam as parks and recreation sites, where residents can recreate, exercise, and enjoy the beauty of the island. The plan includes policies to protect and maximize public access to beaches and along the shoreline – an important right and expression of Guam's cultural heritage. Universal access to open spaces enhances community health and social equity, especially for more vulnerable populations. Related, the G50SP requires preservation and enhancement of the island's scenic resources, recognizing their intrinsic cultural value.



UNIVERSITY OF GUAM PHOTO

In this October 2023 photo, a newly installed sign at the Talo'fo'fo' Baseball Field shows several walking routes and public park amenities that residents can use in the area. The sign, created by the Community Nutrition Education Program and Children's Healthy Living Program at the University of Guam and installed by the Talo'fo'fo' Mayor's Office, aims to help residents find convenient areas to be active and improve their health.



Other important community and public facilities are protected by the G50SP. This includes policies of planning for the equitable distribution of public health and safety resources such as fire and police stations, as well as the need for health clinics and other public health resources. The plan prioritizes the construction of health clinics and emergency services in underserved areas and requires that new development include provisions for community health facilities. The G50SP also requires the designation and protection of areas for community gardens, nature reserves, and urban forests to improve air quality and provide mental health benefits, as well as the development of a network of multi-use trails and recreational areas that promote physical activity and social interaction. Finally, the plan directs the full enforcement of illegal dumping and public nuisance laws to enhance Guam's cultural and natural landscape.

1.2.5. Village Sustainability - Shared and Unique Local Land Use

Although Guam's nineteen villages share many sustainability challenges, each has its own local land use policy priorities. The G50SP Village Sustainability policies build on and complement policies of other plan sections to underscore the shared yet unique local challenges in Guam.

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Island-wide Policy. The G50SP directs that land use decisions recognize and promote development that is sensitive to and reflects the unique built and natural environments in each village. Taller buildings, for example, may make sense in Tumon or Hagåtña, while smaller-scale developments are appropriate in the more rural settings of the southern villages. Each village also has its own character, counseling on different architectural styles and designs across Guam. But each village has an interest in development that is sensitive to its particular setting.



Guam's villages also share a need for critical infrastructure and important community facilities. The plan includes policies to ensure that each village has adequate public and civic spaces, recreational areas, medical facilities, and essential social services. Likewise, the plan applies to the logic of vibrant urban and village centers where pedestrian-scale, mixed use development can contribute to activated community spaces but in different styles and intensities of development. The G50SP also plans for climate and hazard resilience, recognizing common challenges like flooding, but also differing infrastructure needs.

Guam's Villages. The G50SP includes specific designations and directives to address the unique needs of each village. For example, the Tumon area focuses on hotel redevelopment and shoreline adaptation planning in anticipation of sea level rise impacts on tourist beaches. In Piti, the plan captures the desire for development to emphasize the area's coastal and ecological significance, particularly the coral reefs and marine recreational activities. Other villages have specific land use objectives, like implementing micro farming in Agaña Heights, prioritizing smaller scale commercial development in Asan-Maina, or improving traffic management in Barrigada. In Dededo, there is a policy to create shaded markets and small business hubs, which necessitates upgrading the Flea Market. In Hagåtña, the G50SP supports continued revitalization, including improved public spaces and heritage preservation, to reinforce its identity as Guam's cultural and administrative center. In Malesso', the plan underscores the important functions of the pier and connecting people to coastal waters.

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All village needs cannot be captured here - they are too numerous and continually evolving. But the plan attempts to address the diversity of each through context-sensitive policies and programs that are responsive to an ever-changing democratic society.



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1.3 Governance and the Path Forward for G50SP

The Guåhan 2050 Sustainability Plan (G50SP) provides a comprehensive roadmap for advancing sustainability across Guam's environment, economy, and society through strategic land use planning. Realizing this vision will require sustained commitment and coordinated action by the Government of Guam. Key to this effort will be transparent and predictable decision-making processes, clear development requirements, and streamlined reviews and approvals, which must be effectively managed through thorough technical reviews to safeguard environmental sustainability and support responsible community development. Investments in modernized information systems and strong community engagement will also be essential.

Effective implementation may require updates to relevant land use statutes and agency mandates to ensure alignment with the G50SP. Central to these efforts is the role of the Bureau of Statistics and Plans (BSP), which must serve as the coordinating body to ensure that the plan's strategies and policies are reflected in land use decision-making across agencies. BSP will help ensure that implementation is both inclusive and grounded in the expertise and mandates of Guam's many agencies, while also ensuring that those efforts are responsive to the shared vision articulated in the G50SP.

Implementing the Plan for the Common Good

Guam benefits from a robust set of government institutions with responsibilities for land use and related areas. Agencies such as the BSP, Department of Land Management (DLM), Department of Public Works (DPW), Department of Parks and Recreation (DPR), and Guam Environmental Protection Agency (GEPA) all contribute to planning, permitting, and infrastructure development. Numerous existing plans—including sector-specific master plans and regulatory frameworks—are referenced and integrated throughout the G50SP to advance shared objectives.

Yet governing the common good requires more than coordination; it requires a culture of comprehensive planning and shared responsibility across institutions. A central recommendation of the G50SP is to update Guam's public laws and programs to reflect the direction and principles of the plan. Rather than supplant agency roles, the G50SP supports BSP's statutory role in leading and coordinating long-range planning while encouraging every agency to align its work with the vision, policies, and implementation framework of the plan.

To achieve this, Guam's Legislature also plays a critical role. While legislative action will always be needed to adjust to new conditions, incremental or ad hoc zoning changes should be made with caution. Land use decisions should be made within a coherent, long-term strategy rooted in the plan's sustainability principles and guided by the vision of P.L. 35-110, which establishes the required elements of the G50SP.

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Integration Across Social, Cultural, Economic, and Environmental Sectors

The G50SP fully responds to the legislative mandate set forth in Public Law 35-110 by addressing all twenty required elements through an integrated, sustainability-oriented land use framework—within the constraints of the available funding for the project. The plan's five thematic chapters—Sustainable Communities, Prosperous Economy, Thriving Environment, Vibrant Culture, and Village Sustainability— provide a platform for addressing Guam's most pressing planning challenges, from land use and housing to conservation, energy, and hazard resilience. Together, they establish an integrated framework for Sustainability Governance (Figure 1-9).

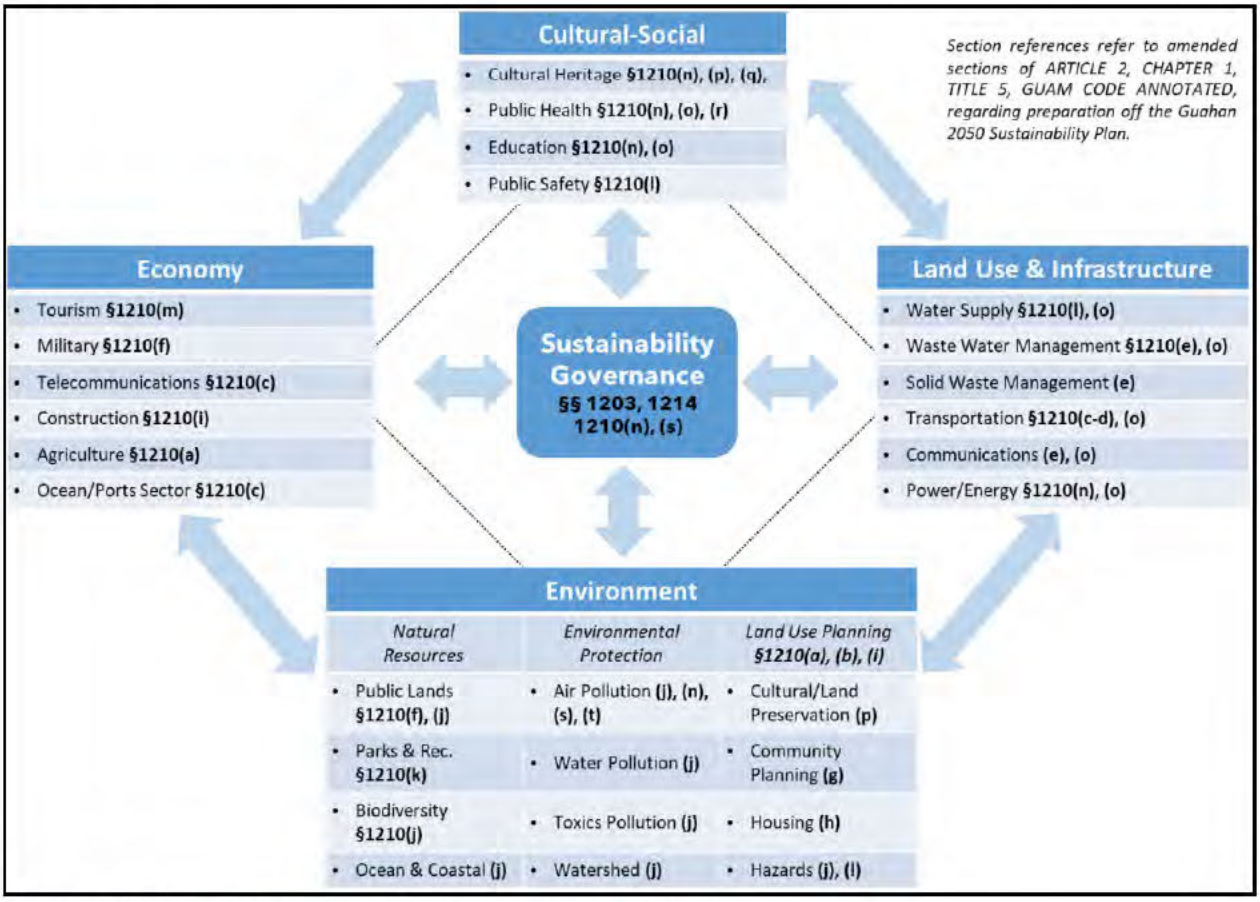

Figure 1-9. Integrated Framework for Sustainability Governance.

The plan includes robust policies supporting compact, walkable development, village identity, and strategic infrastructure investments. It weaves environmental and cultural concerns into land use decisions—protecting CHamoru heritage, watersheds, and coastal areas while promoting equitable access to public lands and facilities. Economic diversification is emphasized through sustainable tourism, local agriculture, and community enterprises. Energy

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and implementation sections directly support Guam's renewable transition and long-term interagency coordination.

Table 1.1 outlines how each of the elements required by P.L. 35-110 is addressed by G50SP policies and plan sections.

Table 1-1. Required Elements of P.L. 35-110 and G50SP Plan Sections and Policies.[1]

P.L. 35-110 Required Elements	G50SP Sections and Policy References
§ 1210 (a) Land Use	Chapter 3 (3.2 Land Use; Land Use Map, Policies SC-1 to SC-6, SC- 9, 10, 23-26, 55-89); Chapter 4 (Policies PE-1 to PE-23); Chapter 5 (TE-2, 4, 16, 18, 22, 29); Chapter 6 (VC-1, 2, 4, 10, 15, 19, 31, 35); Chapter 7 (VS-3, 5, 7, 8, various village policies)
§ 1210 (b) Community Design	Chapter 3 (Land Use, Village Centers, Mixed-Use Zoning: SC-2, 3, 4, 5, 6, 24, 25, 59-63), Chapter 4, PE-2, 7, 8, 9, 12, 14, 19) Chapter 6 (VC-17), Chapter 7 (VS-1 to VS-11)
§ 1210 (c) Transportation	Chapter 3 (3.3.5, Transportation and Mobility; SC-18 to SC-28), Chapter 8 (Infrastructure/Investment Actions)
§ 1210 (d) Regulations (parking, setbacks, street naming)	Chapter 3 (Land Use Table and Zoning Districts, Policies SC-21, 23, 24, 25, 26, 27)
§ 1210 (e) Public Facilities	Chapter 3 (3.4 Public Services; SC-7 to SC 41)
§ 1210 (f) Public Lands	Chapter 3 (3.2.3 Public/Federal Land Ownership; Table 3.1, Land Use Map), Chapter 6 (Land Use and Cultural History, 6.6.2)
§ 1210 (g) Public Buildings	Chapter 7 (Village Land Use Maps, VS-3), Chapter 6 (VC-17)
§ 1210 (h) Housing	Chapter 3 (3.4 Housing; SC-36 to SC-46), Chapter 4 (PE-13), Chapter 5 (Disaster-Resilient Housing section, TE-9 to TE-12)
§ 1210 (i) Redevelopment	Chapter 3 (Land Use objectives, SC-3), Chapter 4 (4.6, PE-12-14)
§ 1210 (j) Conservation	Chapter 3, (Land Use Map - Conservation designation), Chapter 5 (TE-1 to TE-114)
§ 1210 (k) Recreation	Chapter 6 (Parks, 6.3.5-6, VC-30-38); Chapter 5 (Conservation, TE-31, 32, 76, 84, 89, 99, 110, 11), Chapter 7 (VS-4, 19, 22, 36, 38, 42, 54, 62, 67, 71, 72, 83, 87)

[1] The G50SP focuses on the land use planning dimensions of sustainable development policy and requirements of P.L. 35-100 as provided for under the funded scope of the project.

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P.L. 35-110 Required Elements	G50SP Sections and Policy References
§ 1210 (l) Safety	Chapter 3 (3.7, SC-71 to SC-124), Chapter 5 (5.2.3, Hazard Avoidance, Green Infrastructure, TE-9 to TE-12)
§ 1210 (m) Tourism	Chapter 4 (4.3.1 Tourism Land Use, ; PE-18 to 23); Chapter 3, (Hotel Zones, Agri-tourism, SC-70); Chapter 6 (Cultural Tourism, VC-13-14)
§ 1210 (n) Sustainable Development Policy (Land Use)	Chapters 1-8 generally, including: Chapter 3-4 (redevelopment, affordable housing, access to services, energy); Chapter 5 (Environmental health); Chapter 6 (Cultural heritage preservation; public recreation/health); Chapter 7 (Village Sustainability)
§ 1210 (o)Capital Improvements	Chapter 8, 8.2 (Framework), 8.3 (Action Strategy and Financing)
§ 1210 (p) Preservation	Chapter 3 (Land Use, SC-1-6, Agricultural protection, SC-55-70, Chapter 5 (Conservation designation, habitat protection); Chapter 6 (Cultural Heritage/History Preservation)
§ 1210 (q) Indigenous Connections and Rights	Chapter 6 (Cultural Heritage, History, Landscapes, Resources)
§ 1210 (r) Community Mental Health, Physical Health and Well-being	Chapter 6 (6.3, Community Well-Being, VC-24-29, Parks, VC-37, 38, Chapter 7 (Resilient villages and public health, VS-58)
§ 1210 (s) Policy Statements	Chapters 1-8, Core Principles, Goals, Objectives, Policies.
§ 1210 (t) Other Elements	Chapter 2, Coordination with Defense Dept. (IP-3, 4); Federal Consistency Review (IP-5)
§ 1211 (a) Plan Implementation and Financing	Chapter 8 (Entire chapter; Implementation Goals, Monitoring, Timeframes, Agency Roles)

Integrating Guam's Planning Landscape – Regulatory Streamlining

Guam's agencies and programs have undertaken significant planning efforts in recent years, including the Guam Watershed Plan, Guam Transportation Improvement Program (GTIP), Guam Energy Master Plan, Statewide Comprehensive Outdoor Recreation Plan (SCORP), Climate Change Resilience Framework, and the Guam Green Growth (G3) Action Framework. These initiatives – at least 21 in the last ten years – reflect the island's dedication to sustainability across sectors and its ability to engage federal and regional partnerships (Table 1.2).

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Table 1-2. Recent Planning Efforts in Guam.

Category/Agency	Planning Effort	Year(s)
LAND USE & INFRASTRUCTURE		
	Guam Hazard Mitigation Plan	2024/2019
	Guam Transportation Improvement Plan	2023
	GPA Clean Energy Master Plan / Integrated Resource Plan	2022
	Hagåtña Master Plan	2022
	Guam Hazard Mitigation Plan	2019
	Zero Waste Plan	2013
	Inalahan Revitalization Plan	2011
	North and Central Guam Land Use Plan	2009
	2030 Transportation Management Plan	2008
	Integrated Solid Waste Management Plan	2006
	I Tano'-Ta, The Land Use Plan for Guam (Repealed by P.L. 25-20)	1994 / 1999 repeal
	GWA Water Resource Master Plan (V1, V2)	N/A
ECONOMY		
	Guam Comprehensive Economic Development Strategy	2023 / 2019
	Guam Housing and Urban Renewal Authority Consolidated Plan	2021
	GVB Guam Tourism 2020 Plan	2020

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ENVIRONMENT		
	Guam Forest System Plan	2022
	Guam Coral Reef Restoration Action Plan	2021
	Guam Forest Action Plan 2020–2030	2021
	Guam REPI Habitat Conservation Initiative Implementation Plan 2022–2027	2021
	Guam Shoreline Atlas	2021
	Guam Comprehensive Flood Study	2020
	Guam Marine Conservation Plan	2020 or 2017?
	Guam Coral Reef Resilience Strategy	2019
	Guam Wildlife Action Plan	2018
	CNMI and Guam Stormwater Management Manual (V1, V2, Supp.)	2010 / 2006
	Guam Habitat Conservation Plan	In process
CULTURE / SOCIETY		
	Guam Preservation Trust Strategic Plan	2023 / 2018
	Guam Historic Preservation Plan	2016
	Comprehensive Outdoor Recreation Plan	2014
	Supplemental EIS Guam and CNMI Military Relocation (2012 Roadmap Adjustments)	2015

However, the complexity of Guam's interdependent systems—energy, water, housing, mobility, culture—underscores the need for stronger alignment across planning efforts. Many sectoral plans operate in isolation, resulting in gaps, inefficiencies, or missed opportunities for synergy. While some may worry that the G50SP adds another layer of regulatory process, its intent is precisely the opposite: by serving as a unifying framework, the plan seeks to clarify development priorities, align agency actions, and create more transparent, efficient, and predictable land use decisions. When followed, the G50SP should reduce uncertainty for both public and private actors by sending clear, shared signals about where and how development can be pursued to be sustainable.

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By anchoring this integration in a land use–based strategy, the G50SP links spatial decisions—such as where Guam grows, conserves, and invests—with broader sustainability values. This coordination not only supports better environmental and social outcomes but also helps streamline the permitting and review process by reducing conflict, clarifying agency expectations, and guiding infrastructure investment. Ultimately, the G50SP reflects the collective aspirations of Guam's people and institutions—shifting from fragmented and reactive decision-making to a proactive, cohesive, and future-ready planning approach.

Aligning with the Guam Green Growth Action Framework

The G50SP and the Guam Green Growth (G3) Action Framework are mutually reinforcing initiatives that together guide Guam's journey toward a resilient, equitable, and sustainable future. The G50SP serves as the government's long-range land use and policy framework, while G3 functions as a cross-sectoral platform for implementation—engaging academia, civil society, and the private sector in advancing shared goals.

G3's five focus areas and the G50SP's priorities closely align, including healthy communities, multi-faceted skilled workforce, sustainable infrastructure, thriving ecosystems, and strong cultural identity and partnerships. G3's biennial updates and stakeholder-driven projects—such as aquaponics, conservation workforce training, and community gardens—provide mechanisms for operationalizing the values articulated in the G50SP. In turn, the G50SP provides the spatial and regulatory foundation needed to institutionalize such efforts through land use policy and infrastructure planning.

Together, the two initiatives promote alignment across planning, investment, governance, and community engagement, helping build momentum for long-term change rooted in Guam's environmental assets, cultural heritage, and development vision. Chapter 8 discusses the alignment of the two initiatives in the context of G50SP implementation.

Toward Coordinated, Shared Governance

Ultimately, the success of the G50SP depends on the ability of Guam's agencies to coordinate their efforts under a shared vision. As described in Chapter Eight, this will require BSP to lead ongoing collaboration with DLM and other permitting and regulatory agencies, as well as with agencies in health, education, economic development, and the environment.

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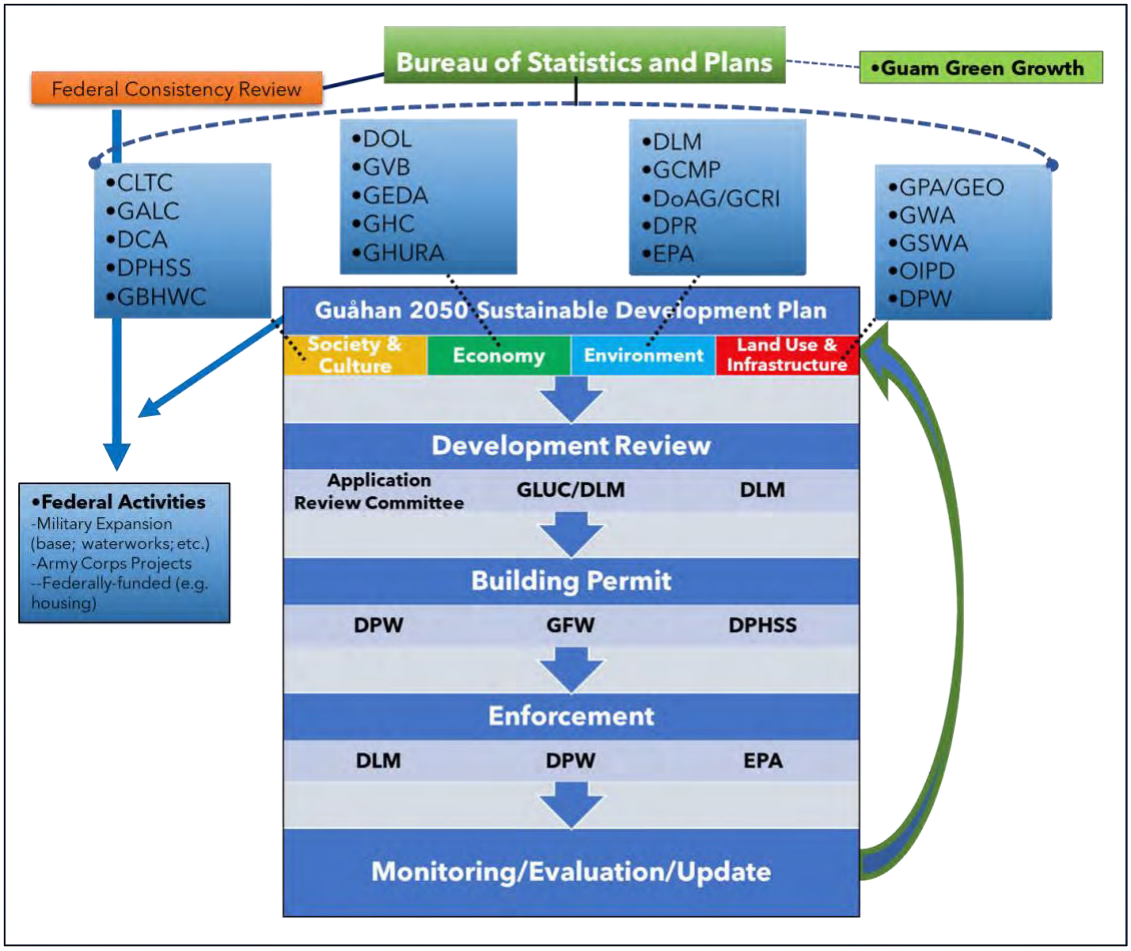

Figure 1-10. Institutional Architecture Envisioned for BSP.

Guam's limited land base and overlapping development needs demand a deliberate and disciplined approach to land use governance. Effective implementation means managing competing priorities—housing, infrastructure, public access, and resource conservation—within a framework that ensures sustainability and equity. Figure 1-10 illustrates the institutional architecture envisioned: BSP functions as the central node coordinating across all relevant agencies to guide plan-aligned decisions.

Importantly, successful implementation will depend not just on top-down guidance but on the everyday decisions made by agencies, communities, and individuals. When those decisions align with the vision of the G50SP, the common good becomes not just a goal, but a shared reality. Policy GOV-1 recognizes this and leads the plan policies, directing maximum community engagement and shared governance through G50SP implementation. Policy Gov-2 recognizes the importance of coordinated implementation of the G50SP, especially with the Department of Land Management (DLM) through existing programs and processes to the maximum extent feasible and consistent with existing law. It includes clarification that certain specific land uses or projects may already be designated through prior legislative decisions (such as master plans

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or certain reservations of government land), and that these would not be subordinate to the designations of the G50SP unless otherwise specifically changed through legislative action.

GOV-1. Community Engagement and Plan Implementation.

The Government of Guam shall assure maximum community engagement and shared governance in G50SP implementation, through regular village and neighborhood-level participation and engagement—especially with vulnerable populations, indigenous groups, elders, local business owners, renters, and other community members that may be impacted by new development, redevelopment, and other land use changes and challenges. Support transparent decision processes and communication of land use decisions through public dashboards addressing objectives, financing, and plan implementation outcomes.

GOV-2. Land Use Planning and Regulation.

Except as it may concern existing legislative land use designations (such as prior government land use reservations, or approved master plans), the Bureau of Statistics and Plans shall coordinate GovGuam's implementation of the G50SP, working in partnership with the Department of Land Management to ensure that land-use planning, zoning administration, and regulatory processes conform to the G50SP's goals, objectives, and policies to the maximum extent feasible and consistent with existing law. This shall include collaboration with the Application Review Committee, the Guam Land Use Commission, the Guam Seashore Commission, and other relevant land-use planning programs to implement the land use designations, policies, and programs of the Guahan 2050 Sustainability Plan.

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Chapter 2: **The Island and People of Guam**

2.1. The Island of Guåhan

This chapter of the G50SP frames a broad land use goal to "plan for population and land use growth that supports Guam's sustainability capacity and cultural integrity." The discussion includes an overview of Guam's geography and demographics, and a short discussion of the critically important relationship between the Government of Guam and the U.S. military. The chapter addresses three planning objectives to meet the goal of sustainability planning for population and land use:

Objectives:

- Use best-available population data to align infrastructure, housing, and services.
- Coordinate proactively with the U.S. Department of Defense to mitigate impacts.
- Apply federal consistency review to support plan implementation.

The chapter concludes with five land use policies to meet these objectives and the broad aspirations of the United Nations Sustainable Development Goals (SDGs).

2.1.1. Geography

Guam is a United States (U.S.) territory in the western Pacific Ocean, approximately 3,500 miles west of Hawaii, 1,500 miles south of Japan, and 1,500 miles east of the Philippines. It is the southernmost island in the Mariana Islands archipelago. Nearly 212 square miles, it is the largest island in Micronesia. The northern part of Guam is composed of a mostly flat limestone plateau approximately 850 feet above sea level. The southern part of the island is more mountainous. Mount Lam Lam is the highest point at 1,332 feet. Much of Guam is fringed with coral reef habitat; at its southern tip, a barrier reef and Cocos Island enclose Cocos Lagoon. Apra Harbor, located along the west coast, is a large lagoon bounded by Cabras Island and the Orote Peninsula to the south (USGS, 2005).

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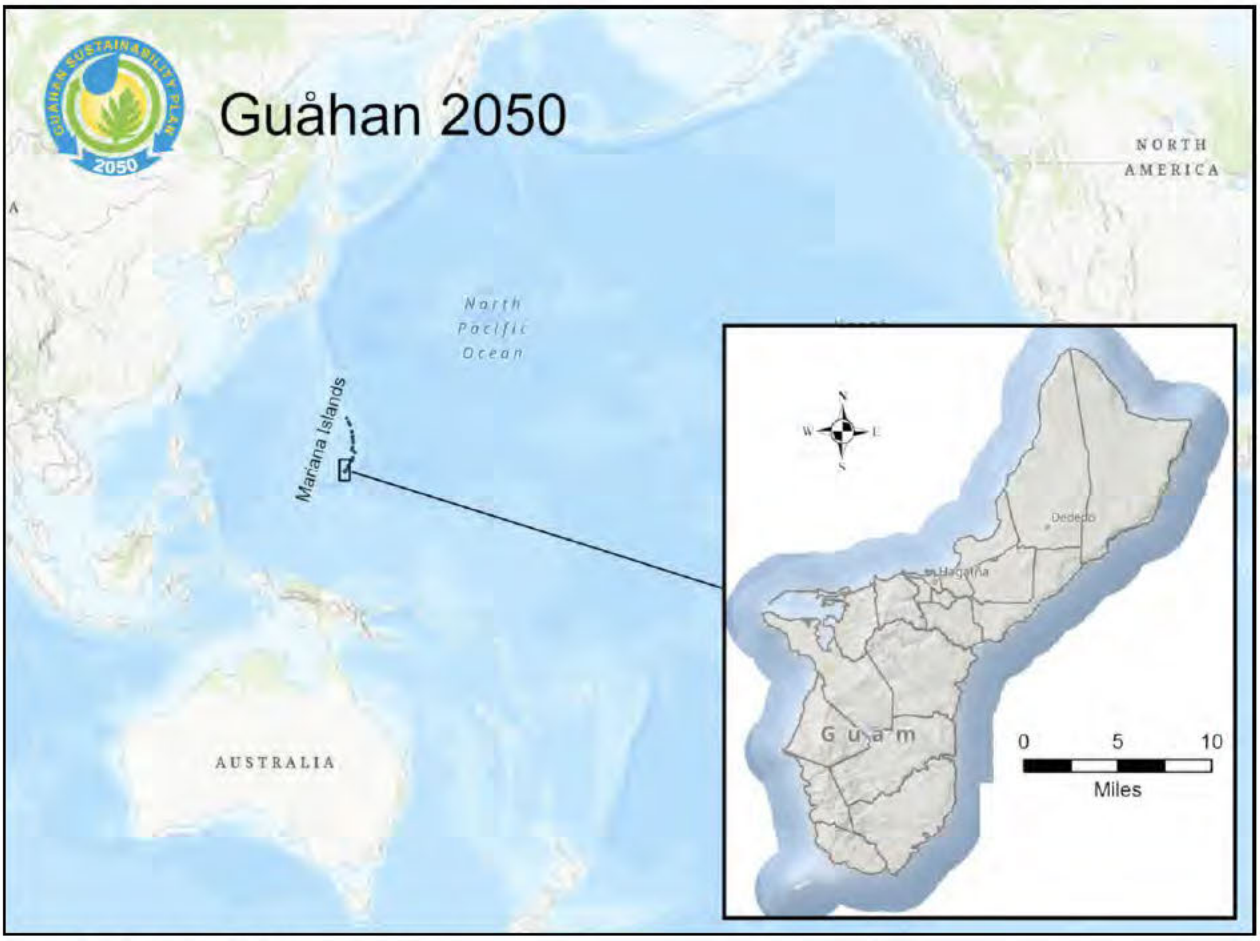

Figure 2-1. Guam Global Location Map.

Guam is a tropical island located 13˚ north of the equator. It is uniformly warm and humid year-round, with temperatures ranging from the low 70s to the mid-80s Fahrenheit and annual precipitation between 80 and 110 inches. The coolest, least humid months are December through February when westerly trade winds prevail. The warmest months are March through August. The rainy season generally runs from July to December (Pacific RISA, 2024). Guam is periodically hit by tropical storms and typhoons - some severe - with an average of three tropical storms and one typhoon passing within 180 nautical miles (330 km) each year (Id.). As discussed in later plan sections, climate change is expected to continue increasing the temperature and number of hot days in Guam, and result in a drier climate overall but with more extreme rainfall events every year. Experts also project fewer though more intense tropical typhoons (Grecni et al., 2020). Along with global sea level rise, these climate changes will have significant implications for the sustainability of Guam.

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2.1.2. Population

Guåhan (the CHamoru term for Guam) and the Marianas Archipelago were settled approximately 4,000 years ago by the CHamoru people. While estimates vary, the indigenous population of the Marianas ranged from 20,000 to 100,000 people before Spanish colonization in the 17th century (Guam Bureau of Planning, 1978; Guampedia, 2024). There is little doubt that the indigenous population suffered a precipitous decline to perhaps 4,000 people over the next several hundred years, though whether this was due to warfare and colonial violence, disease, or other causes is a matter of on-going scholarly debate (Guampedia, 2024). Spanish colonization gave way to U.S. colonization in 1898 following the Spanish-American War. The Japanese then occupied Guam for about three years during World War II. The U.S. reclaimed Guam in 1944.

Guam officially became a U.S. unincorporated territory in 1950 under the Guam Organic Act (64 Stat. 384, 48 U.S.C. 1421 et seq.). Guamanians are U.S. citizens and represented by a non-voting member in the U.S. Congress, but cannot vote otherwise for U.S. officials (President, Vice-President). As established in the Organic Act, Guamanians are represented on island by a unicameral legislature (I Liheslaturan Guåhan) consisting of 15 senators elected at large for two-year terms, and an executive branch headed by an elected Governor (four-year term).[1] The Act also established a judicial branch for the island.

2.1.2.1. Trends

Since 1900, Guam's population grew steadily, with a significant increase immediately following the end of WWII (Figure 2-2). The rate of population growth has slowed in recent years and perhaps was negative as measured by the 2020 U.S. Census. However, there may be some uncertainty about the reliability of census data collected during the COVID-19 global pandemic, despite assurances (Khubba, et al., 2022; Pacific Daily News, 2021). The most recent estimate of Guam's population suggests that it is continuing to increase, though perhaps at a slower pace.

[1] The Organic Act originally provided for the appointment of a Governor by the President. In 1968, the Guam Elective Governor Act amended the Organic Act to provide for the popular election of the Governor of Guam (Pub.L. 90-497, 82 Stat. 842). 3 GCA §6101 establishes the at-large election of 15 senators for 2-year terms.

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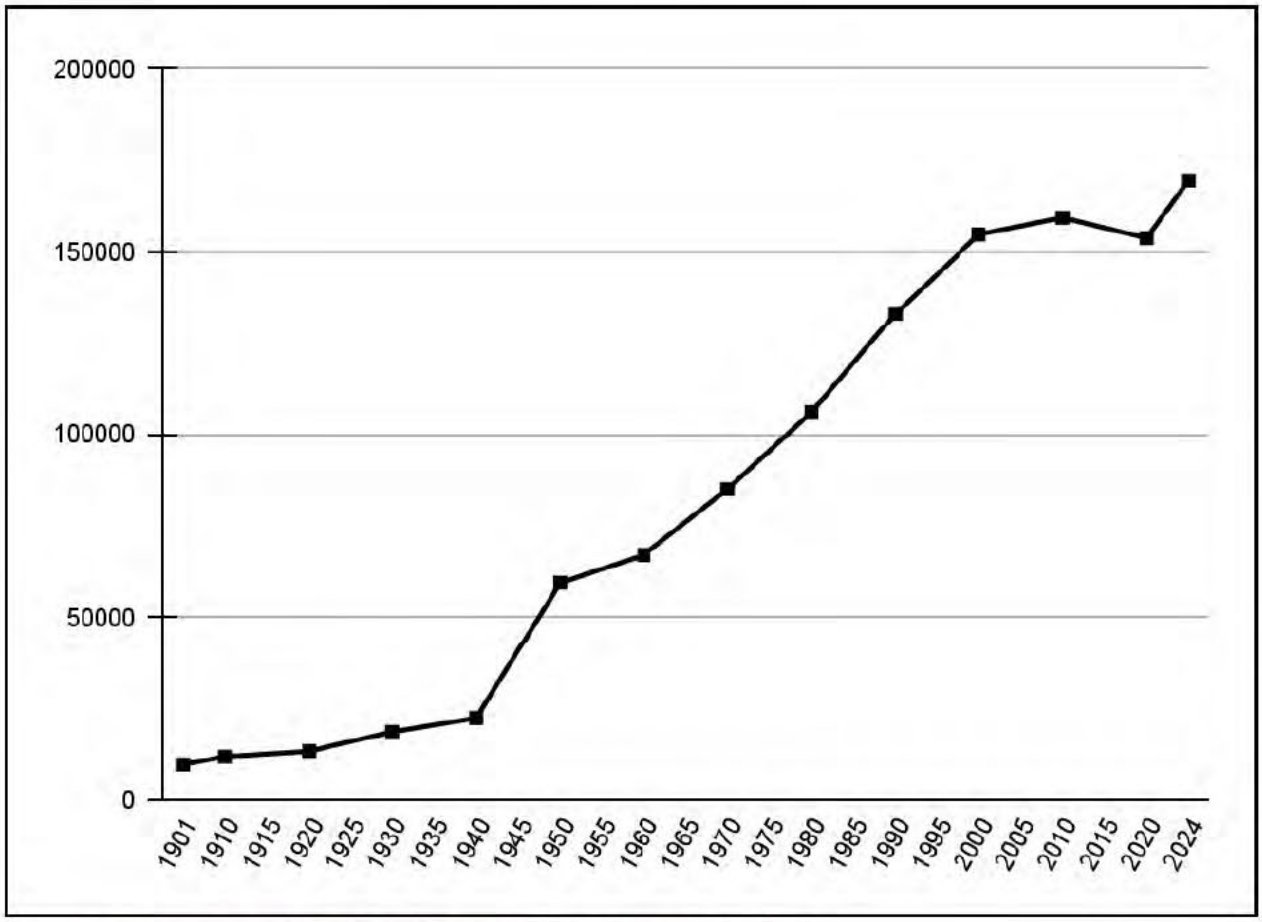

Figure 2-2. Guam Population, 1900 to Present (U.S. Census; CIA, 2024).

2.1.2.2. Diversity

Guam's population has become more ethnically diverse over the last 100 years, with a corresponding and notable decline in the proportion of those identifying as CHamoru (Figure 2-3). According to the 2020 U.S. Census, Guam's population is 32.7% CHamoru, 29.1% Filipino, 13.2% other Pacific Islander, 6.8% White, 6.7 % Chuukese, and much smaller proportions of Chinese, Korean and other races. The median age on the island in 2020 was 33.7, and census data show a marked aging of the population from 1990 (25.0) to 2000 (27.4) to 2010 (29.5) to 2020 (33.7).

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2.1.2.3. Distribution

Guam's residents reside in nineteen villages, with the highest population found in the more northern villages of Dededo (44,908), Yigo (19,339) and Tamuning (18,489). The smallest village populations are in the central and southern parts of the island, including Humåtak (647), Hagåtña (943), Piti (1,585), and Malesso' (1,604). Table 2-1 shows the population of each village documented in the 2020 census. Figure 2-4 shows the villages of Guam and the population density per square mile of Guam by census tract. The northern island is the most urbanized, while the south is mostly a coastal population ringing with the more mountainous interior.

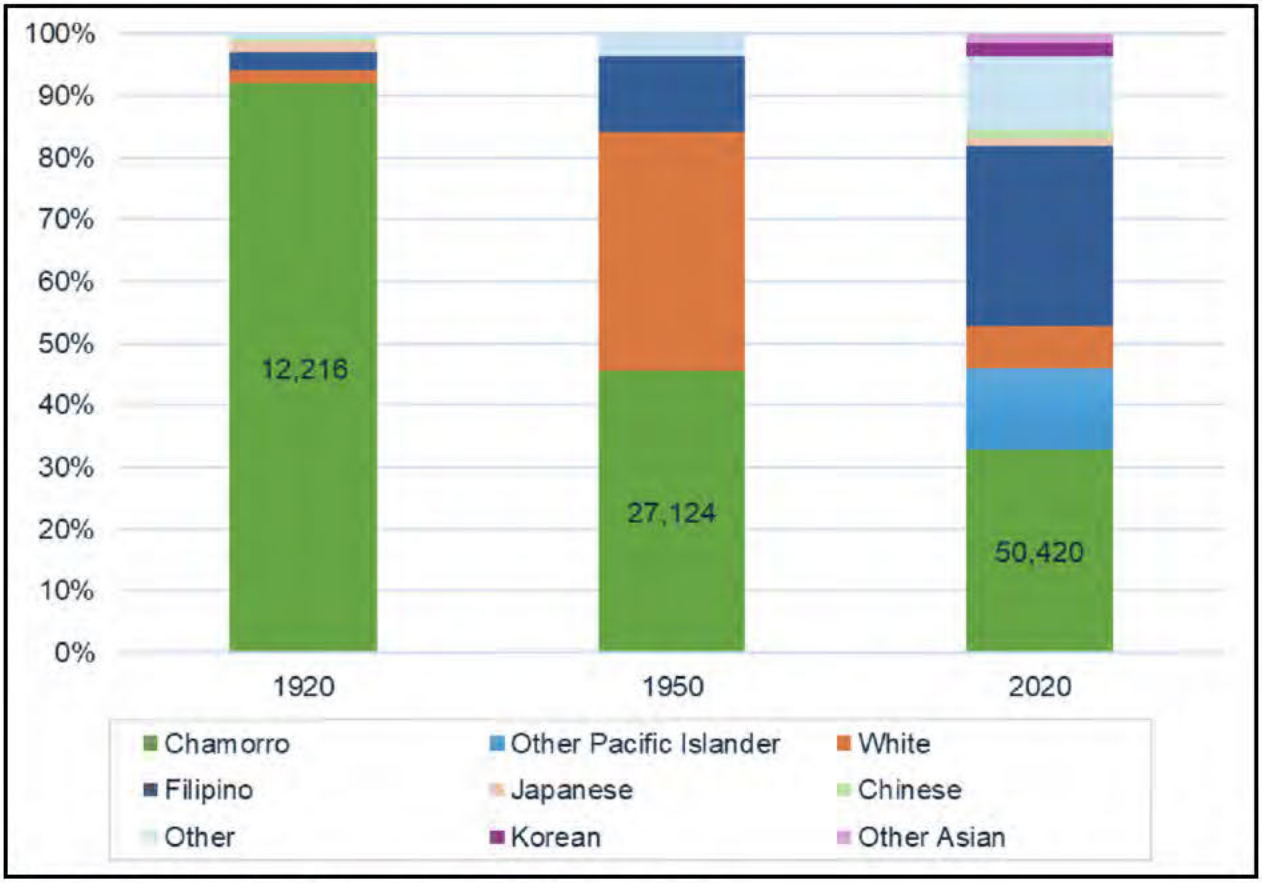

Figure 2-3. Guam's Racial Composition, 1920, 1950 and 2020.

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Table 2-1. Guam's Villages and Populations from 2020 U.S. Census.

Village	Population	Village	Population
Agaña Heights	3,673	Mongmong-To'to-Maite'	6,380
Hågat	4,515	Piti	1,585
Assan-Ma'ina	2,011	Sånta Rita-Sumai	6,470
Barigåda	7,956	Sinahånña	2,611
Chålan Pågu-Otdot	7,064	Talo'fo'fo	3,550
Dededo	44,908	Tamuneng-Tomhom	18,489
Hagåtña	943	Humåtak	647
Inalåhan	2,317	Yigu	19,339
Mangilao	13,476	Yo'ña	6,298
Malesso'	1,604		

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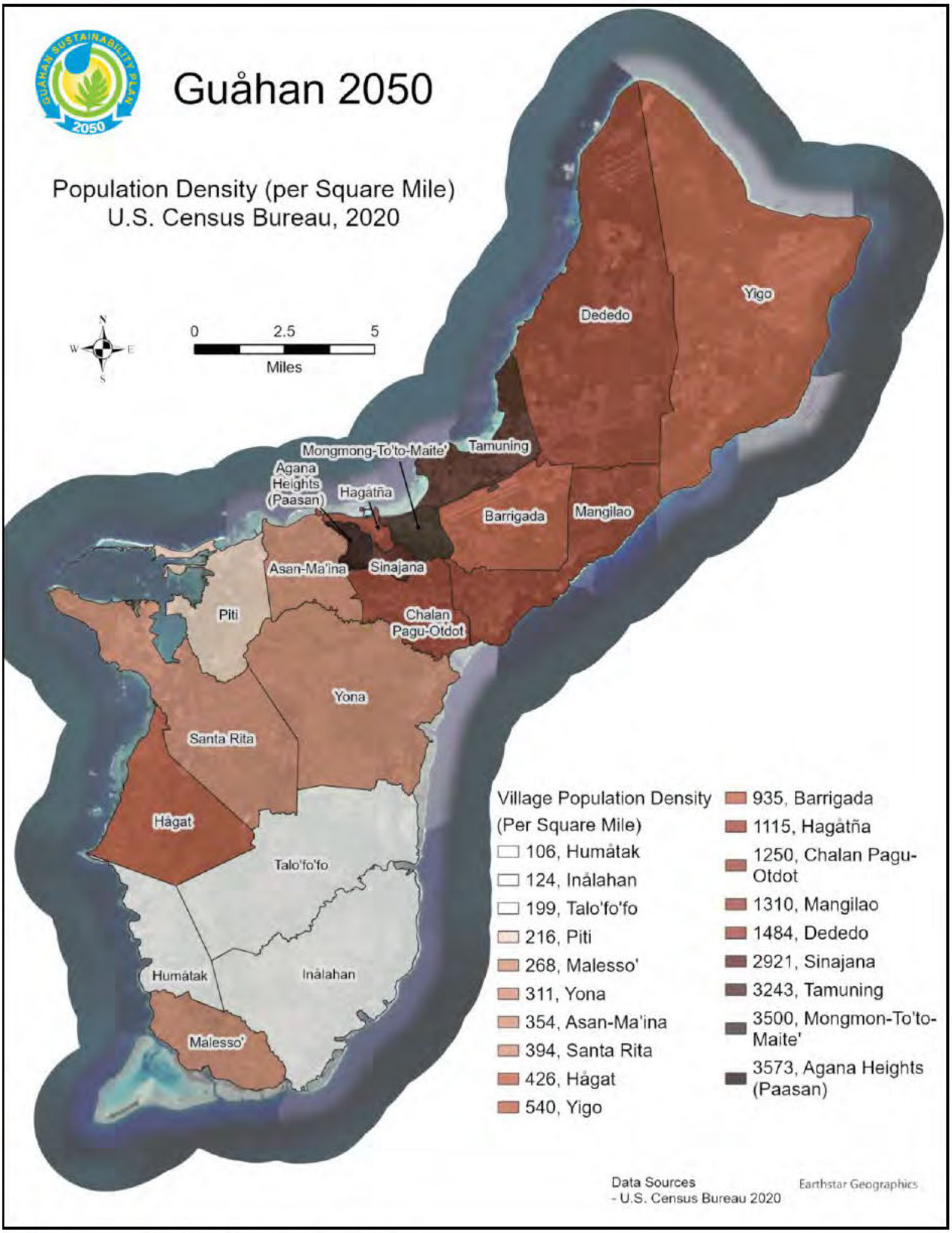

Figure 2-4. Guam's Population Density by Village.

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2.1.2.4. Projections

The United Nations Population Division projects a steady increase in Guam's population through 2050, with a leveling out occurring through 2075, followed by declining population through 2100 (Figure 2-5). There is a significant uncertainty in the curve, though, with the range of possible futures driven by probabilistic projections of total fertility and life expectancy at birth (United Nations, 2022). For purposes of addressing island sustainability, including land use and infrastructure capacities and demand, the G50SP assumes that Guam's population generally will continue to increase, perhaps 14% or more through the 2050 planning horizon, based on U.N. projections (172,000 in 2022 to 196,000 in 2050). The population will continue to age, with the number of persons over the age of 65 nearly doubled by 2050 according to U.N. projections (Figure 2-6).

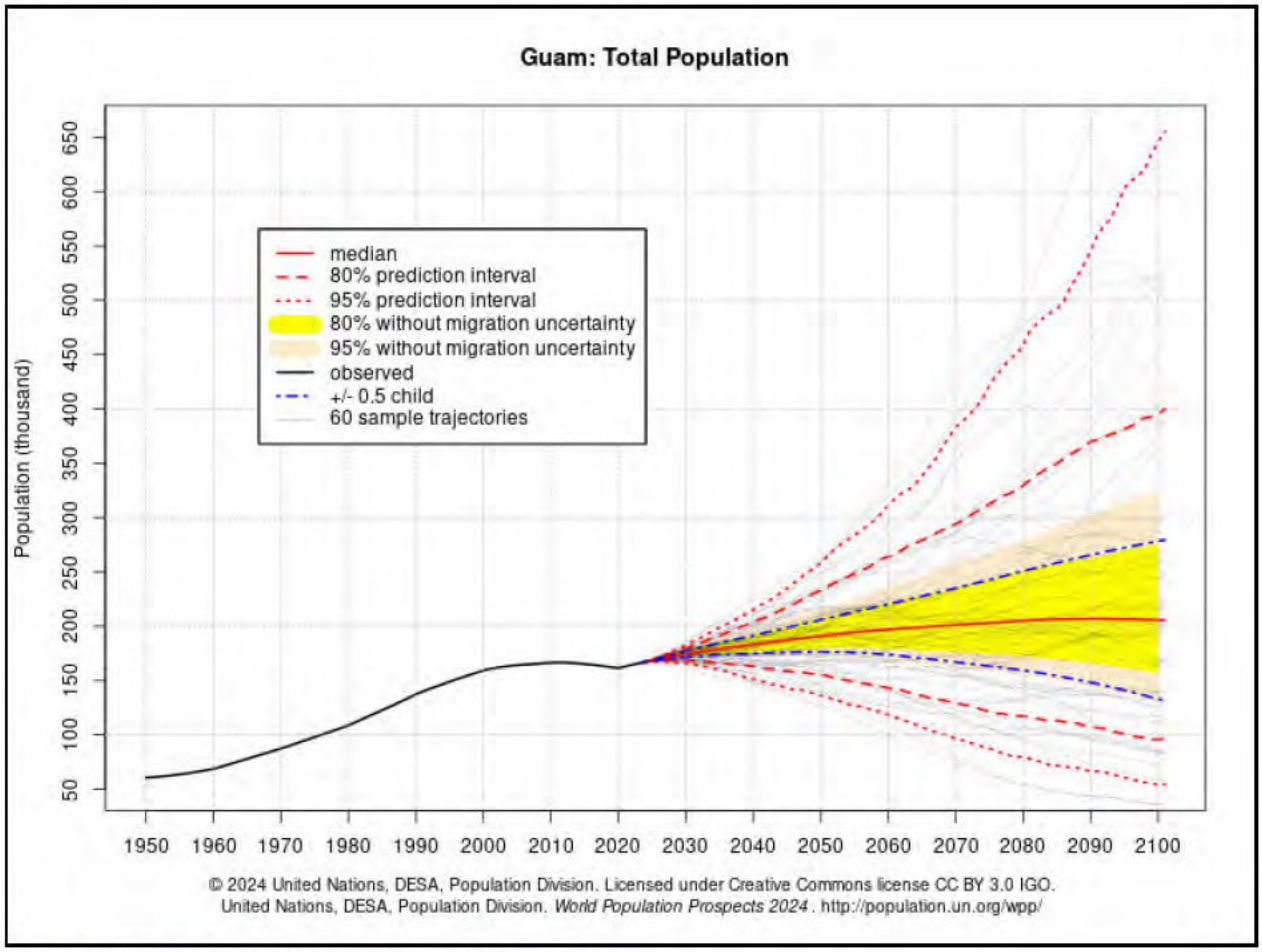

Figure 2-5. Guam Projected Population, United Nations.

One of the critical factors driving Guam's population growth soon is the expanding U.S. military presence. The 2020 census identified 21,700 service members and dependents in Guam, equal to about 14% of the total population measured at the time (153,836) (Pacific Island Times,

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2022). As of March 2023, the U.S. Department of Defense reported a total of 11,616 military personnel in Guam, including active-duty service members, reservists, and civilian

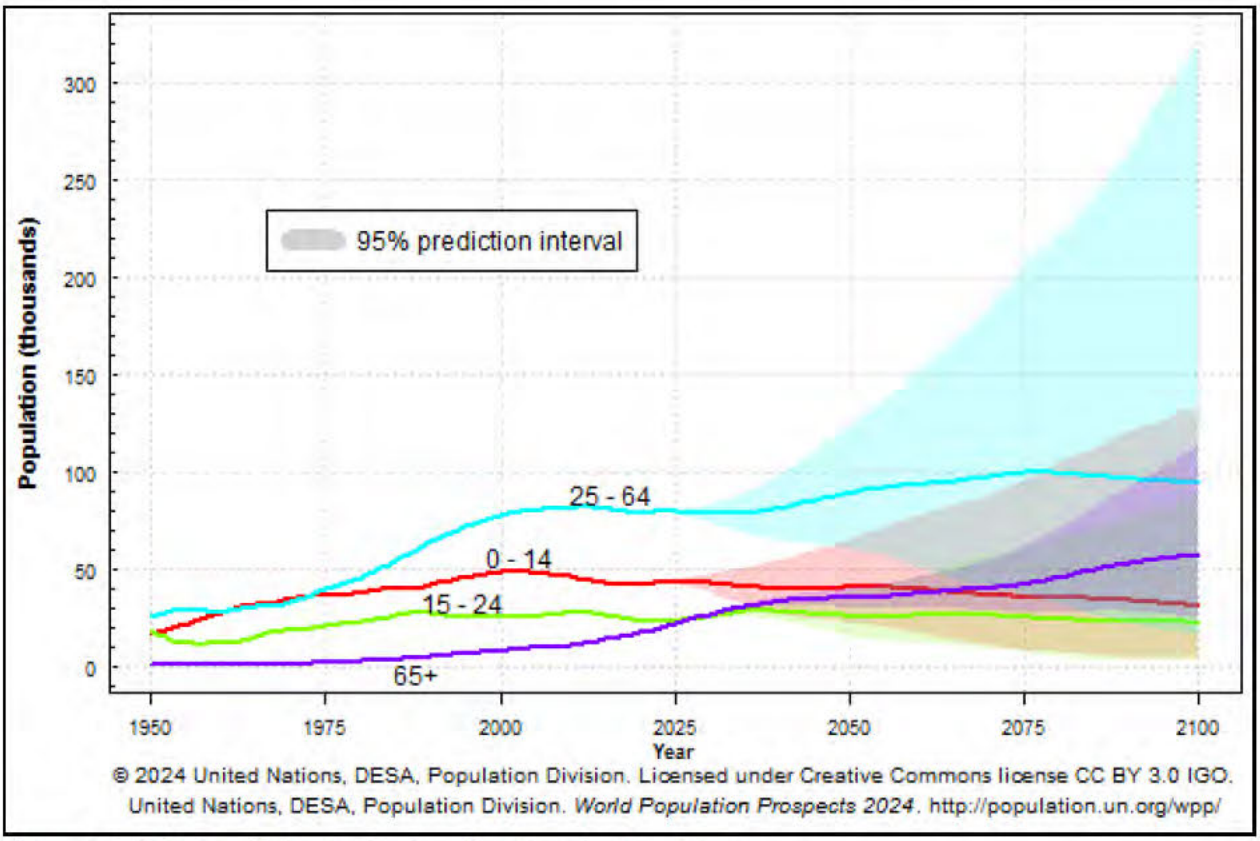

Figure 2-6. U.N. Population Projections for Guam by Age Groups.

employees (CRS, 2023). This number is expected to increase in the next five years as a planned relocation of marines from Okinawa, Japan gets underway. According to a Congressional Research Service (CRS) report, marines and their families will begin moving from Okinawa to Guam in 2024 with 2,500 service members arriving by 2026, and another 2,500 by 2028 (Id.).

In April 2025, the Committee on Economic Investment, Military Buildup, Regional Relations, Regulatory Affairs, Technology, Justice, Elections, and Retirement conducted an informational briefing. The Joint Region Marianas (JRM) reported that the total military-related population in Guam was anticipated to be close to 35,000 by 2037, a more than 50% increase from 2024 and nearly a tripling since 2015 (Figure 2-7, Guam Legislature, 2025). This expansion is and will continue to have significant implications for all aspects of Guam's economy, housing, infrastructure, culture, and more. This anticipated growth in the population related to the military expansion also is well-reflected by the planned construction budget for Guam and the CNMI, shown in Figure 2-8.

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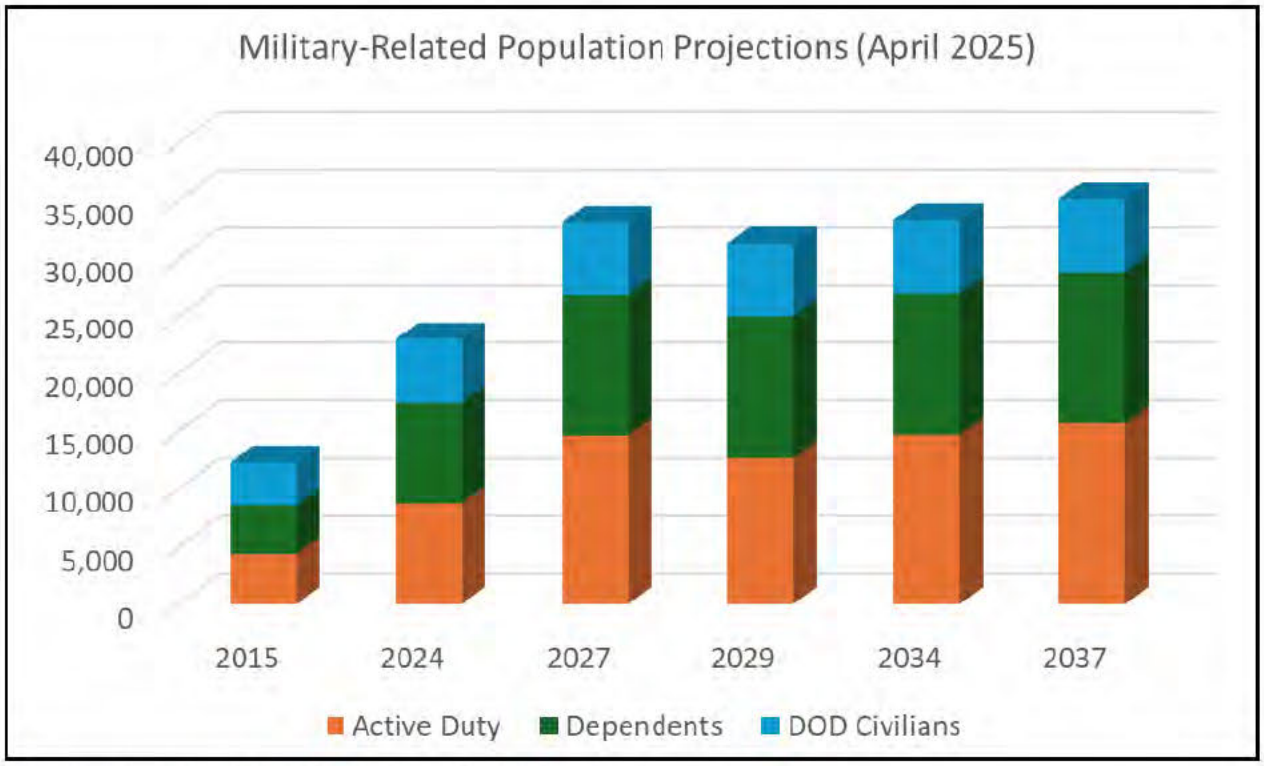
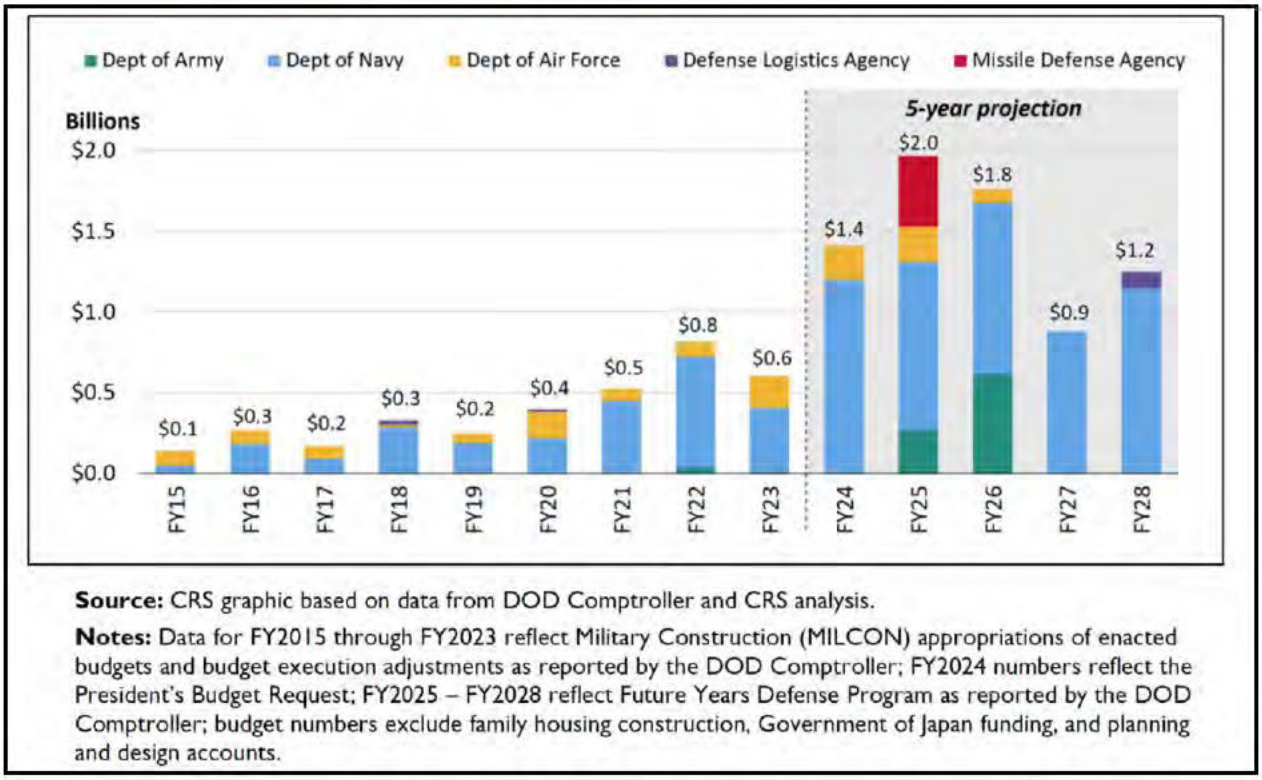


Figure 2-8 Military Related Population Projections



Source: CRS graphic based on data from DOD Comptroller and CRS analysis.

Notes: Data for FY2015 through FY2023 reflect Military Construction (MILCON) appropriations of enacted budgets and budget execution adjustments as reported by the DOD Comptroller; FY2024 numbers reflect the President's Budget Request; FY2025 – FY2028 reflect Future Years Defense Program as reported by the DOD Comptroller; budget numbers exclude family housing construction, Government of Japan funding, and planning and design accounts.

Figure 2-7. Military Construction Funding ($ billions) for Guam and CNMI From FY15-FY23, and Projected Funding Through FY28.

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2.2. Coordination with the Department of Defense

The CRS has identified multiple important questions about the U.S. military and Guam, including the following that relate directly to sustainability planning (CRS, 2023):

- What is the optimal disposition of operational forces and military personnel within the limited space available in Guam?
- What is the optimal configuration of military infrastructure in Guam within the limited space available?
- Should Congress consider providing direct support for civilian infrastructure in Guam as a component of military readiness?
- How might U.S. immigration policy relate to Guam support military readiness on the island?
- How might Congress support and ensure positive civil-military relationships between DOD and the U.S. citizens who live on Guam?

The CRS notes that land use is a recurring issue on Guam, and that Congress may consider whether to appropriate funding for critical infrastructure outside of military installations on Guam to increase readiness, such as improving electrical system robustness, drinking water and stormwater management systems, transportation infrastructure (e.g., roads or the civilian airport), and mitigation of risks related to extreme weather or climate change. This is also important for wastewater services, as the Guam Water Authority (GWA) provides wastewater services to Anderson AFB, Camp Blaz, and GWA to share an outfall with the Navy. New DOD wastewater demands may impact the central wastewater collection basin and Hagatna Wastewater Treatment Plant (see Chapter 3).

Congress might also consider measures to expand housing options in Guam, including a potential influx of military contractors to support emerging missions, or the temporary labor force possibly needed for military construction plans. As noted: “[e]nsuring a supply of available and affordable housing could reduce strain on the relationship between the people of Guam and the military community . . .” (CRS, 2023, p. 39). The CRS 2023 report also notes that the federal government has provided $186 million to Guam to fund civilian infrastructure, including a new medical facility (Id.).

As discussed in more detail in Chapter 5, Guam participates in the U.S. Federal government coastal zone management program. Section 307 of the Coastal Zone Management Act (CZMA) gives the Government of Guam a federal consistency authority, intended to ensure that federal actions affecting coastal use or resources, including actions by the Department of Defense, align with approved Guam Coastal Management Program enforceable policies. This provision ensures that federal actions contribute positively to the long-term health and sustainability of coastal and natural resources. Given the numerous shared land use concerns between the Government of Guam and the federal government, it is important for the two governments to

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collaborate as much as possible on land use planning issues and impacts, including through the federal consistency review process.

2.3. Land Use and Sustainability for the Island and People



Addressing population growth and the implication for a sustainable Guam is foundational to all the United Nations Sustainable Development Goals (SDGs). The U.N. Population Division provides data essential for the global monitoring of about one-quarter of the 231 SDG indicators monitored by the U.N. (U.N., 2024). Consistent with P.L. 35-110, the Guåhan 2050 Sustainability Plan recognizes this with policies directing the Bureau of Statistics and Plans (BSP) to use the best available population data and analysis in support of sustainable population growth in Guam. Policies also direct that the Government of Guam coordinate with the U.S. Department of Defense to address population growth and related impacts, including potential mitigation to the Island of Guam. Finally, policy IP-6 directs that the Government of Guam address the potential cumulative impacts of growth and development on Guam's communities, economy, environment, culture, and village life.

These policies align with the U.N. SDGs by promoting sustainable urban growth, environmental stewardship, and responsible governance. Through data-driven planning and demographic analysis (SDG 11, SDG 17), BSP will ensure that population growth is managed within Guam's economic, social, cultural, and environmental capacities (SDG 3, SDG 12). Coordination with the U.S. Department of Defense (DOD) will facilitate strategic planning for military-related population and land use impacts, helping to secure mitigation investments that enhance infrastructure resilience and social equity (SDG 9, SDG 10, SDG 16). Additionally, the federal consistency review process reinforces Guam's sustainability goals by ensuring federal actions align with the G50SP (SDG 13, SDG 14). These policies collectively support sustainable development, economic resilience, and environmental protection, fostering a balanced approach to growth that meets the needs of both present and future generations. By integrating these principles, Guam strengthens its capacity for long-term sustainability while enhancing quality of life for its residents.

2.3.1. Land Use Policy Goal Statement and Objectives

This land use plan embodies an overarching goal to plan for population growth and related land uses that will support both the sustainability of all other aspects of Guam's environment, society, and economy, and long-term cultural integrity. This chapter also frames three objectives and five policies to achieve this goal.

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Goal: *Plan for population and land use growth that supports Guam's sustainability capacity and cultural integrity.*

Objectives:

- Use best-available population data to align infrastructure, housing, and services.
- Coordinate proactively with the U.S. Department of Defense to mitigate impacts.
- Apply federal consistency review to support plan implementation.
- Address cumulative impacts of population growth and development on Guam's communities, economy, environment, culture, and village life.

2.3.2. General Island Demographics and Land Use Planning Policies

Planning

IP-1. BSP Clearinghouse.
BSP shall continue to serve as a clearinghouse for population and other demographic data and analysis for the Island of Guam. Support G50SP implementation with regular monitoring, data collection, analysis, and reporting.

IP-2. Sustainable Population.
BSP shall, through coordinated government action, plan for a population that can be sustained within the economic, social, cultural, environmental, land use and infrastructure constraints of the Island of Guam. Use the best available population data and projections to plan for island sustainability and meet the needs of present and future generations.

Coordination with DOD

IP-3. Intergovernmental Coordination.
The Government of Guam shall coordinate as necessary with the U.S. Department of Defense and the Joint Region Marianas, including through the federal consistency process and other available consultation processes (such as section 106 of the National Historic Preservation Act), concerning the military population, including personnel and their families, and other related demands, as well as natural resources, historic and cultural resources, land use, economic, social, environmental, infrastructure, and other impacts.

IP-4. Mitigation Monies.
As warranted, GovGuam shall seek mitigation monies (such as infrastructure investments) from the U.S. Department of Defense to offset impacts of the military population and activities on Guam's social fabric, economy, land use, infrastructure, environment, and culture.

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Federal Consistency Review

IP-5. Federal Consistency Review.

GovGuam shall use the certified federal consistency review process to the maximum extent feasible to support the planning and development goals of the Guåhan 2050 Sustainability Plan.

Cumulative Impacts

IP-6. Cumulative Impacts.

Address the potential cumulative impacts of population growth and development on Guam's communities, economy, environment, culture, and village life, consistent with the goals, objectives, and policies of the Guåhan 2050 Sustainability Plan.

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Chapter 3: **Sustainable Communities**

3.1. Introduction

Guam's long-term well-being depends on how wisely its land is used to shape healthy, resilient, and thriving communities. With limited land and growing pressures from population growth, military expansion, economic transitions, and climate change, coordinated and responsible land use planning is essential. This chapter provides the foundation for shaping land use decisions that balance environmental stewardship, cultural identity, housing and infrastructure needs, and economic opportunity. It builds on the core principles of the Guåhan 2050 Sustainability Plan—limits, balance, renewal, equity, and engagement—to establish a forward-looking strategy for development that enhances quality of life while protecting the island's most vital natural and cultural resources.



The chapter introduces a comprehensive land use framework organized into six interrelated sections. Each section identifies a specific component of sustainable community development, along with clear goal statements and planning objectives to guide policy and zoning decisions. Together, these goals and objectives form the strategic architecture for a land use system that is inclusive, place-based, climate-resilient, and grounded in Guam's unique context.

General Land Use

Section 3.2 addresses the spatial structure of growth and conservation across the island. It addresses how future development is distributed, the balance between urban and rural areas, and how land use decisions can protect aquifers, forests, and other sensitive landscapes. The overarching goal is to guide new development and redevelopment to the best locations and patterns to balance economic growth with environmental and cultural preservation.

> **Goal**: *Direct growth to appropriate locations to balance development with environmental and cultural preservation.*
>
> **Land Use Objectives:**
>
> - Concentrate new development within designated urban zones with existing public services.
> - Establish and maintain urban-rural boundaries to prevent sprawl and protect open space.

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- Protect aquifers, sensitive lands, and watersheds through low-intensity zoning and special overlays.

Public Services

Section 3.3 considers Guam's infrastructure and public services as the backbone of sustainable land use. This section includes policies to ensure that all development is matched with adequate water, sewer, stormwater, energy, and transportation services, and that those systems are planned for long-term resilience.

Goal: *Ensure that all development is supported by adequate public infrastructure.*

Land Use Objectives:

- Require water, sewer, and stormwater infrastructure to be in place before subdivision or development approvals.
- Coordinate utility expansion with the land use map and growth boundaries.
- Promote green infrastructure and resilient design to manage runoff, reduce flooding, and mitigate heat.

Housing

Recognizing Guam's rising housing costs and increasing population, section 3.4 focuses on how land use planning can expand access to affordable, climate-resilient, and well-located housing. Policies and objectives promote higher-density and mixed-use development patterns, infill and reuse of existing structures, and flexibility for family-oriented solutions such as accessory dwelling units (ADUs).

Goal: *Provide safe, resilient, and affordable housing for all Guam residents.*

Land Use Objectives:

- Expand zoning for multifamily housing and accessory dwelling units (ADUs) to meet diverse needs.
- Prioritize infill and redevelopment in existing built areas and reuse of vacant or underutilized buildings.
- Encourage climate-resilient building practices in areas exposed to flooding, typhoons, or sea level rise.

Commercial, Industrial, And Priority Development

Section 3.5 discusses the availability of land for economic growth while maintaining compatibility with surrounding communities and sensitive resources. It supports strategic redevelopment, eco-cultural tourism, and protection of essential sectors like fisheries and telecommunications.

Goal: *Encourage economic growth through strategic and context-sensitive development.*

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Land Use Objectives:

- Promote mixed-use corridors and redevelopment in already urbanized areas.
- Preserve land for priority economic uses including agriculture, fishing, telecommunications, and small-scale manufacturing.
- Support village-scale employment, entrepreneurship, and eco-cultural tourism that reflects local character.

Rural and Agricultural Lands

Rural and agricultural areas are essential to Guam's cultural heritage, food security, and environmental health. Section 3.6 thus addresses the preservation of open space and farming lands and promotes sustainable agricultural practices and land tenure reform through various rural and agricultural land policies.

Goal: *Preserve rural landscapes and support sustainable agriculture*.

Land Use Objectives:

- Limit subdivision and enforce minimum parcel sizes in rural zones to prevent fragmented land use patterns and development unsupported by public services.
- Support traditional and commercial farming through appropriate zoning and infrastructure.
- Consider a transfer of development rights (TDR) program to facilitate the movement of development potential from rural to urban zones to incentivize conservation.

Natural Hazards

Guam faces increasing risks from coastal erosion, flooding, typhoons, sea level rise, and other natural hazards. Section 3.7 includes policies and objectives designed to integrated hazard mitigation into land use planning through science-based land use hazard overlays, coastal adaptation, and nature-based solutions.

Goal: *Reduce vulnerability and build resilience to natural hazards and disasters*.

Land Use Objectives:

- Adopt hazard overlays and risk-based zoning to guide development away from high-risk areas.
- Promote living shorelines and nature-based solutions for coastal protection.
- Integrate hazard mitigation and resilience planning into land use decisions, infrastructure design, and housing policy.

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LAND USE POLICY AND SUSTAINABLE DEVELOPMENT GOALS



Together, the six sections of Chapter 3 form the land use policy backbone of the Guåhan 2050 Sustainability Plan. They seek to direct growth wisely, safeguard the island's natural and cultural systems, and ensure that development enhances rather than undermines quality of life. In so doing, the goals, objectives, and policies advance multiple United Nations Sustainable Development Goals (SDGs), including:

- **SDG 11: Sustainable Cities and Communities:** *Make cities and human settlements inclusive, safe, resilient and sustainable.*
- **SDG 6: Clean Water and Sanitation**: *Ensure availability and sustainable management of water and sanitation for all.*
- **SDG 7: Affordable and Clean Energy**: *Ensure access to affordable, reliable, sustainable and modern energy for all.*
- **SDG 13: Climate Action:** *Take urgent action to combat climate change and its impacts.*

Each section of the chapter provides more detail on the issues and how the policies align with the UN SDGs. Overall, by combining planning discipline with cultural respect, Chapter 3 provides a roadmap for communities that are sustainable, climate-ready, and rooted in the spirit of Guam.

3.2. Land Use on Guam

3.2.1. Background on Existing Land Use

The Island of Guam encompasses approximately 212 square miles or 135,680 acres of land. It also includes approximately 234 square miles of submerged land (out to 3 miles). The history of this land on Guam – its tenure, stewardship, and ownership, is deeply complex, shaped by centuries of colonialism and the island's strategic role in U.S. military operations, especially in the post-WWII era. Following the Spanish-American War in 1898, Guam was ceded to the United States, initiating a period of American naval administration. During this time, the U.S. Navy assumed ownership of all Spanish crown lands—roughly one-quarter of the island—and designated Guam as a naval station. After World War II, the U.S. dramatically expanded its military footprint, acquiring between one-third and one-half of the island's land, including large areas of ancestral CHamoru territory. The legacy of these takings persists today, as Guam continues to grapple with efforts to recognize and return traditional CHamoru lands. The potential expansion or reconfiguration of U.S. military land use remains a dynamic and contested issue with significant land use, cultural, and political implications. Overall, current and future land ownership patterns play a significant role in determining both where and how Guam

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might grow, and the opportunities available for preserving Guam's special culture and natural lands (Rogers, 2011; NPS, 2004; Bevacqua, 2005; Underwood, 1998; GAO, 2021).

3.2.2. Current Distribution of Land Uses

The locations and intensities of existing land uses in Guam largely reflect patterns of land ownership and geography. The north and central limestone plateau is significantly urbanized, with large areas of land held by the military. Southern Guam is more rural, with most development occurring on the lower elevation of coastal areas that fringe a mountainous terrain of steeply sloping lands. Figure 3-1 shows the current geographic distribution of urban and rural land cover in Guam. Figure 3-2 shows the approximate allocation of land between the federal government, Government of Guam, and private parties, based on the best available land use data. As shown in Table 3-1, about one quarter of the island is held by the military, another quarter by the Government of Guam, and almost one half may be privately held, much of which is designated for agriculture. Some of this "agricultural" land was recently included in the Forest System Plan as conservation lands with the plans for formal adoption (see Chapter Five).[1] As discussed in Chapter Two, most of Guam's population lives in the north and central parts of the island. This is clearly reflected in the distribution of development in Figure 3-1. This land use plan proposes updated land use designations for the island, including designations for a significant portion of the island heretofore undesignated or designated for agriculture (see below).

[1] Guam P.L. 37-143 _Bill No. 363-37.

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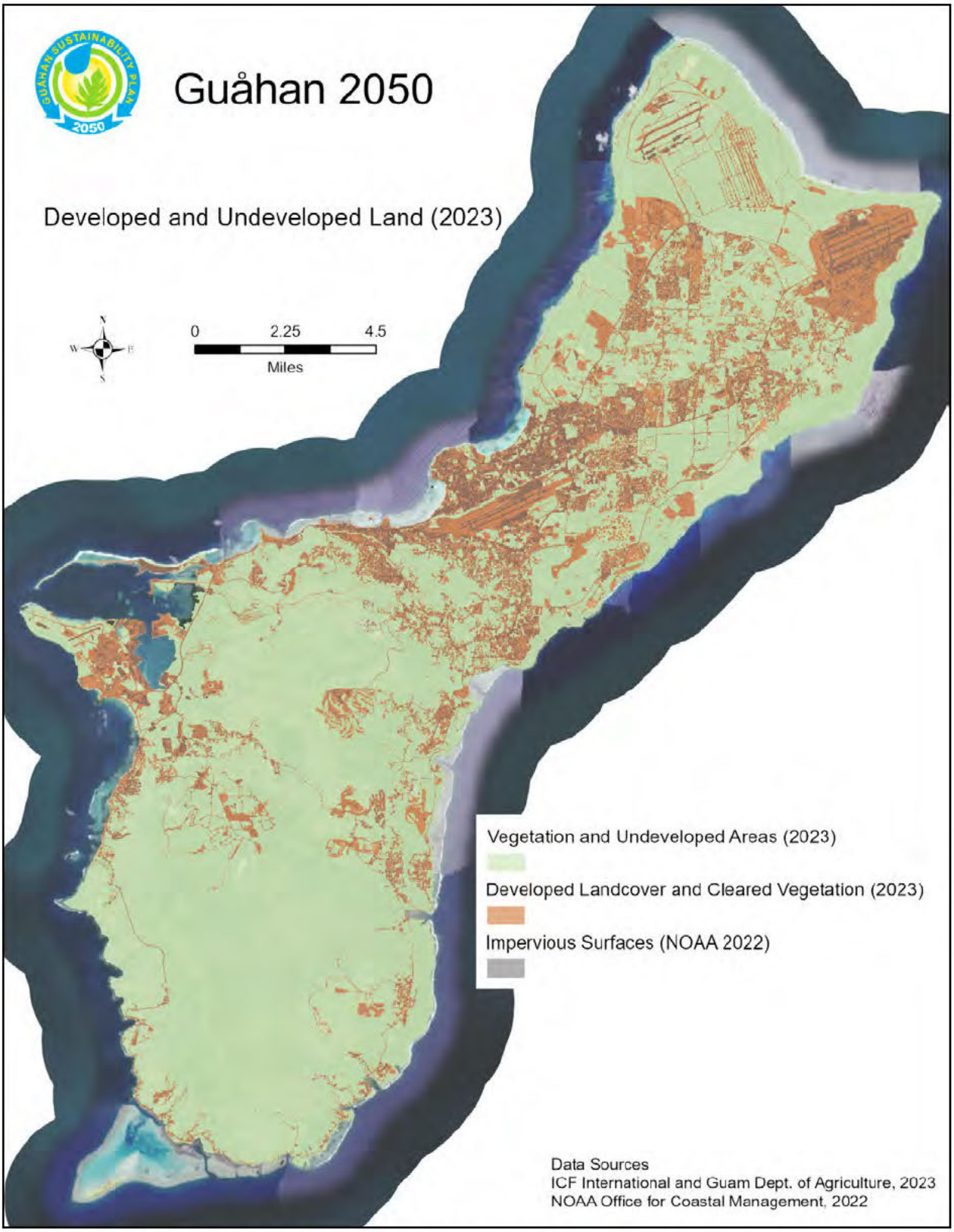

Figure 3-1. Current Developed and Vegetated Land Cover on Guam.

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3.2.3. Land Ownership

Table 3-1 summarizes the current ownership of Guam's land by private parties, the Government of Guam, and the federal government land (including U.S. military land). Most of the federal land (about 25.4% of the island) is held by the U.S. Department of Defense, including Andersen Air Force Base in Yigo and Naval Base Guam in Santa Rita. The Department of Interior holds the Guam National Wildlife Refuge, Ritidian Unit. Land ownership, and the transfer of land between the federal government and the Government of Guam, is an ongoing and dynamic situation. Based on recent public lands data from Guam Bureau of Statistics and Plans (January 2025), the Government of Guam holds approximately 25.8% of the island, including 2,643 acres held by the Guam Ancestral Lands Commission, and 11,668 acres held by the CHamoru Land Trust Commission. Multiple other agencies hold land making up the total 35,004 acres of land held by the Government of Guam. About 66,241 acres or 48.8% of the island is held by private parties, which includes residential, commercial, and agricultural properties. This distribution reflects Guam's historical and strategic significance, particularly its role as a pivotal U.S. military outpost in the Pacific. The considerable federal and government land holdings have implications for local development, land use planning, and the availability of land for private and commercial purposes. Figure 3-2 shows the land ownership in Guam as of 2025.

The land holdings of the U.S. military and the Government of Guam are somewhat fluid. Currently, 24.5% of the island is managed by the Federal Government, while 25.8% is held as public land by the Government of Guam, including lands of the CHamoru Land Trust Commission (CLTC) and the Guam Ancestral Lands Commission (GALC). These numbers have changed over the years (and will continue to change) as additional lands have been transferred between the two governments (e.g., PDN, 2025). Most of the federal military land is evenly split between the U.S. Navy and the Air Force. As discussed in this plan, the on-going expansion of federal military presence in Guam, including base expansion, the proposed missile defense system, and construction activity related to the expansion, raise significant land use issues for Guam.

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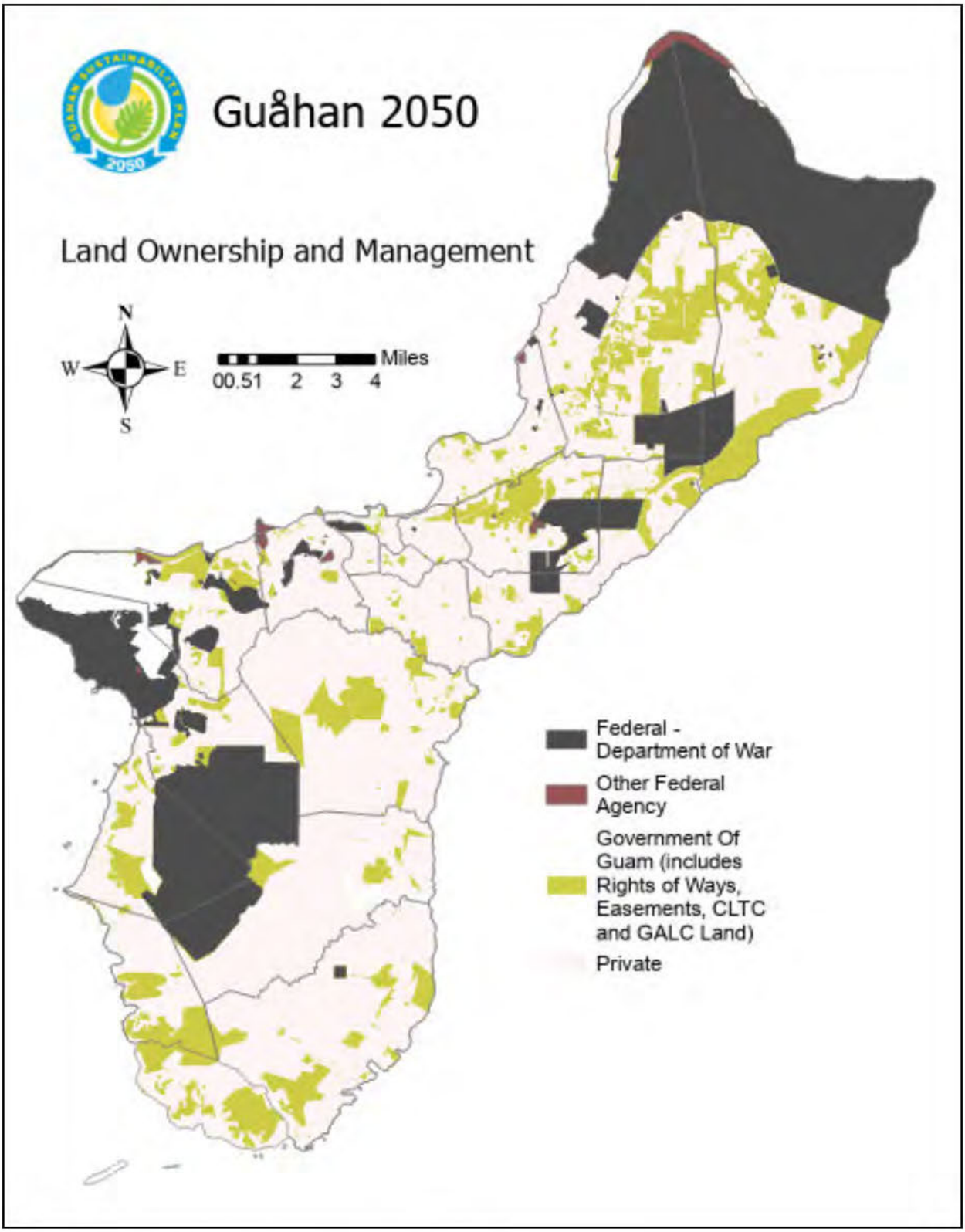

Figure 3-2. Map of Land Ownership and Management.

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The land holdings of the U.S. military and the Government of Guam are somewhat fluid. Currently, 25.4% of the island is managed by the Federal Government, while 25.8% is held as public land by the Government of Guam, including lands of the CHamoru Land Trust Commission (CLTC) and the Guam Ancestral Lands Commission (GALC). These numbers have changed over the years (and will continue to change) as additional lands have been transferred between the two governments (e.g., PDN, 2025). Most of the federal military land is evenly split between the U.S. Navy and the Air Force. As discussed in this plan, the on-going expansion of federal military presence on Guam, including base expansion, the proposed missile defense system, and construction activity related to the expansion, raise significant land use issues for Guam.

Table 3-1. Land Ownership on Guahan.

Ownership	Acres (acres)	Percent of Island
Federal	**34,435**	**24.5%**
Total Government of Guam	**35,004**	**25.8%**
CLTC	11,668	8.6%
GALC	2,643	1.9%
Private	**66,241**	**48.8%**
Totals	**135,680**	**100%**

3.2.4. Overview of Land Use Planning on Guam

Comprehensive land use planning is essential for balancing development needs with environmental conservation and sustainability goals. By carefully identifying the proper locations, types, and intensities of land uses, this plan seeks to ensure that growth occurs in a way that meets community needs while minimizing negative impacts on natural resources. For example, designations for Single-Family Dwellings (R-1) and Multi-Family Dwellings (R-2) are strategically placed near infrastructure and essential services to support residential communities. Planned Unit Development (PUD) and Mixed-Use Residential/Commercial (MU) zones encourage walkability and efficient land use by integrating housing, businesses, and public spaces. At the same time, commercial areas (C – Commercial) and village center (VC) designations are concentrated in accessible, high-



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traffic locations and village centers to support economic activity without disrupting residential neighborhoods.

The land use plan will also play a crucial role in protecting environmentally sensitive and resource-rich areas. Prime Agriculture (AG-P) and Non-Prime Agriculture (AG) designations ensure that potentially valuable farmland remains available for food production, while Parks and Recreation (PR) and Resource Conservation (RC) designations help preserve natural ecosystems, recreational spaces, and watersheds. Rural Lands (RL) provide a transition area between urban and protected areas. Industrial zones (M-1 – Light Industrial and M-2 – Heavy Industrial) are placed strategically to minimize environmental hazards while supporting economic growth. Similarly, the Hotel Resort Zone (H) is positioned to promote tourism without overburdening infrastructure or harming coastal ecosystems. Federal and military lands (F) are largely established, though careful coordination with adjacent areas is still needed to align them with civilian land use while ensuring national security needs are met. By thoughtfully designating and regulating these land uses, Guam can promote sustainable development, protect its natural and cultural heritage, and enhance the quality of life for current and future generations.

Land Use Constraints. Various delineated constraints in the Guåhan 2050 Sustainability Plan serve as an additional layer of land use planning, ensuring that specific areas receive targeted management strategies based on their unique characteristics and needs. These constraints work alongside existing land use designations to guide development while considering environmental, economic, and social factors. For example, policies direct the concentration of development into identified urban areas and encourage mixed-use and pedestrian-friendly developments within Guam's villages to enhance community livability. Urban areas are also considered *redevelopment areas* that focus on revitalizing aging or underutilized urban spaces to stimulate economic growth and improve infrastructure. Similarly, overlays such as *Flood* (FEMA 100-year floodplain) and *Shoreline Hazards/SLR* (Sea Level Rise) aim to mitigate risks associated with climate change and natural disasters by implementing stricter development regulations in vulnerable areas.

Other constraint maps prioritize ecological and cultural preservation, economic activities, and infrastructure needs. *Critical Habitat Areas* and *Scenic Areas/Viewsheds* protect Guam's biodiversity and maintain the island's natural beauty by restricting development in sensitive areas. Meanwhile, policies to provide for *Priority Coastal Dependent Uses* ensure that essential industries like fisheries and maritime activities have the necessary access to coastal resources. Special *Community Character* policies safeguard culturally significant areas by preserving historical and architectural integrity. Economic and infrastructure policies, such as *Priority Industrial/Government Uses*, support renewable energy, waste management, and military operations, while *Airport Compatibility* ensures that land uses near the airport align with safety and operational requirements. These designated constraints and priorities collectively contribute to a more resilient, sustainable, and well-planned future for Guam.

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3.2.5. Balancing Urban and Rural Land Use for Sustainability

The G50SP directs that new development be concentrated in existing urban areas with adequate public services, a principle that aligns with the concept of a stable *Urban-Rural Boundary* to manage growth. This approach delineates specific areas where urban development is encouraged, ensuring that places with established infrastructure—such as water, sewer systems, roads, power, and communications—are used efficiently. By directing growth to these designated urban zones, Guam aims to balance economic development with environmental preservation, thus preventing the adverse effects of urban sprawl on rural and ecologically sensitive areas. This approach reflects and builds on past planning efforts in Guam, including the 1978 Guam Comprehensive Development Plan (*Kabales Na Planu Para Guahan*) and the 1994 Land Use Plan for Guam (*I 'TANO'-TA*), as well as the more recent North and Central Land Use Plan for Guam (2009).[2]

Implementing balanced development zones is central to this strategy. By designating specific areas for commercial, residential, agricultural, and industrial purposes, as well as mixed use zones to promote compact, walkable communities, Guam seeks to harmonize economic growth with the conservation of natural resources. This ensures that each land use is situated in the most appropriate location, minimizing conflicts between land uses and protecting the environment. For instance, concentrating industrial activities in areas with adequate infrastructure reduces the potential for environmental degradation in rural zones.



The policy of *Concentration of Development* directs new projects to urban areas capable of supporting increased density. This not only maximizes the use of existing public services but also reduces the need for costly infrastructure expansions into undeveloped regions. Such a focus on urban centers helps preserve Guam's rural landscapes and agricultural lands, thus maintaining the island's ecological balance and cultural heritage. This policy also seeks to

[2] Concerned with the "random pattern" of expansion of residential, commercial, and industrial uses the 1978 plan included direction to "[c]oncentrate uses requiring high levels of support facilities within designated urban districts." Likewise, the 1994 I Tano'-Ta proposed new development "in areas where existing infrastructure or planned improvements are available or planned to be available." The North and Central Guam Land Use Plan includes Policy LU-10: "Provide for incremental growth in already developed areas to take advantage of existing investments in transportation and utility systems and to reduce impacts on the Northern Aquifer. In providing for infill growth, assure the adequacy of water, roads and other public services."

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address the on-going challenge of residential sprawl and fragmentation of rural lands in Northern Guam brought about from development that was unsupported with urban services. More detailed discussion and policy to address the lack of urban services for new development is presented below.

Promoting *Compact, Walkable Communities* is another key aspect of the G50SP. Encouraging mixed-use development within urban centers fosters vibrant neighborhoods where residential, commercial, and recreational facilities coexist. This development pattern reduces land consumption, supports public transit, and enhances walkability, contributing to a reduction in traffic congestion and greenhouse gas emissions. By prioritizing pedestrian-friendly infrastructure, Guam aims to improve public health and create more livable communities.

Similarly, the emphasis on *Village Centers* through designation of urban areas in the plan focuses on creating diverse, compact hubs that integrate residential, commercial, and community facilities. These centers may serve as focal points for community life, providing accessible services and amenities while preserving the surrounding rural areas. By concentrating on development in these centers, Guam will support efficient land use and strengthen community identity.

Finally, to further protect rural and environmentally sensitive areas, the G50SP includes a policy to consider developing a *Transfer of Development Rights (TDR)* Program. This initiative would allow for the transfer of potential development from rural agricultural zones, particularly in the Northern Guam Lens Aquifer groundwater protection area, to designated urban areas more appropriate for urban intensification. Implementing such a program would safeguard critical water resources and agricultural lands by redirecting development pressures to urban centers that are better equipped with the necessary infrastructure. It may also be effective at promoting traditional CHamoru stewardship on ancestral lands (see below).

3.2.6. G50SP General Land Use Map and Policies

The core land use strategy and policies seek to manage growth sustainably, ensuring that development is concentrated in areas with adequate public services while protecting the island's environmental integrity and cultural heritage. The key to effective implementation will be to observe and follow the essential patterns of land use established in the G50SP.

Figure 3-3 shows the new land use map for Guam to implement the vision and policies of the G50SP. This new land use map includes changes in land use designations and other planning mechanisms working in conjunction with various policies to support the new sustainability objectives of the plan. These changes include:

- Establishment of urban-rural boundaries separating the major existing urban or central development areas of the island from more rural, agricultural areas;

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- Land use changes in the NGLA protection zone supporting lower density development, including agriculture, parks and open space., and a new *Rural Lands* designation for transitional areas between less developed and residential areas;
- Economic opportunity, mixed-use commercial, and redevelopment focused in urban areas;
- A new *Resource Conservation* designation for sensitive natural lands and watersheds, especially unique, sensitive habitat areas such as the limestone forest;
- Policies to designate areas for priority industrial and coastal-dependent land uses;
- Multi-family areas allowing increased residential densities, including the support of affordable housing;
- Distinguishing viable/prime Agricultural lands (P) from non-prime Agricultural and Rural Lands; and
- Use of various land use constraint designations to indicate hazard areas (e.g. erosion and flooding, landslide, seismic) and other sensitive development zones (riparian corridors, wetlands, steep slopes, sensitive viewsheds).

All but the last of these proposed land use designations and indications are shown in Figure 3-3. The land use constraint maps are presented later in the plan in relevant sections (e.g. natural hazards). The following sections of the plan elaborate on the proposed land use designations and policies to promote their role in realizing a more sustainable Guam. Table 3-2 summarizes the proposed permitted and conditional uses in each land use designation and corresponding zone.

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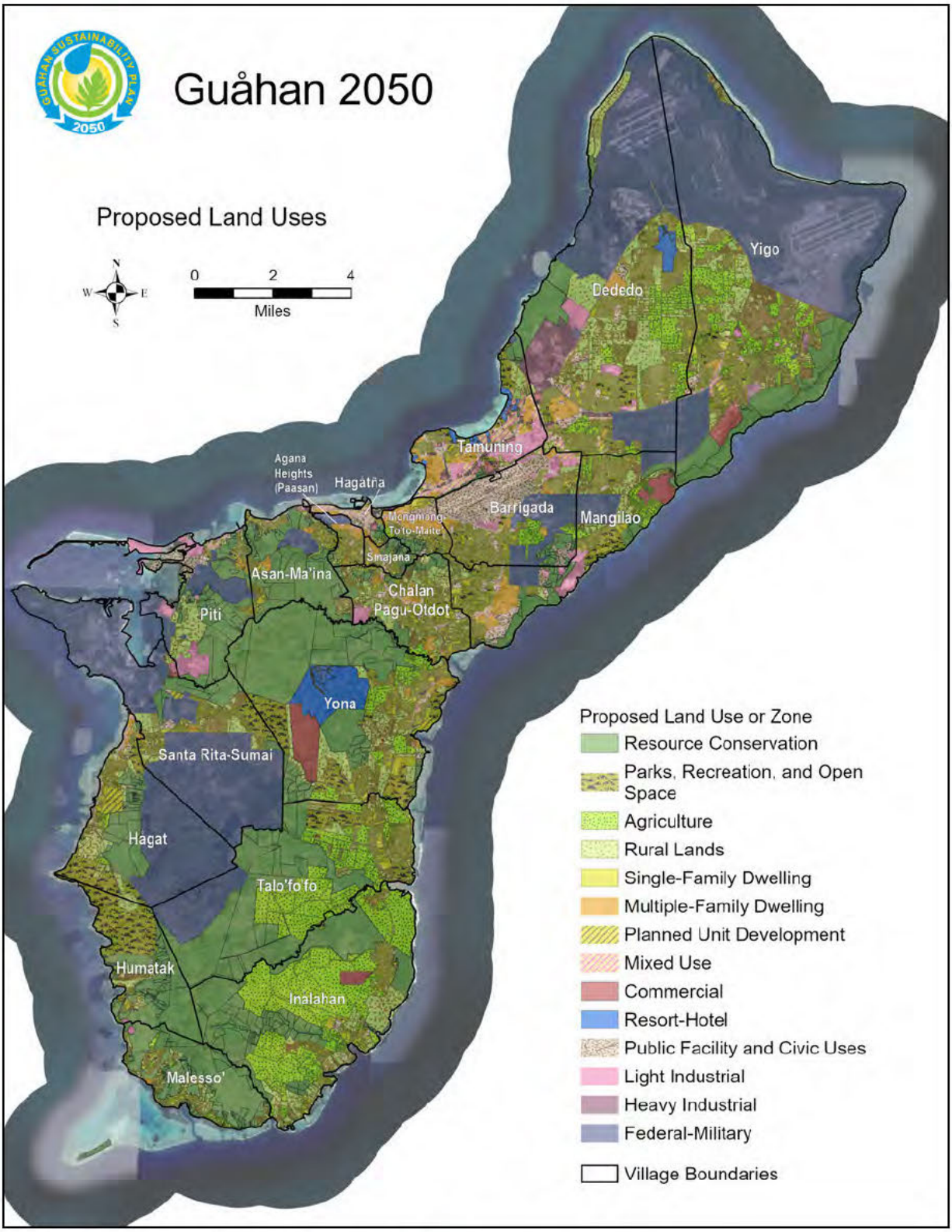

Figure 3-3. G50SP Land Use Designations for Guam.

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Table 3-2: SC-1 Island Land Use Designations with Changes Shown (see Proposed LU Designation Map)

Land Use	Permitted Uses	Conditional Uses
R-1 Single-Family Dwelling Minimum lot size: 5,000 sq. ft	1. Single-family dwellings, with minimum lot size of 5,000 sq. ft. 2. Gardening and the keeping of domesticated animals for noncommercial purposes. 3. Bed and breakfasts 4. Use customary accessory to any of the above uses, including accessory dwelling units, home occupations and private parking areas with accessory buildings and structures.	1. Duplexes. 2. Schools and churches. 3. Parks, playgrounds, and community centers. 4. Health service office, outpatient with laboratory. 5. Utilities and public facilities. 6. Short-term vacation rental units.
R-2 Multiple Dwelling. Residential zoning for multiple family housing at density up to 30 units per acre	1. Single-family dwellings. 2. Duplexes. 3. Multi-family dwellings (maximum of 30 units/acre) 4. Hotels, private groups, and institutions. 5. Bed and Breakfasts. 6. Accessory uses and structures for the above. 7. Accessory Dwelling Units	1. Any conditional use permitted in the "R-1" zone. 2. Health clinics. 3. Utilities and public facilities. 4. Air, bus, taxi, auto, rental terminals. 5. Accessory uses and structures for the above. 6. Temporary workforce housing
MU Mixed Use C/R-2	1. R-2 permitted uses: Single-family dwellings, Duplexes, Multi-family dwellings, Hotels, private groups and institutions, Bed and Breakfasts, Accessory uses and structures for the above, Accessory Dwelling Units. 2. C permitted uses as may be compatible with residential uses: Wholesale and retail stores, shops and businesses, Amusement enterprises, Limited automobile service stations, including minor repairs, Offices, business or professional, inclusive of professional healing arts offices and clinics and banks, Personal service shops, Repair shops,	Conditional Uses 1. Hospitals and clinics. 2. Public utility and other public buildings. 3. Shopping centers. 4. Recreation, including marinas, amusement centers, and drive-in theaters. 5. Hotels, motels, beds and breakfasts, and tourist accommodations. 6. Air, bus, taxi and auto rental terminals. 7. Auto sales and car washing. 8. Parking garages and lots. 9. Service vehicle storage.

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Land Use	Permitted Uses	Conditional Uses
	Restaurants and cafes, Studios, Other similar uses, uses customarily accessory to the above, and Accessory structures for the above.	10. Mini storage or mini warehouse. 11. Laundry, cleaning, and dyeing establishments. 12. Schools and churches. 13. Parks, playgrounds, and community centers. 14. Utilities and public facilities. 15. Accessory uses and structures for the above. 16. Temporary workforce housing
PUD Planned Unit Development	1. Single and multi-family residential uses (R-1, R-2) 2. Temporary workforce housing 3. Mixed commercial-residential uses 4. Public facilities and Civic uses (community centers, recreational facilities, etc…)	• Small-scale commercial uses compatible with planned residential development • Small scale Agricultural uses • M-1 uses • RC uses
VC Village Center	Compatible mix of residential, commercial, public facility, medical and other service uses, and open space uses at a scale and pattern that is consistent with traditional CHamoru villages and neighborhoods • R-1, R-2 • PF, PR • MU, C	No conditional uses in this zone - targeted as an overlay
C Commercial	1. One-family dwellings. 2. Duplexes. 3. Wholesale and retail stores, shops, and businesses. 4. Amusement of enterprises. 5. Automobile service station, including minor repairs. 6. Bakery. 7. Mortuary.	1. Hospital. 2. Public utility and other public buildings. 3. Shopping center. 4. Recreation, including amusement centers, drive-in theaters. 5. Multi-family residences. 6. Hotels, motels, tourist accommodations.

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Land Use	Permitted Uses	Conditional Uses
	8. Offices, business or professionals, including professional healing arts offices and clinics, and banks. 9. Personal service shops, including barber shops, beauty parlors, laundromats, and the like. 10. Repair shops and service shops, including shoe repairs, plumbing, dressmaking, and the like, but not including automobile repair shops for major work. 11. Restaurants and cafes. 12. Studios. 13. Other uses which in the judgment of the Commission, as evidenced by resolution in writing, are like those listed herein. 14. Uses customarily accessory to any of the above listed uses, including only those accessories to manufacturing, storage, compounding or processing activities which are necessary for the ordinary conduct of said listed uses and which are an integral part thereof. 15. Accessory structures for the above.	7. Air, bus, taxi, auto rental terminals. 8. Auto sales and car wash. 9. Parking garage and lots. 10. Service vehicle storage. 11. Mini-storage or mini-warehouse. 12. Laundry, cleaning, and dyeing establishments. 13. Schools and churches. 14. Parks, playgrounds, and community centers. 15. Utilities and public facilities. 16. Accessory uses and structures for the above.
H Resort- Hotel Zone	1. Cultural and recreational facilities, hotels, restaurants, tourism related shops, and offices, dwellings, parks, marinas, zoos, amusement activities and supportive services. 2. Permitted Accessory uses and structures. Uses and structures which are customarily accessory and clearly complementary to permitted principle uses and structures shall be permitted. Service stations shall be permitted only within, and as accessory to parking garages containing two	"H" - Resort Hotel Zone There are no conditional uses in this zone

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Land Use	Permitted Uses	Conditional Uses
	hundred fifty (250) or more parking spaces.	
P Automobile Parking Zone	1. Public or commercial parking areas and garages. 2. Public access to adjoining parking areas. 3. Loading and unloading of automobiles or trucks, but not to use portions of required parking spaces. 4. Service vehicle storage after commercial hours. 5. Utilities and public facilities. 6. Accessory uses and structures for the above	
PF Public Facility and Civic Uses	1. Schools, police stations, fire stations, community centers, historic and cultural sites, recreation centers and sports fields, senior citizen centers, public health centers, libraries, government buildings and other related facilities. 2. Non-industrial/commercial boat access and public marinas.	
M-1 Light Industrial	1. Any use permitted with or without condition in the commercial zone. 2. The manufacturing, compounding, processing or treating of such products as drugs, cosmetics, and food products (not including fish and meat products nor the rendering of fats and oils). 3. The manufacturing, compound, assembling, or treating of articles or merchandise from previously prepared materials. 4. Automobile repair shops including painting, body and fender work, and rebuilding; truck and tractor repairing; and tire retreading. 5. Bottling and packaging plants.	1. Other industrial uses not objectionable, obnoxious or offensive because of odor, dust, smoke, noise, gas fumes, cinders, vibration, flashing lights, or water-carried waste. 2. Utilities and public facilities. 3. Accessory uses and building for the above.

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Land Use	Permitted Uses	Conditional Uses
	6. Ceramic products are manufactured. 7. Laundry, cleaning, and dyeing establishments. 8. Machine shops and sheet metal shops. 9. Warehouses and cold storage plants. 10. Lumber yards, building material sales yards, contractor equipment storage yards, and the like. 11. Other uses which, in the judgment of the Commission as evidenced by resolution in writing, are like those listed herein. 12. Use customary accessories to any of the above listed and accessory buildings. 13. Temporary Workforce Housing, subject to the following: (A) Must conform to 10 GCA § 26A101(b). (B) Must be served by an adequate sanitary sewer system. (C) Must meet minimum fire flow standards (e.g., 6-inch water line). (D) Must comply with all health and safety regulations, including OSHA. (E) Must include a perimeter fence (minimum 6 feet, chain link quality) and landscaping plan. (F) Must include a development plan detailing sleeping quarters, sanitation, food services, security, medical care, transportation, and recreation.	
M-2 Heavy Industrial	1. Any uses permitted in the "M-1" zone, except for residential use. 2. Junk yards, under the special provisions set forth in Chapter X of Title XVIII, Government Code of Guam. 3. Any other uses not specifically prohibited by law, including those	1. All residential uses. 2. Accessory uses and structures for the above.

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Land Use	Permitted Uses	Conditional Uses
	which are or may be objectionable, obnoxious, or offensive by reason of odor, dust, smoke, noise, gas fumes, cinders, vibrations, or water-carried waste. 4. Uses customarily accessory to any of the uses herein permitted, and accessory buildings and structures.	
RL Rural Lands One-acre minimum lot size. For legal, non-conforming lots: 10,000 square feet with public sewer connection 19,200 square feet without public sewer connection only 9,600 square feet if located over the Northern Guam Lens Aquifer with public sewer connection	1. One-family dwellings and duplexes. 2. Farming and fisheries, including all types of activities and pursuits customarily carried on in the field of agriculture and fisheries including the raising of crops and fruits, poultry and livestock, grazing and dairying, and tree and other vegetative production, whether for commercial or personal uses. 3. Use customary accessory to any of the above uses, including home occupations and private automobile parking areas as well as accessory buildings and structures such as private garages, warehouses, barns, corrals, or other similar structures.	1. Parks, playgrounds, and community centers. 2. Biological gardens. 3. Schools and churches. 4. Hospitals, sanitariums, and institutional uses. 5. Cemeteries. 6. Recreational uses, including, marinas, beaches, swimming pools, and accessory residential and commercial uses. 7. Utilities and public facilities. 8. Wholesale and retail stores, shops, and businesses. 9. Automobile service stations, including service shops. 10. Bed and breakfasts and short-term vacation rental units 11. Accessory uses and structures for the above.
A Agriculture AG-1 (Prime). Agricultural lands with soils that meet the requirements for prime farmland when irrigated (Units 27, 39, 48, 50). AG-2 (non-Prime). Lands suitable for agriculture	1. Uses include subsistence and commercial farming and accessory uses normally associated with farming 2. One-family dwellings and duplexes. 3. Farming and fisheries, including all types of activities and pursuits customarily carried on in the field of agriculture and fisheries including the raising of crops and fruits, poultry and livestock,	-All rural land uses

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Land Use	Permitted Uses	Conditional Uses
Minimum Lot Sizes: 10 acres, or 5 acres with agricultural restriction For legal, non-conforming lots: 10,000 square feet with public sewer connection 19,200 square feet without public sewer connection only 9,600 square feet if located over the Northern Guam Lens Aquifer with public sewer connection	grazing and dairying, and tree and other vegetative production, whether for commercial or personal uses. 4. Both subsistence and commercial farming 5. Accessory uses associated with small-scale commercial agricultural production.	
PR Parks and Recreation; Open Space and Green Space Public and private lands for recreational use and open space.	1. Parks and Open Space Uses 2. Active and Passive Recreation 3. Resource Conservation 4. Community facilities 5. Green Infrastructure 6. Uses customarily associated with the above.	
RC Resource Conservation Sensitive natural lands and waters to be conserved in perpetuity.	1. Resource Conservation 2. Watershed Management 3. Restoration 4. Passive Recreation	
F Military/Federal	• Uses critical to the operations of the U.S. Department of Defense • RC uses under direct management and stewardship of federal agencies (USFWS) • PR uses under direct management and stewardship of federal agencies (National Park Service)	No conditional uses in this category

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3.2.7. Community Land Use Policies and Sustainability



The G50SP emphasizes concentrating urban development in existing developed areas while protecting rural and sensitive lands directly aligned with the United Nations Sustainable Development Goal 11: Sustainable Cities and Communities. This approach promotes sustainable urbanization by directing growth into well-planned, infrastructure-supported urban areas, thereby reducing urban sprawl, minimizing environmental degradation, and enhancing resilience to climate change.

The policies below also support specific targets of SDG 11. Compact, mixed-use urban development fosters affordable and accessible housing (SDG 11.1) and improves public transportation and walkability (SDG 11.2), contributing to healthier, more inclusive communities. Protecting rural and ecologically sensitive lands supports SDG 11.4, which calls for safeguarding cultural and natural heritage, and SDG 11.6, which focuses on reducing the environmental impact of cities, including air quality and waste management. Overall, by prioritizing smart growth strategies, the comprehensive land use planning approach of G50SP will help create livable, efficient, and sustainable urban centers while preserving biodiversity and ensuring the responsible management of Guam's natural resources.

Sustainable Community Land Use Policies

SC-1. Balanced Development Zones.
Designate specific zones for commercial, residential, agricultural, and industrial development to balance economic growth with environmental preservation. Assure that new development is consistent with designated land uses, densities, and other requirements of the G50SP.

SC-2. Urban-Rural Boundary.
Maintain an urban-rural boundary to distinguish areas with adequate public services (water, sewer, roads, power, communications) that are appropriate for concentrating new urban development from more rural, agricultural, and sensitive resource areas not suitable for urban densities.

SC-3. Concentration of Development and Redevelopment.
New development shall be directed to designated urban areas with adequate public services (water, sewer, roads, power, communications) able to accommodate it. Designate urban areas as redevelopment zones. Prioritize redevelopment opportunities over intensive development outside urban areas.

SC-4. Compact Walkable Communities.
Promote high density residential and commercial development patterns that support walkable, vibrant communities. Encourage mixed-use development in urban centers to reduce land consumption and promote walkability.

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SC-5. Village Centers.
Prioritize a diverse mix of residential, commercial, and community facilities development in compact village centers, sensitive to the cultural landscapes, designs, and scales of each village, and consistent with policies VS-1 to VS-8.

SC-6. Transfer of Development to Urban Areas.
Evaluate and if feasible implement a program to facilitate the transfer of development potential from rural agricultural areas to urban areas and support potential creation of a cultural heritage parkway corridor within the Guam Northern Lens Aquifer groundwater protection zone.

3.3. Public Services

3.3.1. Public Services and Sustainable Development

Overview of Public Service Policies

Ensuring that new development in Guam is supported by adequate public services is crucial for achieving sustainability and enhancing the quality of life for its residents. The Guåhan 2050 Sustainability Plan emphasizes the importance of aligning urban development with the availability of essential infrastructure, such as water supply, wastewater systems, roads, power, and communications. By concentrating growth in areas already equipped with these services, Guam can prevent the overextension of resources, protect its natural environment, and foster resilient communities.

Urban Development and Public Services. The plan mandates that new developments in designated urban areas must be served by adequate and sustainable public services prior to occupancy. This includes ensuring a reliable and safe water supply, efficient wastewater connections, accessible roads, dependable power, and modern communication networks. By adhering to this policy, Guam aims to create urban spaces that are both livable and sustainable, reducing the environmental impact associated with sprawling and unplanned growth. Moreover, appropriately sizing new infrastructure to support planned development prevents unintended growth that could strain resources and disrupt ecological balances.

Protecting the Northern Guam Lens Aquifer. A significant aspect of Guam's sustainability efforts involves safeguarding the *Northern Guam Lens Aquifer*, the island's primary source of fresh drinking water. The plan prohibits the subdivision of parcels over the aquifer that are not served by public wastewater systems. This measure is designed to prevent contamination of the aquifer from inadequate septic systems, ensuring the long-term viability of Guam's freshwater resources. By enforcing stringent wastewater management practices in these sensitive areas, Guam demonstrates a commitment to preserving its natural resources for future generations.

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Sustainable Water and Wastewater Management. The sustainability plan also emphasizes that groundwater withdrawals should not exceed the aquifer's sustainable yield, aligning water usage with natural replenishment rates. New developments are required to have access to adequate public water supplies or, in rural areas, sustainable and safe water sources. Wastewater infrastructure must be designed to accommodate planned, sustainable growth without inducing unsanctioned expansion. These policies ensure that water and wastewater systems are capable of supporting current and future populations without compromising environmental integrity.

Transportation Infrastructure and Multi-Modal Connectivity. Adequate transportation infrastructure is vital for the functionality of urban areas. The plan stipulates that new developments must be accessible via public roadways that meet federal standards and support multi-modal transportation options, including automobiles, bicycles, and pedestrian pathways. By promoting diverse transportation modes, Guam aims to reduce traffic congestion, lower greenhouse gas emissions, and enhance public health. Additionally, integrating public transit systems and rideshare programs into new developments encourages residents to utilize alternative transportation, further contributing to sustainability goals.

Stormwater Management and Environmental Protection. Effective stormwater management is essential to prevent flooding and protect water quality. The sustainability plan requires that new developments incorporate adequate stormwater detention, treatment, and conveyance systems, adhering to best management practices outlined in the *CNMI and Guam Stormwater Management Manual.* Properly designed stormwater facilities mitigate the risks associated with peak storm events, safeguard natural habitats, recharge the aquifer, and maintain the health of aquatic ecosystems. Flood hazard policies also direct the consideration of programs to remove or relocate existing development in flood hazard areas that may exacerbate existing flooding problems (see SC-83 and SC-90).

Renewable Energy and Sustainable Power Supply. Transitioning to sustainable energy sources is a cornerstone of Guam's long-term sustainability strategy. The plan advocates for the prioritization of non-fossil fuel energy developments, aiming to achieve 100% affordable, resilient, and equitable renewable energy for Guam by 2045, in line with existing law.[3] This includes supporting rooftop solar installations on residential, commercial, and industrial buildings to minimize impacts on undeveloped areas and enhance energy grid resilience. By investing in renewable energy infrastructure, Guam reduces its dependence on imported fuels, decreases greenhouse gas emissions, and promotes energy security.

Modernizing Communication Infrastructure. In the digital age, robust communication networks are indispensable. The sustainability plan requires that new developments are equipped with state-of-the-art telecommunications, including equitable access to advanced transmission technologies. Where feasible, communication infrastructure should be installed underground or

[3] For example, Guam Code Annotated §8311.

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utilize wireless technologies to preserve Guam's scenic character and reduce vulnerability to environmental hazards. Co-locating and consolidating telecommunication facilities further minimize visual impacts and optimize land use.

In summary, the Guåhan 2050 Sustainability Plan outlines comprehensive policies that integrate urban development with the provision of adequate public services, environmental stewardship, and community well-being. By ensuring that new developments are supported by sustainable infrastructure and services, Guam is proactively addressing the challenges of growth while preserving its unique natural and cultural resources for future generations.

3.3.2. Urban Services and Growth Management

Ensuring that new development in Guam is supported by adequate public services is essential for sustainable growth and environmental protection. The Guåhan 2050 Sustainability Plan emphasizes that new developments in designated urban areas must be supported with essential public services—including water supply, wastewater connections, access roads, power, and communications—*prior to occupancy*. This proactive approach ensures that infrastructure keeps pace with development, preventing resource strain, and maintaining quality of life for residents. Moreover, by sizing new public service infrastructure to support planned development, the plan aims to prevent unplanned or induced growth that could conflict with sustainability objectives.

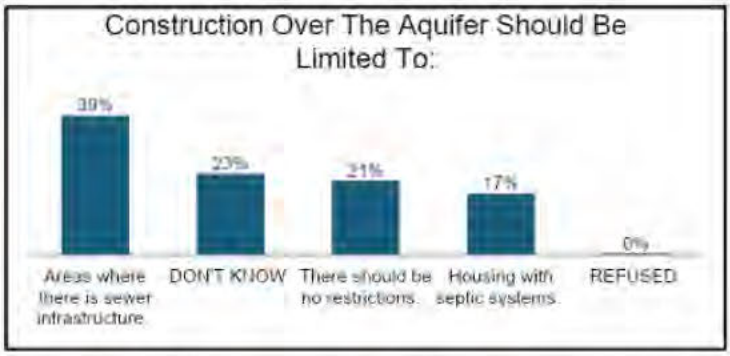

Figure 3-4. Public Agreement with Construction Restriction Types Over the Aquifer.

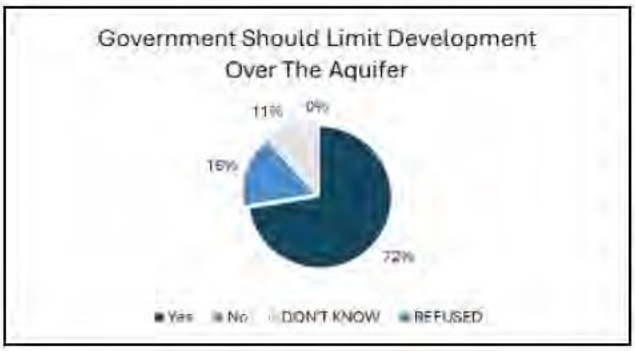

Figure 3-5. Public Agreement with Development Over the Aquifer.

An important element of the plan is the protection of Guam's freshwater resources, particularly the Northern Guam Lens Aquifer (NGLA), which serves as the island's principal source of fresh drinking water, supplying approximately 80% of the island's potable water. To ensure sustainable development while safeguarding the NGLA, the plan mandates that new subdivisions and habitable development over the aquifer be connected to public sewer systems or comply with EPA septic discharge requirements, as stipulated in Public Law 37-105 and implemented by Guam EPA. These policies work to prevent contamination of the aquifer through inadequate wastewater management systems, reinforcing the importance of infrastructure planning to

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protect Guam's water supply. The plan also includes a policy to potentially incentivize the transfer of development potential away from more rural and agricultural areas over the aquifer to existing urban areas better able to accommodate it, including with public services (Figure 3-4). This vision is to gradually connect rural and agricultural lands to create a continuous parkway cutting across northern Guam that could protect agriculture, conserve open lands, and promote cultural heritage and habitat restoration. This idea is consistent with prior iterations of land use planning beginning with the Territorial Plan of 1965, continued in mostly conservation zoning in 1978, followed by parks and recreation zoning in the 2009 North and Central Land Use Plan.

Public sentiment strongly supports limiting development over the aquifer. According to the G50SP Community Engagement Survey, nearly 72% of respondents agreed that development over the aquifer should be restricted (Figure 3-5). Notably, nearly 4 in 10 supported limiting new construction to areas with sewer connections. Another 17% supported the current regulation allowing construction with septic systems over the aquifer. A segment of the population expressed reservations, with 21% opposing restrictions while 23% remaining unsure. The survey underscores the need for continued public engagement and careful policy implementation to ensure protection of water resources and while maintaining public support for the protection of the NGLA.

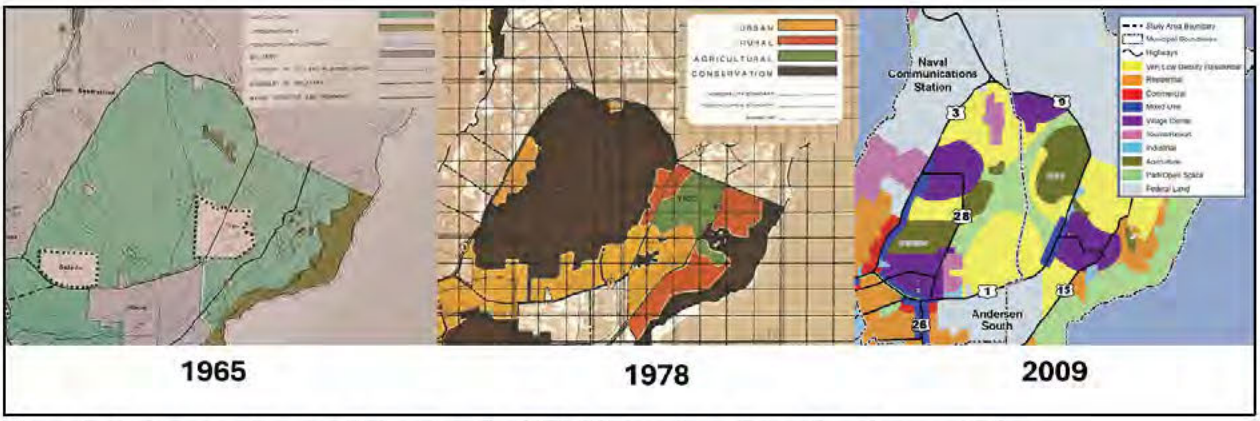

Figure 3-6. Conservation Land Use Over the NGLA in Previous Guam Development Plans.

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Figure 3-7. Parks and Open Space Corridor.

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3.3.3. Water Supply

3.3.3.1. Supply and Capacity

The Guam Waterworks Authority (GWA) supplies water to the majority of Guam's residents.[4] About 80% of Guam's freshwater supply comes from the Northern Guam Lens Aquifer (NGLA). GWA's utilized wells are above the NGLA. Other sources of water operated by GWA include the Ugum Surface Water Treatment Plant and Santa Rita Springs. Fena Lake, which is operated by NAVFAC Marianas (NAVFACMAR) is a water source for military bases and GWA customers in the central water system.

Water is delivered throughout the island to its customers through GWA's piping system of approximately 600 miles of pipeline ranging from 2 to 24 inches in diameter. As of 2023, GWA delivered water to about 50,100 customers producing about 85% of the total freshwater supply on Guam.[5] The remaining 15% is supplied by the Navy Water System, which through a 1982 Memorandum of Agreement (MOA), allows GWA to purchase up to 4.39 million gallons a day (mgd) from the Navy Water System.

GWA's wells and surface waters currently are estimated to produce about 39.79 mgd (Brown and Caldwell, 2024). NAVFACMAR's Fena Lake has a capacity to produce a max of 13.5 mgd.

Guam's average daily demand (ADD) for water calculated for the year 2023 was 42.85 mgd and the maximum daily demand (MDD) was 47.10 mgd (Brown and Caldwell, 2024).



According to the U.S. Census, in 2020 Guam's population was 153,836. The population is expected to grow to 168,908 by 2035 before decreasing to 159,508 by 2050 (Brown and Caldwell, 2024). This projection is a result of a declining population number between 2010 and 2020, projected decline in the fertility rate, decreasing construction workforce needs as military-related projects are completed, tourism employment, climate-related migration, and military population with support workers. The 2024 WRMP projected average day demand for water to be 40.50 mgd in 2035, and maximum day demand to be 47.75 mgd in the same year (Brown and Caldwell, 2024). The sustainable yield of the NGLA is 80 mgd (Mink, 1991). The projected demand in 2035 is well within the estimated sustainable yield of the

[4] Guam Waterworks Authority is a public authority governed by the Consolidated Commission on Utilities (CCU). The Authority also is subject to regulation by the Guam Public Utilities Commission (PUC). GWA provides water to all of the civilian population of Guam. They also provide sewer service to a large percentage of the civilian population, Andersen Air Force Base and several United States Navy facilities.
[5] During FY2023, GWA served more than 43,650 water customers and 30,750 wastewater customers. (GWA Citizen Centric Report, FY2023.

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NGLA, and the aquifer has enough water to provide for the population in 2035. However, the demand exceeds GWA's current available capacity from its wells and surface waters. Currently, GWA makes up the deficiency by purchasing water from the Navy. Short of GWA pursuing operation and/or ownership of the Fena Reservoir as stated in the 2018 WRMP, for GWA to reduce its reliance on purchasing water from the Navy, it would need to rehabilitate existing production wells and address its water losses due to leaks, as well as aging storage systems and water tanks. The 2018 Water Master Plan summarized the major concern of "non-revenue water":

> *The overall condition of equipment in the water system varies depending primarily on its age. The condition of some production wells and booster pump stations is poor, with significant corrosion evident in some areas. In addition, non-revenue water (NRW) represents one of the most significant issues facing GWA. NRW is defined by the American Waterworks Association (AWWA) as "unbilled authorized consumption (water for firefighting, flushing, etc.) plus apparent losses (customer meter inaccuracies, unauthorized consumption and systematic data handling errors) plus real losses (system leakage and storage tank overflows)" (American Water Works Association (AWWA), 2012). Aging water storage tanks and dividing the water system into appropriate pressure zones are also an issue. GWA is in the process of repairing or replacing storage tanks with the program anticipated to be complete in 2021. A program to properly separate the GWA water system into pressure zones is also in progress*. (Brown and Caldwell, 2018).

In interviews conducted with local mayors, infrastructure challenges, particularly concerning water, were frequently mentioned. One pointed out that "low water pressure in some areas of the village" remains an issue and emphasized the need for infrastructure improvements to meet basic needs such as water for residents who lack these utilities such as those along Route 15. Constituents in the southern villages of Guam identified inadequate infrastructure development as a significant hurdle, with water issues being most frequently mentioned. Notably, residents in certain subdivisions were said to be restricted by the cost of upgrading water infrastructure, such as the $5,000 Systems Development Charge fee to connect to a 6-inch water pipe, for example. "Disparities in water pressure and frequent leaks" was another comment made by the mayors. The aging infrastructure in areas such as Nimitz Hill, where utilities are owned by DOD, was cited as an example and highlights the need for GWA and DOD to collaboratively repair the island's existing utilities.

As shown in Figures 3-8 and 3-9, survey responses from residents who attended the G50SP Workshops also emphasized the importance of addressing infrastructure issues. During workshop engagement activities, residents conveyed the need for greater protection of water resources and improved access to water services. The comment highlighted the community's concern over sustainable growth due to the inadequacy of water supply and capacity.

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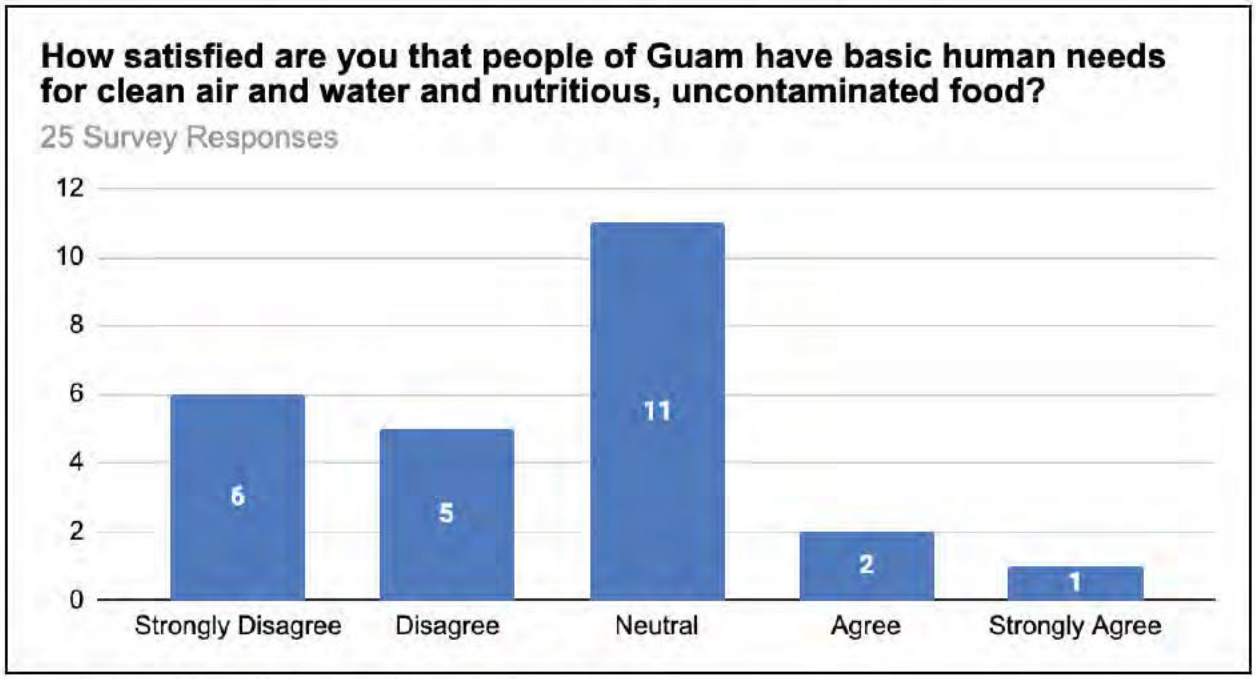

Figure 3-8. Public Satisfaction with Basic Human Needs.

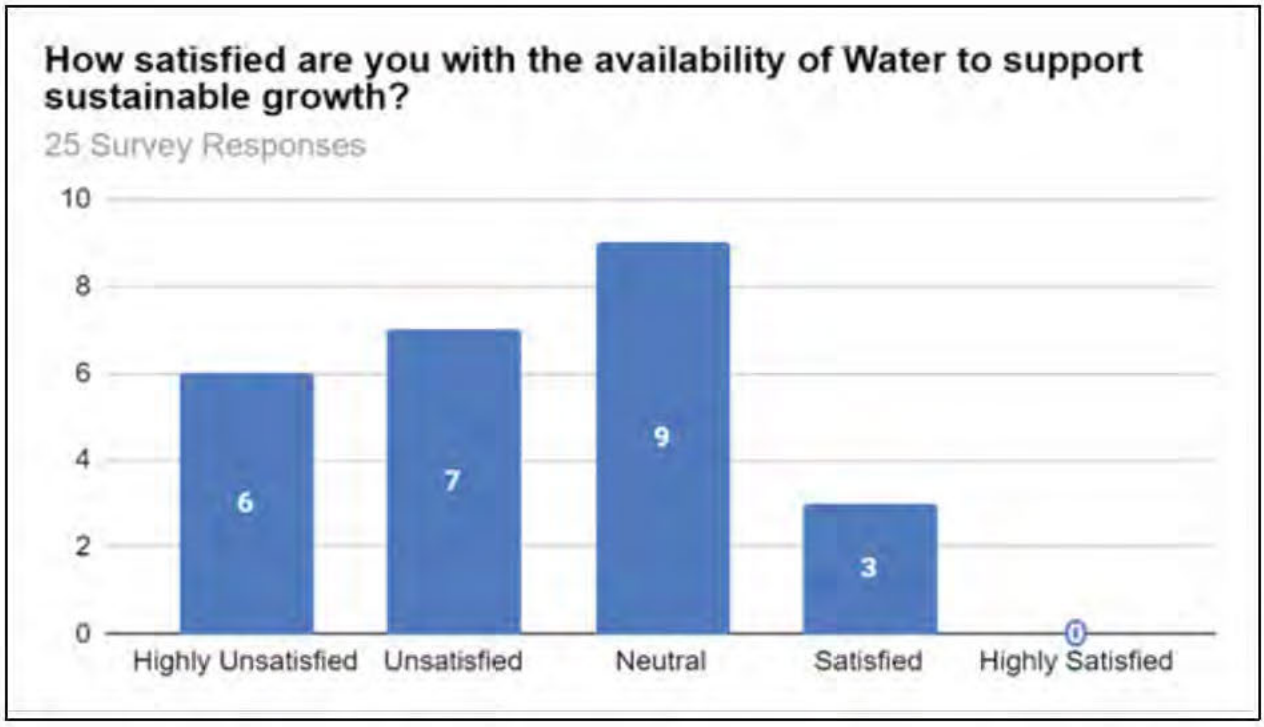

Figure 3-9. Public Satisfaction with Water Supply.

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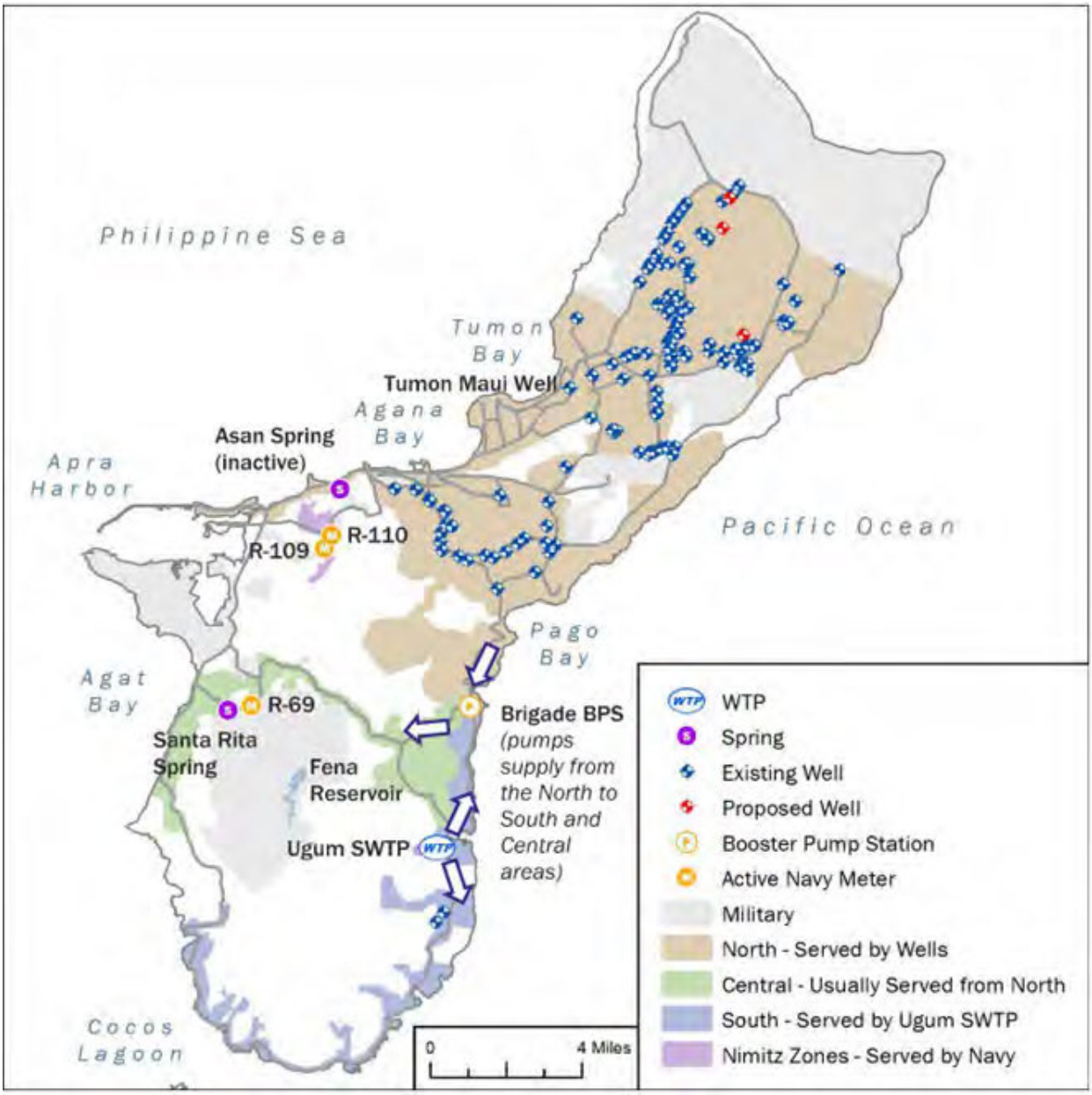

Figure 3-10. Water System Supply Map (Brown and Caldwell, 2018).

3.3.3.2. Threats to Water Sources

Guam's water supply, including the Northern Guam Lens Aquifer, is threatened by a range of contaminants—both legacy and emerging—that pose serious risks to public health, environmental integrity, and long-term water security.

Rising Chloride Concentrations

One of the most persistent indicators of aquifer stress is the steady increase in chloride concentrations observed in production wells across the NGLA. Between 1973 and 2010,

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chloride levels rose in 118 of 153 monitored wells. This trend suggests saltwater intrusion, likely exacerbated by over-pumping, sea level rise, and reduced aquifer recharge due to impervious surface expansion. Elevated chloride levels not only degrade water quality but also signal the potential for irreversible salinization of the aquifer if extraction exceeds sustainable yield (GWRMP Vol. 1, 5-16).

Nitrate Contamination from Unsewered Development

Another major concern is nitrate-nitrogen contamination, primarily from unsewered properties that rely on septic systems. Inadequately treated wastewater from these systems can percolate through the porous limestone geology of northern Guam, introducing nitrates into the aquifer. Elevated nitrate levels are associated with serious health risks, including methemoglobinemia (blue baby syndrome). As development continues over the NGLA, the expansion of sewer infrastructure and enforcement of wastewater regulations are essential to prevent further degradation (GWRMP Vol. 1, 5-21).

Legacy Contaminants: Dieldrin

Dieldrin, a banned pesticide, has been detected in soils and groundwater in parts of Guam. Though its use was discontinued decades ago, its persistence in the environment continues to pose a threat to groundwater quality. Dieldrin is classified as a probable human carcinogen. Therefore, Guam EPA established an Interim Action Level for customers to be notified if their water has dieldrin in it. Subsequently, GWA has fast-tracked projects to remove dieldrin from their drinking water. Additionally, GWA has taken wells offline that have dieldrin concentrations approaching the IAL. Its presence in the aquifer—even at trace levels—underscores the importance of monitoring legacy contaminants, determining the source, and remediating contaminated sites, particularly near drinking water wells (EPA, 2024).

Emerging Contaminants: PFAS

Per- and polyfluoroalkyl substances (PFAS), often referred to as “forever chemicals,” represent a growing concern for the NGLA. These synthetic compounds, used in firefighting foams, industrial processes, and consumer products, are highly persistent and have been linked to a range of adverse health effects, including cancer, immune system suppression, and developmental issues. PFAS contamination has been detected on Guam, raising concerns about the potential migration of these substances into the aquifer. US EPA has established Maximum Contaminant Levels for six PFAS chemicals in drinking water. Subsequently, GWA is working on projects to remove PFAS from the island’s drinking water. Given their resistance to conventional water treatment methods, PFAS requires advanced remediation technologies and proactive source control (Guam Hydrologic Survey, 2025).

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Military Expansion and Marine Base Relocation

As discussed above, the ongoing military buildup and the relocation of Marine Corps forces to Guam also poses risks to the aquifer. As detailed in the 2013 Environmental Impact Statement (EIS) for the buildup and the Guam Forest Action Plan (2021), the projected population increase will drive up water demand and groundwater extraction. Additionally, the establishment of firing ranges and ammunition training areas introduces the risk of lead contamination and other hazardous substances infiltrating the aquifer. Large-scale land clearing, particularly of Guam's limestone forests, further threatens aquifer recharge by removing vegetation that facilitates infiltration and stabilizes soil. These combined pressures highlight the urgent need for integrated land and water resource planning to safeguard the island's primary freshwater source. In response, GWA and DOD have an MOU titled "One Guam". Under it, the Navy and GWA affirmed its commitment to collaborate and share infrastructure and data to improve Guam's water systems' capability, redundancy, and resiliency. To address the increased water demand due to an increase in the military population, DOD plans to drill additional wells.

Previous Concerns with Military Activities and Contamination of the NGLA

The Northern Guam Lens Aquifer (NGLA), which supplies drinking water to approximately 75–80 percent of Guam's population, has long been affected by concerns over contamination associated with military activities, hazardous waste disposal, fuel storage, and industrial operations. Beginning in the 1970s, groundwater monitoring at Andersen Air Force Base detected trichloroethylene (TCE) and other contaminants in drinking water wells, leading to investigations that identified numerous abandoned disposal sites and potential contamination pathways within the aquifer recharge area. A 1987 U.S. Government Accountability Office report concluded that hazardous waste sites on Andersen Air Force Base and Naval installations posed potential risks to Guam's principal drinking water source and recommended expanded investigation and monitoring efforts. Since then, multiple military sites in northern Guam have been investigated and remediated under federal environmental programs, including the Andersen Air Force Base Superfund site, where groundwater contamination from chlorinated solvents, fuels, pesticides, and other hazardous substances has required decades of monitoring and cleanup. Despite substantial progress, the history of contamination underscores the vulnerability of the NGLA to activities occurring within its recharge zone and highlights the continuing importance of groundwater protection, contaminant monitoring, interagency coordination, and careful management of both civilian and military land uses in northern Guam.

3.3.3.3. The Guam Water Authority Water Resource Master Plan

Land use development must take into consideration its effects on the freshwater supply. Development can alter the existing land surface and limit the amount of precipitation that reaches the aquifer. Pollutants making their way into the freshwater supply must be mitigated as well to limit the required treatment and to keep more wells on-line. The island's land use plan

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should take into consideration the projected population growth, while also understanding the possible effects of development on the availability and quality of water supply.

The GWA 2018 Water Resource Master Plan (WRMP) outlines a 20-year roadmap for sustainable water management and provides policies, programs, and recommended capital improvement projects to help increase Guam's water supply to meet the anticipated demand. The plan specifically assesses the increased demands on Guam's infrastructure from the military buildup, including water supply. The G50SP recognizes the GWA master planning efforts, summarized below, and supports them through its more general land use policies SC-11 to SC-14 presented later in this chapter. This includes land use policies to protect the NGLA (including through coordination with the CHamoru Land Trust (CLT)), assure sustainable water supply systems, manage growth, and protect environmental resources in the watershed, such as sensitive limestone forests (see Chapter 5).

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The Guam Water Master Plan

Guam's Water Future: Key Challenges and Recommendations

The 2016 Water Resources Master Plan Update by the Guam Waterworks Authority (GWA) outlines a 20-year roadmap (2018-2037) to improve Guam's water and wastewater systems. It responds to regulatory requirements, aging infrastructure, and future demand driven by population growth and military buildup.

Major Challenges

- Aging Infrastructure: Many wells, tanks, pipelines, and pump stations require rehabilitation or replacement.
- Non-Revenue Water (NRW): Water loss from leaks, faulty meters, and unbilled use remains high.
- Vulnerable Water Supply: Guam depends heavily on the Northern Guam Lens Aquifer (NGLA), which is threatened by contamination and overuse.
- Wastewater Compliance Needs: Several wastewater treatment plants (WWTPs) require upgrades to meet federal discharge standards.
- Growth Pressures: Planned developments and population increases from the military relocation demand system expansion.

Key Recommendations

- Protect and Manage Source Water: Implement wellhead protection policies, expand NGLA monitoring, and develop alternative supply options in the south.
- Upgrade Infrastructure: Replace degraded pipes, storage tanks, booster stations, and fire hydrants; expand leak detection and smart metering.
- Improve Wastewater Systems: Complete upgrades at WWTPs, connect septic systems to sewer networks, and reduce sanitary sewer overflows.
- Strengthen Operations: Enhance asset management, GIS, and SCA DA systems for better planning, maintenance, and response.

Plan for Resilience

Coordinate with the Department of Defense through the OneGuam initiative and prioritize climate-resilient investments.

Vision

A safe, sustainable, and efficient water system that meets the long-term needs of Guam's people, economy, and environment.

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3.3.4. Wastewater Infrastructure and Capacity

3.3.4.1. Capacity and Demand

GWA also provides wastewater service to the majority of the island's civilian population. It has a network of approximately 312 miles of gravity pipe ranging from 3 to 48 inches in diameter, 49 miles of force mains (2 to 36 inches in diameter), 78 lift stations, and 6 wastewater treatment facilities. Approximately 32,000 customers are serviced by GWA. Other wastewater systems on the island are the Andersen Airforce Base wastewater system, Naval Base wastewater system, Leo Palace Resort Guam wastewater system, and other military areas (Brown and Caldwell, 2024).

Wastewater collection and treatment systems are essential in protecting the ground, surface, and coastal waters of Guam. Wastewater collection systems collect and transport wastewater from the source to the wastewater treatment plant where it can get treated and harmful pollutants can be removed before final discharge.

Guam's 2018 Water Resource Management Plan projected the population to increase to 200,581 by 2035 from 153,836 in 2020. As stated in Section 3.3.3.1, the projection has been revised to a population of approximately 170,000 in 2035 (Brown and Caldwell, 2024). However, to be conservative since there are a variety of dynamic factors that can affect the island's population within 10 years, the projected increase of 200,000 residents was maintained in projecting the average wastewater daily flow and is shown in Figure xx. Collectively, GWA's wastewater treatment facilities have a design capacity for an average daily flow of 23 Brown and Caldwell, 2024), which is greater than the projected 2035 average daily flow of 17.36 mgd (Brown and Caldwell 2018). The management plan estimates that direct and indirect wastewater flows specifically attributed to the military build-up represent a 36 percent increase from the 2015 baseline (Brown and Caldwell, 2018).

Table 3-3. Flow Summary

Region	Basin	2015–2016 Average Billing Data (mgd)	Existing Average Daily Flow (2015) (mgd)	Future Average Daily Flow (2035) (mgd)
North	Northern District	3.19	3.75	4.33
North	Tumon	2.00	1.99	2.82
Central	Hagåtña	4.64	7.59	8.92
South	Agat-Santa Rita	0.45	0.47	0.58
South	Baza Gardens	0.09	0.21	0.28
South	Inarajan	0.06	0.12	0.14
South	Umatac-Merizo	0.10	0.24	0.28
Total		**10.54**	**14.38**	**17.36**

Figure 3-11. Existing and Future Wastewater Flow Summary (Brown and Caldwell, 2018).

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3.3.4.2. Infrastructure Improvements

GWA has been actively working to address wastewater infrastructure over the last 15 years. In November 2011, U.S. EPA issued a court order that established deadlines for required GWA infrastructure improvements for several wastewater treatment plants to meet the requirements of their respective National Pollutant Discharge Elimination System (NPDES) permits. There were also several improvements required for the lift station, gravity piping, and force main rehabilitation. A Sewer System Evaluation Study (SSES) was also mandated by the court order. In 2024, US EPA issued a Partial Consent Decree that maps additional updates to the wastewater collection system and is GWA's guiding document for its Capital Improvement Projects. Projects include rehabilitation and replacement of sewer lines, pump station improvements, and wastewater treatment plant upgrades. As of 2025, GWA had completed most of the wastewater treatment plant improvement projects from the 2011 order and was actively working on projects to address the remaining infrastructure improvement projects.

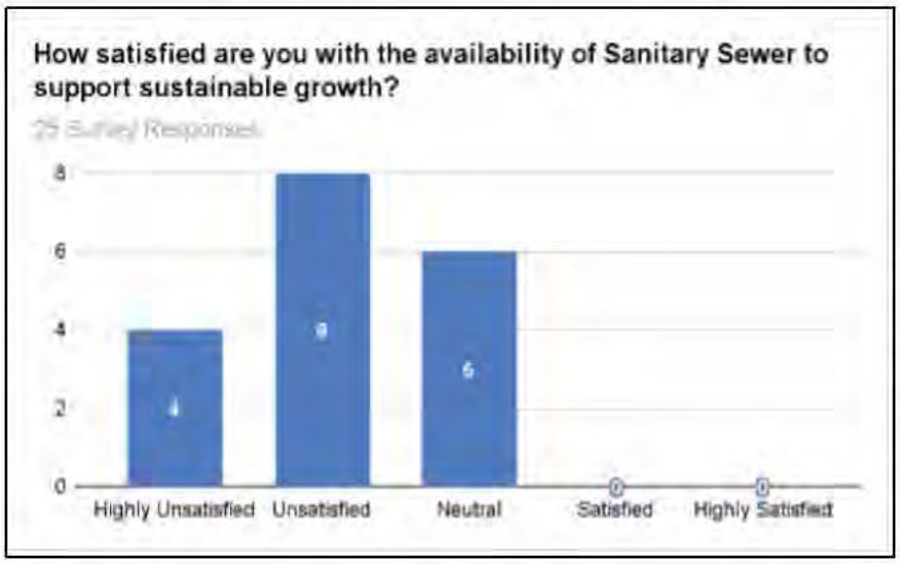

Figure 3-12. Public Satisfaction with Sewer Services.

Resident feedback from the G50SP Workshops further emphasized the critical need for sewer infrastructure investment. When asked what the most important infrastructure actions to support sustainable growth are, responses highlighted the need for improvements in sewer, water, and electricity services. Also, the installation of sewer and water lines in northern subdivisions such as Zero Down, Gil Baza, and Gil Breeze were mentioned. Overall, the most frequent concern was the availability of sewer services to support sustainable growth (see Figure 3-12).

Mayor interviews emphasized the importance of protecting existing infrastructure—such as roadways—during water and wastewater improvement projects. This highlights the value of a coordinated approach that enhances utility systems while also supporting the integrity of other essential services. While contractors are required to restore roadways after new utility installations, repairs to existing leaks typically involve patching only the immediate area of the leak. In some cases, pavement erosion downstream from the leak site may remain unaddressed. Identifying a dedicated funding source could enable GWA and DPW to work together to address these broader roadway impacts. Although leaks may not be the original

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cause of pavement deterioration, they can contribute to worsening conditions. A notable example of this can be seen in Nimitz Hill.

Coordination with the Villages and mayors is also important to continue moving existing development located over the NGLA onto wastewater systems. Current law requires existing development to hook up to the public sewer if within 200 feet of the system. Guam EPA should coordinate with local community members to identify those residential homes and areas that may have been built decades ago, without sewer hookups, to determine the feasibility of connecting to the public wastewater system.

3.3.4.3. Wastewater's Effect on Water

The wastewater system directly affects Guam's water resources since a failing wastewater system can contaminate Guam's fresh water sources. Leaking sewer pipes underground can infiltrate down to the aquifer potentially increasing nitrogen-nitrate concentrations. Surging manholes due to infiltration and inflow (I/I) can also make its way to surface water sources downstream. The wastewater system should minimize possibilities of contamination to freshwater and coastal waters.

The island land use plan must take into consideration the capabilities of the wastewater system, while also accounting for the population growth. Available land for easements for pump stations should be considered for expansions of the existing wastewater system due to the population growth. Land use development should also be limited in unsewered areas in the NGLA. Sewer infrastructure should be in place prior to development in order to limit the need for septic systems in the NGLA, and existing development on septic currently should be connected to the sewer system if within 200 feet of the system as required by law.

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3.3.4.5. The WMP Strategies, Programs, and Actions

The 2018 GWMP recommended multiple strategies and actions for addressing wastewater infrastructure and its potential impacts on water resources. Many of these are complementary of other strategies and policies put forth in this plan, such as requiring watershed best management practices, green infrastructure, and other softer storm water management strategies (see Chapter 5). The WMP strategies and programs included:

- Establish a comprehensive lift station preventative maintenance program to enhance system reliability and reduce emergency repairs.
- Develop a long-term flow measurement and monitoring program to assess system capacity and support data-driven planning.
- Initiate 15-year rehabilitation plans for the Agat-Santa Rita, Northern District, and Hagåtña Wastewater Treatment Plants to maintain performance and extend asset life.
- Establish a five-year visual inspection program for the Hagåtña ocean outfall pipe and diffuser to ensure environmental compliance and marine ecosystem protection.
- Develop a sustainable solids management strategy that addresses primary and secondary sludge, explores composting and indirect drying, and aims to upgrade biosolids classification to Class A through policy reform and public engagement.
- Continue and expand Sewer System Evaluation Surveys (SSES) and I/I assessments to reduce excess flow and improve treatment efficiency.
- Maintain and regularly update a sewer system model to support infrastructure planning and climate resilience.
- Establish policies to ensure adequate wastewater service in new development areas, prioritizing underserved communities.

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- Implement a Fats, Oils, and Grease (FOG) control program to reduce blockages and improve system performance.
- Eliminate septic systems and cesspools with sewer connections, particularly in areas over the Northern Guam Lens Aquifer (NGLA), to protect groundwater quality.
- Minimize variances for new septic installations within the NGLA and enforce sewer connection requirements for properties within 200 feet of existing lines. Collaborate with agencies like the CHamoru Land Trust and developers early in the planning process to secure easements and protect wellhead zones.

Similarly, the GWMP recommended various actions for the wastewater system, categorized by system type, to address the need for adequate infrastructure and minimizing impacts to the environment, including the NGLA. These address such things as improved data collection and inspections for the gravity piping system, improving force mains and lift stations, and continuing upgrades to wastewater treatment facilities (Brown and Caldwell, 2018). Such actions will continue to be important for assuring a sustainable, environmentally-sound wastewater management system for existing and new development.

3.3.5. Transportation and Mobility

Guam's transportation system is central to the island's long-term sustainability, economic and environmental vitality, and social resilience. As a geographically constrained island in the Western Pacific, Guam faces unique challenges in planning and managing transportation infrastructure, particularly as it contends with increasing population pressures, typhoon-related hazards, the effects of climate change, and a major military buildup. The Guåhan 2050 Sustainability Plan presents a critical opportunity to align transportation policy with broader sustainability goals related to land use, climate adaptation, public health, and economic development.

Guam’s transportation network remains a vital system supporting residents, visitors, and the US military. It includes roadways, bridges, transit services, sidewalks, bicycle and pedestrian facilities, harbors, and airports. The system connects civilian and military destinations through a combination of federal-aid highways, village streets, fixed-route and demand-responsive transit, and privately operated tourist services. The Guam Department of Public Works (DPW) continues to serve as the lead agency for the island’s roadway infrastructure, overseeing roads, bridges, sidewalks, and stormwater drainage systems. DPW also manages capital improvement projects and collaborates with federal agencies to secure funding for infrastructure upgrades.

Over the past two decades, transportation planning in Guam has been guided by the 2030 Guam Transportation Plan (GTP), supported by successive Guam Transportation Improvement Programs (GTIPs). These plans have identified key infrastructure needs, prioritized investments, and coordinated funding across federal and territorial agencies. The most recent GTIP (FY 2024–2027) outlines a multi-year, multi-agency strategy for road capacity improvements, safety upgrades, multimodal transportation, and resiliency projects totaling more than $690 million. These investments are aimed not only at maintaining existing infrastructure but also at

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addressing the cumulative demands of increased vehicular use, military activity, and climate-related vulnerabilities.

3.3.5.1. Road Capacity, Safety, and Investment Priorities

Roadway infrastructure continues to be the primary component of Guam's transportation strategy. As of 2025, Guam’s roadway system includes approximately 155 miles of federal-aid highways and 860 miles of secondary and local roads. These roads serve as critical connectors between residential areas, employment centers, and military installations. Route 1 (Marine Corps Drive) remains the island’s primary arterial, stretching from Naval Base Guam in the south to Andersen Air Force Base in the north. It supports commercial activity, freight movement, and daily commuting. Other key connectors include Routes 3, 4, 8, 10A, and 16, which link central and southern villages to Route 1 (Figure 3-13).

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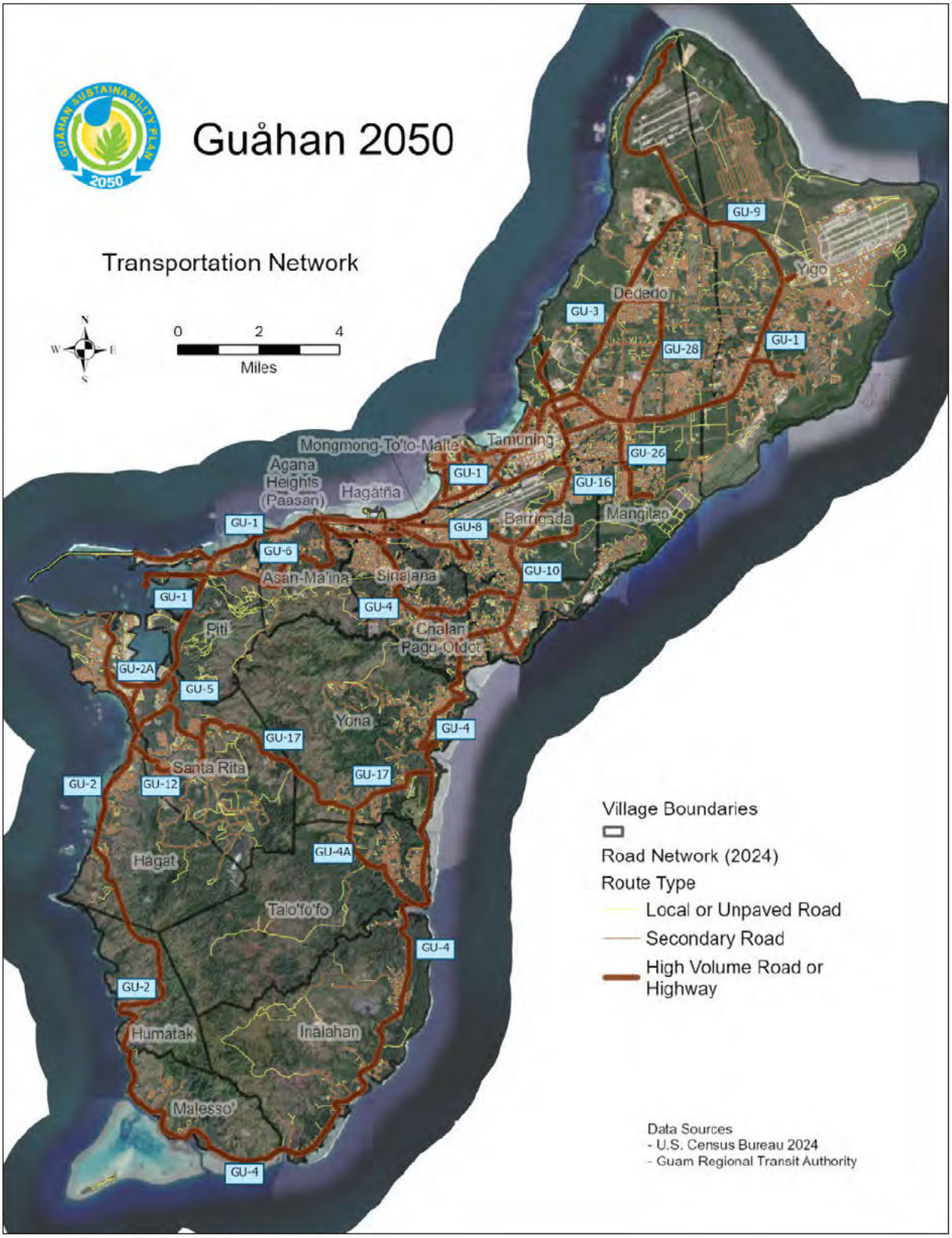

Figure 3-13. Transportation Network.

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The territory's heavily utilized primary and secondary road network suffers from congestion, aging infrastructure, and limited resilience to extreme weather events. In the last two decades Level of Service (LOS) issues have been documented in several corridor studies, particularly along Routes 1, 2, 4, 10, and 17, where peak-hour congestion, aging intersections, and limited signal coordination result in travel delays and safety concerns (GTP Ch. 3; GTIP 2020–2023). The ongoing military buildup, projected to bring thousands of new residents and increased freight movement, is further straining existing infrastructure (GAO-10-90R, GAO-11-459R). Recent traffic data indicates continued growth in vehicle volumes, particularly in urban centers like Dededo, Tamuning, and Barrigada. Congestion remains a concern on Routes 27, 27A, 28, 29, and 10A, especially during peak hours. While Route 1 handles high volumes efficiently due to its design capacity, operational issues such as traffic signal timing still contribute to delays (Figure 3-14). DPW should adopt a maintenance first strategy, performing preventative and routine maintenance to sustain the existing infrastructure and design the infrastructure for climate resilience to provide more resilient, longer lasting roadways.

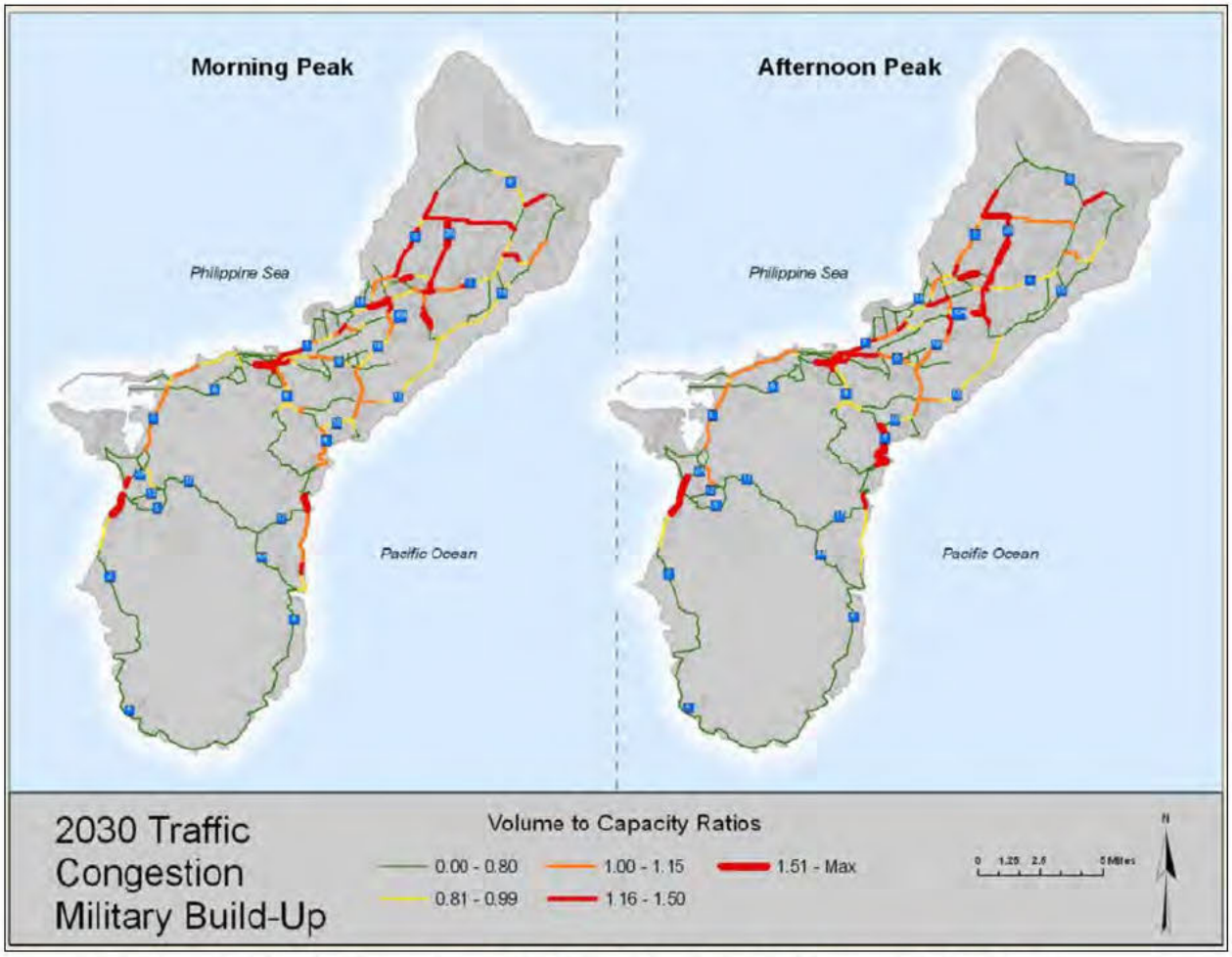

Figure 3-14. Projected Traffic Congestion with Military Build-Up (2030 Transportation Plan).

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As part of the U.S. military build-up, Guam has developed a designated Haul Road Network (HRN) to support the transport of military personnel, equipment, and construction materials. The HRN identifies and strengthens specific routes to accommodate increased truck traffic while minimizing island-wide disruption. Major corridors such as Route 8, Route 16, Route 27, and Route 3 are targeted for pavement strengthening, widening, intersection improvements, and bridge replacements to ensure structural integrity and traffic capacity. A key component of the network is a bypass around the congested Route 1 corridor near the Guam International Air Terminal, providing a critical cargo movement route between the Port of Guam, Andersen Air Force Base, and other military facilities.

DPW has launched multiple island wide pavement improvement projects since 2023, targeting deteriorated roads in Santa Rita, Mangilao, Mongmong-Toto-Maite, and Tamuning. These projects include milling, resurfacing, drainage repairs, and new striping to improve safety and visibility. Despite these efforts, many roads still require ongoing maintenance due to aging infrastructure and limited resources. Opinions collected from the G50SP Public Engagement Workshops align with the need for improved public transportation, road capacity, and better traffic planning. One resident highlighted the inefficiencies caused by heavy reliance on personal vehicles and inadequate traffic flow, stating, “I spend at least 10 hours a week driving to and from work in my personal car, which is very inefficient with only me in the car, and with how bad traffic is getting due to bad traffic planning.”

Insights from mayors’ interviews also identified road maintenance as an on-going concern. Offices have made efforts to “fill in potholes,” “stop small erosion,” and maintain village roads for their constituents, but main/routed roadways, such as Route 6, continue to raise concerns. Hence mayors indicated frustration in trying to address constituent concerns about roadway safety. Additionally, many mayors emphasized that widening roadways should be a priority in addition to repaving, resurfacing, and other repairs being done, especially in villages where there is evident erosion due to flooding and storms.

In villages where there are mainly two-lane roads mayors indicated, “...lots of tour vans and buses create traffic jams... We now have a compounded problem of trash trucks and tour buses. There was a perception that little planning for road widening had happened, raising concerns for public safety. Mayors also shared that, “whenever we have sick individuals here, ambulances have to work around all the traffic” conveying that if roadways were improved it would reduce the time it takes residents to obtain emergency services.

Concerns about road conditions were also echoed in responses from the G50SP Workshops. Participants highlighted challenges with “public roads,” noting that many access roads to private properties remain unpaved or entirely undeveloped due to the high cost of road improvements for individual property owners. Most workshop survey respondents also indicated dissatisfaction with the availability of roadways necessary to support sustainable growth (Figure 3-15).

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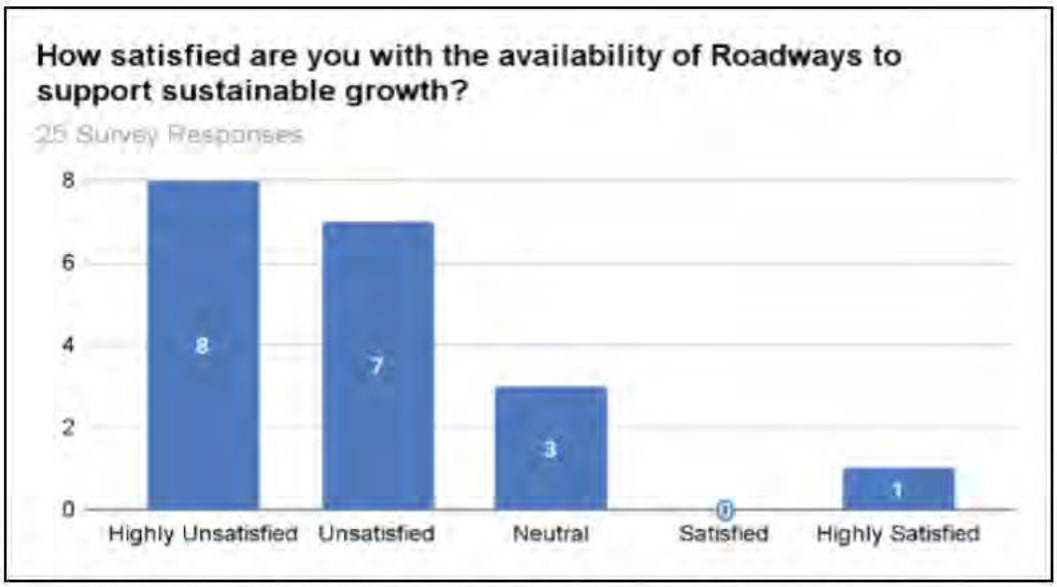

Figure 3-15. Public Satisfaction with Availability of Roadways to Support Sustainable Growth.

This feedback highlights the critical need for strategic improvements in roadway design, traffic signal optimization, and enhanced public transportation options to alleviate congestion and improve overall mobility on the island. The strategy to widen roadways for increased capacity is not sustainable. Many of the roadways do not have the space to expand due to existing properties and structures adjacent to the roadway. This is true for much of Routes 1, 4, 8, 16 and 28 as examples. In these cases, and in general, the priority should shift to traffic management and multimodal corridors over widening to solve traffic capacity issues. Traffic management strategies could include synchronized signals, intersection redesign, dedicated turn lanes, and intelligent traffic systems.

Despite public perceptions, significant road investments are being made. The GTIP FY 2024–2027 includes a wide array of transportation projects categorized by function and purpose. Table 3-3 summarizes estimated spending by project type, reflecting investments in reconstruction, drainage, transit, and more.

Table 3-3. Road Improvement Projects and Investments.

Ownership	Acres (acres)	Percent of Island
Bridge Replacements & Safety Upgrades	Replacing and retrofitting aging bridges, scour protection	~$300 million
Road Widening & Reconstruction	New lanes, medians, shoulders, drainage improvements	~$397 million
Intersection & Signal Improvements	New signals, optimized timing, reconfigured intersections	Included above

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Ownership	Acres (acres)	Percent of Island
Storm Damage Repairs	Post-typhoon repairs to signs, lights, and roads	Included in grants
Drainage & Flood Control	Culvert upgrades, channel improvements, flood mitigation	Included above
ADA/Accessibility & Safety Enhancements	Sidewalks, curb ramps, safety medians	Included above
Transit Infrastructure	Buses, shelters, rural routes, maintenance	~$13 million (est.)
Program Management & Oversight	Engineering, legal services, ROW acquisition, inspections	~$116 million

As shown, Guam is benefiting from significant investments in bridge replacements and road widening and reconstruction. A major portion of funding—more than $280 million—comes through the Defense Access Roads (DAR) program, intended to expand and upgrade transportation corridors that serve both civilian and military needs. This includes major projects on Routes 1 and 3, and access improvements to the Marine Corps Base Guam. In parallel, over $294 million in federal grant funding has been secured for critical bridge replacements, traffic signal modernization, and ADA compliance improvements. These investments represent a decisive shift from patchwork repairs to more comprehensive corridor-level upgrades. Much of this funding was made possible through the Bipartisan Infrastructure Law (Infrastructure Investment and Jobs Act), which significantly expanded federal transportation programs such as the Bridge Formula Program, Surface Transportation Block Grants, and transit funding for rural and underserved communities.

3.3.5.2. Parking, Setbacks, and Road Signage

Guam's Zoning Law under Title 21 GCA, Chapter 61 provides clear minimum standards for parking and setbacks, though these are not always tailored to urban and more rural contexts. For urban and village core areas—such as Hagåtña's redevelopment corridors or Tamuning/Tumon—standards should include reduced front yard setbacks of approximately 10 feet (versus typical 15–20 ft) and side setbacks of 5– 8 feet, to reinforce pedestrian continuity and mixed-use activation promoted by G50SP. Parking requirements could be relaxed to 0.75 stalls per dwelling unit or per 500 ft² of commercial space, utilizing shared or on-street loading, pursuant to an approved neighborhood parking management plan, aligning with walkable village strategies. One (1) off-street parking space per accessory dwelling unit must be provided. Currently, the code requires bicycle parking at a minimum of 1 bicycle rack per 20 auto stalls (§ 61531(l) GCA §61531(l)).

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In rural and agricultural zones, standard setbacks currently range from 15–20 feet in front yards and 7–10 feet sides/rears, allowing flexibility for farm structures and buffers. Parking standards follow base statutory minimums: one auto space per dwelling unit (§ 61531(a)), or 1 per 100 ft² retail/commercial, 1 per 4 seats in assembly uses, etc. (§ 61531(b–f)). Standard stalls must measure at least 19 × 8.5 ft (compact: 16 × 7.5 ft) and aisle widths adjusted by angle: e.g. 13.5 ft aisle for 45° stalls. (§ 61532(d)).

While zoning and land use intensity influence how streets are designed and used, naming and numbering systems must maintain consistency and coherence across all contexts to ensure safety, mail delivery, disaster response, and utility service. The Government of Guam currently maintains a baseline street grid system, but gaps remain—especially in newer subdivisions, informal developments, and rural roads with multiple identifiers or inconsistent signage. The Guam Fire Department and Department of Public Works have reported navigation and dispatch difficulties, particularly during typhoon response and medical emergencies.

To modernize Guam's addressing system, the Guam 2050 Sustainability Plan recommends adoption of a unified addressing standard, supported by centralized GIS mapping and tied to parcel-level records. This allows for more responsive permitting, real-time infrastructure planning, and seamless integration of public services. Although implementation in rural areas may rely on simplified schemes, ensuring every structure has a mappable, unique identifier remains critical to equitable public service delivery.

3.3.5.3. Transit and Multimodal Transportation

Public transportation in Guam remains underdeveloped relative to demand, with low ridership and limited service coverage. Guam's transit system includes a core fixed-route service and demand-responsive options. While ridership remains modest, there is growing recognition of the need for high-capacity transit along Route 1 to support future growth and reduce reliance on private vehicles. Long-term plans include enhanced service frequency, improved bus stops, and integration with pedestrian and bike networks. The Guam Regional Transit Authority (GRTA) has made incremental progress through federal support programs such as Sections 5310 (mobility for seniors and persons with disabilities), 5311 (rural area service), and 5339 (capital projects). Recently, Guam received funding under the Federal Transit Administration's Accelerating Innovative Mobility (AIM) program, which supports service modernization, route optimization, and technology upgrades (FTA, 2022). This program may provide enhanced on-demand mobility options, especially for the southern villages. Despite these gains, GRTA continues to face challenges related to fleet size, scheduling frequency, and infrastructure such as bus stops and shelters.

The Guåhan 2050 Sustainability Plan can play a key role in establishing policy goals for expanding and improving public transit, particularly by prioritizing transit-oriented development (TOD) near employment centers, educational institutions, and key government services. Planning should integrate transit services with roadway projects to ensure accessibility, reduce

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vehicle dependency, and support equitable mobility for residents who lack access to private vehicles.

3.3.5.4. Pedestrian and Bicycle Infrastructure

Pedestrian and bicycle infrastructure is notably underdeveloped in Guam, with many corridors lacking safe sidewalks, crossings, or bike lanes. The GTIP and GTP mention ADA compliance and some safety improvements as part of broader road upgrades, but there is no dedicated strategy or funding stream for active transportation. Routes with high pedestrian activity—such as along tourism zones in Tumon or near schools, bus stops and public facilities—often lack safe, separated infrastructure.

To address this, Guam should develop a territory-wide pedestrian and bicycle master plan, identifying priority corridors, safety enhancements, and design standards. Integrating complete streets policies into the 2050 Sustainability Plan would ensure that future investments support walking and biking as viable modes and increase safety, consistent with public health, climate, and equity goals. Programs should also target school zones and village centers where short trips could be easily shifted from cars to foot or bike with better infrastructure.

DPW policy continues to promote integrated bicycle and pedestrian facilities in all new and reconstructed roadways. In alignment with Public Law 29-98 all roadway redevelopment and new construction projects are required to consider the inclusion of bicycle lanes and pedestrian pathways. Improvements include:

- 4-foot-wide shoulders or marked bike lanes
- 14-foot-wide shared lanes
- 8-foot-wide shared-use paths in key corridors
- Sidewalks in urban areas and expanded shoulders in rural zones

While formal bike lanes remain limited, recent projects have begun incorporating these features, especially in areas with high tourist activity or near schools and parks.

Guam's pedestrian infrastructure varies significantly across the island, with the most integrated sidewalks located in Tumon Bay, the island's primary tourist district. This area includes continuous sidewalks along Routes 14 and 14A, mid-block crosswalks, and well-marked crossings at major intersections. However, even in these high-traffic zones, accessibility challenges persist.

For example, sidewalks adjacent to Dusit Thani, Dusit Thani Beach Resort, and DFS Galleria appear to not consistently meet accessibility standards. Obstacles such as utility poles, signage posts, and utility boxes often obstruct the pedestrian path, making navigation difficult for individuals using wheelchairs, mobility aids, or strollers. Similar issues are present in Hagåtña, where narrow sidewalks and inconsistent curb ramps limit safe and equitable access.

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Outside of Tumon and Hagåtña, pedestrian infrastructure is fragmented. Sidewalks are present along portions of Routes 10A, 16, 27, and 27A, with intermittent coverage on Routes 4, 8, 11, 26, and 28. In rural and southern areas, unpaved shoulders often serve as informal pedestrian paths due to the absence of sidewalks.

Marked crosswalks are generally found at signalized intersections and near schools and churches. However, many crossings lack adequate lighting, visibility, or spacing, contributing to pedestrian-vehicle collisions, particularly at night.

3.3.5.5. Electric Vehicle Infrastructure and Sustainability

Guam is beginning to explore electric vehicle (EV) infrastructure, though current deployment is limited. As of 2024, the island has few public charging stations, and EV adoption remains modest due to cost, infrastructure, and awareness barriers. However, the GTIP includes administrative support and preliminary steps toward participating in the federal National Electric Vehicle Infrastructure (NEVI) program, which provides funding for designated charging corridors. The Guam Power Authority has also expressed interest in integrating EV charging with renewable energy resources, such as solar (Guam EPA, 2024).

As Guam advances toward a cleaner, more resilient future, the development of electric vehicle (EV) infrastructure stands as a cornerstone of the island's sustainable transportation strategy. Transitioning from fossil fuel-based vehicles to electric mobility will significantly reduce greenhouse gas emissions, improve air quality, and decrease Guam's dependence on imported petroleum products. Including robust EV infrastructure planning in the Guåhan 2050 Sustainability Plan can accelerate this transition. Strategies should include incentives for private sector investment, utility partnerships for grid management, and coordination with vehicle fleet replacement plans for government agencies. EV readiness should also be included in zoning and building codes for commercial and multifamily development.

Investing in EV infrastructure aligns directly with Guam's renewable energy targets and long-term sustainability goals. By expanding the network of EV charging stations across the island—particularly in high-traffic areas, government facilities, commercial centers, and underserved communities—Guam can support the growing adoption of electric vehicles while ensuring equitable access to clean transportation options.

3.3.5.6. Policy Implications

Guam's transportation system is undergoing a major transformation, fueled by federal investments, increased military activity, and the need for climate-resilient infrastructure. While recent plans and projects demonstrate clear progress in addressing critical road capacity and safety needs, future policies must more fully integrate multimodal access, land use coordination, and environmental sustainability.

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For the Guam 2050 Sustainability Plan, this means adopting policies, including from the 2030 Transportation Plan, that accomplish the following:

- Promote compact and transit-accessible development near upgraded corridors.
- Establish complete streets standards and fund active transportation. For example, to ensure Guam's transportation network is inclusive and safe for all users, it would be important to prioritize upgrades in high-use areas, including lighting, signage, curb ramps, and pedestrian refuge islands. It would also be useful to:
    - Conduct islandwide accessibility audits of sidewalks and crosswalks, with a focus on identifying barriers such as utility poles, signage, and uneven surfaces
    - Remove or relocate obstructions that impede access for people using wheelchairs, strollers, or mobility aids
    - Ensure all new and reconstructed pedestrian infrastructure complies with ADA standards
- Promote traffic safety with speed management through traffic calming including roundabouts, medians, and raised crosswalks where appropriate. Require safety audits of all major road safety projects before and after construction to verify the projects reduce traffic accidents.
- Expand public transit service and infrastructure, with a focus on rural and transit-dependent communities.
- Accelerate EV infrastructure and align transportation planning with clean energy goals. This could include the following:
    - Develop supportive policies such as EV purchase incentives, reduced registration fees and preferential parking to encourage adoption. This includes:
        - Fleet Electrification: Transition government and public transportation fleets to electric vehicles, setting a leadership example and reducing operational emissions.
        - Workforce Development: Train local technicians and electricians in EV maintenance and charging station installation to build local capacity and create green jobs.
        - Deployment of Public Charging Stations: Prioritize Level 2 and DC fast chargers in strategic locations to support both daily commuting and long-distance travel.
    - Grid Integration and Renewable Energy Synergy: Design EV infrastructure to integrate with Guam's evolving renewable energy grid, including solar-powered charging stations and smart grid technologies.
- Require climate adaptation, hazard mitigation, and green infrastructure in all transportation projects.

A sustainable transportation future for Guam will depend not only on federal funding and engineering improvements, but also on bold, integrated policy that supports a resilient, equitable, and accessible transportation network for all island residents.

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Transportation Policy Options

- Establish a Multi-Agency Infrastructure Coordination Committee composed of the Department of Public Works (DPW), Guam Waterworks Authority (GWA), Guam Power Authority (GPA), and telephone/fiber/data provider(s). This committee will oversee the development of a centralized Geographic Information System (GIS) to map and manage utility and transportation assets. The system will support coordinated planning, reduce project delays, and minimize redundant excavation, thereby lowering environmental and financial costs.
- Reform and relaunch the Guam Mass Transit Authority as an autonomous agency with the authority to:
    - Own and manage transit-related property and infrastructure
    - Receive and administer federal transportation funds
    - Enter into public-private partnerships and service contracts
    - Operate under the guidance of an independent, multi-sector board. This will enable the development of a more resilient, efficient, and equitable public transportation system aligned with long-term sustainability goals.
- Strengthen collaboration between the Guam Land Use Commission, non-governmental organizations (e.g., Guam Running Club, Guam Triathlon Federation), and DPW to ensure transportation planning is aligned with land use, environmental, and community development goals. Key actions include:
    - Coordinating right-of-way acquisition with land use planning to preserve corridors for future mobility needs
    - Encouraging mixed-use development and transit-oriented design
    - Promoting public-private partnerships for infrastructure investment

3.3.6. Stormwater Management

Guam experiences an average annual rainfall of approximately 100 inches, with typhoons capable of delivering 10–15 inches of rain in a single event. These intense storms, combined with strong winds and storm surges, pose significant risks to both the natural environment and built infrastructure. The island's unique geology—comprising porous limestone and volcanic formations—along with its sensitive water resources and ongoing land development, makes effective stormwater management a critical environmental and economic priority.

Historically, stormwater has been treated primarily as a drainage issue, with runoff directed to the nearest discharge point—often infiltrating untreated into the limestone aquifer or flowing directly into streams and coastal waters. This approach has led to increased flooding, erosion, and pollution of marine ecosystems.

Urban development has further intensified these challenges. The expansion of impervious surfaces such as roads, rooftops, and parking lots has disrupted the natural hydrologic cycle. During construction, vegetation that once absorbed rainfall is removed, and the land is

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compacted, reducing its ability to retain water. Post-construction, the lack of infiltration leads to higher volumes of stormwater runoff, overwhelming drainage systems and contributing to localized flooding. For example, a one-acre parking lot can generate up to 16 times more runoff annually than a one-acre meadow (Schueler, 1994). In Guam, this excess runoff may exceed the capacity of natural and built drainage systems, which are further compromised by inadequate maintenance. Sediment buildup and vegetation overgrowth in storm drains, swales, and basins reduce their effectiveness, exacerbating flood risks.

To address these issues, Guam must transition from conventional drainage practices to integrated stormwater management strategies that emphasize sustainability, resilience, and ecosystem protection. This includes implementing green infrastructure, enhancing maintenance programs, and aligning development practices with the island's hydrologic and ecological realities.

Public engagement for the G50SP included Mayors noting that the absence of proper sewer infrastructure in areas such as Malojloj often creates problems with stormwater runoff and flooding. In addition, they expressed that ponding basins in their villages need upgrades and cleaning which should be routine to prevent unnecessary stormwater runoff and flooding into main roadways such as Route 4. Residents' opinions gathered from the G50SP Workshops align

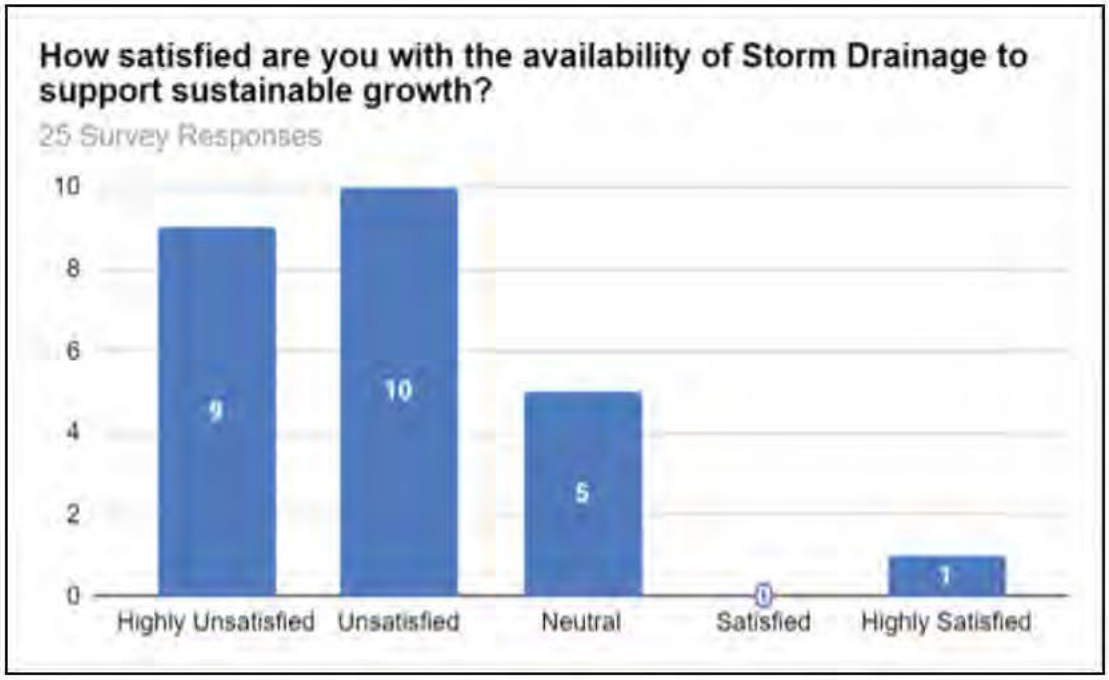

Figure 3-16. Public Satisfaction with Availability of Storm Drainage.

with these sentiments stating that "flood control" was the most important infrastructure investment needed to support sustainable growth. Most respondents indicated dissatisfaction with the availability of storm drainage in the G50SP Workshop Survey (Figure 3-16).

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3.3.6.2. Stormwater Policy Objectives

Stormwater management is an important infrastructure concern to address in the planning and development of roads, commercial, industrial, residential, and other development, hence its inclusion in this chapter about sustainable communities. The G50SP also addresses stormwater later in this chapter's discussion of flood hazards management, as well as Chapter Five's discussion of watershed management and Guam's comprehensive stormwater management plan. These other discussions highlight how stormwater is a multidimension concern for Guam, and they establish the policy basis to address various stormwater management objectives, including:

- Providing integrated watershed and stormwater management such as regional detention basins and stormwater best management practices (BMPs) to manage runoff at the watershed scale. This will reduce peak flows, improve water quality, and support aquifer recharge. Regional detention basins will also alleviate flooding caused by existing structures that were permitted before the implementation of the CNMI/Guam Stormwater Management Manual (see Chapter 5).
- Require all new developments to incorporate integrated stormwater strategies that address quantity, quality, and downstream protection. This will minimize environmental impact and promote resilient site design (see Policies SC-23, SC-24).
- Prohibit development in flood-prone and coastal hazard zones unless comprehensive mitigation measures are implemented. This will reduce exposure to flood risks and protect sensitive ecosystems (SC-84).
- Enforce flood prevention and stormwater control measures prior to subdivision approval, in accordance with GCA Title 21 Chapter 62. This requires relevant GovGuam agencies to review subdivision plans for adequate storm drainage and supporting infrastructure. Mandate that all subdivisions, including parental subdivisions, provide sufficient drainage to reasonably protect against flooding (SC-24).
- Pursue mitigation measures for private developments that contribute to flooding or stormwater pollution in key waterbodies such as Tumon Bay (see Policies TE-20 to TE-40).
- Require Low Impact Development (LID) practices and Green Infrastructure —such as bioswales, rain gardens, permeable pavements, and green roofs—in all new developments. This will enhance infiltration, reduces runoff, and supports biodiversity and urban cooling (see TE-17).

3.3.7. Solid Waste Management

Guam's history of solid waste management has been marked by long-standing challenges in infrastructure, regulation, and enforcement, culminating in significant legal and institutional reforms over the past two decades. For many years, the island's solid waste system was characterized by inadequate facilities, illegal dumping, limited recycling options, and insufficient government oversight. In 1986, the US Environmental Protection Agency (USEPA) cited that

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Guam was in violation of the Clean Water Act, since its only municipal solid waste disposal site was leaching contaminants into the groundwater. These deficiencies led to severe environmental and public health concerns, particularly related to the Ordot Dump—a large, unlined landfill site used for decades by both civilian and military entities. The Ordot Dump, which accepted waste without proper environmental controls, became emblematic of the island's waste management crisis.

In 2004, the U.S. Environmental Protection Agency (EPA) filed a lawsuit against the Government of Guam for violations of the Clean Water Act, citing leachate discharges from the Ordot Dump into the Lonfit River and failure to close the site in accordance with environmental regulations. The case resulted in a 2004 consent decree in which Guam agreed to close the Ordot Dump and build a new sanitary landfill (*United States v. Government of Guam*, Civil Case No. 02-00022 (D. Guam). However, the government struggled to meet the decree's requirements, facing delays, cost overruns, and management issues. As a result, the U.S. District Court appointed a federal receiver in 2008 to take control of the Guam Solid Waste Authority (GSWA), initiating a comprehensive overhaul of the island's waste system.

Under receivership, significant progress was made. The Layon Landfill—a modern, EPA-compliant facility—was completed in 2011 in Inarajan, replacing the Ordot Dump, which was formally closed. The receivership also implemented island-wide residential trash collection for single-family homes, established recycling programs, and improved operational efficiency. While these reforms addressed many critical deficiencies, they also highlighted the high costs of mismanagement and the need for sustained institutional capacity.

The role of the U.S. military in Guam's waste management history is also notable. During and after World War II, military operations contributed substantial quantities of waste to the Ordot Dump. In recent years, Guam has sought to hold the federal government accountable for part of the cleanup costs. In 2017, Guam sued the Navy for costs incurred as the Navy deposited munitions and chemicals at the Ordot Dump for decades. Guam sought compensation under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), leading to a landmark U.S. Supreme Court ruling in 2021. The Court unanimously ruled in favor of Guam, allowing the territory to proceed with its claims to recover some of the costs of closing the Ordot Dump (*Guam v. United States,* 141 S. Ct. 1608 (2021)). In 2023, the US agreed to pay nearly $50M for costs associated with the dump's closure. The receivership has partially ended with GSWA collecting the island's solid waste and operating the Layon Landfill. The Receiver's remaining task is to finalize the Post-Closure Care Plan of Ordot Dump.

Guam's solid waste management also changed hands during the receivership. It was previously managed by the Department of Public Works (DPW). Now, Guam's solid waste is managed by the Guam Solid Waste Authority (GSWA), which was a government agency formed as part of the 2006 Integrated Solid Waste Management Plan (ISWP)(GEPA, 2006). Today, Guam continues to face solid waste challenges, including the need to expand diversion infrastructure, reduce illegal dumping, improve recycling rates, and manage construction and demolition debris. The Guam

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Zero Waste Master Plan (2023) reflects a strategic effort to address these issues by transitioning to a green circular economy (see below).

3.3.7.1. Landfills

Replacing Ordot Dump as the disposal site for the island's solid waste, Layon Landfill in Inarajan has been in operation since 2011. Given Guam's limited space, constructing multiple landfills to manage the solid waste is not feasible. Therefore, the government of Guam has issued a comprehensive plan to tackle Guam's solid waste scenario. In 2023, Guam EPA released its Integrated Solid Waste Management Plan (ISWMP), setting a landfill diversion target goal of 50% by 2035. Guam's waste disposal and diversion pattern in 2022, are shown in Figure 3-17. GEPA and GSWA hope to accomplish this with the implementation of two zero waste programs for additional diversion: extended producer responsibility (EPR) for packaging and commercial food waste composting. In 2021, the diversion rate was 29% meaning Guam is more than halfway to reaching its goal of 50% by 2035.

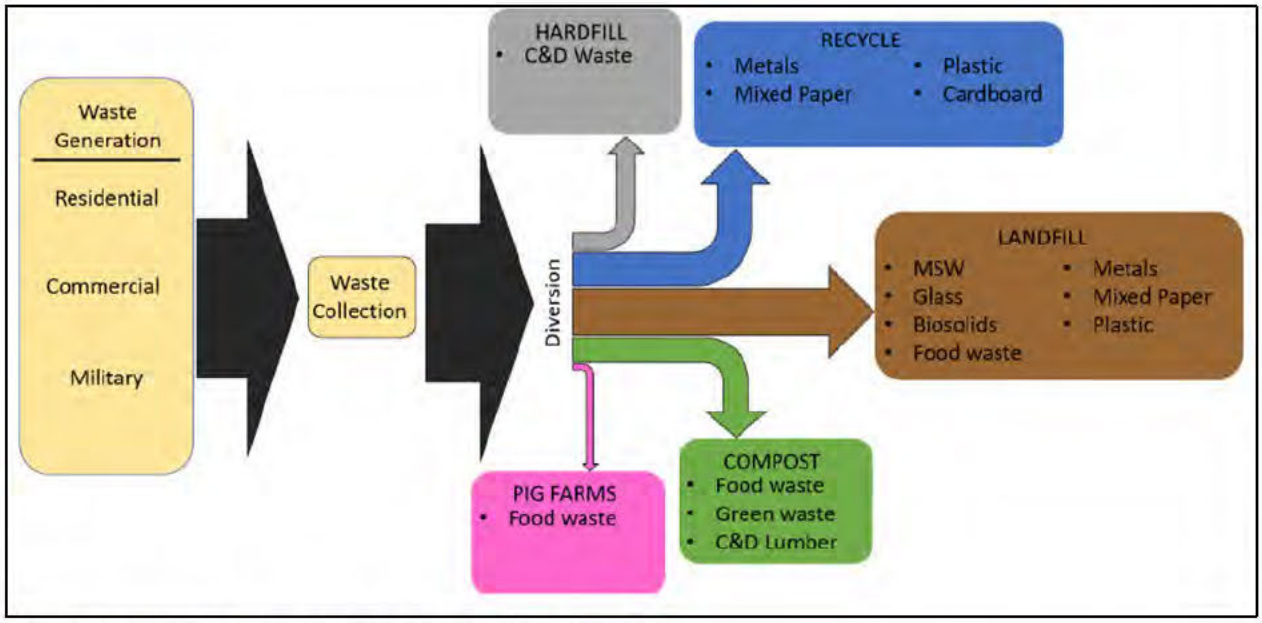

Figure 3-17. Guam's 2022 Waste Disposal and Diversion.

The short term goal of GSWA is to initiate a comprehensive study on a redesign of Layon Landfill to allow for smaller cell construction that maintains adequate separation from seasonally high ground water. The other key component of the study is the establishment of the overall time Layon Landfill will be available to provide disposal capacity. The timelime can then be included in an updated ISWMP.

The ISWMP projects a population increase to 183,580 by 2040, increasing the waste generation disposal to 105,700 tons (Figure 3-18). The waste diversion plan is key to managing the waste due to the increase in population.

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Year	Population	Waste Disposal (tons)
2025	173,034	100,600
2030	179,932	103,600
2035	182,022	104,800
2040	183,580	105,700

Figure 3-18. Forecasted Population and Predicted Waste Disposal (ISWMP, 2023).

3.3.7.2. Guam Zero Waste Plan

The Guam Zero Waste Master Plan (GZWMP), released by the Guam Environmental Protection Agency (Guam EPA) in January 2023, provides a comprehensive and phased roadmap to transition Guam toward a green circular economy and achieve the aspirational goal of zero waste. Building on the foundation of the 2013 Zero Waste Plan, the updated 2023 Master Plan outlines strategic initiatives, implementation phases, and sustainability targets aligned with the Guam Green Growth (G3) Action Framework and the United Nations Sustainable Development Goals.

The 2023 GZWMP emphasizes the following strategic actions to guide Guam's zero waste transition:

- Strengthen Guam's Zero Waste Framework
- Establish Intergovernmental Partnerships
- Build Public-Private Partnerships
- Invest in Education and Green Workforce Development
- Focus on Equity and Environmental Justice

These strategies are supported by twelve priority zero waste initiatives, including mandatory island-wide residential collection, extended producer responsibility (EPR), commercial food waste composting, and construction and demolition (C&D) materials diversion.

Currently, Guam is in Phase III, which emphasizes increasing waste diversion and launching key regulatory and infrastructure initiatives. Key activities underway in Phase III include:

- Implementing a mandatory island-wide residential collection program
- Enacting legislation for an Extended Producer Responsibility (EPR) program for packaging
- Launching a mandatory commercial food waste and organics composting program
- Expanding recycling and reuse of waste tires and glass in construction applications
- Improving enforcement of open dumping and litter control laws

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- Measuring and reporting progress toward Guam's 2035 goal of 50% waste diversion

While a Pay-As-You-Throw (PAYT) program has not yet been implemented, the other initiatives are on-going.

The Guam Zero Waste Master Plan also encompasses several strategies that have direct implications for land use planning and permitting, emphasizing the need for new infrastructure, regulatory reforms, and policy integration to support the island's transition to a circular economy. Key recommendations include establishing construction and demolition (C&D) materials processing and reuse facilities, mandating recycling and diversion policies within the permitting process, and adapting public infrastructure projects to incorporate recycled materials such as tire-derived aggregate and crushed glass. These initiatives may require zoning updates, streamlined permitting processes, and proactive integration of zero waste goals into site planning and public works procurement. To align with these recommendations, the G50SP incorporates land use policies that enable siting and development of waste recovery infrastructure, support environmentally preferred purchasing in public projects, incentivize green industries, and ensure equitable distribution of zero waste services across the island.

3.3.7.3. Materials and Waste Management/Toxics

The Integrated Solid Waste Management Plan (ISWMP) does recognize that there are certain wastes that are safer to manage in a landfill. Those wastes are treated wood, nonhazardous contaminated soil, nonfriable asbestos, stabilized fats, oils, and grease (FOG), and shredded tires when recycling is not available. These are classified as "special wastes." Since these "special wastes cannot be handled on-island, ISWMP presents a fee for the off-island disposal of these "special wastes."

In a waste composition study conducted in 2019, 5% of the landfill waste was metals. Certain metals, household hazardous wastes, and old corrugated containers are banned from being disposed of in the landfill.

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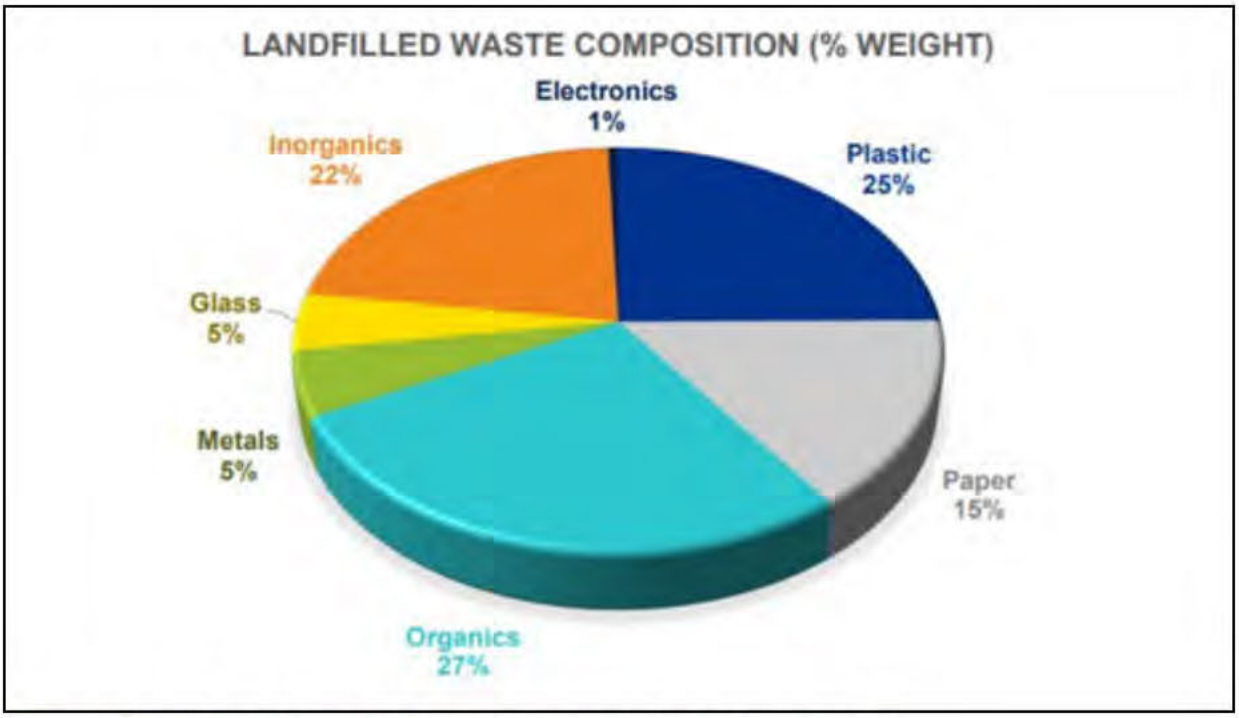

Figure 3-19. Results of Guam 2019 Waste Composition Study (Jacobs, 2023).

3.3.7.4. Recycling

Since October 2013, GSWA has offered recycling services for residential customers. Paper, aluminum and metal cans, and plastics were collected curbside twice a month. However, Guahan Waste Control, the company responsible for sorting through the collected materials, reports that there is a contamination rate of 60% in the residential stream (Jacobs, 2023).

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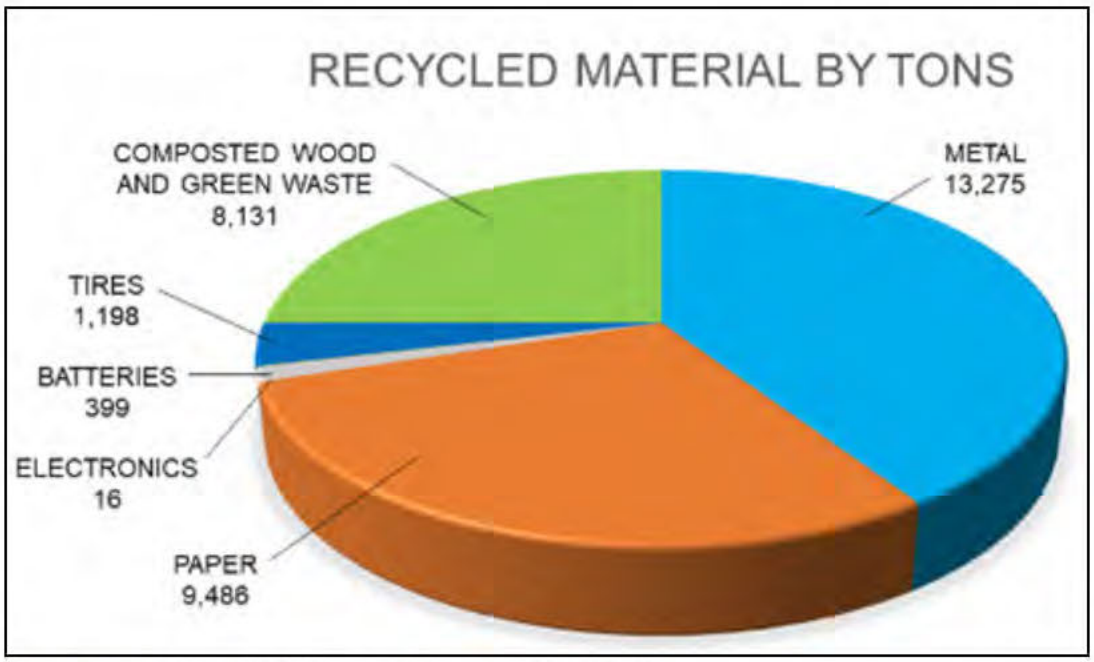

Figure 3-20. Recycled Material by Tons (Jacobs, 2023).

On-island recyclable materials processing are only for cardboard, glass bottles and jars, tires, and green waste. Plastics are collected, but are not being recycled. To facilitate Guam's recycling efforts, GEPA has proposed several zero waste initiatives in the GZWMP to include the biosolids composting initiative and the food waste initiative.

There were legislative actions to assist with the initiative. One was the Bottle Bill (Public Law 30-221) and Choose To Reuse: Mungna Ma Ayek I Plastek Act of 2018. The Bottle Bill is a bottle-redemption recycling program that was enacted in 2010. However, due to high start up costs, the program has not been implemented. The Plastek Act of 2018 banned the use of plastic carry out bags.

The Abandoned Vehicle Program was also established. This program provided free pickup and removal of priority recyclables such as abandoned cars, large white goods, and metals. Private recycling vendors (Pyramid Recycling) and programs (i*Recycle) also assists with recycling efforts on the island.



Although the ISWMP plans to divert 50% of the waste from landfill by 2035, the island land use plan should still consider the possibility of needing new land in case the need for a new landfill arises. Guam's population is expected to grow in the coming decade. Initiatives such as the zero-waste and waste diversion programs are steps in the right direction, but the land use plan

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should still account for the scenario where a new landfill is needed as Layon Landfill is projected to reach its capacity around 2060 (GWSA, 2025).

3.3.7.6. Waste Management Policy and Program Direction

From the ISWMP, the recommended policies and programs are below:

- Islandwide Mandatory Residential Waste Collection - Launch a mandatory curbside waste and recycling collection service for all households across the island. All residents would be required to enroll and pay for the service. To ensure affordability, a subsidized "lifeline" rate would be offered to low-income households.
- Extended Producer Responsibility (EPR) for Packaging- Introduce an EPR program targeting plastic and paper packaging. This initiative would require producers to pay fees that cover the costs of collecting, sorting, and transporting recyclable packaging materials. The program would also include incentives to encourage producers to reduce the volume of packaging materials they introduce into the Guam market.
- Commercial Food Waste Collection and Composting - Establish a program to collect and compost food waste from commercial sources. This initiative would support local economic development by generating large quantities of compost for use in agriculture and landscaping. It would also create employment opportunities through the construction and operation of a private composting facility.

The recommended policies and programs from the Guam Zero Waste Plan are below:

Phase III (2023–2028): Increasing Diversion

- Mandatory Residential Island-Wide Collection. Expand curbside collection to all single and multifamily households, with subsidies for low-income residents. Include greenwaste.
- Mandatory Commercial Food Waste & Organics Composting. Require businesses to separate and compost food waste and compostable organics.
- Voluntary Residential Food Waste & Organics Composting. Provide composting collection facilities in civic locations (e.g. Mayor's offices).
- Extended Producer Responsibility (EPR) for Packaging. Develop legislation requiring producers to fund recycling of packaging materials.
- Illegal Dumping & Litter Control Enforcement. Strengthen enforcement and public education to reduce illegal dumping.
- Recycle & Reuse Waste Tires. Promote use of tire-derived aggregate (TDA) in construction projects.
- Waste Glass Disposal Ban & Reuse. Ban landfill disposal of glass and promote its reuse in construction applications.
- Measure & Report Progress. Establish systems to track and report diversion and program performance.

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Phase IV (2029–2033): Creating On-Island Markets

- Environmentally Preferable Purchasing (EPP). Strengthen compliance with existing laws (e.g., Public Laws 21-22 and 24-100) to prioritize procurement of recycled and sustainable materials.
- Mandatory Recycling in Government, Commercial Buildings & Public Spaces. Expand recycling mandates beyond government agencies to include commercial properties and public areas.
- Expansion of Existing Programs. Scale up EPR, tire and glass recycling, and public education initiatives.
- Measure & Report Progress. Continue performance tracking and public reporting.
- Five-Year Review of the Master Plan. Evaluate progress and update strategies as needed.

Phase V (2034–2038): Strengthening Resilience

- Construction & Demolition (C&D) Debris Processing Facility. Develop infrastructure to process and divert C&D materials.
- Used Building Materials Facility. Establish a facility to collect and resell salvaged construction materials.
- C&D Debris Diversion Policy. Enact policies requiring diversion of recyclable C&D materials.
- Optimize EPR & EPP Programs. Expand materials covered and improve program efficiency.
- Continue Public Education & Outreach. Annual Progress Reporting & Five-Year Review

Phase VI (2039+): Enhancing Sustainability

- Used Oil Recycling. Develop on-island micro-refinery capacity for waste oil reuse.
- Annual Reporting & Development of a New 20-Year Plan

In 2025, Guam enacted Public Law 38-39, establishing an Islandwide Collection Plan administered by the Guam Solid Waste Authority (GSWA). The law requires most residential properties to subscribe to either public or private solid waste collection services, with the goals of reducing illegal dumping and litter, increasing participation in waste collection, improving operational efficiency through economies of scale, and strengthening the long-term financial sustainability of GSWA. The law also creates a Customer Assistance Program for eligible low-income households, authorizes subsidies and lifeline-rate assistance, and provides exemptions for certain vacant properties, self-haulers, and properties served by private haulers. By moving toward universal waste collection, the legislation represents a significant step toward improving solid waste management, protecting public health, and advancing Guam's broader sustainability and environmental stewardship objectives.

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3.3.8. Power

Guam's power system is a critical infrastructure sector that directly influences the island's sustainability, resilience, and economic prosperity. As a geographically isolated island territory with no indigenous fossil fuel resources, Guam is almost entirely dependent on imported fuel for electricity generation. The Guam Power Authority (GPA), a public utility governed by the Consolidated Commission on Utilities and regulated by the Public Utilities Commission, supplies electricity to all residential, commercial, and military customers on the island. As of 2022, approximately 89% of electricity generation came from fossil fuels, with the remaining 11% supplied by renewable sources (NREL, 2024). Electricity rates on Guam are among the highest in U.S. jurisdictions, averaging nearly $0.35/kWh, largely due to fuel costs and a Levelized Energy Adjustment Clause (LEAC) surcharge.

In recent years, Guam has taken steps to transition to a cleaner and more resilient energy system. Public Law 35-46 revised the Renewable Portfolio Standard (RPS) to require that 50% of net electricity sales come from renewable sources by 2035 and 100% by 2045. GPA's Clean Energy Master Plan, also known as the Integrated Resource Plan (IRP), outlines a phased approach to meet these goals, including 400 MW of new renewable energy capacity and $230 million in grid upgrades. Despite progress in adding utility-scale solar and battery storage, challenges remain in integrating intermittent resources, modernizing the grid, and addressing post-typhoon recovery and infrastructure vulnerabilities. As the island continues to rebuild from Typhoon Mawar and manage anticipated increases in military demand, a coordinated and equity-centered power sector transition is essential.

3.3.8.1. Clean and Renewable Power

Guam's commitment to renewable energy is anchored in both legislative mandates and community-driven planning processes. Public Law 35-46 codifies Guam's goal to achieve 100% renewable electricity by 2045. To support this target, GPA has partnered with the National Renewable Energy Laboratory (NREL) to develop "Guam Energy Strategies," a comprehensive roadmap to transition to 100% clean energy. The Guam Energy Strategies approach prioritizes energy justice through three pillars: recognition justice (acknowledging past and present inequities), procedural justice (ensuring inclusive and fair decision-making), and distributional justice (ensuring equitable sharing of benefits and burdens).

As of 2023, GPA's operational renewable energy portfolio includes the 25 MW Dandan Solar Farm, the 60 MW KEPCO Mangilao Solar Project with integrated battery storage, and over 22 MW of distributed customer-sited solar. New procurements have been underway, including perhaps more than 330 MW of solar and solar-plus-storage capacity. All new utility-scale renewable projects are required to include Battery Energy Storage Systems (BESS) to support grid stability. GPA is also planning a Virtual Power Plant (VPP) program (P.L. 36-137) and

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upgrading its grid controllers, smart meters, and control systems to accommodate higher levels of inverter-based generation.

3.3.8.2. Reliability

System reliability is a pressing concern for Guam, especially in the wake of recent typhoon-related disruptions. GPA's generation assets are aging, and recent storm damage has underscored the fragility of key infrastructure. The GPA 2022 Integrated Resource Plan, or the GPA Clean Energy Master Plan (CEMP), emphasized the importance of maintaining adequate reserve margins and modernizing generating assets to ensure grid reliability. GPA's current reliability strategy includes the deployment of Battery Energy Storage Systems (BESS) capable of energy shifting and additional grid services such as fast frequency response, frequency regulation, voltage support, spinning reserve (rapid reserve), and others.



The 198 MW Ukudu Power Plant was commissioned in December 2025 and celebrated with a ribbon-cutting in May 2026. It will provide critical new base load capacity, replacing older fossil-based units and enabling the retirement of the Cabras 1 & 2 steam plants. GPA continues to rely on its interruptible load program, smart grid technology, and rotating outages during peak periods to maintain grid stability. Long-term reliability will require resilient infrastructure, grid automation, and diversified generation sources.

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3.3.8.3. Affordability

Affordability remains one of the most significant challenges for Guam's energy system. The cost of electricity—driven by global fuel prices, shipping constraints, and operational inefficiencies—places a heavy burden on residents and businesses. In 2022, Guam's average retail electricity cost was nearly double the U.S. national average. GPA's LEAC surcharge fluctuates with international fuel markets and can constitute over half the customer rate. GPA anticipates that the Ukudu plant will improve cost efficiency by reducing annual oil imports by nearly 900,000 barrels and enabling more stable, efficient generation.

To mitigate the energy burden on consumers, GPA offers demand-side management programs, net metering for distributed solar, and energy efficiency rebates through the Energy Sense Rebate Program. The Guam Energy Office offers income qualifying programs (Weatherization Assistance Program and Low Income Home Energy Assistance Program) aimed to assist low-income households with affordability. Strategic energy planning must consider land use needs for future renewable energy installations and battery storage, and address lifecycle issues such as battery disposal. Guam's sustainability and land use planning must integrate long-term energy affordability with clean energy deployment, equitable access, and system-wide efficiency improvements.

3.3.8.4. Policy and Implementation Priorities

To support an equitable and sustainable energy future aligned with Guam's land use energy policies below (SC-26 through SC-31), the following actions are important to consider:

- Guam should fully implement and regularly update the Clean Energy Master Plan to ensure consistency with the 2045 renewable energy goal under GCA §8311.
- Integrate Guam Energy Strategies's energy justice principles into all planning, permitting, and investment decisions.
- The Bureau of Statistics and Plans (BSP), Department of Land Management (DLM), GPA, and other agencies should coordinate to identify and secure sites for renewable energy facilities that avoid impacts to sensitive natural resources, prime agricultural lands, hazard zones, and residential communities.
- Prioritize rooftop solar and solar over developed areas such as parking lots and commercial buildings, consistent with SC-28 and SC-29, to reduce land use conflicts and support distributed energy resilience.
- Prior to development, it is essential to analyze whether the power system can accommodate the additional load required.
- Require new residential subdivisions (5+ lots) and commercial developments (>10,000 sq ft) to include solar systems or contribute in-lieu fees for public solar investments.
- Complete a coordinated siting and feasibility study for large-scale solar facilities, per SC-28, ensuring optimization of grid connectivity and avoidance of scenic or ecological impacts.

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- Ensure all new energy infrastructure, including power lines, is undergrounded to the extent feasible to enhance storm resilience (SC-30).
- Ensure long-term safety and security of energy facilities while minimizing impacts to public access and recreational use areas (SC-31).
- Advance GPA's Virtual Power Plant (VPP), smart grid, and DER integration strategies to support efficient, decentralized, and responsive power systems.
- Strengthen interagency collaboration among GPA, CCU, PUC, GWA, GEPA, DoD, and community stakeholders to ensure energy planning is comprehensive, transparent, and inclusive.

With the requirements of PL 35-46, the land use plan should also address the need for land for wind turbine or solar power generation. Moreover, the land use plan should consider the storage required for the disposal or storage of the future spent solar batteries and solar panels. Figure 3-21 shows GPA's proposed island wide power system by 2028 as reflected in the NREL 2023 Energy Baseline Report. Together, these integrated policies and actions will enable Guam to transition to a 100% renewable, affordable, and resilient power system by 2045 while supporting smart land use, environmental protection, and community well-being.

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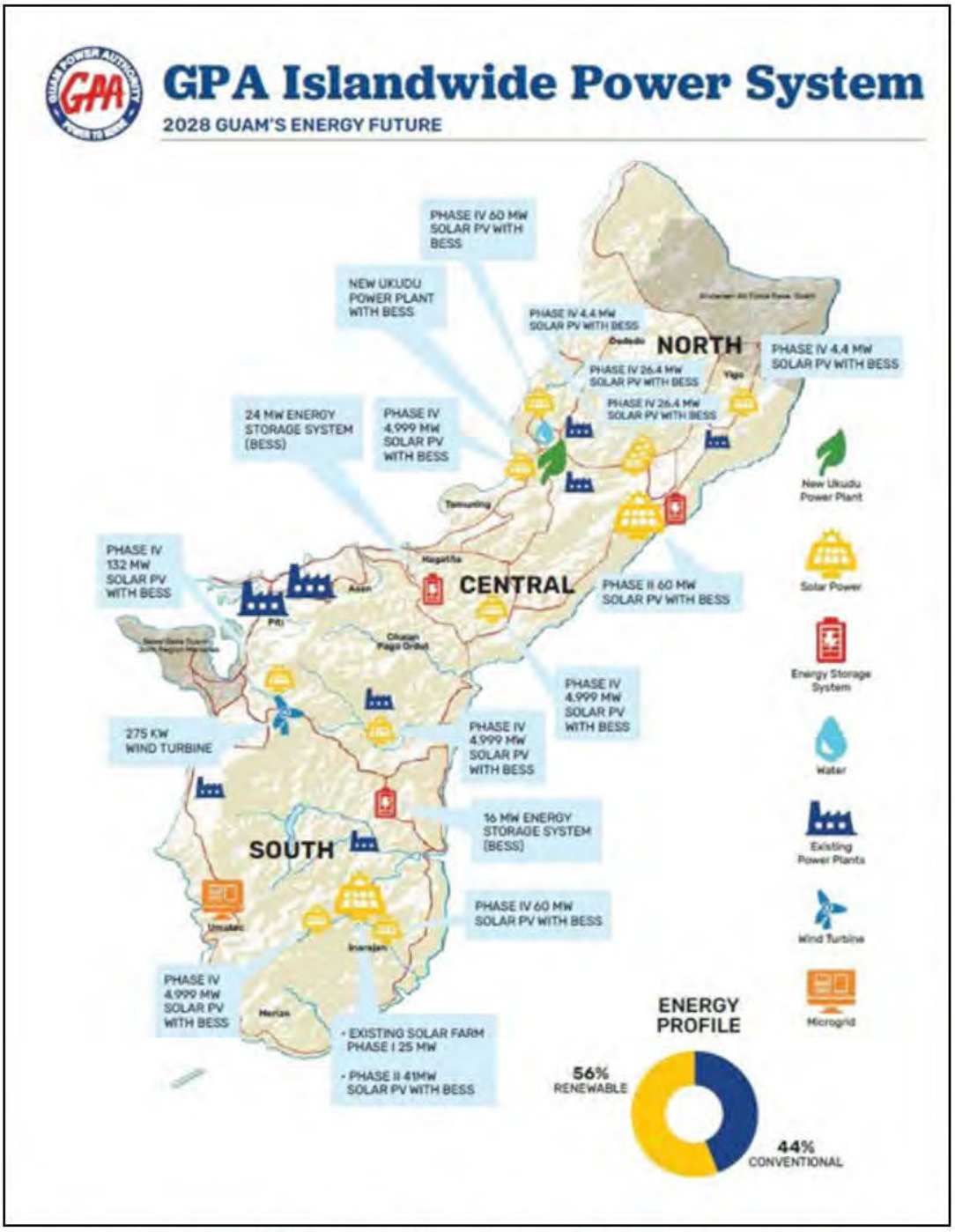

Figure 3-21. GPA Islandwide Power System: 2028 Guam's Energy Future.

3.3.9. Communications

Several communication companies provide internet service throughout the island. Docomo Pacific, GTA, and IT&E are the three major communication companies on the island. Additionally, Starlink is present on the island and provides high-speed services on the island for approximately 4,000 subscribers. With the advancement in technology, an internet connection

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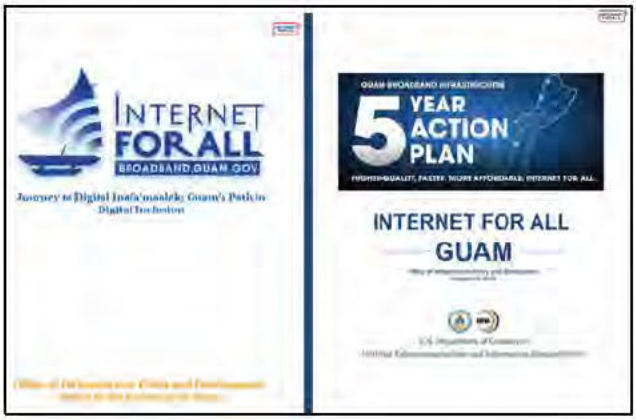
has become a necessity. The internet allows residents of Guam to connect through messaging and social media networks. Society has gotten to a point where a lack of connectivity to the internet can really become a disadvantage for those who cannot afford it.

3.3.9.1. Five-Year Action Plan



A five-year action plan, "Internet for All – Guam" was established on August 28, 2023 by the Guam Office of Infrastructure Policy and Development. The five-year action plan has set a tangible goal to ensure that "every islander, no matter their location or income, has access to free high-speed public internet or an affordable private broadband service" (Office of Infrastructure Policy and Development, 2023). The program would utilize Broadband Equity, Access, and Deployment (BEAD) funding from the US Department of Commerce. The program defines a population as 'Served' with affordable internet access greater than 100 Mbps download, 20 Mbps upload, and latency below 100 ms. Unfortunately, these speeds are currently inaccessible for most Guamanians.

The five-year plan has established the following goals and objectives:

- Develop a Self-Sufficient Broadband Infrastructure
- Deliver Affordable, High-Speed Internet
- Offer Free Public Island-Wide Service
- Elevate the Internet Speeds Across Guam
- Nurture a Skilled Workforce
- Facilitate Participation in the Digital Economy
- Navigate Regulatory Challenges
- Champion Equitable Access
- Adhere to Federal BEAD Program Requirements

One of the key components of the five-year action plan is the construction of Tier 4 Data Center 4 which include the IXP, CDNs, Hosting Services, and other technologies to address latency. The action plan believes that the data center would position Guam as a "hub for global content providers, addressing latency and boosting the economy" (Office of Infrastructure Policy and Development, 2023).

3.3.9.2. Digital Equity Plan

As a result of the five-year action plan, the Office of Infrastructure Policy and Development released "Internet For All: Journey to Digital Inafa'maolek: Guam's Path to Digital Inclusion," also known as the Digital Equity Plan (DEP), in April 2024. The DEP's vision for digital equity is a

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"future where every individual, from each of the covered populations, enjoys equal access to the opportunities and benefits of the digital world" (Office of Infrastructure Policy and Development, 2024). The DEP believes that digital equity is "not merely a technological goal but a moral imperative for Guam" (Office of Infrastructure Policy and Development, 2024). The DEP strives for equitable access to broadband data for the island.

3.3.9.3. Affordability

Figure 3-22 shows that, in comparison to Hawaii and Idaho, Guam pays significantly more than residents of Hawaii and Idaho. The five-year action plan strives to address this issue and to make high-speed internet affordable at a standard of 100 mbps download and 20 mbps upload for a rate of $75 a month.

ISP Name	Download Mbps	Upload Mbps	Price	Per Mbps
Guam / ITE	25	5	$50.00	$2.00
Guam / ITE	75	5	$75.00	$1.00
DOCOMO Pacific Premium	60	3	$110.00	$1.83
DOCOMO Pacific Extreme	120	8	$175.00	$1.46
Guam / GTA minimum	25	1	$92.00	$3.68
Guam / GTA maximum	150	30	$172.00	$1.15
Hawaii / Oahu / Hawaiian Telcom	1000	500	$75.00	$0.08
Ziply Fiber Idaho	50	50	$20.00	$0.40

Figure 3-22. Guam Internet Prices (Office of Infrastructure Policy and Development, 2023).

To address the affordability issue, the five-year plan aims to provide free island-wide wireless internet access. To avoid undermining carriers, the free wireless internet would offer speeds below what's considered as "served," so that carriers would still be able to provide service for customers who want faster speeds.

3.3.9.4. Land Use Policy Implications

The Guam Digital Equity Plan and Five-Year Broadband Action Plan carry significant land use policy implications as they propose extensive deployment of broadband infrastructure across the island. These include the construction of a Tier 4 data center, expansion of middle- and last-mile fiber networks, and installation of wireless towers—all of which require coordinated land use planning, zoning, and streamlined permitting. To enable rapid and equitable deployment, land use policies must accommodate "Dig Once" strategies (to ensure that conduits for internet cables are installed when there's construction work on roads and public spaces), co-location rights, and infrastructure siting near community anchor institutions such as schools and clinics. Village-level engagement is emphasized, meaning land use decisions must reflect localized needs while balancing infrastructure growth with environmental protection and cultural preservation.

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Moreover, the plans treat broadband as essential infrastructure, comparable to water and electricity, suggesting a shift in land use priorities to support digital access as a public utility. This elevates the need for land use regulations to support publicly owned digital infrastructure, designate easements and access corridors, and ensure siting avoids hazard zones and sensitive cultural or ecological areas. As Guam adapts to climate risks and a growing digital economy, land use planning will also need to integrate digital infrastructure into broader resilience, workforce housing, and economic development strategies. In short, digital equity goals necessitate a proactive, inclusive, and adaptive land use framework to ensure equitable and sustainable infrastructure deployment across the island.

3.3.10. Airport Land Use and Infrastructure Planning Considerations

This analysis draws primarily from the 2023 Antonio B. Won Pat International Airport Master Plan Update, which provides a comprehensive roadmap for the airport's growth over the next 20 years. The Master Plan identifies land use, infrastructure, and sustainability challenges that must be addressed to accommodate projected increases in passenger and cargo demand while ensuring continued safety, resilience, and compatibility with surrounding land uses. As the island's only commercial service airport, the Antonio B. Won Pat International Airport plays a substantial role in Guam's economy, public services, and emergency response system, making thoughtful integration with regional land use and transportation planning essential.

A key issue highlighted in the Master Plan is the need to protect Runway Protection Zones (RPZs)[6] and other critical safety areas from encroachment by incompatible uses (Figure 3-23). Although the airport has sufficient airfield capacity to meet projected demand, the master plan notes several safety-related land use issues—including fencing, terrain obstructions, and development within RPZs—that require mitigation to maintain compliance with FAA standards (Master Plan, Executive Summary, p. ES-7). Future development must reinforce land use compatibility by aligning zoning, permitting, and enforcement practices with the Airport Layout Plan and FAA design criteria.

[6] Runway protection zones are a trapezoidal area "off the end of the runway end that serves to enhance the protection of people and property on the ground" in the event an aircraft lands or crashes beyond the runway end. Runway Protection Zones underlie a portion of the approach closest to the airport. Compatible land use within the RPZ is generally restricted to such land uses as agricultural, golf course, and similar uses that do not involve congregations of people or construction of buildings or other improvements that may be obstructions.

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Figure 3-23. Runway Protection Zone and Existing Development.

The Master Plan also underscores the importance of preserving adjacent lands for airport-compatible industrial and logistics functions. The northern, northeastern, and southern areas of the airport are home to key air cargo, general aviation, and support facilities—including the Guam Integrated Air Cargo Facility and Airport Industrial Park (p. ES-8). These areas are essential to sustaining aviation services and accommodating projected cargo tonnage growth, which is forecast to more than double by 2039 (p. ES-2). Land use planning must therefore resist pressures to convert these areas to residential or incompatible commercial uses that could undermine long-term airport operations and employment-generating opportunities. Access to the airport is another priority addressed in the Master Plan, particularly the impact of planned improvements to Route 10A and Tiyan Parkway (p. ES-8). These upgrades will improve connectivity and capacity but are expected to affect airport parking and circulation systems, including employee and rental car lots. The Plan recommends a two-story parking structure and revised traffic circulation to manage these changes. These investments should be coordinated with regional transportation and land use plans to ensure multimodal accessibility, support

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efficient freight and passenger movement, and prevent new conflicts between airport operations and adjacent communities.

Sustainability and stormwater management also feature prominently in the Master Plan. The airport's physical expansion—through new cargo aprons, terminal enhancements, and parking structures—will increase impervious surfaces and runoff. The Master Plan recommends integrating sustainability strategies such as energy-efficient infrastructure, water conservation, and green stormwater systems (pp. ES-16–17). These strategies are essential given Guam's vulnerability to extreme rainfall and coastal flooding. Climate resilience must also guide the siting and design of critical infrastructure, especially facilities like the fuel farm and air traffic control tower located in low-lying areas.

Finally, the Master Plan raises concerns about noise compatibility and environmental justice. As nearby communities in Barrigada and Harmon grow, updated airport noise contour mapping and land use policies may be needed to prevent new residential or sensitive developments in high-exposure areas (Figure 3-24). Coordination with federal, territorial, and military agencies will also be critical to maintain joint-use airspace, emergency access, and continuity of operations across Guam's civil and defense infrastructure. Land use planning around the airport must therefore reflect a systems-level understanding of risk, access, and interagency responsibilities.

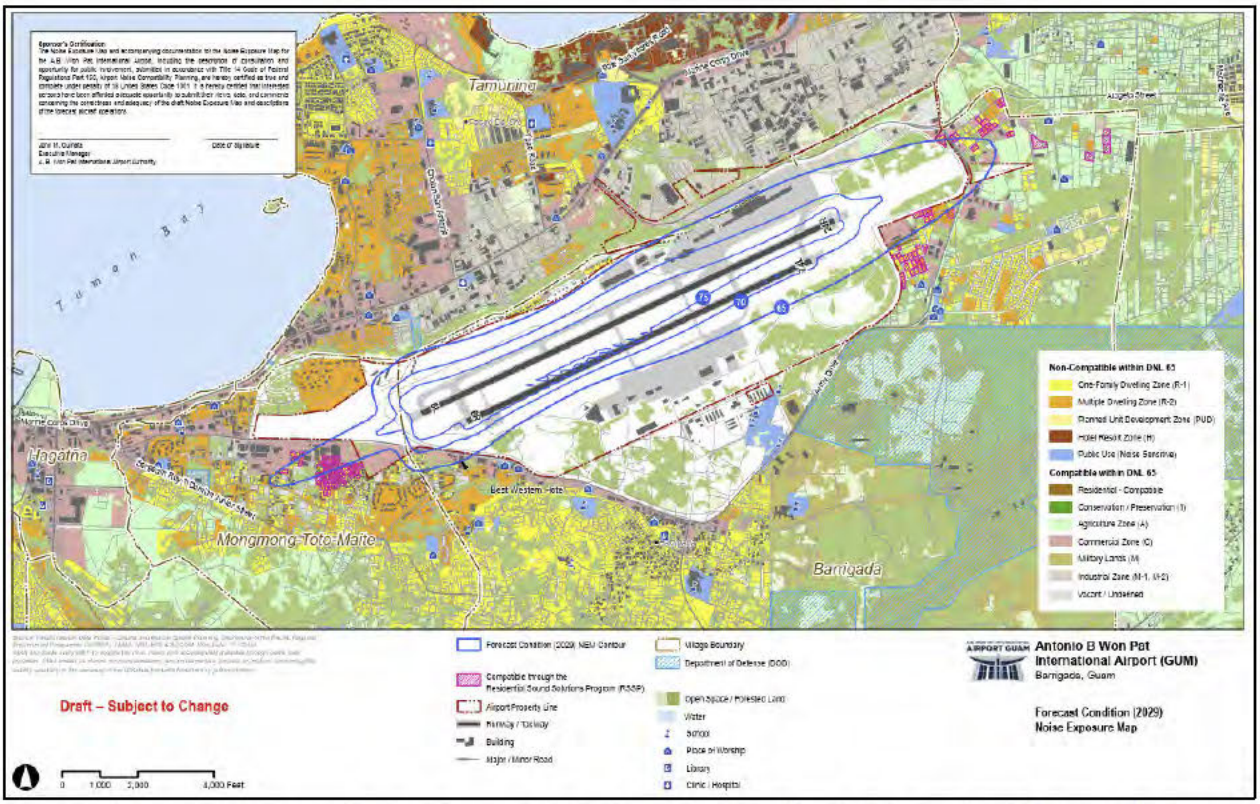

Figure 3-24. Forecasted 2029 Noise Exposure Map for Antonio B. Won Pat International Airport (Antonio B. Won Pat International Airport Master Plan Update).

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3.3.11. Port of Guam Land Use and Sustainability

This discussion draws from the 2025 *Port Authority of Guam Sustainability and Resiliency Plan*, which provides the most current evaluation of port infrastructure, operational challenges, and environmental vulnerabilities. The Port of Guam, located in Apra Harbor, is Guam's primary maritime cargo facility and a lifeline for over 90% of the island's imported goods, including food, fuel, building materials, and critical supplies. The port's continued functionality is vital to public safety, economic stability, and disaster resilience. As such, planning for the port's land use, infrastructure, and surrounding development must be closely aligned with Guam's broader sustainability and climate adaptation goals.

The Port Sustainability and Resiliency Plan identifies major physical vulnerabilities to climate change and natural hazards. These include aging and corroded infrastructure, limited drainage capacity, exposure to coastal inundation and sea level rise, and lack of redundancy in critical systems (PAG, 2023, p. 12–13). Key assets such as the main wharves, container yards, power and water systems, and access roads lie within areas highly exposed to storm surge and flooding. The Port Sustainability and Resiliency Plan recommends elevating and hardening critical infrastructure, relocating vulnerable systems, and planning for eventual sea level rise inundation over the long term. These physical vulnerabilities have direct implications for land use, requiring not just on-site upgrades but broader coordination of coastal management and upland development.



Land use compatibility is another core issue. The port occupies constrained land adjacent to industrial and commercial development in Cabras Island and Piti, but faces pressure from adjacent land uses that may be incompatible with its high-volume, high-impact operations.

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Heavy truck traffic, noise, and emissions from port activities require careful buffer zoning and separation from residential or recreational uses. The Port Sustainability and Resiliency Plan notes that some existing land uses—such as fuel tank farms, utility facilities, and shoreline access points—may conflict with long-term resilience objectives or create hazards in the event of natural disasters (*Id.*, p. 34–36). Land use planning should preserve essential working waterfront functions while improving compatibility and access management.

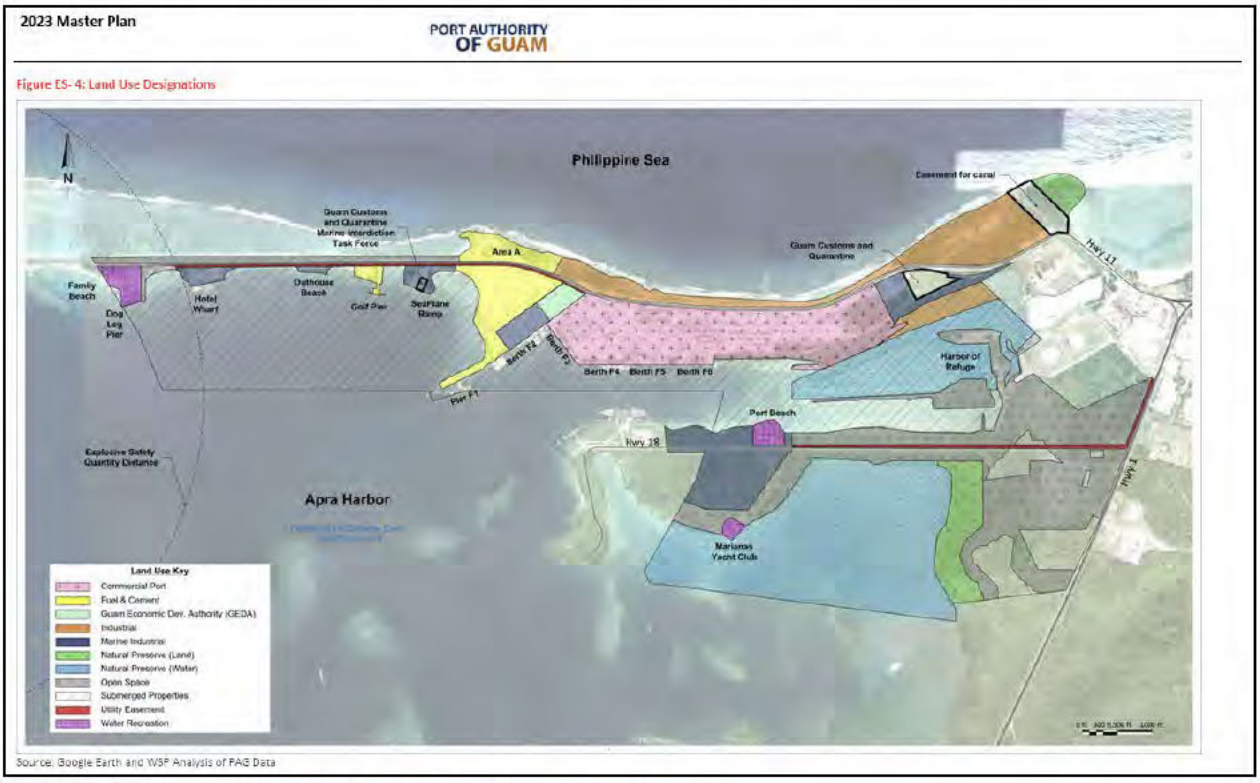

Figure 3-25. Port Authority of Guam Land Use Designations.

The port's role as a multimodal freight hub requires robust surface transportation infrastructure and integrated planning with the island's road system (Figure 3-25). Access to and from the port depends heavily on Marine Corps Drive (Route 1), which also serves as a primary corridor for the civilian population. The Port Sustainability and Resiliency Plan recommends investments in access roads, staging areas, and traffic management systems to reduce congestion, facilitate emergency response, and maintain cargo flow in the event of disruptions. From a land use perspective, this means identifying and preserving corridors for freight mobility and ensuring new development near the port does not constrain operations or emergency access routes.

Sustainability and environmental compliance are also major concerns. The port contributes to air and water quality impacts due to diesel emissions, stormwater runoff, and aging bulk handling infrastructure. The Port Sustainability and Resiliency Plan calls for implementation of environmental best management practices (BMPs), such as upgrading fueling stations, improving stormwater treatment, and developing green infrastructure where feasible (*Id.*, p. 20–21). These actions must be supported through land use policies that enable space for such

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infrastructure, limit runoff from adjacent uplands, and guide future development toward more sustainable practices.

The port also plays a central role in Guam's climate adaptation and emergency preparedness framework. It must remain functional during typhoons and earthquakes and be positioned to support recovery after disasters. This necessitates regional coordination in hazard mitigation planning, pre-positioning of emergency resources, and cross-sector continuity planning. Land use planning should support this function by enabling redundancies, providing upland staging areas, and maintaining open logistics corridors. The Port Sustainability and Resiliency Plan specifically calls for a "whole community" approach that includes not just the port, but surrounding businesses, utilities, and public agencies in building resilience (*Id*., p. 39–40).

In addition to infrastructure and operational priorities, the Port Sustainability and Resiliency Plan identifies the need to protect surrounding coastal and marine ecosystems, including wetlands, mangroves, and nearshore habitats in and around Apra Harbor. These resources provide critical ecological functions—such as shoreline stabilization, fish nursery habitat, and water quality filtration—while also contributing to the port's climate resilience by buffering against erosion and storm surge. Mangrove areas along the harbor's edge and remnants of wetland systems near fuel storage and staging areas are particularly vulnerable to the effects of sea level rise, port expansion, and pollutant runoff. Ensuring compatibility between port operations and these natural systems will require integrated planning and adherence to both local and federal environmental safeguards (see Chapter Five also).

The Port Sustainability and Resiliency Plan calls for environmental best management practices (BMPs) and nature-based solutions to reduce impacts from stormwater and industrial activity. These include improving drainage infrastructure, installing vegetated swales, and potentially restoring mangrove fringes or tidal wetland buffers where space allows. Such approaches serve dual purposes: they help the port meet Clean Water Act and Coastal Zone Management Program requirements, and they contribute to broader resilience objectives by enhancing natural defenses. Incorporating habitat protection into land use and infrastructure decisions will strengthen the port's sustainability profile and ensure that Guam's working waterfront supports both economic and environmental security.

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3.3.12. Public Services Policies and Sustainability



Ensuring that new development in Guam is supported by adequate public services aligns closely with the United Nations Sustainable Development Goals (SDGs), particularly SDG 11: Sustainable Cities and Communities. The Guåhan 2050 Sustainability Plan reinforces key SDG principles by requiring that urban development is strategically planned, infrastructure-supported, and environmentally sustainable. SDG 11.1 advocates for safe and affordable housing, which necessitates proper public services such as water, power, wastewater systems, and transportation networks. Similarly, SDG 11.3 emphasizes inclusive and sustainable urbanization, which is reflected in Guam's commitment to concentrating development in areas with established infrastructure, preventing urban sprawl, and protecting rural and sensitive lands.

Beyond urban planning, these policies also align with SDG 6: Clean Water and Sanitation by ensuring that groundwater withdrawals remain within sustainable limits, wastewater infrastructure supports public health, and stormwater systems mitigate environmental risks. Furthermore, the emphasis on renewable energy and resilient power supply directly supports SDG 7: Affordable and Clean Energy, aiming for a transition to 100% renewable energy by 2045 in accordance with Guam's energy policies. Investments in multi-modal transportation and public transit systems also advance SDG 9: Industry, Innovation, and Infrastructure, improving mobility while reducing traffic congestion and emissions. By integrating these SDG-aligned principles into Guam's land use policies, the island is fostering a future that balances economic growth, environmental protection, and social well-being, ensuring long-term resilience and sustainability for its communities.

PUBLIC SERVICES POLICIES

Urban Development

SC-7. Adequate Public Services.

New development, including individual residential, in designated Urban Areas must be served, prior to occupancy, by adequate and sustainable public services, including water supply, wastewater connection, primary and secondary access roads, power, and communications. The Bureau of Statistics and Plans, Department of Land Management, and the CHamoru Land Trust (CLT) shall coordinate about the adequacy of public services and other relevant land use matters prior to any disposition, transfer, subdivision, or development proposal of CLT lands that may lead to an increase in water, wastewater, or other public services demand.

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SC-8. Capacity and Growth Inducement.

New public services infrastructure shall be adequately sized to support planned development and to not induce growth inconsistent with other provisions of the Guåhan 2050 Sustainability Plan.

SC-9. Development Over the Aquifer.

New development, including single family residential, over the aquifer must be served by public sewer or meet Guam EPA septic discharge requirements pursuant to P.L. 37-105.

SC-10. Subdivision Over the Aquifer.

Subdivision of parcels over the Northern Guam Lens Aquifer not served by public wastewater or able to comply with Guam EPA septic discharge requirements pursuant to P.L. 37-105 is prohibited.

Water Supply

SC-11. Sustainable Water Supply.

Groundwater withdrawals shall not exceed the aquifer's sustainable yield.

SC-12. Adequate Water Supply.

New development, including single family residential, must be served by adequate, safe public water supply, including source waters, storage (water tanks) and distribution systems, or in rural areas by sustainable and safe private water, where applicable.

SC-13. Private Water Supply.

Private water supply systems shall be designed, operated, and function consistent with the protection of public health. Consider water catchment systems subject to further review by GEPA.

SC-14. Water Capacity and Sizing.

Public and private water systems, including wells, storage, and distribution infrastructure, shall be provided and designed to serve planned, sustainable growth, support minimum fire safety flows, and not induce growth inconsistent with the Guåhan Sustainable Development Plan.

Wastewater Infrastructure

SC-15. Wastewater Capacity.

The capacity of public and private wastewater systems shall be sized to serve planned, sustainable growth and not induce growth inconsistent with the Guåhan Sustainable Development Plan.

SC-16. Wastewater Public Health.

Wastewater systems shall be designed, operated and maintained in support of the public health and public groundwater supplies.

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SC-17. Adequate Wastewater Systems.

New development, including single family residential, must be served by adequate public wastewater service, consistent with GCA Title 10 and implementing regulations, or in rural areas by a private system authorized by Guam EPA. The adequacy of wastewater systems for existing development shall be evaluated and connected to public wastewater service if feasible and as otherwise required by law. Expansions or redevelopment of existing development shall comply with this policy.

Transportation and Mobility System

SC-18. Adequate Roads, Circulation, and EV Infrastructure.

New development shall be served by adequate public roadways and circulation capacity, including bicycle, pedestrian, and transit options and supporting infrastructure (e.g., bike racks, lighting, benches, green infrastructure), consistent with applicable federal and local standards. EV charging infrastructure shall be supported to meet EV demand. New and existing public transportation infrastructure shall maximize opportunities to use sustainable power, such as electric vehicles, and be maintained to ensure long-term efficiency.

SC-19. Multi-modal Transportation.

Public roads shall be designed and operated for safe, multi-modal transportation, including automobile, bicycle, and pedestrian use in compliance with the American with Disabilities Act. Existing roads shall be regularly assessed and those not in compliance with required safety standards shall be upgraded as soon as possible. Existing transportation facilities, including bus/transit stops, shall be enhanced with bicycle and ADA-accessible pedestrian infrastructure, including signage and benches where applicable, bike lanes, sidewalks, and crosswalks.

SC-20. Public Transportation.

Public transit systems, rideshare, bike lanes, on-demand transit, and other non single-occupancy vehicle transportation strategies and programs shall be facilitated and provided for in new development and infrastructure improvements where applicable, including to facilitate higher speed public transit. Sponsored ride programs shall be considered to support disadvantaged community ridership.

SC-21. Parking.

New development, including redevelopment of existing structures and land uses, shall be served by adequate parking facilities, incorporating low-impact development solutions as feasible. Parking requirements may be reduced if supported by offsetting transit options.

SC-22. Road Capacity and Transportation Planning.

New roads and parking facilities shall be sized to serve planned, sustainable growth and not induce growth inconsistent with the Guåhan Sustainable Development Plan. Update

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the Guam Transportation Management Plan for 2030-2050. Establish Level of Service (LOS) standards to maintain a sustainable road system.

SC-23. Context-Sensitive Setback and Parking Standards.
Establish updated, context-sensitive setback and parking standards, including through approved neighborhood parking management plans, that support multimodal mobility, pedestrian safety, and stormwater management objectives, consistent with site conditions, land use intensity, and village design principles.

SC-24. Urban/Village Setbacks & Parking Ratios.
Implement the following setbacks and parking ratios in Urban and Village centers as appropriate:

- **Setbacks:** Front yard setback may be reduced to 10 ft; side setbacks 5–8 ft, to support active street frontage without compromising safety or stormwater buffers.
- **Parking Ratios:** Allow reduction to ~0.75 auto stalls per residential unit; 1 per 500 ft² commercial, pursuant to an approved neighborhood parking management plan; allow compact/angled configurations, shared on-street facilities, and integrate required bicycle parking per § 61531(l).

SC-25. Rural/Agricultural Setbacks & Parking Standards.
Implement the following setbacks and parking ratios in Rural and Agricultural Areas as appropriate:

- **Setbacks:** Maintain existing minimums (15–20 ft front; 7–10 ft side/rear) to support open space, operations, and emergency access. Allow limited modular variances (±3 ft) per § 61616(l) for practical hardship cases.
- **Parking:** Comply with base statutory standards—1 auto stall per dwelling; 1 per 100 ft² retail; maintain standard stall dimensions and aisle widths as defined in § 61531 and § 61532.

SC-26. Flexible Loading and Shared Parking in Denser Zones.
Urban mixed-use zones may allow angled parking (up to 45°) with 13.5 ft aisle widths to economize space. Promote shared parking between complementary uses (e.g. retail/night & residential/day) to reduce overall parking footprint, supported by zoning flexibility.

SC-27. Emerging Resilience Standards via Setback Design.
Encourage setbacks to incorporate bioretention strips or native landscaping zones, especially where stormwater drainage is constrained. Parking layouts should be designed for dual use—e.g. as temporary staging or emergency surge space during disasters—while still complying with dimensions and aisle standards.

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SC-28. Islandwide Standardization of Street Naming and Address Systems.

- **Uniform Guidelines:** Establish and enforce a consistent, islandwide protocol for street naming and building numbering, aligned with National Emergency Number Association (NENA) standards and compatible with public safety systems (e.g. 911 response, disaster evacuation).
- **Urban Areas and Village Cores:** Prioritize block-by-block precision, GIS tagging, and integration with parcel databases, especially in growth areas (e.g. Dededo, Tamuning, Mangilao). Ensure names are unique, culturally appropriate, and usable by emergency responders and logistics.
- **Rural and Agricultural Areas:** Implement simplified linear addressing or distance-based numbering (e.g., house number = distance from road origin), allowing lower density areas to be included in the grid while minimizing maintenance burden.
- **Technology Integration:** Invest in an up-to-date, centralized digital platform integrating naming, numbering, and GIS location data across all government departments (DPW, Land Management, GFD, etc.) for permit processing, infrastructure planning, and emergency access.

Stormwater Capacity

SC-23. Stormwater Facilities.

New development, including redevelopment, shall include or be served by adequate stormwater detention, treatment, conveyance capacity, and maintenance, including on and offsite best management practices as specified in the CNMI and Guam Stormwater Management Manual and Supplement. Development of individual residential parcels shall include stormwater best management practices to allow infiltration to account for the increase in impervious surface.

SC-24. Stormwater Capacity.

Stormwater facilities shall be designed and sized to serve planned, sustainable growth and not induce growth inconsistent with the Guåhan Sustainable Development Plan.

SC-25. Peak Storm Events System Assessment.

Assess island drainage systems to identify priority improvements to address significant risks from peak storm events.

Waste Management

SC-26. Zero-waste Infrastructure.

Designate and protect land for zero waste infrastructure (e.g., reuse centers, C&D recovery, composting). Streamline permitting for facilities aligned with zero waste goals. Allow accessory recovery and recycling uses in commercial and light industrial zones.

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SC-27. Construction and Demolition Waste Diversion.
Require waste diversion plans for construction and demolition permits.

SC-28. Recycled Materials in Public Infrastructure.
Maximize use of recycled materials as feasible in public infrastructure projects.

SC-30. Incentives for Green Industry and Circular Economy.
Consider land use incentives, including density bonuses and permit streamlining for projects incorporating site recycling, material reuse, or green job creation. Support eco-industrial parks consistent with G50SP land use designations and policies.

SC-31. Infrastructure Siting Coordination.
Use land use planning to reduce illegal dumping by ensuring accessible, conveniently located drop-off and processing facilities.

SC-32. Distribution of Waste Management Infrastructure.
Ensure that zero waste infrastructure and services are equitably distributed without disproportionate~~ly~~ impacts across the villages. Engage village residents in site selection and planning of reuse and recycling facilities.

Power Supply

SC-33. Sustainable Power.
New development, including single family residential, shall be served by adequate and sustainable power.

SC-34. Renewable Energy.
Non-fossil fuel energy developments and infrastructure should be prioritized and provided for through appropriate siting and design to achieve 100% affordable, technically sound, resilient, and equitable renewable energy for Guam by 2045 consistent with GCA §8311, in coordination with community interests and the National Renewable Energy Lab (NREL).

SC-35. Locating and Planning for New Energy Facilities.

a. Energy facility development shall be located to avoid adverse impacts to natural resources (including groundwater), parks, cultural resources, significant visual resources, and communities to the maximum extent feasible. This includes utilizing distributed and diverse energy sources using developed locations, such as solar facilities over public parking areas and larger industrial and commercial buildings.

b. **Large Solar Arrays.** BSP shall complete, in coordination with GPA, DLM, and other relevant agencies, a siting and feasibility study to identify appropriate locations for large solar arrays that (1) avoid to the maximum extent feasible lands designated as resource conservation or prime agricultural land, sensitive habitats, wetlands, or streams, cultural resources, other significant environmental resources, and land

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located in a hazard zone, including coastal setback areas, flood zones, and steep slopes or unstable lands; (2) consider and minimize potential impacts to residential areas; (3) minimize impacts to scenic landscapes or public views; and (4) optimize proximity to the power grid and other energy system infrastructure.

SC-36. Rooftop Solar Energy.

Rooftop residential, government, commercial, and industrial solar energy siting shall be supported to minimize impacts to undeveloped areas and support energy grid resilience and maximum affordability, consistent with the Guam Clean Energy Master Plan. Where appropriate, residential subdivisions of 5 or more lots, and commercial developments greater than 10,000 square feet shall include solar energy systems or provide equivalent in lieu fees to the GPA for purposes of public solar energy or other renewable energy facility development.

SC-37. Undergrounding.

Power lines shall be installed underground to the maximum extent feasible.

SC-38. Facility Security.

Power and energy facilities shall be sited and designed for long-term safety and security without unnecessary impacts to public recreational access or other public purposes.

Communications

SC-39. Universal Telecommunications.

New development, including single family residential, shall be served by adequate telecommunications, including state-of-the-art transmission technologies equitably distributed.

SC-40. Undergrounding and Wireless.

Communication infrastructure shall be installed underground or rely on wireless technologies to the maximum extent feasible.

SC-41. Co-Location, Consolidation, and Visual Mitigation Required.

Telecommunication transmission infrastructure shall be co-located and consolidated, outside of the roadway pavement, to the maximum extent feasible. Communication towers and other facilities shall be designed with visual mitigations and screening to reduce impacts on Guam's scenic character.

SC-42. Facility Security.

Communication facilities and infrastructure shall be sited and designed for long-term safety and security without unnecessary impacts to public recreational access or other public purposes.

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Airport Land Use and Infrastructure

SC-43. Ensure Compatible Land Use in Airport Safety Zones.
Preserve the safety and operational integrity of the airport by maintaining land use compatibility in Runway Protection Zones (RPZs), safety areas, and airspace clearance zones. Prohibit new incompatible development in these zones and coordinate zoning and permitting with FAA guidelines and the Airport Layout Plan.

SC-44. Preserve Strategic Lands for Airport-Compatible Development.
Protect and reserve adjacent lands, including those in the Airport Industrial Park and former NAS property, for logistics, cargo, aviation maintenance, and other airport-compatible industrial uses. Avoid rezoning or redevelopment for residential or incompatible commercial use that may constrain long-term airport operations.

SC-45. Coordinate Airport Access Improvements with Regional Mobility Planning.
Support the integration of Route 10A and Tiyan Parkway improvements into broader transportation planning. Ensure safe and efficient access for airport users—passengers, workers, freight, and emergency vehicles—while minimizing local congestion and land use conflicts.

SC-46. Integrate Sustainable Stormwater Management into Airport Development.
Require all new and redeveloped airport and adjacent facilities to implement sustainable stormwater management practices consistent with other policies of this plan, including green infrastructure, detention systems, and runoff quality treatment to manage flood risks and protect water quality.

SC-47. Mitigate Airport Noise and Air Quality Impacts.
Discourage new sensitive land uses, such as housing and schools, in areas affected by aircraft noise and emissions. Use noise contour maps, air quality data, and flight path analyses to inform planning, zoning, and development review decisions.

SC-48. Build Resilient and Sustainable Airport Infrastructure.
Support investments in infrastructure hardening and decarbonization at the airport, including energy-efficient building design, renewable energy, electrification of support systems, and storm hazard protection. Coordinate with the Guam Coastal Management Program to ensure consistency with climate resilience and coastal zone policies.

Port of Guam Land Use and Sustainability

SC-49. Protect and Reinforce Port Infrastructure and Lifeline Systems.
Support investments to harden, elevate, and modernize critical port infrastructure to reduce exposure to climate hazards, including sea level rise, coastal flooding, and typhoon damage. Coordinate hazard mitigation planning with port operations and adjacent land uses to ensure system-wide resilience.

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SC-50. Ensure Land Use Compatibility and Buffer Zones around the Port.
Maintain zoning and land use designations that preserve industrial and maritime functions within the port district and prevent encroachment of incompatible uses. Consider coastal-dependent uses such as aquaculture and Ocean Thermal Energy Conversion (OTEC) as may be appropriate, consistent with maintaining priority port functions. Encourage land use buffers and mitigation strategies (e.g., traffic controls, vegetation, setbacks) to reduce conflicts with adjacent communities.

SC-51. Integrate Port Access Planning into Regional Transportation Systems.
Coordinate freight and cargo access routes to the port with regional transportation planning. Preserve and enhance road capacity and staging areas along Marine Corps Drive and related corridors to support efficient and resilient movement of goods, including during emergencies.

SC-52. Advance Stormwater and Environmental Management at the Port.
Support implementation of green infrastructure, stormwater BMPs, and environmental upgrades at the port and surrounding industrial areas. Require adjacent developments to manage runoff and minimize pollution loads that may affect harbor and marine ecosystems.

SC-53. Support the Port's Emergency and Disaster Preparedness Role.
Plan for redundant systems, upland logistics zones, and continuity of operations to ensure the port's functionality during and after disasters. Designate compatible upland areas to serve as contingency logistics hubs or emergency support facilities as part of Guam's broader adaptation framework.

SC-54. Protect Coastal Wetlands, Mangroves, and Marine Resources at the Port.
Ensure that all port operations, infrastructure upgrades, and adjacent land development avoid or minimize adverse impacts to coastal wetlands, mangrove forests, and nearshore marine ecosystems. Require compliance with environmental regulations and support enhancement measures such as shoreline buffers, habitat restoration, and green infrastructure that provide ecological and protective benefits. Coordinate with resource agencies to integrate habitat considerations into all phases of port planning, permitting, and construction.

3.4. Housing

Guam faces significant challenges in providing adequate and sustainable housing for its growing population. These challenges include a shortage of affordable housing, exposure to climate change-related hazards, and aging infrastructure that limits new development. At the same time, the island must balance the demand for new residential land while ensuring that existing communities remain resilient to climate change impacts such as sea level rise, increasing storm intensities, extreme flooding, and other environmental risks. This section summarizes the recent history of housing issues in Guam and the basis for policies that aim to

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create a diverse and sustainable housing market that meets the needs of Guam's residents while promoting climate resilience and infrastructure efficiency.

3.4.1. Contemporary Housing Trends and Issues

Over the past four decades, Guam has experienced significant shifts in housing trends and land use, influenced by economic fluctuations, military activities, and policy decisions. In the 1980s, the federal government controlled approximately one-third of Guam's land, primarily for military purposes, a situation unchanged since the end of World War II. This extensive federal land ownership limited the availability of property for civilian housing and development, contributing to a constrained real estate market (Government of Guam, 1988).

The early 1990s saw a concerted effort to analyze and address housing needs. A 1994 report highlighted challenges such as infrastructure deficiencies, a lack of affordable housing, and environmental degradation resulting from rapid, unplanned growth. These issues underscored the necessity for comprehensive land use planning to balance development with environmental preservation (BSP, 1994).

In recent years, Guam's housing market has faced renewed pressures. The military buildup, particularly the relocation of U.S. Marines from Okinawa, has intensified demand for housing, leading to rising property values and rental rates. This surge has exacerbated the existing shortage of affordable housing, including on-base, making it increasingly difficult for local residents to secure homes within their financial means (GAO, 2025; GAO, 2024; Reuters, 2024). As summarized by the GAO:

> *In the absence of identified personnel requirements, DOD faces challenges to ensuring an adequate support infrastructure at installations in Guam to accommodate both Marine Corps personnel relocating from Okinawa and future GDS personnel.[] Guam has limited space and capacity to support the expected growth in personnel and related installations and services. DOD faces significant challenges to ensuring GDS personnel and their families have sufficient housing, schools, medical care facilities, and commissaries.* (GAO, 2025, p. 22)

3.4.2. Affordable Housing and Housing Diversity

The affordability crisis in Guam has been exacerbated by rising construction costs, land scarcity, and a mismatch between housing supply and income levels. Many low- and moderate-income households struggle to find suitable housing within their means, while higher-density and mixed-use developments remain limited. To address this, it is necessary to maintain adequate land availability and zoning for a range of housing types, including single-family, multi-family, and mixed-use developments, ensuring that all income levels have access to affordable,

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safe and sustainable housing options.[7] Inclusionary housing requirements and density bonuses will help increase the availability of affordable units while promoting efficient land use.

Guam is currently grappling with a multifaceted housing crisis characterized by a shortage of affordable units, vulnerability to climate-induced hazards, rising construction costs, and infrastructure challenges. The 2019 Guam Housing Study and Needs Assessment projected a demand for nearly 10,000 additional housing units between 2020 and 2025 to accommodate population growth and address existing shortages (GHURA, 2020). Notably, the island's housing stock increased by only 988 units between 2010 and 2020, highlighting a significant shortfall in meeting housing needs (BSP, 2025).

The affordability crisis has been exacerbated by rising construction costs and limited land availability. In 2021, the median price for a single-family home reached $375,000, a 12% increase from the previous year, making homeownership increasingly unattainable for many residents. Most recently, the median home price was around $400,000. When plotted against median household income, the dramatic decrease in affordability is apparent, with the ratio of income to home price falling by more than half (Figure 3-26). This situation is further strained by the influx of military personnel and associated temporary workers, which has led to increased demand and competition in the housing market (MBJ, 2023). Moreover, analysis by the Guam Housing Corporation suggests that realistically, a $400,000 home price is not very attainable (and thus not affordable) for median household incomes, using typical borrowing conventions. This highlights, even more, the need for increased housing stock that is relatively more affordable, whether through market mechanisms responding to increased densities (supply) or government programs (subsidies) (GHC, 2025).

[7] Affordability is typically defined as providing housing for people making from 80% of the area median income (low income), to 50% (very low) to 30% (extremely low). In the alternative, the U.S. Department of Housing and Urban Development generally defines “affordable housing” as housing on which the occupant is paying no more than 30 percent of gross income for housing costs, including utilities.

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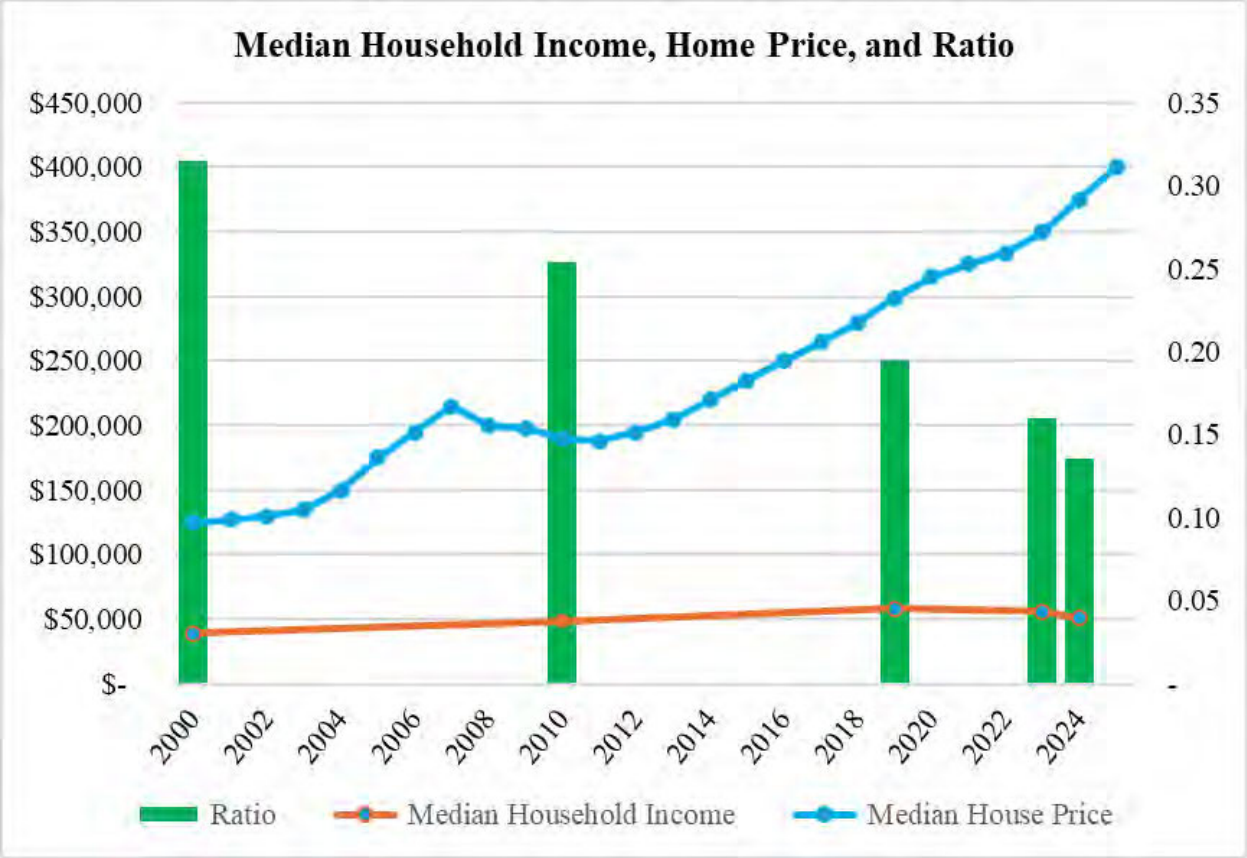

Figure 3-26. Median Household Income, Home Price and Ratio.

According to some village mayors, there are concerns about the adequacy of the housing stock: "Our village seems to have an adequate number of livable spaces in general, as there are many apartment-type units. However, many of those units house more than one household." And, despite some high-quality affordable housing, some felt that "many homes are costly considering the quick development in the more recent past." Mayors also emphasized the need to explore new or redeveloped housing opportunities, including development of supporting infrastructure, particularly along Route 15, where many residents apparently use Chamorro Land Trust properties. "Perhaps new housing can be possible for our people if these large properties have infrastructure needed to build."

Survey responses from the G50SP Workshop (Figure 3-27) highlight community concerns and priorities for sustainable growth with respondents emphasizing the importance of and need for:

- "Affordable housing, repairing education facilities,"
- "Affordable, multiuse housing, protection of our water sources, renewable energy: solar panels on roofs (not clearing land)."

When asked how affordable housing could be provided, responses suggested that Guam should "subsidize affordable housing construction and training for construction workers/architects in Guam," as well as "provide more options in housing choices and accommodations to income."

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Others called for "good and stronger policy and laws for businesses to provide affordable housing to the local people," while pointing out that the government should evaluate whether Chamorro Land Trust land was being used for farming as was originally intended, and whether there were opportunities to leverage this land for affordable housing development for all.

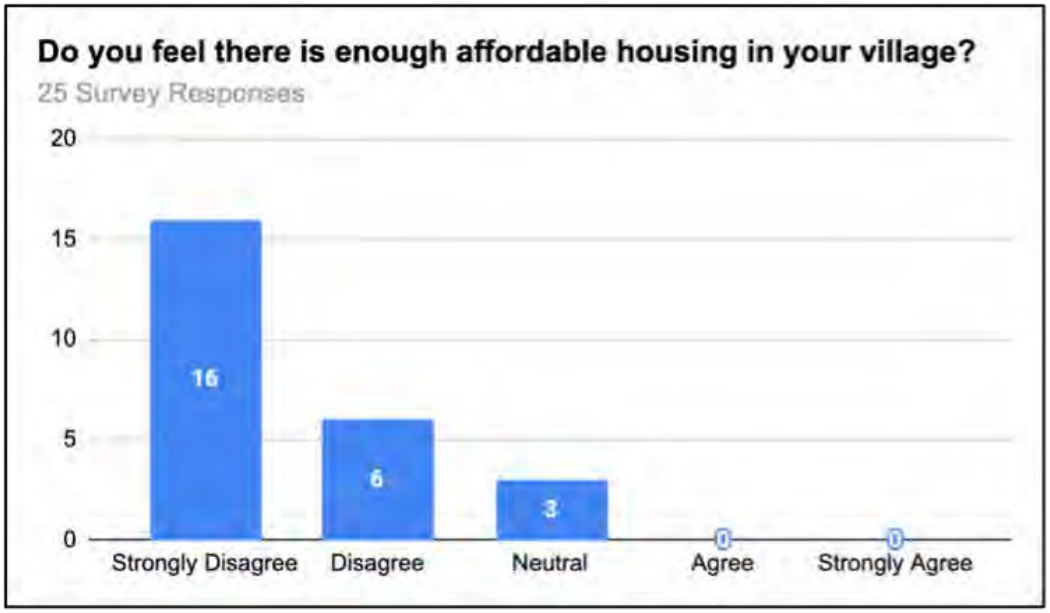

Figure 3-27. Public Response to Available Affordable Housing.

As seen in *Figure 3-28*, further community engagement through the G50SP Island Wide survey revealed that 82% of respondents believed a combination of both multi-family and single-family housing was the best approach to addressing Guam's housing needs. A strong majority (87%) supported the construction of affordable housing in their village, while 12% opposed it. Similarly, 79% supported the construction of more multi-family housing units in their village, with only 19% opposed.

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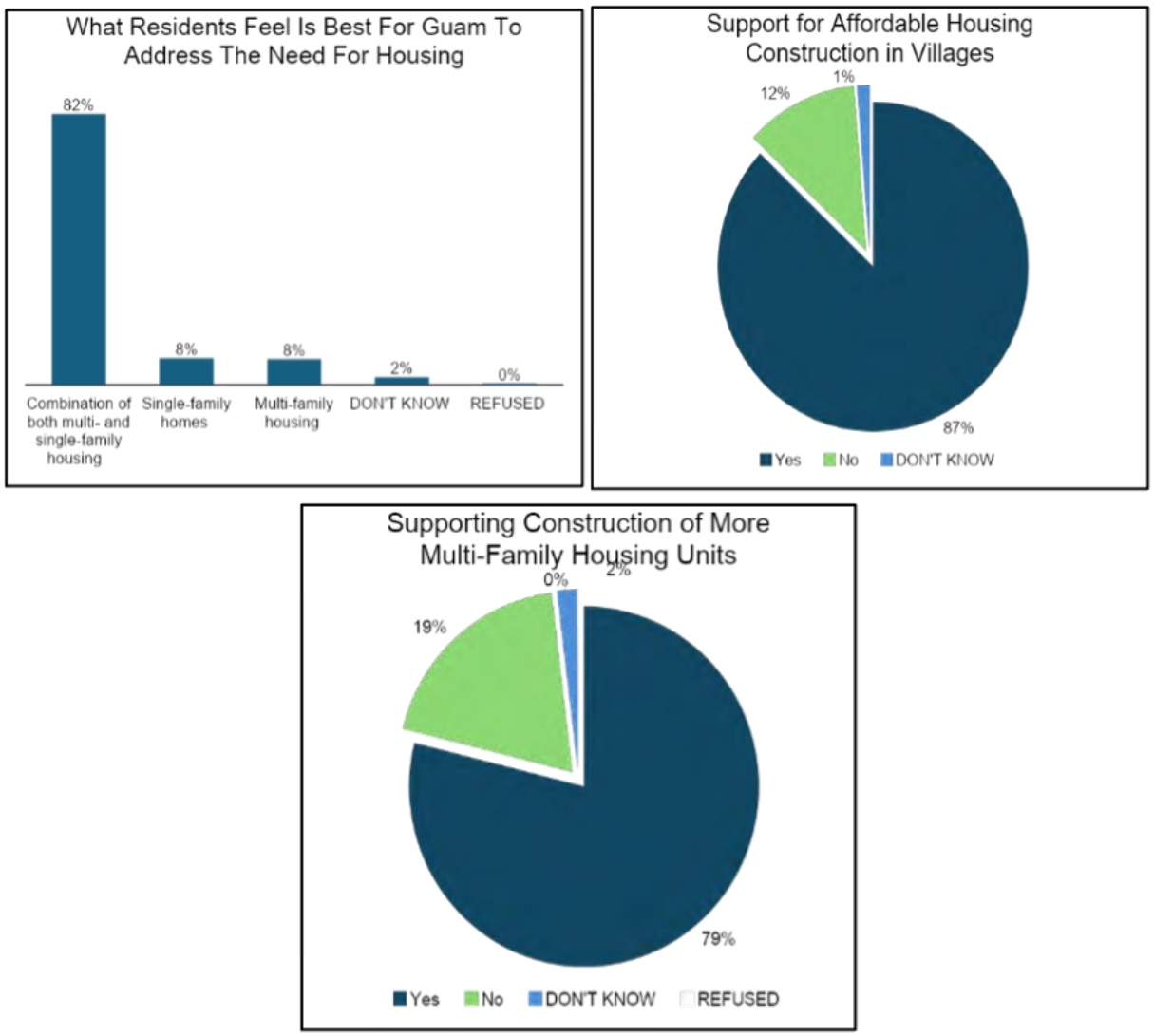

Figure 3-28. Public Response to Housing Needs.

Accessory Dwelling Units (ADUs) is another viable solution for increasing affordable housing options. Also known as "granny flats" or "in-law suites," these units can serve multiple purposes, such as housing family members or generating rental income, thereby addressing the pressing need for affordable housing on the island. Many communities have been updating their land use plans and zoning codes to allow ADUs, including specific requirements to ensure compliance with existing building codes, such as minimum lot sizes, unit dimensions, and utility hookup requirements. Guam Public Law 38-7 currently allows a 400-square-foot ADU for lots measuring between 3,500 square feet and 5,000 square feet while lots between 5,000 square feet and 10,000 square feet can have an 800 square feet ADU. ADUs must be connected to public sewer or have an advanced-nitrogen reducing septic system. Any increase in housing density should be closely coordinated with other elements of the G50SP that seek to protect Guam's drinking water supply by minimizing septic demand over the aquifer.

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Enabling the construction of ADUs could provide practical and immediate solutions to the affordable housing crisis, allowing families to care for their members—particularly the elderly—and offering more affordable rental opportunities for the community. Implementing ADUs could be a strategic approach to alleviating Guam's housing shortage. By maximizing existing residential spaces, ADUs can increase housing density without the need for extensive new developments. This approach not only addresses the immediate demand for affordable housing but also supports multigenerational living arrangements and provides homeowners with additional income streams, contributing to the economic resilience of Guam's communities.

3.4.3. Mixed-Use and Compact Development

Traditional settlement patterns in Guam have favored village centers with a mix of residential, commercial, and community uses. Encouraging mixed-use development and compact urban design will help revitalize village cores, reduce transportation costs, and enhance access to essential services. Higher residential densities near employment centers, public services, and transit corridors will maximize land efficiency and minimize the need for costly infrastructure expansion, which is consistent with the growth management and public services policies of G50SP.

Planned Unit Developments (PUDs) and innovative housing models, such as small-lot developments and mid-rise buildings, can provide additional flexibility and creativity in residential planning. This approach aligns with the 2009 North and Central Land Use Plan, which included mixed use land use designations along major developed road corridors in Yigo, Dededo, Tamuning, and Barrigada-Mangilao, which are largely incorporated into the land use map of the G50SP (Figure 3-29).

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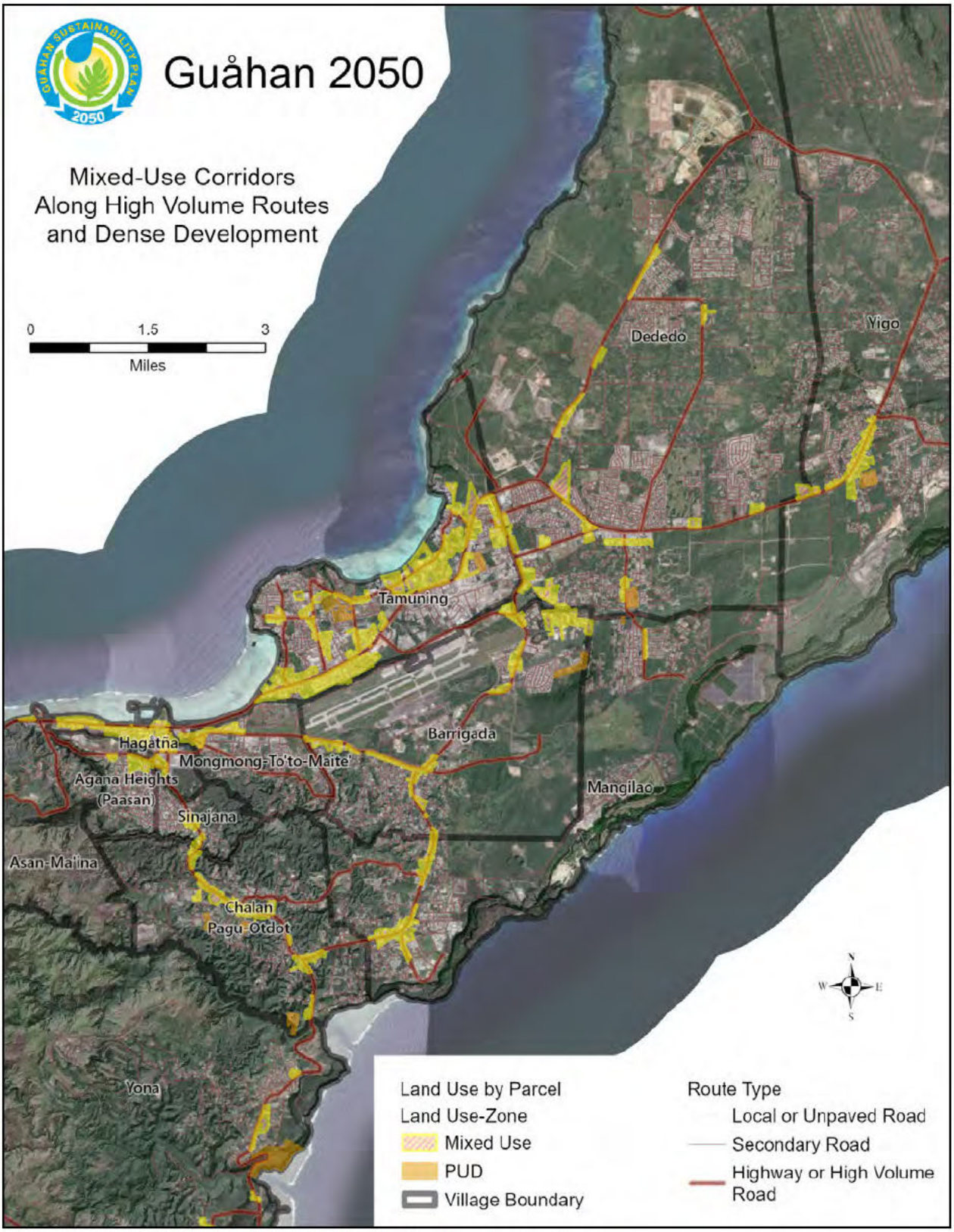

Figure 3-29. Mixed-Use Corridors (Yellow) in North and Central Guam.

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3.4.4. Temporary Workforce Housing

The demand for temporary workforce housing, particularly related to military construction and economic growth, requires strategic planning to prevent excessive strain on existing communities and resources. Ensuring that such housing is located in designated urban zones and designed for potential conversion into permanent residential use will help mitigate long-term land use challenges.

The Challenge: Housing for Temporary Workers

Guam faces a severe housing shortage driven by an influx of temporary foreign workers—primarily construction laborers under the H-2B visa program—who are critical to ongoing military and infrastructure projects. With thousands of temporary workers arriving to support the $8 billion military buildup and civilian development, the island's limited housing stock is under strain. Many contractors struggle to find suitable accommodations, which in turn affects project timelines, increases rental costs, and contributes to the broader affordability crisis for local residents.

The key issues raised by this challenge include:

- **Housing Market Pressure:** Increased demand for rental properties has driven up housing costs, making it harder for local families to find affordable homes.
- **Zoning and Land Use Restrictions and Concerns:** Temporary worker housing is largely, though perhaps not exclusively, restricted to industrial (M-1) zones, limiting opportunities for new worker accommodations. At the same time, temporary worker housing may not be compatible with more established residential neighborhoods, tourist districts, school and park locations, and other competing land uses, if not planned and designed carefully.
- **Infrastructure Limitations:** Many areas lack sufficient sewer, water, and transportation infrastructure to support large-scale workforce housing developments.
- **Project Delays:** Without adequate housing, contractors struggle to bring in enough skilled labor, slowing down major construction projects and increasing costs.

LAND USE APPROACHES AND POLICY SOLUTIONS

The need for temporary workforce housing can be addressed through multiple strategies, including land use policy:

1. **Expand Workforce Housing Zones:** Modify zoning laws to allow temporary worker dormitories in select commercial and mixed-use zones rather than restricting them to industrial areas.

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2. **Fast-Track Approvals for Workforce Housing:** Streamline the permitting process for dedicated worker housing facilities to reduce bureaucratic delays and encourage private investment.
3. **Leverage Underutilized Federal and Public Lands:** Repurpose unused government-owned (military) land for worker housing projects, particularly near job sites to reduce transportation burdens.
4. **Encourage On-Site Housing for Large-Scale Developments:** Provide incentives for developers to include on-site dormitory housing as part of major construction projects.
5. **Public-Private Partnerships for Housing Villages:** Support the development of centralized, high-capacity workforce housing projects that can serve multiple employers, ensuring safe, sanitary, and cost-effective accommodations.
6. **Increase Local Skilled Workforce:** Reduce long-term reliance on foreign labor by investing in training programs to develop a skilled local workforce, mitigating future housing shortages.
7. **Amend the Definition of Temporary Workforce Housing:** Consider amending the definition of temporary workforce housing in Title 10 GCA Chapter 26A, such as excluding the use of apartments as dormitories, to reduce the pressure on rental stock.These strategies may help Guam balance the need for temporary worker housing with sustainable land use policies that protect local residents from market disruptions while ensuring the continued success of critical infrastructure and military projects.

3.4.5. The Need for Specialized Community Housing.

Guam's changing demographics and social needs highlight an urgent demand for specialized community housing, including senior living facilities, supportive housing (e.g. assisted living, group homes) for persons with disabilities, transitional housing for the unhoused, and group homes for foster care and other vulnerable populations. As discussed in Chapter 2, the island's aging population is a growing concern. By 2030, it is projected that over 20% of Guam's residents will be 65 years or older. This shift requires expanded senior housing options, from independent living communities to assisted living and skilled nursing facilities. Currently, Guam lacks sufficient licensed assisted living centers, forcing many elderly residents to seek care from family members or relocate off-island for specialized medical and eldercare services.

Additionally, supportive and transitional housing is essential for individuals experiencing homelessness, survivors of domestic violence, and persons with disabilities. Guam's housing market is highly competitive and expensive, making it difficult for low-income or vulnerable populations to secure stable housing. A coordinated land use strategy is necessary to integrate these facilities into the broader community, ensuring that transitional and supportive housing programs are not isolated but rather co-located near essential services, parks, community centers, and commercial areas. Such planning would improve accessibility to healthcare, public transportation, employment opportunities, and social services, fostering long-term stability for residents.

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The Need for Specialized Housing Services

- The **Guam Four Year State Plan on Aging (2024-2027)** highlights that, despite discussions on establishing assisted living facilities, there remains a need to implement regulations and attract businesses to provide such services. Consequently, families often resort to off-island healthcare due to limited local options (DPHSS, 2023).
- A recent study published in **Alzheimer's & Dementia** notes that Guam currently has no nursing homes or assisted living facilities specializing in care for individuals with Alzheimer's disease and related dementias, placing a significant burden on families (Twaddle, et al., 2025).
- An article from **NeighborWorks America** discusses the severe lack of nonprofit housing and community development capacity in Guam, exacerbating the housing shortage and impacting the availability of specialized facilities for seniors (Barbier, 2024).

From a land use perspective, Guam's planning policies should designate areas for specialized housing developments that align with existing infrastructure and community assets. Strategic zoning modifications could expand the availability of land for group homes and care facilities while incentivizing mixed-use developments that incorporate residential, commercial, and recreational spaces. Land use strategies include:

- Updating zoning codes where necessary to permit senior housing, group homes, and transitional housing in more commercial and residential districts.
- Providing incentives (such as density bonuses or tax credits) to encourage private sector investment in specialized housing.
- Encouraging co-location of facilities near parks, health clinics, and transit hubs to improve accessibility and enhance quality of life.
- Streamlining permitting processes for non-profits and developers to fast-track the construction of community support housing.

The G50SP includes policy to support increased specialized community housing, including co-location of facilities in optimum areas and to initiate a focused planning assessment to determine the need and best locations for such housing.

3.4.6. Housing Land Use Policy and Sustainability

The G50SP's land use plan housing policies directly support multiple United Nations SDGs by promoting affordable, inclusive, and sustainable housing for a diverse population. Overall, the policies ensure residential land availability, density planning, mixed-use development, and

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housing affordability, aligning with key SDGs such as Sustainable Cities and Communities (SDG 11), No Poverty (SDG 1), Climate Action (SDG 13), and Reduced Inequalities (SDG 10).



The policy to maintain adequate residential land for a diversity of housing needs supports SDG 1 (No Poverty) and SDG 11 (Sustainable Cities and Communities) by ensuring that land use planning prioritizes equitable access to safe and sustainable housing. By providing zoning and public services to accommodate single-family and multi-family housing across income levels, the plan fosters inclusive urban development, addressing SDG Target 11.1, which calls for adequate, safe, and affordable housing for all.

The Affordable Housing policy—which mandates that at least 20% of new subdivisions and multi-unit developments be allocated for affordable housing or provide an equivalent contribution to Guam Housing and Urban Renewal Authority (GHURA)—ensures that lower-income households are not excluded from new housing opportunities. Density bonuses for developers who provide affordable units create economic incentives to expand the housing supply, contributing to SDG Target 10.2, which focuses on empowering and promoting social, economic, and political inclusion. Allowing Accessory Dwelling Units (ADUs) in appropriate zones supports SDG 9 by promoting innovative housing solutions that optimize existing land use. ADUs enable multi-generational housing, providing additional income for homeowners while increasing the supply of affordable rental units, directly addressing SDG Target 11.1.

The plan's emphasis on mixed-use development and compact urban design directly supports SDG 11.3, which promotes inclusive and sustainable urbanization by integrating housing, public services, and transportation infrastructure. By encouraging high-density housing (30 units per acre in R-2 zones, 45 units per acre in mixed use and PUD zones) near commercial centers, transit hubs, and employment areas, the policy reduces urban sprawl, supports public transit, and enhances walkability, aligning with SDG 13 (Climate Action) by lowering carbon emissions from transportation. Additionally, the Planned Unit Development (PUD) policy encourages innovative housing solutions, such as small-lot development, flexible setbacks, and mid-rise buildings, which optimize land use efficiency and promote energy-efficient housing designs. These strategies align with SDG Target 9.4, which calls for upgrading infrastructure to be sustainable, with increased resource efficiency and adoption of clean technologies, and they foster resource-efficient and low-waste housing development, contributing to SDG 12

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(Responsible Consumption and Production) by minimizing land consumption and reducing construction waste.

The Land Use Compatibility policy ensures that residential areas are protected from environmental hazards and conflicting adjacent uses, such as intensive industrial or agricultural activity. This aligns with SDG 3 (Good Health and Well-Being) by mitigating exposure to pollution, hazardous waste, and environmental degradation, directly supporting SDG Target 3.9, which seeks to reduce illnesses caused by air, water, and soil pollution. By establishing minimum lot sizes (5,000 sq. ft. for R-1, 1 acre for rural lands), the plan also protects open space, preserves natural resources, and balances urban expansion with conservation goals, contributing to SDG 15 (Life on Land) and Target 15.1, which calls for the sustainable management of land and natural ecosystems.

Guam's commitment to housing accessibility and inclusivity is evident in policy supporting senior housing, assisted living, supportive housing for persons with disabilities, group homes, and transitional housing for unhoused individuals. Co-locating these facilities near community centers, parks, and commercial areas ensures that residents have access to healthcare, employment, and essential services. This supports SDG Target 3.8, which aims for universal access to healthcare and essential services. Additionally, the Temporary Worker Housing policy, which encourages worker housing in urban zones (R-2, MU, and PUD) and near transit corridors, ensures that migrant and contract workers have safe and accessible housing options, aligning with SDG Target 10.7, which calls for safe, orderly, and responsible migration and mobility of people. Requiring that temporary worker housing be designed for future conversion into permanent housing ensures long-term sustainability and maximizes land use efficiency.

HOUSING LAND USE POLICIES

Residential Land Use

SC-55. Residential Land.

Maintain adequate land area suitable for a wide range of safe and sustainable housing for a diversity of incomes and household and community needs.

SC-56. Single and Multi-family Housing.

Provide sufficient land area, zoning, and public services to support single and multi-family housing and mixed-use developments for a wide range of incomes.

SC-57. Residential Densities.

Minimum parcel sizes in the R-1 zone shall be 5,000 square feet and one acre in the Rural Lands zone. Maximum densities in the R-2 zone shall be 30 units/acre. Allow up to 45 units/acre in mixed use and PUD zones where appropriate.

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SC-58. Land Use Compatibility.
Assure that residential areas are, where necessary, protected from and do not conflict with adjacent uses, such as intensive industrial, commercial, and agricultural land use activities.

SC-59. Mixed Use Development and Compact Urban Design.
Implement mixed-use development patterns where appropriate. Provide for a variety of densities, based on compact traditional patterns, with highest densities located near village centers, public facilities and services, commercial services, major transportation corridors, and within easy walking distance of employment centers and transit stops. Amend the zoning code to provide a specific mixed use (MU) zoning designation.

SC-60. Planned Unit and Other Innovative Housing.
Where appropriate, promote innovation in housing, such as small lot development, flexible setbacks, attached single family residential development, mid-rise development, mixed-use buildings, clustering and other measures that support design creativity. Use Planned Unit Development (PUD) designations where appropriate.

Community Housing

SC-61. Affordable Housing.
Subdivision creating four or more lots or developments proposing 5 or more units shall provide at least 20% affordable inclusionary housing (households earning up to 80% of local income) or pay an equivalent in lieu of the affordable housing fee to the Guam Housing and Urban Renewal Authority solely for purposes of constructing affordable housing units on Guam.

SC-62. Density Bonuses.
Provide density increases and other zoning flexibility for projects providing at least 20% affordable housing.

SC-63. Accessory Dwelling Units.
Allow accessory dwelling units on single-family residential lots, and in rural areas where appropriate.

SC-64. Temporary Worker Housing.
Locate temporary worker housing in urban development zones, including R2, MU, and PUD zones, and near existing and planned transit facilities to the maximum extent feasible. Design and construct housing for eventual conversion to permanent housing.

SC-65. Senior and Community Facilities.
Support new housing for seniors, assisted living, foster care, persons with disabilities, transitional and supportive housing for unhoused persons, group homes, and other community support facilities. Where feasible co-locate facilities near community centers, parks, commercial areas, and other community facilities.

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SC-66. Planning for Specialized Housing.

BSP should initiate a focused planning assessment of the need and best locations for specialized community housing, including housing for seniors, assisted living, foster care, persons with disabilities, transitional and supportive housing for unhoused persons, and group homes.

3.5. Commercial, Industrial, and Priority Development

A well-planned approach to commercial, industrial, and priority coastal-related land uses is essential for Guam's long-term economic resilience, environmental sustainability, and community well-being. Thoughtful land use planning ensures that commercial and industrial developments are strategically located to maximize economic benefits while minimizing negative environmental and social impacts. Similarly, coastal-related industries such as boating facilities, aquaculture, and marine tourism play a critical role in Guam's economy, providing jobs and supporting local food production while requiring careful management to preserve the island's fragile coastal ecosystems. Additionally, environmental site assessments and cleanup of underutilized properties (through brownfield redevelopment) support sustainable land reuse, reduce sprawl, and support affordable housing and economic revitalization. By aligning land use policies with sustainable development principles, Guam can promote economic diversification, protect natural resources, and enhance climate resilience while fostering vibrant, livable communities.

3.5.1. Commercial Development and Mixed-Use Areas

Incorporating well-planned commercial areas and adopting mixed-use land use strategies are pivotal components of the Guam 2050 Sustainability Plan, aiming to foster sustainable economic growth and enhance community well-being. By promoting diverse commercial developments in proximity to residential zones, directing intensive commercial activities to designated urban and tourist areas, and encouraging mixed-use corridors, Guam can create vibrant, resilient communities that align with contemporary urban planning principles.



3.5.1.1. Planned, Appropriate Commercial Land Uses

Strategically locating a variety of commercial developments near residential and village centers not only stimulates local economies but also enhances the quality of life for residents. This approach reduces travel times, encourages local spending, and fosters a sense of community. Recent studies have shown that mixed-use developments can lead to increased economic opportunities and household wealth by integrating residential,

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commercial, and recreational spaces, thereby creating dynamic neighborhoods that cater to diverse needs (County Health Rankings, 2025).

Concentrating intensive commercial activities within designated urban and tourist areas also ensures that such developments are supported by adequate infrastructure and services, minimizing potential disruptions in less developed regions. This strategy not only preserves the character of rural and village settings but also maximizes the efficiency of resource utilization in urban centers. As discussed previously, the North and Central Guam Land Use Plan emphasizes the importance of directing high-density commercial projects to appropriate areas, thereby maintaining a balance between development and community integrity (BSP, 2009).

3.5.1.2. Commercial/Mixed-Use Corridors

Developing concentrated commercial and mixed-use corridors within urban zones promotes walkability, reduces reliance on personal vehicles, and enhances accessibility to essential services. This approach aligns with the concept of "20-Minute Neighborhoods," where residents can access most of their daily needs within a short walk or bike ride.[8] Implementing such corridors in Guam's urban planning can lead to more sustainable and connected communities, as evidenced by successful mixed-use projects in other regions that have revitalized local economies and improved quality of life (Gensler, 2022).

[8] The concept of a “20-minute neighborhood” refers to a planning model in which most daily needs—such as groceries, schools, parks, healthcare, and transit—can be met within a 20-minute walk, bike ride, or transit trip from home. This approach promotes walkability, local living, and reduced car dependency, contributing to sustainability, public health, and social cohesion. The model has been adopted or explored in various cities, including Melbourne, Australia, which formalized the concept in its Plan Melbourne 2017–2050; Paris, France, where Mayor Anne Hidalgo’s “15-minute city” initiative has restructured urban life around local accessibility; and Portland, Oregon, which integrated the concept into its Climate Action Plan and comprehensive planning framework. See: City of Melbourne (2017). Plan Melbourne 2017–2050; Ville de Paris (2020). La Ville du quart d’heure; City of Portland (2009). Portland Climate Action Plan; Moreno, C. et al. (2021). Introducing the “15-minute city”: Sustainability, resilience and place identity in future post-pandemic cities, Smart Cities, 4(1), 93–111. See also: https://www.eugene-or.gov/1216/What-is-a-20-Minute-Neighborhood.

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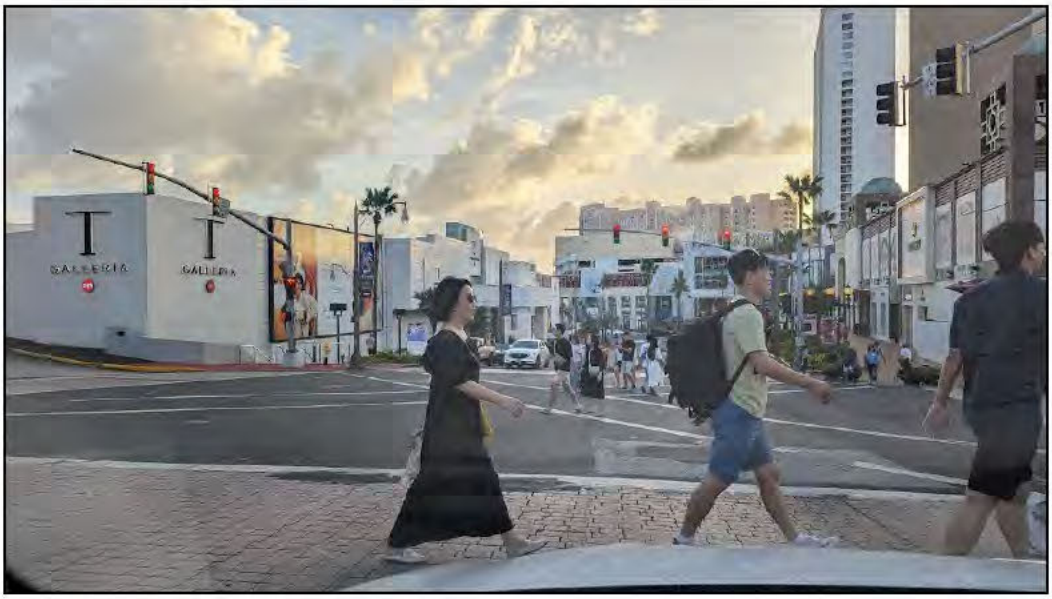

3.5.2. Industrial Land Uses on Guam

Over the past 25 years, Guam's industrial development has grown modestly, driven largely by construction, public infrastructure projects, and support industries for tourism and the U.S. military presence after a slump in the 1990s and early 2000s, the economy began to improve; however, heavy manufacturing remains limited due to Guam's remote location and focus on service sectors. Industrial land use has gradually expanded in designated areas (e.g. Harmon, Tamuning near the airport, and around the Port of Guam) to support activities like warehousing, logistics, and utilities. Key economic drivers – tourism, defense, and real estate – have shaped these land use patterns, with new industrial facilities primarily related to infrastructure (power generation, waste management) and construction material production. Throughout this period, land use planning initiatives (such as the North and Central Guam Land Use Plan of 2009) emphasized accommodating growth through a "sustainable pattern of development" that provides for industrial and commercial expansion while maintaining Guam's character (BSP, 2009).

Land use challenges. Historically, Guam faced fragmented, haphazard development with residential and industrial uses in close proximity due to past lax zoning enforcement. In response, government agencies have worked to strengthen zoning laws and enforcement to prevent incompatible uses. For example, older industrial activities (auto shops, scrap yards, and small manufacturing) that once popped up in rural or residential zones have been gradually brought into compliance or relocated. Over time, public awareness of environmental and community impacts has grown, leading to stricter review of industrial projects by the Guam Land Use Commission (GLUC) and regulatory agencies.

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3.5.2.1. Siting of Intensive Industry and Zoning Policies

Guam's current policy framework strictly controls the siting of "intensive" industries (those with significant noise, pollution, or hazard potential) by limiting them to designated industrial zones (M-1 and M-2). The island's zoning law provides two industrial designations: "M-1" Light Industrial and "M-2" Heavy Industrial. Light Industrial (M-1) zones allow manufacturing, warehousing, and other uses that are not objectionable or hazardous, including many small to mid-scale industries compatible with commercial uses. Heavy Industrial (M-2) zones, by contrast, are the only zones where uses considered "objectionable, obnoxious, or offensive by reason of odor, dust, smoke, noise, [etc.]" are permitted (21 GCA 61). In practice, this means any truly intensive industry – such as power plants, waste processing facilities, quarries, heavy manufacturing plants, or chemical storage – must be located in an M-2 (or in some cases M-1) zone and cannot be established in residential, commercial, or agricultural zones.

Within the island's sustainable planning framework, spot zoning or one-off exceptions for heavy industry are strongly discouraged. Industrial rezoning applications are scrutinized for consistency with the Comprehensive Land Use Plan and the Guam Coastal Management Program. Over the last two decades, proposals to rezone rural or residential land to industrial have been approved only when clearly serving the public interest and when buffering measures are in place. High-impact uses (e.g. an asphalt or concrete batching plant) that sought rezoning were conditioned to operate strictly within the industrial-zoned footprint and adhere to all performance standards (For example, Zone Change Application 2012-48). In essence, intensive industries are kept within the bounds of M-1/M-2 zones, and these zones themselves tend to be located in certain parts of Guam (such as along Route 3, around Cabras/Piti, Harmon, and Tiyan) identified for economic development. This concentrated approach not only simplifies the provision of infrastructure to industrial areas but also preserves the integrity of residential and conservation areas.

3.5.2.2. Minimizing Offsite Impacts of New Industrial Development

A cornerstone of the G50SP approach to sustainable industrial growth is the requirement that new industrial developments minimize and mitigate offsite impacts to the maximum extent feasible. Any proposed industry must undergo environmental assessments and meet regulatory standards designed to protect neighboring communities and ecosystems. The zoning regulations themselves embed this principle: M-1 zone uses must not produce nuisance-level impacts beyond their site (excessive noise, noxious odors, air or water



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pollution), and any use that does is classified as heavy industrial and tightly controlled (Title 21 GCA 61).

Typical requirements for new industrial facilities include:

- **Emission and pollution controls:** Facilities must install appropriate pollution control technology (e.g. scrubbers, filters, wastewater treatment) and obtain permits (air, water) from Guam EPA to ensure emissions meet standards and do not degrade ambient environment quality beyond the property line. For example, the new Ukudu power plant's air permit application details advanced controls to minimize sulfur dioxide and particulate emissions offsite (Guam Ukudu Power, 2021).
- **Buffering and site design:** Industrial sites are usually required to maintain buffer zones (setbacks, landscaping belts or greenbelts) between their operations and adjacent non-industrial properties. These buffers help dampen noise and trap dust. Height and lighting restrictions may be imposed to reduce visual and light pollution impacts on surrounding areas, aligning with the GLUC's mandate to control nuisances (Title 21 GCA 61).
- **Traffic and infrastructure mitigation:** Projects that generate heavy truck traffic must implement traffic management plans to avoid congestion or unsafe conditions on public roads. Often, improvements (widening access roads, adding turn lanes) are required as a condition of approval. Similarly, any large water or power demands are coordinated with utilities to prevent strain on local service for other users.
- **Operational best practices:** Conditions may be placed on hours of operation (to limit nighttime noise), dust suppression (e.g. wetting of roads and stockpiles at quarry or construction material sites), and spill containment. Guam EPA and Public Works inspectors conduct follow-up checks; compliance with these measures is needed before an occupancy permit is granted.
- **Community engagement:** For major projects, public hearings are held, and community concerns (health, safety, cultural resource protection) are considered. Mitigation measures often directly respond to these concerns – for instance, relocating an access point away from a village or funding environmental monitoring in neighboring areas.

Through these measures, Guam may ensure that even as industrial activities expand, their external footprint is limited. The phrase "to the maximum extent feasible" is contained in policy to push developers to use the best available technology or practices to avoid impacts that could otherwise be "externalized" to the public. For example, if a manufacturing facility can feasibly recycle its wastewater or capture waste heat, it would be expected to do so, thereby reducing pollution and resource use offsite. Additionally, environmental impact studies for significant projects detail potential effects on air quality, water resources, coral reefs, and community well-being, and they propose mitigation that must be implemented as enforceable permit conditions. This process reflects the broader goal of Guam's sustainable land use planning: to allow economic and industrial development without sacrificing environmental quality or public health.

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Data Centers
Data centers and similar high demand facilities currently undergo an extensive review process involving consultation with multiple regulatory agencies, including the land use application process, federal consistency review, nationwide permits, and leases for submerged cable landings. Historically, potential data center developers have consulted GovGuam representatives during early planning stages; however, Guam's existing grid and generation capacity are insufficient to support facilities that are classified as Tier I and Tier II. These constraints underscore the need for coordinated, forward looking planning to ensure that digital infrastructure development aligns with Guam's long term resource limitations and resilience goals.

3.5.2.3. Sustainable Land Use Planning Context

All of the above practices are framed within Guam's push toward sustainable land use and development, looking ahead to 2050 and beyond. The Guåhan2050 Sustainability Plan (building on efforts like the Guam Green Growth initiative) treats land use as a holistic system where industrial zones, residential villages, commercial centers, and natural areas each have a role in a sustainable island ecosystem. The policies on industrial siting and impact mitigation align with several core principles of sustainable land use planning:

- **Smart growth and compact development:** Guam aims to direct growth (including industry) to appropriate areas and already-developed districts, rather than sprawl into greenfield sites. By confining industry to existing M-1/M-2 zones, the island prevents uncontrolled expansion into agricultural or conservation lands, preserving open space and critical habitats. This approach mirrors "smart growth" strategies that concentrate development where infrastructure exists and protect undeveloped land.
- **Economic diversification with environmental stewardship:** Encouraging light industrial and tech industries in designated parks contributes to a more diverse economy (reducing over-reliance on tourism and military) At the same time, strict environmental safeguards ensure this economic growth does not degrade natural resources. The land use plan explicitly calls for a "diverse economic base" while preserving quality of life and natural heritage.
- **Community health and safety:** Keeping intensive industries away from residential zones and groundwater recharge areas supports cleaner air and water for communities (for example, ensuring that a landfill or fuel storage is not near a village's drinking water source). Guam's sustainability vision includes "safe, crime-free, clean, organized communities" and a natural environment that is "clean and well managed." The industrial land use policies contribute to this vision by preventing land use conflicts that could lead to pollution or hazards in neighborhoods.
- **Resilience and climate adaptation:** By planning industrial facilities in appropriate locations, Guam also accounts for natural hazard exposure and climate resilience. Industrial zones are evaluated for risks like flooding, typhoons, and proximity to the

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coast. New facilities are often built to higher standards (e.g. wind-resistant structures, setbacks from shorelines) to withstand climate impacts, in line with the sustainability plan's resilience goals. Furthermore, consolidating industry can make it easier to implement island-wide improvements such as renewable energy integration or emergency response for chemical incidents.

- **Coastal Hazards Management:** As discussed later in this Chapter and Chapter 5, there is a need to reevaluate and strengthen seashore reserve policies by potentially extending the mandatory setbacks from the mean high water mark (MHWM), which is currently 33 feet, perhaps to a minimum of 100 feet. This adjustment aims to provide enhanced protection against a range of coastal hazards, including the increasing risks posed by storm surges, sea level rise, and coastal erosion. Establishing a wider setback will not only safeguard infrastructure and human activities, but also help preserve natural coastal ecosystems that play a vital role in mitigating such hazards. Moreover, adopting updated setbacks is essential for long-term resilience, allowing coastal communities to better adapt to the evolving impacts of climate change while maintaining the ecological integrity of coastal areas.

3.5.3. Coastal-Dependent and Priority Land Uses

Coastal-dependent and other priority land uses need to be planned and accommodated relative to other land uses. This requires a plan that prioritizes such uses and identifies appropriate locations that can be preserved for potential use.

3.5.3.1. Aquaculture

Aquaculture in Guam has experienced significant developments, particularly in recent years, as the island seeks to enhance food security, economic diversification, and cultural preservation. Historically, aquaculture activities on Guam have fluctuated, with the highest number of fish farms recorded in 1974 at 13, and the lowest in 1993 with only two farms (UOG, 2016).

Recognizing the potential of aquaculture, the government and various stakeholders have initiated several programs and plans to revitalize and expand this sector. In 2024, Governor Lou Leon Guerrero signed Executive Order 2024-01, establishing a Division of Aquaculture within the Department of Agriculture. This division aims to support the development of a sustainable aquaculture industry by providing technical assistance, regulatory oversight, and promoting research and development. The creation of this division underscores the government's commitment to prioritizing aquaculture as a key component of Guam's economic and food security strategies.

Community-based projects have also gained momentum. A notable example is the NOAA-funded initiative focused on giant clam (hima) aquaculture in the southern villages of Inalåhan and Malesso' (NOAA, 2022). The project not only aims to provide a sustainable source of food and employment, but also seeks to preserve cultural practices associated with the hima, while

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also observing appropriate concerns about the status of specific hima species. The initiative involves training community members in aquaculture techniques, thereby fostering local expertise and stewardship. Also, the University of Guam (UOG) has been instrumental in exploring innovative solutions to support aquaculture. In November 2024, UOG hosted a town hall meeting to discuss the potential of ocean thermal energy conversion (OTEC) and wave energy conversion (WEC) technologies to power a proposed Guam Aquaculture Innovation Center. This initiative aims to harness renewable energy sources to support aquaculture operations, reducing reliance on imported energy and promoting environmental sustainability. (guamepscor.uog.edu)

LAND USE CONSIDERATIONS AND PLANNING OBJECTIVES

The expansion of aquaculture in Guam necessitates careful consideration of land use to balance development with environmental conservation and cultural preservation. Historically, land use plans, such as the 1966 Territorial Planning Commission's master plan, emphasized the protection of prime agricultural areas. As discussed in later sections, urbanization and other developments have encroached upon these areas, leading to a decline in agricultural lands. Hence, the Guam Department of Agriculture's Strategic Plan advocates for the preservation of agricultural lands and the promotion of sustainable practices, policies also included in the G50SP (DOAG, 2024). The plan recommends measures such as zoning regulations that restrict non-agricultural uses in designated farming areas, including CHamoru Land Trust properties. By safeguarding these lands, the government aims to provide adequate space for aquaculture and other agricultural activities, ensuring their viability for future generations.

Additionally, the Guam REPI Habitat Conservation Initiative Implementation Plan highlights the importance of mitigating environmental threats, such as land-based sources of pollution and sedimentation, which can adversely affect marine ecosystems (NFWF, 2022). Implementing best management practices in land use can help reduce these impacts, creating a more conducive environment for aquaculture.

3.5.3.2. Fishing and Boating

Recreational fishing and boating are integral components of Guam's cultural heritage, economy, and community life. These activities not only provide leisure and subsistence opportunities but also significantly contribute to the island's tourism sector. However, the increasing demand for marine recreation necessitates strategic land use planning and infrastructure development to ensure sustainable growth and environmental conservation.

Guam's small-boat fisheries have experienced fluctuations over the years. A 2019 report by the National Oceanic and Atmospheric Administration (NOAA) highlighted trends in economic performance indicators for small boat fisheries in Guam from 2009 to 2017. The data revealed variability in catch rates and economic returns, influenced by factors such as weather patterns, fish stock health, and market demand. Notably, pelagic species like tuna have shown strong gains in certain years, while non-tuna species such as mahimahi have seen declines. These

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trends underscore the dynamic nature of Guam's marine ecosystems and the need for adaptive management strategies (NOAA, 2019).



The recreational boating sector, encompassing activities like sportfishing, sailing, and diving excursions, has also seen growth, particularly driven by tourism. Charter operations cater to both residents and visitors, offering access to Guam's rich marine biodiversity and scenic coastal waters. However, the expansion of this sector brings challenges, including the need for adequate docking facilities, maintenance services, and environmental safeguards to prevent habitat degradation.

LAND USE ISSUES AND PLANNING OBJECTIVES

The development of boating infrastructure in Guam is closely tied to land use planning, as coastal areas serve as the interface between terrestrial and marine environments. Key considerations include:

- **Coastal Development:** Balancing the construction of marinas, docks, and related facilities with the preservation of natural habitats is crucial. Unregulated development can lead to shoreline erosion, water pollution, and loss of biodiversity.
- **Public Access:** Ensuring that local communities have access to coastal areas for recreational and subsistence fishing is a priority. This involves designating public access points, developing accessways and locations as appropriate, and preventing the privatization of critical shoreline segments. In addition, the public's right of unrestricted access must be ensured to all non federally-owned beach areas and all Territorial recreation areas, parks, scenic overlooks, designated conservation areas and other public lands; and agreements shall be encouraged with the owners of private and federal property for the provision of reasonable access to, and use of, resources of public nature located on such land. Impacts to traditional fishing grounds from federal military activities should be mitigated with funding for boating and fishing activities.
- **Environmental Protection:** Implementing measures to mitigate the environmental impact of increased boating activity, such as controlling fuel spills, managing waste disposal, and protecting coral reefs from anchor damage. Monitoring the status of moorings and removing unpermitted buoys is one mechanism for addressing boating impacts.

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The Guam Coastal Management Program (GCMP) plays a pivotal role in addressing these issues. The GCMP aims to create a responsible and balanced use of Guam's coastal resources by integrating policy-making efforts with public and private interests. This includes planning for the preservation of natural charm and character within the framework of a growing population and modern technology. The program emphasizes the importance of establishing specified areas of use within urban, suburban, rural, agricultural, conservation, industrial, and resort contexts.

ENHANCING BOATING OPPORTUNITIES AND INFRASTRUCTURE

To support the growth of recreational fishing and boating, several initiatives can be considered:

- **Infrastructure Development:** Investing in the construction and maintenance of marinas, boat ramps, and docking facilities to accommodate increasing numbers of recreational vessels. This includes ensuring facilities are equipped with amenities such as fuel stations, waste disposal systems, and restrooms. Provision of a boat ramp on the eastern coast (Pago Bay or Talofofo Bay) to support first responders, marine education, and other coastal-related uses such as aquaculture, should be evaluated and developed if feasible.
- **Funding Opportunities:** Leveraging federal programs like the Boating Infrastructure Grant (BIG) Program, which provides funds for tie-up facilities and support amenities for transient vessels. These grants can assist in expanding and enhancing Guam's boating infrastructure.
- **Community Engagement:** Involving local communities in the planning and decision-making processes to ensure that developments align with public interests and cultural values. This includes conducting public consultations and workshops to gather input and foster stewardship.
- **Environmental Education:** Promoting awareness among boaters and fishers about sustainable practices, such as catch-and-release fishing, proper waste disposal, and adherence to marine protected area (MPA) regulations. Educational programs can help preserve marine ecosystems for future generations.

3.5.3.3. Fiber Optic Cables

Guam serves as a critical hub in the Pacific for submarine fiber-optic cables, sometimes referred to as "The Big Switch in the Pacific." As of 2024, the island hosts 11 operational subsea cables, with plans for at least four additional cables in the coming years. Notable projects include the APRICOT cable system, connecting Guam to Indonesia, Taiwan, Japan, the

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Philippines, and Singapore, and the MYUS cable, linking Oregon, Guam, Indonesia, and the Philippines. These developments underscore Guam's strategic importance in global telecommunications (cite).

In 2023, for example, GTA TeleGuam received approval to construct a new cable landing station in Inalåhan, located on the southeastern coast of Guam. This facility aims to provide an alternative landing site to the existing ones on the western side of the island, enhancing the resilience and capacity of Guam's telecommunications infrastructure (cite). These types of projects, sometimes require a rezoning, and should be carefully planned in consideration of other competing land uses.



The expansion of submarine cable infrastructure on Guam brings several land use considerations. Environmental concerns are paramount, as cable installation can disrupt marine ecosystems. Additionally, the leasing of submerged lands for cable infrastructure has prompted discussions about fair compensation for the use of public lands, as well as regulatory oversight (P.L. 36-108). To address these challenges, Guam's Bureau of Statistics and Plans developed guidelines for identifying optimal locations for submerged cable landings.

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Suitability Guidelines for Submerged Cable Landings on Guam (2023)

In accordance with Public Law 36-108, the Bureau of Statistics and Plans (BSP), through the Guam Coastal Management Program (GCMP), developed comprehensive *Suitability Guidelines for Determining Optimal Locations for Submerged Cable Landings on Guam*. The guidelines aim to ensure that new telecommunications infrastructure is sited with minimal environmental, cultural, and recreational impacts to Guam's submerged lands and coastal waters. The framework is based on a four-tier classification system that evaluates site compatibility based on benthic habitat sensitivity, public use, ecosystem services, and water quality standards:

- Highly Suitable (S1)
- Moderately Suitable (S2)
- Marginally Suitable (S3)
- Not Suitable (NS)

Land Use Policy Implications

This guidance is as a decision-support tool for permitting agencies and planners during the early stages of infrastructure planning. It complements, but does not replace, existing local and federal permitting requirements. From a land use policy perspective, it encourages:

- Co-location at existing cable landing sites.
- Early inter-agency coordination.
- Discourages development in ecologically and culturally sensitive areas (S3 and NS classes).

It provides technical grounding for the CHamoru Land Trust Commission and other land managers to incorporate marine spatial planning and environmental constraints into lease, zoning, and development decisions.

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3.5.4. Commercial, Industrial, and Priority Uses Policy and Sustainability



The alignment of commercial, industrial, and priority development land use policies with the UN SDGs reflects a commitment to sustainable economic growth, environmental stewardship, and community well-being. The promotion of Planned Commercial Land Uses aligns with SDG 8 (Decent Work and Economic Growth) by fostering economic diversification and proximity to residential areas, reducing commuting distances and promoting local entrepreneurship. Appropriate Commercial Development and Commercial/Mixed-Use Corridors support SDG 11 (Sustainable Cities and Communities) by ensuring that commercial growth is well-integrated into urban and rural environments, reducing sprawl and promoting walkable, mixed-use communities.

Industrial Development policies align closely with SDG 9 (Industry, Innovation, and Infrastructure) and SDG 12 (Responsible Consumption and Production). The Siting of Intensive Industry within designated M-1 zones helps control environmental and social impacts, contributing to Target 9.4, which emphasizes sustainable industrialization and improved resource efficiency. Additionally, policies requiring industrial development to minimize offsite impacts reinforce Target 12.4, which calls for the environmentally sound management of chemicals and waste, reducing pollution and negative effects on communities.

Priority Island Development policies advance SDG 7 (Affordable and Clean Energy) and SDG 14 (Life Below Water) by ensuring well-planned infrastructure and facilities that support renewable energy and protect coastal-dependent industries such as fishing and boating. Providing Critical Infrastructure and Community Facilities ensures resilience in island communities, in line with Target 11.B, which focuses on disaster risk reduction and sustainable urban planning. Similarly, the Priority Island and Coastal Developments policy safeguards economic and environmental sustainability by ensuring the responsible allocation of coastal resources, supporting Target 14.7, which promotes sustainable marine-based economies, particularly for small island communities. Overall, these land use policies demonstrate a strategic alignment with the UN SDGs by fostering sustainable economic activity while preserving environmental integrity and community resilience.

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COMMERCIAL, INDUSTRIAL, AND PRIORITY LAND USE POLICY

Commercial Development and Mixed-Use Areas

SC-66. Planned Commercial Land Uses.
Promote the location and design of a diversity of commercial development types in proximity to residential and village life and to promote sustainable economic growth.

SC-67. Appropriate Commercial Development.
Direct intensive commercial development to designated urban and tourist areas. Appropriately scale new commercial land uses in rural and less intensively developed village settings.

SC-68. Commercial/Mixed-Use Corridors.
Promote concentrated commercial development and mixed-use in designated urban corridors and zones.

Industrial Development

SC-69. Siting of Intensive Industry.
Limit intensive industrial development to M-1 zones without exception.

SC-70. Offsite Impacts.
New industrial development shall minimize and mitigate offsite impacts to the maximum extent feasible.

SC-70a. Data Centers and High Demand Digital Infrastructure.
Require that data centers and other high demand digital infrastructure be planned, sited, designed, and operated in a manner that protects Guam's limited land, water, energy, and environmental resources; supports the island's renewable energy and sustainability objectives; and avoids or mitigates adverse impacts on communities, public infrastructure, and natural systems. Projects shall demonstrate consistency with Guam's sustainability, resilience, and equity objectives by minimizing energy and water consumption; protecting the Northern Guam Lens Aquifer and other sensitive environmental resources; avoiding or mitigating impacts to agricultural lands, cultural and historic resources, and village character; ensuring adequate infrastructure and public service capacity; reducing greenhouse gas emissions and other forms of pollution; and addressing potential cumulative impacts on energy demand, water supplies, climate adaptation efforts, and community well being. Data centers should be located in industrial areas with appropriate infrastructure capacity and designed to support Guam's transition toward a more resilient, efficient, and self-sufficient future.

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Priority Island Development

SC-71. Critical Infrastructure and Community Facilities.
Provide well-planned and adequate locations for important infrastructure and community uses, such as renewable energy facilities and civic buildings.

SC-72. Priority Island and Coastal Developments.
Assure adequate land and locations for important coastal-dependent and related development, such as boating and fishing facilities. Evaluate the status of existing moorings and buoys and impacts to the nearshore environment. Mitigate development impacts to boating and fishing resources.

SC-73. Siting of Submerged Cable Landings.
Proposed cable landings shall follow the Government of Guam's Guidelines, Standards, and Suitability Orders for Submerged Cable Landing Sites on Guam.

3.6. Rural and Agricultural Lands

Guam's agricultural and rural lands play a crucial role in ensuring local food security, protecting natural resources, and maintaining cultural traditions. However, these lands face significant challenges, including encroaching development, declining agricultural activity, and the need for more sustainable farming practices. The Guåhan 2050 Sustainability Plan establishes a framework to address these issues by balancing growth with the preservation of agricultural and rural lands. The policies outlined in the plan emphasize maintaining minimum lot sizes, ensuring adequate public services for new developments, and protecting prime agricultural soils from conversion to non-agricultural uses. The long-term sustainability of these lands depends on comprehensive land use planning, improved infrastructure, and incentives for farmers to engage in productive and sustainable agriculture.

3.6.1. Status of Agriculture on Guam: Sustainability and Land Use Planning Issues

Agriculture on Guam has undergone significant changes over the decades, evolving from a subsistence-based system to a more market-oriented but highly import-dependent sector. The historical shift has been shaped by factors such as land use policies, military expansion, economic shifts, and climate change. Despite a renewed focus on food security and sustainability, Guam's agricultural sector continues to face challenges related to land availability, market access, and environmental constraints. Guam's agricultural sector faces several land use challenges that impact its sustainability and growth. Significant issues include:

- Limited availability of arable land. The island's total land area is approximately 212 square miles, and much of this is allocated for urban development, military installations, and conservation areas, leaving limited space for agriculture. This scarcity of suitable

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farmland restricts the expansion of agricultural activities and affects the island's ability to achieve greater self-sufficiency in food production.

- Land tenure and ownership complexities further complicate agricultural land use. A considerable portion of land on Guam is under federal or government control, and private land often has fragmented ownership or unresolved title issues. These factors can deter investment in agriculture, as farmers may face uncertainties regarding long-term access to land, making it challenging to plan and implement sustainable farming practices.
- Urbanization, competing land uses, and demographic change present additional challenges. As Guam's population grows and tourism-related development expands, agricultural lands are increasingly under pressure for conversion to residential, commercial, or industrial uses. This trend not only reduces the land available for farming but also leads to potential conflicts between agricultural and non-agricultural land uses, such as issues related to water rights, pesticide use, and infrastructure development. Another major challenge is the aging farmer population, with decreasing interest among younger generations in continuing farming traditions.
- Environmental factors also play a role in agricultural land use issues. Soil erosion, particularly in areas with steep topography, and the prevalence of invasive species can degrade the quality of agricultural lands. Additionally, the island's susceptibility to typhoons and climate change impacts poses risks to both land and crop viability, necessitating the implementation of resilient and adaptive farming practices.

3.6.2. Rural Lands Development and Agricultural Land Protection

Current land use planning efforts, particularly those outlined in the Guam Agriculture Master Plan, emphasize the need for comprehensive land use planning that integrates agricultural considerations. Strategies in the Master Plan include identifying and protecting prime agricultural lands through zoning regulations, resolving land tenure issues to provide farmers with secure land access, and promoting sustainable farming practices that mitigate environmental impacts. The plan also advocates for balancing development with the preservation of agricultural spaces to ensure the long-term viability of Guam's agricultural sector.

Community perspectives, as reflected in the G50SP Community Engagement Survey, highlight the importance of conservation and agriculture. As seen in Figure 3-30, while 57% of respondents prioritized conservation, 34% believed that conservation areas should also be used for agricultural purposes. The strong support (85%) for agricultural initiatives reflect general concerns about food security in Guam because it is a remote island, but it also may reflect nostalgia for Guam’s rural agricultural heritage.

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Rural Lands Protection

The Policies of G50SP align closely with the Agricultural Master Plan. One of the key policies aimed at strengthening agriculture on Guam is the Rural Lands Development policy, which establishes a minimum lot size of one acre for rural lands and requires adequate public services for subdivisions unless otherwise required by local law governing protection of the Northern Guam Lens Aquifer. This policy is designed to prevent excessive land fragmentation and maintain the rural character of the island while allowing for appropriate levels of development that support small-scale and subsistence farming.

Development on rural lands also must be sited and designed to be compatible with small-scale or subsistence agricultural uses, ensuring that new projects do not conflict with existing farming activities. This may preserve opportunities to support local food production and preserve Guam's agricultural heritage. Subdivision of rural lands is also restricted, and requires the availability of essential public services, ensuring that new developments do not convert potential agricultural lands without appropriate infrastructure. These policies align with the 2009 North and Central Guam Land Use Plan, which emphasizes the importance of maintaining the rural character of these areas while accommodating limited residential and agricultural development.

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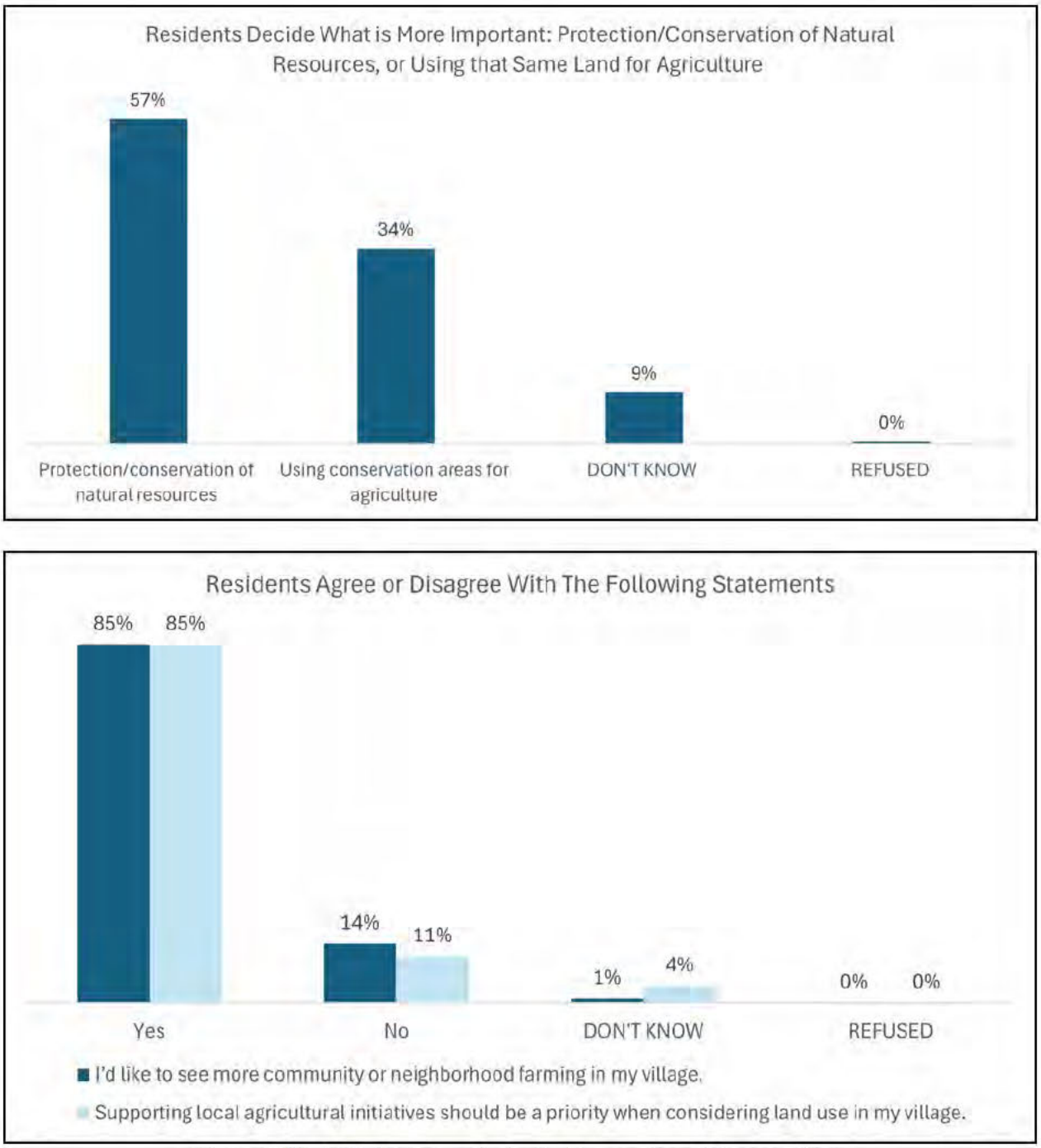

Figure 3-30. Attitudes Towards Agriculture and Land Conservation.

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Agricultural Lands Protection

The G50SP Agricultural Lands policies seek to preserve critical agricultural lands, as first called out in the 1978 Comprehensive Development Plan for Guam developed under the Coastal Zone Management program. The policy ensures that agricultural zones remain intact, where feasible to enhance local food security and support the economic viability of the agricultural sector. The decline in Guam's agricultural land over the decades—dropping from over 32,000 acres in the 1960s to only 1,000 acres in 2007 and 2,441 acres today—demonstrates the urgency of this effort (Figure 3-31). The plan also sets a minimum lot size of 10 acres for agricultural lands, or 5 acres with appropriate restrictions, preventing the conversion of viable farmland into smaller parcels unsuitable for commercial or subsistence farming.



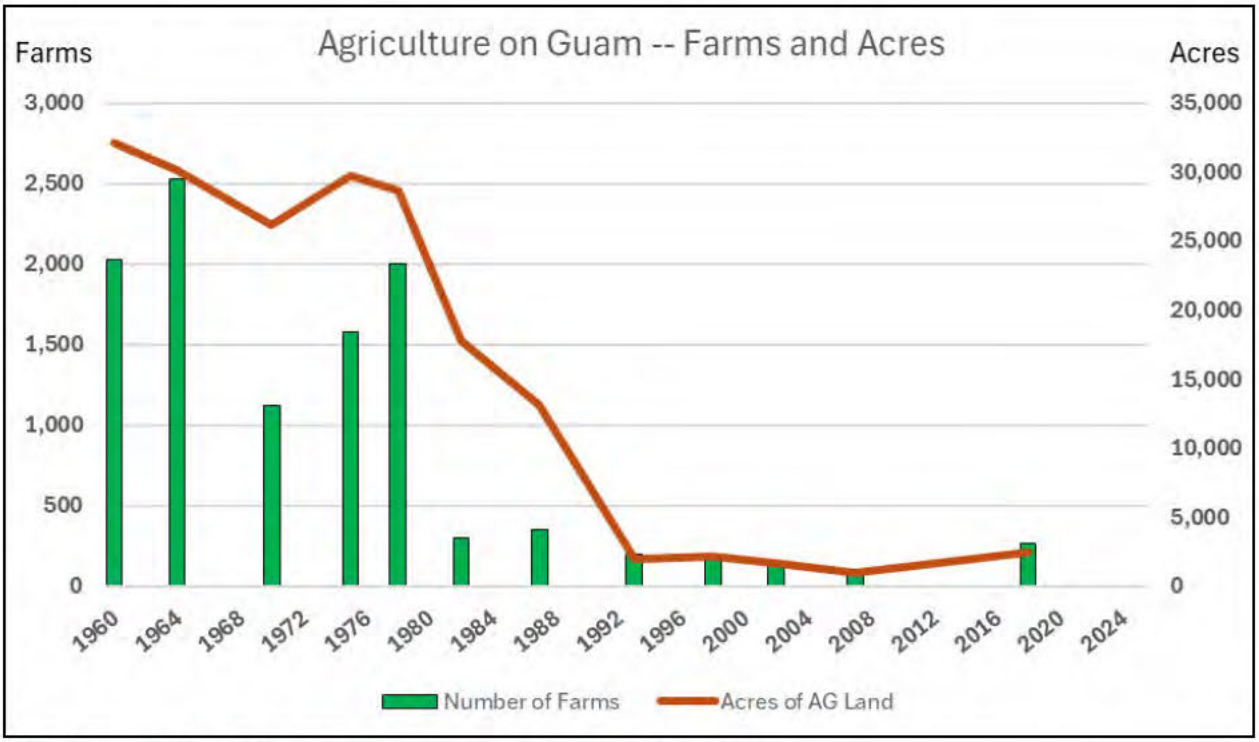

Figure 3-31. Decline in Guam's Agricultural Land Over the Decades.

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Though limited in occurrence and availability (see Figure 3-32), protecting prime agricultural soils (AG-1 lands) is a cornerstone of the policy, prohibiting their conversion to non-agricultural uses unless an agricultural land viability analysis determines they are no longer productive. This approach mirrors global best practices in agricultural land conservation, ensuring that Guam retains its capacity to produce local food. Furthermore, subdivision of AG-1 land is only permitted for agricultural purposes, with enforceable restrictions such as recorded deed requirements or agricultural conservation easements. Other agricultural lands (AG-2) will also be protected to the maximum extent feasible, discouraging their subdivision unless accompanied by an agricultural sustainability plan that demonstrates long-term farming viability.

Unlocking Guam's Agricultural Potential

Guam holds significant promise for sustainable and productive agriculture, particularly when soil limitations such as moisture availability are addressed through irrigation. The USDA Soil Survey identifies four soil types that become prime farmland when irrigated, greatly expanding the island's agricultural productivity potential. These soils include:

- **Akina soils (AkB, AkC)** – Classified as *Ultisols*, these deep and moderately permeable soils offer a strong foundation for diversified crop production when supplemented with consistent irrigation.
- **Guam soils (GuB, GuC)** – Classified as *Mollisols*, these soils are typically found in gently sloping areas and are productive and responsive to good water management practices.
- **Pulantat soils (PuC, PuD)** – Classified as *Alfisols*, these fertile, well-drained soils are ideal for various crops and significantly enhance agricultural output under irrigation.
- **Yigo soils (YgC, YgD)** – Classified as *Oxisols*, these soils have moderate depth and good natural drainage, becoming highly productive agricultural land when adequately irrigated.

Investing in irrigation infrastructure, may transform these soil types into highly productive farmland, enhancing food security, economic resilience, and sustainability on the island.

USDA, Soil Conservation Service, 1988. Soil Survey of Territory of Guam.

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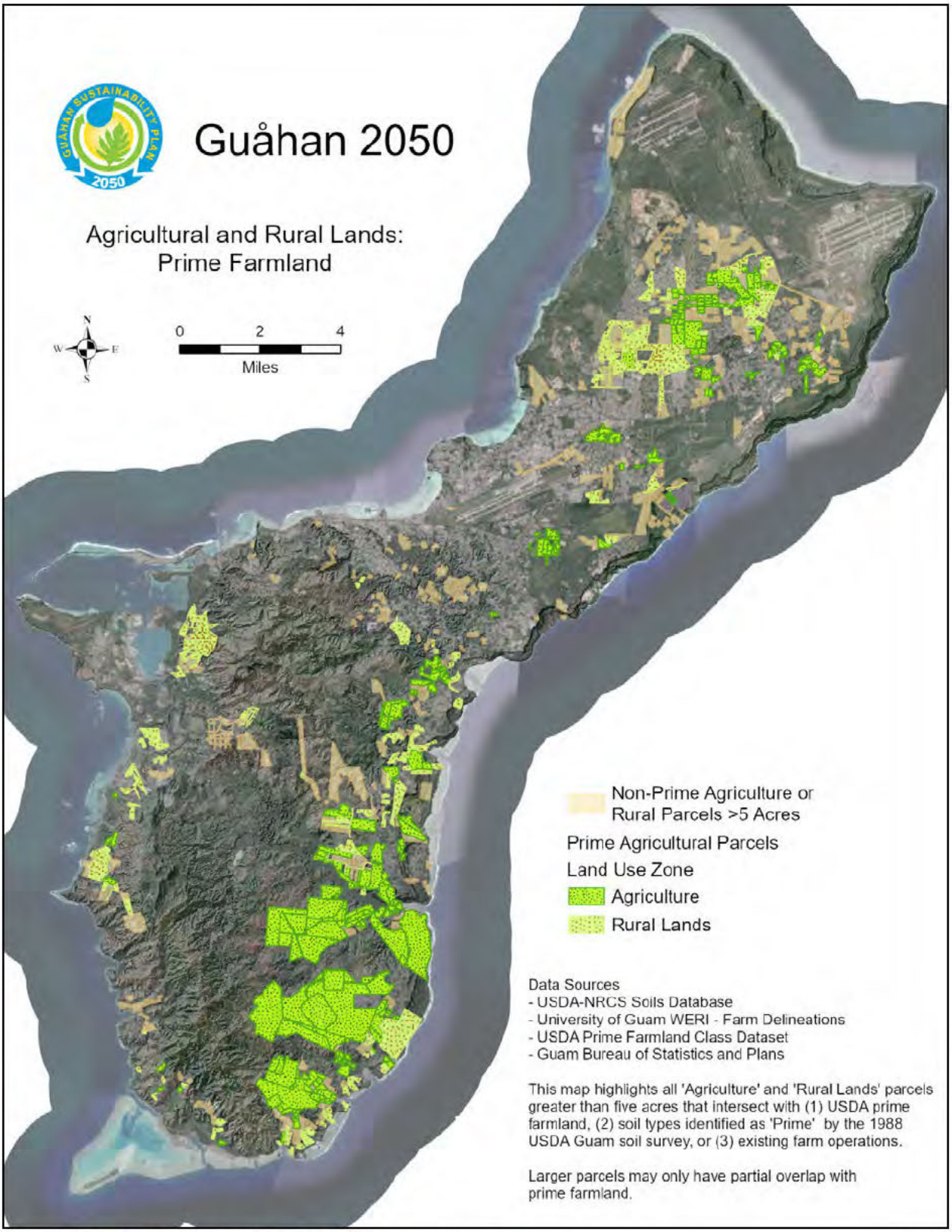

Figure 3-32. Agricultural and Rural Lands: Prime Farm Land.

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To balance growth with agricultural sustainability, the plan limits the conversion of agricultural land to non-agricultural purposes. Exceptions include parks and recreation, critical public infrastructure, and residential uses within a Planned Unit Development (PUD) that meets stringent public service requirements. Additionally, Transfer of Development Rights (TDRs) are proposed for consideration to incentivize the permanent protection of agricultural lands, providing landowners with financial compensation or development credits while preserving farming areas. The Guam Department of Agriculture (DOAG) and the Bureau of Statistics and Plans (BSP) will collaborate on monitoring and enforcement mechanisms to ensure compliance with these policies.

Another critical component of implementing agricultural land use protection policies is enhancing agricultural infrastructure, including water supply, road access, and market facilities. According to the Guam Agriculture Master Plan, improved water storage, irrigation systems, and soil conservation measures are essential for supporting long-term agricultural productivity. Additionally, Guam's government is working on incentives for sustainable farming, such as grants for organic farming, agritourism opportunities, and financial support for farmers adopting climate-resilient practices.

3.6.3. Agriculture Land Use Policies and Sustainability

The Guam 2050 Sustainability Plan presents a proactive approach to agricultural and rural land use planning, balancing development needs with environmental and economic sustainability. By implementing policies that protect farmland, support agricultural livelihoods, and ensure responsible rural development, Guam can safeguard its agricultural heritage and food security for future generations.



The discussion of agriculture and rural land use in Guam also aligns closely with the United Nations Sustainable Development Goals (SDGs), particularly SDG 2 (Zero Hunger), SDG 11 (Sustainable Cities and Communities), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), and SDG 15 (Life on Land). By prioritizing the protection of agricultural lands, ensuring food security, and promoting sustainable farming practices, the Guam 2050 Sustainability Plan contributes to SDG 2 by reducing reliance on imported food and fostering a resilient local food system. The plan's emphasis on minimum lot sizes, land use protections, and incentives for sustainable agriculture also supports SDG 15, as it helps prevent land degradation and protects Guam's soil and biodiversity from urban encroachment and unsustainable development.

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Additionally, the emphasis on rural economic development and local food systems aligns with SDG 8 (Decent Work and Economic Growth) and SDG 12 (Responsible Consumption and Production). By ensuring that agricultural lands remain productive and sustainable, Guam is taking critical steps toward reducing import dependency, improving food sovereignty, and fostering economic resilience in rural communities.

Also, the plan's focus on planned rural development and infrastructure improvements aligns with SDG 11, ensuring that Guam's rural communities have access to adequate public services while maintaining their agricultural productivity. The restrictions on converting prime farmland and the promotion of climate-resilient farming techniques contribute to SDG 13, helping the island mitigate and adapt to climate change impacts, such as rising temperatures and more extreme weather events. Moreover, the encouragement of local food production and responsible land use management under the plan supports SDG 12, ensuring that natural resources are used efficiently and equitably. By integrating land use planning with sustainability goals, Guam is taking significant steps toward a future where agriculture, rural livelihoods, and environmental protection are harmonized, reinforcing global commitments to a more sustainable and resilient world.

Finally, the proposed agriculture policies in the Guåhan 2050 Sustainability Plan align closely with the recently drafted Guam Agriculture Master Plan (2024), which emphasizes food security, economic diversification, and sustainable land management. Both plans advocate for the protection of agricultural lands, ensuring that critical AG-1 and AG-2 lands remain dedicated to farming and preventing their conversion to non-agricultural uses without thorough viability assessments. The Master Plan highlights the need for infrastructure improvements, including water storage, irrigation systems, and road access, which are also reinforced in the Sustainability Plan's requirement for adequate public services in rural land subdivisions. Additionally, the Agriculture Master Plan underscores the importance of incentivizing local food production through policy support, financial assistance, and agritourism development, directly aligning with the Sustainability Plan's commitment to offering incentives for sustainable farming practices. Moreover, both plans recognize the threats posed by climate change and invasive species, advocating for stronger conservation efforts, biosecurity measures, and integrated land-use strategies to protect Guam's agricultural sector from environmental degradation. Chapter 5 of this plan also discusses agroforestry, promoted by policy TE-19, both for climate resiliency and food security. By reinforcing the principles outlined in the Agriculture Master Plan, the Guåhan 2050 Sustainability Plan ensures a cohesive, long-term strategy that supports farmers, strengthens local food systems, and promotes sustainable rural development. The plan could be part of a foundation for developing measurable food sovereignty goals, such as percentage reduction in imported food by 2050, and for supporting DOAG's leadership in developing sustainable agriculture programs, soil health management, and agroforestry initiatives.

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Agricultural Master Plan – Land Use Strategies

Strategy 19 – Land Use Inventory. DOAG in collaboration with other Guam agencies, should develop an inventory of government, CHamoru Trust Land, and private land that is currently in agriculture land use. The inventory should determine the agricultural potential of that land. The inventory should rate that land based on productivity and should take into account the current agriculture use in the inventory.

Strategy 20 – Preserving Agriculture Land Use. DOAG and other government agencies responsible for land use and zoning, should preserve agriculture land and make it difficult to change the land use to non-agriculture uses. This should apply to all lands, including the CHamoru Trust Lands.

Strategy 21 – Development of Farm Lots for Small Farms. One of the challenges for new farmers or starting small farms is the lack of inexpensive agriculture land(s) or the high cost of buying or leasing land. DOAG should develop small farm lots in a subdivision for a low lease rent with a lease period of 20 to 30 years. The long lease period is to allow them to obtain traditional funding for the development of the farm.

Strategy 22 Agri-Tourism and Energy Production on Agriculture Land. The use of Agriculture land for other uses such as agri-tourism and energy production is an ongoing debate. The double purpose of the land may have financial benefit to the landowner. The opponents cite the loss of good agriculture land from production. To address these issues and to ensure long-term agriculture production, DOAG should develop policies, rules and regulations for agri-tourism and energy production on agriculture lands.

AGRICULTURE AND RURAL LANDS POLICY

Rural Lands Development

SC-74 Minimum Lot Size.

Rural Lands shall have a minimum lot size of 1 acre.

SC-75. Services Required for Subdivision.

Subdivision of Rural Lands shall require adequate public services except as may be provided by P.L. 37-105.

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SC-76. Development Siting on Rural Lands.
Development on Rural Lands shall be sited and designed to be compatible with small-scale or subsistence agricultural uses.

Agricultural Lands Protection

SC-77. Critical Land (CZM).
Critical agricultural lands shall be preserved and maintained for agricultural use.

SC-78. Preservation of Agricultural Land.
Protect agricultural zones to ensure local food security and support the agricultural sector. Offer incentives for sustainable farming practices and local food production.

SC-79. Minimum Lot Size.
Agricultural Lands shall have a minimum lot size of 10 acres except that lot sizes may be reduced to no less than 5 acres if restricted to agricultural use by deed restriction or easement.

SC-80. Protection of Prime Soils.
Lands designated AG-1 (Prime) shall not be converted or redesignated to non-agricultural land uses unless the lands are shown to be no longer viable for agricultural production, as determined by an agricultural land viability analysis.

SC-81. Subdivision of Prime Land.
Subdivision of AG-1 land is prohibited except for agricultural purposes, which shall be memorialized through appropriate land use restrictions, such as recorded deed requirements or agricultural conservation easements.

SC-82. Other Suitable Agricultural Lands.
Other lands suitable for agricultural land uses (AG-2) shall be protected for such purposes to the maximum extent feasible.

SC-83. Subdivision of Lands Suitable for Agriculture.
Subdivision of lands suitable for agriculture is discouraged. Any subdivision lands shall be supported by an agricultural sustainability plan identifying how agricultural uses will be promoted and supported.

SC-84. Conversion of Agricultural Land.
Redesignation of agricultural land for non-agricultural purposes shall be limited to conversions to parks and recreational and resource conservation purposes, critical public services and community infrastructure, or residential uses pursuant to a Planned Unit Development with adequate public services, including wastewater capacity, roads and circulation, and water supply.

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SC-85. Transfer of Development.
Consider development transfer mechanisms to incentivize the permanent protection of agricultural lands. Coordinate with the CHamoru Land Trust concerning the agricultural and other potential of CLTC lands to meet the needs of Guam's cultural heritage.

SC-86. Right to Farm.
Evaluate the current right to farm

SC-87. Land Use Inventory.
DOAG in collaboration with other Guam agencies, should develop an inventory of government, CHamoru Trust Land, and private land that is currently in agriculture land use. The inventory should determine the agricultural potential of that land. The inventory should rate that land based on productivity and should take into account the current agriculture use in the inventory.

SC- 88. Development of Farm Lots for Small Farms.
Where appropriate, DOAG should support development of small farm lots in a subdivision for a low lease rent with a lease period of 20 to 30 years.

SC-89. Agri-Tourism and Energy Production on Agriculture Land.
BSP, in collaboration with DOAG, GPA, and other agencies should develop policies, rules and regulations for agri-tourism and energy production on agriculture lands.

3.7 Natural Hazards

Guam faces a variety of natural hazards, including typhoons, flooding, shoreline erosion, earthquakes, landslides, and wildfires. These hazards pose significant threats to public safety, development, and infrastructure, and require a robust land use planning and sustainability framework to mitigate risks while ensuring responsible development.

3.7.1. General Hazard Policies and Sustainable Land Use

The 2024 Guam Hazard Mitigation Plan (GHMP) provides an island-wide risk assessment and mitigation framework, identifying hazards, mapping vulnerable assets, and outlining goals and actions for resilience (GHS, 2024; GHS, 2025). The GHMP provides important guidance for the G50SP land use policies addressing natural hazards. Additionally, the Hazardous Materials Emergency Preparedness (HMEP) Program, managed through Guam EPA, supports training, tabletop exercises, and interagency response planning. Integrating HMEP into hazard mitigation strategies would strengthen Guam's resilience.

Best Available Hazard Information. Guam's sustainability plan must leverage the GHMP to maintain up-to-date hazard mapping and risk assessment. The latest findings indicate that coastal and inland flood risks, seismic vulnerabilities, and wildfire exposure have intensified due to climate change and increased urbanization. Continued investments in GIS-based hazard mapping and data collection, including updates to FEMA's Flood Insurance Rate Maps (FIRMs)

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and the Guam Shoreline Atlas, will improve planning and resilience efforts. The hazard risks should be communicated to the public in multiple languages to reach as much of the public as possible.

Hazard Risk Reduction & Disaster Safety. Development policies also should integrate risk assessments for critical infrastructure such as power grids, transportation networks, and emergency facilities. The GHMP highlights coastal infrastructure risks, particularly in Apra Harbor, Talofofo Bay, and Inalåhan, where typhoon-driven storm surges and sea-level rise exacerbate vulnerabilities. To mitigate these risks, zoning regulations should prohibit new development in high-risk zones unless climate-adaptive measures—such as elevated structures, breakaway walls, and storm-resistant materials—are implemented.

Health and Safety. Public health considerations include ensuring safe water supplies and sanitation, especially in flood-prone areas. The GHMP underscores the impact of flooding on Guam's water systems, advocating for upgrades in wastewater treatment and drinking water infrastructure to withstand extreme weather events.

Building Safety, Maintenance, Dumping, and Public Nuisance. Ensuring that habitable structures are fit for occupancy is a crucial component of Guam's sustainability. The GHMP, and the G50SP, emphasize compliance with structural safety standards, including wind and seismic-resistant designs. The GHMP identifies deteriorating structures, illegal dumping, and abandoned properties as contributing factors to public safety risks and environmental degradation. In some areas, illegal dumping is a persistent challenge, with discarded vehicles, appliances, and trash accumulating in open fields, jungles, and even tourist sites according to nearly all Mayors. Pollutants from illegal dumping may impact the aquifer. Efforts to combat this include ongoing cleanups, the installation of illegal dumping signs, and community outreach campaigns. However, stricter penalties and greater enforcement are necessary to fully address the issue. In certain locations, isolated areas such as pipeline easements, have become dumping grounds, exacerbating environmental concerns. Proper sanitary conditions, adequate means of egress, and fire safety measures are essential to reducing disaster-related injuries and fatalities. Unauthorized waste disposal, particularly in flood-prone areas, can clog drainage systems and exacerbate flooding. The implementation of regular building inspections and code enforcement, retrofitting older buildings to meet modern standards, and community engagement programs to encourage proper waste disposal and neighborhood upkeep will be necessary to enhance resilience to earthquakes, typhoons, and other hazards.

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Key Insights from the 2024 Hazard Mitigation Plan (HMP)

MAJOR NATURAL HAZARDS IMPACTING GUAM

- **Tropical Cyclones & Typhoons** – With wind speeds exceeding 150 mph, typhoons pose the greatest immediate threat. Storm surges, flooding, and wind damage from events like Typhoon Mawar (2023) have caused massive destruction.
- **Sea Level Rise & Coastal Erosion** – Rising ocean levels threaten homes, infrastructure, and ecosystems, exacerbated by coral reef degradation.
- **Earthquakes & Tsunamis** – Guam's location in the Pacific's seismic zone makes it susceptible to earthquakes and tsunamis.
- **Drought & Wildfires** – Climate change is intensifying dry conditions, leading to water shortages and increased wildfire risks.
- **Flooding & Landslides** – Heavy rainfall, particularly during typhoons and El Niño events, increases the likelihood of inland flooding and slope failures.

LAND USE AND DEVELOPMENT CHALLENGES

- **Military Expansion & Civilian Development** – Guam's military buildup and urban expansion require careful hazard mitigation planning to ensure resilience.
- **Infrastructure Vulnerabilities** – The power grid, water supply, and critical facilities remain exposed to storm damage and flooding.
- **Tourism & Economic Impacts** – With much of Guam's economy tied to coastal areas, hazards such as typhoons and sea level rise pose a risk to hotels, businesses, and transportation systems.

MITIGATION STRATEGIES

The 2024 HMP outlines a whole-community, multi-pronged approach to hazard mitigation, including:

- Strengthening building codes and enforcing zoning laws to minimize risk exposure.
- Investing in resilient infrastructure, such as flood-resistant roads and energy systems.
- Expanding coral reef and coastal protection projects to reduce storm surge impacts.
- Enhancing emergency preparedness and early warning systems.
- Integrating climate adaptation strategies into long-term land use planning.

3.7.2. Typhoons, Storms, and Other Extreme Weather Hazards

Typhoons are one of the most significant natural hazards affecting Guam, bringing devastating winds, storm surges, and heavy rainfall that contribute to widespread destruction. The 2024 GHMP highlights that typhoons can produce sustained winds over 150 mph and gusts exceeding 180 mph, causing severe damage to buildings, infrastructure, and coastal areas. The

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impact of these storms is further intensified by secondary hazards such as flooding, slope failures, and saltwater intrusion, which can cripple essential services like power and water supply. The severity of typhoons is largely influenced by seasonal monsoon patterns, with most forming between September and November, when warm ocean temperatures and atmospheric conditions are favorable for cyclone development. However, Guam remains at risk of typhoons year-round, making preparedness and mitigation efforts crucial (Figure 3-33).

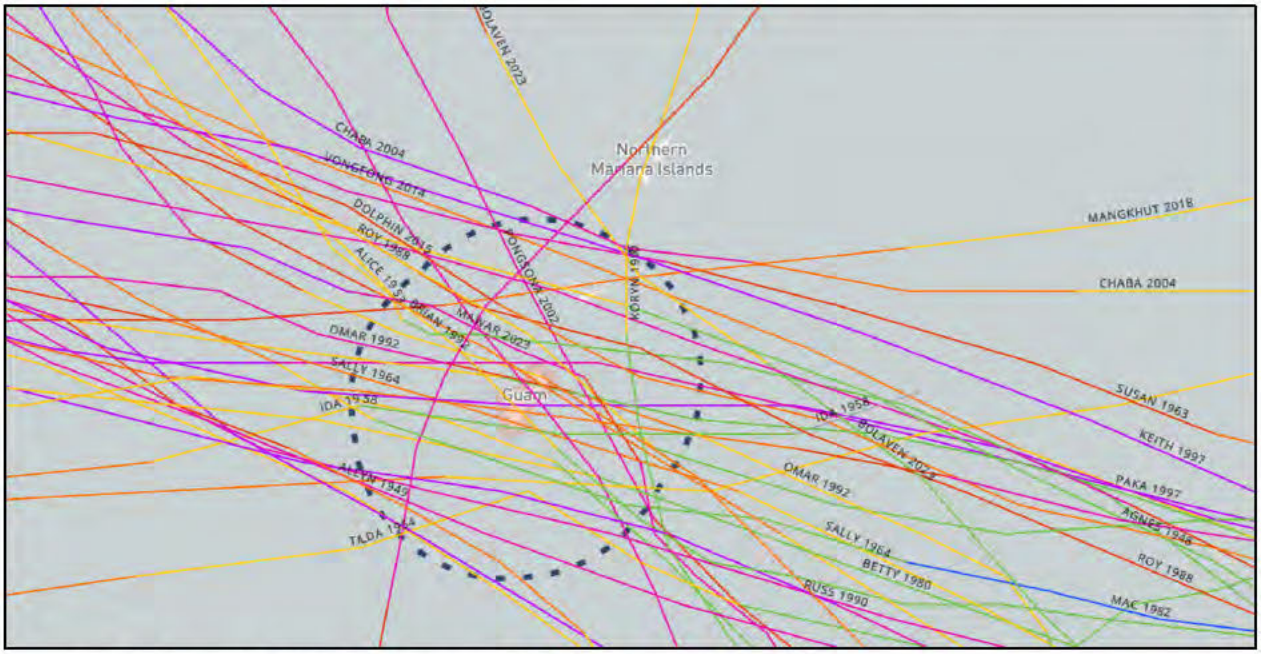

Figure 3-33. Typhoon Tracks Near Guam, 1948-Present (NOAA, 2025).

Climate change is expected to increase typhoon intensity in the future, with stronger winds and more extreme rainfall rates posing an even greater threat to the island (EPA, 2016). The 2024 HMP notes that while the frequency of tropical cyclones may decline, those that do form are projected to be more intense, leading to higher storm surges and greater flood risks. Historical events like Typhoon Mawar (2023), which caused an estimated $300 million in damages, and Typhoon Pongsona (2002), which left Guam without power for weeks, underscore the island's vulnerability. The loss of coral reefs due to climate change further exacerbates coastal flooding and erosion, as reefs provide a natural buffer against powerful waves. Recognizing these threats, the 2024 HMP emphasizes the need for stronger building codes, improved disaster preparedness, and climate adaptation strategies to reduce the long-term risks posed by typhoons.

Guam's land use planning deeply incorporates resilience to typhoons and extreme storms, which are a persistent threat in the Western Pacific. Lessons from past storms have significantly shaped policy. For example, Super Typhoon Paka (1997) pummeled Guam with sustained winds of 115–144 mph for 8–10 hours. In its aftermath, assessments noted no loss of life on Guam – a result credited to the island's experienced populace, timely warnings, and a superior building code that produced sturdy concrete homes (PDN, 1997). Newer concrete-

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roofed houses and reinforced power poles withstood Paka's onslaught well, whereas older tin-roofed structures and wooden utility poles were destroyed, leaving several thousand people homeless (Weather.gov, 1997). These outcomes reinforced the crucial importance of adhering to modern building standards and replacing aging, vulnerable infrastructure. Each major typhoon, from Karen (1962) to Pongsona (2002) to Mawar (2023), has underscored the need for robust construction and continuous improvement in storm preparedness.

Most recently, Typhoon Sinlaku reinforced several key resilience lessons for Guam. The storm highlighted the interconnected vulnerabilities of power, water, wastewater, communications, and transportation systems, demonstrating how disruptions in one sector can quickly affect others. Response efforts underscored the importance of backup power, redundant communications, resilient water infrastructure, and strong coordination among local, federal, military, and community partners. The event also reaffirmed the value of household preparedness and proactive emergency planning. Looking forward, Sinlaku emphasized the need for continued investment in climate-resilient infrastructure, hazard-informed land use planning, and adaptation strategies that can reduce future risks from increasingly severe tropical cyclones and related hazards.

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Building resilience against typhoons is a top land use priority. Guam's development regulations require that structures meet stringent wind load and flood standards. Most homes and buildings are constructed of reinforced concrete or masonry, often with typhoon shutters or impact-resistant windows, to endure extreme winds. Power and communications infrastructure are steadily being upgraded to reduce storm vulnerability. Nearly all of Guam's older wooden power poles have been replaced with steel or concrete, and about a quarter of power lines have been undergrounded to prevent wind damage and accelerate post-storm recovery. The G50SP incorporates these mitigation policies to support future natural hazard and climate change resilience.

Critical facilities like hospitals, shelters, and water/power plants are built to higher design standards and include backup systems, recognizing their importance during disasters. Development in hazardous coastal areas is managed via setback requirements and elevation standards to mitigate storm surge impacts. For instance, new construction along low-lying shorelines often must be elevated on reinforced concrete piers or placed further inland. Land use plans also designate certain public buildings (e.g. concrete school structures or community centers) as typhoon shelters, ensuring that residents of flood-prone or weak structures have a safe refuge during storms. At the same time, mayors and residents are concerned about the adequacy and availability of typhoon shelters. Some village Mayors have reported that residents are directed to seek shelter in locations that may be inaccessible due to road conditions during severe weather events and typhoons. In certain areas, the nearest available shelters lack sufficient protection, highlighting the need for improved facilities in certain locations. Additionally, insufficient stormwater drainage systems exacerbate flooding risks, particularly in flood-prone villages, reinforcing the necessity of designed and accessible typhoon shelters for residents.



Hurricanes and typhoons are the same weather phenomenon: tropical cyclones – a generic term used by meteorologists to describe a rotating, organized system of clouds and thunderstorms that originates over tropical or subtropical waters and has closed, low-level circulation (NOAA, 2024x)

The weakest tropical cyclones are called *tropical depressions*. If a depression intensifies such that its maximum sustained winds reach 39 miles per hour, the tropical cyclone becomes a *tropical storm.* Once a tropical cyclone reaches maximum sustained winds of 74 miles per hour or higher, it is then classified as a hurricane, typhoon, or tropical cyclone, depending upon where the storm originates in the world.

Tropical cyclones have strong, damaging wind and very heavy rainfall. An average of three tropical storms and one typhoon pass within 180 miles (330 kilometers) of Guam each year.

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Regular drills, public awareness campaigns, and well-coordinated emergency response plans complement the physical preparedness, so that communities know how to respond when typhoon warnings are issued. Emergency shelters are critical during typhoon events, and the G50SP requires the equitable distribution and upgrading of emergency facilities to ensure structural integrity and community accessibility. Existing structures, such as recreational facilities, are targeted for disaster retrofitting to serve as Tier 1–3 shelters, consistent with the Guam Hazard Mitigation Plan.[9]

3.7.3. Flooding

Flood hazard management is critical in Guam's sustainability and land use planning due to the island's heavy rainfall and coastal exposure. Flooding on Guam takes multiple forms – from riverine floods in low-lying valleys, to flash floods from intense downpours, to coastal inundation from storm surge. The island's geology creates distinct regional flood patterns: the porous limestone in northern Guam absorbs water, but the clay soils and steeper terrain in southern Guam generate high runoff, making the south more prone to flash flooding and erosion during torrential rains. Climate records show that extreme rainstorms occasionally overwhelm Guam's streams and storm drains, especially in the wet season, causing damaging floods in villages and farms. The flood waters create hazardous road conditions, damage homes and increase public health risks from standing water and contamination. These risks are projected to **increase with climate change**, which may bring more frequent extreme rainfall events (EPA, 2016). Ensuring that new development does not worsen flood hazards (for example, by paving over absorbent ground or building in natural flow paths) is a guiding principle of land use policy.

Large projects require drainage impact assessments, and developers must incorporate features like retention basins, permeable surfaces, and slope stabilization to manage runoff. Special flood hazard areas – such as river floodplains and coastal zones – are subject to strict controls under Guam's building law and U.S. National Flood Insurance Program (NFIP) standards. Homes built to NFIP flood standards (elevated above base flood elevation, with reinforced foundations) have proven to incur far less damage and allow quicker recovery when floods do occur (GHS, 2025). By enforcing these standards, Guam reduces the risk to life and property in known flood zones. However, additional environmental challenges exacerbate these issues, such as insufficient ponding basin maintenance, which has worsened flooding according to local Mayors. They believe runoff negatively impacts the aquifer, posing risks to Guam's water supply. Other concerns include the preservation of indigenous snail populations, challenges in pipeline maintenance, and the presence of junk cars that may obstruct drainage. Flooding

Guam's land use planning for flooding is also informed by up-to-date flood mapping and planning. FEMA's Flood Insurance Rate Maps delineate areas at risk from 100-year and 500-year

[9] As described in Guam's Hazard Mitigation Plan: "Tier 1 shelters provide immediate, short-term refuge; Tier 2 shelters offer more comprehensive services for longer durations; and Tier 3 shelters are equipped for extended stays, providing full-scale support including, healthcare, food, and long-term accommodation" (Guam Homeland Security, 2024).

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floods, guiding zoning decisions and insurance requirements. In addition, Guam agencies have conducted detailed watershed and flood studies – such as the Guam Comprehensive Flood Study and recent watershed assessments – to refine understanding of flood frequencies for local rivers (e.g. the Ugum, Umatac, and Talofofo watersheds) (BSP, 2020). These studies support evidence-based policies like preserving upstream wetlands and floodplains as natural buffers. Some areas are particularly vulnerable, such as parts of Mangilao, where flooding is a major issue in recreational open fields and along Route 15. In Hagat, poor drainage has led to flood-related backups in homes, with outdated road infrastructure compounding the issue as sewer systems are positioned below road levels, making proper drainage more difficult (see Figure 3-35 and Chapter 7).

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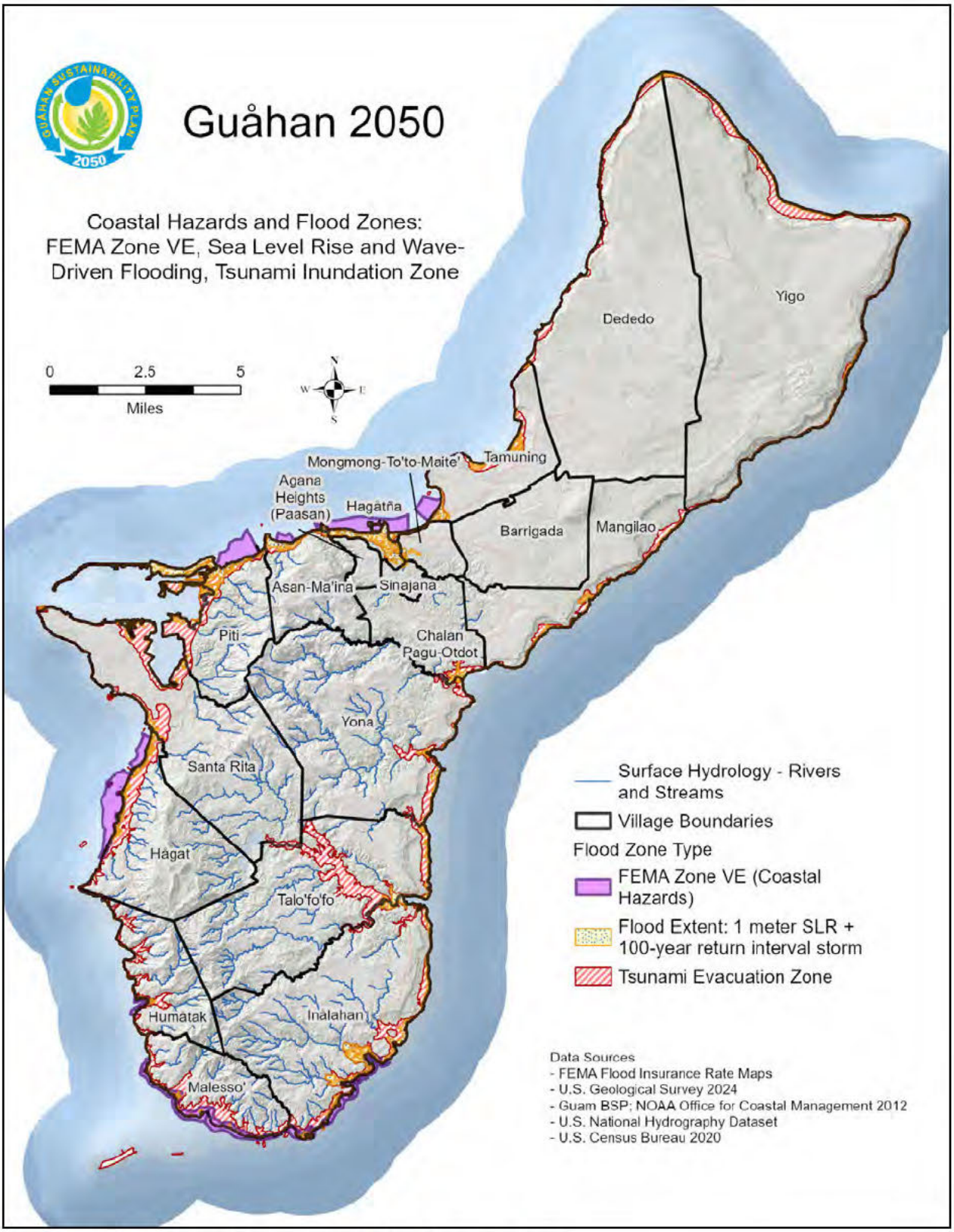

Figure 3-34. Map of Coastal Hazards and Flood Zones on Guam.

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Figure 3-35. Flood Areas in Hagåtña.

The G50SP prioritizes keeping critical infrastructure (water wells, sewage treatment plants, etc.) and new development out of high-risk flood zones whenever possible. Where development already exists in flood-prone areas (for instance, parts of Hagåtña or low-lying coastal villages), mitigation measures should be pursued: floodwalls or berms, improved drainage systems, maintenance of drainage systems, the addition and conservation of natural flood management measures and even voluntary relocation or buyouts of the most vulnerable properties. Guam also participates in innovative interagency programs such as the *Silver Jackets* partnership to address flooding. The Guam Silver Jackets team unites federal and local agencies to implement non-structural flood risk reduction projects – examples include community education on flood preparedness, emergency action plan development, and better flood warning systems (BSP, 2022). These collaborative efforts ensure that flood risk management is comprehensive, covering everything from engineering solutions to public awareness. By combining accurate flood hazard mapping, responsible land use in floodplains, enforcement of building standards, and watershed management (e.g. reforestation to curb runoff and erosion), Guam will strengthen its resilience to flooding while protecting water resources and ecosystems.

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3.7.4. Shoreline Hazards, Sea Level Rise, and Coastal Resilience

As an island in the Pacific, Guam faces significant coastal hazards that threaten its environment, infrastructure, and communities. Rising sea levels, coastal erosion, tsunamis, and other shoreline hazards necessitate proactive and sustainable policies to mitigate risks. In response, G50SP policies emphasize development safety, shoreline hazard mapping, site-specific hazard evaluation, and the limitation of shoreline protective devices. These measures ensure that development occurs in a manner that safeguards both human safety and natural coastal environments.

Guam's coastal areas are on the front line of climate change and geologic hazards, and the island's sustainability plan addresses these shoreline challenges through science-based adaptation and nature-based solutions. Sea level rise (SLR) is a growing concern for this low-lying oceanic island. Tide gauge data and regional models indicate Guam has already seen about 4 inches of sea-level rise since the early 1990s (Figure 3-36). Projections suggest an additional rise of roughly 0.5 to 1.5 feet by 2050 and potentially 3+ feet by 2100 under intermediate-to-high scenarios (BSP, 2022). Such an increase will gradually submerge low-lying coastal flats and exacerbate coastal flooding and erosion during high tides and storms.

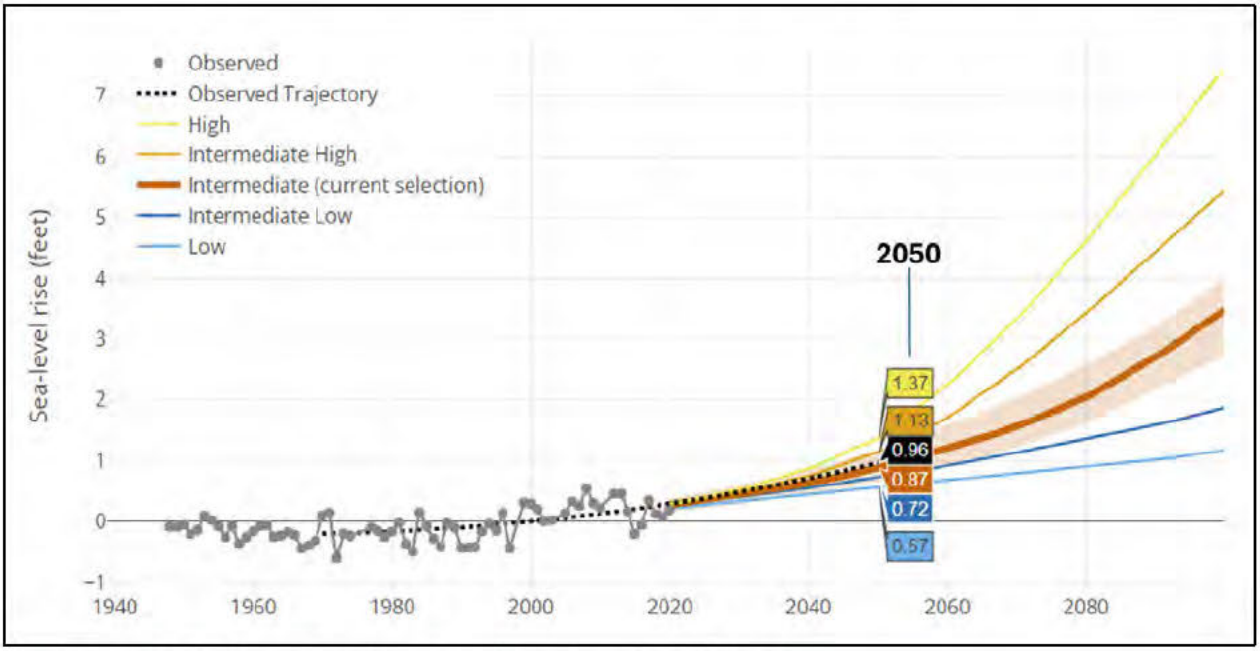

Figure 3-36. APRA Harbor Sea Level Rise Projections (NASA, 2024).

The G50SP includes policies to anticipate these changes. Setback requirements along the shoreline would be expanded – new construction must be sited further inland from the current high-tide line to allow for erosion and inundation buffers over the coming decades. In particularly vulnerable spots (e.g. parts of Tumon Bay or Malesso' village waterfront), adaptation planning and considerations will become increasingly important.

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Another critical facet of shoreline hazard planning is addressing coastal erosion and extreme wave events. Guam's beaches and coastal bluffs face steady erosion from natural wave action, which is being intensified by higher sea levels and the loss of protective ecosystems. To mitigate these risks, Guam has implemented coastal land use regulations and early warning systems. Tsunami inundation maps and evacuation routes are posted in coastal villages, and new buildings in tsunami hazard zones are required to incorporate vertical evacuation options (like rooftop refuge areas) or meet structural designs to withstand certain wave forces. Additionally, local Mayors emphasized the need for environmental protection efforts to safeguard the ocean, coral reefs, and mangroves, recognizing their role in coastal resilience (see Chapter 5 also).



Many of Guam's shorelines are protected by wide fringing reefs, which results in a relatively mild wave climate along the shoreline, except during infrequent typhoon events. This results in narrow and mildly sloped beaches, often backed by vegetated beach berms. These areas are not as vulnerable to erosion, but will be affected by rising sea levels, as larger waves may be able to transform across the reef and reach the shoreline. The primary areas of concern are those in which buildings and roadways exist very close to the shoreline. In these areas, as sea levels rise, homeowners, businesses, and the Government of Guam will be required to adapt by using protective structures, elevating smaller infrastructure, or even by retreating from the shoreline. Residents and Mayors in affected villages have identified sea level rise as a significant problem, particularly where it causes erosion near roads and residential areas.

In the Guam Shoreline Atlas, shorelines were classified into three categories based on susceptibility to erosion: critical, potentially critical, and non-critical (Figure 3-37):

- Critical is defined as existing and/or continuing shoreline erosion, protective structure failure, or storm damage vulnerability that is an immediate threat to existing structures or public facilities, and thereby justifies protective action.
- Potentially Critical is defined as existing and/or continuing shoreline erosion, protective structure failure, or storm damage vulnerability that is a potential threat, and justifies protective action. However, protective action is not as urgent as for critical status.
- Non-critical is defined as shoreline erosion, protective structure failure, or storm damage vulnerability that is either not currently a threat or does not exist, and does not justify protective action. These areas could become potentially critical or critical if erosion begins to threaten existing structures or public facilities

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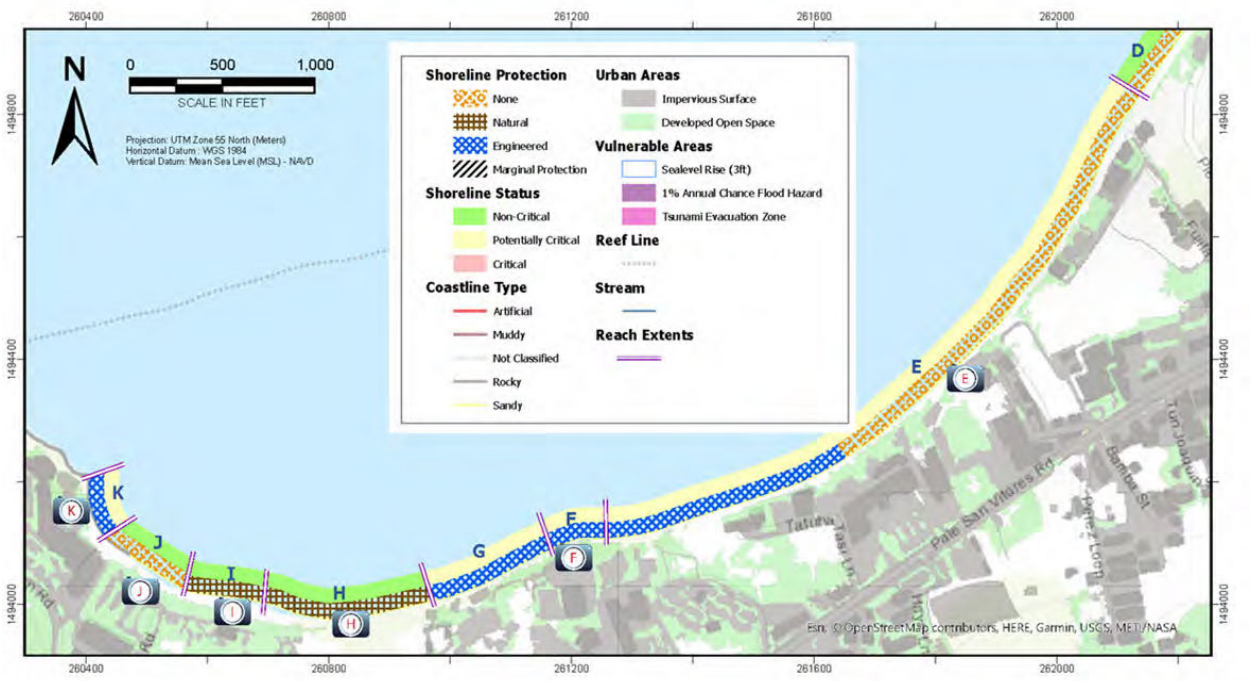

Figure 3-37. Guam Shoreline Atlas Shoreline Status, Tamuning.

For daily erosion issues, Guam's Coastal Management Program encourages "living shoreline" approaches over hard structures wherever feasible. This includes restoration of mangroves and coastal vegetation to anchor shorelines, beach nourishment projects to replace lost sand, and establishing setback zones where no new construction is allowed so that natural beach migration can occur. Coral reef restoration is also recognized as a key nature-based solution to shoreline hazards – Guam's coral reefs are vital breakwaters that dissipate wave energy before it hits the coast. Unfortunately, reefs have been degraded by warming, pollution, and Crown-of-Thorns starfish outbreaks, reducing their protective function. In response, local and federal partners (e.g. NOAA, University of Guam Marine Lab) are working on reef resilience projects, such as outplanting nursery-grown corals and improving water quality to support reef recovery.

Healthy reefs, along with intact seagrass beds and mangroves, help buffer the shore from storms, reducing erosion and flood damage. Guam's sustainability plan highlights these nature-based adaptations: planting mangroves in vulnerable bays, conserving reef flats as no-fishing marine preserves to boost reef health, and possibly constructing artificial reef structures in key locations to enhance coastal protection. By coupling hard infrastructure where needed (raised seawalls, tide gates, etc.) with ecosystem-based approaches, Guam may build layered defense against coastal hazards. This integrated strategy aims to safeguard coastal communities, critical infrastructure (like the Port of Guam and seaside roads), and invaluable natural resources from the threats of sea-level rise, coastal erosion, and tsunamis in the coming decades. Community sentiment supports these efforts, with a majority (68%) of G50SP Community Engagement Survey respondents believing that development in coastal areas should be restricted due to sea level rise (Figure 3-38).

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3.7.4.1. Shoreline Hazards and Development Safety

Ensuring the safety of new developments near the shoreline is a crucial policy goal. The construction of infrastructure and buildings must be planned and executed with long-term risk assessments in mind. Policies dictate that new developments, including land divisions, must avoid or minimize exposure to coastal hazards, including shoreline erosion, wave runup, and sea-level rise impacts. Crucially, structures should not rely on shoreline protection devices over their anticipated lifespan. This requirement aims to prevent excessive artificial modifications to the coastline, which can disrupt natural sediment movement and exacerbate erosion.

3.7.4.2. Shoreline Hazard Mapping

A vital component of hazard mitigation is the continuous updating of shoreline hazard maps. These maps must integrate the latest scientific findings to accurately reflect risks such as wave action, flooding, tsunamis, and erosion. The incorporation of best available science ensures that policymakers, developers, and residents have access to reliable data, facilitating informed decision-making regarding coastal planning and infrastructure placement. Regular updates are essential, as sea levels and climate patterns change over time, affecting risk levels.

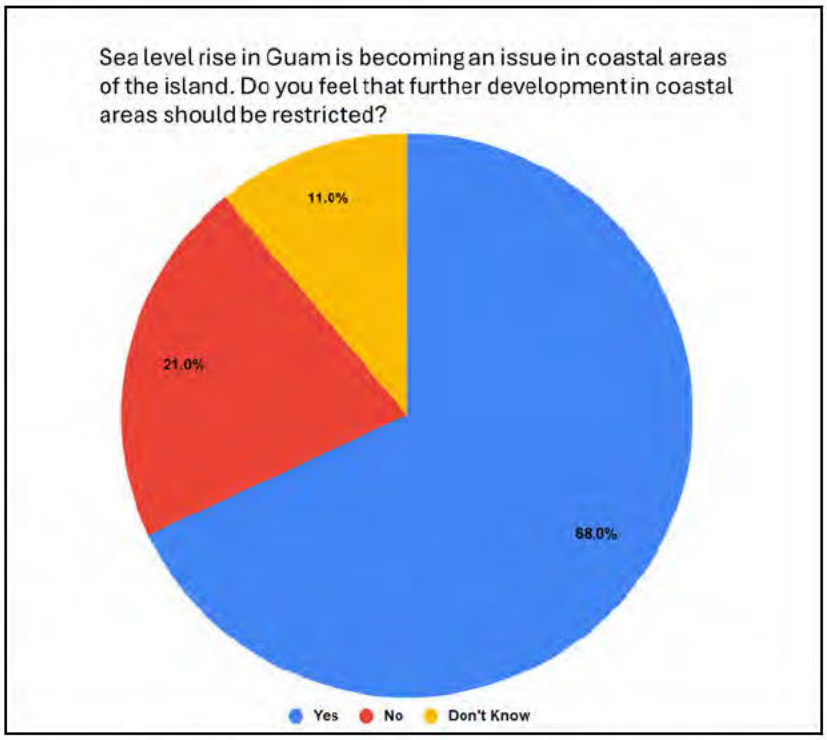

Figure 3-38. Public Response to Sea Level Rise and Coastal Development.

3.7.4.3. Site-Specific Shoreline Hazard Evaluations

To further refine risk assessments, policies require that any new development proposed in areas subject to shoreline hazards undergo a site-specific hazard evaluation. These evaluations must be conducted by professionals specializing in coastal processes and should consider the structure's lifespan, expected sea-level rise projections, and 100-year storm events. Blufftop developments, in particular, must meet specific safety factors for both static and seismic conditions. These stringent requirements ensure that developments are resilient and do not contribute to future coastal degradation or instability.

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3.7.4.4. Bluff-Clifftop Development Setbacks

Bluff and cliff top areas are highly susceptible to erosion, making strict setback regulations necessary. Before permitting new blufftop developments, a detailed evaluation must demonstrate that the design and location can ensure stability over the structure's lifespan. The policies require a safety factor greater than or equal to 1.5 for static conditions and 1.1 for seismic conditions. Additionally, developments must not contribute to erosion, geologic instability, or other environmental damage. These measures help maintain the integrity of bluff ecosystems and protect coastal communities from hazardous collapses.

3.7.4.5. Beach Setbacks and Land Division Policies

For beachfront development, setback policies ensure that structures remain safe from coastal flooding and long-term erosion. Developments must be positioned inland far enough to account for projected sea-level rise and seasonal changes in shoreline morphology. Similarly, land division policies restrict the creation of new lots near beaches or blufftops unless they can be developed without future reliance on shoreline protection devices. These provisions help prevent overdevelopment in high-risk areas and reduce the necessity for costly and environmentally harmful interventions. It may be beneficial to reevaluate and strengthen seashore reserve policies by extending the mandatory setbacks from the mean high water mark (MHWM), which is currently 33 feet, to a minimum of 100 feet. This adjustment could provide enhanced protection against a range of coastal hazards, including the increasing risks posed by storm surges, sea level rise, and coastal erosion. Establishing a wider setback will not only safeguard infrastructure and human activities, but also help preserve natural coastal ecosystems that play a vital role in mitigating such hazards. Moreover, adopting these updated setbacks is essential for long-term resilience, allowing coastal communities to better adapt to the evolving impacts of climate change, while maintaining the ecological integrity of coastal areas, including shoreline habitat areas like sand nesting sea turtles..

3.7.4.6. Assumption of Risk for Development in Hazard Areas

An important policy mechanism involves placing the responsibility of risk on property owners. New developments in hazardous areas must include deed restrictions that acknowledge potential dangers, waive claims against the Government of Guam, and accept the possibility of relocation or removal due to future hazard conditions. This policy ensures that developers and property owners understand the risks associated with building in coastal zones, thereby reducing liability for the government while promoting responsible development.

3.7.4.7. Limitations on Shoreline Protective Devices

Policies strictly limit the use of shoreline protective devices to coastal-dependent land uses, such as boating and fishing facilities, or for protecting pre-existing structures under imminent threat of erosion. Even in these cases, the chosen protective measure must be the least environmentally damaging option, with resource impacts mitigated appropriately. This limitation

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discourages reliance on artificial barriers that can accelerate erosion on adjacent properties and disrupt natural shoreline dynamics.

3.7.4.8. Protection of Critical Facilities and Infrastructure



While general policies restrict shoreline protective devices, exceptions are made for critical infrastructure necessary for public services. Interim shoreline protection may be permitted for public safety facilities, hospitals, and essential utilities, provided that feasibility assessments explore relocation options. Adaptation plans must be included to transition these facilities away from high-risk areas in the long term. These measures ensure that vital public services remain operational while promoting sustainable land use planning.

3.7.4.9. Nature-Based Solutions and Coral Reef Restoration

Guam prioritizes nature-based solutions as alternatives to hard infrastructure for shoreline protection. Strategies such as dune restoration, dynamic revetments, cobble wave trippers, vegetative planting, and sand nourishment provide natural buffers against coastal hazards while preserving ecological integrity. Coral reef restoration is also a key focus, as healthy reef systems reduce wave energy and serve as natural barriers against coastal flooding. These environmentally friendly approaches offer sustainable protection while enhancing biodiversity and ecosystem services. In addition to promoting reef restoration, it is important to prioritize protection of coral nurseries, such as the Piti Bomb Holes, Dogleg Reef (Apra Harbor), and Malesso' Coral Nurseries.

3.7.4.10. Tsunami Inundation Zone Policies

Due to the high tsunami risk in Guam, stringent policies govern development in tsunami inundation zones. New building sites are generally discouraged in these areas, especially for critical community facilities such as hospitals and schools. Infill development is permitted under specific conditions, requiring disclosure of tsunami risks and indemnification of the government against liability. Clear evacuation plans and routes must be established for all developments in tsunami-prone areas to ensure public safety in the event of an emergency.

3.7.4.11. Land Acquisition and Shoreline Adaptation Planning

To further enhance resilience, Guam's policies support the acquisition, land trades, and or purchase of development rights of at-risk properties in erosion-prone areas. This land can then be used for implementing adaptation strategies, including shoreline restoration and the creation

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of vegetation buffers. Additionally, maintaining and updating the Guam Shoreline Atlas supports long-term adaptation planning. These plans incorporate vulnerability assessments, projected shoreline changes, and strategies for minimizing risk while preserving public access and coastal resources.

3.7.5. Land Stability and Seismic Safety

Guam's hilly terrain and seismic setting pose additional land use challenges, and the island's policies promote careful site planning and engineering to ensure land stability and seismic safety. In southern Guam, which is dominated by volcanic soils and steep slopes, landslides and soil erosion are persistent concerns. Heavy rainfall—especially during typhoons or monsoon storms—can oversaturate the thin topsoil on hillsides, causing slope failures and debris flows. In some cases, a single landslide can strip a large area of vegetation within minutes, creating exposed badland scars on the mountainsides (Guampedia, 2025).

These barren areas then contribute to further erosion and sediment runoff, as they lack plants to hold the soil. To combat this, Guam has implemented hillside development restrictions by requiring geotechnical evaluations and strict erosion control measures for any project on slopes above a certain grade (e.g., 15% slope or greater).[10] The G50SP includes a policy restricting development on slopes greater than 30%, except for critical infrastructure projects that must demonstrate safety feasibility through detailed geotechnical studies.

Builders are often mandated to include terraces, retaining walls, or vegetative cover to prevent cuts and fills from sliding. Furthermore, activities that exacerbate erosion – like indiscriminate clearing of vegetation on steep land – are regulated or discouraged. The government works with private landowners on reforestation initiatives in critically eroding watersheds, planting trees and vetiver grass to stabilize soils. There is also recognition of the link between wildfires and landslides: wildland fires (often human-caused in the dry season) leave hillsides bare and prone to mudslides in the next heavy rain.

Thus, wildfire prevention and post-fire revegetation (discussed in the next section) are integral to maintaining slope stability. By guiding intensive development away from unstable slopes and enforcing site-specific safeguards (like proper retaining structures and controlled drainage), Guam's land use policies aim to minimize landslide hazards and protect downhill communities and coral reefs from the cascade of sediment.

Seismic safety is an equally important pillar of Guam's planning framework. The island is in a seismically active region near the Mariana Trench; it experiences frequent earthquakes and occasional major seismic events. In fact, ground shaking intensities in Guam can rival those in California's most quake-prone areas (Structuremag, 2025). A notable event was the 1993 Guam

[10] As noted in the Comprehensive Development Guide, Guam has a policy addressing Erosion and Siltation: Development shall be limited in areas of 15% or greater slope by requiring strict compliance with erosion, sedimentation, and land use districting guidelines, as well as other related land use standards for such areas.

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earthquake (Mw 8.1), which caused significant ground motion and even soil liquefaction in parts of the island (for example, around Apra Harbor). All of Guam is considered susceptible to earthquakes, and numerous surface faults traverse the island (with a concentration of faults east of Apra Harbor).

These realities have led Guam to adopt some of the strictest seismic design requirements in the Pacific. Building codes mandate that structures be designed for high seismic loads; engineers must account for strong ground shaking in structural calculations, similar to practices in earthquake-prone U.S. states. Since the late 1970s, when modern seismic codes were first introduced on Guam, new buildings have been constructed with features like reinforced concrete frames, shear walls, and anchoring systems to resist quakes. The transition to the IBC code in 2010 further improved seismic provisions, bringing Guam up to date with the latest International Building Code standards for seismic risk.

Critical infrastructure – bridges, utilities, and especially lifeline facilities like hospitals and airports – undergo rigorous seismic design reviews. For instance, fuel storage tanks and power plants are evaluated for seismic-induced settlement or liquefaction potential, given that the 1993 quake caused ground settlement near the island's main power plant (though the plant itself remained structurally sound).

Additionally, retrofitting older structures remains a priority: many buildings constructed before 1980 (when seismic codes were minimal) may be undergoing upgrades such as column wrapping, roof-to-wall anchoring, or bracing of parapets to improve earthquake resilience. Guam also conducts regular emergency drills for earthquake response and has public education on "drop, cover, and hold" and tsunami awareness, recognizing that a local quake could generate tsunamis. Overall, through stringent building code enforcement for new construction and strategic retrofits of older buildings, Guam is fortifying its built environment against seismic shocks. When combined with prudent land use on steep slopes, these measures help ensure that the island's growth is geologically safe and secure.

3.7.6. Wildfire

Wildfires on Guam present a unique hazard intersection of human activity, climate, and land management, and the island's sustainability plan addresses these through fire risk mitigation and adaptive land use practices. Although Guam is a humid tropical island, it experiences a pronounced dry season from December to June, during which the landscape can become prone to wildland fires (PacificFireExchange, 2025). Unlike some regions, Guam has no natural ignition sources (such as lightning); wildfires are caused by human actions – whether accidental campfires, arson for hunting (to flush out game), or military training exercises.[11]

[11] Guam regulations prohibit the use of fire in hunting activities: GARR § 11117. Use of Lights and Fire Prohibited. The use of fire or artificial light of any kind as an aid to the taking of game is prohibited (5 GCA § 63125).

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Wildfires pose a growing threat to Guam's rural and agricultural lands, particularly during extended dry periods. The G2050SP discourages development in fire-prone areas, promotes fuel break maintenance, and mandates fire-resistant landscaping with native species. To further enhance wildfire resilience, the plan requires:

- Emergency vehicle access improvements to ensure quick response times.
- Adequate fire flows and hydrant upgrades for rural developments.
- Incentives for rainwater capture and drought-adaptive practices on agricultural lands.

This multi-faceted approach helps reduce fire hazards while protecting ecological integrity.

During severe droughts or El Niño events, vegetation dries out more extensively, heightening fire risk. In an average dry season, hundreds of fires occur across the island's grasslands and scrub areas. For example, in 2024, Guam experienced a substantial increase in wildfire activity, with 267 fires burning a total of 8,440 acres equivalent to 6.22% of the islands total land area" (Guam FY2025 State Factsheet). In comparison, in 2023 there were 102 wildfires that burned 861 acres, 1.05% total percentage of land are burned (Guam Forestry Division Wildland Fire Data). The spike in wildland fires and total area burned can be attributed to increased vegetative fuel loads from Typhoon Mawar and exacerbated by severe drought conditions and human activities such as debris burning and arson fires (Guam FY2025 State Factsheet). These fires primarily torch the southern and central "savanna" terrain covered in swordgrass and shrubs, which can ignite easily and spread fast with the wind. Guam's wildfires threaten infrastructure and ecosystems on a recurring basis. They can damage power lines and put rural homes at risk, especially those built at the wildland-urban interface. Moreover, wildfires contribute to the formation of the earlier-mentioned badlands by removing protective vegetative cover; subsequent rains then erode the exposed soil, causing landslides and sending sediment into rivers. This linkage means fire hazards are entwined with flood and erosion issues. Reducing wildfire incidence is thus a key strategy not only for direct property protection but also for safeguarding watersheds and coastal reefs from erosion impacts (GDO, 2024).

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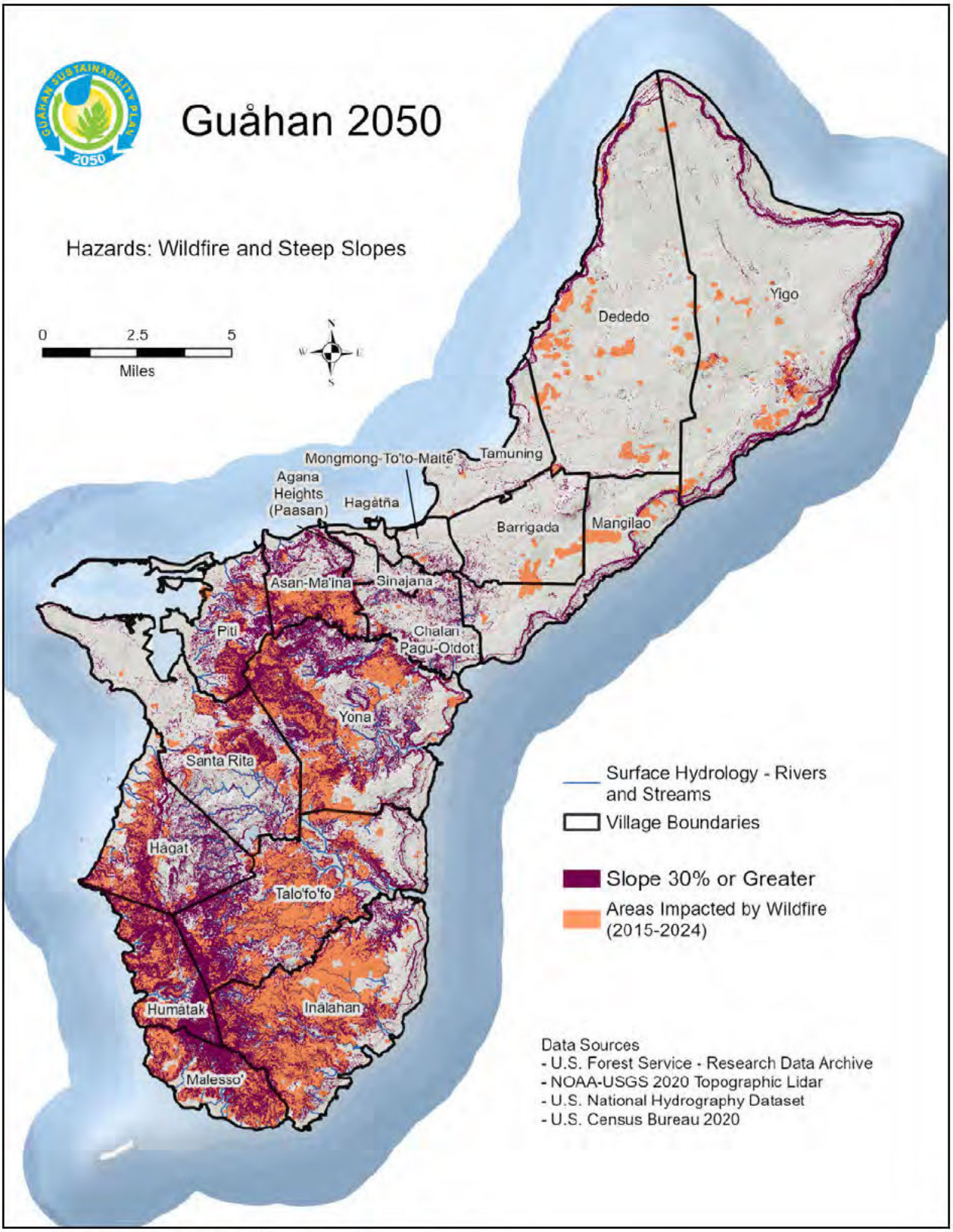

Figure 3-39. Guam Wildfire Hazards and Steep Terrain.

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However, according to several Mayors both in the north and south of the island, “the police and fire departments were deemed insufficient, with a planned expansion never realized, leading to inefficiencies in service delivery. The reliance on services from the northern villages has often created response delays in southern villages, prompting the need for a local ambulance, police, and/or fire station to expedite response times during emergencies.” These limitations heighten the challenges posed by wildfires, as rapid response times are essential for minimizing damage, especially in rural and hard-to-reach areas.

Guam’s land use and environmental policies use several strategies for wildfire risk mitigation. First, there is an emphasis on preventing ignitions through public outreach and interagency cooperation. The Guam Forestry Division and Guam Fire Department run annual awareness campaigns (e.g. “Munga Masongge Guåhan, Don’t Burn Guam!” during peak fire season) to discourage arson and educate residents about the dangers of uncontrolled burning. They also maintain fuelbreaks and firebreaks in high-risk areas – these are cleared or greenbelt strips (often along roads or around villages) that can slow or stop a grassfire spread. Guam currently and historically uses wildland fire mapping supported by USDA-Forest Service Cooperative Fire funding to assist with planning (from 2015-2025 (PFX, 2025). Guam can also pursue the development of Community Wildfire Protection Plans (CWPP), which are collaborative strategies developed by communities to address and mitigate the risks associated with wildfires (Jakes et al., 2007). These plans are created with input from local stakeholders, including residents, fire management agencies, and government officials. The primary goals of a CWPP include:

- Assessing Wildfire Risks: Identifying areas at risk of wildfires and evaluating the potential impact on community infrastructure and safety.
- Mitigation Strategies: Developing recommendations to reduce the likelihood of wildfires damaging homes and properties, such as creating defensible spaces and managing vegetation.
- Community Involvement: Engaging community members in the planning process to ensure that local needs and priorities are considered.

CWPPs are important documents that complement Hazard Mitigation Plans and can be appendices in Hazard Mitigation Plans that may be referenced for federal funding opportunities.

CWPP’s were worked on for Piti and Asan-Maina through USDA Forest Service Cooperative Fire Protection funding; and through USDA-FS State and Private Forestry grant funds, as well as a Joint Chiefs Landscape Partnership Grant for the village of Inalåhan too (DOAG, 2025).

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How People, Rainfall, and Vegetation Shape Fire Regimes in Micronesia

Key Findings

- Fire plays a significant role in shaping landscapes across the high islands of Micronesia.
- Human activity, particularly the long-term use of fire by Pacific Islanders, has influenced the persistence of savanna ecosystems.
- The extent of savannas is positively correlated with island age and rainfall variability, suggesting historical and climatic influences.
- Fire occurrence is highest in drier regions with pronounced seasonal rainfall, with Guam, Rota, and Yap experiencing some of the highest annual burn rates.
- Despite suitable conditions for forest growth, savannas remain stable due to fire recurrence, soil conditions, and potential dispersal limitations.

Climate & Fire

- Fire activity is strongly linked to El Niño events, with increased dry-season intensity leading to higher fire occurrence.
- Lightning activity is rare across the region, reinforcing the idea that most fires are human-caused.
- Annual burned areas range from 2% to 10% of island land area, largely occurring in savannas.

Ecological Impact

- While often seen as degraded landscapes, Micronesian savannas support native vegetation and endemic species.
- Soil characteristics in savannas, such as high acidity and aluminum content, may limit forest re-establishment.
- Frequent fires contribute to erosion and sedimentation, impacting nearshore marine ecosystems.

Implications for Fire Management

- Understanding the historical role of fire can help develop better fire management and restoration strategies.
- Fire risk assessment should integrate climate variability, land cover changes, and human activity patterns.
- Recognizing the cultural and ecological value of savannas is essential for sustainable land use planning.

Citation:

Trauernicht, C., Frazier, A. G., Dendy, J., Bubb, I., Camacho-Fejeran, C., Friday, J. B., King, R., Manglona, J., Ruegorong, F., Singeo, A., Giardina, C. P., & Cordell, S. (2023). *How people, rainfall, and vegetation shape tropical island fire regimes across Micronesia*. *Journal of Biogeography, 00*, 1–17. https://doi.org/10.1111/jbi.14763

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In terms of development, new subdivisions near savanna areas are encouraged to create defensible space around homes (by clearing brush and using fire-resistant landscaping in a buffer zone). Building guidelines recommend non-flammable roofing and siding materials for houses in these fringe areas, to prevent ember intrusion during grassfire events. The hazard mitigation plan identifies zones of “high” wildfire hazard (indeed, 239 major utility and public assets are rated at high or very high wildfire risk), and in these zones land managers prioritize fuel reduction projects. Such projects include grazing programs (using cattle or goats to keep grasses short), strategic controlled burns under safe conditions (per DOAG Forestry procedures, guidelines, and conditions of agriculture/prescribed fire) to eliminate excessive fuel build-up, and invasive species control since some invasive grasses can increase fire intensity.

Guam’s conservation agencies are also restoring native forests in certain areas; healthy forest is much less fire-prone than degraded grassland. For instance, planting fast-growing trees in fire-scarred savannas can, over time, shade out flammable grass and reduce future fire spread. Emergency access is another consideration in land use planning: road designs in rural neighborhoods must accommodate fire trucks, and water storage or hydrants are installed to ensure firefighting water supply in remote areas. The island’s community planning integrates Wildland-Urban Interface (WUI) best practices from the U.S. Forest Service and FEMA, tailored to Guam’s environment. After any significant wildfire, Guam’s Forestry and Soil & Water Conservation teams quickly move in for rehabilitation – reseeding burned slopes, stabilizing soil with mulches, and repairing any damaged infrastructure (trails, culverts) to prevent post-fire erosion. By addressing wildfire through preventive education, smart land management (fuel breaks and fire-resistant design), Guam’s Firewise Program (Firewise.org), and rapid post-fire response, Guam is working to reduce the incidence and impact of fires. These efforts not only protect lives and properties directly but also preserve the island’s ecological health, contributing to the overall resilience of Guam in the face of climate variability.

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3.7.7. Natural Hazards Policy and Sustainability.



Guam's 2050 Sustainability Plan includes natural hazards policies that align with multiple UN SDGs. For example, the comprehensive hazard mitigation efforts contribute directly to SDG 11 (Sustainable Cities and Communities), especially Target 11.5 which calls for reducing deaths, people affected, and economic losses from disasters. By enforcing safe building codes, relocating vulnerable structures, and educating the public on disaster preparedness, Guam aims to minimize casualties and damage when hazards strike – effectively working toward "significantly reducing the number of people affected by disasters" by 2030 (SDG 11.5).

Likewise, Guam's integration of climate projections into land use decisions and its emphasis on adaptation align with SDG 13 (Climate Action). Target 13.1 is to "strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries". G50SP policies – from coastal adaptation plans for sea level rise to drought and wildfire management – serve as local fulfillment of SDG 13.1 by proactively building adaptive capacity in this island community. Progress on these targets can be measured through indicators such as disaster loss statistics (which Guam tracks via its mitigation plan monitoring) and the integration of climate risk into local planning (an indicator of adaptation governance).

In addition to SDGs 11 and 13, Guam's hazard resilience measures support several other Goals in the 2030 Agenda. Protecting coastal ecosystems through reef restoration and watershed conservation ties into SDG 14 (Life Below Water) and SDG 15 (Life on Land), since healthy coral reefs and forests are key to a sustainable and resilient island. For instance, restoring coral reefs not only buffers Guam against storm waves (a resilience benefit) but also achieves SDG 14.2, which is to safeguard and restore marine ecosystems. Similarly, wildfire prevention and reforestation efforts contribute to SDG 15.3 on land degradation neutrality by rehabilitating burned lands and preventing soil erosion.

Ensuring resilient infrastructure, such as typhoon-resistant roads and reliable power grids, advances SDG 9 (Industry, Innovation, and Infrastructure), particularly the aspect of building infrastructure that is sustainable and can withstand climate disasters. Moreover, the plan's focus on equity in resilience planning (e.g. providing shelters and resources for all communities, including the most vulnerable) resonates with SDG 10 (Reduced Inequalities) and SDG 1 (No Poverty) targets about bolstering the resilience of the poor and those in vulnerable situations (Target 1.5).

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Through its integrated land use policies, hazard mitigation strategies, and climate adaptation efforts, the Guam 2050 Sustainability Plan provides a comprehensive framework for addressing natural hazards while promoting long-term sustainability, safety, and environmental resilience.

NATURAL HAZARD POLICIES

General Hazard Policies

SC-90. Best Available Hazard Information.
The Guåhan Sustainable Development Plan shall use, maintain, and continually improve the best available science and mapping concerning Guam's built and natural assets and their vulnerability to natural hazards. Use multi-lingual hazard communication tools to the maximum extent feasible.

SC-91. Hazard Risk Reduction.
Development shall minimize and reduce risks of natural hazard damage to buildings and infrastructure, especially essential facilities, major utilities, and transportation systems.

SC-92. Disaster Safety.
Promote disaster-resistant development and disaster recovery.

SC-93. Health and Safety.
Development shall protect human health and safety.

SC-94. Flood Safety.
Development shall avoid and minimize flooding risks to life and property.

SC-95. Building Safety.
Assure that habitable structures are fit for habitation, including structural safety, sanitary standards, adequate means of ingress and egress, fire safety, regular maintenance, or any other dangers to human life or safety.

SC-96. Building Maintenance, Dumping, and Public Nuisance.
For the protection of neighborhoods and communities, any residential, commercial, and other existing buildings and properties shall be maintained, free of unauthorized waste dumping, disposal, or other nuisance, and not abandoned. The Government of Guam shall enforce this provision to the maximum extent, consistent with public health and safety regulations, including abatement of public nuisances.

Typhoons, Storms, and Other Hazards

SC-97. Extreme Events.
Design and construct buildings that can resist, with minimal damage, reasonably expected natural disasters and weather events, including typhoons/high winds, storms, and flooding, earthquakes, tsunamis, drought, wildfires, landslides, and extreme heat.

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SC-98. International Building Code Requirements.
Locate, design, and construct buildings in compliance with Guam building code standards, including adopted International Building Codes as applicable.

SC-99. Extreme Wind Hazards.
Design and construct buildings to withstand minimum wind loads as prescribed in applicable International Building Codes and the Guam building code. Decreases in wind load due to shielding from other structures is prohibited.

SC-100. Powerline Undergrounding.
Install new and existing primary and secondary power distribution lines underground to the maximum extent feasible.

SC-101. Emergency Shelters.
Assure equitable distribution of adequate emergency shelters for Guam's population, including Tier 1, 2, and 3 shelters, consistent with the Guam Hazard Mitigation Plan. Upgrade existing facilities (such as recreational facilities) through hardening to enhance their structural integrity and equip them to function as emergency shelters.

Flooding

SC-102. Flood Hazard Studies and Mapping.
Maintain and update flood hazard mapping to using best available science, including but not limited to the most current official FEMA FIRM to determine the general location of flood hazard areas. Conduct targeted flood studies for major rivers, watercourses, and drainages. Consider developing flood management incentive programs to relocate existing development out of flood hazard areas, consistent with SC-90.

SC-103. Flood Hazard Avoidance for New Development.
Ensure that no new permitted development causes or contributes to flood hazards.

SC-104. Flood Protection Evaluation.
Require new development proposals to evaluate potential impacts to adjacent or downstream properties from all proposed structural flood protection measures to ensure that the flood protection measures will not create adverse direct and/or cumulative impacts either on-site or off-site. Single-family residential projects may comply with this policy by complying with other applicable flood hazard policy, ordinances, and FEMA requirements for flooding impact avoidance and mitigation.

SC-105. New Development in Watercourses.
Prohibit new development within the 100-year flood hazard zone of a watercourse, except for uses allowed pursuant to the policies of Chapter 5, such as stream restoration or necessary flood control measures. If no alternative building site exists, proper mitigation measures shall be provided to minimize or eliminate risks to life and

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property from flood hazard, and to ensure the development would not constitute a public nuisance, decrease watercourse capacity, or direct flows outside of the watercourse.

SC-106. Flood Protection.

Prohibit habitable space at elevations subject to flood risk. New development that must be located in areas subject to current or future flooding shall be sited and designed to be capable of withstanding such impacts in compliance with FEMA, NFIP, and applicable Guam public law. This shall include elevating all finished floor elevations at least 2 feet above the 100-year flood event, taking into account future climate change and projected storm events. Allow retrofitting for existing development in areas subject to current or future flood, including through elevation of habitable areas, use of break-away walls, etc. Ensure that flood protection measures are consistent with the visual and other resource protection policies of this Land Use Plan.

SC-107. New Development Adjacent to Flood Zones.

Require new development in areas outside of the identified 100-year flood hazard zones to identify opportunities to improve site drainage, address biological resource and water quality issues, and reduce contributions to flood hazards.

SC-108. Priority Flood Zone Development.

Prioritize open space, recreation, and conservation land uses within and adjacent to identified flood zones.

SC-109. Flood Hazard Abatement.

Implement flood hazard abatement projects that consider the following: a. Removal or relocation of development from flood hazard areas; b. Prioritizing green stabilization and infrastructure approaches; c. Restoration of flood plains and meander belts of drainages in public and private stormwater systems that were previously channelized; d. Use of impoundments or channel diversions when necessary, provided that adequate mitigation of environmental impacts can be demonstrated; and e. Debris clearance and silt removal conducted in a manner so as not to disrupt existing riparian communities.

Shoreline Hazards

SC-110. Development Safety.

Ensure that new development, including land division, is sited, sized, and designed to avoid or minimize shoreline hazards risks such as coastal flooding, shoreline erosion, wave runup, tsunami inundation, seawater intrusion, and other sea level rise impacts without requiring a shoreline protection device at any time over the anticipated life span of the structure.

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SC-111. Shoreline Hazard Mapping.

Maintain and update shoreline hazard maps to incorporate significant updates in best available science and information when such significant updates are available, including areas subject to wave action, flooding, tsunamis, and erosion due to sea level rise.

SC-112. Site-Specific Shoreline Hazards Evaluation.

All new development proposed in areas that may be subject to shoreline hazards, including all beaches and beachfronts, blufftops, and areas mapped in the shoreline hazard overlay, shall require the submittal of a site-specific evaluation report of shoreline hazard risks over the anticipated life of the proposed development. Analyses shall be conducted by a qualified professional with expertise in coastal processes and shall establish the appropriate setback from the beach or bluff edge based on the anticipated life of the structure, best available science including utilizing the highest projected sea level rise amounts appropriate for the type of proposed development with a 100-year storm event and for blufftop development, a demonstrated factor of safety greater than or equal to 1.5 for static conditions and greater than or equal to 1.1 for seismic conditions.

SC-113. Blufftop Development Setbacks.

Permit new blufftop development only if, as demonstrated by the site-specific evaluation required by Policy SC-93, (1) design and setback provisions are adequate to assure stability and structural integrity for the anticipated life span of the development, taking into consideration long-term future erosion and short-term episodic erosion including the influence of sea level rise, plus an added geologic stability factor of safety greater than or equal to 1.5 for the static condition and greater than or equal to 1.1 for the seismic condition, without reliance on existing or proposed shoreline protective devices; and (2) the development (including associated stormwater runoff, foot traffic, grading, irrigation, and septic tanks) will neither create nor contribute to erosion, geologic instability of the site or surrounding area, or otherwise harm coastal resources.

SC-114. Beach Setbacks.

Ensure that new beachfront development is set back far enough inland from the beach and other low-lying areas, as demonstrated by the required Shoreline Hazards Evaluation, such that the development will not be endangered by coastal flooding, seasonal and long-term erosion (including sea level rise induced erosion), and other shoreline hazards over the anticipated life span of the structure without the use of an existing or proposed shoreline protective device.

SC-115. Land Divisions near Beachfront and Blufftops.

Land divisions, including subdivisions, lot splits, and lot line adjustments that create new lots near beaches or blufftops, shall not be permitted unless the lots can be

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developed in accordance with the bluff and beach setback policies of the G2050SP and without requiring a current or future shoreline protective device.

SC-116. Assumption of Risk.

As a condition of approval for all development that may be subject to shoreline hazards, require a deed restriction to ensure that property owners understand and assume the risks of development in a hazardous area. Recorded restrictions shall include a waiver of claim of damage or liability against the Government of Guam, waiver of rights to future shoreline protection, and acknowledgement that the development may need to be removed and the site restored in response to future hazard conditions. In the event that development is threatened by shoreline erosion or other hazards and needs to be removed or relocated, the owner shall bear full responsibility for all costs and must work to implement the mitigation in a timely manner.

SC-117. Shoreline Protective Device Limitations.

Shoreline protective devices shall be permitted only to serve a coastal-dependent land uses (such as boating and fishing facilities) or to protect an existing structure (as of G2050SP adoption date) in imminent danger from erosion; when found to be the least environmentally damaging feasible alternative to address the danger; and when all resource impacts are appropriately and proportionally mitigated.

SC-118. Protection for Critical Facilities.

Notwithstanding the shoreline protective device limitations of Policy xxx, interim shoreline protective devices may be permitted to protect critical public infrastructure and facilities required to continue providing needed services to the community. Approval of facilities shall include a feasibility assessment of relocating the infrastructure out of the hazard zone and, where feasible, an adaptation plan for implementing relocation.

SC-119. Shoreline Protective Device Siting and Design.

Allowable shoreline protective devices shall be sited, designed, engineered, and constructed by qualified professionals to avoid resource impacts to the maximum extent feasible, including through preserving the maximum amount of existing beach, protecting lateral public access along the shoreline, protecting and enhancing public views, minimizing alteration of and visually blending with the surrounding natural shoreline; avoiding impacts to cultural resources; and not encompassing an area larger than that necessary.

SC-120. Nature-based Solutions.

Maximize use of nature-based solutions (“living shorelines”) where feasible and appropriate as a preferred alternative to the placement of hard shoreline protection in order to protect development or other resources and to enhance natural resource areas. Examples of soft solutions include vegetative planting of native plant species,

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dynamic revetments, cobble wave trippers, dune restoration, and sand nourishment. In addition, the use of native plants in restoration, adaptation, and other projects should be prioritized.

SC-121. Coral Reef Restoration.
Prioritize coral restoration on reefs adjacent to coastal/wave-driven flood zones as natural infrastructure and habitat restoration. Protect coral nursery locations such as the Piti Bomb Holes and Merizo Coral Nurseries.

SC-122. Mitigation and Monitoring for Shoreline Protection Impacts.
Impacts of shoreline structures shall be avoided or minimized where feasible. Unavoidable impacts shall be mitigated through onsite, in-kind, or in-lieu fee measures proportional to the impact.

SC-123. Tsunami Inundation Zone.
Limit the creation of new building sites in the tsunami inundation zone. Avoid, if feasible, locating critical community facilities, including public safety, hospitals, and schools, in the inundation zone. Infill development on existing building sites may be permitted in the tsunami inundation zone, provided that a disclosure of hazard presence and a hold harmless clause indemnifying the Government of Guam from any harm caused to permitted development by tsunami inundation are recorded against the property.

SC-124. Tsunami Evacuation Plans.
Provide clear evacuation routes and plans in each village. Development in tsunami hazard zones shall include evacuation plans ensuring hazards notification to occupants and procedures for expediting emergency evacuation.

SC-125. Land Acquisition.
Identify and acquire land and at-risk properties in erosion-prone areas to implement coastal adaptation and erosion control measures, including shoreline restoration, living shorelines, vegetation buffers, and other stabilizations techniques.

SC-126. Shoreline Adaptation Plans.
Maintain the Guam Shoreline Atlas in support of shoreline adaptation plans for areas subject to wave hazards, erosion, and long term sea level rise. Plans should include short and long-term goals consistent with the G50SP, management strategies, policies, and actions to achieve the goals, and monitoring to ensure effectiveness. Plans should consider shoreline vulnerability, projected shoreline changes, and preferred strategies for maintaining safety, maximizing public access and recreation, and avoiding natural resource impacts, including shoreline restoration, realignment or relocation of development elevation and flood-proofing, living shorelines, and other protective measures.

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Land Stability and Seismic Safety

SC-127. Minimize Geologic Hazards.

New development in areas of high geologic and seismic hazard shall minimize risk to life and property and neither create nor contribute to geologic and seismic hazards. Geologic and seismic hazards are defined to include soil stability, erosion, sedimentation, landslides, subsidence, sinkholes, seismicity, and liquefaction. Assure stability of new development for its economic life.

SC-128. Geological Reports.

Require submission of a site-specific geologic hazards report prepared by a qualified professional for new development proposed in areas of high geologic hazard risk, including as indicated on the Seismic Hazards and Liquefaction Potential map (xxx). The report shall describe the threats and impacts from geologic hazards arising from, for example, seismic events, watercourse erosion, landslides, expansive soils, and subsidence areas. Reports shall identify appropriate hazard setbacks, siting and design options, and mitigation measures where necessary to minimize potential impacts to life and property.

SC-129. Hillside Construction Slope Limitation.

Require submission of a soils and slope stability report prepared by a qualified professional for all new development on slopes 20 percent or greater. Development of new structures on hillside slopes 30 percent or greater shall be prohibited, with the exception of critical facilities and public infrastructure that cannot be located elsewhere.

SC-130. Seismic Standards.

Development shall be located, designed, and constructed to avoid and minimize risks from seismic events, including through setbacks from major faults and meeting all applicable building codes.

SC-131. Landslide Remediation and Stabilization.

Permit the remediation or stabilization of landslides that affect existing structures or that threaten public health or safety except along coastal bluff or other eroding edges, such as streambanks. Permit remediation or stabilization to the extent necessary where an existing landslide prevents development of private property and remediation does not shift risk to other property, and the remediation project includes mitigation monitoring and reporting. Alternative remediation or stabilization techniques shall be analyzed to determine the least environmentally damaging alternative. Maximum feasible mitigation shall be incorporated into the project in order to minimize adverse impacts to resources.

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Wildfire

SC-132. Minimize Fire Hazards/Community Wildfire Protection Plans.
Minimize fire hazards by appropriately siting development and managing fuels and ensuring adequate fuel breaks and firebreaks and buffers around high-risk areas. Develop Community Wildfire Protection Plans (CWPPs) for management areas and neighboring communities to identify and prioritize areas for hazardous fuel reduction treatments and recommendations to break the fire cycle. Use educational campaigns to reduce the risks of human-caused fires.

SC-133. Development in Natural Areas.
Avoid development in rural, natural, and grassland areas. Prohibit the creation of new developable lots within high fire hazard zones. Site new development to minimize fire risk and the need to remove native vegetation. Use development buffers from significant vegetation with high fire risk.

SC-134. Fire Hazard Avoidance of Critical Facilities.
Locate, where feasible, new critical facilities outside of high fire risk areas, including, but not limited to, hospitals and health care facilities, emergency shelters, emergency command centers, and emergency communications facilities.

SC-135. Greenbelts and Fuel Breaks.
Identify and protect greenbelts to minimize the Wildland-Urban Interface. Use and maintain fuel breaks outside of sensitive habitats.

SC-136. Risk Mitigation and Native Vegetation.
Balance the need for fire protection for existing structures with the need to protect natural resources. Examples include prioritizing sprinkler system retrofits, smart landscaping, and integrated habitat restoration and use of fire breaks.

SC-137. Fire-resistant Landscaping.
Use fire-resistant and native species in development landscaping. Avoid non-native grasses and other species conducive to wildfire.

SC-138. Landscape and Watershed Restoration.
Remove non-native vegetation and restore native, fire-resistant landscapes. Integrate DOAG watershed restoration and wildfire mitigation programs.

SC-139. Drought Adaptive Practices.
Use rainwater capture and other drought adaptive practices on rural and agricultural lands.

SC-140. Emergency Vehicle Access.
Assure adequate emergency vehicle ingress and egress to developed areas. Ensure that new subdivisions are established with adequate emergency vehicle access,

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evacuation standards for residential development, and can be maintained without requiring fuel modification within native vegetation.

SC-141. Street Identification and Visibility.
Ensure that all roads, streets, and major public buildings are identified in a manner that is clearly visible to fire protection and other emergency vehicles.

SC-142. Fire Safety Compliance.
Development shall comply with applicable fire codes.

SC-143. Adequate Fire Flows.
Evaluate, prioritize, and upgrade as necessary fire flow capabilities in developed areas.

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Chapter 4: **Prosperous Economy**

4.1. Introduction

Economic prosperity is central to sustainability. Guam's economy has played a pivotal role in shaping land use patterns, which reflect the island's unique characteristics as a regional hub for tourism, defense, and commerce in the western Pacific. Land use planning and policy can also shape the economy of the future to support a thriving economy and environmental and cultural sustainability. To do so, economic development and land use policies must address sustainable growth, economic diversity, and equitable opportunities while ensuring that Guam's limited land and water resources are utilized efficiently.

The Guåhan 2050 Sustainability Plan embodies an approach where economic growth aligns with preserving cultural heritage and the environment, fostering a prosperous and balanced economy.

> **Goal:** *Foster a resilient and diversified economy that supports long-term prosperity, uplifts communities, and aligns development with Guam's land, culture, and sustainability principles.*
>
> **Land Use Objectives:**
>
> - Encourage mixed-use and walkable commercial districts that revitalize existing built areas and reduce sprawl.
> - Promote economic development in village centers that reflects local character and supports small businesses and artisans.
> - Prioritize redevelopment over new construction in tourism areas and support eco-cultural and agricultural tourism island wide.
> - Reserve and appropriately site lands for critical infrastructure and priority uses, including fishing, boating, telecommunications, and renewable energy.
> - Protect productive agricultural lands, promote local food production, and explore local timber market potential, to reduce dependency on imports and increase economic resilience.
> - Support equitable economic opportunity through land use policies that enable affordable housing, workforce development, and business space in underserved areas.

As elaborated in following sections, these economic objectives seek to move Guam's existing economy, currently dominated by tourism, the U.S. military presence, and construction activity, toward a more holistic and equitable economic prosperity that supports cultural heritage, natural resource conservation, agriculture, and emerging local economies and businesses.

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4.2. Economic Conditions and Land Use

4.2.1. Overview of Economic Conditions

Guam's existing economic land use reflects its predominant sectors: tourism, defense, construction, and federal investments. The substantial land holdings of the U.S. Department of Defense for military activities have long influenced the economic opportunities and constraints for economic development. This extensive military presence, combined with tourism development along Guam's coastal areas, has dominated the north and central parts of the island. The economy of southern Guam and more rural regions are characterized more by local businesses and agricultural activities, although both of these also are important to the north and central parts of Guam. The equitable distribution of land use for economic purposes must consider these historic allocations while promoting diverse and sustainable growth in areas that could benefit from increased economic activity and investment. As discussed in other chapters and below, the military presence and particularly the buildup have far-reaching implications for land use patterns and challenges, such as the need for affordable housing and adequate public services for new development.

Tourism: Pre and Post COVID-19 Pandemic

In the years before the COVID-19 pandemic, Guam's economy, as measured by such traditional markers as gross domestic product, was experiencing remarkable rates of growth, driven by a historic surge in tourism arrivals and consistent rates of local and federal investment. These factors contributed to a 24% rate of growth between 2002 and 2019 (Figure 4.1). The pandemic marked a significant shift in Guam's economy, with the Real Gross Domestic Product (GDP)

falling by 10.5% in 2020 due to halted international travel and business activity restrictions aimed at mitigating the spread of the virus. The consequences were particularly stark in the

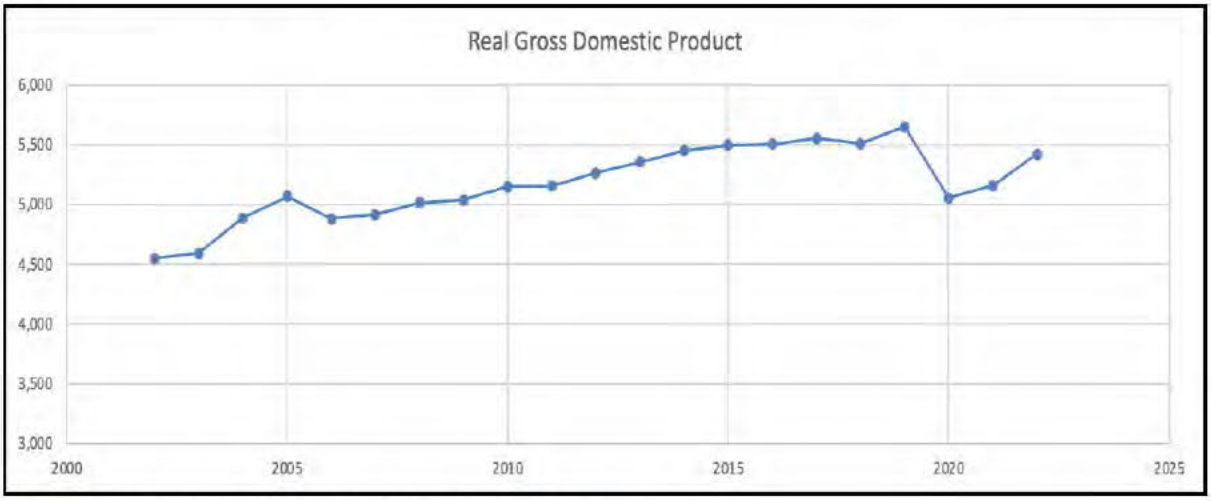

Figure 4-1. Gross Domestic Product Between 2002 and 2019.

Doc. No. 38GL-26-2651.*

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tourism sector. In 2019, tourism contributed $1.85 billion to Guam's economy, with a record-breaking 1,664,934 visitor arrivals that year. By the end of 2020, this figure had fallen by 53.7%. Despite this setback, efforts to revitalize the sector continued through marketing initiatives and capital improvement projects funded by the hotel occupancy tax and federal assistance provided in response to the pandemic. These projects aimed to enhance Guam's historic sites and tourist attractions, supporting the long-term recovery and growth of the tourism industry.

In 2021, Guam's economy experienced a modest 2.1% increase in output, growing from $5.01 billion in 2020 to $5.16 billion in inflation-adjusted figures. This growth was primarily fueled by significant rises in personal consumption expenditures on durable goods, heightened private fixed investments, and increased spending by the territorial government. As of 2025, recovery toward pre-pandemic levels of economic activity continues, with the economy growing 5.1% between 2021 and 2022 and the size of total economic output reaching nearly 96% of the pre-pandemic economy in 2019.

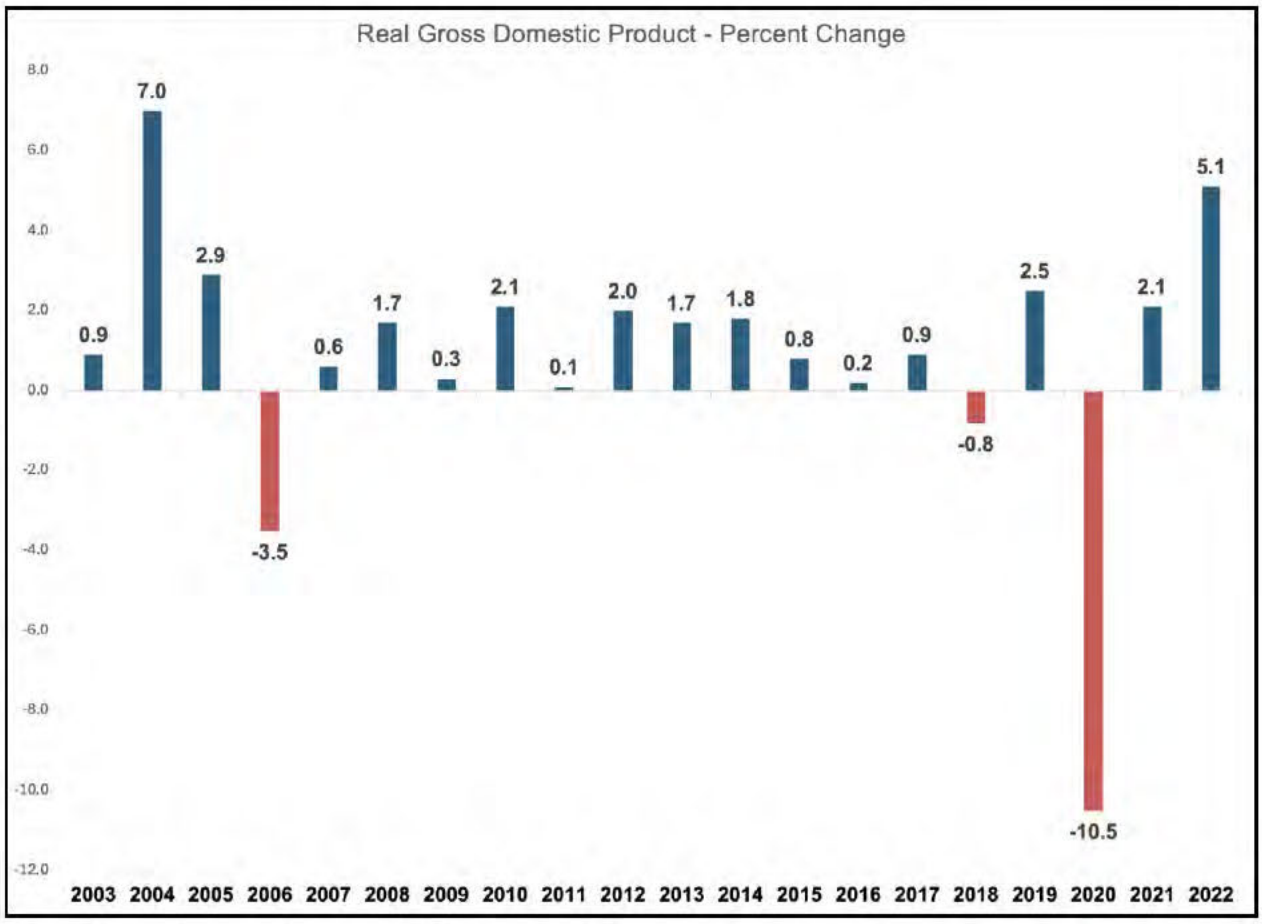

Figure 4-2. Real Gross Domestic Product Percent Change.

The Military Economy

The military sector constitutes a large portion of Guam's economy, particularly highlighted by the recent activation of Marine Corps Base Camp Blaz in Dededo, which will house

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approximately 5,000 Marines. This base is part of a larger agreement between the U.S. and Japan to relocate Marines from Okinawa to Guam. The ongoing military buildup and related construction projects, with significant federal funding, will continue to bring investment and other economic support, aiding with the recovery of Guam from some of the adverse impacts of the COVID-19 pandemic on the island's economy.

Construction

The buildup is a significant driver for the construction sector in Guam. This sector has faced challenges due to labor shortages, particularly with restrictions on the H-2B visa program. Despite these hurdles, the sector is experiencing growth driven by federal construction projects related to the U.S. military buildup and civilian construction permits, which peaked at $1.4 billion in 2024. The increase in military and federal construction investments has bolstered the local economy and provided employment opportunities, contributing to general economic recovery post-pandemic and record government tax collections.

4.2.2. Tourism

Guam's visitor accommodations sector offers a total of 8,404 rooms, spread across 35 primary hotels and resorts located in Barrigada, Dededo, Tamuning, Tumon, and Yona. Within Tamuning, the area of Tumon is the central hub of tourism activities hosting 69% of these establishments and 82% of the total room inventory. A notable addition to this sector is the Tsubaki Towers, which commenced operations in Tumon in 2020. Of the total accommodation inventory, 66% became operational prior to 2000 (GVB, 2022).

Hotel and resort developments in Tamuning are guided by the Guam Zoning Code, specifically the "H" Resort-Hotel Zone designation. Allowable uses within H-zoned parcels include a mix of amusement activities, cultural facilities, park recreational facilities, tourism-related shops, office and supporting services, and transient guest facilities. In Tamuning, H-zoned parcels cover approximately 536 acres, representing about 17% of the village's total area. These parcels contribute significantly to the economy, with the H-zoned parcels in Tamuning alone holding an aggregate land value of $615.1 million, which accounts for 31% of the total village land value.

Tamuning, with 1,616 establishments generating over $5.16 billion in revenue in 2022, stands as the primary economic hub of Guam (2022 Economic Census of Guam, U.S. Bureau of the Census). It houses the majority of hotels and resorts, particularly within the Tumon Bay area, which supports Guam's tourism industry. The significance of tourism is also evident in Tamuning's workforce, where 29,142 employees contribute to the



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sector's operations, highlighting the importance of maintaining sustainable development practices and balancing growth with infrastructure capacity.

As tourism rebounds to pre-pandemic levels, the demand for further development of hotel and accommodation inventory in Guam, particularly in Tamuning's primary tourism corridor, will rebound as a priority. Prior to the pandemic, historical visitor arrivals had already necessitated the expansion of accommodation options. In 2014, plans to meet increased tourism demand projected an expansion from 8,451 rooms to 10,091 rooms, with a focus on "upper scale" and "luxury upper scale" rooms. To incentivize development, Guam Public Law 32-233 introduced a Special Hotel Qualifying Certificate Program, managed by the Guam Economic Development

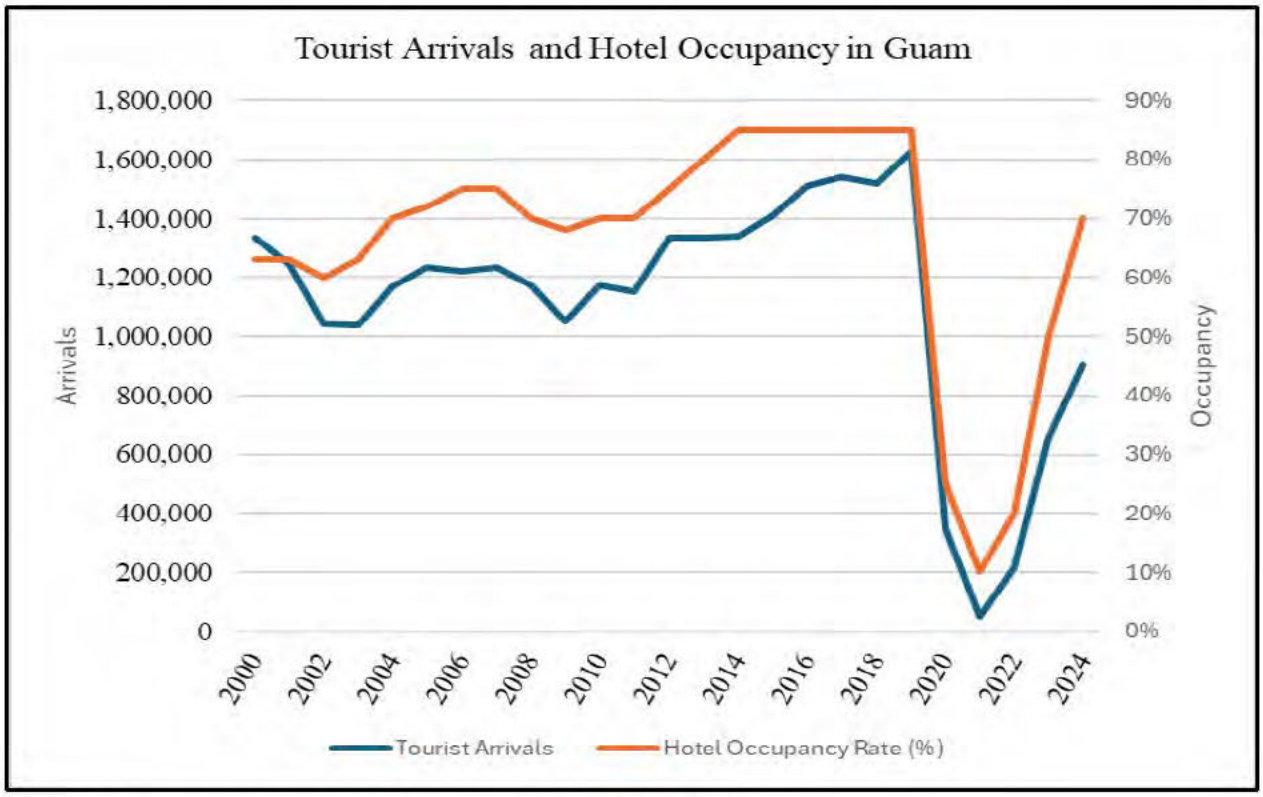

Figure 4-3. Tourist Arrivals and Hotel Occupancy in Guam 2000 - 2024.

Authority. This program aimed to encourage the development of 1,600 new hotel rooms by 2020 by offering developers a tax rebate or exemption amounting to 10% of total construction costs. Due to the pandemic, the program was extended by Guam Public Law 36-72 until 2031 or until the targeted 1,600 rooms are committed. In addition to the 35 existing hotels, two new developments are under review, aimed at increasing the total room stock toward the targeted 1,600 rooms, both of which are planned for Tamuning.

Post-pandemic resurgence in tourism has lagged behind Hawaii and other U.S destinations. Hotel occupancy rates have been bolstered by military contractors and transiting military personnel. Actual tourist arrivals between 2021 and 2022, were predominantly driven by South Korean tourists. However, still, measured against pre-pandemic levels, arrivals in 2024 were

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about 55% below those in 2019. Nonetheless, a rebound to pre-pandemic levels could sustain demand for new hotel developments, especially within the existing tourism corridors. Efforts will also be looked upon to diversify the tourism sector, particularly through promoting eco-tourism, cultural tourism, and agricultural tourism, aligning tourism growth with sustainable land use.

4.2.2.1. Developing Concepts for Tourism Expansion

In recent years, trends have emerged that not only promote economic growth but also raise land use implications and opportunities within the tourism sector. In 2025, the government of Guam was undertaking the Guam Tourism Recovery Plan Expansion - Tourism Repositioning Study. This study seeks to thoroughly analyze market trends, demographics, and analytics, providing repositioning and rebranding strategies supported by comprehensive, data-driven research. The final report is anticipated to be completed in August 2025. The project's first phase of strategic conclusions and land use implications are summarized below.

Ecotourism. Complementing the island's cultural and historical preservation efforts, ecotourism has become an important but still underdeveloped component of Guam's tourism sector. Visitors are increasingly traveling to Guam to participate in cultural activities and enjoy the island's natural scenic environment. The rise in Free Independent Travelers (FIT)[1] over the past year has prompted local businesses and hotels to enhance their sustainability practices.



These efforts are critical to maintaining Guam's ecosystem, with local businesses playing a key role in providing educational information to both residents and visitors. Land use planning must ensure that areas suitable for ecotourism remain protected from overdevelopment, and that infrastructure projects support environmental conservation. As discussed elsewhere in the plan, southern Guam presents an opportunity for eco- and heritage tourism expansion, but with attention to the appropriate scale and cultural designs of new development and tourism activities. OBJ

Education Tourism. Guam's unique environment also presents opportunities for education tourism, particularly in marine and environmental studies. Guam's coral reefs and marine life attract world-class academic researchers and students interested in field research, offering

[1] A Free Independent Traveler is someone who plans and books their own trips, without relying on group tours or pre-packaged itineraries. FITs have the freedom to choose their transportation, accommodations, and activities.

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first-hand experience in these areas. Historical sites further strengthen the island's appeal to those studying its history and culture.

Guam's academic institutions, such as the University of Guam (UOG) and Guam Community College (GCC), already support education tourism with programs like UOG's English Language Institute and English Adventure Program. These programs cater to international students, particularly from China, South Korea, and Japan, which are key tourism markets for Guam. Along with sister-school partnerships and sister-city agreements, these programs have the benefit of priming the next generation of travelers from key tourism markets to Guam. Given this connection between tourism and education, land use planning should support the development of educational facilities and accommodations to cater to this growing sector.



Heritage Tourism. Hagåtña, the capital of Guam, holds historical significance, with many of its historical sites tracing back to Spanish and pre-Spanish periods. Despite the destruction caused by World War II, remnants of Spanish colonial architecture and ancient CHamoru stone pillars remain, making the village an important cultural destination.

Public Law 24-110, known as the Hagåtña Restoration and Redevelopment Act, established the Hagåtña Restoration and Redevelopment Authority (HRRA) to oversee the revitalization of Hagåtña as the governmental, cultural, and commercial heart of the island. The project aims to re-establish Hagåtña as a vibrant mixed-use area that attracts both businesses and visitors. Redevelopment efforts are intended to expand low- and moderate-income housing, create employment opportunities, and enhance the overall social and economic well-being of the area. Land use policies in this region will need to carefully balance redevelopment with the preservation of historical sites, ensuring that Hagåtña remains a focal point for both cultural heritage and economic growth. Lessons learned from this effort should be captured and expanded to support redevelopment efforts across Guam.

4.2.2.2. Guam Tourism Recovery Plan (2024)

The Guam Tourism Recovery Plan, Phase 1, offers a comprehensive roadmap to restore and reposition Guam as a competitive global destination. Central to the plan is the recognition that

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tourism must be guided by policy, planning, and investment strategies that align with Guam's environmental limits, cultural values, and economic aspirations.

STRATEGIC RECOMMENDATIONS

Key long-term strategies identified in the Recovery Plan include:

- **Reforming the regulatory framework** to reduce barriers for tourism-related small businesses.
- **Establishing a governance model** for coordinated public-private tourism development.
- **Investing in airlift capacity and connectivity**, particularly with Japan, Korea, and emerging feeder markets.
- **Rebranding Guam's tourism identity** around CHamoru culture, natural landscapes, and marine-based recreation.
- **Becoming a standard-bearer for sustainable tourism** through best practices in environmental, social, and governance (ESG) principles.

Short-term actions emphasize other strategic projects and activities:

- Launching a **"lighthouse" tourism project** to catalyze brand renewal.
- Leveraging **public-private financing tools**, such as bond issuances, to support infrastructure.
- Strengthening **digital marketing** and community-based tourism initiatives.

LAND USE AND DEVELOPMENT IMPLICATIONS

The recovery plan acknowledges that tourism development must be carefully sited and scaled. As noted, large, proposed hotel projects—including the 824-room Honhui Hotel and the 736-unit Vista Del Mar Resort—have raised significant concerns regarding their environmental and cultural impacts, particularly in sensitive coastal and scenic areas like Tumon Bay and Two Lovers Point.

The land use implications of the findings include ensuring that tourism growth supports rather than undermines sustainability. Guam must:

- **Align new tourism development with land use policies** that protect cultural sites, coastal ecosystems, and scenic landscapes.
- **Prioritize infill and redevelopment** of underutilized urban and resort zones (e.g., vacant hotel sites) before expanding into greenfield or high-value conservation areas.
- **Implement clear permitting standards** for tourism infrastructure that account for carrying capacity, hazard exposure, and community impact.
- **Encourage low-impact, culturally grounded tourism models**, including eco-tourism, village-based experiences, and CHamoru heritage tours.

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Strategic tourism investment must be planned in concert with land use, environmental, and infrastructure policies to avoid overdevelopment and ensure long-term economic resilience. The plan underscores that Guam's future competitiveness will depend not on volume, but on place-based, sustainable tourism that respects the land, the people, and their shared heritage.

4.2.3 Defense

Defense spending remains a key component of Guam's economy, with military land holdings constituting 27% of the island's total land area. The recent activation of Marine Corps Base Camp Blaz and other defense-related developments underscores the importance of military investments, which contributes over $2.5 billion annually to the economy.

Defense personnel, including active duty, civilian, National Guard, and Reserve personnel, receive $825.7 million in payroll annually, with active-duty personnel accounting for the largest share. In FY 2022, the DoD awarded $1.7 billion in contracts, with a majority directed to construction and services. These contracts not only support military infrastructure but also create jobs and stimulate local businesses. Locally based contractors are heavily involved, with about 68% of military project contracts awarded to Guam-based firms in FY 2020.



The combination of payroll and contract awards sustains a large portion of the island's workforce and economy. The defense sector also creates a ripple effect, supporting industries such as housing, retail, and construction, which benefit from the presence of military personnel and their families. But as the military expands its presence, there is growing pressure on land availability for civilian purposes. Villages such as Dededo and Mangilao, which are adjacent to military installations, must balance their residential and commercial growth with the needs (and opportunities) of the defense sector. Zoning policies in these areas need to accommodate both military-related activities and the expansion of civilian housing and commercial services.

Defense-driven infrastructure projects, such as the construction of Marine Corps Base Camp Blaz, require significant land and resources. These projects bring substantial economic benefits. But they also need infrastructure upgrades to support the increased demand for water, energy, wastewater and transportation. In addition, as discussed elsewhere in the plan, they present distinct impacts and challenges to the environmental and social sustainability of Guam. The need for limited aggregate material is a major concern leading to importation of materials. Ensuring that these projects are integrated into Guam's overall land use plan is critical to avoiding infrastructure bottlenecks, crowding out "outside of the fence" investment

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opportunities, and overburdening local resources, especially the natural environment such as the limestone forest.

Changes to U.S. defense policy have driven the increase in investment and economic gains in recent years and have had a significant resulting impact on Guam's economy, particularly during periods of military downsizing. Following the end of the Cold War and the fall of the Soviet Union in 1991, U.S. defense strategy called for the widespread closure of many defense facilities within the United States and its territories. Through the Base Realignment and Closure Commission's (BRACC) two-phased realignment strategy in 1993 and 1995, Guam saw a steep reduction in the presence of federal civilian employees and uniformed military personnel.

This reduction led to the turnover of the Apra Harbor Ship Repair Facility, the closure and transfer of Naval Air Station at Tiyan, and a reduced military presence at Andersen Air Force Base. Transfers of the closed military facilities to the Government of Guam added to the revenue of publicly owned lands but also contributed to the abandonment and deterioration of certain properties. This realignment led to a more than 40% decline in uniformed military personnel on Guam between 1995 and 2000. This decline resulted in the loss of the tax revenues from the income tax payments of military personnel, which was once provided to the government of Guam. Consequently, government revenue dropped significantly, prompting property tax increases on the resident population.[2] The corresponding economic effects of downsizing saw a surge in bankruptcies, business closures, and unemployment that persisted for nearly a decade (Rogers, 2011 pp. 269-270).

[2] Under Guam's Organic Act, federal income taxes derived from active members of the United States Armed Forces and pensions paid to retired civilian and military employees of the United States, or their survivors, who reside in, or who are domiciled in Guam, are annually "covered over" to the Guam Treasury to support the operations, activities, and programs of the local government (48 U.S. Code 1421 Section h) (DOI, 2025).

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U.S. Military Presence and Investment in Guam

A STRATEGIC HUB IN THE INDO-PACIFIC

Overview of U.S. Military Presence

Guam, the westernmost U.S. territory, plays a critical role in U.S. military strategy in the Indo-Pacific. It is home to approximately 6,400 active-duty personnel, with plans for further military expansion. The Department of Defense (DOD) controls about 25% of Guam's land, hosting major installations:

- **Andersen Air Force Base:** Strategic airpower projection hub.
- **Naval Base Guam:** Homeport for nuclear-powered submarines.
- **Marine Corps Base Camp Blaz:** Established to support the relocation of 5,000 U.S. Marines from Okinawa by 2028.

Military Investments and Spending Trends

The U.S. has significantly increased its military spending on Guam, particularly in infrastructure and missile defense. Key investments include:

- **$7.3 billion for military construction** (FY2024-FY2028) to expand base capacity and missile defense.
- **$1.7 billion allocated** for an Integrated Missile Defense System.
- **$12.5 billion in disaster recovery funding** following Typhoon Mawar in 2023, including 51 military construction projects.

Land Use and Planning Challenges

- **Strain on Civilian Infrastructure:** Military expansion increases pressure on roads, water, and electrical grids, raising concerns among local communities.
- **Housing Shortages:** Military personnel influx is affecting real estate and housing affordability for Guam residents.
- **Workforce Limitations:** Guam's local construction workforce is insufficient to meet military demand, necessitating reliance on foreign labor under H-2B visa programs.
- **Environmental Concerns:** Expansion raises issues regarding deforestation, habitat destruction, and contamination from military activities.
- **Tensions Over Land Control:** Guam's indigenous Chamorro population has voiced concerns about land seizures and historical dispossession, impacting local support for military expansion.

Conclusion

While the U.S. military investment in Guam enhances regional deterrence and readiness, it also presents economic, environmental, and social challenges. Balancing national security priorities with the well-being of Guam's residents remains a crucial policy consideration for Congress.

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4.2.4. Construction

Construction is a vital part of Guam's economy, generating over $1.46 billion in revenue and employing 6,774 people. The sector is key to the island's development, supporting both residential and commercial growth. Major construction activities are concentrated in areas like Tamuning and Dededo, where housing, tourism, and business infrastructure projects are rapidly expanding. Construction also plays a critical role in building essential infrastructure such as roads and utilities, along with being an essential and growing sector for the development of planned Defense installations and upgrades.



4.2.5. Agriculture and Emerging Sectors

As discussed in Chapter 3, Guam's agricultural sector, while relatively small, has grown a little in recent years after the precipitous declines of past decades. Guam recently completed a master plan for agriculture (see Chapter 3). In 2018, the number of farms on the island rose to 264, a 154% increase from 2007. These farms covered 2,441 acres, or about 2% of Guam's total land area, reflecting a 144% increase in farmland. The average farm size was 9.2 acres, and there was substantial growth in sales of vegetables, melons, nursery crops, and livestock products. Protecting this growing sector from encroachment by other land uses is crucial for food security and economic diversification.



Emerging industries, such as aquaculture and additive manufacturing (AM), a process that uses a digital model to create a physical object. It's also known as 3D printing)), also offers promising opportunities for Guam's future economic growth, but may require careful land allocation and infrastructure investment. The UOG Center for Island Sustainability and Sea Grant have developed and continues to facilitate the Guam Green Growth (G3) Circular Economy & Innovation Hub, located in Chamorro Village in Hagåtña, using 3D printing technology for creative reuse of materials. Another example in this area is a recent report about the Astro-Guam Gamma initiative, which raises key land use planning issues related to facility siting, zoning, infrastructure coordination, workforce housing, and integration with Guam's strategic development goals (Astro America, 2024). These issues should be addressed through supportive land use policies, zoning reforms, and infrastructure planning to enable successful implementation while ensuring environmental

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and cultural protections. Additive manufacturing (AM) offers a blueprint for new avenues in entrepreneurship and job creation, moving Guam from dependence on tourism and military construction to part replacement for vehicle maintenance and repair. AM aligns with sustainability goals by reducing material waste, energy consumption, and carbon emissions.

AM has the potential to transform local production by reducing material waste and disposal and enabling on-demand production of parts. This technology is particularly beneficial for industries like defense and medical manufacturing, which require rapid access to customized components. Guam's development of AM, led by collaborations between government, academic institutions, and private industry, is expected to play a pivotal role in building local manufacturing capabilities, reducing dependency on imports, and supporting critical sectors like defense.

Aquaculture presents another opportunity. A recent feasibility study concluded that with strong land use planning and government collaboration, Guam has the potential to build a resilient and profitable aquaculture industry that supports local food security, economic growth, and environmental sustainability (see call-out). Executive Order 2024-01, issued by Governor Lourdes A. Leon Guerrero, establishes the Division of Aquaculture within the Guam Department of Agriculture (DOAG). The Order is grounded in existing legal authority that grants the DOAG broad mandates including land conservation, sustainable farming, and the management of natural resources. Recognizing the growing global demand for seafood, the Order highlights Guam's strategic interest in advancing aquaculture to support seafood security and environmental stewardship. It notes that aquaculture now accounts for over 50% of global seafood consumption and that Guam has already invested in aquaculture development. The creation of this Division affirms aquaculture as a priority on par with other agency objectives and enables focused allocation of resources and pursuit of external funding.

To guide the new Division, the Executive Order establishes an Aquaculture Advisory Board composed of government agency representatives, academic leaders, and aquaculture industry members. This Board will provide expertise and recommendations to ensure a sustainable, scientifically informed aquaculture industry on Guam. It also rescinds Executive Order 2019-12, which had established the Guam Aquaculture Task Force, with the new Board intended to carry forward and incorporate its contributions. Through these actions, the Executive Order formalizes a long-term institutional framework to promote, regulate, and support aquaculture as an essential part of Guam's agricultural and economic development strategy.

Together, agriculture, aquaculture, and additive manufacturing represent important pathways for Guam's economic diversification. Strategic land allocation, combined with infrastructure investments, will be key to supporting the long-term sustainability and success of these sectors.

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Guam Aquaculture Feasibility Study

KEY FINDINGS AND RECOMMENDATIONS

- **High Dependence on Imports**: Guam imports 5 million pounds of seafood annually, valued at $20 million, with local aquaculture production covering less than 5% of consumption.
- **Economic and Food Security Potential**: Aquaculture presents an opportunity for economic diversification, job creation, and enhanced food security by reducing reliance on imports.
- **Challenges in Expansion**: High costs of land, labor, water, and energy, along with the need for imported aquaculture inputs, create barriers to growth.
- **Strategic Site Selection**: The Tanguisson Beach area is recommended for the Guam Aquaculture Innovation Center (GAIC), contingent on decommissioning the power plant.
- **Government Role**: Policy support, financial incentives, and infrastructure investments are critical to accelerating industry growth.

RECOMMENDATIONS

Land Use Planning Priorities:

- ☑ Identify aquaculture as a coastal-dependent activity in land use plans.
- ☑ Provide priority zoning for aquaculture developments.
- ☑ Ensure access to water resources for aquaculture operations.

Infrastructure Development:

- ☑ Establish Guam Aquaculture Innovation Center (GAIC) to support research, seedstock production, and industry incubation.
- ☑ Develop a Guam Aquaculture Commercialization Park (GACP) with pre-approved permits and essential utilities.

Policy and Regulatory Support:

- ☑ Establish a Department of Aquaculture to oversee and facilitate industry growth.
- ☑ Create a one-stop permitting system to streamline regulatory approvals.
- ☑ Offer tax incentives and financing programs to encourage private investment.

Species and Market Focus:

- ☑ Expand production of shrimp, tilapia, and other high-value species.
- ☑ Position Guam as a supplier of Specific Pathogen-Free (SPF) shrimp broodstock for export.
- ☑ Promote sustainable marine ornamental and reef restoration aquaculture.

Sustainability and Workforce Development:

- ☑ Strengthen partnerships with University of Guam (UOG) and Guam Community College (GCC) to develop workforce training programs.
- ☑ Support sustainable practices, including alternative energy solutions for aquaculture farms.
- ☑ Implement biosecurity measures to protect local species from disease risks.

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4.3. Economic Activity Across Guam

The economic landscape of Guam is marked by varying levels of commercial activity across its villages, with significant disparities between the more urbanized centers and rural areas. Understanding the varying levels of commercial activity is critical for informing land use decisions and guiding future development efforts to ensure balanced economic growth. Data on number of establishments, payroll, workforce, and revenues are from the 2022 Economic Census of Guam.

4.3.1. Tamuning Municipality

Tamuning stands out as the most economically active village, contributing to 59% of the island's total commercial revenue. With 1,616 establishments generating over $5.16 billion in revenue, Tamuning is the commercial center of Guam, hosting the majority of the island's hotels, shopping centers, and business districts. These establishments employ a significant portion of the island's workforce, with 29,142 employees supported by an annual payroll of $985 million. The village's infrastructure and land use are heavily focused on tourism and retail sectors, underscoring the need to mitigate the risk of overdevelopment through managing future growth and sustainable planning.

4.3.2. Hagåtña Municipality

As the capital, Hagåtña is an important center for government and professional services. With 393 establishments generating $1.45 billion in revenue, it ranks second in terms of economic contribution. Hagåtña's workforce of 6,269 employees supports the government's operations and many of the island's legal and professional services. Despite its smaller size, the village's annual payroll of $214 million shows its role as the administrative center of Guam.



4.3.3. Dededo Municipality

Dededo, one of the largest residential areas in Guam, is also a significant economic center, with 501 establishments generating $1.22 billion in revenue. The village supports a workforce of 6,485 employees with an annual payroll of $189 million. Dededo's economy is driven by a mix of retail, service industries, and defense-related activities, particularly with the expansion of military facilities. This village serves as a vital connector between Guam's military and civilian economies, with operating expenditures amounting to $855 million.

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4.3.4. Barrigada Municipality

Barrigada is another mid-sized economic center, with 278 establishments generating $743 million in revenue. It employs 4,204 people with an annual payroll of $121 million. Barrigada's economy benefits from its strategic location as a transportation hub, offering a greater assemblage of logistics and industrial services. The village's relatively high operating expenditures, totaling $422 million, highlight its role in supporting Guam's transportation and distribution networks.

4.3.5. Mangilao Municipality

Mangilao plays a specialized role in Guam's economy, particularly in education and agriculture. With 126 establishments generating $659 million in revenue, Mangilao supports 1,970 employees, primarily in educational institutions like the University of Guam and Guam Community College. The village's focus on agriculture also makes it a key player in promoting food security on the island. Mangilao's high average employee pay of $41,150 and operating expenditures of $589 million emphasize the village's contribution to both education and sustainable land use.

4.3.6. Smaller Villages and Rural Areas

In contrast to the larger economic hubs, Guam's smaller villages, such as Inalåhan and Malesso', generate relatively modest economic output which provides for the smaller population sizes of these villages. Inalåhan's 9 establishments generate $5.2 million in revenue, employing 57 people with an annual payroll of $699,000. Malesso', with only 5 establishments, contributes $2.9 million in revenue and supports 25 employees, but it boasts the highest average employee pay at $47,000. These villages are vital for agriculture, eco-tourism, and maintaining Guam's cultural heritage. However, they face challenges in attracting new businesses and retaining local talent, making them areas in need of targeted development strategies. The former Cocos Island Resort used to be Malesso's main tourist attraction. Revitalizing this resort was thought to be an opportunity to contribute to the economy with employment opportunities and revenues. However, the island is vulnerable to storm water surge and has not been revitalized as of 2025. It is also a preserve for the Ko'ko' bird, an endemic species of Guam.

4.3.7. Implications for Land Use

The uneven distribution of economic activity across Guam's villages has significant implications for land use planning. Urban centers like Tamuning and Hagåtña are experiencing high levels of development pressure, which requires thoughtful zoning policies to prevent overbuilding and ensure the sustainable use of land. On the other hand, rural areas such as Inarajan and Malesso', while economically smaller, represent opportunities for growth in agriculture, eco-tourism, and cultural industries. Land use policies should focus on incentivizing

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development in these underutilized areas while protecting their environmental and cultural assets.

Villages like Dededo and Mangilao, serve as key connectors between different sectors – such as defense, agriculture, and education – and must be supported with infrastructure investments to balance their growth with environmental sustainability. Zoning adjustments in these areas could help accommodate both residential expansion and commercial development, ensuring that Guam's economic growth is both equitable and sustainable.

Within Guam, area-based economic development incentive programs exist in the form of *Economic Opportunity Zones* – a federal program created in 2017 through the Tax Cuts and Jobs Act. This program allowed states and territories to designate low-income census tracts as "Opportunity Zones," making certain types of investments in these areas eligible for partial or full deferment of federal income taxes on capital gains. The program aims to promote job creation and long-term investment in distressed communities. However, the program is time-limited for qualified investments, and designation of Opportunity Zones was guided solely by an area meeting program guidelines for median family income within a specific tract.

Tax-based incentive programs like Opportunity Zones have existed in Guam through the Guam Economic Development Authority's Qualifying Certificate (QC) Program. The QC program aims to attract investment in key industries, such as tourism, agriculture, and green technology. Eligible businesses can receive up to 75% income tax rebates and 100% property tax abatements for up to 20 years. The program is designed to stimulate economic growth and diversification across various sectors on the island but is not presently designed to target investment in specific locations on Guam.

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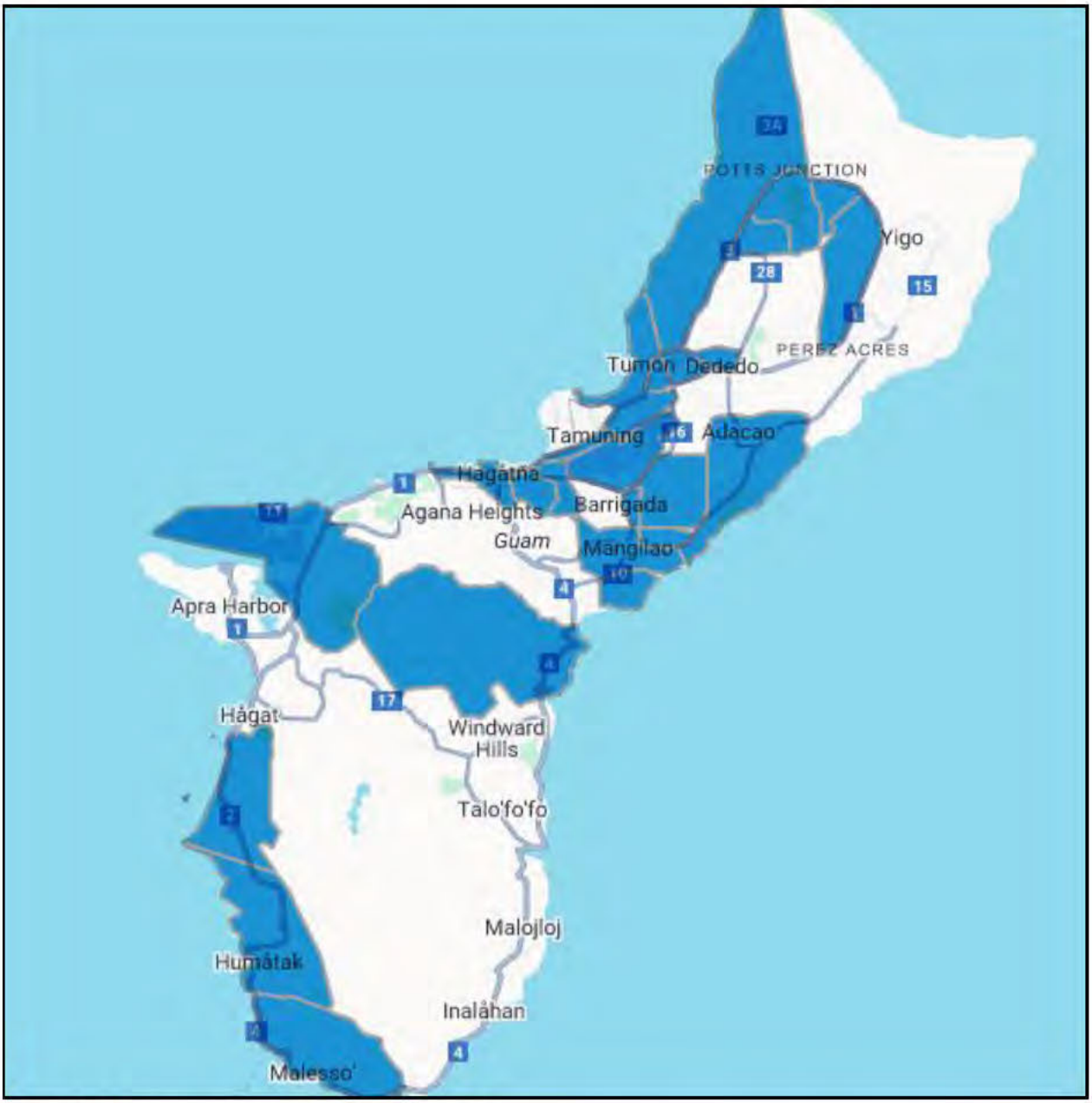

Figure 4-4. Economic Opportunity Zones in Guam.

Similar area-based economic planning can coordinate village-based priorities into specific development incentive packages that provide advantages for investors to off-set or recoup investments in targeted industries or in specific business locations within the villages. In emulating the spatially segmented development zone overlays on Guam, specific development priorities can be known to investors, incentive programs can be crafted to foster interest in priority areas, and villages can align their respective development priorities with the investor incentive programs currently operated on Guam.

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4.4. Economic Diversification and Land Use Implications

The strategic response to Guam's economic reliance on tourism and defense has led to efforts aimed at diversifying the economic base. The Governor's Economic Diversification Working Group, initiated by Governor Lou Leon Guerrero, the Chamber of Commerce, and the Guam Economic Development Authority, has established ten committees to evaluate the feasibility of introducing new industries to Guam. These industries have the potential to influence land use and zoning regulations. Guam's Comprehensive Economic Development Strategy also identifies strategic pathways for pursuing economic prosperity (see call-out).

4.4.1. New Industry Options

Alternative Dispute Resolution (ADR). The introduction of alternative dispute resolution services reflects a development option toward less space-intensive business activities, which could make use of existing commercial spaces more efficiently and may have minimal impact on new land use developments.

Captive Insurance. The expansion of the captive insurance industry could lead to optimized use of existing commercial real estate and specialized facilities. Modifying regulatory and fee structures could potentially increase land values and maximize utilization of currently underused properties.

Trust and Financial Services. The promotion of trust and financial services, particularly targeted at high-net-worth individuals from Asia, would likely necessitate the development of secure, high-quality office and residential spaces. This sector could enhance the economic use of land while requiring relatively minimal expansion of physical infrastructure.

Pharmaceutical Manufacturing. The potential establishment of pharmaceutical manufacturing, motivated by incentives like those successfully utilized in Puerto Rico, could significantly alter the industrial landscape of Guam. This industry requires specialized infrastructure and buildings, impacting land use planning and development.

Technology and Innovation. Proposals such as the Silicon Village initiative and satellite launching facilities call for specific types of land use, including high-tech office spaces and, for satellite operations, secure and extensive land areas suitable for such specialized activities. These initiatives may necessitate revisions to current zoning and land use policies to accommodate and support these high-tech industries that align with necessary technological infrastructure access.

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Guam's Economic Development & Land Use

A STRATEGIC RECOVERY PATH

The **Guam Comprehensive Economic Development Strategy (CEDS) 2020-2025 Pandemic Recovery Update** outlines strategies for sustainable growth, focusing on infrastructure development, labor market stabilization, and industry expansion.

KEY ECONOMIC DRIVERS & CHALLENGES

- **Tourism**: Previously contributing $1.85 billion annually, the industry saw a drastic decline due to travel restrictions. Recovery efforts target South Korean and Japanese markets, with government-backed investments in tourism infrastructure.
- **Defense & Construction**: Military-related projects remain a stable economic pillar, with over $2 billion in military construction projects planned. However, ongoing labor shortages, particularly in the H-2B visa workforce, present challenges.
- **Public Sector Investments**: Federal stimulus funds, including CARES and ARPA, have injected over $121 million into economic recovery initiatives, supporting small businesses and infrastructure projects.

LAND USE & DEVELOPMENT CONCERNS

- **Real Estate Market**: Rising housing costs, labor shortages, and an increasing military presence strain housing availability and affordability for local residents.
- **Infrastructure Needs**: Expanding military and tourism activities require upgrades in water, power, roads, and ports, prompting high-priority development projects.
- **Environmental & Cultural Considerations**: Sustainable land use planning is essential to balance economic growth with Chamorro cultural preservation and ecological conservation.

STRATEGIC ECONOMIC GOALS

- **Diversify the Economy**: Invest in alternative industries such as agriculture, aquaculture, telecommunication, and renewable energy.
- **Expand Workforce Development**: Address skilled labor shortages through training programs at institutions like the Guam Community College.
- **Enhance Infrastructure**: Improve ports, utilities, and transportation systems to support economic growth.
- **Strengthen Resilience**: Implement policies that protect against future economic shocks, including climate-related threats.

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4.4.2. Implications for Land Use Planning

The diversification efforts, as proposed by the Governor's Working Group, imply varied and potentially less intensive land use compared to the existing major economic drivers of tourism and defense. Adapting land use planning to accommodate these new industries involves rethinking zoning laws and land management practices to ensure that economic expansion is balanced with sustainable development and efficient use of land. Additionally, consideration should be given to expanding the growth of these new sectors to villages with relatively lower economic activity, expanding job opportunities for residents and reducing transportation and housing pressures in more developed regions of Guam.

4.5. Redevelopment and Revitalization

Guam faces significant challenges with the increasing number of abandoned and neglected properties across the island. These range from large, once-functional government facilities to public parks and commercial buildings that have fallen into disrepair. These properties not only diminish the aesthetic and functional value of the island but also represent lost opportunities for economic revitalization. Some buildings have been unattended for years, contributing to safety concerns and the continued spread of blight across important commercial areas.

The management and containment of blighted properties is made more difficult with the impacts of natural disasters, the COVID-19 pandemic, and the rates of outmigration from Guam, but the challenge of abandoned properties has been a long-standing issue facing the island. In 2014, it was reported that there were approximately 300 abandoned homes in Dededo alone, with ownership of many unknown structures. These homes, originally built between the 1950s and 1970s, were often left vacant as owners passed away without leaving wills or as heirs moved off-island and could no longer maintain them. The probate process in Guam can be lengthy and costly, leaving many properties in legal limbo for years.

Recent efforts by the Department of Public Works (DPW) to address derelict buildings have made progress, though challenges remain. As of 2021, the DPW identified 115 derelict structures across the island, with 75 of those inspected and 56 citations issued. However, many properties remain unresolved, particularly when owners cannot be located or contacted. This has been a common issue in Dededo, Yigo, and other villages where ownership records are incomplete or outdated.

In addition to residential properties, abandoned commercial buildings in key areas like Tumon have raised concerns due to their prominence in Guam’s tourism district. Large former hotel and resort facilities have been cited for violations but addressing the issues related to the disuse of these facilities remains an ongoing task. These derelict properties detract from the area’s appeal to visitors, and their degradation further contributes to the economic stagnation of the surrounding districts.

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The Government of Guam, primarily through the Department of Public Works (DPW), has several legal and policy tools to address derelict buildings, including enforcement of the Guam Building Code, public nuisance abatement, zoning compliance, and, potentially, condemnation. DPW may declare structures unsafe, order repairs or demolition, and recover costs through liens, while other agencies may act under health or environmental laws. Chapter 3 includes policy SC-77, "Building Maintenance, Dumping, and Public Nuisance," which directs those residential, commercial, and other existing buildings and properties be maintained, free of unauthorized waste dumping, disposal, or other nuisance, and not abandoned. The policy further directs that the Government of Guam shall enforce this provision to the maximum extent, consistent with public health and safety regulations, including abatement of public nuisances.

Lastly, Guam EPA's Green Parcels Program provides federal resources and technical capacity that can accelerate blight removal, adaptive reuse, and safe redevelopment of contaminated or abandoned sites.

However, challenges such as limited resources, due process requirements, and unresolved property titles often hinder timely action. Strengthening building maintenance codes, creating a derelict property registry, and funding demolition efforts are recommended to improve effectiveness.

4.6. Economic Opportunity and Land Use Planning

G50SP policies related to Guam land use and economic development aim to balance growth while ensuring sustainability, accessibility, and economic opportunity. The provision of diverse commercial and industrial land use areas is essential in fostering economic activity that provides living-wage jobs, which is crucial for long-term economic stability. Strategic land allocation ensures that commercial and industrial sectors are appropriately placed, avoiding conflicts with residential areas and environmental concerns.

As discussed in Chapter 3, mixed-use development zones support a holistic approach to urban planning by integrating residential, commercial, and workplace spaces. The policy around mixed-use development zones encourages vibrant communities with reduced dependency on long commutes, fostering an environment where businesses and residents can mutually benefit. Promoting these zones contributes to enhanced economic vitality, job creation, and the provision of essential services within proximity to residents.

Priority expansion areas, such as Upper Tumon, Route 3, and North Marine Corps Drive, are targeted for economic growth and infrastructure development. Concentrating public investment in these corridors ensures that economic expansion is well-supported by essential utilities, transportation, and urban amenities. This strategic development approach mitigates urban sprawl and ensures efficient land use while stimulating business activities.

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Higher education and vocational training facilities are integral to fostering a skilled workforce. By providing opportunities for technical and professional development, Guam can cultivate an educated labor pool that aligns with industry demands. Investments in educational infrastructure bolster long-term economic resilience and attract businesses that require specialized skills. This will also allow Guam to retain individuals as job opportunities will increase. Most young adults graduating from the University of Guam or from the mainland universities do not stay or return to Guam due to the lack of job opportunities on the island.

4.6.1. Village Economic Development and Community-Centric Growth



A critical component of economic expansion in Guam involves strengthening village economies. The G50SP recognizes and directs commercial activity to village centers as *economic development areas*, to village centers, enhancing local accessibility to goods, services, and employment. Pedestrian-scale development further enhances village economies by fostering local food markets, artisanal businesses, and cultural exchanges, which appeal to both residents and tourists.

Ensuring that growth reflects the needs of the people is equally important to economic development. The G50SP Community Engagement Survey identified key gaps, including lack of medical services, local restaurants, and retail options, as well as limited entertainment and recreational activities such as theaters and community gathering spaces (see Figure 4-5). Many residents also emphasized the need for improved public transportation, advocating for increased bus frequency, expanded routes, and additional bus stops.

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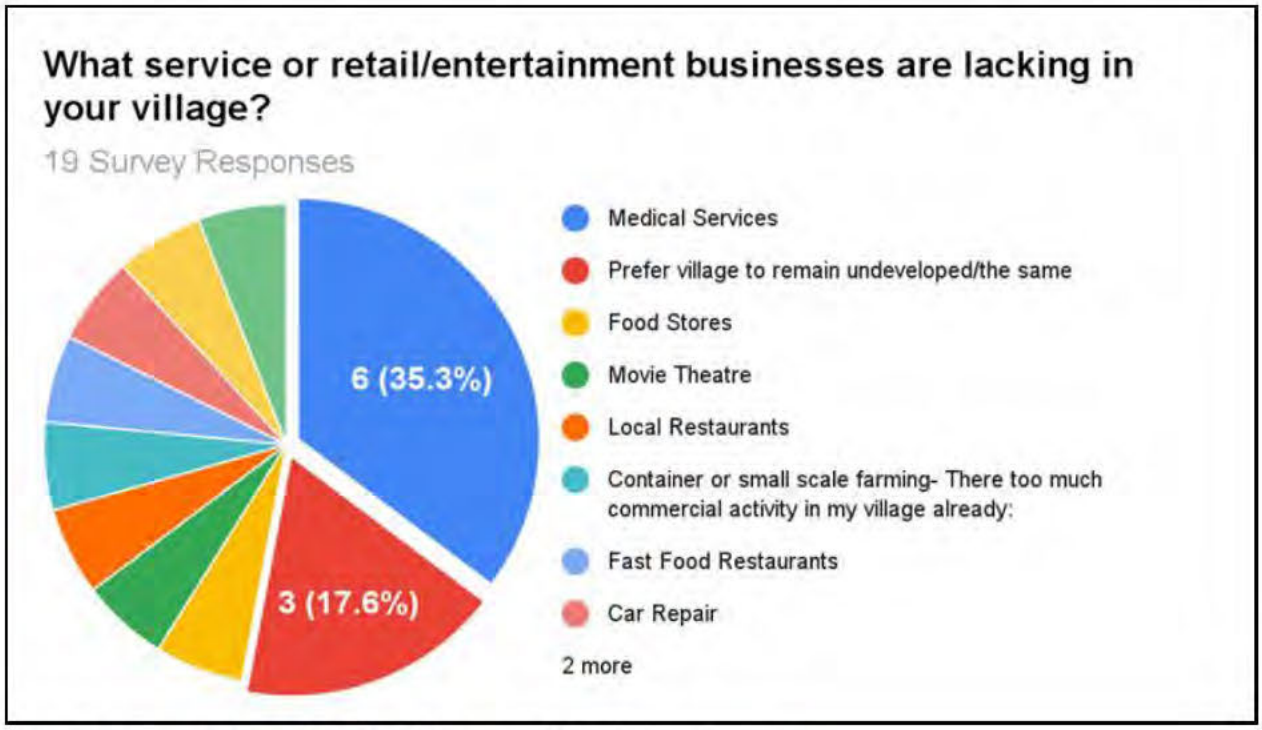

Figure 4-5. Results from the G50SP Community Engagement Survey.

Community input from the G50SP Residential Survey also highlighted concerns about overdevelopment and the preservation of village identity (Figure 4-6). Many respondents (79%) preferred development tailored to the character of their village, indicating a strong desire to maintain local traditions and avoid excessive urbanization. There was limited support (10%) for no change, while 9% of respondents favored replicating the northern and central development models elsewhere in Guam. Additionally, there was low uncertainty (2%) regarding Guam's economic future, suggesting that most residents have a clear vision for the island's growth.

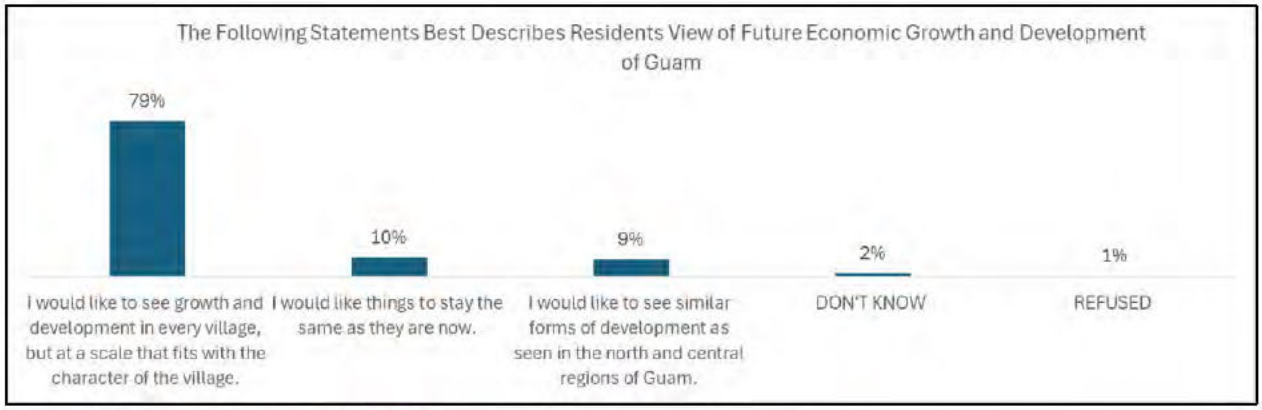

Figure 4-6. Results from the G50SP Community Engagement Survey.

Engagement at the community level is not only vital for economic development but also for fostering safe, vibrant spaces for families. As a local mayor expressed,

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> *Well, of course, engagement of the entire community as far as making decisions, but also a safer [environment]... Activities for our children especially and families…Whether it be recreation, educational, or just incorporating activities where safe environments [exist]... additional parks where they can actually go out to open spaces rather than just staying indoors.*

This sentiment aligns with residents' redevelopment priorities, which include upgraded parks and beach access, creating community resource and education centers, and revitalizing underutilized buildings to serve as local hubs for economic and social activity. Moreover, it echoes responses from the G50SP Residential Survey which indicates that community and social infrastructure development is a top priority (39%) for respondents (see Figure 4-7).

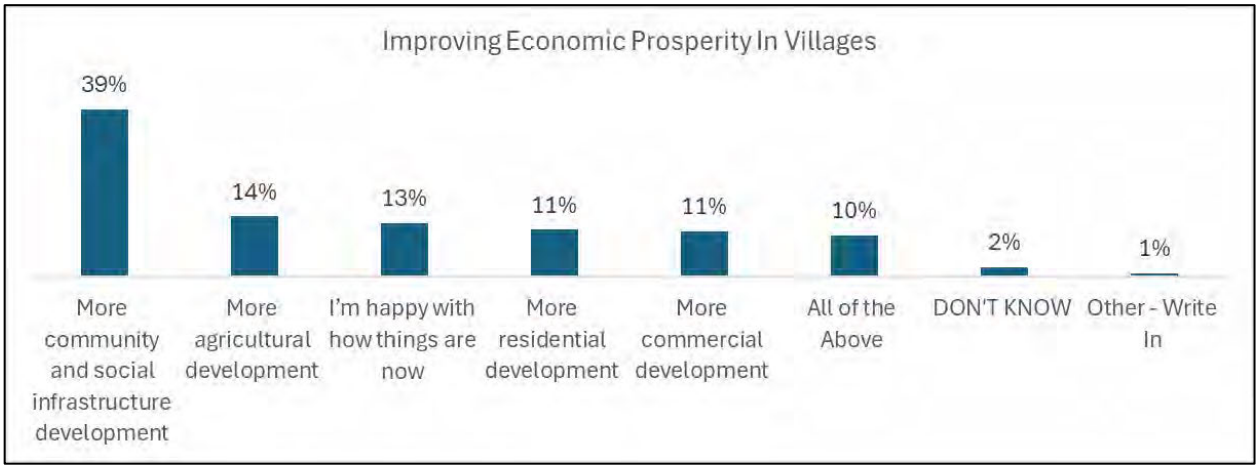

Figure 4-7. Results from the G50SP Community Engagement Survey.

Encouraging mixed-use developments that integrate residential, educational, and commercial facilities promotes civic engagement and sustainable growth. These developments enhance accessibility to essential services, promote walkability, and create dynamic spaces that strengthen village economies. By prioritizing community-driven, family-friendly environments this localized approach ensures that small businesses thrive and that economic opportunities are inclusive and beneficial to Guam's diverse communities.

However, perspectives on new development vary across the island. As seen in Figure 4-8, *w*hile southern villages like Inalåhan and Talo'fo'fo' support strict building height limitations (2-3 stories), residents in central and northern villages such as Dededo and Agana Heights are more open to taller structures (4-5 stories). Opinions on industrial and commercial expansion are also mixed (see Figure 4-9)–many residents oppose new industrial development and hotels but support sustainable commercial farming and multi-family housing projects.

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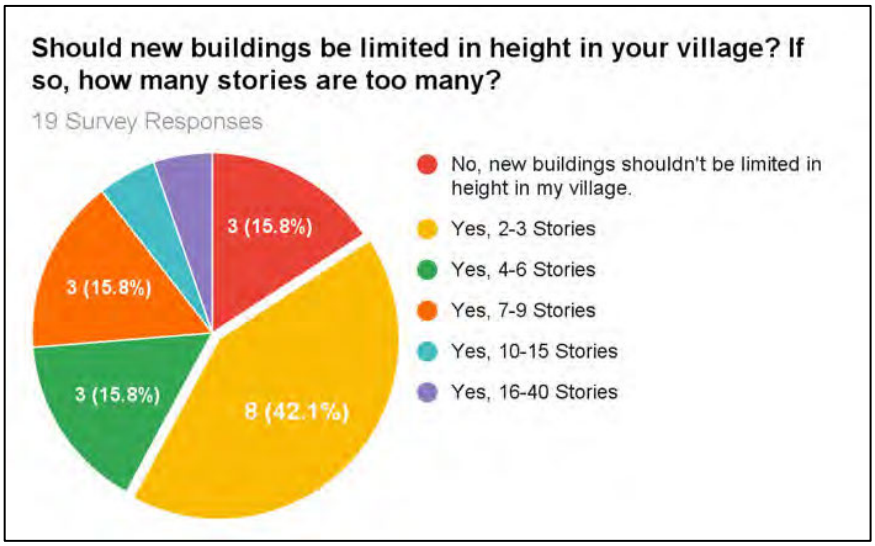

Figure 4-8. Results from the G50SP Community Engagement Survey.

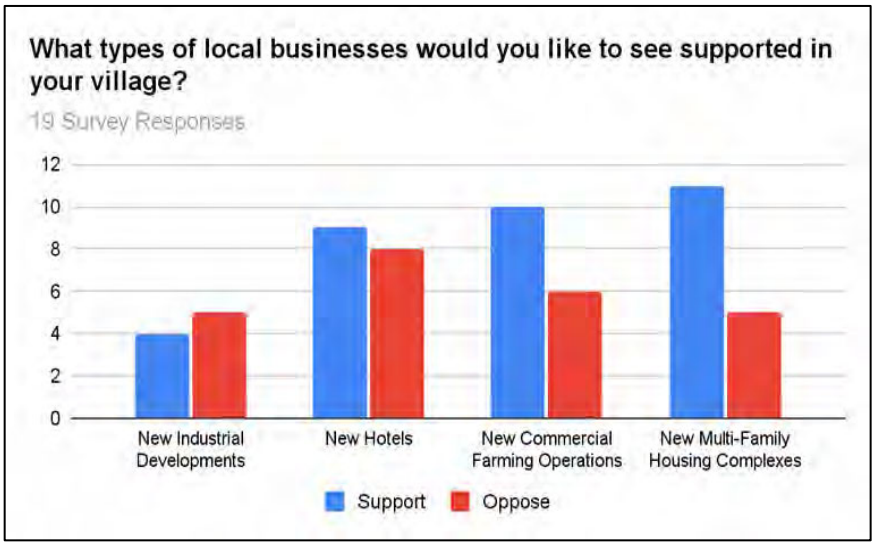

Figure 4-9. Results from the G50SP Community Engagement Survey.

Ultimately, Guam's economic future depends on a balanced approach that integrates growth, sustainability, and cultural preservation. The community strongly advocates for protecting CHamoru culture, safeguarding natural resources, and ensuring that businesses contribute to environmental stewardship. By fostering an economic model that prioritizes village revitalization, small business support, and sustainable development, Guam can build a resilient, community-driven economy that benefits both present and future generations.

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4.6.2. Agricultural and Redevelopment Opportunities

Sustaining agricultural land use is fundamental to food security and economic diversification. By protecting fertile lands for commercial and subsistence farming, the policy supports a resilient agricultural sector. Encouraging small-scale farming initiatives strengthens community-based economies while preserving Guam's rural landscape and heritage.

There is overwhelming community support for expanding agricultural initiatives and activities in Guam's villages based on G50SP Community Engagement Survey results. As seen in Figure 4-10, a large majority (85%) of respondents favored local farming efforts, demonstrating broad enthusiasm for agriculture-driven economic development. Support for these initiatives was especially high among younger generations, with Gen Z (91%), Millennials (90%), and Gen X (89%) expressing strong agreement.

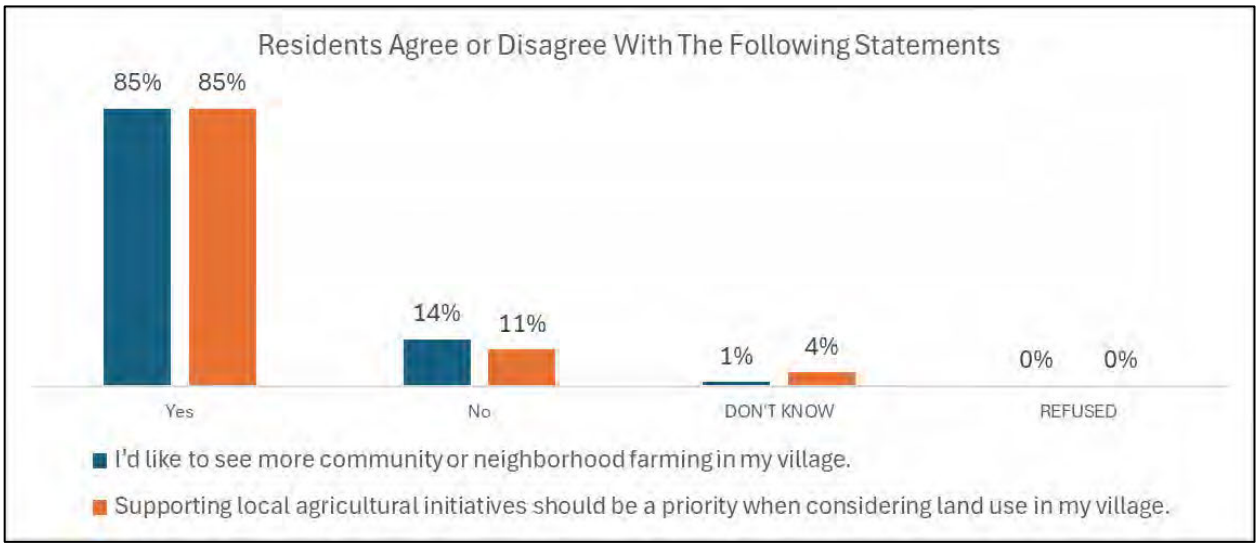

Figure 4-10. Results from the G50SP Community Engagement Survey.

Additionally, 14% of respondents supported farming and sustainability initiatives to enhance village economies, reinforcing the importance of integrating agriculture into broader economic strategies (see *Chart X*).

Redevelopment policies focus on revitalizing existing urban spaces rather than expanding into undeveloped areas. Prioritizing commercial and residential property rejuvenation prevents unnecessary urban sprawl and ensures that infrastructure and public services are efficiently utilized. Redevelopment also presents an opportunity to address affordable housing shortages by repurposing underutilized buildings. Implementing zoning amendments to support adaptive reuse can make redevelopment efforts more effective in meeting Guam's evolving housing needs.

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Enhancing infrastructure and public services is crucial to sustaining urban growth. Investment in public transportation and critical infrastructure such as ports, airports, and energy facilities aligns with economic objectives by facilitating trade, tourism, and sustainable urban expansion. Maintenance of essential utilities, including water, wastewater, and road networks, ensures the longevity of economic initiatives and supports Guam's long-term economic vision.

4.6.3. Sustainable Tourism and Cultural Preservation

Tourism is a cornerstone of Guam's economy, and sustainable tourism development is essential in maintaining the island's appeal, environmental integrity, and livability. Right-sized development investments, particularly in village settings, help prevent overdevelopment while catering to visitor demand and luring boutique travelers. By limiting the height and density of accommodations, Guam can preserve its natural and cultural landscapes while maintaining a high-quality visitor experience.

Public sentiment strongly supports a sustainable and balanced approach to tourism development. According to the G50SP Community Engagement Survey:

- 92% of respondents agreed that Guam should prioritize the rehabilitation and improvement of existing hotels rather than building new ones.
- Only 23% agreed that Guam should build more hotels and retail buildings, while 75% disagreed with that approach.
- 77% supported building more tourist-serving attractions and optional tours, signaling a preference for enhancing the visitor experience through activities and services rather than new construction.
- Just 30% felt that Guam's hotel and tourism industry is fine the way it is, while 66% disagreed, suggesting there is still room for improvement–particularly through renovation, not expansion.
- Opinions were mixed regarding the extent of current development: 42% believed Guam has too much hotel and tourist-related development already, while 53% disagreed with that view.

These findings underscore the importance of rehabilitating existing infrastructure, developing culturally rich and environmentally sensitive attractions, and avoiding an overreliance on traditional mass tourism models. Cultural and eco-tourism initiatives support a diversified tourism sector, emphasizing historical preservation, environmental conservation, and community-based tourism activities. By integrating cultural landmarks and ecological sites into development plans, Guam ensures that economic benefits from tourism are equitably distributed while preserving its unique heritage. The recent phase 1 study of the Tourism Recovery Plan Repositioning Study discussed above identifies three key areas for improving potential visitor perceptions of Guam:

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- **Emotional Connections:** Position Guam as a desirable place to live, a destination that fulfills dreams and inspires pride in visiting.
- **Experiential:** Highlight the friendly locals, courteous service, and easy access of the island.
- **Uniqueness:** Promote Guam's cultural festivals, heritage, distinct cuisine, and unique shops.

This approach aligns with global tourism trends that favor authentic, sustainable experiences over mass commercial tourism, and reflects the community's clear preference for thoughtful, place-based development.

4.6.4. Prosperous Economy Land Use and Sustainability



The policies outlined align with U.N. SDGs, particularly those focusing on sustainable cities and communities (SDG 11), decent work and economic growth (SDG 8), and climate action (SDG 13). By promoting mixed-use development, prioritizing redevelopment over new expansion, and integrating infrastructure improvements, these policies support sustainable urbanization and economic inclusivity.

The focus on education and workforce development aligns with SDG 4 (Quality Education) by ensuring that the labor market is equipped with skilled professionals. Agricultural preservation and subsistence farming initiatives support SDG 2 (Zero Hunger) by promoting food security and sustainable land use. Additionally, infrastructure investments, particularly in renewable energy and transportation, contribute to SDG 9 (Industry, Innovation, and Infrastructure) and SDG 7 (Affordable and Clean Energy), reinforcing Guam's commitment to sustainable economic growth.

Overall, Guam's land use and economic development policies provide a comprehensive framework that balances economic expansion, community well-being, and environmental stewardship. By aligning international sustainable development goals, these policies ensure that economic opportunities remain equitable, resilient, and beneficial to future generations.

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4.6.5. Prosperous Economy Land Use Policies

Prosperous Economy Land Use Policies

PE-1. Development Opportunities.

Provide a diverse mix of commercial and industrial land use areas and capacity needed to meet future employment projections and encourage economic activity capable of providing living-wage jobs, reasonably scaled to the needs of the community and consistent with other plan policies.

PE-2. Promote Mixed-Use Development Zones.
Provide for mixed-use commercial, retail, and workplace development compatible with residential neighborhoods to provide easy access to jobs, shopping, and activities.

PE-3. Priority Expansion Areas.
Identify and prioritize specific areas and transportation corridors designated for future expansion of the economic base, such as the Upper Tumon area, Route 3 and North Marine Corps Drive. Provide public investment and infrastructure support to encourage development in these areas.

PE-4. Education Facilities.
Provide land and opportunities to establish, maintain, expand, and support higher educational opportunities to ensure an educated and technically trained workforce. Expand opportunities in both new and existing institutions, including vocational, post-secondary, and professional training opportunities.

PE-5. Co-location of Industrial Development.
Concentrate similar industrial uses and intensities to support development and limit offsite impacts.

PE-6. Priority Land Uses.
Provide adequate land to support priority economic development and infrastructure, including coastal-dependent uses and sustainable energy facilities, such as solar farms.

Village Economic Development

PE-7. Village Economic Development Areas.
Promote and direct appropriately designed and scaled commercial and other community development to village centers and economic and community enhancement areas.

PE-8. Pedestrian-scale Development.
Encourage the development of pedestrian-oriented retail markets in Village Centers to connect local food and craft vendors to customers and tourists.

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PE-9. Community-Centric Development.
Engage local communities in the planning process to ensure developments meet their needs and preserve cultural heritage through appropriate siting and design. Co-locate residential and community uses to facilitate civic engagement, including educational opportunities. Support small businesses and local artisans through zoning policies that enable markets, workshops, and co-ops.

Agricultural Opportunities

PE-10. Commercial Agriculture.
Protect the most productive soils and large undeveloped areas capable of supporting agriculture for commercial purposes, consistent with other plan policies.

PE-11. Subsistence and Community Agriculture.
Protect and promote agricultural and rural lands capable of supporting subsistence and community agricultural activities. Encourage small-scale farming in community gardens and residential properties where appropriate.

Redevelopment

PE-12. Redevelopment.
Promote redevelopment of commercial and residential properties in designated areas. Consider opportunities for redevelopment before allowing new development in rural areas.

PE-13. Redevelopment for Affordable Housing.
Consider redevelopment of existing buildings for affordable housing. Amend zoning codes to support creative reuse.

PE-14. Rejuvenation of Existing Properties.
Promote investment, refurbishment, and enhancement of existing commercial and residential properties in core urban areas, especially the tourist and hotel districts in Tamuning. Use tax or fee reduction incentives to promote investment and refurbishment of dilapidated and blighted properties.

Infrastructure and Maintenance

PE-15. Infrastructure Improvements.
Enhance infrastructure, including in conjunction with approval of new commercial development.

PE-16. Infrastructure Maintenance.
Maintain infrastructure supporting urban development, including water, wastewater, and road capacity. Consider infrastructure improvement districts to finance maintenance and upgrades of needed facilities.

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PE-17. Infrastructure and Transportation Planning.
Invest in public transportation to reduce reliance on private vehicles and mitigate traffic congestion. Prioritize infrastructure projects that support economic activity, such as ports, airports, and renewable energy facilities.

Sustainable Tourism Development

PE-18. Expanding Tourism.
Support tourism-related development and infrastructure as appropriate in each of Guam's villages.

PE-19. Appropriate Village Scale.
Provide for right-sized development investments, consistent with village characteristics and community desires. Limit the height and density of tourist accommodations to prevent overdevelopment and maintain the island's visual appeal.

Cultural and Ecotourism

PE-20. Diverse Opportunities.
Promote diverse and unique cultural, nature-based, and recreational tourism developments, attractions, and experiences.

PE-21. Eco Tourism.
Promote eco-tourism initiatives that respect local culture and natural resources.

PE-22. Diverse Community Opportunities.
Recognize a wide variety of cultural, tourism, and active recreational programs with regional and neighborhood facilities, providing well-rounded recreational and tourism opportunities.

PE-23. Cultural and Historical Preservation.
Protect and integrate cultural and historical landmarks into development plans to promote cultural tourism.

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Chapter 5: **Thriving Environment**

5.1. Climate Change and Environmental Sustainability

Guam's natural environment is the foundation of its cultural heritage, economic vitality, and quality of life. As a small island community, Guam faces unique environmental challenges, including the looming impacts of climate change, rapid development, and resource depletion. This chapter of the Guåhan 2050 Sustainability Plan frames a comprehensive strategy for protecting the island's natural resources while enhancing resilience to environmental and climate-related risks. The chapter establishes policies and practices for the following: Climate Resilience and Land Use Planning, Watershed Protection, Sensitive Habitats and Species, and Coastal and Marine Habitats.



At its core, a thriving environment is pursued through an integrated set of land use policies and planning and broad environmental objectives:

> **Goal:** *Conserve Guam's land and marine environments and strengthen climate resilience through integrated land use and ecosystem planning*.
>
> **Land Use Objectives:**
>
> - Implement nature-based climate adaptation and green infrastructure.
> - Protect watersheds and drinking water sources through zoning and BMPs.
> - Designate and protect critical terrestrial and marine habitats.
> - Strengthen coastal zone management and enforce shoreline protections.

5.1.1. Building Climate Resilience

Climate change poses a growing and perhaps the greatest threat to Guam, with extreme heat, rising sea levels, increased storm intensity, coastal erosion, and saltwater intrusion affecting both residents and the natural and built environment. To protect communities and ecosystems from these threats, Guam must strengthen its climate resilience by integrating sustainable land-use policies, nature-based solutions, and disaster-ready infrastructure. Key strategies include implementing coastal setbacks to reduce development in high-risk areas, prioritizing mangrove and coral reef restoration for natural shoreline protection and enhancing water conservation measures to mitigate drought impacts. Green infrastructure, such as permeable surfaces and urban tree canopies, will also play a crucial role in reducing the urban heat island effect and managing stormwater runoff.

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Beyond infrastructure, building resilience also means preparing communities for climate-related challenges. Disaster-resilient housing standards, renewable energy integration, and climate-smart agriculture will help Guam adapt to changing environmental conditions while reducing reliance on fossil fuels and external food sources. The island must also invest in education and community engagement to ensure residents and businesses are informed and equipped to take part in climate adaptation efforts. Through proactive planning, adaptive management, and sustainable development, Guam can strengthen its ability to withstand environmental disruptions while ensuring long-term environmental and economic stability.

5.1.2. Protecting and Restoring Natural Resources

In addition to climate resilience, Guam's sustainability depends on the health of its watersheds, groundwater sources, and coastal and terrestrial habitats. Guam's terrestrial and shoreline environments provide a unique setting in which numerous challenges and opportunities exist to balance protection, restoration, and projected growth. It includes habitats and species found nowhere else in the world, fragmented among geographically distinct land use patterns. The watersheds of the southern island feed vital streams and wetlands. The ancient volcanic and limestone cliff landforms and sheer coastal cliffs define a special character, appreciated for cultural values, recreational opportunities, and their intrinsic beauty. This limestone plateau provides a permeable surface for rainfall to infiltrate and recharge the Northern Guam Lens Aquifer (NGLA), the main source of drinking water for the island. Viable agricultural soils are limited, heightening their importance. The fringing coral reef ecosystems surrounding the island support a diversity of marine life and Guam's island culture and are directly impacted by changes to the island's landscape.



Sustainability requires that the most important of Guam's natural resources be protected for future generations and restored in instances where there is strong potential to revive native habitat. The G50SP includes a resource conservation land use designation for natural areas and basic policies to balance the siting and design of development with the protection or restoration of natural resources, recreation, and scenic. It includes protections for agricultural lands and native habitats. Habitat conservation policies will ensure that sensitive terrestrial ecosystems, such as limestone forests and riparian corridors, are protected from encroaching development. Policies also address water resource protection through strict regulation of wastewater discharges, stormwater management, and land-use practices that affect water quality. Watershed protection strategies and management plans will be implemented to reduce polluted runoff, preserve riparian and wetland areas, and improve groundwater recharge to sustain the Northern Guam Lens Aquifer. Efforts to safeguard coastal and marine waters will focus on reducing land-based sources of pollution, enforcing sustainable fishing practices, and restoring

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coral reefs. Similarly, the Guam Sustainability Plan prioritizes a balance between responsible growth and ecological preservation, ensuring that future generations continue to benefit from the island's natural resources.

5.2. Climate Resilience and Land Use Planning

Climate change affects all aspects of Guam's environment and society (PIRCA, 2020). Hence, there is significant overlap between land use strategies and policies discussed in this section with certain discussions in other chapters of the G50SP, such as adapting to coastal hazards, building resilient housing, and water resource management (each discussed in Chapter 3), and protection of sensitive habitats (later in this chapter). But this climate resiliency section is important for tying together all of the various land use strategies in an integrated discussion of what may be the most significant environmental threat for Guam at this time. Guam faces massive challenges from climate change. According to Guam's Priority Climate Action Plan, per the 5th National Climate Assessment Chapter 30 Hawai'i and US-Affiliated Pacific Islands, the resources of Guam impacted from climate change are: Water, Food Security, Human Health, Built Environment, Ecosystems, and Cultural and Historical Resources (Guam's Priority Climate Action Plan, 2024).

As an island community, Guam's environmental resilience is closely tied to sustainable land use planning. Climate change affects all aspects of society, from infrastructure and economic development to cultural preservation and village life. To address these risks, Guam must adopt an integrated, proactive approach that prioritizes coastal resilience, green infrastructure, disaster-resilient housing, proper hazardous materials facilities and storage, water resource management, climate-smart agriculture, renewable energy, and strong community engagement. By incorporating climate considerations into land use planning, Guam can protect vulnerable communities, ensure long-term environmental and economic sustainability, and preserve its unique cultural and natural heritage. The following strategies and policies will guide Guam toward climate resilience and a thriving environment.

5.2.1. Coastal Zone Management

Coastal zone management is integral to effective land use planning and sustainability on Guam. Guam's coastal zone management program is nearly fifty years old. It is discussed in more detail later in this chapter. But it is important to highlight at least three coastal management strategies for responding to climate change: coastal risk reduction, hazard avoidance, and nature-based solutions. G50SP policies direct that these strategies be applied in land use planning and development decisions.

Coastal Risk Reduction: Setbacks. Guam's low-lying coastal areas are particularly vulnerable to rising sea levels and extreme weather events. Since 1993, sea levels around Guam have risen by approximately 4 inches. As presented in Chapter 3, projections indicate a rise of 1 to 3 feet in the next century. Development in high-risk areas must be restricted to avoid increased exposure

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to storm surges, flooding, and erosion. Implementing coastal setbacks will help reduce vulnerability, requiring construction to be positioned away from hazard-prone areas.

Hazard Avoidance and Updated Mapping. Land-use planning must integrate updated hazard maps that account for projected sea-level rise and extreme weather patterns. Construction should be prohibited in high-risk flood zones, and at-risk areas should be designated for conservation or nature-based solutions (see Chapters 3 and 7). Planning should also integrate GEPA's Hazardous Materials Emergency Preparedness Program to strengthen climate resilience and reduce risks of chemical releases during storms or disasters.

Nature-Based Shoreline Protection. Guam's mangroves and coral reefs act as natural barriers, absorbing wave energy and reducing erosion. Healthy coral reefs reduce wave energy by 97% before it reaches the shore, making them a cost-effective alternative to artificial seawalls (Ferrario et al, 2014). Restoration and conservation of these ecosystems should be prioritized to protect coastal communities.

5.2.2. Green Infrastructure Development

Another important land use strategy for addressing climate change is the use of *green infrastructure*, especially in urban areas. G50SP policies address the following aspects of green infrastructure:

Urban Development with Natural Systems. Incorporating natural systems into urban development helps mitigate climate impacts. Green infrastructure—such as rain gardens, bioswales, bioretentions, and permeable pavement—reduces flooding and improves water quality by allowing stormwater to filter into the ground instead of overwhelming drainage systems.

Green Spaces and Tree Canopy Expansion. Guam's urban heat island effect is exacerbated by increased paved surfaces and deforestation. Expanding tree-lined streets, urban forests, and green spaces reduces temperatures, improves air quality, and enhances stormwater management. Urban trees can reduce local temperatures by up to 9°F (Guam DOAG, 2025).

Climate Resilient Infrastructure. New infrastructure projects should incorporate elevated roads, flood-resistant materials, and energy-efficient designs. Investment in climate-resilient transportation networks, water systems, and stormwater infrastructure will reduce long-term costs and vulnerability to extreme weather.

5.2.3. Disaster-Resilient Housing

As discussed in more detail in Chapter 3, climate change necessitates that Guam focuses even greater attention on assuring that new housing is resilient to natural hazards and storm events, especially typhoons. Policies in this chapter underscore the following aspects of resilient housing:

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Building Code Updates for Extreme Weather. Guam is frequently impacted by typhoons and tropical storms. Recent storms, such as Typhoon Mawar (2023), caused over $100 million in damages (FEMA, 2025). Updating building codes to require storm-resistant roofing, reinforced foundations, and elevated construction will strengthen Guam's housing stock.

Retrofitting and Renewable Energy Integration. Many homes in Guam were built before modern climate considerations were incorporated into building codes. Retrofitting older structures with climate-resilient materials, solar energy systems, and battery storage will enhance disaster preparedness and energy security. Incentives should be provided for climate-smart renovations.

5.2.4. Water Resource Management

Chapter 3 and other sections of this chapter address water resource management in more detail, but together, the policies of the G50SP present a multi-pronged strategy for addressing climate change vulnerabilities of Guam's drinking water supplies and watersheds, while promoting water conservation and reuse:

Addressing Climate Impacts on Water Resources. Guam's primary drinking water source, the Northern Guam Lens Aquifer (NGLA), is at risk due to climate change. Rising temperatures and prolonged droughts reduce groundwater recharge rates, while sea-level rise increases the risk of saltwater intrusion (Gingerich, et al., 2019).

Watershed Protection and Sustainable Water Use. Deforestation and urban sprawl threaten watersheds, leading to reduced groundwater recharge and increased erosion. Stricter land-use regulations must protect watershed areas by limiting deforestation, preserving riparian zones, and restricting pollution sources.

Rainwater Harvesting and Greywater Recycling. Rainwater harvesting and greywater reuse should be integrated into new developments to reduce strain on freshwater resources. Policy incentives, such as tax credits or grants for water-efficient systems, can encourage adoption.

5.2.5. Climate-Smart Agriculture

Climate-smart agriculture is another important component of the G50SP climate resilience strategy. This includes food security and agroforestry, also addressed in Chapter 3.

Strengthening Food Security. Guam imports over 90% of its food supply, making it highly vulnerable to climate-related disruptions in global food systems (Epicenter, 2020). Expanding local, climate-resilient food production is crucial for food security. The strong support (85%) expressed by respondents in the G50SP Community Engagement Survey for agricultural initiatives not only signals a recognition of this urgent need, but may also reflect deeper, collective nostalgia for Guam's rural and agrarian past–an identity rooted in self-sufficiency and connection to the land.

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Promoting Agroforestry and Soil Health. Agroforestry—integrating trees with agricultural crops—improves soil health and reduces carbon emissions. Encouraging composting, crop diversification, and regenerative agriculture will enhance resilience and productivity.

5.2.6. Renewable Energy Integration

Renewable energy, too, is critically important to a sustainable Guam. Both broad strategies listed below are elaborated in Chapter 3, with a particular focus on the land use challenges to securing a renewable energy system by 2050. Notably, seen in Figure 5-1, respondents of the G50SP Community Engagement Survey expressed overwhelming support for renewable energy projects within their own villages, signaling a strong community willingness to participate in Guam's clean energy transition due to cost savings, climate change, and importance of environmental preservation.

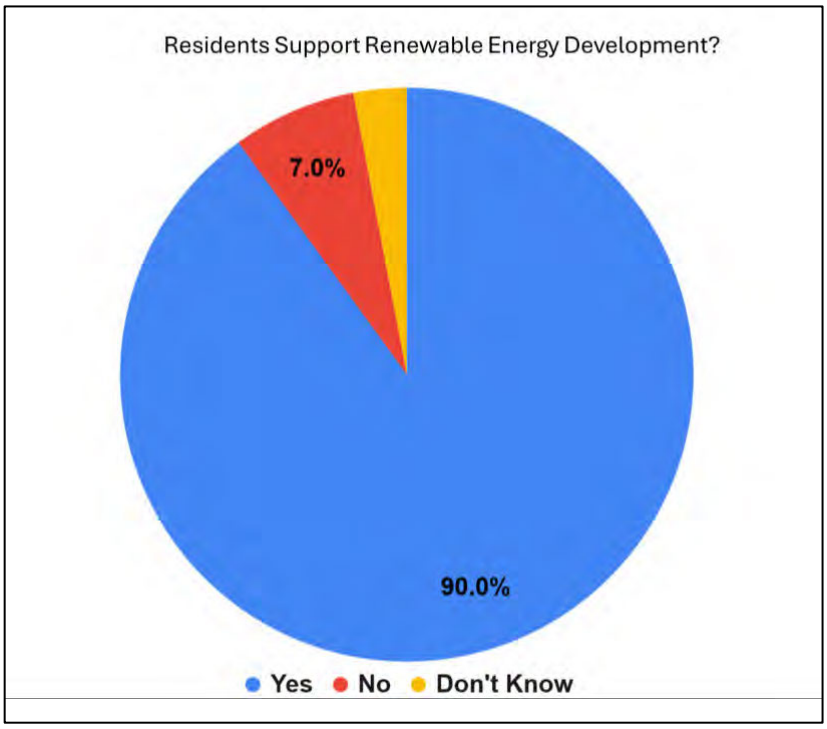

Figure 5-1. Public Support for Renewable Energy.

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Summary of Water Resources on Guam

KEY CHALLENGES & RECOMMENDATIONS

(Gingrich et al, 2019)

Guam's freshwater supply relies primarily on the Northern Guam Lens Aquifer (NGLA) for groundwater and the Fena Valley Reservoir (FVR) for surface water. However, climate change, population growth, and aging infrastructure pose significant threats to water availability and quality. Projected temperature increases, decreased rainfall (by 7%), and reduced groundwater recharge (by 19%) will lead to water shortages and higher salinity levels in drinking water sources. Rising sea levels (up to 3.2 feet by 2100) further increase the risk of saltwater intrusion into groundwater supplies, threatening long-term sustainability.

Key Challenges:

- **Decreasing Water Supply:** Lower rainfall and increased evaporation reduce streamflow (by 18%) and groundwater recharge.
- **Saltwater Intrusion & Contamination:** Higher sea levels and over-extraction increase chloride concentrations, affecting drinking water.
- **Sedimentation & Storage Loss:** The FVR has lost 17% of its storage capacity due to sedimentation from erosion and typhoons.
- **Infrastructure & Demand Growth:** Aging water systems, population growth (projected 200,581 by 2035), and military expansion increase demand and strain resources.

RECOMMENDATIONS

- ☑ **Infrastructure Upgrades:** Rehabilitate water pipelines, expand wastewater systems, and improve leak detection.
- ☑ **Climate Adaptation Measures:** Lower water intake in the FVR, raise spillway height, and reduce high-salinity well withdrawals.
- ☑ **Land Use Planning:** Restrict development in recharge areas, enforce septic system regulations, and improve stormwater management.
- ☑ **Water Conservation Programs:** Encourage rainwater harvesting, greywater reuse, and public conservation initiatives.
- ☑ **Integrated Management & Policy Coordination:** Enhance collaboration between Guam Waterworks Authority (GWA), Department of Defense (DoD), and environmental agencies to improve long-term water sustainability.
- ☑ By **implementing these strategies**, Guam can ensure a resilient and sustainable water supply amid climate change and increasing demand.

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Building a Resilient Energy System. Climate resilience requires transitioning to renewable energy. Guam relies on imported fossil fuels for nearly 90% of its energy, making it vulnerable to global supply chain disruptions and price volatility (NREL, 2024).

Solar and Wind Energy Expansion. Policies should promote the development of solar and wind farms, including potentially offshore wind, wave energy, Ocean Thermal Energy Conversion and Sea Water Air Conditioning technologies as feasible, as well as community microgrids that enhance energy independence.[1] Large-scale developments should be required to incorporate renewable energy installations. According to the G50SP Community Engagement Survey (see *Figure 5-2*), sixty-six percent (66%) of respondents believed there should be renewable energy projects (e.g., solar and wind farms) constructed in conservation areas. This strong public support underscores the urgency and community backing for integrating renewables more broadly, even in traditionally protected spaces, provided environmental impacts are carefully managed. However, while expressing a desire for renewable energy, it may not reflect a desire to override conservation of sensitive environmental areas, which was also strongly supported in other survey responses (see Chapter 3).

[1] Recent federal activity highlights growing interest in assessing Guam's offshore wind energy potential. In January 2025, the Bureau of Ocean Energy Management (BOEM) issued a Call for Information and Nominations for commercial wind energy leasing on the Outer Continental Shelf (OCS) offshore Guam, covering approximately 2.1 million acres in water depths ranging from 350 to over 2,200 meters (BOEM, 2025a). This followed the formation of a Guam Intergovernmental Renewable Energy Task Force, which first convened in September 2024 to coordinate planning among federal agencies, the Government of Guam, and the U.S. Department of Defense (BOEM, 2024). BOEM was also collaborating with NOAA's National Centers for Coastal Ocean Science (NCCOS) to develop spatial suitability models and biogeographic assessments, with results anticipated in 2026–2027 (BOEM, 2025b). These actions potentially support Guam's legislated targets of 50% renewable energy by 2035 and 100% by 2045. A potential offshore wind lease sale was previously targeted for 2028 as part of BOEM's five-year leasing roadmap (OffshoreWind.biz, 2024), prior to the Trump administration move away from offshore wind.

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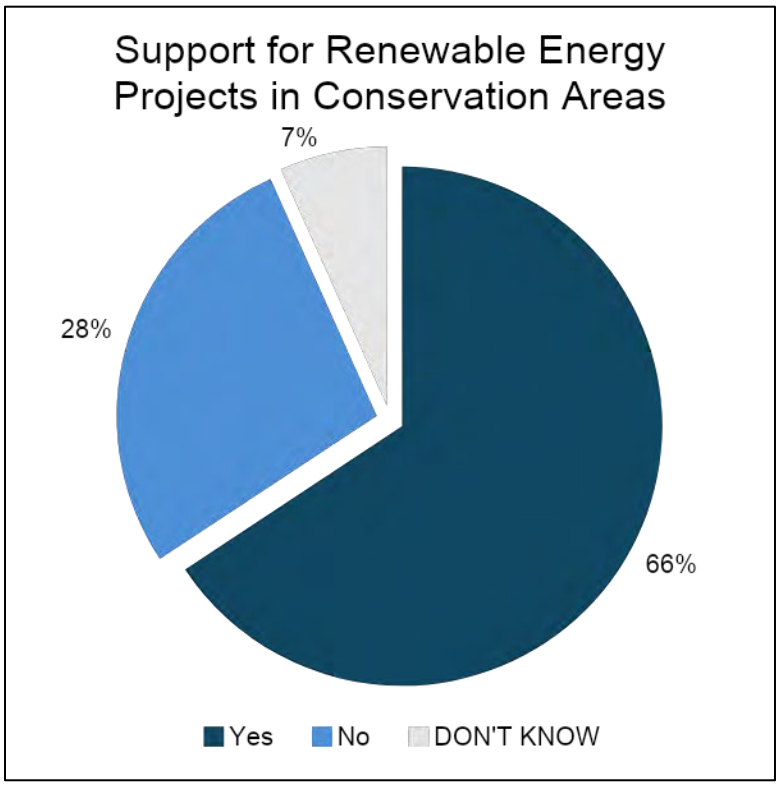

Figure 5-2. Support for Renewable Energy Projects in Conservation Areas.

5.2.7. Community Engagement and Education

As with other planning concerns, climate resilience can only be achieved and strengthened with robust community engagement and education. The G50SP recognizes this through two primary policy objectives:

Public Involvement in Land Use Planning. Community participation is vital in shaping resilient land use policies. Public consultations and education campaigns will empower residents to take part in climate adaptation initiatives.

Community-Led Adaptation Initiatives. Supporting shoreline restoration projects, tree planting campaigns, and local conservation efforts will foster a culture of environmental stewardship. Partnerships with schools and businesses can further expand outreach efforts.

5.2.8. Monitoring and Adaptive Management

Finally, a climate resilience strategy must be informed by on-going monitoring and adaptive management. Though the broad directions and magnitude of potential changes driven by climate change are well understood, the specific changes, and their timing, have significant uncertainties around them. If Guam is to maintain a sustainable land use system, it will need to

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keep track of climate changes and effects and adjust its management systems and land use policy accordingly.

Continuous Assessment and Policy Adjustments. Climate change is an evolving challenge, requiring ongoing monitoring and adaptation. A dynamic land-use framework must be established to assess coastal erosion rates, flood risks, and water resource depletion.

Regular Policy Updates. As new climate data emerges, hazard maps, zoning laws, and environmental regulations must be updated accordingly. Funding should be allocated for scientific research and pilot projects to test innovative resilience strategies.

5.2.9. Climate Resilience, Land Use and Sustainability



Guam's Land Use Climate Resilience policies align closely with the United Nations SDGs, particularly those focused on climate action (SDG 13), sustainable cities and communities (SDG 11), life below water (SDG 14), and clean water and sanitation (SDG 6). The Coastal Zone Management policies, which prioritize resilience against sea level rise, storm surges, and erosion, directly support SDG 14.2 (Sustainably manage and protect marine and coastal ecosystems) by ensuring that Guam's shorelines remain resilient to climate impacts. Implementing coastal setbacks and hazard avoidance furthers SDG 13.1 (Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters) by enforcing development regulations that prevent high-risk construction in flood-prone areas. The emphasis on nature-based shoreline protection, including the preservation of mangroves and coral reefs, aligns with SDG 14.5 (Conserve at least 10% of coastal and marine areas by 2020 and beyond) by actively restoring natural coastal buffers.

The Green Infrastructure Development policies contribute to multiple SDG targets. Encouraging permeable surfaces, rain gardens, and tree-lined streets in urban development supports SDG 11.7 (Provide universal access to safe, inclusive, and accessible green and public spaces, particularly for vulnerable populations) by integrating sustainable, accessible green spaces into urban environments. Incorporating climate-resilient infrastructure aligns with SDG 9.1 (Develop quality, reliable, sustainable, and resilient infrastructure to support economic development and human well-being) by mandating the inclusion of climate-adaptive designs in new infrastructure projects, such as elevated roads and storm-resistant materials. These strategies reduce urban

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heat island effects, enhance stormwater management, and mitigate flooding risks, making Guam's communities more adaptable to climate change.

The policies on Disaster-Resilient Housing strongly support SDG 11.1 (Ensure access for all to adequate, safe, and affordable housing and basic services and upgrade slums) by requiring housing developments to incorporate resilience against extreme weather events. Enforcing building codes that require homes to withstand typhoons and other climate hazards aligns with SDG 13.1 (Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters) by ensuring structures are built to endure extreme weather conditions. Encouraging climate retrofits and the integration of renewable energy in housing developments contributes to SDG 7.2 (Increase the global share of renewable energy in the energy mix) by incentivizing solar energy and other renewable technologies. Similarly, Water Resource Management policies align with SDG 6.1 (Achieve universal and equitable access to safe and affordable drinking water for all) by protecting drinking water sources through the establishment of buffer zones, and SDG 6.4 (Substantially increase water-use efficiency across all sectors to address water scarcity) through the promotion of rainwater harvesting and greywater recycling systems.

Other Guam policies, such as Climate-Smart Agriculture and Renewable Energy Integration, contribute to SDG 2.4 (Ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, help maintain ecosystems, and strengthen capacity for adaptation to climate change) by supporting agroforestry and climate-resilient crops. Renewable energy policies further SDG 7.2 by designating land for solar and wind energy projects, increasing the renewable energy share in Guam's energy mix. Community engagement and education initiatives align with SDG 4.7 (Ensure all learners acquire the knowledge and skills needed to promote sustainable development, including climate change awareness and adaptation strategies) by fostering public participation in climate resilience efforts. Finally, the Monitoring and Adaptive Management policy aligns with SDG 13.3 (Improve education, awareness, and human and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning systems) by establishing a framework for continuous assessment and policy adaptation based on climate impact monitoring. Collectively, these policies reinforce Guam's commitment to sustainable development, ensuring environmental resilience, community participation, and long-term climate adaptation in alignment with the U.N. SDGs.

5.2.10. Climate Resilience Land Use Plan Policies

Coastal Zone Management

TE-1. Coastal Resilience.

Protect and enhance the resilience of Guam's coastal zone against rising sea levels, flooding, storm surges, and erosion.

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TE-2. Coastal Setbacks.
Implement development setbacks consistent with policies SC-93, 94, and 95.

TE-3. Nature-Based Shoreline Protection.
Prioritize the preservation and restoration of mangroves and coral reefs as natural buffers against storm surges. Prioritize and incorporate living shoreline strategies as appropriate in lieu of more traditional engineered seawalls and other hard armoring structures.

TE-4. Hazard Avoidance.
Prohibit, to the maximum extent feasible, construction in high-risk flood zones identified by updated hazard maps.

Green Infrastructure Development

TE-5. Urban Development.
Incorporate natural systems and features as feasible into urban planning to mitigate the impacts of climate change.

TE-6. Green Infrastructure.
Promote the use of permeable surfaces, green roofs, and rain gardens to reduce urban heat and manage stormwater runoff.

TE-7. Green Space and Trees.
Include tree-lined streets and public green spaces in urban developments to improve air quality and reduce heat island effects.

TE-8. Climate Resilient Infrastructure.
Require new infrastructure projects to include climate-resilient design features, such as elevated roads and storm-resistant materials.

Disaster-Resilient Housing

TE-9. Safe Housing.
Ensure that housing is designed and constructed to withstand extreme weather events, consistent with Chapter 3 of this plan.

TE-10. Typhoons and Extreme Events.
Implement building codes that require homes to be designed to withstand typhoons and other extreme climate events consistent with Chapter 3 of this plan.

TE-11. Climate Retrofits.
Encourage the retrofitting of existing structures with climate-resilient materials and technologies.

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TE-12. Incentivize Renewable Energy.
Provide incentives for housing projects that integrate renewable energy systems, such as solar panels and battery storage.

Water Resource Management

TE-13. Climate Change: Droughts and Saltwater Intrusion.
Protect Guam's water resources from the impacts of climate change, including droughts and saltwater intrusion.

TE-14. Watershed Protection and Deforestation.
Enforce land use regulations that protect watershed areas and limit deforestation.

TE-15. Rainwater Harvesting and Greywater Recycling.
Promote rainwater harvesting and the use of greywater recycling systems in residential and commercial developments.

TE-16. Drinking Water Protection.
Establish buffer zones around aquifers and water sources to prevent contamination and over-extraction.

Climate-Smart Agriculture

TE-17. Food Security and Climate.
Support sustainable agricultural practices that enhance food security and resilience to climate variability.

TE-18. Soil Health and GHGs.
Designate agricultural lands for sustainable farming practices that improve soil health and reduce greenhouse gas emissions.

TE-19. Agroforestry.
Promote agroforestry and the cultivation of climate-resilient crops suitable for Guam's environment and to support food security.

TE-20. Water Irrigation and Conservation.
Implement water-efficient irrigation technologies and practices to conserve water in agricultural areas.

Renewable Energy Integration

TE-21. Resilient Energy Systems.
Transition to renewable energy systems to reduce greenhouse gas emissions and enhance energy security.

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TE-22. Renewable Energy Land Use Planning.
Designate zones for the development of solar, wind, and other renewable energy projects, consistent with Chapter 3 of this plan.

TE-23. Renewable Energy in Large Developments.
Require large-scale developments to include renewable energy installations as part of their project plans.

TE-24. Community Energy Supply.
Promote community energy projects, such as microgrids, to improve energy resilience in remote areas.

Community Engagement and Education

TE-25. Education and Participation.
Foster public awareness and community participation in climate resilience efforts.

TE-26. Public Engagement.
Require public consultations for all major land use planning initiatives to ensure community input and support.

TE-27. Climate Education.
Develop educational programs that inform residents about climate risks and resilience strategies.

TE-28. Community-led Adaptation.
Support community-led adaptation projects, such as shoreline clean-ups and native vegetation planting.

Monitoring and Adaptive Management

TE-29. Adaptive Land Use Planning.
Establish a dynamic framework to assess and adjust land use policies based on changing climate conditions.

TE-30. Monitoring.
Implement a system for regular monitoring of climate impacts on land use, such as coastal erosion rates and flood frequency.

5.3. Watershed Protection

A watershed is an area of land that drains precipitation into larger bodies of water, such as the ocean. Watersheds are vital landscape features that may help filter contaminants out of ground water supplies and protect near-shore coral reefs from sedimentation. The size and shape of a watershed is highly dependent on the topography of the land. Guam is divided into 19 distinct watersheds, with 18 concentrated in the central and southern parts of the island. The northern

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portion of the island contains the “Northern” watershed, consisting of a relatively flat, shallow soil layer on top of highly permeable limestone. This sub-watershed has been further delineated into sub-basins as more complete data on the flow of water through the northern aquifer becomes available (Figure 5-1).

In the southern part of Guam, the Mount Lamlam mountain ridge runs along the western coast, topographically defining many of the watersheds, which consist of smaller and steep areas with short streams in the west, and broader floodplains with longer, larger rivers in the east (Digital Atlas of Southern Guam).

While each southern watershed is different, they all face similar threats to their overall health, function, and water quality. Erosion and associated sedimentation, land development and land use change, wildland fires, invasive species, and pollutants are the major threats impacting all watersheds on the Island (NOAA 2012). As discussed in Chapter 3, groundwater contamination and saltwater intrusion are a primary concern in the NGLA.

The Manell-Geus watershed has been identified by NOAA as a Habitat Focus Area. The watershed, primarily located in the village of Malesso’, flows into the coral reefs in Achang Reef Flat Marine Preserve and Cocos Lagoon. The seagrass beds and coral reefs support a strong fishing tradition and provide habitat for sea turtles. Risks to watershed health include erosion of hillsides and streambanks due to impacts from wildfires, ungulates, and off-roading vehicles. The erosion has resulted in poor water quality and increased sedimentation leading to declining coral health. As a Habitat Focus Area, NOAA works with the local community to develop and test various watershed restoration techniques, such as streambank stabilization, bamboo removal, and placing riparian buffers in the sub-watersheds of Geus, Liyog, and Asgadao (King, 2014; NOAA, 2025a, 2025b).

The Water Planning Committee, also known as the Watershed Planning Committee, completed an assessment of the island’s watersheds in 2019 and selected three, Northern, Ugum, and Talofofo watersheds, as its highest priority watersheds due to their value as drinking water resources. The designation of Ugum as a high-priority watershed is important as there is no other water source for the southern villages.

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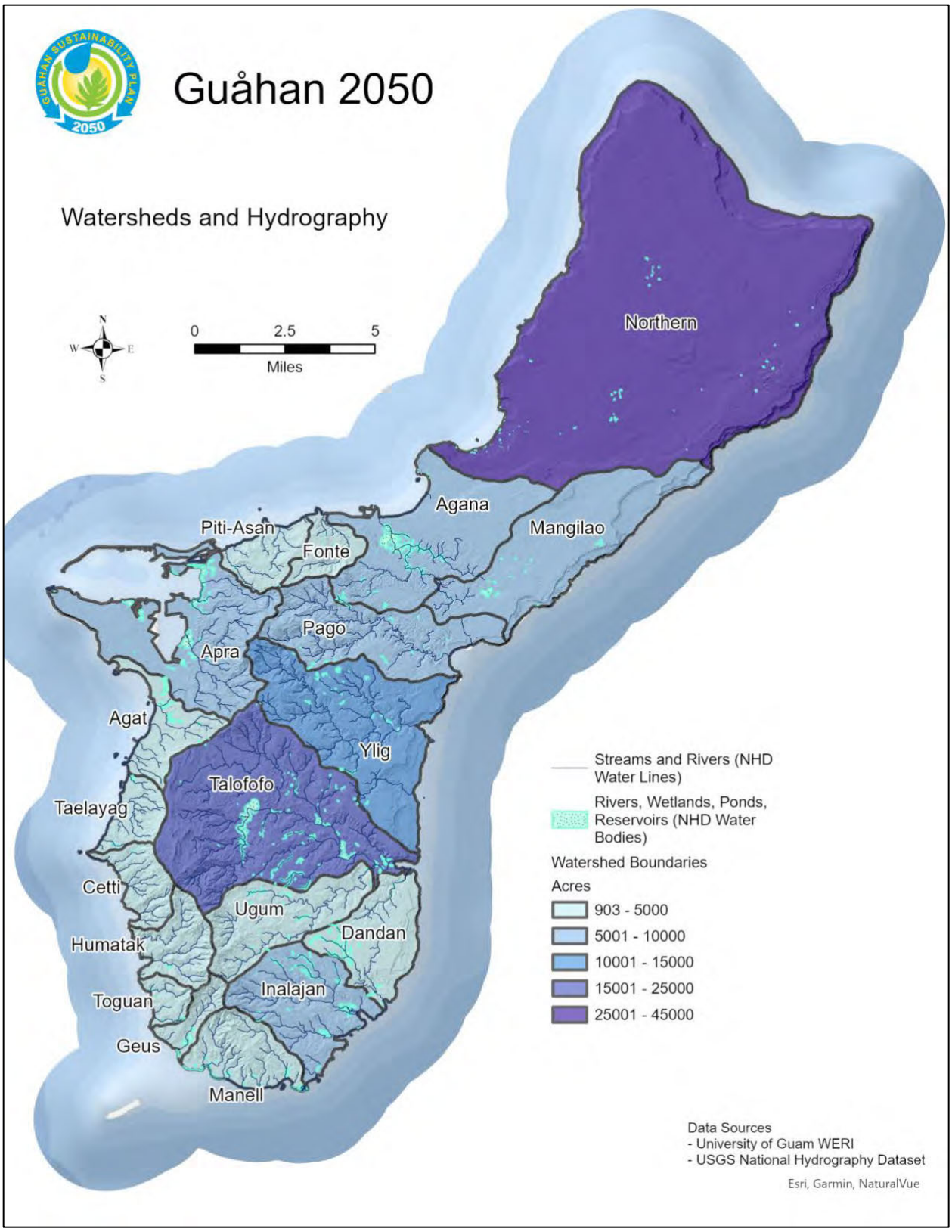

Figure 5-3. Guam Watersheds and Hydrography.

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5.3.1. Groundwater Protection

5.3.1.1. Northern Guam Lens Aquifer (NGLA)

Guam has very few freshwater resources. The freshwater environments of Guam can be classified as wetlands, lentic environments (ponds and artificial impoundments), lotic environments (streams and rivers), and groundwater. The distribution of freshwater in Guam is controlled by local geology and topography. Surface freshwaters are common in the south, where the land is dominated by volcanic bedrock and clays. In the north, surface water is rare as the terrain is made of highly porous limestone. As a result, southern Guam has numerous rivers but limited groundwater areas, whereas northern Guam has no rivers, but is underlain by groundwater.

Wetlands are limited to freshwater marshes on clayey limestone and limited swamp vegetation around Pago River. In the subsurface, the aquifer represents a complex freshwater ecosystem in which different habitats can be recognized: freshwater zone, brackish water zone, salty groundwater beneath the aquifer, large water-saturated cavities, small water-saturated interstices, open-surface freshwater pools and streams inside caves, and coastal springs (Digital Atlas of Guam).

The NGLA supplies about 80% of Guam's population with portable water (USACE 2022; WERI, 2013). In 1978, the EPA designated the NGLA as a principal source of drinking water for the island of Guam and that, "if the ground waters were contaminated, a significant hazard to public health would exist" (43 Fed. Reg. 868; also Guam Clean Water Action Plan, 1998). The NGLA encompasses all of northern Guam and consists of the limestone bedrock that is located north of the Pago-Adelup fault (geologic fault that separates the volcanic terrain of southern Guam from the limestone plateau in northern Guam). This lens-shaped aquifer is the thickest in the island's interior and thinnest along the island's perimeter. Because freshwater is less dense than seawater, this fresh groundwater lens floats upon saltwater that permeates the bedrock beneath it. Under future conditions, the NGLA is likely to be threatened by saltwater intrusion as ocean levels rise and pumping from supply wells increases in drought years (Grecni et al. 2020).

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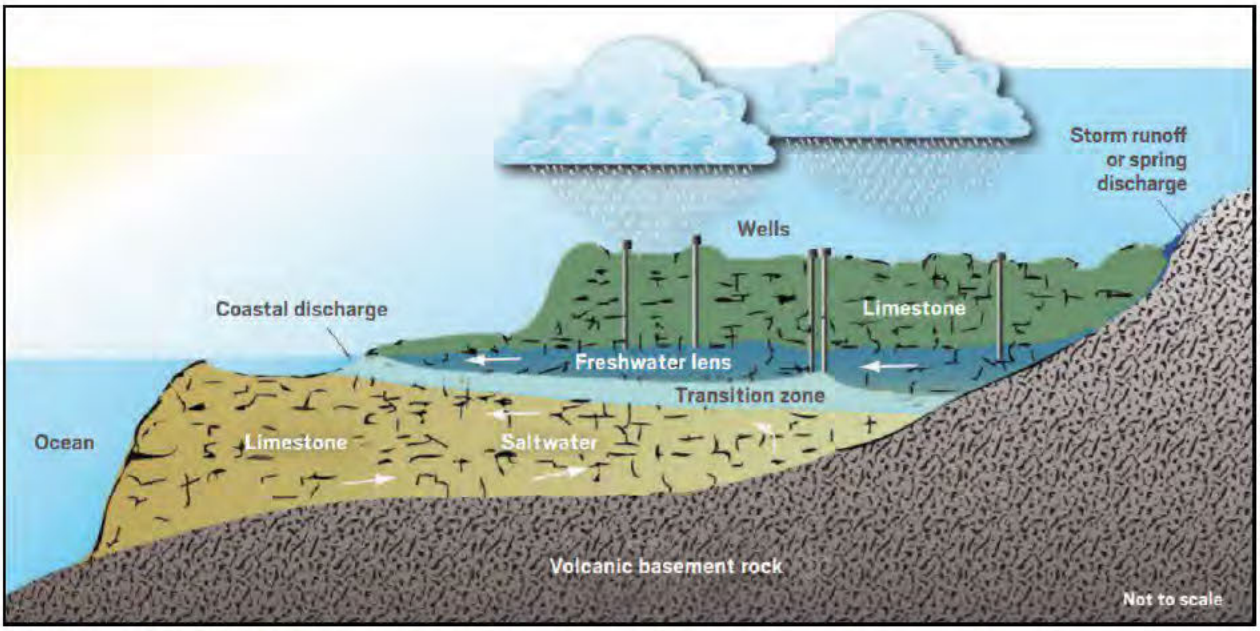

Figure 5-4. Northern Guam Lens Aquifer.

Unlike other aquifers (for example, the Floridan Aquifer), the NGLA does not hold its water in a subterranean lake within underground rooms, rather, water is contained within the rocks. These rocks, mainly limestone, though solid and dense, are full of holes and empty space that can accommodate a large volume of water. The empty spaces include pores and gaps that were created by coral when the limestone was still a live reef. Cracks and fractures developed from earthquakes and tectonic movements, and karst voids were created by water as it moved through the rocks and removed some of the limestone bedrock in solution. These spaces make the NGLA particularly vulnerable to contamination from above.

Protecting the NGLA from contaminants is crucially important for public health and sustainable development. Drinking water is pumped from the underground aquifer into the water distribution system. Contaminants can affect the water supply from beneath the aquifer and from the land surface. Seawater contamination is a major risk in island aquifers. For example, salty groundwater that normally underlies the aquifer is kept in its place by the weight of fresh groundwater sitting atop it. If too much freshwater is removed by pumping, the saltwater will move upward into the aquifer to achieve equilibrium. In addition to contamination from percolation and runoff of surface pollution (including trash and debris), saltwater intrusion is also a risk for the aquifer. The risk of saltwater intrusion depends on recharge rates, the hydraulic properties of the rocks, and well location and depth (USGS-WERI 2003). Roughly 120 wells are used on Guam to withdraw water from the NGLA, and the halocline (transition zone) of brackish and freshwater will thicken as fresh water is reduced during over pumping and droughts.

Other sources of contaminants are at the land surface. Domestic wastewater and sewage, industrial spills, and agricultural and stormwater runoff can contaminate the aquifer through

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infiltration or cracks and fractures in the bedrock. Several thousand septic tanks and pit toilets sit right above the NGLA and are major sources of contaminants. Septic tanks alone discharge roughly five (5) million gallons of wastewater into the environment each day. The extent to which contaminants have impacted the chemical and biological integrity of the NGLA is currently unknown and cannot be ignored due to the well-connected open spaces which facilitate rapid movement of water (and any contaminants therein) without being filtered (Digital Atlas of Northern Guam).

As detailed in Chapter Three, the Consolidated Commission on Utilities (CCU) comprises the Guam Waterworks Authority (GWA) and the Guam Power Authority (GPA). The CCU supplies power, drinking and wastewater services for all of Guam. Sources of water supply other than the NGLA include freshwater springs and rivers. Surface sources used by GWA include an intake from the Ugum River in addition to water purchased from the US Navy Water System (FENA). Spring water from Santa Rita is used to supplement the water supply from FENA for the villages of Asan, Piti, Anigua, Agat, Santa Rita and some areas of Barrigada and Mongmong-Toto-Maite.

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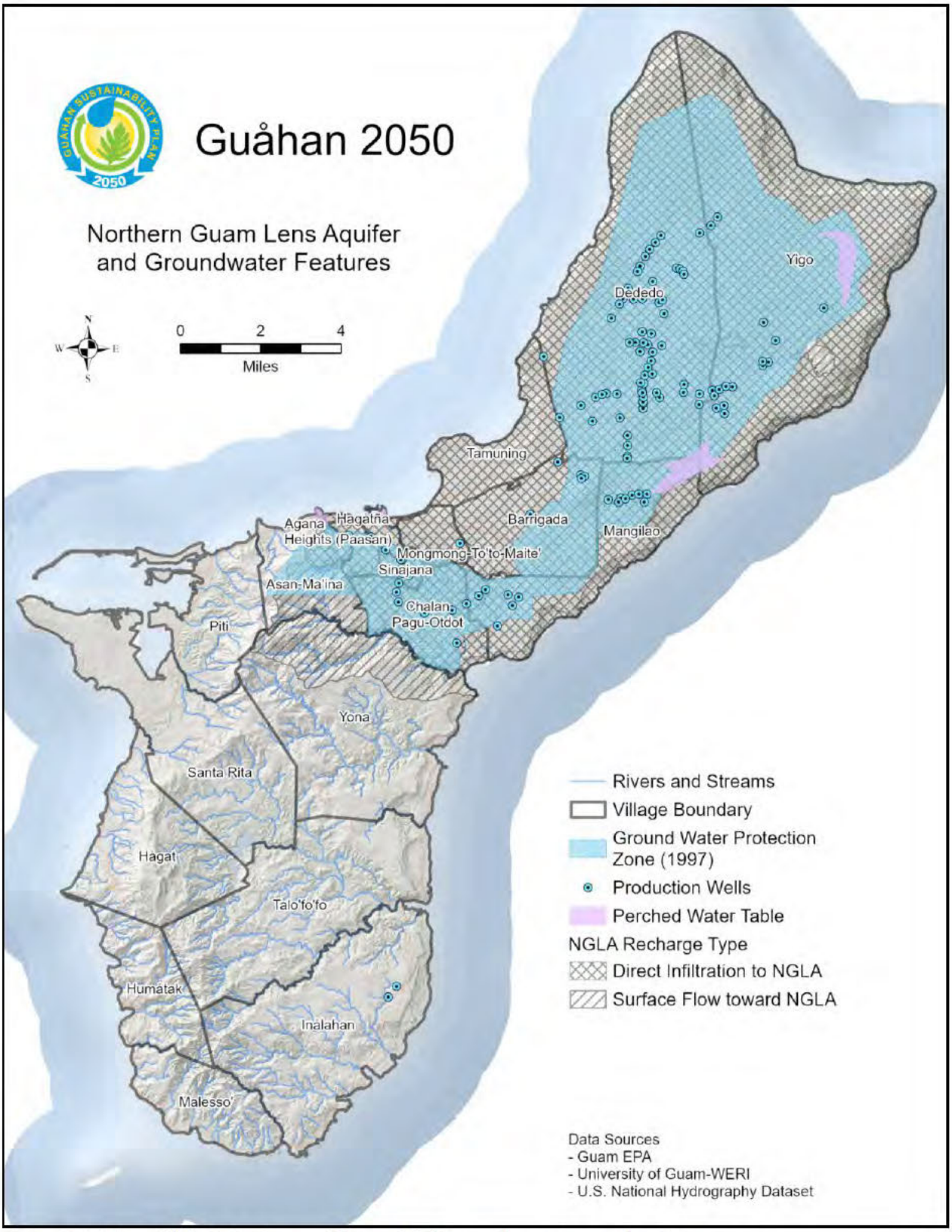

Figure 5-5. Map of (1) NGLA Composition and (2) Groundwater Protection Zone.

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5.3.2. Erosion and Runoff Control

5.3.2.1. Sedimentation

According to the 2022 Guam Watershed Plan, sedimentation because of erosion is one of the biggest environmental threats on Guam (USACE, 2022). Though erosion occurs naturally over time, the process is expedited by human-caused land management issues. For example, when land is cleared of vegetation for the purpose of development (e.g. agricultural, industrial), sediments and soil that were once held in place by plants become vulnerable to runoff from heavy rains and drain into nearby streams and rivers. Loss of vegetation due to wildfire also exacerbates erosion (see Chapter 3, section 3.7.6).

Sedimentation usually occurs via nonpoint source pollution, which comes from many different origins such as rainfall and runoff from impervious surfaces, agricultural land, etc. Sedimentation can result in adverse effects to aquatic life in both freshwater and marine ecosystems. Increased turbidity due to suspended sediments can affect the amount of light able to reach submerged vegetation and can result in an increase in water temperature, leading to reduced plant productivity and potential disturbance to aquatic organisms that may not tolerate higher water temperatures. Sedimentation is the biggest threat to coral reefs around Guam. Corals can be smothered by deposited sediment, depleted of light via turbidity, and be exposed to excess nutrients carried with sediment (Horsley Witten Group, Inc., 2006).

5.3.2.2. Nonpoint Source

In addition to sedimentation, other nonpoint source pollution types include nutrient runoff and bacteria. Nitrogen and phosphorus are commonly nutrients found in fertilizers, sewage, animal waste, maintained lawns, and other organic sources. When these nutrients enter streams, lakes, and other water bodies in high amounts via runoff, eutrophication can occur over time. The excess nutrients often lead to algal blooms, and in turn, deplete sunlight and oxygen for aquatic plants, fish, and wildlife below the surface. Bacteria pollution is typically a result of runoff from livestock/pet wastes and faulty or overflowing septic systems. Stormwater can carry high concentrations of bacteria and is a public health concern on Guam which has led to several beach closures in recent years (Horsley Witten Group, Inc., 2006).

5.3.3. Stormwater Management

Stormwater runoff is generated from rain that flows over land or impervious surfaces, such as paved streets, parking lots, and building rooftops, and does not soak into the ground. Construction sites, lawns, improperly stored hazardous wastes, and illegal dumping are all potential sources of stormwater pollutants. During a rain event, stormwater runoff picks up pollutants like trash, chemicals, and dirt/sediment discharges into streams, lakes, and groundwater (EPA 2024).

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5.3.3.1. Stormwater Issues in Guam

The Commonwealth of the Northern Mariana Islands (CNMI) and Guam have a tropical marine climate. The average annual rainfall exceeds 100 inches per year in many locations. During the rainy season, typhoons can drop 10-15 inches of precipitation in a single storm event. These climatic conditions combined with the region's unique limestone geology, volcanic geologic formations, sensitive water resources, and significant land development forces make stormwater a very significant environmental and economic issue. Historically, stormwater has been viewed as strictly a drainage issue and has been routed to the nearest discharge location, infiltrated into the highly-permeable limestone with little or no pre-treatment, or conveyed directly to receiving waters (CNMI and Guam Stormwater Manual (Horsley Witten Group, Inc., 2006)).

Seasonality also poses significant challenges to stormwater management. A trademark of the tropical marine climate is warm and humid weather moderated by seasonal tradewinds and a distinct wet and dry season. The dry season typically lasts from January to June, while the wet season, also known as the typhoon season, occurs typically from July to December (USGS 2024). About 70 percent of the total annual rainfall is recorded during the wet season. Topographical differences between the north and south sides of the Island result in annual precipitation totals varying as much as 30 inches with southern Guam receiving more rainfall. In northern Guam, the average rainfall during the wet season is about 12 inches per month (Camp, Dresser & McKee, Inc. 1982). During the dry season, the seasonal average rainfall is about five (5) inches per month on the northern portion of the island.

Urban development significantly intensifies stormwater runoff due to the conversion of permeable land to impervious surfaces. This leads to a dramatic increase in both the frequency and volume of storm flows (Figure X). For instance, the "bankfull" event, typically associated with a two-year storm (7.0 inches of rain in 24 hours in Guam), can occur two to seven times more frequently after development, and its discharge rate can increase by up to five times. This escalation is because impervious surfaces generate greater runoff, and drainage systems deliver water more rapidly to natural water bodies (Horsley Witten Group, Inc., 2006).

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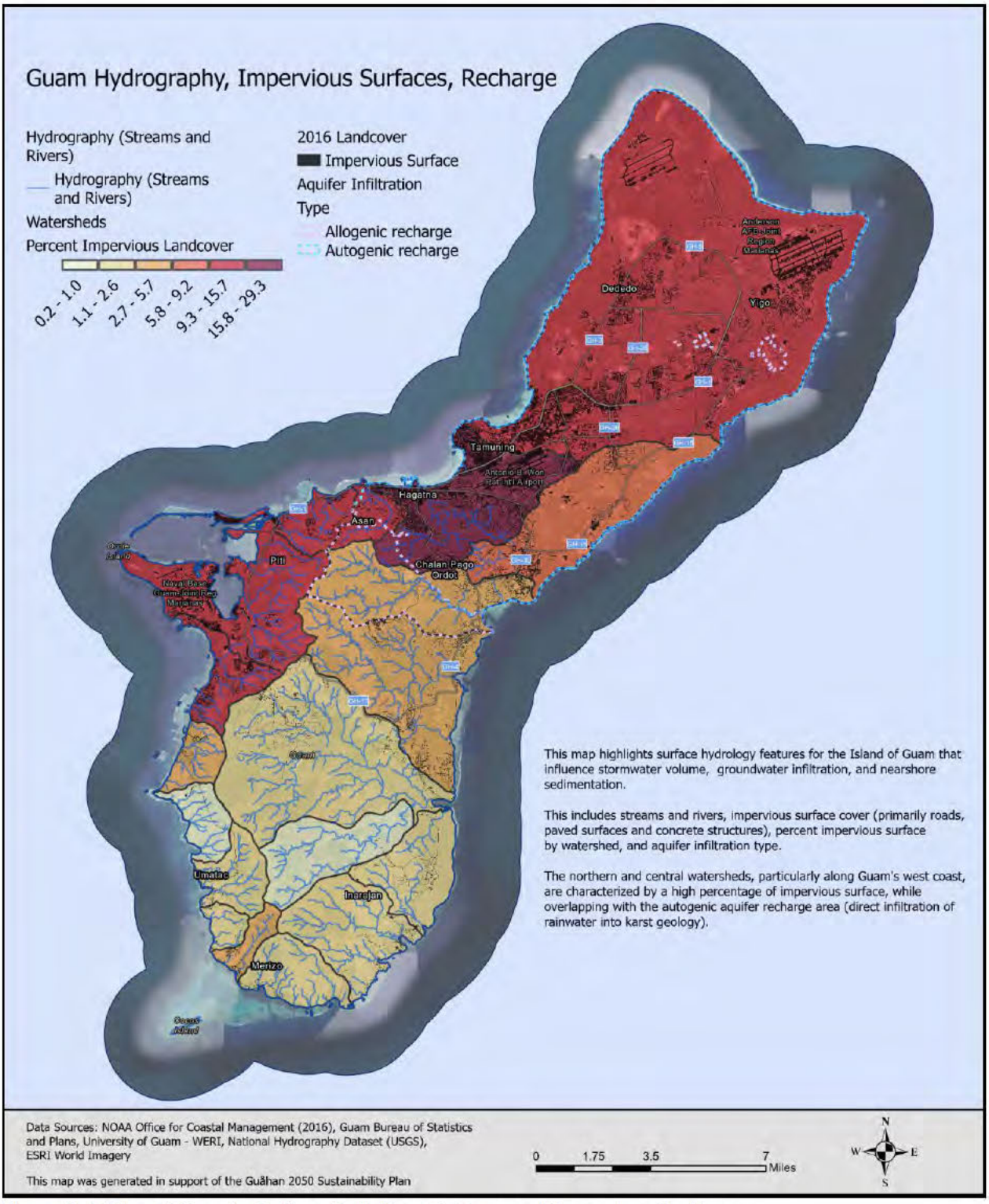

Figure 5-6. Map of Guam's Surface Hydrology Features and Impervious Surfaces.

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Land Use Planning Issues and Challenges in Guam Watershed Management

KEY ISSUES

Habitat Loss & Environmental Degradation

- Deforestation, wildfires, and invasive species are leading to loss of native forest and biodiversity.
- Coral reef degradation due to sedimentation, pollution, and climate stress weakens coastal protection.
- Nutrient loading from agricultural runoff and septic systems contributes to algal blooms and water quality deterioration.
- **Coastal & Inland Flooding Risks**
- Flash flooding from heavy rainfall affects life safety and property, especially in southern Guam.
- Riverine sedimentation, caused by erosion and runoff, exacerbates flooding risks and threatens marine habitats.
- Sea level rise and loss of natural coastal barriers (coral reefs and shoreline vegetation) increase shoreline erosion.
- **Land Use & Development Pressures**
- Unregulated development in flood-prone areas heightens vulnerability to flooding and infrastructure damage.
- Urban expansion in northern Guam threatens limited freshwater resources, increasing demand on the Northern Guam Lens Aquifer.
- Tourism development in Tumon Bay drives economic growth but poses risks to fragile marine ecosystems.

CHALLENGES IN SUSTAINABLE PLANNING

Balancing Conservation & Development

- Need for policies that protect ecological integrity while allowing economic growth.
- Zoning regulations required to prevent urban sprawl in sensitive watershed areas.

Resource Constraints & Enforcement Gaps

- Limited enforcement capacity for existing land use and conservation policies.
- Need for increased personnel for forestry management, wildland firefighting, and habitat restoration.

Interagency Coordination & Funding Needs

- Multi-agency efforts required for comprehensive watershed restoration, sustainable land use strategies, and achieving public buy-in.
- Lack of long-term funding for reforestation, sediment control, and infrastructure resilience.

PATH FORWARD

- Implement stricter **land use planning** and **zoning regulations** to mitigate urban expansion in high-risk areas.
- Enhance **watershed restoration** through reforestation, erosion control, and sustainable agriculture practices.
- Strengthen **coastal resilience** by protecting coral reefs and preventing shoreline degradation.
- Increase **interagency collaboration** and secure funding for long-term sustainability projects.

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5.3.3.2. Existing Water Quality Legal Requirements, Policies, and Best Management Practices for Guam

Guam's water quality is governed by a comprehensive framework of federal and local regulations aimed at protecting freshwater and coastal ecosystems from pollution. The Guam EPA, the Guam Department of Public Works, and the US EPA play key roles in regulating stormwater runoff from construction sites through Guam's Soil Erosion and Sediment Control Regulations (GAR Title 22, Chapters 10 & 45) and the Clean Water Act (CWA). Under the National Pollutant Discharge Elimination System (NPDES), permits are required for pollutant discharges into water bodies. While Guam has not been delegated authority to manage NPDES permits, the US EPA integrates both federal and local water quality requirements into its permitting process. Additionally, the 401 Water Quality Certification (WQC) ensures that federally permitted projects comply with Guam's Water Quality Standards, protecting both surface and groundwater resources.

To mitigate the impacts of stormwater runoff, Environmental Protection Plans (EPPs) are mandated for most construction activities, requiring developers to outline erosion control measures. The CNMI and Guam Stormwater Management Manual (2006) sets 11 erosion and sediment control (ESC) standards, including minimizing unnecessary clearing, protecting waterways with buffers, stabilizing disturbed soils within 14 days, and implementing advanced sediment settling controls. Construction projects must phase development to reduce soil exposure, schedule activities during the dry season when feasible, and ensure ESC measures are maintained throughout construction. Additionally, sediment control best management practices (BMPs) require perimeter controls to prevent sediment-laden runoff from reaching coastal and inland waters, as well as specialized protections for steep slopes, riparian corridors, and wetlands to reduce erosion and habitat degradation.

Post-construction, water quality management strategies focus on maintaining groundwater recharge rates and minimizing impervious surfaces, with a limit of 70% impervious cover for developments over 1 acre. Stormwater BMPs must be designed to remove at least 80% of total suspended solids (TSS) and match pre-development infiltration rates. Additional performance criteria apply to critical areas, including coral reefs, wellhead protection zones, and recreational beaches. Redevelopment projects must either reduce impervious cover by 40% or implement stormwater controls for the equivalent area. Industrial sites must comply with stormwater pollution prevention plans (SWPPPs), while hotspot land uses with high pollutant loads require specific BMPs and pretreatment before any runoff is discharged into groundwater or surface waters.

To enhance Guam's resilience to climate change and sea level rise, new stormwater outfalls should be minimized in favor of green infrastructure solutions such as bioretention systems and permeable pavements. Where outfalls are necessary, they must be designed to reduce coastal impacts and, where possible, consolidated with existing systems. Additionally, Guam's Water Pollution Control Act mandates that water bodies must meet both aesthetic and ecological

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standards, preventing the introduction of pollutants that cause excessive turbidity, toxicity, or undesirable aquatic growth.

These existing policies and best practices collectively ensure that Guam's freshwater and coastal ecosystems remain protected while allowing for sustainable development. They provide a strong basis for the G50SP policies presented following the next section. Together, they support integrated stormwater management for proposed development sites, as provided for in the 2006 Stormwater Management Manual for CNMI and Guam (Figure 5-7).

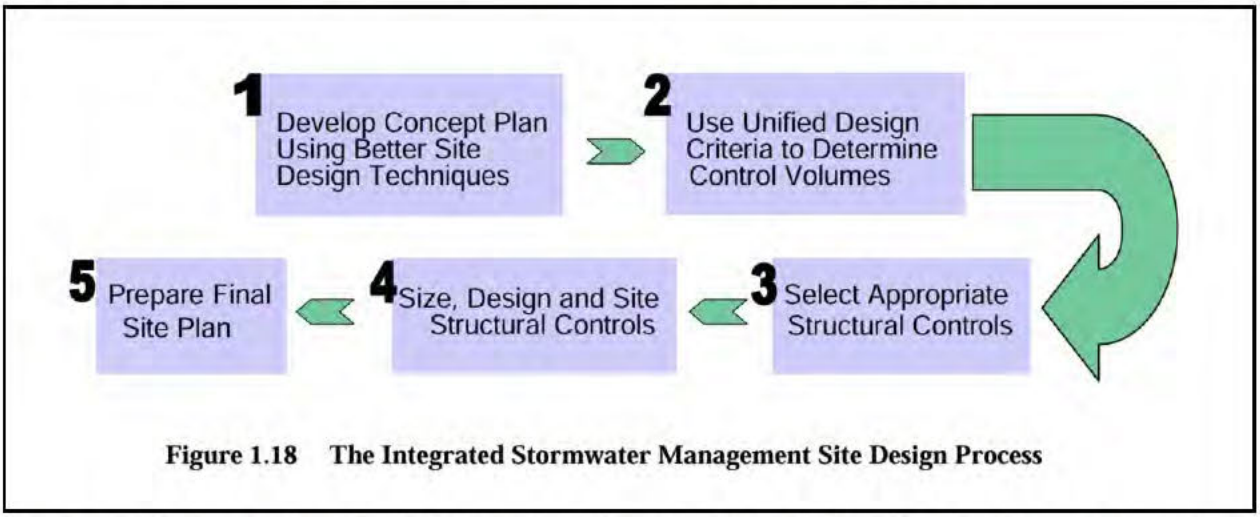

Figure 5-7. Stormwater Management for Proposed Development Sites (from CNMI and Guam Stormwater Management Manual).

5.3.4 Wetlands and Riparian Areas

Wetlands are unique transitional zones between aquatic and terrestrial areas that provide essential functions to maintain water quality, hydrology, and habitat functions for the island ecosystem and people of Guam. Wetlands are defined by the US Army Corps of Engineers as "*Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions*" (Environmental Laboratory 1987). These inundated or saturated areas not only retain water as it flows through the landscape, but they additionally work to cleanse the retained freshwater of pollutants and suspended sediment, directly affecting the quality of drinking water available to residents. On the southern portion of the island, many human-made freshwater wetlands were created historically for drinking water and crop irrigation, and some still function as drinking water reservoirs today (Wiles & Ritter 1993). Vegetation in wetlands can also act as important sources of food, medicine, and material to both humans and wildlife (W.B. Flores & Associates/Strategic Planning Group, Inc. 1994).

Wetlands provide important areas of refuge for fish and wildlife – particularly juvenile fish, an important resource ecologically and economically. Mangrove wetlands, present along the

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island's shoreline in some areas, are especially important for breeding grounds for economically valuable reef fish and habitat for juvenile fish (Wiles & Ritter 1993). Mangrove wetlands additionally provide significant inland protection from storm events and flooding. Their complex network of roots stabilizes shoreline soils and prevents erosion during periods of intense wave action. Mangroves also protect marine aquatic resources such as seagrass beds and coral reefs from the impacts of concentrated stormwater runoff from the island by filtering/trapping sediment and pollutants (W.B. Flores & Associates/Strategic Planning Group, Inc. 1994; Ellison 2008). Overall, wetlands play a crucial role in the water cycle of the island ecosystem and provide essential habitat for its fish and wildlife.

5.3.4.1. Wetlands in Guam

Guam boasts the Mariana Islands' most abundant and diverse wetlands, categorized into four primary types: freshwater swamps, freshwater marshes, estuarine/mangrove wetlands, and river valley floodplains (Wiles & Ritter 1993). Smaller areas also feature savannah and salt marshes (W.B. Flores & Associates/Strategic Planning Group, Inc. 1994).



Freshwater swamps, with their woody vegetation, are the most common, appearing at marsh and river valley edges and in isolated forested depressions. Freshwater marshes, largely grass and sedge-covered, range from under one to over 90 hectares. Estuarine wetlands, dominated by mangroves, are found along coastlines or in tidally influenced river valleys, with significant mangrove presence along the Malesso' shoreline, in Piti, and at the Atantano River mouth (Figure 5-6). River valley wetlands combine features of swamps and estuarine types, sustained by river flow and contained by topography. Wetlands are most concentrated in southern Guam, where abundant volcanic soils facilitate water collection and retention by slowing percolation. The USFWS National Wetlands Inventory (NWI), using 1975 aerial images, provides general wetland locations on the island (Figure 5-6).

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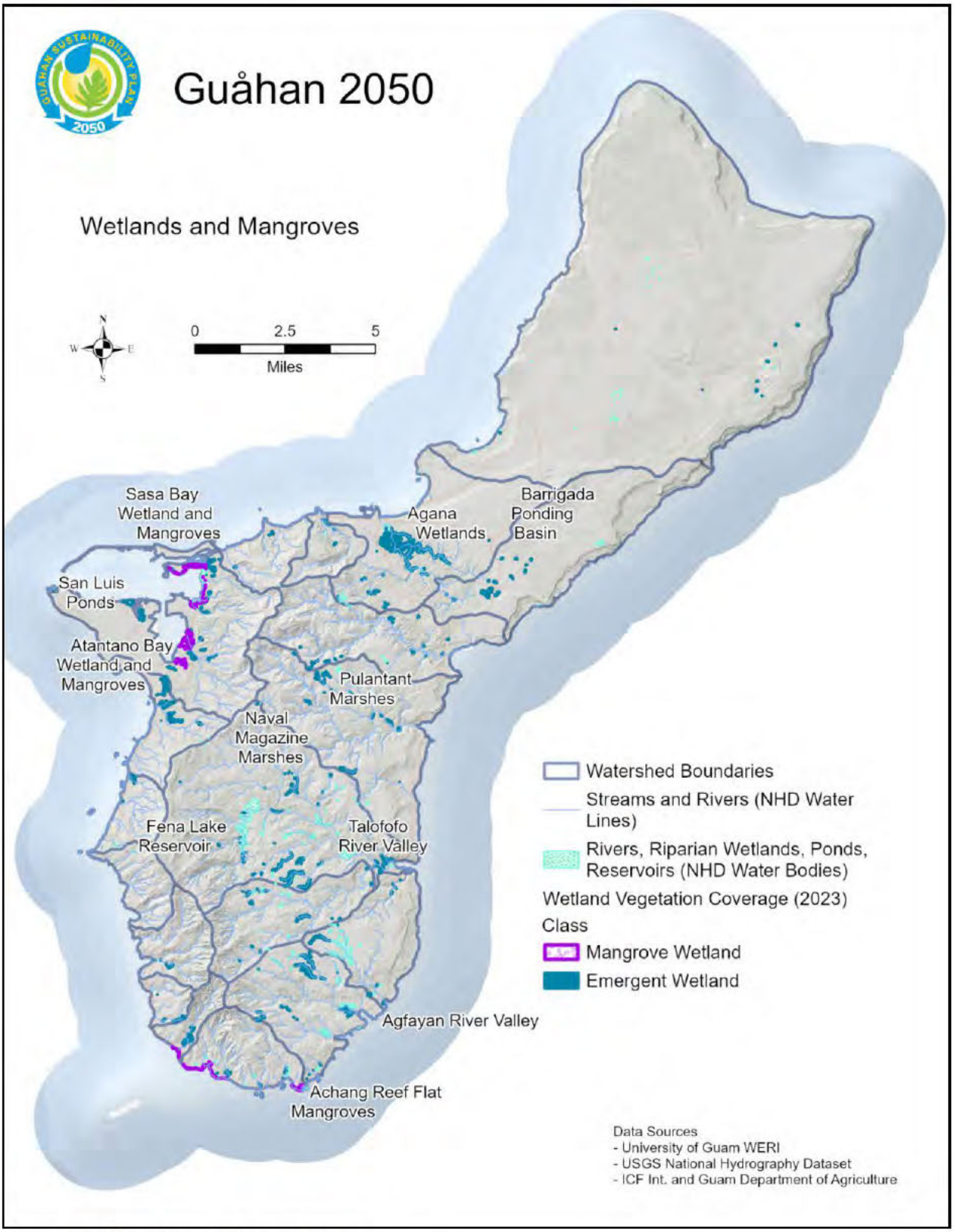

Figure 5-8. Map of Guam Wetlands by Type.

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5.3.4.2. Issues

Currently, some of the greatest issues wetlands face are the impacts of fill/dredge and polluted runoff. Due to the increase in land development over the last few decades, many wetlands have been entirely or partially filled or altered as a part of construction (Guam EPA, 2020; Wiles & Ritter 1993; W.B. Flores & Associates/Strategic Planning Group, Inc. 1994). Complete or partial fill of wetlands decreases the overall stormwater/flood storage of the area, resulting in a variety of issues including increased flood damage, increased surface water turbidity, loss of habitat, and degradation of water quality.

The increased volume of stormwater created by the loss of freshwater wetlands carries heavy loads of sediment, excess nutrients, organisms, and heavy metals downgradient across the landscape and eventually into marine waters. When this occurs, economically and ecologically valuable marine resources such as coral reefs and their associated biota are negatively impacted (Wiles & Ritter 1993; Ellison 2008). Polluted urban runoff entering fishing areas poses risks to human health as well. Guam EPA lists urban runoff as one of the top ten greatest threats to Guam's groundwater resources (Government of Guam 2009).

Loss of mangrove/estuarine wetlands is also negatively impacting water quality and shoreline erosion. The presence of mangrove forests along the shoreline increases resilience against strong winds and wave action, forces which may be increased over time by climate change (Ellison 2008).

5.3.4.3. Policy Recommendations

A rapid evaluation method for measuring wetland functions and categorizing overall value would be advantageous for determining protections during permit review. The three main functional categories suggested for analysis would be water quality, habitat, and hydrology (water volume). These functions should be evaluated not only at the site level, but also by how they affect the whole island to accurately reflect the overall value of the wetland to the community. Wetlands assigned higher functional categories should receive greater protection and have more substantial mitigation requirements when impacted.

Currently, compensatory mitigation requirements do not consider the overall value of a wetland, only that its area is equally replaced via creation elsewhere. Establishing wetland creation ratios that correspond with the functional categories would not only ensure no net loss of wetland area but also aim to achieve no net loss of wetland function by preventing and/or reducing temporal loss (Redmond 2000). Temporal loss of function refers to the lag time between the construction of a created wetland, and the time when that created wetland reaches an equal level of function to the impacted or filled wetland (National Research Council 2001). Higher replacement ratios are recommended for wetlands with higher functional value (up to 4:1), and lower ratios are recommended for wetlands with less functional value.

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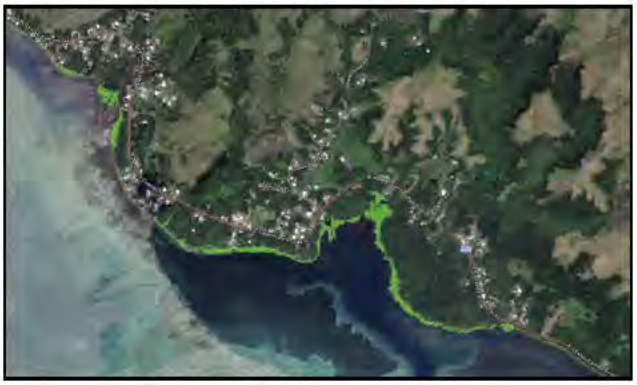
Another recommended protection is the regulation of vegetated buffers surrounding wetlands to protect wetland functionality. Regulating development within wetland buffers in conjunction with the establishment of wetland mitigation ratios will help to ensure no net loss of wetland functionality. Some of the ways vegetated buffers protect wetland functions are by infiltrating runoff, trapping sediment, providing a visual and auditory screen for wildlife, additional wildlife habitat, preventing erosion, and aiding in temperature regulation (Castelle et al. 1992 & Desbonnet et al. 1994).



It is recommended that the width of the required buffer corresponds with the functional category determined via the rapid evaluation method described at the beginning of this section. This way, buffer widths should be higher for higher functioning wetlands, and narrower for degraded wetlands. The minimum buffer width for adequate protection of most wetlands is 15 meters (45 feet) ranging up to 200 meters (600 feet) depending on the specific wetland type, condition, and functionality (Castelle et al. 1994). Per Desbonnet et al. 1994, a 100 meters (300 feet) wide buffer provides approximately 80 percent or greater removal of sediment/pollutants, generally good wildlife habitat, and potential to protect significant wildlife habitat. Mitigation for impacts to wetland buffers is recommended at a 1:1 ratio, however mitigation can also include enhancing the remaining buffer via planting or averaging the buffer width by relocating a portion of the protected buffer to another area along the contiguous buffer.

5.3.5. Watershed Protection and Sustainability

The policies of the G50SP reflect a strong commitment to sustainable land use planning and environmental protection, aligning closely with the United Nations Sustainable Development Goals (SDGs). These policies address key sustainability challenges related to water conservation, pollution control, climate resilience, and biodiversity protection, ensuring that economic and social development occur within the framework of environmental stewardship.



The policies support SDG 6 (Clean Water and Sanitation) by safeguarding watersheds, groundwater sources, and water quality for human consumption and ecological balance. Regulations on wastewater discharges, wellhead protection, and aquifer preservation help

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maintain clean drinking water and healthy aquatic ecosystems. The emphasis on stormwater management, sediment control, and pollution prevention ensures that water bodies remain free from contamination, directly addressing targets 6.3 (water quality improvement) and 6.6 (protection of water-related ecosystems).

Additionally, the integration of green infrastructure, low-impact development (LID), and best management practices (BMPs) contributes to SDG 11 (Sustainable Cities and Communities) by enhancing urban resilience to climate change and reducing environmental degradation. Provisions that limit impervious surfaces, protect riparian buffers, and restore wetlands help prevent flooding and promote natural water retention, ensuring that development supports long-term sustainability. These measures also align with SDG 13 (Climate Action) by incorporating climate adaptation strategies such as updated precipitation models, hydromodification measures, and habitat restoration to mitigate the effects of extreme weather events.

The policies also reinforce SDG 14 (Life Below Water) by minimizing pollution runoff into marine environments, protecting coral reefs, and ensuring coastal water quality remains high for both human use and biodiversity conservation. The prevention of point and non-point source discharges, limits on industrial waste disposal, and requirements for stormwater treatment contribute to SDG 14.1 (reducing marine pollution) and 14.2 (sustainable management of marine and coastal ecosystems).

Lastly, these policies align with SDG 15 (Life on Land) by emphasizing the protection and restoration of wetlands, riparian areas, and terrestrial habitats that support biodiversity and ecosystem services. Provisions that restrict development on steep slopes, regulate land clearing, and require habitat restoration for unavoidable environmental impacts contribute to SDG 15.1 (conservation of freshwater and terrestrial ecosystems) and 15.3 (combating land degradation). The no net loss policy for wetlands and required mitigation for riparian corridor disturbances further demonstrates a commitment to ecological preservation.

Overall, the policies below establish a comprehensive framework for sustainable land and water resource management, ensuring that development is balanced with environmental protection. By addressing water quality, climate resilience, habitat conservation, and responsible land use, they support multiple SDGs while promoting a future where economic growth and ecological integrity coexist.

5.3.6. Watershed Protection Land Use Plan Policies

Groundwater Protection

TE-31. Water Quality (CZM).

Safe drinking water shall be assured, and aquatic recreation sites shall be protected through the regulation of uses and discharges that pose a pollution threat to Guam's waters, particularly in estuarine, reef and aquifer areas.

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TE-32. General Water Quality Protection Policy.

Development shall:

a. Conserve, protect, maintain, and improve the quality of Guam's waters for human consumption (drinking, fish and shellfish harvesting and food processing); for the growth and propagation of aquatic life; for marine research; for the preservation of coral reefs and wilderness areas; and for domestic, agricultural, commercial, industrial, recreational and other legitimate uses;

b. Provide that no pollutant is discharged into any of Guam's waters, unless: (A) the discharge first receives processing/treatment to remove all harmful or hazardous products, or provides the control technology necessary to protect the designated beneficial uses of waters; (B) the discharge meets the effluent limitations established for that discharge; and (C) best management practices are applied as necessary;

c. Provide for the prevention, abatement and control of new and existing water pollution sources;

d. Maintain and improve the chemical, physical and biological integrity of the waters of Guam as necessary to meet Clean Water Act Section 101(a);

e. Provide protection from point or non-point source discharges to wetlands in the same way as other surface waters;

f. Provide protection from point and non-point discharges, including discharges from ponding basins and sinkholes to groundwater in the same way as surface waters; and

g. Eliminate all point source discharges to certain near-shore waters.

TE-33. Requirement to Protect the Northern Guam Lens Aquifer (NGLA).

Development within the Groundwater Protection Zone (GPZ), as delineated and regulated by the Guam Environmental Protection Agency (GEPA), shall protect and enhance the Northern Guam Lens Aquifer to the maximum extent feasible.

TE-34. Wastewater Discharges.

Development over the NGLA shall connect to the public wastewater system whenever feasible. Development using private wastewater systems shall comply with all applicable GEPA policies and regulations.

TE-35. Wellhead Protection.

Development shall avoid and protect wellhead protection zones, consistent with GEPA requirements.

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TE-36. Additional Requirements in the GPZ.

Unless specifically modified by other provisions of this plan, the following additional development restrictions shall apply in the GPZ and over the Northern Guam Lens Aquifer:

a. Industrial development should not occur without adequate public sewer infrastructure;

b. High density residential development, more than one (1) dwelling per one-half (1/2) acre, should not occur without adequate public sewer service;

c. Individual wastewater disposal systems and ponding basins and similar point source waste or storm water disposal works should not be permitted within a Wellhead Protection Zone; and

d. As practical, storm water disposal systems should be designed and operated to terminate in close proximity to, or within project property boundaries, to facilitate groundwater recharge.

Polluted Runoff Control

TE-37. Water Quality Criteria.

The waters of Guam shall meet all applicable GEPA water quality regulations and meet generally accepted aesthetic qualifications, be capable of supporting desirable aquatic life, and be free from substances, conditions or combinations thereof attributable to domestic, commercial and industrial discharges or agricultural, construction and land-use practices or other human activities that: (1) cause visible floating materials, debris, oils, grease, scum, foam, or other floating matter which degrades water quality or use; (2) produce visible turbidity, settle to form deposits or otherwise adversely affect aquatic life; (3) produce objectionable color, odor or taste, directly or by chemical or biological action; (4) injure or are toxic or harmful to humans, animals, plants or aquatic life; or (5) induce the growth of undesirable aquatic life.

TE-38. Development Discharges and Best Management Practices.

All point and nonpoint source discharges from development shall comply with GEPA water quality requirements. Construction and post-construction best management practices shall be required, consistent with the GEPA requirements and the CNMI and Guam Stormwater Management Manual and supplemental materials as applicable. All stormwater runoff generated from new development shall be adequately treated prior to discharging into jurisdictional wetlands or inland and coastal waters of Guam. Update the Stormwater Management Manual to incorporate state-of-the art drainage BMPs and implementation practices.

TE-39. Green Infrastructure.

Promote and prioritize the use of Low Impact Development (LID) strategies, Best Management Practices (BMPs), and on-site infiltration to create green infrastructure for

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treating and reducing stormwater runoff. Use green infrastructure projects for natural restoration purposes and provision of buffer areas to allow for natural erosion, evolution of natural drainage flows, and sediment transport balance.

TE-40. Hydrology and Water Quality Restoration.

Encourage and implement opportunities to restore wetlands, riparian corridors, and other habitats that provide stormwater retention and storage, carbon sequestration, remediation for degraded water quality, and groundwater recharge. Support and prioritize restoration projects that provide multiple benefits to coastal resources and improve ecosystem functionality and resiliency.

TE-41. Habitat Protection from Runoff.

In areas in or adjacent to sensitive habitats, plan, site, and design development to prevent significant disruption of habitat values from the discharge of stormwater or dry-weather runoff flows. Stormwater discharges to critical areas with sensitive resources (e.g., coral reefs, swimming beaches, wellhead protection areas, designated sensitive ecosystems) will be subject to additional performance criteria, and will need to use or restrict certain BMPs.

TE-42. Stormwater Management.

Reduce impacts from erosion and water quality degradation by managing development project runoff stormwater discharge rates and implementing hydromodification management measures. Update storm event standards and precipitation models with best available science on climate change as necessary.

TE-43. Sitting and Design.

Site and design development consistent with recommended practices of the CNMI Guam Stormwater Management Manual as applicable, including to achieve (1) preservation of natural features and conservation design;(2) reduction of impervious cover; and (3) utilization of natural features and source control for stormwater management. Avoid adverse impacts to coastal waters by incorporating measures designed to achieve the following:

a. Protect, restore, and enhance areas that provide important water quality benefits, areas necessary to maintain riparian and aquatic biota and/or that are susceptible to erosion and sediment loss;

b. Limit increases of impervious surfaces, especially impervious surfaces directly connected to the storm drain system;

c. Minimize the transport of pollutants from development into runoff and coastal waters;

d. Limit land disturbance activities such as clearing and grading, and cut-and-fill to reduce erosion and sediment loss; and

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e. Preserve, restore, and enhance natural watercourses and vegetation.

TE-44. Land Division Design.

All land divisions shall be designed such that the location of and grading required for building pads and access roads minimizes erosion and sedimentation. Ensure that new subdivisions are sized and designed to provide adequate space for necessary runoff and drainage controls. Prohibit land divisions that would result in building pads, access roads, or driveways located on slopes over 30 percent, or result in grading on slopes over 30 percent.

TE-45. Steep Slopes.

Steep slopes shall be protected from erosion by avoiding development on steep slope areas and minimizing grading and flattening of hills and ridges. Development shall be limited in areas of 15% or greater slope and limiting clearing of these areas or, where grading is unavoidable, by providing special techniques to prevent upland runoff from flowing down a steep slope and through immediate stabilization to prevent gullying. A steep slope is defined as any slope over 15% (6.67:1) in grade over a length of 50 feet.

TE-46. Construction Best Management Practices (BMPs).

To prevent adverse impacts from construction site runoff, general performance standards for construction stormwater treatment (designated as erosion and sediment control standards or E&SC Standards) for all new development and redevelopment construction sites are described in the CNMI Guam Stormwater Management Manual, Volume 1, Chapter 2. The performance criteria shall be applied to the maximum extent practicable. Require new development proposals as appropriate to include construction phase erosion control and polluted runoff control plans. These plans shall specify BMPs that will be implemented to minimize erosion and sedimentation, provide adequate sanitary and waste disposal facilities and prevent contamination of runoff by construction chemicals and materials. Minimize unnecessary clearing and grading from all construction sites. Clearing and grading shall only be performed within areas needed to build the project, including structures, utilities, roads, recreational amenities, post-construction stormwater management facilities, and related infrastructure. Clearing should only be scheduled during the dry season if possible. Mass clearing during the wet season should be avoided.

TE-47. Drainage and Runoff Control Plans.

Require new development proposals to include post-construction phase drainage and polluted runoff control plans. Such plans shall: a) Specify site design, source control and treatment control BMPs that will be implemented to minimize post-construction polluted runoff, and shall include the monitoring and maintenance plans for these BMPs; b) Ensure that post-construction structural BMPs (or suites of BMPs) are designed and sized to treat, infiltrate, or filter the amount of stormwater runoff as specified in the CNMI and Guam Stormwater Management Manual and applicable updates; c) Ensure

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dry weather runoff does not exceed the pre-development baseline flow rate to receiving water bodies; d) Complement and utilize existing drainage patterns and systems where they are in proper functioning condition, conveying drainage from the developed area of the site in a non-erosive manner that avoids downstream cumulative impacts; and e) Restore disturbed or degraded natural drainage systems where feasible, except where there are geologic or public safety concerns.

TE-48. Minimize Impervious Surface.

Site designers shall strive to reduce the generation of stormwater runoff and utilize pervious areas for stormwater treatment. For development sites over 1-acre, impervious cover shall not exceed 70% of the total site area. Impervious areas are hard surfaces that prevent water infiltrating into the ground and include paved and coral surfaces such as roads, driveways, parking lots, and yards, as well as rooftops.

TE-49. BMP Maintenance.

Require structural BMPs to be inspected, cleaned, and repaired as necessary to ensure proper functioning for the life of the development.

TE-50. Erosion from Infrastructure.

Ensure that new infrastructure such as roads, bridges, and culverts shall not cause or contribute to watercourse or hillside erosion, or watercourse or wetland siltation and shall include BMPs to minimize impacts to water quality, including construction phase erosion and pollution runoff control plans, and soil stabilization practices. Where space is available, dispersal of sheet flow from roads into vegetated areas or other on-site infiltration practices shall be incorporated into road and bridge design.

TE-51. Construction Timing and Phasing.

Construction should be scheduled to minimize soil exposure in the rainy season (July 1st–Nov. 30th) and during periods of coral spawning. Whenever practicable and feasible, construction shall be phased to limit disturbance to only one area of active construction at a time. Future phases shall not be disturbed until construction of prior phases is complete, and the land area is stabilized. Disturbed areas shall be stabilized as soon as feasible after construction is completed within a designated construction area, and in no case longer than 14 days after completion of active construction.

TE-52. Sediment Control.

Erosion and sediment control practices shall be aggressively maintained throughout all phases of construction. All erosion and sediment control plans shall have an enforceable operation and maintenance agreement to ensure that practices are maintained during the construction process. Perimeter sediment controls shall be applied to retain or filter concentrated runoff from disturbed areas to trap or retain sediment before it leaves a construction site. Upland runoff should be diverted around excavations where possible. Sediment trapping and settling devices shall be employed to trap and/or retain suspended sediments and allow time for them to settle out in cases

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where perimeter sediment controls (e.g., silt fence) are deemed to be ineffective in trapping suspended sediments on-site.

TE-53. Site Management Training.

All construction site managers (or superintendents) shall provide documentation that they have received adequate training in the application and maintenance of erosion and sediment control practices. All construction site managers must participate in a pre-construction meeting with the applicable authority to review the provisions of the erosion and sediment control plan and make any field adjustment necessary to implement the intent of the plan to minimize erosion and maximize sediment retention on-site throughout the construction process.

TE-54. Groundwater Recharge.

Pre-development of annual groundwater recharge rates and runoff rates to coastal waters shall be maintained by promoting infiltration through the use of structural and non-structural methods.

TE-55. Post Development Standards.

For new development, structural stormwater best management practices (BMPs) shall be designed to remove 80% of the average annual post development total suspended solids (TSS) load and match or exceed pre development infiltration rates, as possible. It is presumed that a BMP complies with this performance standard if it is: 1. sized to capture the prescribed water quality volume (WQv), 2. designed to match or exceed pre-development infiltration rates, 3. designed according to the specific performance criteria outlined in this Design Manual, 4. constructed properly, and 5. maintained regularly. The post-development peak discharge rate frequency shall not exceed the pre-development peak discharge rate for the 25-year frequency storm event.

TE-56. Redevelopment Standards.

Redevelopment projects are governed by special stormwater sizing criteria depending on the amount of increase or decrease in impervious areas created by the redevelopment. Redevelopment projects that reduce impervious cover (from existing conditions) by at least 40% are deemed to meet both the recharge and water quality requirements. Where site conditions prevent the reduction in impervious cover, stormwater management practices shall be implemented to provide stormwater controls for at least 40% of the site's impervious area. When a combination of impervious area reduction and stormwater management practice implementation is used for redevelopment projects, the combination of impervious area reduction and the area controlled by a stormwater management practice shall equal or exceed 40%.

TE-57. Infill Development.

Infill development project stormwater management requirements will be the same as other new development projects except that requirements may be met either on-site or at an approved off-site location and the 70% impervious cover requirement may be

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waived. The applicant must also demonstrate that there are no downstream drainage or flooding impacts because of not providing on-site management. The intent of this provision is to allow flexibility to meet the goals of improved water quality and channel protection to receiving waters while still promoting infill development.

TE-58. Industrial Sites.

Certain industrial sites are required to prepare and implement a stormwater pollution prevention plan. All sites with disturbance over 1.0 acre are required to prepare and implement a SWPPP in accordance with the NPDES Phase II Stormwater Program.

TE-59. Hotspot Controls.

Stormwater discharges from land uses or activities with higher potential pollutant loadings, defined as hotspots, are required to use specific structural BMPs and pollution prevention practices. In addition, stormwater from a hotspot land use may not be recharged to groundwater without pretreatment of 100% of the water quality volume (WQv) or the recharge volume (Rev), whichever is greater.

TE-60. New Stormwater Outfalls.

Prioritize the use of green infrastructure instead of new stormwater outfalls when feasible. Otherwise ensure that new stormwater outfalls are sited and designed to minimize impacts from sea level rise and to coastal resources. Consolidate new and existing outfalls where appropriate.

TE-61. Oil and Hazardous Substance Spills.

Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.

Rivers and Streams

TE-62. Protection of Riparian Areas.

Channelization, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible and be limited to (1) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat. Any alterations permitted for one of these three purposes shall: adhere to the performance standards listed for permitted uses within riparian corridors in Policy TE-66; minimize adverse impacts to coastal resources, including the depletion of groundwater and changes in water flow speed and volume; and include maximum feasible mitigation measures to mitigate unavoidable impacts. Green infrastructure shall be preferred for flood protection, erosion, and

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sedimentation control over “hard” solutions such as concrete or riprap channels. Any permitted watercourse alterations shall include BMPs for hydromodification activities.

TE-63. Riparian Buffer Requirements.

Development shall be setback at least 100 feet from rivers, streams, and other riparian drainages. Buffers may be reduced to 50 feet, or increased, if supported by a technical assessment and buffer study justifying the reduced or increased buffer. Buffers shall provide natural stream flows for the life of the development, without the need for bank stabilization or other erosion control.

TE-64. Riparian Impact Mitigation.

Development projects with unavoidable impacts to riparian areas shall incorporate best available feasible mitigations, including offsite restoration at a 2:1 ratio. Protection of existing functional riparian areas is not an acceptable mitigation.

TE-65. Riparian Corridors Definition.

Riparian corridors are defined on the ground by an association of native, and in some cases non-native, plant and animal species within or adjacent to a watercourse that contribute to the function or distinction of the riparian habitat. Boundaries of riparian corridors are determined by the limit of riparian vegetation or top of bank, or other confining topography, whichever is greater. The limit of riparian vegetation is determined by the drip line of riparian canopy trees or the limit of riparian shrubs or herbaceous vegetation.

TE-66. Permitted Uses in Riparian Corridors.

Permit only the following uses within riparian corridors:

a. Education and research activities;

b. Fishing for consumptive uses;

c. Habitat restoration and fish and wildlife management activities; and

d. Necessary water supply projects.

Where no feasible alternative exists, permit the following uses:

e. Stream-dependent aquaculture, provided that any non-stream-dependent facilities are located outside of the corridor;

f. Flood, sedimentation, or erosion control projects where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development;

g. Bridges providing an important public transportation or resource- dependent function where supports do not significantly impact the riparian corridor or its resources, such as free-span designs;

h. Pipelines and stormwater runoff facilities;

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i. Repair, maintenance, or incidental improvement of roadways or road crossings that do not increase the capacity of the roadway;

j. Existing agricultural uses; and

k. New agricultural uses, including agricultural irrigation conveyance systems, provided no riparian vegetation is removed, and no soil, nutrients, waste, or other material is allowed to enter stream channels.

TE-67. Standards in Riparian Corridors.

Require new development permitted in riparian corridors to adhere to the following standards:

a. Minimize removal of native vegetation;

b. Minimize land exposure during construction and use temporary vegetation or mulching to protect critical areas;

c. Minimize erosion, sedimentation, and runoff by appropriately grading and replanting modified areas with native species;

d. Use only native plant species when replanting, and monitor replanted species and replace as necessary to ensure establishment;

e. Provide sufficient upstream and downstream habitat conditions for native fish as may be specified by Guam Department of Agriculture and the National Marine Fisheries Service;

f. Minimize adverse effects of wastewater discharges and entrainment;

g. Prevent depletion of groundwater supplies and substantial interference with surface and subsurface water flows;

h. Encourage wastewater reclamation;

i. Maintain natural vegetation buffer areas that protect riparian habitats;

j. Minimize alteration of natural streams;

k. Conform with Plan policies for minimizing risks and avoiding contribution to flood and erosion hazards;

l. Maintain hydrologic function and sediment transport function of drainages; and

m. Provide mitigation and long-term monitoring and reporting for any adverse impacts incurred upstream or downstream as a result of permitted development.

Wetlands

TE-68. Protection of Wetlands.

Development shall avoid wetland areas to the maximum extent practicable to preserve their ecological functions and values.

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TE-69. Wetland Definition.

Wetlands are areas inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs and similar areas.

TE-70. Delineation.

Development on parcels containing wetlands shall delineate their full extent according to established procedures of GEPA. The USFWS National Wetland Inventory Map shall constitute rebuttable evidence, though not exclusively, of the presence of wetlands and shall, in addition to the policies of this plan, be used by all Government of Guam agencies as applicable.

TE-71. Prohibition of Development in Wetlands.

Filling or development within wetlands is limited to the following uses where there is no feasible less- environmentally-damaging alternative and where feasible mitigation measures have been provided to minimize adverse environmental effects:

a. New or expanded port, energy, and coastal-dependent industrial facilities, including any needed fishing facilities.

b. Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.

c. In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.

d. Incidental public service purposes, including, but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.

e. Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.

f. Restoration purposes.

g. Nature study, aquaculture, or similar resource-dependent activities.

TE-72. Wetland Rating System.

Wetlands shall be classified as necessary based on their ecological significance, functions and values, consistent with GEPA regulations.

TE-73. Wetland Buffer Requirements.

Development shall be setback at least 100 feet from delineated wetlands. Buffers may be reduced to 25 feet for lower value wetlands or increased for higher values, if

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supported by a technical wetlands buffer study justifying the reduced or increased buffer.

TE-74. No Net Loss – Wetland Impact Mitigation.
Development projects with unavoidable impacts to wetlands shall assure no net loss of wetlands. Acceptable mitigation includes construction of a wetland designed to replace the wetland functions destroyed, altered or impaired, and restoration or enhancement of an existing degraded wetland. Direct impacts shall be mitigated at 4:1 ratio for wetland creation and 8:1 for restoration or enhancement of existing degraded wetlands. Protection of an existing functional wetland is not acceptable mitigation for destruction of a wetland, however, as part of a mitigation plan, certification conditions may require protection of on-site wetlands through establishment of deed restrictions or easements. Mitigation conditions may also require long-term biological monitoring. The feasibility and general acceptability of a given investigation scheme cannot be used to justify permitted alterations.

TE-75. Additional Mitigation, Restoration Measures, and Incentives.
Additional mitigation or restoration measures as recommended by a qualified biologist shall be required for any permitted activities within wetlands or their buffers. The Bureau of Statistics and Plans, in coordination with Guam EPA, shall consider and develop feasible landowner incentive programs to protect wetlands, such as conservation easements and carbon credits.

5.4. Sensitive Habitats and Species

Guam's terrestrial habitats are vital to the island's ecological health, cultural identity, and economic stability. The island's limestone forests, savannas, wetlands, and coastal environments support a diverse array of native and endemic species, many of which are threatened by habitat loss, invasive species, and climate change. These natural landscapes not only provide essential ecosystem services—such as clean air and water, soil stabilization, and carbon sequestration—but also serve as critical wildlife habitats and hold deep significance in the island's Chamorro heritage. Community input gathered through the Guahan 2050 Community Workshops and interviews have emphasized the value of these ecosystems; mayors and residents across Guam have expressed that important environmental assets in their villages include coral reefs, mangroves, and freshwater rivers among others–vital systems that support biodiversity, fisheries, cultural practices, and climate resilience. However, increasing development pressures and environmental challenges necessitate a comprehensive and integrated approach to land use planning that prioritizes conservation while supporting responsible growth, drawing upon scientific data, local knowledge, and cultural values.

The Guåhan 2050 Sustainability Land Use Plan aligns with the United Nations Sustainable Development Goals (SDGs) by integrating habitat protection into broader sustainability and resilience strategies. In particular, SDG 15 (Life on Land) calls for the preservation of

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biodiversity and sustainable management of forests, while SDG 13 (Climate Action) emphasizes the need for proactive environmental policies that address the effects of climate change. Recognizing the importance of these global priorities, Guam's terrestrial habitat policies presented at the end of this section are designed to prevent habitat degradation, restore critical ecosystems, and promote sustainable land use practices. Through conservation designations, habitat overlay zones, and mitigation strategies, the plan ensures that sensitive environments are protected while allowing for balanced development that meets the needs of Guam's growing population. The following discussion and policies outline a path forward, safeguarding Guam's terrestrial habitats for future generations while fostering a sustainable and resilient island community.

5.4.1. Guam's Terrestrial Ecology

Guam's terrestrial vegetation is an essential component of the island's ecological integrity, cultural heritage, and environmental resilience. The vegetation across the island varies significantly, from dense primary limestone forests to open savannas, wetlands, and coastal strand ecosystems, each supporting unique flora and fauna. The composition and distribution of these vegetation types have been shaped by natural factors such as climate, soil composition, and topography, as well as human activities including land clearing, agriculture, urban development, and the introduction of non-native species. Understanding the characteristics and ecological functions of these plant communities is critical for effective conservation, habitat restoration, and sustainable land-use planning.

Scientific studies of Guam's vegetation date back to Fosberg (1960), with subsequent updates from Stone (1970) and Mueller-Dombois and Fosberg (1998), which collectively document the island's rich biodiversity, including a high rate of plant endemism—approximately 21% of native vascular plants are endemic to the Mariana Islands. A forest inventory by Donnegan et al. (2004) estimated that about 48% of the island remains forested, comprising 44,404 acres (17,970 hectares) of limestone forest, primarily in northern Guam, and 19,129 acres (7,741 hectares) of volcanic forest, mostly in the south. Other vegetation types include 44,455 acres (17,991 hectares) of savanna and 23,956 acres (9,695 hectares) of urban land.

The following sections describe the major vegetation communities found on Guam, their defining characteristics, and their ecological significance. Figure 5-1 shows the most recently mapped distribution of specific vegetation communities and ecosystem types on the island (ICF and Guam Department of Agriculture 2023). Figure 5-2 shows the relative acreage of each.

Primary Limestone Forest

Primary limestone forest is a relatively undisturbed plant community dominated by native species, never having been completely cleared. These forests are among the most floristically diverse habitats on Guam, supporting a range of native and endemic plants adapted to the shallow, well-drained limestone soils. Structurally, the primary limestone forest has a stratified

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canopy with distinct vegetation layers, including large canopy trees, mid-sized understory trees, shrubs, ferns, herbaceous plants, and a leaf litter layer. The canopy can reach heights of 30–45 feet (9–14 meters). Dominant tree species include Artocarpus, Ficus, Mammea, Cordia, Merrilliodendron, Pandanus, Aglaia, Neisosperma, Premna, Tristiropsis, and Elaeocarpus. The understory is composed of species such as pai pai (*Guamia mariannae*), micronesica (*Cycas circinalis*), Indian mulberry, and limeberry. This ecosystem is essential for biodiversity conservation, providing habitat for many native species.

Disturbed Limestone Forest

Disturbed limestone forest, sometimes referred to as degraded or secondary limestone forest, is a successional stage following human-induced disturbances such as land clearing and urban development. Unlike primary limestone forest, these areas lack large native canopy trees and are instead dominated by shorter, fast-growing species, many of which are non-native. The canopy, often open, allows more sunlight to penetrate, promoting the growth of invasive plant species. Common species found in disturbed limestone forests include tangantangan (*Leucaena leucocephala*), limeberry (*Triphasia trifolia*), papaya (*Carica papaya*), and African tulip tree (*Spathodea campanulata*). These forests have lower biodiversity value but can serve as transitional habitats in ecological restoration efforts.

Halophytic/Xerophytic Scrub

This unique plant community is found on limestone terraces and cliff edges, where vegetation is exposed to strong winds, salt spray, and dry conditions. Species in this habitat are highly adapted to harsh environmental factors, leading to stunted, wind-pruned growth. The plant community varies in complexity, with some areas supporting a rich diversity of species, while others are more sparsely vegetated. Common species include nigas (*Pemphis acidula*), chopak (*Mammea odorata*), hunik (*Tournefortia argentea*), lodugao (*Clerodendrum inerme*), pago (*Hibiscus tiliaceus*), and gasoso (*Colubrina asiatica*). These plants provide critical erosion control and serve as protective buffers for coastal ecosystems.

Shrub/Grasslands (Scrub Forest)

Scrub forests are secondary growth forests that have resulted from long-term human disturbance, often occurring on argillaceous limestone soils. These communities contain a mix of native and non-native species, with a canopy that reaches up to 10 meters. Although degraded, scrub forests still provide habitat for a variety of species and play a role in the ecological transition back to more mature forest types. In northern Guam, scrub habitats are often dominated by vitex (*Vitex parviflora*), which sheds its canopy during the dry season, creating conditions favorable for invasive grasses and other non-native species.

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Tangantangan Forest

This plant community is dominated by the introduced small tree, tangantangan (*Leucaena leucocephala*), which forms dense stands that prevent the establishment of an understory. These forests are often found in areas previously cleared for agriculture or development. While tangantangan forests provide some ecosystem benefits, such as soil stabilization, their low biodiversity and dominance by a single species make them less ecologically valuable than native forests.

Strand Vegetation

Strand plant communities occur along Guam's coastlines, particularly within Naval Base Guam and the Naval Computer and Telecommunications Station (NCTS Finegayan). These communities are adapted to sandy, well-drained soils and frequent saltwater exposure. Common overstory species include coconut (*Cocos nucifera*), ironwood (*Casuarina equisetifolia*), and da'ok (*Calophyllum inophyllum*). Shrubs such as *Tournefortia argentea* and *Hibiscus tiliaceus* are also found here. These habitats provide crucial stabilization for coastal dunes and serve as a buffer against storm surges.

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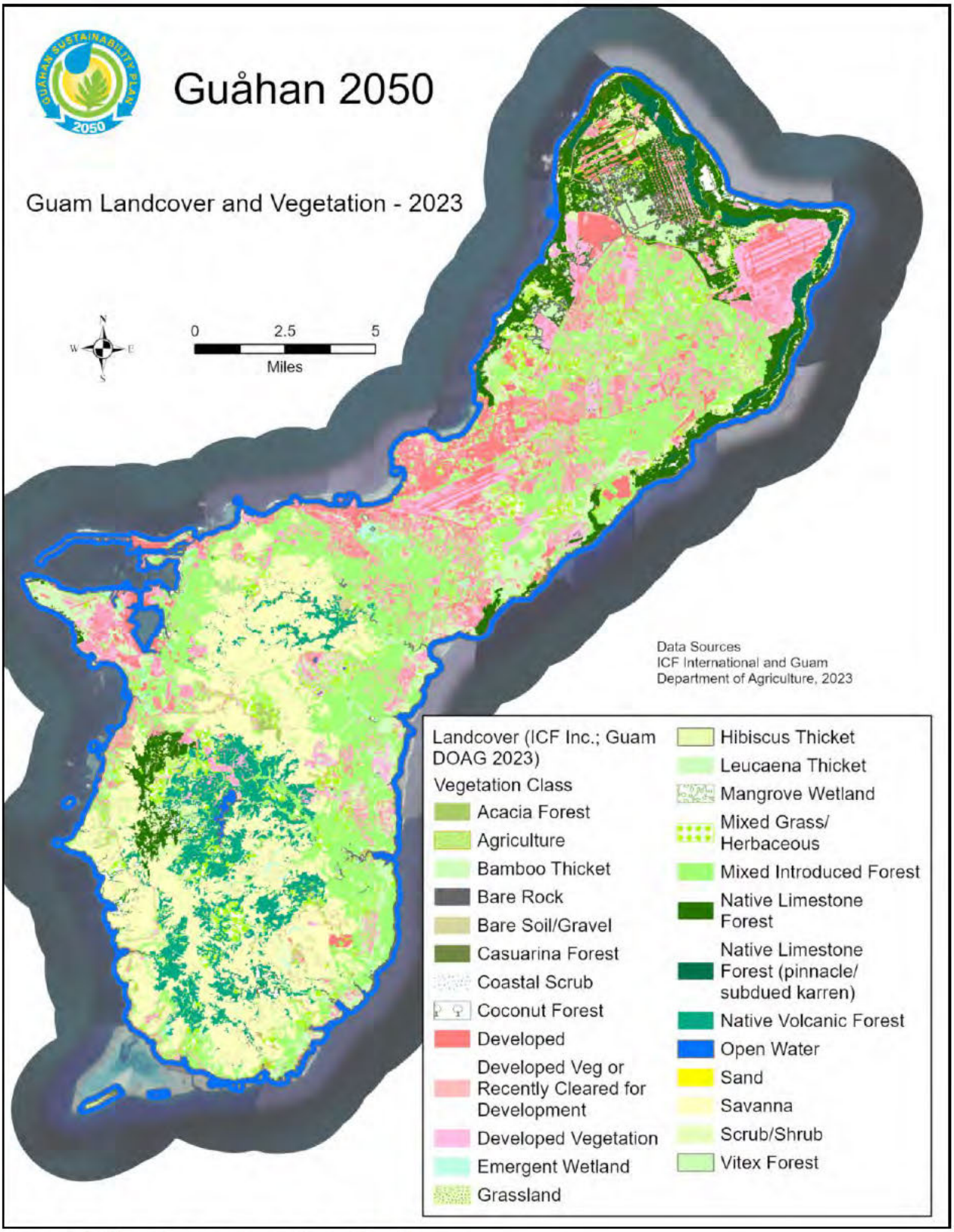

Figure 5-9. Map of Guam Vegetation and Landcover.

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Ravine Forest

Ravine forests are located in valleys and along riverbanks, primarily in southern Guam. These forests are often found on volcanic soils and vary widely in plant composition based on soil moisture levels. Common species include hibiscus, pandanus, fig, chosga (*Glochidion mariannensis*), and breadfruit. Due to their proximity to freshwater, ravine forests support a mix of native and cultivated species. Disturbed ravine forests are similar to disturbed limestone forests, often dominated by non-native species and exhibiting a more open canopy.

Coconut Grove

Coconut groves are planted landscapes that occur within limestone, ravine, and strand communities. These groves consist primarily of *Cocos nucifera* and may be associated with other introduced species.

Casuarina Forest

Casuarina forests, dominated by ironwood (*Casuarina equisetifolia*), thrive in dry, exposed areas. These trees are highly tolerant of salty and nutrient-poor soils, making them well-suited for Guam's coastal and savanna habitats.

Savanna

Savanna ecosystems, found primarily in southern Guam, consist of grasslands interspersed with scattered trees. These areas are maintained by periodic fires and are characterized by species such as Pacific Island silvergrass (*Miscanthus floridulus*), *Dimeria chloridiformis*, and *Phragmites karka*. While these habitats support unique plant communities, they are vulnerable to erosion and degradation due to fire and soil instability.

In addition to these vegetation communities, Guam has four general types of wetlands, discussed in the previous section: freshwater swamps, freshwater marshes, estuarine/mangrove wetlands, and river valley floodplains. Finally, Guam has significant land areas classified as developed. Overall, Guam's diverse terrestrial vegetation communities are integral to the island's ecological balance, supporting biodiversity, protecting watersheds, and contributing to climate resilience. Effective management and conservation efforts are crucial to preserving these habitats for future generations.

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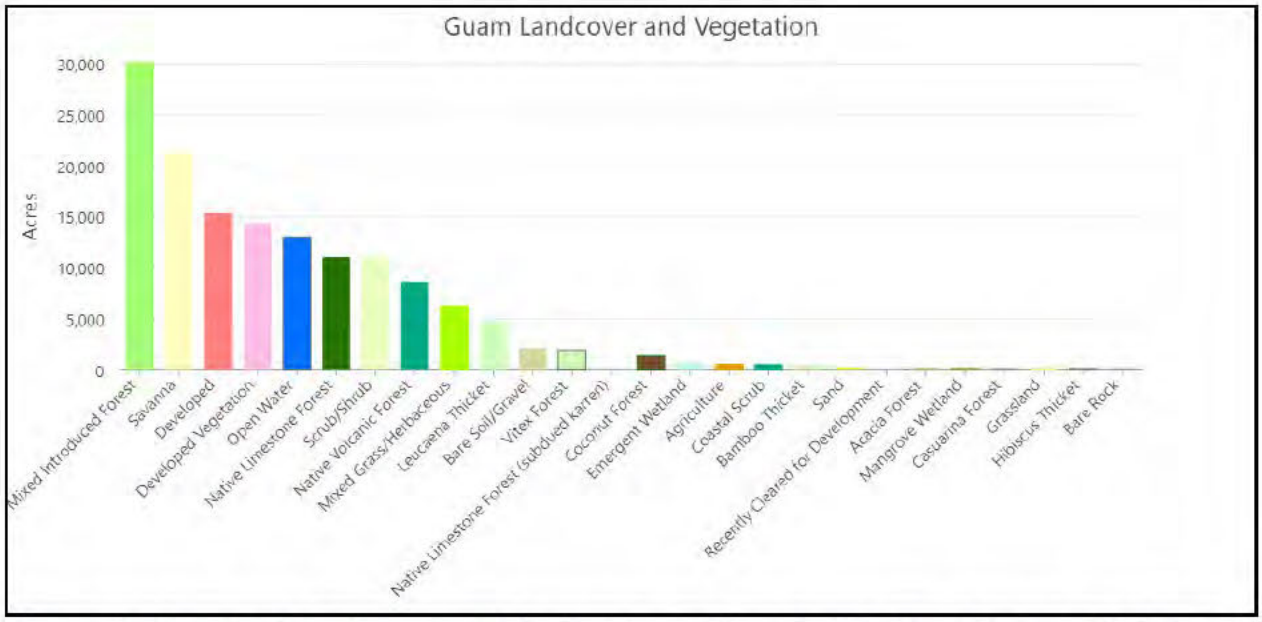

Figure 5-10. Guam Land Cover Composition by Acreage, as Mapped by ICF International Inc. and Guam Department of Agriculture (2023).

5.4.2. Development, Landscape Change, and Impacts

Like many island communities, Guam has seen a steady loss in natural habitats and vegetation communities due to development – there is a consistent trend of landscape change from natural habitat to disturbed and more developed lands. As described in the Guam Department of Agriculture 2019 Wildlife Action Plan (GDOAG, 2019):

> *Over the last 50 years Guam has experienced tremendous domestic growth and suffered significant environmental degradation island-wide. Guam's native flora and fauna have been impacted by numerous insidious threats, such as the introduction of invasive species, poor land management practices, and overexploitation. These anthropogenic threats are exacerbated by the frequency with which the island is impacted by typhoons, and more recently, the effects of climate change. In the last two decades, Guam has been hit directly by four storms with sustained winds greater than 150 miles per hour and suffered high wave and winds from large systems passing near Guam (Guard et al. 2003). Many of the terrestrial and aquatic species that may be of abundance now face environmental and man-made threats that could easily reduce or decimate populations. The cognizance of the many threats assailing Guam's native flora and fauna makes all species listed in the Species of Greatest Conservation Need (SOGCN) legitimately a high priority for conservation actions. The various resource agencies of the Government of Guam and their partners continue to address these issues, knowing that economic prosperity and preservation of the Chamorro culture are dependent on the successful recovery and sustainable use of the island's natural resources.*

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These landscape changes and threats present a shared challenge to plan for sustainable land uses and the right balance between growth and environmental conservation. Development and growth of residential areas, military activities, and new infrastructure generate direct shifts from vegetated spaces to cleared areas and impermeable land cover (Figure 5-3), while also disturbing previously intact habitat patches and corridors.

As shown in the figure, landscape disturbances are easily observable in the north and central regions of the Island, including significant increases over the groundwater protection zone. Increases in impervious surface may also present even greater disruptions to historically intact more rural areas in the southern villages and watersheds. The change is compounded by periodic, climate-driven events such as tropical cyclones and drought-enhanced wildfires. Post-disturbance landscapes then provide greater opportunity for the spread of invasive and non-native species and erosion of bare soil.

Serianthes nelsonii, known as håyun lågu on Guåhan and tronkon guåfi on Luta, is one of the largest trees in the Mariana Islands (USFWS 1994). These CHamoru names give us important insight into the nature of the tree. Håyun lågu means “foreign tree”, illustrating the CHamoru's understanding of its distant origin (Demeulenaere 2021). Indeed, biogeographical data revealed the tree is closely related to other *Serianthes* species from New Caledonia (Demeulenaere and Bone 2023). The CHamoru word “guåfi” means “fire”, referring to the beautiful fire-looking flowers. This iconic tree is listed as endangered under the ESA. Before *S. nelsonii*'s listing in 1987, military construction projects in the 70s and 80s after World War II destroyed several trees (Demeulenaere and Ickert-Bond 2023). Following its ESA listing, the USFWS identified habitat loss, ungulate browsing, herbivorous insect infestations, and inbreeding as the primary perils to the species in their Recovery Plan (USFWS 1994). There is only one adult seed-producing tree on Guåhan and less than 40 such trees on Luta remaining. The species is (once more) threatened by military expansion, as the largest range of the Live-Fire Training Range Complex (LFTRC) is under construction next to the last wild population of *S. nelsonii*. When Typhoon Mawar hit Guåhan in May 2023, major branches of the last mature seed-producing håyun lågu tree broke off, making sustained seed-production uncertain (Demeulenaere and Ickert-Bond 2023).

The unique biodiversity found within Guam forests supports traditional practices such as agroforestry, the collection of plant materials for medicines, the harvesting of timber for seafaring, and wood carving practices. In addition to these significant cultural and intrinsic values, Guam’s forests provide critical ecosystem services, and habitats for native, endemic, and endangered species.

Guam faces a variety of present and future challenges to terrestrial habitat. The availability of suitable habitat poses significant challenges for the recovery of Guam’s native species (NFWF 2024). Habitat loss or degradation has long-term and lasting effects on terrestrial species. As areas are disturbed, native plant communities are displaced leaving degraded, or secondary

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communities, that are often dominated by the non-native trees such as Vitex. The community shift threatens overall biodiversity as well as ecosystem and watershed functions.

Major factors exacerbating habitat loss are land development, introduction of invasive plant and animal species, the increased frequency of climate-driven natural disasters such as typhoons, and the ecological modification of factors that affect recovery from natural events (Commonwealth of the Northern Mariana Islands Division of Fish and Wildlife 2005; Guam Division of Aquatic and Wildlife Resources 2006).

An increase in land development is largely associated with the expansion of the U.S. Marine Corps, Navy, Army and Air Force on the island (Guam Forest Action Plan 2021). The population of military personnel is expected to grow by over 15,000 by 2037. This expansion puts native habitats on Guam at risk, either through direct land use change, or through secondary impacts.

Invasive species jeopardize worldwide biodiversity (Chornesky and Randall 2003), economies (Pimentel et al. 2005), and human health (Duraiappah et al. 2005) and cost trillions of dollars annually in ecological damages, economic losses, and management efforts (Pimental et al. 2001). Guam faces many invasive species threats, such as ungulates (wild pigs and deer), Vitex, as well as the brown tree snake (BTS). The BTS has had a devastating impact on any island where it is not native because it is a generalist species, and its populations are not controlled by predators, diseases, or competitors. The BTS arrived in Guam via ships in the 1950's and since then has been responsible for the extinction of nine (9) forest bird species and three (3) species of lizard (Hawaii Invasive Species Council 2024).

The impacts of climate change and sea level rise will be felt acutely by the biodiversity on small, low-lying islands surrounded by open ocean (Taylor & Kumar 2016). High-elevation ecosystems such as cloud montane forests are projected to disappear entirely by the year 2100, with corresponding global losses of their endemic biodiversity. Sea level rise threatens restricted range species on small low-lying atolls. Shifts in distribution may be possible for generalist species, but range shifts will be difficult for species with small distributions, specialized habitat requirements, slow dispersal rates, and species at high elevation (MITT EIS 2015). Island species may be limited in their ability to adapt to climate change due to a range of characteristics, including smaller geographic ranges, limited genetic variation, small colonizing populations, reduced species richness, and poor adaptations to avoid predation (Jupiter, Mangubai & Kingsford 2014). Endemic island plant species with restricted ranges are less able to migrate to suitable habitats than plants inhabiting larger islands, thus posing a barrier to successful migration. As much of the northern half of Guam is characterized by flat limestone plateau (Defense Technical Information Center 2010), the low dispersal ability of many species will also hinder migration.

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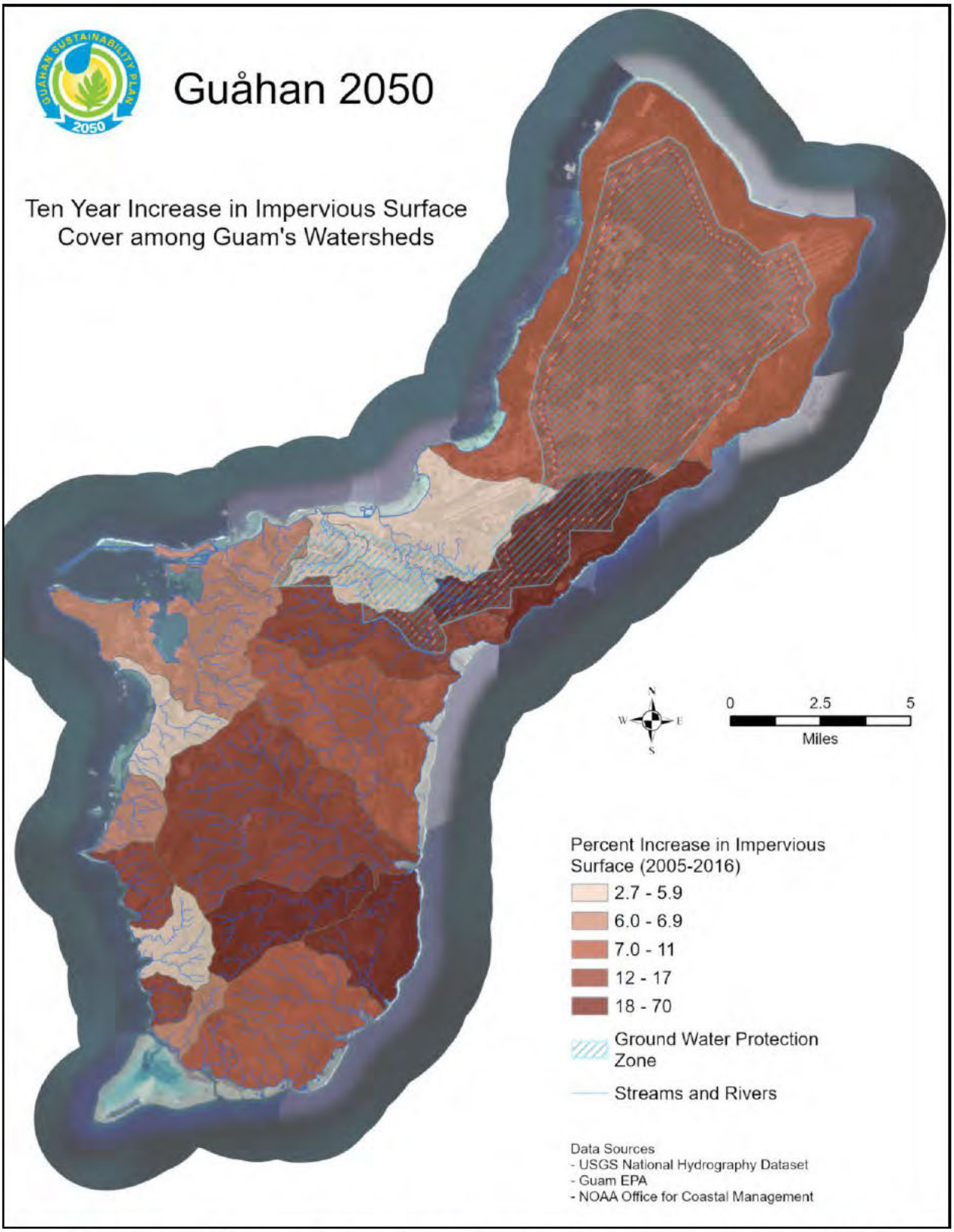

Figure 5-11. A Decade of Increases in Impervious Surface Cover in Guam's Watersheds from 2005-2016.

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5.4.3. Threatened & Endangered Species (terrestrial)

The terrestrial environments on Guam support a diverse range of flora and fauna species, some of which are listed under the Endangered Species Act (ESA). Listed species are identified by the United States Fish and Wildlife Service (USFWS) as threatened, endangered, or proposed as such. Candidates are plant or animal species for which USFWS has sufficient information on file regarding biological vulnerability and threats to support a proposal that would list them as endangered or threatened under the ESA, based on the most recent candidate review (USFWS 2008c). As of 2025, there were 30[2] federally listed threatened or endangered species (terrestrial) found on Guam (Table 5.1).

In addition to listings under the ESA, in 2019 the Guam Division of Aquatic and Wildlife Resources (DAWR) identified 76 species—including 42 terrestrial, 7 freshwater, and 27 marine species—as in need of conservation (see call-out box below). These species are at risk due to a multitude of factors including loss of habitat and presence of invasive and non-native species. It requires a concerted effort and significant financial contributions to potentially save species. For example, the Guam rail, *ko'ko'* in Chamorro, is the national bird of Guam and it was nearly pushed to extinction by the invasive brown tree snake (BTS). In 2019 a successful reintroduction of the rail into the wild through a breeding program changed the rail's listing from extinct in the wild to critically endangered.

Table 5-1. ESA-Listed Threatened or Endangered Terrestrial Species Found in Guam.

Scientific Name	Common Name	ESA Listing Status
BIRDS		
Aerodramus bartschi	Mariana swiftlet	Endangered
Gallinula chloropus guami	Mariana common moorhen (pulattat)	Endangered
Gallirallus owstoni	Guam rail	Endangered
Gallirallus owstoni	Guam rail	Experimental Population, Non-Essential (Rota)
Phoebastria (=Diomedea) albatrus	Short-tailed albatross	Endangered
Todiramphus cinnamominus	Guam kingfisher	Endangered

[2] This total includes two sea turtles (Green sea turtle Central South Pacific DPS and Central West Pacific DPS and Hawksbill sea turtle).

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CONIFERS and CYCADS		
Cycas micronesica	Fadang	Threatened
FLOWERING PLANTS		
Bulbophyllum guamense	Cebello halumtano	Threatened
Dendrobium guamense	No common name	Threatened
Eugenia bryanii	No common name	Endangered
Hedyotis megalantha	Paudedo	Endangered
Heritiera longipetiolata	Ufa-halomtano	Endangered
Maesa walkeri	No common name	Threatened
Nervilia jacksoniae	No common name	Threatened
Phyllanthus saffordii	No common name	Endangered
Psychotria malaspinae	Aplokating-palaoan	Endangered
Serianthes nelsonii	Hayun lagu (=(Guam), Tronkon guafi (Rota))	Endangered
Solanum guamense	Berenghenas halomtano	Endangered
Tabernaemontana rotensis	No common name	Threatened
Tinospora homosepala	No common name	Endangered
Tuberolabium guamense	No common name	Threatened
INSECTS		
Hypolimnas octocula marianensis	Mariana eight-spot butterfly	Endangered
Vagrans egistina	Mariana wandering butterfly	Endangered
TERRESTRIAL MAMMALS		
Pteropus mariannus mariannus	Mariana fruit Bat (=Mariana flying fox)	Threatened
REPTILES		
Chelonia mydas	Green sea turtle (Central South Pacific DPS)	Endangered
Chelonia mydas	Green sea turtle (Central West Pacific DPS)	Endangered
Emoia slevini	Slevin's skink	Endangered
Eretmochelys imbricata	Hawksbill sea turtle	Endangered

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SNAILS		
Partula gibba	Humped tree snail	Endangered
Partula radiolata	Guam tree snail	Endangered
Samoana fragilis	Fragile tree snail	Endangered

5.4.4. Protecting Sensitive Terrestrial Habitats

Sensitive habitats and species are often addressed through the lens of "critical habitat" under the ESA. Critical habitat generally refers to areas that are considered essential to species conservation or may require special management consideration.

Guam has had numerous instances of critical habitat circumstances in recent decades. In 1991, the USFWS first issued a proposal for critical habitat designation in Guam for the Mariana fruit bat, Mariana crow, and Guam Micronesian kingfisher (USFWS 1991a). In 1993, the Guam National Wildlife Refuge (NWR) was established by a Memorandum of Understanding with USFWS, Navy, Air Force, and Government of Guam (GovGuam) (GovGuam et al. 1993). In 1994, Cooperative Agreements were signed between the Navy, Air Force, and USFWS to establish the Guam NWR into three units; The Ritidian Unit (open to the public), the Andersen Air Force Overlay Unit, and the Navy Overlay Unit (Figure 5-4; Air Force and USFWS 1994, Navy and USFWS 1994). The 1994 Cooperative Agreements provide a commitment by the Navy, Air Force, and USFWS for a coordinated program centered on the protection of endangered and threatened species.

In October 2002, USFWS again proposed critical habitat for the Mariana crow, Guam Micronesian kingfisher, and Mariana fruit bat (USFWS 2002). The areas proposed as critical habitat were primarily on Overlay Refuge lands but included additional areas as well. The approximately 21,690 acres (8,778 hectares) of the Guam Overlay Refuge (Andersen Air Force Overlay Unit and the Navy Overlay Unit) are on lands owned or controlled by the U.S. Department of Defense. Therefore, those lands (in northern and southern Guam) were excluded from critical habitat designation. Air Force lands were excluded under section 4(a)(3) of the ESA, based on the Air Force's Integrated Natural Resources Management Plan (INRMP) for Andersen Air Force Base (AFB). Navy lands were excluded under section 4(b)(2) because the benefits of excluding these lands, including benefits to national security and existing management plans and conservation efforts, outweighed the benefits of designating them as critical habitat.

On October 28, 2004, the USFWS designated 376 acres (152 hectares) of land as critical habitat for the Guam Micronesian kingfisher, Mariana crow, and Mariana fruit bat on the Ritidian Unit of the Guam NWR in northern Guam (Figure 5-4).

In addition to these early habitat conservation efforts, Guam has multiple agencies and programs addressing sensitive habitats and species.

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The Guam Invasive Species Council (GISC)

The Guam Invasive Species Act of 2011 (Public Law 31-43) established the Guam Invasive Species Council (GISC) as Guam's lead entity in coordinating with local, regional and international jurisdictions in the control and elimination of invasive species through policy direction, coordination and planning for the prevention, control, monitoring and eradication. The GISC is composed of 14 groups with nine voting members and five non-voting members. Together, the groups created the Guam Invasive Species Management Interim Plan 2017-2019 which outlines Guam's strategic response to the increasing threat of invasive species on the island. The introduction highlights the long history of invasive species on Guam, from early human settlements to colonial trade routes and modern economic activities. It details the environmental and economic consequences of species such as the brown tree snake (BTS), little fire ant (LFA), coconut rhinoceros beetle (CRB), and Asian cycad scale, which have contributed to biodiversity loss, economic damages, and public health risks.

The plan also identifies key goals and strategies including appointing a Territorial Invasive Species Coordinator, strengthening prevention through enhanced biosecurity measures at ports of entry, enforcing deterrence policies such as penalties for introducing invasive species, and increasing public education and outreach to encourage local participation in invasive species control. The Guam Invasive Species Act also established a Biosecurity Division within the DOAG as the lead local government agency with a purpose to provide for the inspection, quarantine, and eradication of invasive species contained in any freight, including, but not limited to, marine commercial container shipments in efforts to address invasive species coming to, and already present in, Guam. Additionally, the 2017-19 plan emphasizes the importance of a Rapid Response Plan for early detection and containment of new invasive species, aiming to prevent outbreaks before they cause irreparable damage. The document also aligns Guam's efforts with regional and national initiatives, incorporating recommendations from the Regional Biosecurity Plan for Micronesia and Hawaii (RBP) and the National Invasive Species Council's Management Plan.

A significant portion of the plan discusses the economic, environmental, and human health costs of invasive species. The brown tree snake, for example, has led to power outages costing over $1 million annually, while the coconut rhinoceros beetle has devastated Guam's coconut palm population, affecting tourism and local livelihoods. The report highlights the urgency of securing funding and resources for effective invasive species management, including investments in research, biocontrol solutions, and inter-agency collaboration. By implementing the outlined strategies, the GISC aims to mitigate the impact of invasive species and protect Guam's unique environment for future generations.

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Government of Guam Department of Agriculture (DOAG)

The Government of Guam Department of Agriculture (DOAG) has primary responsibility for conservation management of the 21 protected terrestrial and marine areas, as well as local government conservation lands. The Forestry and Soil Resources Division (Guam Forestry) is the central agency of the Department that is responsible for protecting and restoring forest ecosystems and soil resources in Guam. The mission of Guam Forestry is "to conserve, protect and enhance Guam's vegetative environment and sustain the natural resources which are dependent on healthy forests." The agency works with stakeholders to promote healthy and productive forests in both rural and urban areas throughout the island in partnership with non-governmental organizations, the USDA Forest Service, and other government agencies.

The DOAG recently led the completion of the 2022 Guam Forest System Plan, adopted in late 2024 (P.L. 37-143 Bill No. 363-37). The plan outlines the framework for land use management, conservation, and sustainable development of Guam’s forests. Land use issues primarily stem from threats like urban development, invasive species, wildfires, and poor land management practices. The plan emphasizes that forested areas, including limestone and ravine forests, are critical to biodiversity, water quality, and local cultural heritage. The Guam Forest Legacy Act of 2012 mandates the protection of these areas through sustainable land use policies and conservation efforts.

Key land use challenges identified in the plan include balancing conservation with public access and economic development. The plan categorizes lands within the Guam Forest System for multiple uses, such as scientific research, recreation, agriculture, and conservation. Inappropriate activities like off-road driving, unregulated hunting, and unplanned urban expansion contribute to habitat degradation and increased wildfire risks, which can lead to erosion and aquifer impacts. The document stresses the importance of public and private land cooperation, especially for identifying and protecting suitable lands.

To address various habitat conservation challenges, the Guam Forest System Plan proposes several strategies:

1. **Reforestation and Habitat Protection** – Expanding native forest coverage, managing watersheds to prevent erosion, and controlling invasive species.
2. **Wildfire Prevention and Management** – Establishing firebreaks, enhancing fire suppression capabilities, and conducting community education programs. Investments in these management measures will help protect watersheds and island aquifers.
3. **Sustainable Economic Use** – Encouraging eco-tourism, regulated timber harvesting, and conservation partnerships with private stakeholders.
4. **Public Engagement and Access** – Developing designated trails, educational programs, and recreational zones while ensuring environmental integrity.

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The plan also includes mechanisms for land identification, permitting, and enforcement. Lands are categorized based on their ecological significance and legal status, ensuring that only compatible activities are allowed in designated conservation areas. The plan notes that partnerships with local government agencies, NGOs, and community organizations will enhance enforcement and sustainability efforts. Overall, the Guam Forest System Plan aims to create a resilient, well-managed landscape that protects natural resources while allowing for responsible public and economic use. The policies and land use designations of the G50SP build on the recommendations of the Forest System Plan and other work. For example, in 2019, the DOAG Division of Aquatic and Wildlife Resources updated the Wildlife Action Plan, including to identify key threats and land use strategies for habitat protection (see call-out).

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Guam Division of Aquatic and Wildlife Resources

Wildlife Action Plan (2019) – Land Use Issues and Strategies

Guam's wildlife and ecosystems face critical threats from habitat destruction, invasive species, climate change, and unsustainable land use. The Guam Wildlife Action Plan (GWAP) identifies 76 species—including 42 terrestrial, 7 freshwater, and 27 marine species—as in need of conservation.

KEY CHALLENGES & THREATS

- **Habitat Loss & Fragmentation:** Urban expansion, military activities, and agriculture reduce native forests and wetlands.
- **Invasive Species:** Feral pigs, coconut rhinoceros beetles, and aggressive non-native plants threaten native biodiversity.
- **Wildfires & Watershed Degradation:** Human-induced fires accelerate erosion, harming rivers and coral reefs.
- **Climate Change:** Rising sea levels, shifting weather patterns, and coral bleaching disrupt ecosystems.

STRATEGIES FOR SUSTAINABLE LAND USE

☑ **Habitat Protection & Restoration**
  - Expand protected conservation areas and enforce land-use regulations.
  - Restore native forests by removing invasive species, replanting, and fire prevention.

☑ **Sustainable Resource & Land Management**
  - Implement a Guam Invasive Species Plan to improve biosecurity and rapid response.
  - Strengthen enforcement of land conservation laws to prevent illegal clearing.

☑ **Community Engagement & Climate Resilience**
  - Increase public awareness programs on conservation and responsible land use.
  - Develop a Climate Vulnerability Plan to safeguard coastal and forested habitats.

By integrating these strategies, Guam can **balance development with environmental sustainability**, ensuring a thriving future for its people and ecosystems.

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Guam Habitat Conservation Plan and Reserve Network

In an effort to streamline land use decision-making processes and establish a cohesive framework for mitigating environmental impacts to threatened or endangered species, DOAG and a network of local and federal stakeholders have developed a Habitat Conservation Plan (HCP) (*pending adoption)* (referred to hereafter as the Plan). The Plan serves as a resource to ensure a centralized, consistent approach to offsetting impacts to listed terrestrial species in areas where a proposed land use overlaps with species presence. The Plan designates mitigation ratios for different types of threatened and endangered (T&E) habitat, with key ecosystem types warranting greater offsets. Offsets in the form of fees to fund conservation strategies in the HCP network, meeting conservation targets that are commensurate with the scale of impact or incidental take. Notably, the Plan replaces the fragmented process of generating individual HCPs on a project-specific basis, which can lead to high costs, development delays, and inconsistent application of regulations.

A key component of the Plan development was the identification of species-specific habitat and ecosystem associations, and delineation of these areas throughout Guam. Habitat associations were delineated using a combination of criteria, including primary vegetation type and landcover, as well as secondary vegetation and soil associations. For example, while the Mariana eight-Spot butterfly is almost exclusively associated with native limestone forest, the distribution of *Phyllanthus saffordii*, a focal shrub species in the Guam Plant Extinction Prevention Program, has a more complex distribution ranging from slopeless savanna on volcanic soil to the very steep, clay-dominated slopes of the Akina-Badland area. Table 5-2 highlights the main ecosystem associations for federal and local T&E species.

Table 5-2. Ecosystem associations for threatened and endangered species on Guam.

Covered Species	Primary Ecosystem Type Association(s)
Haggan (green sea turtle, *Chelonia mydas*)	Sandy Beach (within 100 feet of the shoreline)
Haggan karai (hawksbill turtle, *Eretmochelys imbricata*)	Sandy Beach (within 100 feet of the shoreline)
Slevin's skink (*Emoia slevini)*	Native limestone forests, native volcanic forest, casuarina forest, coconut forest
Fanihi (Mariana fruit bat, *Pteropus mariannus mariannus*)	Coastal scrub, native limestone forest, native volcanic forest
Mariana eight-spot butterfly (*Hypolimnas octocula marianensis*)	Native limestone forest
Siboyas hålom tåno' (*Bulbophyllum guamense*)	Coastal scrub, native limestone forest, native volcanic forest; hibiscus thicket; riparian corridor

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Covered Species	Primary Ecosystem Type Association(s)
Fadang (*Cycas micronesica*)	Coastal scrub, native limestone forest, native volcanic forest
Dendrobium guamense	Native limestone forests; native volcanic forest; coastal scrub, riparian corridor
Phyllanthus saffordii	Savanna on volcanic soil that occurs on slope less terrain not described under secondary, outside of the Anderson Air Force Base-Frontal Pacific Ocean Watershed
Tabernaemontana rotensis	Native limestone forest
Tuberolabium guamense	Coastal scrub, native limestone forest, native volcanic forest, scrub/shrub, riparian corridor

These ecosystems are unevenly distributed throughout the Island, with a high concentration of critical habitat constrained along the limestone bluffs and forested terraces on the northern and eastern coastlines, and a wider spread throughout the southern and central interior uplands. This broader distribution encompasses much of the savanna, riparian corridors, and patches of native forest found in the southern half of the Island and overlaps with most of the Guam Forest System boundaries among the southern villages. Figure 5.5 depicts the geographic spread of all key HCP ecosystems. These areas constitute one of the primary inputs for the designation of a formal 'conservation' land use in this plan. The HCP also will continue to provide authoritative science and coordination for implementing the land use policies of the G50SP.

Protected Conservation Lands

Local and federal conservation lands cover about 20% of Guam's total land area and marine preserves cover about 10% of Guam's coastline (Figure 5.4, NOAA PIRO 2023). The Anao, Bolanos, and Cotal Conservation areas are Government of Guam properties that encompass various terrestrial habitat types and aim to recover and support native species. The Anao conservation area includes four large properties of unclear management authority: Pagat (192 ac), Lujuna (404 ac) and Lujuna (377 ac), and Janum (205 ac), most of which is limestone forest habitat. The Bolanos conservation area covers 2,854 acres in southern Guam and mostly supports savanna complex/grassland habitat (47%) and ravine forest habitat (50.2%). The Cotal conservation area covers 662 acres in central Guam, 74% of which is savanna complex habitat.

Federal conservation lands on Guam include the Guam National Wildlife Refuge, which covers about 24,000 acres. Established in 1993, the Refuge supports a wide range of native and endemic species including nesting sea turtles and the last remaining populations of the endangered Mariana fruit bat, Mariana crow, and the *Serianthes nelsonii* tree (USFWS n.d.). The Refuge aims to protect Guam's cultural resources in addition to its natural resources. The Ritidian Unit, the only publicly-accessible Unit on the Refuge, encompasses a former Native Chamorro (Chamoru) village and an ancient cave decorated with pictographs, pottery, and

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stones (USFWS n.d.). Other Federal conservation lands on Guam include two Naval Ecological Reserve Areas, both of which lie on the coast and complement other protected marine areas.



Five permanent marine preserves were established when Public Law 24-21 was passed in 1997: Tumon Bay, Piti Bomb Holes, Sasa Bay, Achang Reef Flat, and Pati Point (Figure 5.4). The preserves encompass coral reef habitat, important fish nursery areas, and sea turtle nesting habitat. While the preserves allow fishing, the timing and type is controlled to protect habitat and fish. Tumon Bay and Pati Point Marine Preserves allow limited rod and reef fishing year-round. The Pati Point Marine Preserve allows shoreline rod and reel fishing for all species, while the Tumon Bay Marine Preserve allows shoreline rod and reel fishing for only rabbitfish, convict tang, and juvenile jacks. Boat-based bottom fishing is allowed to begin at the 100-foot contour at the Tumon Bay marine preserve. Boat-based bottom fishing is allowed only beyond the 600-foot contour at the Pati Point Marine Preserve, the Achang Bay Marine Preserve, and the Piti Bomb Holes Marine Preserve. The Tumon Bay 100-foot contour, however, is regularly fished by commercial bottom fishing charter boats from the Agana boat basin. Fishing activity is restricted in the preserves with limited cultural take permitted in three of the five areas. The preserves are complemented by the War in the Pacific National Historical Park; Ritidian NWR; the two Naval Ecological Reserve Areas, Orote and Haputo; and the Guam Territorial Seashore Park.

While the five marine preserves are enforced, the other areas currently have limited management and enforcement (DOA GMC 2020, NOAA CORIS 2018). To aid in the protection and proper use of these spaces, the Government of Guam has empowered the public to report environmental violations through a mobile app (TOKA App). This will allow DOAG Conservation officers more eyes on the ground, and reports will aid in response and investigation of incidents.

The protected terrestrial and marine spaces on Guam help accomplish many conservation goals, such as the Micronesia Challenge, G3, and others (described above in section 2.2.3). These spaces aid in the conservation of resources as well as promote sustainability on the Island. A key component is the promotion of sustainable fisheries within Guam. The Sea Grant Aquaculture and Aquaponics project promotes the use of recirculating aquaculture systems (RAS), or backyard aquaponics, throughout communities on the island. This system allows for the growth of various types of fish and plants, helping reduce the stress put on marine resources.

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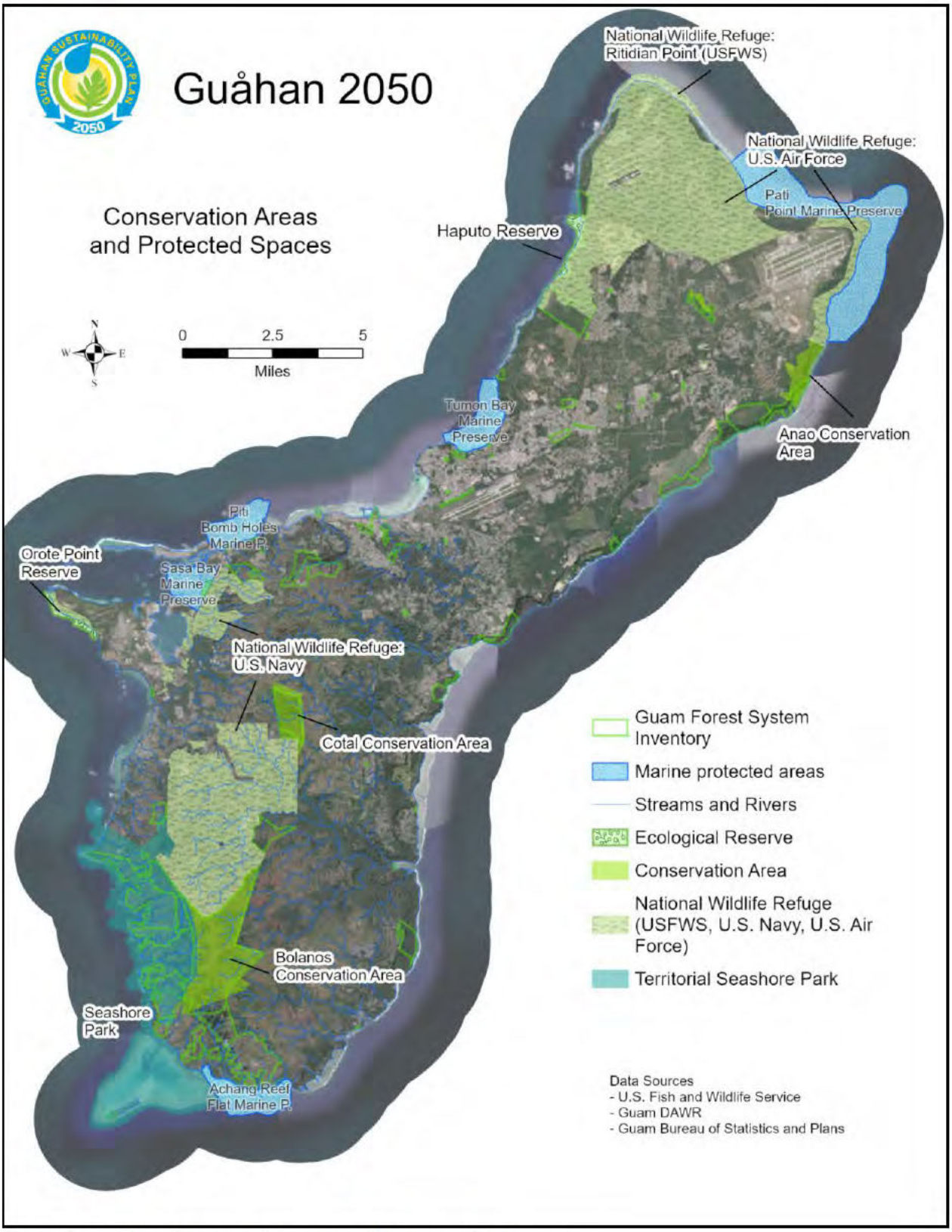

Figure 5-12. Map of Protected Spaces and Conservation Areas.

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Other Habitat Conservation Programs

Guam Green Growth Initiative. The Guam Green Growth (G3) Initiative is a public-private partnership that develops tangible solutions to sustainability challenges and contributes to a green economy for the island region. In September 2019, Governor Lourdes A. Leon Guerrero and Lt. Governor Joshua F. Tenorio promulgated Executive Order 2019-23, creating a 97-member Working Group of government, academia, private sector, non-profit, and youth partners to transition Guam toward a sustainable future. The executive order assigned the facilitation of the Working Group to the University of Guam Center for Island Sustainability.

The G3 was created with the objective to support public-private partnerships (connected to the Local2030 Islands Network) and to scale and accelerate locally and culturally relevant sustainability solutions. As such, the G3 Action Framework was created to meet the 17 Sustainable Development Goals (SDG) set by the United Nations (UN) and expand public participation, awareness, and education of the goals.

To help implement the G3 Action Framework, the G3 Conservation Corps was created in 2021 as a paid workforce development program. The Corps members execute sustainability projects in island beautification, agriculture, aquaculture, circular economy and recycling, invasive species removal, and energy efficiency. This program serves a dual purpose in accomplishing sustainability goals as well as public involvement and education.

The Climate Change Resiliency Commission. The Climate Change Resiliency Commission was created under Executive Order 2019-19, signed by Gov. Leon Guerrero in August 2019. The objective of the Climate Change Resiliency Commission is to develop an integrated strategy to build resiliency against the adverse effects of climate change and to reduce contributing factors such as greenhouse gas emissions. The Commission aims to develop and coordinate an effective, data-based response to climate change focusing on eight key climate change outcomes: energy, water resources, ocean and land resources, infrastructure and community resiliency, development planning, food security, public health and safety, and greenhouse gas emissions and carbon footprint.

The Micronesia Challenge. The Micronesia Challenge (MC) is a multijurisdictional commitment, signed by leaders from Palau, Guam, FSM, CNMI and the Republic of Marshall Islands (RMI) in 2006. The original goals were to effectively manage 20 percent of terrestrial resources and 30 percent of nearshore marine resources by 2020. In 2019, those goals were updated and increased to managing 30 percent terrestrial and 50 percent marine resources with a target date of 2030. A monitoring protocol for the terrestrial environment was developed which includes streams, groundwater in atolls, trees (including mangrove species), and birds. While several terrestrial measures have yet to be monitored, data from USDA Forest Service Forest

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Inventory Analysis (FIA) program has been used to describe terrestrial measures of trees and mangroves (Dendy et al. 2020).

Guam Island-wide Habitat Conservation Plan (Guam HCP)

The Guam Department of Agriculture is developing an HCP in collaboration with the University of Guam Center for Island Sustainability to protect Guam's native habitats and sensitive species.

What is the Guam HCP?

A planning document required for an Incidental Take Permit (ITP) under the U.S. Endangered Species Act (ESA) while supporting compliance with the Guam Endangered Species Act (Guam ESA) to prevent harm to listed species and their habitats, including 7 plant species, 1 butterfly species, 3 reptile species, 2 snail species, and 1 mammal species.

Provides a coordinated and comprehensive approach to balancing conservation and development efforts.

Goals of the Guam HCP

- Protect and restore critical habitats for endangered species.
- Support conservation of limestone forests, watersheds, and wildlife corridors.
- Facilitate sustainable development while ensuring compliance with environmental laws.
- Enhance public awareness and promote stewardship of Guam's natural resources.
- Improve freshwater and marine water quality by conserving watersheds and controlling erosion.

The HCP allows for planned development and infrastructure projects while ensuring conservation commitments. Benefits of the Guam HCP include:

For Landowners

- Simplifies and streamlines the local permitting process.
- Creates a new market for conservation land purchases or easements.

For the Environment

- Protects, enhances, and restores native habitats.
- Ensures connected and well-managed conservation areas rather than fragmented, project-by-project efforts.

For Developers

- Provides a faster and more predictable path to obtaining ESA compliance.
- Reduces costs associated with endangered species permitting.
- Eliminates the need for direct negotiations with the U.S. Fish and Wildlife Service.

The Guam HCP offers a proactive and balanced approach to environmental conservation and economic development, ensuring a sustainable future for Guam's unique ecosystems and communities.

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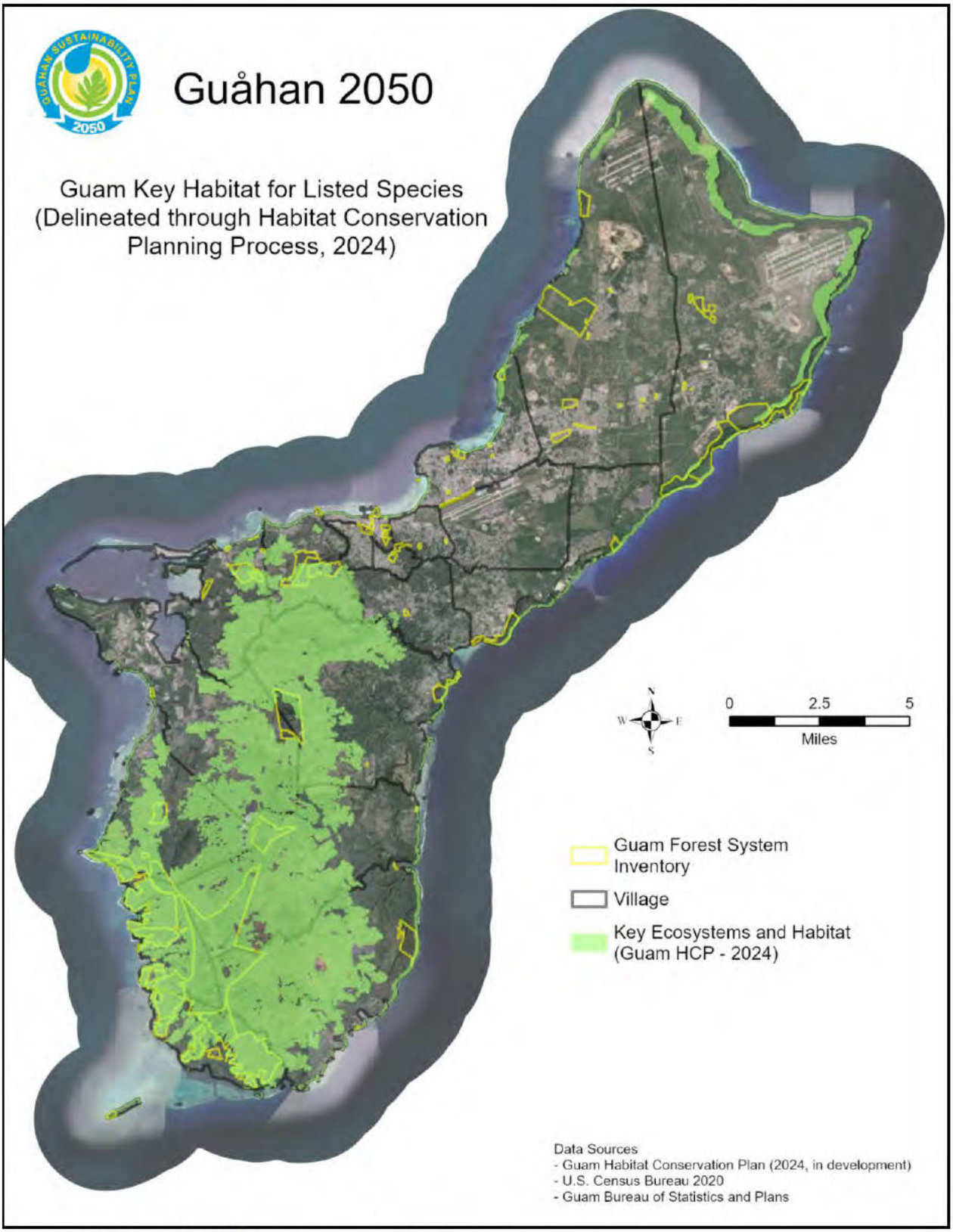

Figure 5-13. Map of Key HCP Ecosystems and Habitat.

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5.4.5. Habitat Protection and Sustainability



The habitat protection policies of the G50SP align closely with several United Nations Sustainable Development Goals (SDGs), particularly SDG 14 (Life Below Water) and SDG 15 (Life on Land), which emphasize the conservation of marine and terrestrial ecosystems. These policies reflect a strong commitment to sustainable development by ensuring the protection and enhancement of Guam's sensitive habitats, mitigating development impacts, and incorporating climate resilience measures. Targets and indicators include:

- 14.1. By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution
- 14.2. By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans
- 14.3. Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels
- 14.4. By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics
- 14.5. By 2020, conserve at least 10 percent of coastal and marine areas, consistent with national and international law and based on the best available scientific information
- 14.7. By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism

The "Forest and Terrestrial Habitat Conservation" policy, along with the "Conservation of Sensitive Habitat" initiative, directly supports SDG 15, which calls for the protection, restoration, and sustainable use of terrestrial ecosystems. By designating conservation areas and implementing a Sensitive Habitat Overlay Zone, these policies help prevent habitat fragmentation and protect biodiversity, including endangered and threatened species native to Guam. This aligns with Target 15.5 of SDG 15, which aims to halt biodiversity loss and protect ecosystems that are crucial for sustaining life on the island. Targets and indicators include:

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- 15.1. By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.
- 15.2. By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests, and substantially increase afforestation and reforestation globally.
- 15.3. By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.
- 15.4. By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development.
- 15.A. Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems.

The Conservation of Natural Resources – Overall Policy (CZM) acknowledges the ecological, cultural, and economic value of Guam's natural resources, reinforcing SDG 6 (Clean Water and Sanitation) by protecting the island's major drinking water sources. By prioritizing conservation and sustainable development practices, this policy ensures that future generations will continue to benefit from healthy forests, wetlands, and riparian areas. Targets and indicators include:

- 6.1. By 2030, achieve universal and equitable access to safe and affordable drinking water for all.
- 6.2. By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.
- 6.3. By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.
- 6.4. By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.
- 6.5. By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate.
- 6.6. By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.

The CZM policy also aligns with SDG 13 (Climate Action) by incorporating climate change science into habitat protection efforts. The requirement to use the best available science to monitor habitat changes and vulnerabilities ensures that conservation strategies remain adaptive and responsive to climate risks, reinforcing Target 13.2, which promotes integrating climate change measures into national policies. Targets and indicators include:

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- 13.1. Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.
- 13.2. Integrate climate change measures into national policies, strategies and planning.
- 13.a. Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible.
- 13.b. Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities.

Furthermore, the policies promote sustainable land use planning by requiring the identification and delineation of sensitive habitat areas before approving new development. This preemptive approach aligns with SDG 11 (Sustainable Cities and Communities), particularly Target 11.4, which emphasizes the protection of natural and cultural heritage. The incorporation of buffers and impact mitigation strategies ensures that development is done in a way that minimizes disruption to sensitive ecosystems. The commitment to requiring a minimum 100-foot buffer around sensitive habitats, unless scientifically justified otherwise, demonstrates a precautionary approach to environmental planning that supports both ecological integrity and community resilience.

Finally, the policy's embrace of the Habitat Conservation Plan aligns with SDG 17 (Partnerships for the Goals) by integrating Guam's conservation efforts with broader regional and global initiatives. The coordination with Guam's Habitat Conservation Plan ensures that conservation policies are implemented effectively in alignment with international best practices and biodiversity protection frameworks.

Overall, the G50SP habitat protection policies reflect a holistic approach to environmental stewardship that is deeply aligned with the UN SDGs. By integrating scientific research, climate adaptation, and sustainable land use strategies, Guam is taking proactive steps to safeguard its unique ecosystems while fostering long-term environmental resilience.

5.4.6. Habitat Protection Land Use Plan Policies

Conservation of Sensitive Habitat

TE-76. Conservation of Natural Resources - Overall Policy (CZM).

The value of Guam's natural resources as recreational areas, critical marine and wildlife habitats, the major source of drinking water, and the foundation of the island's economy, shall be protected through policies and programs affecting such resources.

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TE-77. Sensitive Habitat Protection.

Development shall protect and enhance Guam's sensitive terrestrial habitats and species.

TE-78. Conservation Designation.

Lands consisting predominantly of sensitive terrestrial habitat as defined in Policy TE-82 and/or wetland and riparian areas shall be designated for conservation. Apply conservation policies and programs to these areas.

TE-79. Sensitive Habitat Overlay Zone.

Lands not designated for conservation but containing significant habitat areas may be protected with a habitat conservation overlay zone.

TE-80. Habitat Conservation Plan.

Sensitive habitat policies of the G2050SP shall be implemented in coordination with the requirements and programs of the Guam Habitat Conservation Plan. Pursue funding and other implementation mechanisms for designated conservation lands also in coordination with DOAG and restoration criteria for sensitive species recovery.

Identification of Sensitive Habitat Areas

TE-81. Habitat Identification Application Requirement.

Require the identification and delineation of sensitive habitat areas and species potentially impacted by new development prior to filing an application for a development land use approval.

TE-82. Sensitive Terrestrial Habitat Definition.

Guam's sensitive terrestrial habitats are areas in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in Guam's ecosystem and cultural heritage, and which could be easily disturbed or degraded by human activities and developments and climate change. These include areas supporting listed or potentially-listed endangered and threatened species and significant occurrences of limestone forest, native volcanic forest, savanna, coastal scrub, and sandy beach.

TE-83. Climate Change and Best Available Science.

Use best available science to monitor habitat changes and identify climate change vulnerabilities. Create a comprehensive, user-friendly data portal on social and ecological vulnerability and climate change to support decision-makers, non-profits, and community leaders in addressing habitat conservation and social vulnerability at the village level.

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Protection of Sensitive Habitat Areas

TE-84. Habitat Avoidance.

Locate new development outside of sensitive habitat areas to the maximum extent feasible. Within habitat areas, allow only development dependent on the resource, such as restoration work, or low-intensity, passive recreation and nature study.

TE-85. Sensitive Habitat Buffers.

Require buffers between development and sensitive habitat areas, taking into account the intensity of the development and the sensitivity of the habitat. Require a minimum 100-foot buffer unless infeasible, or a biological assessment supports a finding that a reduced buffer would not significantly disrupt the habitat.

TE-86. Habitat Impact Mitigation.

Unavoidable sensitive habitat impacts shall be mitigated through off site restoration of comparable habitat types at a 3:1 ratio or the permanent protection of privately-held high quality habitat areas at a 2:1 ratio or higher ratios for lower quality but restorable habitat areas.

5.5. Coastal and Marine Habitats

With few if any exceptions, the G50SP doesn't directly plan, regulate, or manage the coastal and marine waters of Guam. However, there are many vital and important connections between Guam's land use and the sustainability of the coastal and marine environment. This section gives an overview of the issues related to protection of Guam's shoreline areas and applicable land use policy strategies.

5.5.1. Lagoon, Reef, and Adjacent Waters

Guam is surrounded by fringing reefs, patch reefs, submerged reefs, offshore banks, and barrier reefs, including around Cocos Lagoon in southern Guam. Guam's coral reefs are essential to the island's culture and continued existence of its people. Guam has over 400 species of stony coral, and 1,000 species of fish (Waddell, 2005). Coral reefs provide a variety of ecosystem services. They act as natural breakwaters to protect coastlines, support commercial and subsistence fisheries, provide local cultural and recreational opportunities, and serve as key attractions for a thriving tourism industry.

Guam's coral reefs were ranked as being in fair condition in the 2018 NOAA Coral Reef Condition: A Status Report. However, they are under stress and continue to be degraded from natural and anthropogenic causes. According to the 2019 Guam Coral Reef Resilience Strategy, around one-fifth of the world's coral reefs have already been lost, and over one quarter of surviving reefs are in danger of imminent decline. The strategy discusses the impacts increasing island population growth and increasing tourism on the reef, observing that "Guam's reefs are subjected to greater impacts from pollution and runoff, coastal development, and

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recreational activities" (Guam Coral Reef Initiative. 2019). Guam's coral reefs have also been impacted by climate change and ocean acidification. Coral bleaching due to climate change can cause widespread coral mortality, degrading the health of the reef ecosystem and all the marine species it supports. While Guam's reefs experienced minimal to moderate seasonal bleaching with high rates of recovery between 1998 and 2013, the Guam Coral Bleaching Response Plan (2017) reported that severe and widespread coral bleaching due to ocean warming occurred in 2013, 2014, 2016 and 2017 and resulted in devastating coral loss throughout the island. Coral bleaching weakens the colonies and makes it difficult for them to recover after high wave events or typhoons.

The Guam Coral Reef Resilience Strategy (GRRS) was developed collaboratively by the Guam Coral Reef Initiative (GCRI), a program of the Guam Department of Agriculture Division of Aquatic and Wildlife Resources, in partnership with local and federal agencies, research institutions, non-profit organizations, and the private sector. The goal of the GRRS is to enhance the resilience of Guam's coral reef ecosystems and human communities to the impacts of climate change by 2025. The GRRS is a tool for adaptive, strategic management; an opportunity to engage and inform key stakeholders; a mechanism to increase the effectiveness of coral reef management; and a guide for funding projects designed to reach a common goal. The GRRS is intended to be a living document and thus frequently updated.

The GRRS has four primary objectives:

1. Reframe Guam's coral reef management efforts and priorities in the context of coral reef resilience;
2. Increase cooperation among local and federal agencies, decision makers, educational institutions, non-governmental organizations, resource users, communities, and business groups;
3. Prioritize implementation of coral reef management interventions; and
4. Shift from reactive efforts to proactive, adaptive coral reef management.
5. The GRRS identified coral reef restoration as a key component of marine management, and the Guam Coral Reef Restoration Action Plan, created in 2020-2021 and published in 2024, identifies reef restoration interventions and appropriate restoration sites. Since 2015, the University of Guam Marine Laboratory has operated a coral nursery in the Piti Bomb Holes Marine Preserve to propagate and genetically bank the eight extant species of staghorn Acropora corals found on Guam. In 2017, a second coral nursery for staghorn corals was added in the Cocos Lagoon. In 2024, the Guam Coral Reef Initiative (formerly a program of the Bureau of Statistics and Plans, now a section of the Guam Department of Agriculture's Division of Aquatic and Wildlife Resources) launched a third coral nursery, also in the Piti Bomb Holes Marine Preserve, to augment existing nursery capacity by adding a wider variety of coral species, growth forms, and reproductive strategies for use in reef restoration projects. In 2025, GCRI launched a second coral nursery in Apra Harbor to expand the variety of coral species being propagated for restoration. Efforts to expand nursery capacity are funded through 2028 and will result in

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the culture of at least 18 coral species with a variety of water quality and depth preferences, growth forms, and reproductive strategies to facilitate reef restoration projects around Guam.

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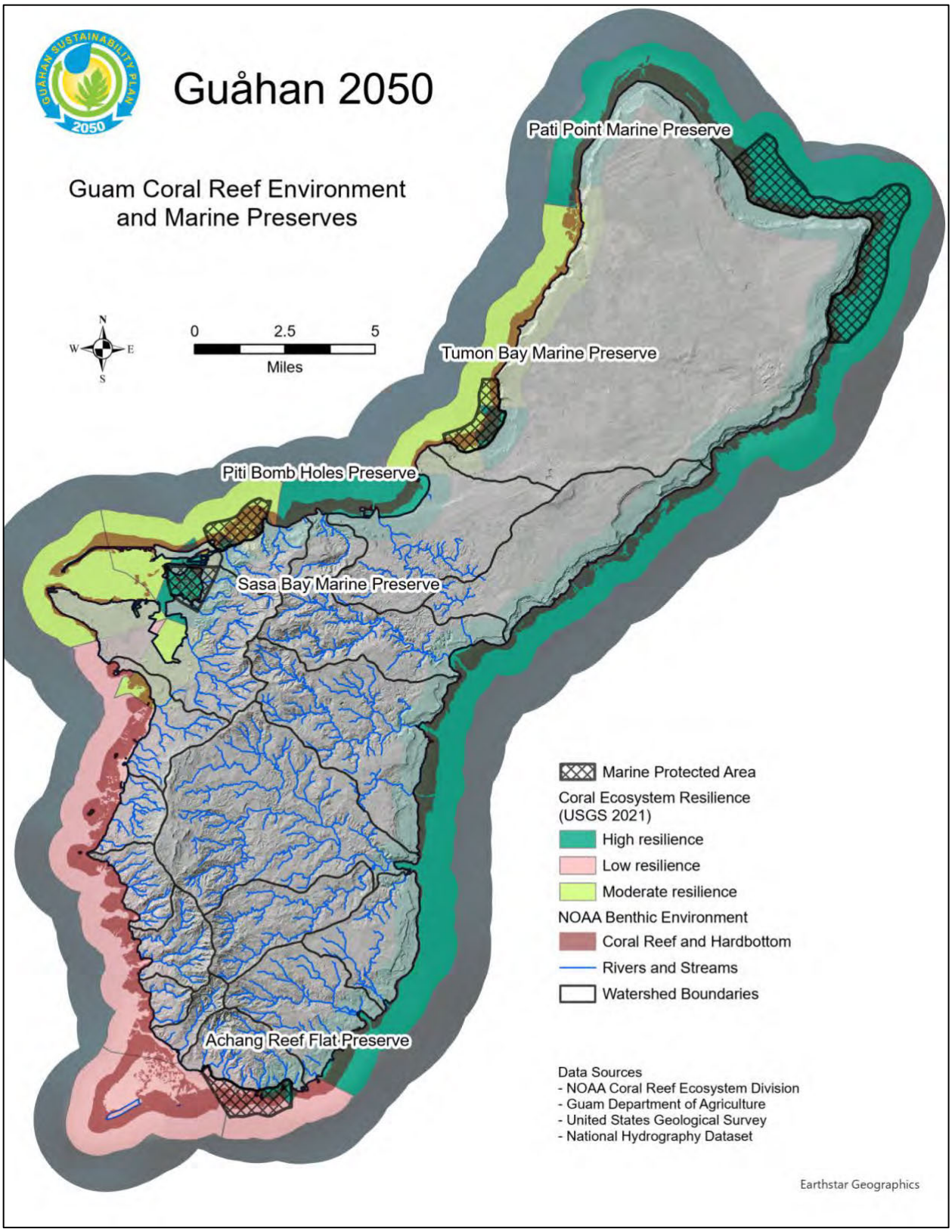

Figure 5-14. Map of Guam's Marine Preserves and Coral Environment.

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The Guam Coral Reef Resilience Strategy recommends several land use planning and regulatory strategies, incorporated into the G50SP, to mitigate environmental threats and enhance coral reef resilience. Key strategies focus on reducing land-based sources of pollution (LBSP) by promoting best management practices such as green infrastructure in commercial and residential developments. Updates to Guam's Building Code are encouraged to integrate sustainable construction criteria, and incentives are proposed for the adoption and maintenance of stormwater management systems. Additionally, watershed restoration efforts are emphasized, including fire mitigation plans to control land degradation and reduce sediment runoff. The strategy also calls for improved enforcement of stormwater regulations and the establishment of a Stormwater Management Master Plan.

To enhance sustainable tourism and recreational use, the strategy advocates for the implementation and enforcement of existing statutes, such as the Guam Territorial Seashore Protection Act and the Marine Preserve Eco-permit law. A sustainable financing mechanism, such as a visitor "green fee," is suggested to support conservation and enforcement efforts. Public engagement programs are also recommended to educate stakeholders about sustainable recreational practices and responsible tourism. Additionally, the strategy underscores the importance of alternative livelihoods, such as aquaculture and cultural tourism, to reduce economic dependency on unsustainable fishing and land use practices (GRRS, 2019).

5.5.2. Sensitive Coastal/Marine Habitat and Species

Guam is home to one of the most species-rich marine ecosystems, with over 5,100 marine species in its coastal waters. This includes more than 1,000 nearshore fish species and over 400 species of hard corals (Paulay 2003; Porter et al. 2005). Guam's corals benefit from the proximity to the Indo-Pacific center of coral reef biodiversity (Veron 2000). There is a total of 14 federally listed threatened, endangered, or candidate marine species on and around Guam (Table 5-3, below).

Table 5-3. ESA-Listed Threatened or Endangered Marine Species Found in Guam/Mariana Islands.

Category	Common Name	Scientific Name	ESA Status	Jurisdiction / Notes
Marine Mammals	Blue whale	*Balaenoptera musculus*	Endangered	NOAA Fisheries
	Fin whale	*Balaenoptera physalus*	Endangered	NOAA Fisheries
	Humpback whale (West N Pacific DPS)	*Megaptera novaeangliae*	Endangered	NOAA Fisheries
	Sei whale	*Balaenoptera borealis*	Endangered	NOAA Fisheries

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Category	Common Name	Scientific Name	ESA Status	Jurisdiction / Notes
	Sperm whale	*Physeter macrocephalus*	Endangered	NOAA Fisheries
	Dugong	*Dugong dugon*	Endangered	U.S. Fish & Wildlife Service
Sea Turtles	Green turtle (Central West Pacific DPS)	*Chelonia mydas*	Endangered	NOAA Fisheries
	Hawksbill turtle	*Eretmochelys imbricata*	Endangered	NOAA Fisheries
	Leatherback turtle	*Dermochelys coriacea*	Endangered	NOAA Fisheries
	Loggerhead turtle (North Pacific DPS)	*Caretta caretta*	Endangered	NOAA Fisheries
	Olive ridley turtle	*Lepidochelys olivacea*	Endangered	NOAA Fisheries
Fishes (Sharks & Rays)	Scalloped hammerhead (Indo-West Pacific DPS)	*Sphyrna lewini*	Threatened	NOAA Fisheries
	Giant manta ray	*Mobula birostris*	Threatened	NOAA Fisheries
	Oceanic whitetip shark	*Carcharhinus longimanus*	Threatened	NOAA Fisheries
Invertebrates (Corals)	Acropora coral	*Acropora globiceps*	Threatened	NOAA Fisheries – only confirmed ESA-listed coral for Marianas

DPS – Distinct Population Segment

Sources: NOAA Fisheries — Marine Protected Species in the Mariana Islands (https://www.fisheries.noaa.gov/pacific-islands/endangered-species-conservation/marine-protected-species-mariana-islands)
U.S. Fish & Wildlife Service — ESA species profiles (Dugong).

In Guam, critical habitat, discussed above, is proposed for two marine species: the green sea turtle and pacific coral (Table 5-4).

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Table 5-4. ESA-Listed Sea Turtle Critical Habitat in Guam/Mariana Islands.

Common Name	Scientific Name	NOAA-NMFS Status	USFWS Status
Green Turtle	*Chelonia mydas*	Proposed	Proposed
No Common Name	*Acropora globiceps*	Designated	N/A

Green Sea Turtle Central West Pacific Distinct Population Segment — Mariana Archipelago. The green sea turtle, known as haggan in CHamoru, is listed as endangered in the Central West Pacific Distinct Population Segment (DPS) under the Endangered Species Act (ESA). Designation of critical habitat will help focus federal, territorial or commonwealth, and local conservation efforts to manage and protect green sea turtles where they nest. Approximately eight percent of the proposed critical habitat overlaps with existing critical habitat for other species. On Guam, approximately 125 acres of federal, territorial, private, and uncategorized lands are proposed as critical habitat for nesting haggan (USFWS 2023).

Pacific Coral. On November 27, 2020, NOAA issued a proposed rule to designate critical habitat for seven threatened corals in U.S. waters in the Indo-Pacific (*Acropora globiceps, Acropora jacquelineae, Acropora retusa, Acropora speciosa, Euphyllia paradivisa, Isopora crateriformis,* and *Seriatopora aculeata*) pursuant to section 4 of the Endangered Species Act (ESA; NOAA-NMFS 2020). Comments on the proposed rule were received by January 26, 2021. Based on public comments and new information regarding the interpretation of the records of the listed corals and application to critical habitat, NOAA withdrew the 2020 proposed rule and published a new proposed rule (NOAA-NMFS 2023). The new proposed rule would designate critical habitat for five of the seven coral species that were addressed in the 2020 proposed rule: *Acropora globiceps*, *Acropora retusa*, *Acropora speciosa*, *Euphyllia paradivisa* and *Isopora crateriformis* and includes select locations in the waters around 16 island units in American Samoa, Commonwealth of the Northern Marianas Islands, Guam, Northwestern Hawaiian Islands and Pacific Remote Island Area. Apra Harbor is excluded from critical habitat and considered ineligible for designation. Comments on the proposed rule were received by February 28, 2024. Based on current records of listed corals, there is only one listed coral in Guam: *A. globiceps* (NOAA PIRO 2023). Critical habitat for *Acropora globiceps* has officially been designated as of July 2025.

5.5.3. Guam Coastal Management Program: An Overview

The Guam Coastal Management Program (GCMP) is a vital part of Guam's current land use planning and implementation framework. Established in 1979, the GCMP operates under the Bureau of Statistics and Plans in partnership with the National Oceanic and Atmospheric Administration (NOAA). The program's goal is to create the responsible and balanced use of Guam's coastal resources through improving management and policy systems, optimizing

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planning, creating awareness, and improving the administration and enforcement of natural resource-related laws and regulations.

Program Objectives:

- Effective administration of natural resource-related laws, programs, and policies;
- Effective enforcement of natural resource-related laws, programs, and policies;
- Increased public awareness of the values and responsibilities associated with coastal resource development and protection; and
- Implementation of a management program that encourages prudent development.

These efforts seek to ensure that both public and private interests are aligned with sustainable development goals. The GCMP focuses on several key areas:

Land Use Planning

- Develops comprehensive land-use policies to guide sustainable development.
- Implements land-use districting systems, including urban, rural, agricultural, and conservation zones.
- Designates Areas of Particular Concern (APCs) to protect sensitive coastal regions.

Federal Consistency

- Ensures that federal actions affecting Guam's coastal zone align with local policies.
- Provides a framework for reviewing federal activities, licenses, permits, and financial assistance to maintain consistency with GCMP objectives.

Coastal Outreach

- Engages the community through educational programs and public participation initiatives.
- Publishes resources like the "Man, Land & Sea" newsletter to inform residents about coastal management efforts.

Natural Resource Projects

- Implements projects aimed at conserving and restoring coastal ecosystems.
- Collaborates with local and federal agencies to address environmental challenges such as erosion, habitat loss, and water quality degradation.

Over the years, the GCMP has achieved significant milestones, including the development of comprehensive plans, such as the North and Central Land Use Plan to guide sustainable development in key regions. It has implemented Federal Consistency procedures by establishing guidelines to ensure federal activities comply with Guam's coastal management policies, many of which are incorporated into the G50SP. It has also sponsored public engagement initiatives like the Assembly of Planners Symposium to foster collaboration among

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stakeholders. It has also been a leading government agency in resource conservation efforts, executing projects targeting the preservation of coral reefs, wetlands, and other vital habitats.

5.5.4. The Guam Seashore Protection Commission

The Guam Seashore Protection Commission (GSPC) is responsible for overseeing the Guam Seashore Reserve, which is "a distinct and valuable natural resource belonging to all the people of Guam" (21 GCA Ch. 63). This reserve includes land and water extending seaward to the ten-fathom contour and inland to either 10 meters (32.8 feet) from the mean high-water mark or the inland edge of the nearest public right-of-way. The GSPC ensures that development within this area aligns with the Territorial Seashore Protection Act, aiming to protect natural coastal environments, maintain public access, and prevent environmental degradation.

To conduct any development within the seashore reserve, an applicant must obtain a Seashore Clearance Permit from the GSPC. This permit application process includes demonstrating that the project will not have substantial adverse environmental effects and that it aligns with the objectives of the Seashore Protection Act. Specific requirements include ensuring public access to beaches and recreation areas, maintaining visual clearance between coastal highways and the sea, reserving wildlife preserves, and implementing proper solid and liquid waste management measures. Additionally, developments must be designed to minimize risks of flooding, erosion, and landslides.

The permit application process is rigorous, requiring the submission of multiple copies of the application, along with detailed maps outlining vicinity, lot lines, zoning, existing and proposed structures, environmental impact considerations, and nearby infrastructure. Once submitted, the Application Review Committee (ARC) evaluates the proposal before scheduling a public hearing. The GSPC then makes a final decision based on ARC recommendations, public input, and other regulatory considerations.

Ultimately, the Guam Seashore Protection Commission plays a crucial role in balancing development and environmental conservation along the island's coast. It ensures that any construction within the seashore reserve aligns with sustainable practices and public interest, safeguarding Guam's coastal resources for both present and future generations. Where applicable, the policies and responsibilities of the GSPC are incorporated into the G50SP.

5.5.5. Shorelines and Floodplains

Shorelines are where the marine environment meets the terrestrial island ecosystem. The transitional shoreline and near-shore areas provide a variety of ecosystem services to the wildlife and people of Guam. In particular, Guam's coral reefs carry immense value culturally, economically, and ecologically. Functioning vegetated shorelines and near-shore areas trap sediment and excess nutrients from entering deeper waters and affecting more sensitive habitats like reefs. Mangrove forests have also been documented providing superior storm event protection compared to bulkheads or other human made structures (NOAA 2015).

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Additionally, natural shorelines provide an important source and sink for sediment in a cycle of movement across the coast. When this cycle is disrupted by human impact, sediment erosion and deposition can get out of balance, which can result in loss of shore, damage to habitat or structures, and/or disruption of morphodynamic processes (NOAA 2015 & Ruggiero 2010).

Floodplains are areas prone to flooding typically from overflow of rivers/other large bodies of water or rain events. The term "flood hazard area" can be defined as "*any land area subject to flood-conditions or susceptible to inundation, including wetlands, and areas subject to a one percent or greater chance of flooding in any given year (100-year flood)*" (Government of Guam 1997). Due to the island's heavy rainfall during the rainy season, some areas prone to flooding are a result of human development and stormwater accumulation (W.B. Flores & Associates/Strategic Planning Group, Inc. 1994). The hazards dimension of floodplains is discussed in Chapter 3 of the G50SP, but floodplains also generally support high levels of biodiversity and can be some of the most productive ecosystems on earth. Additionally, intact floodplains protect infrastructure and agricultural land from flood damage by sequestering water away from these resources (Opperman et al. 2010).

5.5.5.1. Guam's Shorelines & Floodplains

The four main types of shorelines present in Guam are rocky coastlines, sandy beaches, mangrove mudflats, and river estuaries. Much of Guam's shoreline is rocky coastline, which consists of low exposed beach rock, limestone terraces and/or benches, steep slopes, and cliffs (McMakin 1977). The sandy beaches are gently sloping, and the substrate is comprised of mainly calcareous organic remains and detrital volcanic minerals (Emery 1962). Mangrove mudflats are located primarily in two areas: the inner shores of Apra Harbor on the central western coast and between Malesso' and Inalåhanon the southern coastline. These mudflats are in excellent condition and experience little to no shoreline erosion; they are experiencing shore buildup from deposited sediment (McMakin 1977). Approximately 33 of the 40 rivers in Guam have mouths that meet the ocean at the shoreline, and nine of these mouths make up sizable riverine estuaries. These large, braided mouths are often relatively flat, and abundant with wildlife (McMakin 1977).

Floodplains in Guam are primarily associated with river valleys, the Fena Lake basin, and urbanized watersheds. Some of the primary river floodplains are associated with the following river mouths (FEMA 2024):

- Hagatna River
- Asmafines/Sella River
- Laelae River
- Agfayan River
- Ugum River
- Atantano River
- Cetti River
- Dante River
- InalåhanRiver
- Asalonso River
- Namo River
- La Sa Fua River
- Ajayan River
- Tinago River
- Pago River

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The majority of river or lake-associated floodplains are located in the southern portion of the island, due to its geology, land use, and topography. Low areas in the north portion of the island with high impervious surface coverage may experience flood risk as well during heavy rainfall (W.B. Flores & Associates/Strategic Planning Group, Inc. 1994).

5.5.5.2. Issues

The greatest challenges shorelines face are the impacts of fill/dredge operations, pollution, and shoreline development. Due to increased land development, many shorelines have been altered by dredging or filling. The excavation or deposition of sand for fill material, swimming areas, marinas, navigation, or to enhance beach fronts has occurred in near-shore areas, particularly around Tumon Bay, Agana, and Piti (W.B. Flores & Associates/Strategic Planning Group, Inc. 1994 & McMakin 1977). Sediment dredging is known to result in increased turbidity, decreased biodiversity, alteration of near-shore currents, disruption of natural marine ecological systems, and increased beach erosion (McMakin 1977 & USACE n.d.). The resulting degradation of water quality has severe adverse impacts upon coral reefs, mangrove mudflats, and seagrass beds (W.B. Flores & Associates/Strategic Planning Group, Inc. 1994).

Pollution entering the near-shore environment is prolific in Guam. In 2005, the Guam EPA monitored 9.60 miles of the shoreline to evaluate water quality and found that only 0.23 miles of that study area met water quality standards (Bureau of Statistics and Plans – Government of Guam 2009). The polluted runoff, created by impervious surfaces and urban land use, carries excess nutrients, organisms, and heavy metals downgradient across the landscape and eventually into marine waters, negatively impacting marine ecosystems such as coral reefs. The runoff may therefore pose additional economic risks to the recreation and fishing industries (Guam Coastal Management Program 1996). Most recently, the GEPA reports that Guam's marine water quality is generally good, though some water bodies have been impaired and many have not been assessed (GEPA, 2019).

Similar issues are found in the floodplains of Guam. Due to the flat nature of most floodplains, they have been viewed as ideal for development and have been converted to urban uses or to agriculture in many areas of the island (W.B. Flores & Associates/Strategic Planning Group, Inc. 1994). This loss of floodwater storage area upgradient of the shoreline results in amplified volumes of, usually polluted, flood and stormwater flushing onto beaches. Recurrent flooding at the Umatac and Inalåhanwater treatment facilities often results in untreated or partially treated effluent being carried downgradient to marine waters (W.B. Flores & Associates/Strategic Planning Group, Inc. 1994).

On the federal level, the primary regulations addressing shorelines are the Coastal Zone Management Act (CZMA) and the Coral Reef Conservation Act. These acts were put in place to encourage coastal states/territories to develop and implement coastal zone management plans, and to provide financial resources to assist in the preservation of corals. The federal Clean Water Act also regulates water quality of navigable waters, including shorelines and the

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near-shore environment. The Guam EPA manages applicable regulations included in this act, particularly the regulation of fill/dredge in marine and/or other navigable waters of the United States. The Rivers and Harbors Act of 1899 also regulates the alteration or obstruction of navigable waters of the United States, including shorelines and marine waters at the federal level.

The Guam EPA also enforces the Clean Water Act. These regulations require that existing water sources and water quality should be retained, and that the function of waters already impaired by pollution should be improved. This is done by regulating the amount and quality effluent entering waterways, removing point source discharges along the shorelines, preventing dredge/fill of near-shore areas under almost all circumstances, etc. The Bureau of Statistics and Plans manages the Guam Coastal Management Program and the Guam Coral Reef Conservation Program to facilitate responsible and sustainable use of coastal resources and preservation of corals (NOAA 2024). The Guam Territorial Seashore Protection Commission is responsible for managing the Territorial Seashore Act of 1974, which established the Guam Seashore Reserve. This reserve includes the entire coastline of Guam plus all the surrounding Islands within Guam's jurisdiction. Guam's Department of Agriculture and Division of Aquatic and Wildlife Services manages the Guam Marine Conservation Plan as well, a plan with objectives of marine resource assessment, management guidelines, and educational outreach.

Guam regulates floodplains through the Guam Administrative Rules and Regulations and the Guam Floodplain Management Ordinance to meet the standards established by the National Flood Insurance Program (NFIP) and the Guam EPA. The Guam EPA and NFIP require that all proposed development within floodplains comply with erosion, water quality, and pollution standards. No floodplain mitigation is currently required within Guam for proposed impacts.

5.5.6. Coastal and Marine Policies and Sustainability



The policies outlined in the Guam Sustainability Plan align closely with multiple United Nations Sustainable Development Goals (SDGs) and their associated targets. Specifically, the General Marine Resources Policy and Resource Protection and Enhancement efforts align with SDG 14: Life Below Water, which emphasizes the conservation and sustainable use of marine resources. By preventing overharvesting of marine life, ensuring sustainable fisheries, and protecting biologically significant areas, Guam is directly supporting Target 14.2, which calls for the sustainable management and protection of marine and coastal ecosystems. The emphasis on maintaining biological productivity and mitigating human-induced pollution also supports Target 14.1, which seeks to reduce marine pollution from land-based activities. Furthermore, the

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focus on restoring degraded marine environments ties into Target 14.5, which promotes the conservation of at least 10% of coastal and marine areas.

The Coral Reef Protection policies strongly support SDG 13: Climate Action and SDG 15: Life on Land by addressing land-based sources of pollution, sediment control, and fire mitigation. These policies aim to enhance the resilience of coral reef ecosystems by reducing sediment and nutrient runoff, implementing green infrastructure, and updating building codes to require sustainable practices. By improving watershed restoration and promoting land conservation, these policies also align with Target 15.1, which focuses on sustainable management of terrestrial and freshwater ecosystems. Additionally, efforts to reduce agricultural impacts by promoting sustainable farming and preventing harmful pesticide use contribute to Target 2.4 of SDG 2: Zero Hunger, which advocates resilient agricultural practices that enhance ecosystem health.

The policies under Education, Enforcement, and Funding are crucial in supporting SDG 16: Peace, Justice, and Strong Institutions, which includes Target 16.6, focused on developing effective, accountable, and transparent institutions. By enhancing enforcement through increased conservation officers, volunteer programs, and cooperative partnerships, Guam is strengthening governance over its natural resources. Additionally, outreach and education initiatives align with Target 4.7 of SDG 4: Quality Education, which promotes awareness and education for sustainable development. The policy's emphasis on securing funding for conservation and marine management also ties into SDG 17: Partnerships for the Goals, particularly Target 17.3, which encourages financial mobilization for sustainable development.

The Territorial Seashore and Allowable Uses policies align with SDG 11: Sustainable Cities and Communities by ensuring sustainable land use along the seashore, maintaining public access, and enforcing responsible development standards. The emphasis on marine water quality protection and the restriction of certain shoreline developments aligns with Target 11.4, which aims to protect the world's natural and cultural heritage. Similarly, policies regarding exterior lighting and climate resilience funding contribute to SDG 13: Climate Action, particularly Target 13.1, which calls for strengthening resilience and adaptive capacity to climate-related hazards. By integrating sustainable development principles into land use planning and hazard mitigation strategies, Guam is working toward a future that balances ecological preservation with responsible development.

5.5.7. Coastal and Marine Waters Land Use Policies

General Marine Resources Policy

TE-87. Living Marine Resources (CZM).

All living resources within the territorial waters of Guam, particularly corals and fish, shall be protected from over harvesting and, in the case of marine mammals, from any taking whatsoever.

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TE-88. Shore Area Development (CZM).

Only those uses shall be located within the Seashore Reserve that: (1) enhance, are compatible with or do not generally detract from the surrounding coastal area's aesthetic and environmental quality and beach accessibility; or (2) can demonstrate dependence on such a location and the lack of feasible alternative sites.

TE-89. Resource Protection and Enhancement.

Marine resources shall be maintained, enhanced, and, where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

TE-90. Biological Productivity.

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of aquatic organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of groundwater supplies and substantial interference with surface water flow, encouraging wastewater reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Coral Reef Protection

TE-91. Decreased Land-based Sources of Pollution (LBSP).

Enhance the resilience of Guam’s coral reef ecosystems by reducing the introduction of sediment, nutrients, and pollution from coastal development, fires, land-based recreational users, and agriculture in Guam’s watersheds.

TE-92. Best Management Practices.

Require use of best management practices, including stormwater management, erosion control and green infrastructure technology, at commercial and residential sites, consistent with the G2050SP.

TE-93. Building Code Update.

Update Guam’s Building Code to include green infrastructure requirements for new development

TE-94. Sediment Control.

Install sediment catchment systems in appropriate areas with consideration of future climate change impacts, including changing precipitation and storm patterns.

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TE-95. Watershed Restoration.
Implement watershed restoration in priority watersheds.

TE-96. Land Protection.
Promote land conservation through acquisitions and conservation easements.

TE-97. Fire Mitigation Plans.
Develop plans to restore watersheds with native and fire-resistant vegetation and fire breaks at the Wildland-Urban Interface (WUI).

TE-98. Reduce Agricultural Impacts.
Reduce the impacts of agriculture by promoting organic farming, appropriate farming methods on steep hillsides, preventing burning for land clearance, and controlling adverse pesticide use.

TE-99. Sustainable Recreational Use.
Use maximum and conspicuous signage to promote coral reef protection and resilience through sustainable recreational practices.

TE-100. Adaptive Management and Hazard Mitigation.
Implement adaptive management interventions based on the best available science and reduce local pressure and increase coral reef resilience to climate change.

Education, Enforcement, and Funding

TE-101. Monitoring and Enforcement.
Create a volunteer conservation officer program to aid with monitoring activities in Conservation and hire additional Conservation officers. The presence of officers may reduce poaching, and can educate visitors/the public on relevant laws and policies. Maintain existing volunteer programs, such as the Haggan Watch program which supports sea turtle conservation and monitoring efforts. Implement protective measures for sea turtle nests, such as predator control/exclusion, respond to strandings in a timely manner, and establish standardized protocols for nest surveys/monitoring. Support Guam Coral Reef Resilience Strategy (GRRS) and DOAG as a partner agency in coral monitoring, reef-to-ridge watershed protection, and enforcement of land-based pollution controls.

TE-102. Outreach and Education.
Conduct outreach and education to convey the importance of sea turtle and marine mammal conservation to commercial and non-commercial fishermen and the general public. Develop and promote a volunteer reporting program for fishing and recreation vessels for marine mammal sightings. The Division of Aquatic and Wildlife Resources should continue to promote education and awareness of protected areas and natural resource laws by improving signage in visitor areas, improving accessibility of Conservation Areas, providing outreach programs and materials to the public, and

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teaming up with non–profits and non-governmental organizations, such as the Guam Coral Reef Initiative Coordinating Committee.

TE-103. Partnerships.

Develop and strengthen cooperative agreements with the USFWS, Department of Defense, and University of Guam for monitoring and protection of sea turtles, sea turtle nesting sites, and marine mammals.

TE-104. Enforcement of Laws and Policies.

The Guam Department of Agriculture's Division of Aquatic and Wildlife Resources should work with the Department of Law Enforcement and, for Federal lands, the U.S. Fish and Wildlife Service, to implement stronger enforcement and education of fishing and hunting laws within protected conservation areas.

TE-105. Secure Funding.

The Division of Aquatic and Wildlife Resources should regularly attempt to secure additional funding for fish and wildlife management. As described in the Guam Comprehensive Wildlife Conservation Strategy, sources include, but are not limited to, the Sport Fish and Wildlife Restoration Act, US ESA Section 6, Coral Reef Initiative, Western Pacific Fisheries Council (WesPacFIN), Coastal Zone Management (CZM), Clean Water Act Section 319, National Marine Fisheries Service (NMFS) Sea Turtle Recovery, Safe Harbor Agreements, Department of Defense Legacy Funding, the South Pacific Regional Environmental Programme (SPREP), Government of Guam Local Appropriations, Land Acquisition Grants (Federal), and more.

Territorial Seashore

TE-106. Seashore Protection.

Maintain, restore, and enhance the quality of Guam's seashore reserve to the maximum extent feasible including its amenities and aesthetic values.

TE-107. Living Organisms.

Protect the continued existence of optimum populations of endemic and non-invasive species of living organisms in Guam's territorial seashore. Integrate invasive species controls with watershed management/erosion control, reforestation and habitat protection.

TE-108. Public Access.

Provide maximum public access for maximum visual and physical use and enjoyment of the seashore reserve by the public.

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Allowable Uses in the Coastal and Marine Environment

TE-109. Marine Water Quality.

Protect marine water quality through appropriate shoreline area land use designations and development standards such as discouraging construction below the mean high tide mark, including sea or retaining walls, allowing natural beach development processes to prevail, controlling erosion from shoreline development and ensuring that wastewater infrastructure is appropriately set back from marine waters.

TE-110. Permitted Uses in Marine Environment.

The following uses may be permitted in the marine environment: a. Resource-dependent uses permitted by Policy TE-85; b. Restoration projects, including sand nourishment; c. Public beach accessways; d. Temporary lifeguard towers/stations; e. Coastal dependent recreation activities; and f. Shoreline protective devices as permitted by other plan policies.

TE-111. Standards in the Marine Environment.

Require any development or structure permitted within the marine environment to adhere to the following standards: a. Comply with the terrestrial habitat standards as applicable; b. Minimize impacts on coastal access and recreation; c. Avoid sensitive beach species habitat and use; Design so as not to involve any permanent structures and be the minimum size necessary; and e. Provide any necessary mitigation.

TE-112. Exterior Lighting.

Ensure that exterior night lighting is minimized, restricted to low intensity fixtures, shielded, and directed away from beach habitats in order to minimize impacts on wildlife. Prohibit high intensity lighting for recreational facilities along the shoreline. Limit the use of lighting directed over marine waters.

TE-113. Planning Updates.

Require periodic updates to hazard maps and land use plans based on the latest climate data and projections.

TE-114. Funding for Climate Resilience.

Allocate funding for research and pilot projects that test innovative climate resilience strategies.

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Chapter 6: **Vibrant Culture**

Guam's cultural heritage and traditional ways of life are fundamental to the island's identity, resilience, and sense of place. Looking ahead to 2050, preserving and celebrating this vibrant culture must be a core pillar of the G50SP. The island's landscapes, from limestone forests and coastal villages to ancient latte sites and pre-war architecture, are living testaments to CHamoru history and identity. Guam is also a welcoming, multi-cultural place, and land use should provide for the expression of this multiculturalism. Land use planning is not simply a tool for managing development—it is a means to honor ancestral connections to land, support intergenerational knowledge transfer, and safeguard the practices that have sustained communities for generations. The Guåhan 2050 Sustainability Plan commits to a future where heritage and progress walk hand in hand, and where traditional knowledge continues to shape how we live, grow, and thrive.



To achieve this, the G50SP land use policies must integrate the protection of cultural and historic resources, including CHamoru sacred ancestral and burial sites, into every phase of development and community planning. Designating culturally significant areas, such as CHamoru ancestral and historical sites, through zoning and conservation districts will ensure that places of value are not lost to unchecked growth. By conducting comprehensive surveys and mapping of heritage sites, implementing buffer zones, and promoting adaptive reuse of historic structures, the character of Guam's villages can be maintained, and sacred spaces may be protected from encroachment. Collaboration with village communities, cultural organizations, and institutions like the Guam Historic Preservation Office and the Kumisión i Fino' CHamoru yan i Fina'nå'guen i Historia yan i Lina'la' i Taotao Tåno' is essential to fostering a sense of stewardship. Through thoughtful design, conservation efforts, cultural tourism, and education

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initiatives, Guam's built and natural environments can be places of learning, reverence, and pride—supporting not only a vibrant culture but a stronger, more united community.

> **Goal:** *Preserve and celebrate Guam's indigenous and multicultural heritage and enhance the well-being of its people through equitable land use and community design.*
>
> **Land Use Objectives:**
>
> - Protect and manage ancestral, historic, and cultural sites through development reviews and overlays.
> - Support spaces for cultural expression and continuation of traditional practices.
> - Require equitable access to community health, open space, and recreation facilities.
> - Promote development designs that reflect CHamoru and Pacific architectural styles.

6.1. Guam's Cultural Land Use Context

Guam's land use and cultural context is deeply rooted in its long and dynamic history, shaped by thousands of years of CHamoru[1] settlement, colonial encounters, and modern development. The earliest CHamoru communities, dating back over 4,000 years, developed a deep spiritual and practical relationship with the land and sea. Land was not just a resource but a vital part of identity, ancestry, and survival. Villages were strategically located near fresh water sources and marine environments, and land was organized through clan systems that guided farming, fishing, and social relationships. Latte (carved stone pillars), unique to the Marianas, stood as both spiritual markers and structural foundations of ancestral homes, symbolizing the enduring presence of CHamoru culture across the island's landscape.

Spanish colonization in the 17th century marked a major turning point in Guam's land use history. The Spanish forcibly relocated CHamoru communities into centralized villages known as pueblos, through the policy of Reducciónes, disrupting traditional land tenure systems and disconnecting many people from their ancestral lands. Churches and military fortifications were established on elevated or strategic sites, changing the spatial and cultural organization of the island. Over the next 200 years, the Spanish colonial regime imposed their forms of land ownership, taxation, and agriculture, introducing cattle ranching and cash crops that transformed the island's ecology and subsistence patterns. Despite these pressures, CHamorus continued to preserve their cultural practices, often adapting them to fit within new colonial frameworks.

The American era, beginning in 1898, introduced another layer of transformation. The U.S. Navy administration imposed Western-style zoning, land registration, and infrastructure development

[1] The CHamoru Heritage Act of 2016, which established the current Kumisión i Fino' CHamoru yan Fina'nå'guen i Historia yan i Lina'la' i Taotao Tåno', codified the spelling of CHamoru (as opposed to "Chamorro") in the enabling legislation. See, Kumisión i Fino' CHamoru, 2024, p. 23.

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that prioritized military and administrative needs over indigenous land claims. World War II further altered Guam's cultural landscape, as the island was devastated by conflict and later rebuilt with a focus on modernization and strategic military use. The United States leveled Guam's capital city of Hagåtña and other villages throughout the island and repeatedly removed and forcibly relocated CHamoru families from their prewar homestead. At one point following the post–WWII era, the military had seized control over most of the island. Many CHamoru families still await the return of land taken by the United States during this era in Guam history. The postwar period saw rapid population growth, urbanization, and the expansion of U.S. federal programs, which led to the construction of highways, subdivisions, and commercial centers—often at the expense of traditional village layouts and historic sites.



The Guam Organic Act of 1950 established Guam as an unincorporated territory of the United States, providing a framework for civil government but also solidifying federal control over significant portions of the island. Despite this, the indigenous population continued to advocate for the return of their lands and greater autonomy. The CHamoru Land Trust Act, enacted in 1975, aimed to return lands taken by the United States and held by the Government of Guam to the CHamoru people. However, its implementation faced delays and challenges, reflecting the ongoing complexities surrounding land ownership and stewardship on the island. In many cases, CHamoru landowners have lost access to ancestral lands due to eminent domain, unclear land titles, or limited resources to challenge dispossession.

For the G50SP, it is important to recognize how colonization and related land use changes has affected the ability to preserve and promote CHamoru identity and values tied to land use. As summarized by Guam's Commission on Decolonization:

> *. . . the desire for land is often the root of colonialism and dispossessing indigenous peoples of their land has been a ubiquitous occurrence through the history of colonialism and imperialism. Dispossessing people of their land is never just taking "real estate" away. For indigenous peoples, land is a set of relationships. Mohawk scholar Taiaiake Alfred writes, "Land, culture, and government are inseparable in traditional philosophies; each depends on the other, and this means that the denial of one aspect precludes recovery as a whole." (Commission on Decolonization, 2021).*

Today, the cultural context of land use in Guam is shaped by efforts to reclaim, protect, and revitalize CHamoru heritage within the framework of modern development and the political reality of Guam's status as an unincorporated territory of the United States. As with governance generally, land use planning and decisions occur with the complex context of U.S. sovereignty and Guam's limited self-governance as a U.S. territory. Many of the land use challenges facing

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Guam, addressed in this plan, are rooted in the significant (expanding) presence of the federal military on the island. Today and in the future, this may add another layer of complexity to implementing a plan for sustainable land use as federal interests may take precedence over local interests.

Land thus remains a core issue in discussions about sovereignty, justice, and sustainability. Movements to preserve historic sites, promote traditional practices, and support indigenous land claims are of great importance to the community. Guam's land use planning must reckon with its complex history and current political status and seek a balance that uplifts cultural heritage, and potentially self-determination, while guiding sustainable growth. Integrating CHamoru perspectives, promoting inclusive decision-making, and honoring the deep connections between the CHamoru people and their Homeland are essential steps toward a future where development supports—not erases—the cultural landscape of Guam.

6.2. Cultural Heritage and Indigenous Connections

6.2.1. CHamoru Culture and Lands

The CHamoru people, indigenous to the Mariana Islands, have inhabited Guam for over 4,000 years, cultivating a profound connection to their land and sea. Identifying themselves as "taotao tano'," or "people of the land," this bond is integral to their cultural identity. In ancient CHamoru society, land was communally owned, with clans utilizing it for the collective benefit. The highest-ranking female, the maga'håga and the oldest brother, the highest ranking maga'låhi, oversaw land use. Inheritance was determined by the matrilineal lines. (Souder, L. 1984 Doctoral Dissertation, University of Hawaii, Manoa).

This deep-seated relationship with the land is reflected in CHamoru customs and beliefs. Their worldview emphasizes living in harmony with nature, taking only what is necessary, and ensuring resources remain for others. Such practices highlight the CHamoru's role as stewards of their environment, embodying a philosophy that the land and sea are vital; life-giving elements intertwined with their cultural heritage.

As discussed in Chapter 2, Guam is increasingly multicultural, though the CHamoru culture continues to play a central role in Guam's cultural heritage. According to the 2020 U.S. Census, Guam's population is 32.7% CHamoru, 29.1% Filipino, 13.2% other Pacific Islander, 6.8% White, 6.7 % Chuukese, and much smaller proportions of Chinese, Korean and other races. The census also showed that 27.5% of Guam's population (5 years and older) reported speaking the CHamoru language at home (U.S. Census Bureau, 2025).

Culture and Community Cohesion

An essential element of village development is the promotion of community cohesion and cultural preservation. Key landmarks such as Seya Bay (Cella Bay Overlook) Ga'pang (Camel

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Rock), Åcho' Fuha, Asan Bay Overlook, and Tolai Fonte are widely recognized for their significance in representing village identity and resilience. Preservation efforts for these sites reflect a broader commitment to safeguarding cultural heritage and fostering community pride.

Public sentiment supports initiatives aimed at maintaining such natural landmarks and enhancing village spirit. According to input gathered from community engagement sessions, residents have expressed strong support for preserving historic sites and improving access to essential services, including water infrastructure connected to the Fonte Bridge area. In addition, residents generally responded positively to mayoral initiatives that emphasize safety, cultural identity, and collective well-being (see below). While participation in community planning events varied in this project, engagement did reveal that residents prioritize safety and relevant quality-of-life issues. Continued public engagement will be important in shaping policies that reflect the community's values while reinforcing a shared sense of unity and cultural pride.

6.2.2. Land Use and Cultural Heritage

As with the other sectors of this sustainability plan, the Guam Land Use Commission plays an important role in establishing local development conditions that may protect and uplift Guam's cultural heritage (see Chapter 8). But several Government of Guam entities have been established specifically to preserve and manage the just use of CHamoru lands and resources.

CHamoru Land Trust Commission (CLTC)

The CHamoru Land Trust Commission (CLTC), enacted in 1975, is responsible for the disposition of public lands designated as CHamoru Homelands to advance the social, cultural and economic development and well-being of the CHamoru people. It does this through land leases for residential, agricultural and commercial uses and through economic assistance programs (21 GCA, Ch. 75A; P.L. 22-18, P.L. 23-38 as amended; P.L.35-112).[2]

The vision of the CLTC is that Chamoru Land Trust properties are comprised of:

- Clean, safe and thriving neighborhoods, where neighbors practice inafa'maolek and all live with dignity; and
- Productive agricultural tracts of land that are nurtured with best management practices and lead the island's agriculture market; and

[2] In 2020 the Government of Guam reached a settlement with the U.S. government that "underscores the CLTC program's role as a land restoration program that addresses the restoration of CHamoru homelands taken by the federal government between 1989 to 1968." This agreement expands the program's eligible beneficiaries to include individuals and their descendants who owned land or ranched, farmed, or otherwise occupied the land taken, which, in effect, has made any lease application not processed and approved before January 1, 2021, required to comply with the new eligibility requirements (Guam OPA, 2022).

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- Sensitive ecological and culturally significant lands that are protected and preserved for future generations; and
- Sound commercial enterprise that enhances the livelihood and well-being of the CHamoru people.

The CLTC administers more than 11,000 acres of public land. As of the 2021-22 fiscal year, the CLTC had leased a combined total acreage of 3,048 acres consisting of 2,911 Residential and Agriculture leases (CLTC 2022). Most of the CLTC's land is in the northern and central parts of Guam, though there are significant tracts in the south (Figure 6-1). The lands in the north, much of which is not registered, may present significant opportunities to consider land use programs and mechanisms to meet both the objectives of the CLTC and the growth management, agricultural, and aquifer protection concerns addressed in Chapters 3 and 5.

The G50SP proposes considering the development and implementation of a transferable development program to link implementation of the CLTC mandate with other important land use objectives. This would need to be accomplished in the context of on-going challenges facing the CLTC, such as concerns with the leasing process raised by a 2018 Attorney General opinion about the allocation of leases (Guam AG, 2018), commercial leasing issues, and agency capacity to address the important infrastructure matters related to existing and new leases.

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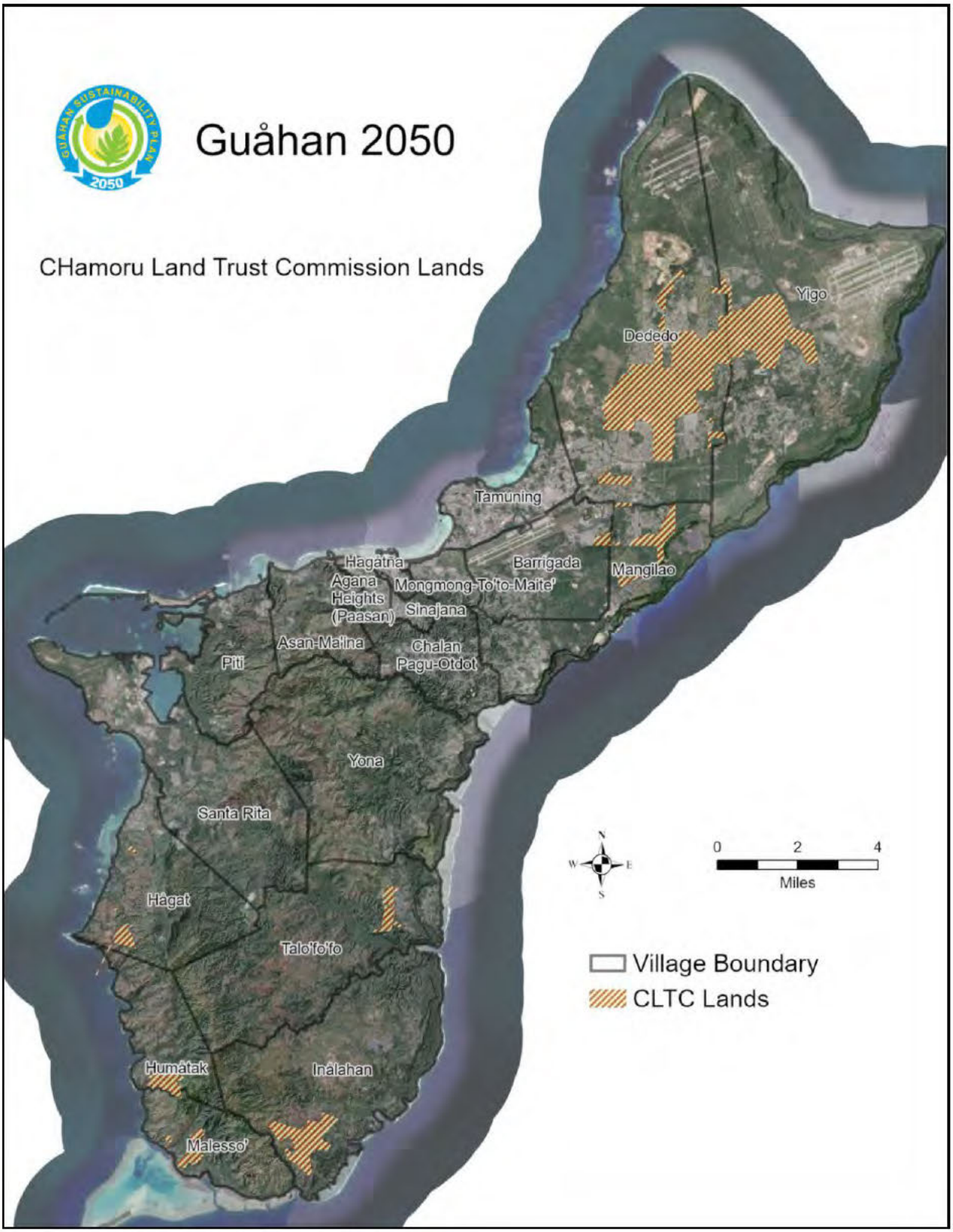

Figure 6-1. CHamoru Land Trust Commission Lands.

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Guam Ancestral Lands Commission

The Guåhan Ancestral Lands Commission (Kumision I Tano Saina-ta Guåhan Ancestral Lands Commission (GALC)) is part of the Guam Department of Land Management. The U.S. government enacted the Guam Excess Lands Act (Public Law 103–339; 108 Stat. 3116) in 1994 to transfer certain “excess” federal lands back to the Government of Guam for public benefit.The statute identified 22 parcels totaling 3,213 acres of land to be transferred. Subsequently, the GALC was established in 1999 through Guam Public Law 25-45 with a mandate to facilitate the return of excess federal and government-held lands to the original landowners and to administer a Land Bank Trust for lands that could not be returned.

Since the creation of the GALC, approximately 7,687 acres of terrestrial land and approximately 15,170 acres of submerged land has been returned by the Federal government to the Government of Guam. Of the terrestrial lands, 1,491 acres were transferred to various government of Guam agencies, with most going to the Guam International Airport Authority (1,417 acres) and 74 acres to other agencies. The remaining 6,196 acres of terrestrial lands, comprising 528 lots, were transferred to the GALC for return to the original landowners or to be held in the GALC Land Bank Inventory to benefit those original landowners who will never realize the return of their ancestral lands. Of these lands, approximately 1,888 acres were identified as non-ancestral or Crown lands to be retained in the Commission's Land Bank Inventory. By July 2023, about 2,648 acres comprising 336 lots of the remaining 4,308 acres had been returned by the GALC, leaving approximately 1,660 acres in the inventory for future return (Burch, 2023). About 77 acres of non-ancestral lands in the Commission's Land Bank Inventory have been leased or licensed to several private entities and a few agencies. Figure 6-2 shows the lands currently identified as GALC lands, both transferred and currently held.

One of the primary issues GALC continues to encounter is the inaccessibility or unusability of returned lands. Parcels in areas like Piti and Barrigada have sometimes been returned without legal access or appropriate zoning, making them difficult to develop or lease. Additionally, GALC’s efforts to generate lease revenue from retained lands through the Land Bank Trust have been delayed due to the absence of finalized rules and regulations. These challenges are compounded by administrative resource constraints and the lack of integrated land use planning that accounts for ancestral claims and traditional land tenure.

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Figure 6-2. Ancestral Lands Commission Lands.

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Department of CHamoru Affairs and Kumision i Fino' CHamoru (Kumisión)

The Department of CHamoru Affairs (DCA) is a government agency including the Kumision dedicated to the preservation, promotion, and advancement of CHamoru language, culture, and heritage. Established to serve as a cultural steward for the CHamoru people, the DCA works to ensure that the island's indigenous identity remains central to public life, education, governance, and development. Its mission encompasses all cultural revitalization and the protection of historical and ancestral resources, emphasizing the importance of intergenerational knowledge and community engagement.

One of the DCA's key responsibilities is to assist in the implementation of an integrated program for the preservation, development and promotion of the Chamorro Heritage of Guam, for the public benefit and to provide specific services to the Chamorro people." The legislature intended that the agency "be a catalyst in the preservation, development and promotion of language, arts, humanities, historic and cultural preservation, research, restoration, presentation, museum activities and support programs significant to Guam's history and culture, and to enhance the future of the Chamorro people of Guam" (5 GCA 87103(a)). The department supports public education initiatives, archives and interprets historical materials, and encourages the use of the CHamoru language in schools and public spaces. These activities are vital for reinforcing cultural continuity, particularly in the face of globalization and external political influences. Language and the Teaching of History are especially important. As summarized by the Kumisión i Fino' CHamoru yan i Fina'nå'guen i Historia yan i Lina'la' i Taotao Tåno' (Commission on CHamoru Language and the Teaching of the History and Culture of the Indigenous People of Guam:

Department of CHamoru Affairs

The purpose and authorized activities of the Corporation are to assist in the implementation of an integrated program for the preservation, development and promotion of the Chamorro Heritage of Guam, for the public benefit and to provide specific services to the Chamorro people. It is intended that this Corporation be a catalyst in the preservation, development and promotion of language, arts, humanities, historic and cultural preservation, research, restoration, presentation, museum activities and support programs significant to Guam's history and culture, and to enhance the future of the Chamorro people of Guam. It is a further purpose of this Chapter to enable the Corporation to aid private enterprise without unfairly competing with it in the expansion of cultural and historical resources for Guam.

Public Law 25-69, Chapter 89, Section 87103.

> *[The Kumisión was reestablished through the CHamoru Heritage Act of 2016 (P.L. 33-236, 5GCA CH 88). The Kumisión carries the critical mandate of developing and maintaining a standardized orthography, producing and approving CHamoru resources, guiding language policy across educational and government institutions, and ensuring the revitalization of the CHamoru language, history, and culture. In its role as the Kumisión i Na'an Lugåt (Place*

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Names Commission), it is further tasked with creating, implementing, and advising on a coherent, culturally grounded, and historically accurate set of criteria for selecting place names. This work requires close coordination with the Guam Land Use Commission, the CHamoru Land Trust Commission, the Department of Education, the University of Guam, the Guam Community College, the village mayors, Dipåttamenton i Kaohao Guinahan CHamoru, and other civil and religious organizations to ensure appropriate place names and consistency in signage.

These agencies and institutions shall seek the guidance of the Kumisión i Na'an Lugåt and to maintain records of their consultations. Beyond its advisory role, the Kumisión also studies ancient CHamoru terminology and the traditional pronunciation of place names, working to restore these forms within the framework of the current CHamoru orthography. It also conducts periodic reviews and evaluations as directed by the Government of Guam, ensuring that its work remains responsive to both cultural integrity and contemporary needs.

Kumisión i Fino' CHamoru yan i Fina'nå'guen i Historia yan i Lina'la' i Taotao Tåno'

Tinanga
U chalåni, u su'on mo'na yan u hotkonuyi i lina'la' CHamoru; u ta atitutuyi kinahulo' tinaotao yan u petsigi i fino' CHamoru, i lina'la', yan i finaloffan i taotao tåno' Guåhan.

Our Vision
We lead nation-building efforts to ensure the continuity of our CHamoru peoplehood and nationhood by fostering the restoration and revitalization of our language, culture and history as Guåhan's Taotao Tåno'.



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I Tinituhon i Manaotao Tåno'
CHamoru Archaeological Periodization

(*Kumisión i Fino' CHamoru yan i Fina'nå'guen i Historia yan i Lina'la' i Taotao Tåno'*)

Pre-Colonial Periods:

Manhålom i Mantátasi
The ocean voyagers came and went
(Unai I, archaeologist designation for C. 3500-3000 BP*)

Mañåga i Mantátas
The ocean voyagers stayed and established their homeland
(Unai 2, archaeologist designation for 2500-1600 BP)

Manháttalom
They settled further inland
(Huyong, archaeologist designation for 1600-1000 BP)

Manmanhåtsa Latte
They became latte builders
(Latte, archaeologist designation C. 800-1700 CE*)

In the context of land use and sustainability, the DCA plays a supportive but important role. While it does not directly manage land like the CHamoru Land Trust Commission or Ancestral Lands Commission, it actively engages in ensuring that land development and policy decisions respect cultural practices, traditional knowledge, and historical land connections. For example, the DCA may collaborate with other agencies to assess the cultural significance of sites prior to development or advocate for the preservation of ancient village locations, sacred places, or areas of ecological importance with cultural ties. In doing so, the department contributes to more holistic, place-based sustainability planning—linking land stewardship to CHamoru values of respect (ináfa'maolek), environmental harmony, and ancestral responsibility.

The DCA's broader engagement with land-related issues also includes participation in cultural impact assessments, public consultations, and educational campaigns about the importance of protecting Guam's heritage landscapes. As Guam continues to face pressures from military expansion, tourism, and urban development, the DCA serves as a cultural compass, helping to ensure that decisions about the island's future honor its indigenous roots and support long-term sustainability for the CHamoru people.

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I Finaloffan i Manaotao Tåno'
CHamoru Historic Periodization

(Kumisión i Fino' CHamoru yan i Fina'nå'guen i Historia yan i Lina'la' i Taotao Tåno')

Historical Periods:

I Inásodda' i Manmo'fo'na na Taotao-ta yan i Taotao Sanlagu Siha
First Encounters with People from the West

I Tinilaika ginen i Sanhiyong
La Nao de China Trade

I Kilu'os yan i Sapble
The Cross and the Sword

I Inachåken i CHamoru Siha: U Mamumuyi pat U Fanlå'la'?
The CHamoru Dilemma: Rebellion or Survival?

Piråta, Biaheru, yan Bayaneru Siha
Pirates, Explorers, and Whalers

I Hiniyong i Manmestisu na CHamoru
Emergence of a Hybrid Colonial Identity

Ginanna Siha Ginen i Geran Espåña yan Amerika
Spoils of the Spanish-American War

Guåhan, Kolonisan Amerika
Guam, The American Colony

CHinachalån-ña para Uta FanmanAmerikånu
The Americanization Process

Ti Geran-måmi
A War Not of Our Making

I Lina'lå'-ta gi i Duranten i Areklamenton i CHapanís
Life During the Japanese Occupation

Hinalom Amerikånu Tåtte
Americans Return 1944-1945

I Machule' Tano' yan Hinipa'
Land Taking and Displacement

I Tinilaikan i Lina'lå'-ta ginen i Nina'siñan Maisa Asta i Suetdo na Fondon Ikonomiha
From Subsistence to a Wage-Based Economy

Ma Agonkåhat Guåhan
The Rebuilding of Guam

I Tinituhon i Gebietnamenton Sibít
The Beginning of Civilian Government

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Guam Preservation Trust

The Guam Preservation Trust (GPT) is a nonprofit public corporation established by the Government of Guam in 1990 to preserve and protect the island's historic and cultural resources. Its mission is to support activities that identify, conserve, and promote Guam's architectural, archaeological, and cultural heritage for the benefit of current and future generations. Through grantmaking, public education, and technical assistance, GPT plays a central role in safeguarding the physical and intangible elements of Guam's history.

Guam Preservation Trust Strategic Plan 2023–2027

Preserving the Past, Sustaining the Future

Grounded in the principle that historic preservation is a shared public responsibility, the Guam Preservation Trust's Strategic Plan is built around the *Appreciative Inquiry* approach—focusing on community strengths to envision and implement a future where heritage preservation is deeply woven into everyday life.

The plan's key program areas reflect this integrated vision, including: ethnography and oral history; restoration of historic buildings; archaeological research; public interpretation and education; documentation and register nominations; archival research; and architectural history. **Through these, the Trust aims to deepen knowledge of Guam's past while supporting sustainable, culturally rooted development**.

The Trust's project goals include the restoration of landmark buildings, village revitalization plans, the development of heritage trails, and the integration of preservation with land use and planning regulations. The Trust also prioritizes support for CHamoru traditional knowledge, youth education, and community-based archaeology—ensuring future generations inherit not only sites but the stories and cultural values they embody.

GPT's work spans a wide range of initiatives, including the restoration of historic buildings, documentation of ancient CHamoru sites, and the development of educational materials on heritage preservation. It collaborates with local communities, cultural practitioners, scholars, and government agencies to ensure that preservation efforts are community-driven and culturally grounded. A key part of GPT's strategy is raising public awareness about the importance of heritage conservation—not only as a cultural obligation but also as a foundation for a more sustainable and resilient future.

In relation to land use and sustainability, the Guam Preservation Trust often serves as a bridge between development and conservation. It advocates responsible planning and land management practices that consider the historical and cultural significance of sites before construction or expansion of projects proceed. GPT may also contribute to cultural resource

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assessments, ensuring that land use decisions comply with preservation laws and reflect CHamoru values and historical context. This is particularly important in areas under pressure from military buildup, tourism infrastructure, or commercial development.

Furthermore, GPT's emphasis on preservation aligns with broader sustainability goals, especially in recognizing the importance of traditional knowledge systems and practices tied to the land. Protecting historic structures and landscapes helps maintain the cultural identity of Guam's communities, fosters a sense of place, and can support sustainable economic development through heritage tourism. In this way, the GPT plays a vital role in ensuring that Guam's future growth is rooted in respect for its past.

6.2.3. Vibrant Culture Through Land Use Planning and Policy

Guam's land use future cannot be charted without reckoning with its colonial past. The dual mandates of the CLTC and the GALC represent enduring efforts to return land, dignity, and opportunity to those whose ancestral ties to the land have been disrupted by war, militarization, and systemic dispossession. Yet despite decades of legal authorization, both agencies continue to face implementation barriers—from legal constraints and underdeveloped land inventories to access, infrastructure, and zoning issues that hinder land use.

At the heart of these challenges is a disconnect between land restitution and land readiness. For CLTC, inadequate infrastructure and encumbered lands have delayed thousands of leases from being utilized. For GALC, lands returned to families are often landlocked or lack zoning alignment, while unreturned lands remain inaccessible due to federal jurisdiction. These obstacles have been further compounded by under-resourced agencies and a planning framework that has historically treated land return as somewhat peripheral rather than integral to Guam's development strategy.

Integrating CLTC and GALC into Guam's comprehensive land use framework presents a powerful opportunity to align sustainability with land justice. This also requires recognizing the cultural dimensions of land—not just as property, but as identity, inheritance, and continuity. Here, the work of the Department of CHamoru Affairs (DCA), the Kumisión, and the Guam Preservation Trust (GPT) is central. DCA and the Kumisión promote cultural revitalization and CHamoru self-determination, while GPT protects sites of historical, cultural, and architectural significance. Each are critical partners in ensuring that returned and trust lands are developed in ways that preserve heritage, support language and cultural practices, and serve as spaces for education, ceremony, and community resilience.

Looking ahead to 2050, Guam must embrace a land use paradigm grounded in restorative justice, cultural sovereignty, and sustainability. A modernized, integrated approach—linking CLTC, GALC, DCA, the Kumisión, GPT, and land management agencies—can build a future where land is not only returned, but also ready, accessible, and alive with purpose. This supports a land use policy framework addressing the following components:

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1. Integrated Land Inventory and Suitability Mapping. Mandate a comprehensive, GIS-based land inventory that includes CLTC, GALC, and public lands, with cultural and historic overlays contributed by DCA and GPT. This system would identify usable lands, cultural and historic sites, encumbrances, and development potential in a single, cross-agency system, so that planning decisions are informed by cultural and historical knowledge as well as infrastructure and zoning constraints.

2. Prioritized Infrastructure Investment on CLTC and GALC Lands. Prioritize CLTC and GALC parcels in the capital improvement plan (CIP) and incorporate site significance data from GPT to avoid conflict with heritage assets, consistent with other land use objectives of the G50SP. The purpose would be to develop essential infrastructure without compromising culturally sensitive or historic areas. Trust and ancestral lands must be supported with infrastructure if appropriate for development or protected where other land use objectives dictate.

3. Land Access, Zoning, and Cultural Alignment. Establish a "Land Access and Readiness" overlay zone that accelerates rezoning and right-of-way planning for trust and ancestral lands, while preserving cultural integrity. This would unlock development while ensuring land use remains consistent with CHamoru values and cultural protections, consistent with rationale that development must be culturally grounded, especially when it involves ancestral sites or traditional uses.

4. Cross-Agency Land Justice and Cultural Planning Task Force. Create a permanent interagency task force including CLTC, GALC, Department of Land Management, Public Works, DCA, and GPT. The task force could coordinate land readiness, cultural preservation, and beneficiary needs; and resolve conflicts in land use and development. It would help overcome the current agency fragmentation that can undermine progress; integrating cultural and land planning expertise will produce more just and culturally appropriate outcomes.

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5. Legal Readiness and Beneficiary Protections. Incorporate legal support, rulemaking assistance, and constitutional review mechanisms into land use planning for both commissions to help finalize long-delayed rules (especially for GALC's Land Bank Trust), clarify eligibility, and defend against legal challenges. Legal uncertainty has long delayed trust implementation and beneficiary access to land and lease dividends.

6. Community-Led, Culturally Informed Development Frameworks. Facilitate community design charrettes and planning workshops on CLTC and GALC lands, in collaboration with DCA and GPT in expert advising roles to ensure developments reflect CHamoru cultural values, traditional knowledge, and sustainability principles. Ground-up planning builds legitimacy, protects cultural landscapes, and aligns with sustainability goals.

6.2.4. Guam's Historic Sites

Guam faces a range of land use issues related to the protection of its historic and cultural resources, rooted in the island's unique colonial history, indigenous CHamoru heritage, and strategic geopolitical significance. The island is home to a wealth of historic sites, from ancient latte villages and Spanish colonial structures to World War II-era fortifications. However, rapid development, population growth, and U.S. military expansion have placed increasing pressure on these sites, often creating tensions between preservation and progress. Land use planning must navigate complex jurisdictional boundaries and the competing interests of private landowners, developers, the Government of Guam, and federal agencies.

6.2.5. Protecting Historic Resources

A major challenge in protection of historic resources is the limited integration of historic preservation goals into broader land use and development frameworks. Guam's zoning laws and permitting processes do not always prioritize or adequately protect historic resources, which can lead to the disturbance of culturally significant sites. To address these gaps, the Guam Historic Preservation Office (GHPO) plays a central role in overseeing the identification, documentation, and protection of historic and archaeological resources. GHPO administers programs under the National Historic Preservation Act, including Section 106 reviews, and works to ensure that federal and local undertakings consider impacts on heritage sites. It also maintains the Guam Historic Properties Inventory, coordinates archaeological surveys, and provides technical assistance to agencies, developers, and landowners.

Doc. No. 38GL-26-2651.*

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Guam's historic and cultural resources include both tangible and intangible assets. Physical resources include archaeological sites, burial sites, historic buildings, and more. Non-tangible resources may include traditional stories, chants, traditional knowledge, community values, and religious practices. Cultural knowledge and practices have been passed down for many generations and continue to help influence and define the cultural identity of Guam (GSHPO 2022). Organizations such as the Micronesian Archaeological Research Services continue to study and preserve indigenous island cultures of the western Pacific, including Guam.



There are currently 134 sites on Guam that are on the National Register of Historic Places, including one National Historical Park: War in the Pacific National Historical Park (Table 6-1). The National Register of Historic Places, which was established under the National Historic Preservation Act. The 134 historic sites are spread across 17 of the 19 villages of Guam. Figure 6-3 shows the publicly available location information. The oldest archaeological sites on Guam date back hundreds of years before western contact first occurred in 1521 (Dept. of the Navy 2010). Guam's historic resources also reflect its former status under Spanish rule, occupation by Japan, and two American territorial periods (Dept. of the Navy 2010).

Despite its critical role, GHPO faces staffing and funding limitations that constrain its ability to proactively manage historic resources across the island. With a small team, it must respond to a high volume of development proposals and land use changes that may affect historic sites. The office also works to support education and public outreach through training workshops, preservation awareness events, and partnerships with schools and community organizations. These programs aim to increase local understanding of Guam's heritage and to build support for preservation efforts, particularly among younger generations.

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A Timeline of Guam's Historical Periods

(Summarized in the Guam State Historic Preservation Office 2023-2027 Plan)

1500 – 1000 B.C.E., Early Pre-Latte Period
1000 – 500 B.C.E., Middle Pre-Latte Period
500 B.C.E. – 500 C.E., Late Pre-Latte Period
500 – 800 C.E., Transitional
800 – 1100 C.E., Early-Latte Period
1100 – 1350 C.E., Mid-Latte Period
1350 – 1521 C.E., Late Latte Period
1521 – 1668 C.E., Pre-Colonial European Trade Period
1668 – 1700 C.E., Spanish Missionization Period / CHamoru Spanish Wars
1700 – 1898 C.E., Spanish Colonial Period
1898 – 1941 C.E., First American Territorial Period
1941 – 1944 C.E., World War II - Japanese Military Occupation
1944 – 1950 C.E., Post-World War II / Second American Territorial Period
1950 – Present, Political and Economic Development Period

Land ownership and access remain complex and politically sensitive issues that further complicate preservation. As discussed above, a significant portion of Guam's land is held by the U.S. military, including areas with known or potential archaeological resources. Many CHamoru communities continue to call for the return of ancestral lands and stronger protections for sacred sites, often located within or near military installations. GHPO participates in consultations related to military development projects, reviewing environmental and cultural impact assessments to identify and mitigate risks to cultural heritage. However, some advocates argue that these reviews need to be more transparent and inclusive of indigenous voices.

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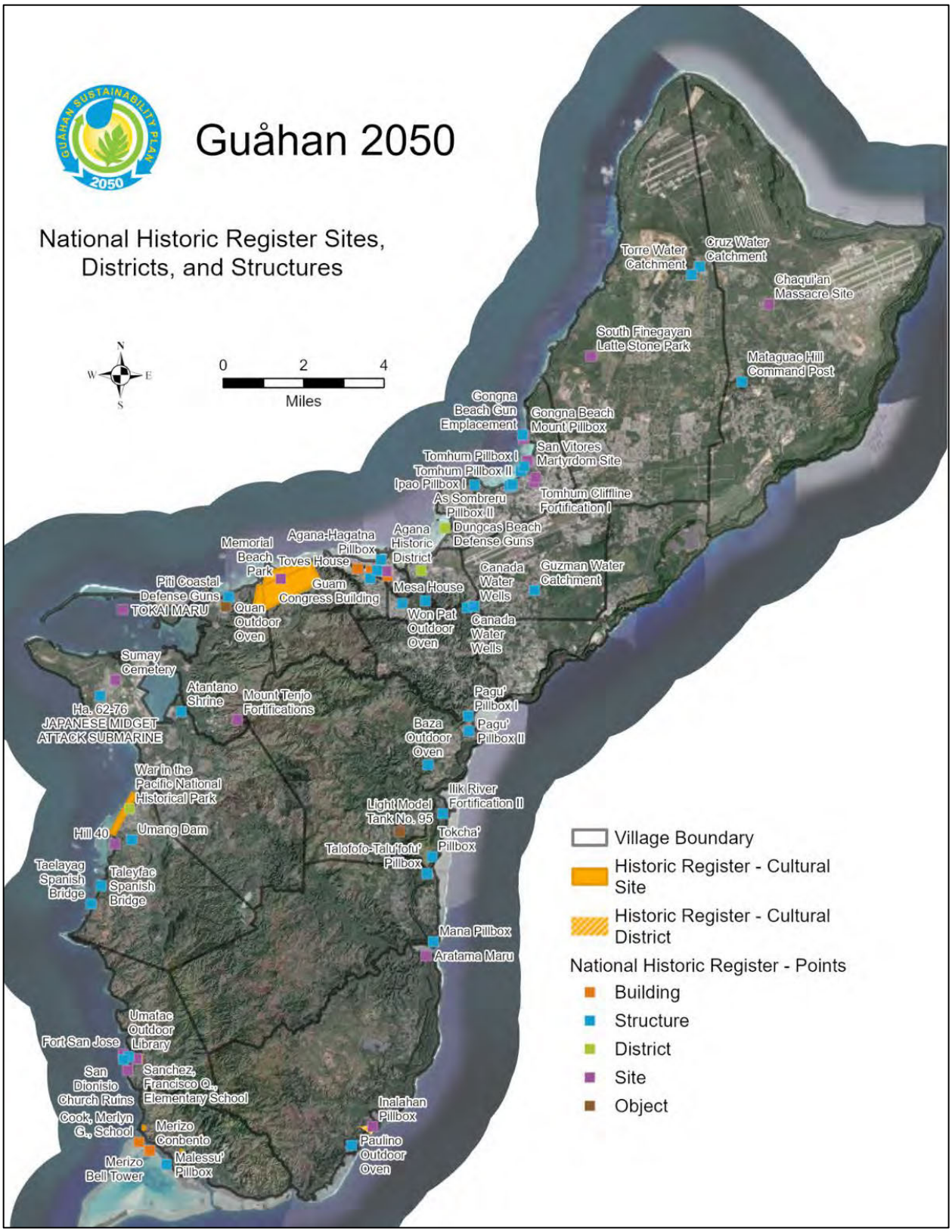

Figure 6-3. National Historic Register Sites, Districts and Structures

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Looking ahead, improving land use outcomes for historic resource protection will require sustained investment in GHPO's capacity, closer collaboration between government agencies and CHamoru stakeholders, and greater integration of cultural resource management into land use planning. A recent audit of the Guam State Historic Preservation Office (GSHPO) and the Guam Historic Resources Division (GHRD) highlighted important areas for improving the island's approach to protecting historic and cultural resources through land use planning (Guam OPA, 2025). The audit found that while GSHPO plays a central role in reviewing development projects for potential impacts to historic sites, many of its current practices are not fully aligned with Guam's existing laws, which were mostly written decades ago. Clarifying GSHPO's authority, responsibilities, and relationships with other agencies through legislative updates would help streamline operations and reduce confusion in the permitting process.

The audit also identified the need for a comprehensive, island-wide inventory of historic and archaeological sites. Although GSHPO maintains internal records, the absence of a complete and publicly accessible mapping system creates challenges for developers, landowners, and planners seeking to understand where cultural resources may be present. Enhancing and sharing this data would support more informed land use decisions, reduce permitting delays, and better protect Guam's rich heritage.

Improvements to internal procedures—such as standardizing permit reviews, formalizing rules and regulations, and ensuring that application documentation is complete and properly tracked—will also support more consistent and efficient decision-making. As part of Guam's broader sustainability goals, strengthening GSHPO's capacity and integrating cultural resource protection into land use planning policies can help balance responsible development with long-term preservation of the island's unique historical and cultural identity. Updating local



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legislation, expanding community education efforts, and ensuring early and meaningful consultation on development projects are essential steps toward safeguarding Guam's diverse and irreplaceable historic legacy.

Finally, the Guam Cultural Repository (I Sagan Fandipositon Kotturåt Guåhan), a partnership between the University of Guam and the Department of Chamorro Affairs, serves as the island's primary facility for the preservation, curation, research, and repatriation of cultural artifacts, archaeological collections, and historical records. Supporting both the Guam Museum and regional cultural research, the Repository plays a critical role in safeguarding Guåhan's tangible and intangible heritage. The facility also highlights the importance of preserving cultural resources in situ whenever possible, recognizing that many archaeological collections have already been displaced by military activities, tourism, and development, and emphasizing the need to protect Guam's cultural landscapes for future generations. Policies highlight the importance of working with this repository and other opportunities to preserve historic and cultural resources. This should include opportunities such as the current solicitation by the National Park Service concerning the Guam National Heritage Feasibility Study (https://parkplanning.nps.gov/projectHome.cfm?projectID=124223).

6.2.6. Cultural and Historic Preservation and Sustainability



The Guåhan Sustainability Plan's cultural heritage and indigenous connections policies align closely with multiple United Nations Sustainable Development Goals (SDGs), particularly SDG 11 (Sustainable Cities and Communities), SDG 4 (Quality Education), SDG 8 (Decent Work and Economic Growth), SDG 16 (Peace, Justice and Strong Institutions), and SDG 17 (Partnerships for the Goals). By emphasizing the preservation of historic sites, cultural landscapes, and traditional practices, plan policies reflect the targets under SDG 11.4, which focuses on strengthening efforts to protect and safeguard the world's cultural and natural heritage. The proposed overlay zones, GIS mapping, and integrated planning tools also support inclusive and sustainable urban planning (SDG 11.3), ensuring that development is compatible with Guam's cultural identity.

Other policies that prioritize community engagement, education, and intergenerational learning align with SDG 4.7, emphasizing education for sustainable development and appreciation of cultural diversity. These initiatives promote community stewardship of heritage resources while fostering a deeper understanding of indigenous knowledge among younger generations. The incorporation of cultural heritage into curricula and the promotion of oral histories directly support lifelong learning and cultural awareness.

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The plan's focus on cultural tourism, adaptive reuse of historic structures, and infrastructure investments on culturally significant lands contributes to sustainable economic growth under SDG 8.9, which calls for policies that promote sustainable tourism and local culture. Furthermore, the establishment of strong partnerships, legal frameworks, and interagency coordination demonstrates commitment to SDG 16.6 and 17.17 by promoting accountable institutions, transparent governance, and cross-sector collaboration in cultural conservation and land use planning.

Finally, the G50SP supports the principle of balancing conservation with development and enhancing access to cultural heritage, echoing SDG 10.2 and 11.7 goals around inclusivity and equitable access to public spaces. By integrating cultural values into building design, land use zoning, and planning frameworks, the policies advance an overarching vision of sustainable development rooted in Guam's unique identity, reinforcing resilience and equity across generations.

6.2.7. Cultural and Historic Resource Protection Land Use Policies

Cultural Heritage and Indigenous Connections

VC-1. Preservation of Historic Sites and Heritage.
Designate and protect culturally and historically significant areas through zoning ordinances and conservation districts to ensure Guam's cultural heritage, including CHamoru ancestral sites, burial sites, cultural and historic resources, is preserved and not adversely impacted by new growth and development. Consider establishing a "Land Access and Readiness" overlay zone that accelerates rezoning and right-of-way planning for trust and ancestral lands, while preserving cultural integrity.

VC-2. Historic and Cultural Properties, Sites, and Resources.
Conduct comprehensive surveys and mapping of Guam's cultural and historic resources to ensure their inclusion in land use planning. Identify, preserve, and protect historic/cultural properties. Establish buffer zones around historic/cultural sites to prevent encroachment from incompatible land uses.

VC-3. Integrated Historic and Cultural Resource GIS System.
Create a comprehensive, GIS-based land inventory that includes CLTC, GALC, and public lands, with cultural and historic overlays contributed by DCA, GPT, and Kumisión i Fino' CHamoru.

VC-4. Preserve Traditional Practices and Knowledge.
Designate areas for the continuation of traditional CHamoru cultural practices, such as farming, fishing, and weaving. Support cultural festivals, educational programs, and workshops that preserve and celebrate Guam's heritage.

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VC-5. Strong Partnerships.
Establish strong partnerships between the Guam Historic Preservation Office, village communities, the Guam Preservation Trust, Kumisión i Fino' CHamoru, and other interest community members and organizations to support preservation of Guam's cultural heritage

VC-6. Cross-Agency Land Justice and Cultural Planning Task Force.
Create a permanent interagency task force including CLTC, GALC, Department of Land Management, Public Works, DCA, Kumisión i Fino' CHamoru, GPT, and BSP. The task force shall coordinate land readiness for meeting land transfer and heritage preservation goals, potential beneficiary needs; and resolving conflicts in land use and development, including meeting other objectives of the G50SP.

Community Involvement and Engagement

VC-7. Collaboration.
Facilitate collaboration with the village communities in identifying, preserving, and managing cultural heritage sites.

VC-8. Awareness.
Promote public awareness programs to educate residents and visitors about Guam's cultural heritage.

Regulation of Development Activities

VC-9. Impact Assessment.
Require cultural and historical impact assessments for all major development projects.

VC-10. Protecting Historic Sites.
Implement strict regulations to prevent the destruction or alteration of historic sites, including penalties for violations.

VC-11. Prioritize Infrastructure Investment on CLTC and GALC Lands.
Prioritize CLTC and GALC parcels in capital improvement planning and incorporate site significance data from GPT to avoid conflict with heritage assets, consistent with other land use objectives of the G50SP.

Promote Adaptive Reuse of Historic Structures

VC-12. Reuse Historic Buildings.
Encourage the rehabilitation and adaptive reuse of historic buildings for modern purposes while maintaining their cultural integrity. Provide incentives such as grants or tax breaks for property owners who preserve and restore historic structures.

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Sustainable Tourism Practices

VC-13. Cultural Tourism.
Encourage tourism activities that respect and highlight Guam's cultural heritage without causing degradation to historical sites, natural areas, and Guam's inherent beauty.

VC-14. Enhancing Cultural Experiences.
Develop heritage trails and cultural centers to enhance visitor experiences while protecting sensitive areas.

Integration into Land Use Planning

VC-15. Cultural Landscapes, Sites, and Practices.
Ensure that land use plans incorporate measures to protect cultural landscapes, archaeological sites, and traditional CHamoru practices.

VC-16. Designate Cultural Preservation Sites.
Prioritize the preservation of cultural sites in land use designations and infrastructure development.

VC-17. Building Design and Construction.
Encourage building construction and design guidelines that help create 'people places' based on architectural designs from pre-war era Guam and other Pacific nations, while encouraging innovation and design excellence. Design public buildings consistent with village character, cultural context, and public function.

Partnership with Cultural Organizations

VC-18. Strengthen Partnerships.
Strengthen partnerships with institutions like the Guam Preservation Trust, Department of CHamoru Affairs, Kumisión i Fino' CHamoru, and other local museums and artifact repositories, to support conservation efforts. Secure funding and technical expertise to maintain and restore cultural heritage assets.

VC-19. Balance Development and Conservation.
Protect and enhance natural landscapes for recreation and cultural activities while preserving ecological integrity. Foster sustainable growth that respects the cultural and historical fabric of Guam by aligning development projects with heritage conservation goals. Develop urban design guidelines that reflect and honor the island's cultural identity.

VC-20. Enhance Accessibility to Cultural Heritage.
Improve infrastructure to provide safe and sustainable access to cultural and historic sites for both residents and tourists. Utilize technology, such as virtual tours and

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augmented reality, to share Guam's history while reducing physical strain on sensitive sites.

VC-21. Strengthen Legal Frameworks.
Update and enforce laws related to the protection of cultural heritage, ensuring alignment with international standards such as UNESCO guidelines. Empower local authorities with the legal tools to intervene and prevent activities that threaten cultural resources.

VC-22. Promote Intergenerational Learning.
Foster programs that connect younger generations with elders to learn about the island's history, language, and traditions. Incorporate Guam's cultural heritage into school curriculums to ensure continuity of knowledge.

VC-23. Support Research and Documentation.
Encourage and promote academic research and community-based projects that document Guam's history, oral traditions, and archaeological findings, such as the Guam Cultural Repository (*Sagan Fandipositon Kotturåt Guåhan*) at the University of Guam. Develop an accessible digital archive for historical and cultural records.

6.3. Community Mental Health, Physical Health and Well-being

Community well-being is the foundation of a vibrant and resilient culture. On Guam, where the health of both people and land is deeply interconnected, the built environment—including how land is used, developed, and preserved—plays a critical role in supporting physical and mental health. The Guåhan Sustainability Plan recognizes that sustainable land use planning can reduce health disparities, promote active lifestyles, and ensure equitable access to services and green space for all residents.

6.3.1. Integrating Health Priorities into Land Use Planning

The Guam Department of Public Health and Social Services (DPHSS) identifies key community health indicators including obesity, tobacco and alcohol use, infant mortality, and traffic fatalities. Cardiovascular disease remains the island's leading cause of death, followed closely by cancer. These non-communicable diseases (NCDs), which are influenced by lifestyle factors such as diet and physical activity, can be addressed through thoughtful design of the spaces where residents live, work, and play.

The 2019–2023 NCD Strategic Plan, currently being updated for 2025 – 2030, set goals to increase physical activity and fruit and vegetable consumption across Guam. Despite challenges—including increasing youth inactivity—the plan prioritizes policies to expand opportunities for movement and access to nutritious local food. Key strategies include creating active spaces in schools, community centers, and workplaces, and promoting community

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gardens and healthy food environments. Enforcement of Public Laws 31-141 (Healthy Vending Machine Policy) and 32-085 (Healthy Food Establishments) complement these land-based interventions.

Land use policies in the G50SP can reinforce these objectives by:

- Requiring pedestrian infrastructure and bike paths in new developments
- Ensuring access to recreational spaces and gardens within walking distance of homes
- Encouraging mixed-use zoning that brings food, services, and wellness opportunities closer to residents

In short, land planning is health planning—and investing in walkable, green, and connected communities directly supports physical health.

6.3.2. Expanding Access to Health Services

Equitable access to essential services is another core aspect of well-being. Guam faces persistent challenges in health care delivery due to its geographic isolation, small population, and limited medical infrastructure. These barriers disproportionately affect rural and underserved areas, where health clinics and emergency services may be absent or outdated.

The Sustainability Plan addresses these gaps by supporting policies that prioritize health facilities in development approvals. Policies call for expanded investment in health infrastructure, especially in areas where access is currently limited. This includes culturally competent clinics, emergency response stations, and wellness centers designed to serve diverse and multilingual populations.

The Need for a New Hospital Services

The construction of a new hospital represents a critical public need for Guam, ensuring that residents have access to modern, resilient, and high-quality medical care. As the island's population grows and existing facilities age, planning for adequate and appropriately located land becomes an essential component of long-term community well-being. Land use policy should therefore support proactive identification and reservation of suitable public lands for essential health infrastructure, including hospitals, clinics, and supporting utilities. Such policies can streamline permitting and interagency coordination, helping to avoid future delays while ensuring that the hospital's siting aligns with broader community development, emergency preparedness, and infrastructure plans. Policies should also ensure that potential land use issues, like conversion of agricultural land, habitat impacts, infrastructure and transportation concerns, and aesthetic issues are addressed.

The Guam 2050 Sustainability Plan provides an overarching framework that supports this balance by aligning essential public facilities with appropriate land use designations. With respect to the need for new hospital services the plan designates the Mangilao parcel and approved by the Guam Land Use Commission, as well adjacent area, as suitable for institutional

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and community service uses (public facility) —consistent with development of a new hospital and associated health infrastructure. By guiding the hospital's siting within an already planned institutional area, the Guam 2050 Plan helps ensure that critical health investments advance in a manner consistent with long-term sustainability goals, coordinated infrastructure expansion, and protection of surrounding land uses and community character.

Mental health is another area of urgent need. The Guam Behavioral Health and Wellness Center (GBHWC) serves as the island's central provider of mental health and substance use services. Despite earning a three-year CARF accreditation, the Center has identified opportunities to strengthen its service delivery, infrastructure, and engagement with clients. Land use strategies that support mental health include:

- Preserving quiet, natural spaces for reflection and healing
- Locating behavioral health facilities near transportation corridors and population centers
- Ensuring new developments include supportive housing and community service centers

The plan encourages cross-sector partnerships—between developers, health providers, and local agencies—to embed these services into the fabric of everyday life.

6.3.3. Supporting Vulnerable Communities

Equity, inclusion, and community engagement are the heart of a sustainable and vibrant culture. Guam's foster care system, behavioral health services, and programs for individuals with disabilities face resource shortages and staffing gaps, exacerbated by high demand and economic hardship. As of 2024, only 80 licensed foster families serve more than 670 foster children, often placed in care due to poverty and substance use.

Land use planning can support these vulnerable populations by:

- Allocating space for family support services, emergency shelters, and affordable housing
- Ensuring every village has access to inclusive public spaces and health services within a 15-minute walk
- Prioritizing infrastructure investments in disadvantaged communities

For individuals with disabilities, inclusive design standards must be applied to embedded into zoning codes, public infrastructure, and parks planning to ensure accessibility and promote independence.

Land use planning and development decisions can also take into account social vulnerability broadly to guide and prioritize outcomes. The recent Guam Hazard Mitigation Plan developed a social vulnerability index (SVI) for Guam drawing on recognized methodologies for understanding factors that shape the vulnerability of specific communities and populations. Such factors include demographic characteristics like age and socio-economic status, housing and environmental conditions, such as the availability of services, and access to

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communication services, such as phone and internet service. Figure 6-4 shows the ranking of each of Guam's villages based on this SVI assessment in the GHMP.

Table 8. Social Vulnerability Index (SVI) and Percentile Rank for the 19 Municipalities in Guam Stratified by Methodology[16]

CDC Methodology			Adjusted Methodology*		
Rank	SVI	Municipality	Rank	SVI	Municipality
1	1.00	Agat	1	1.00	Agat
2	0.94	Merizo	2	0.94	Dededo
3	0.89	Hagatna	3	0.89	Yigo
4	0.83	Mongmong-Toto-Maite	4	0.83	Hagatna
5	0.78	Dededo	5	0.78	Umatac
6	0.72	Mangilao	6	0.72	Mangilao
7	0.67	Umatac	7	0.67	Merizo
8	0.61	Yigo	8	0.61	Mongmong-Toto-Maite
9	0.56	Sinajana	9	0.56	Inarajan
10	0.50	Yona	10	0.50	Chalan Pago-Ordot
11	0.44	Barrigada	11	0.44	Barrigada
12	0.39	Inarajan	12	0.39	Yona
13	0.33	Chalan Pago-Ordot	13	0.33	Sinajana
14	0.28	Agana Heights	14	0.28	Talofofo
15	0.22	Talofofo	15	0.22	Tamuning
16	0.17	Tamuning	16	0.17	Agana Heights
17	0.11	Asan-Maina	17	0.11	Asan-Maina
18	0.06	Santa Rita	18	0.06	Santa Rita
19	0.00	Piti	19	0.00	Piti

* Adjusted for Guam definition of minority (neither CHamoru nor Filipino) and additional Guam-specific variables on housing, connection, and other minority indicators.

Figure 6-4. Social Vulnerability of Guam's Villages (Guam Homeland Security, 2024).

6.3.4. Childcare and Community Infrastructure

High-quality, affordable childcare enables families to thrive. The Bureau of Child Care Services (BCCS) under DPHSS plays a key role in expanding access to early childhood and afterschool programs for working families. Also, the Department of Youth Affairs operates 3 Youth Centers which provide after school programs and intercession camps in Hagat, Mangilao and Dededo free of charge. As costs continue to go up, it will be important to reassess the income level requirements for receiving childcare services to support Guam's families as much as possible. Land use policy can support this mission by:

- Encouraging the integration of childcare facilities in residential and commercial zones
- Offering incentives for developments that include on-site early learning centers
- Ensuring safe routes to childcare through improved pedestrian infrastructure

These strategies directly support workforce participation and long-term child development.

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Youth Employment. As reported by the Department of Youth Affairs (DYA), in 2021 DYA's Summer Youth Employment Program was resurrected after over 15 years in hiatus; each year the Program has expanded either in capacity or with enhanced features in response to participant/parent exit surveys and community needs. In 2024, a Child Care Workforce Development component was added to help grow interest in the childcare industry for youth participants. This feature was a collaboration between DYA and DPHSS, Division of Children's Wellness. This feature is sustained by Child Care Development Funds. Additionally, in the 2025 program, a cultural component was added in collaboration with the Guam Museum/Uritao Leadership Academy. The Academy featured an intentional and intensive cultural curriculum of which Summer Youth Participants, age 15-17 years, were recruited, and efforts were focused on a six-week program that offered extensive cultural training. The curriculum included firsthand experience in the art of carving, slinging, chant and dance, navigation and seafaring, farming, fishing, hut building and CHamoru history and language lessons. In addition, the DYA promotes youth engagement/volunteerism by participation in island beautification projects, coastal clean up, tree planting projects, and recycling efforts.

6.3.5. Leveraging Parks and Open Spaces for Community Health



Guam's parks, natural areas, and recreational facilities are vital community assets that provide space for physical activity, stress relief, cultural connection, and climate resilience. The Guam Department of Parks and Recreation (DPR) serves the island's residents and visitors by managing public parks, beaches, recreational facilities, community programs, and preserving historical and cultural resources. The DPR oversees approximately 68 public parks and beaches, including 12 beach parks, manages Guam's only public cemetery, and as summarized above, is responsible for protecting historic areas, buildings, and sites significant to Guam's history. Figure 6-5 shows the general location of DPR's park assets. These areas encompass 1,261 acres of public land. The DPR's Parks Division is tasked with controlling, managing, developing, and maintaining all the areas within the Guam Territorial Park System.

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In addition to its management responsibilities, the DPR plays a role in land use planning by ensuring that new residential subdivisions and planned unit developments meet requirements for parks and recreation functions. This integration aims to enhance the quality of outdoor recreation resources and accommodate the anticipated growth of Guam's population, which will place additional demands on parks and recreation services. The DPR also is involved in the Guam Territorial Park System's development and maintenance, classifying areas such as Natural Preserves, Conservation Reserves, Historic Sites, or Recreation Areas. This classification guides the appropriate use and development of these lands, balancing conservation efforts with public access and recreation needs. The DPR faces several challenges in its operations. One significant issue is inadequate funding, which hampers the Park Patrol's ability to meet growing demands. Challenges include understaffing, limited resources, and outdated equipment. Such resources are necessary in part to ensure safety and security in DPR-managed areas.

Parks and Recreation Strategic Goals

- Promote healthy active lifestyles through community recreation programs, public-private partnerships, and development of public recreational facilities and public parks.
- Maintain clean and safe public parks, beaches and restrooms for island residents and visitors alike.
- Promote, preserve and protect Guam's rich cultural and historical resources.
- Identity, evaluate, and nominate historic properties.
- Strengthen community involvement in historic preservation.
- Establish strong partnerships.
- Improve efficient retrieval of information for research and distribution.

DPR CITIZENS CENTRIC REPORT FY2021.

From a land use planning perspective, it is important that parks and open spaces areas are both adequate and equitably distributed to serve the population. Guam has a significant number of parks and recreation facilities, as well as other lands available for public use and enjoyment. In addition to the 1,261 acres of land programmed specifically for parks and recreation, as of 2014, DPR also managed an additional 5,414 acres of undeveloped property. In addition, and in some cases adjacent to these realized and potential areas are nearly 10,000 acres of green space within Guam's Forest System Inventory, and roughly 5,000 acres of managed space in ecological preserves, conservation areas, and the territorial seashore reserve. These large expanses of nearby green or open space offer varying levels of recreational opportunities and have potential to greatly expand access in instances where associated land management, e.g. conservation areas, may be compatible with certain recreational opportunities. Figure 6-5 and Table 6-1 highlight parks, recreation and green space access by village, including the basic DPR land inventory, as well as all open and green spaces within each village.

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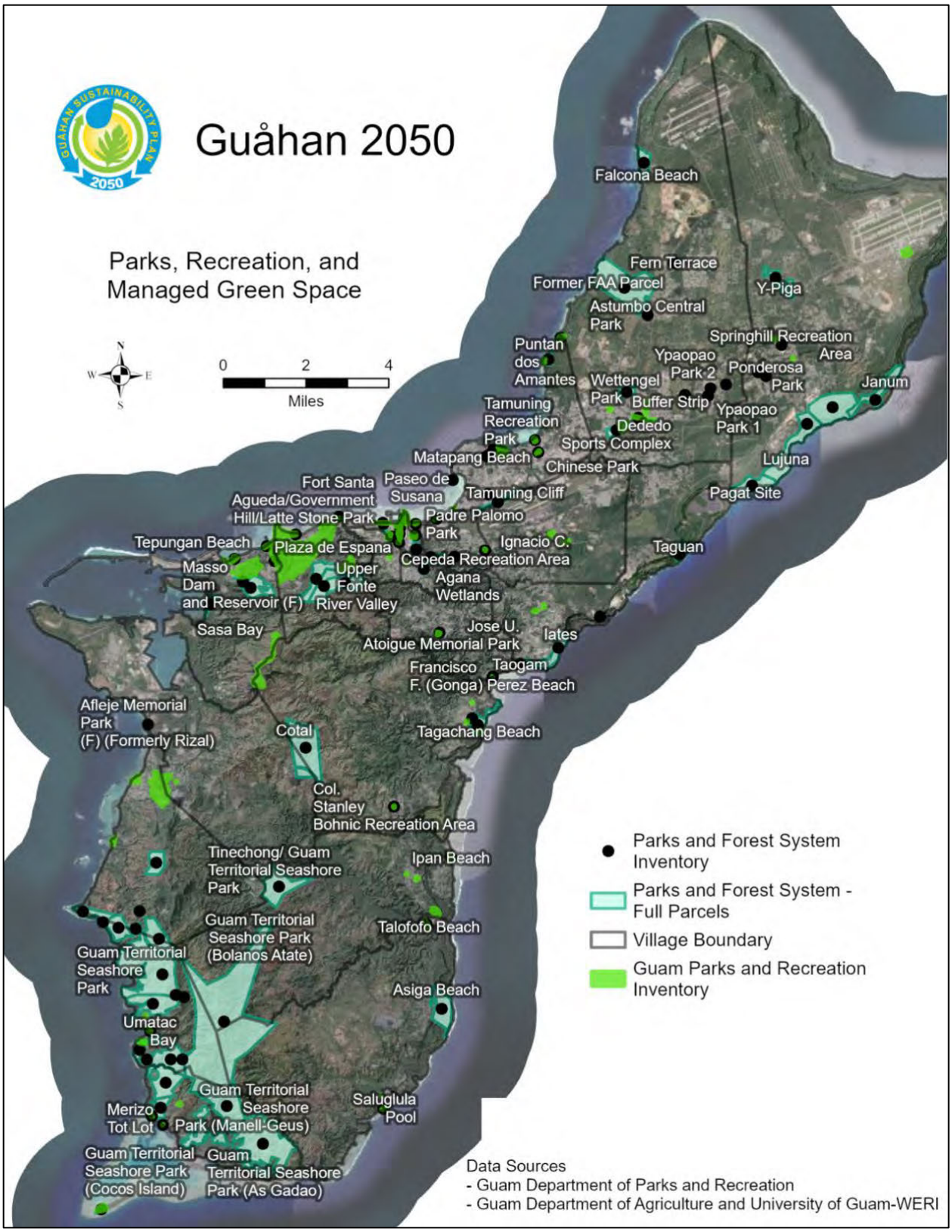

Figure 6-5. Parks and Recreation Areas on Guam.

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Table 6-1. Parks, Recreation, and Green Space on Guam.

Village	Area (Sq. Mi.)	Population (2020)	Park Area per Capita (SF)	Percent of Village Recreation or Park Space	Village
Humåtak	6.1	647	850.3	0.32	100
Hågat	10.6	4515	1435.7	2.19	68.9
Malesso'	6.0	1604	144.7	0.14	57.6
Santa Rita	16.4	6470	187.4	0.26	40.7
Yigo	35.8	19339	45.9	0.09	39.7
Piti	7.3	1585	4598.5	3.56	34.8
Dededo	30.3	44908	38.7	0.21	32.2
Asan-Ma'ina	5.7	2011	13506.5	17.17	31.3
Talo'fo'fo	17.8	3550	321.3	0.23	25.6
Hagåtña	0.8	943	2620.3	10.48	24.5
Inålahan	18.7	2317	134.2	0.06	8.2
Sinajana	0.9	2611	15.7	0.16	7.7
Yona	20.3	6298	318.8	0.36	5.4
Tamuning	5.7	18489	103.4	1.2	3.2
Mangilao	10.3	13476	17.8	0.08	3.1
Mongmong-To'to-Maite'	1.8	6380	6.9	0.09	0.8
Agana Heights (Paasan)	1.0	3673	22.6	0.29	0.7
Chalan Pago-Otdot	5.7	7064	18.9	0.08	0.3
Barrigada	8.5	7956	31.4	0.11	0.3

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As shown, access to these park resources is uneven. For example, while villages like Piti and Hagåtña have abundant green space per capita, others like Dededo, Yigo, and Mongmong-Toto-Maite all have much less so.

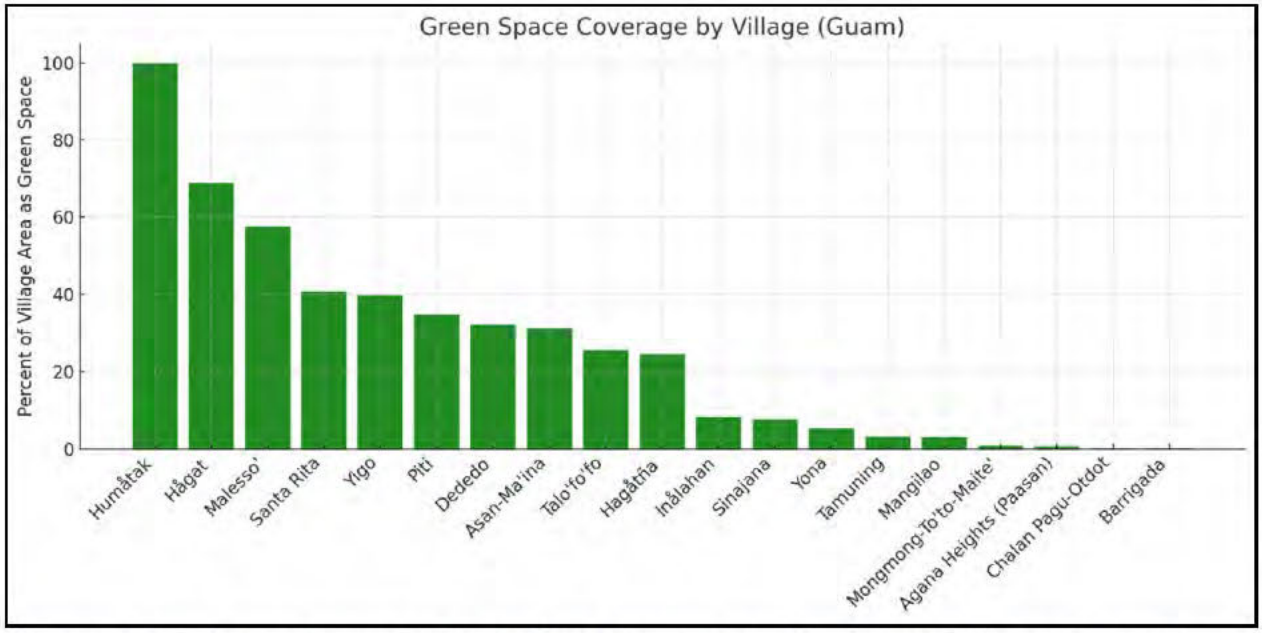

Figure 6-6. Green Space Coverage by Village (Data Sources: Guam Department of Parks and Recreation, Guam Department of Agriculture, National Park Service, Guam Bureau of Statistics and Plans).

Access to areas that are specifically managed for recreational purposes, primarily through DPR and the National Park Service, are largely concentrated along the central-west coastal villages and associated community centers. Hågat, Hagåtña, Piti, and Asan-Ma'ina have a variety of recreational opportunities, community and urban parks, and accessible shorelines distributed along primary transportation routes and popular reaches of shoreline, and the highest ratio of parks and open spaces per resident. Talo'fo'fo and Humatak also maintain a larger amount of green space access relative to the rest of the island, with coastal and seashore parks in particular featuring key community assets.

While the other northern and central villages maintain key community facilities, including popular sports complexes and community centers, these spaces have not expanded in pace with residential growth, and may require particular attention in the face of projected expansion of development in this region of Guam. In Southern Guam, growth and development pressures are less pressing, although a surge of interest in restoration of natural areas throughout upper watersheds and along the shoreline present a key moment of opportunity to align with SCORP objectives.

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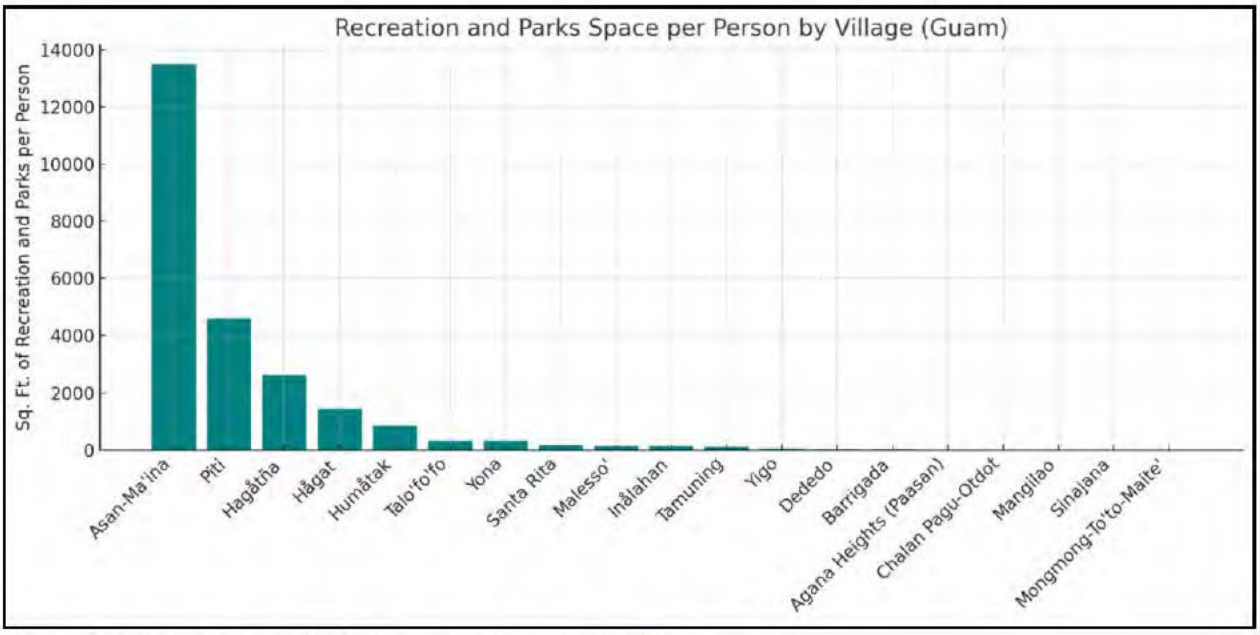

Figure 6-7. Recreation and Park Space per Person by Village

Guam has addressed these concerns in the most recent Statewide Comprehensive Outdoor Recreation Plan (SCORP) in 2014. This plan articulated primary goals as:

- Enhancing the quality of outdoor recreation resources
- Increasing the quantity of outdoor recreational resources
- Improving public awareness of available outdoor recreational resources
- Encouraging intergovernmental and private sector planning to meet the growing outdoor recreation needs of the Territory

The plan also supported targeted investments in:

- New and revitalized parks in growing residential areas
- ADA-accessible trails, outdoor fitness zones, and community gardens
- Shoreline access, nature reserves, and urban forests

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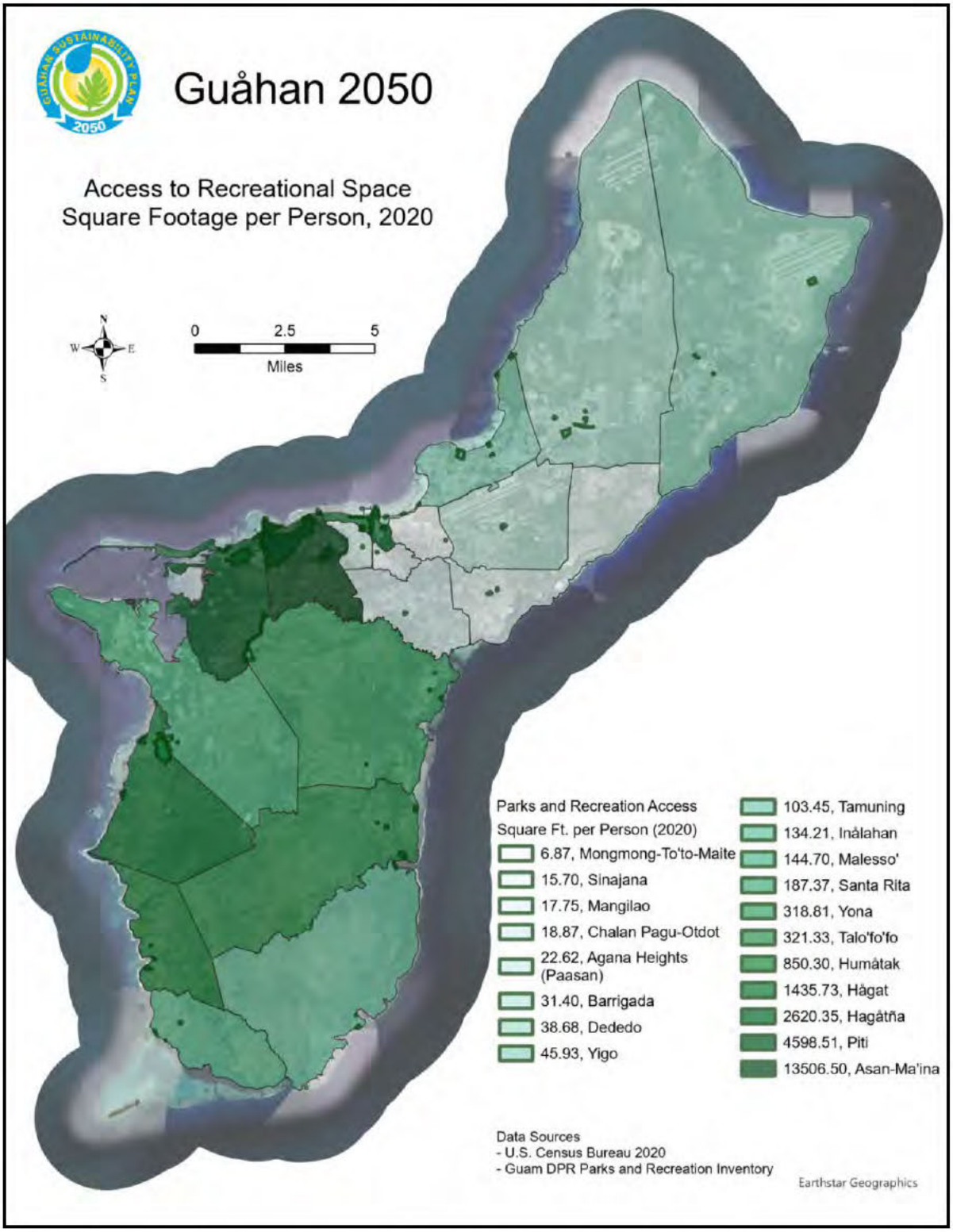

Figure 6-8. Map Highlighting Village Access to Parks and Recreation as a Ratio of Population to Area, Including Guam DPR Facilities NPS National Historic Park Units (see Figure 6-7). *Any Green Space includes Guam Forest System Inventory, National Wildlife Refuge, Seashore Park, Conservation Areas, Natl. Park Service Units, and Guam DPR Inventory.

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Embedded in these goals and targets are land use planning implications, particularly with respect to increasing the quantity of resources, and enhancing quality in part through enabling or ensuring greater access. Input gathered through public meetings, user surveys, and agency feedback have highlighted the need to leverage partnerships with the private sector and entities involved in Guam's development (SCORP 2014). The latter have a potential role in the programming of undeveloped areas wherein new growth can be paralleled by new or enhanced allocations of green space, particularly during the land use decision-making and negotiation process. Other land use objectives, such as integrating climate-resilient designs—such as shaded walkways, stormwater gardens, and wind-resistant structures—will help ensure that parks and public spaces remain safe, comfortable, and usable in Guam's changing climate.

6.3.6. Public Shoreline Access



Public access to Guam's shoreline is both a cultural right and a legal guarantee rooted in traditional practices and supported by the Ocean Shore Public Access Law of 1987. The island's coastline has long served as a vital space for fishing, recreation, cultural ceremonies, and family gatherings. However, increasing development pressures and privatization of coastal areas have limited access to many parts of the shoreline, particularly where traditional rights-of-way have been obstructed or neglected. This has not only infringed on the public's right to free movement in public spaces but also impacted community well-being and the preservation of cultural lifeways tied to the ocean.

To address these issues, the law establishes clear requirements for the protection and maintenance of traditional access routes such as footpaths, bull cart trails, and roads historically used by the public. It prohibits the blocking of these paths by private landowners and ensures that development permits are contingent upon maintaining or providing alternative public access to the shore. This creates a foundation for Parks and Recreation, in coordination with land use planning agencies, to actively defend existing pathways and prevent further loss of shoreline accessibility due to unregulated development.

Beyond preserving traditional access, the law empowers the Department of Parks and Recreation to acquire new rights-of-way where existing ones are insufficient or unavailable. This authority is essential for creating equitable access, especially in areas where land ownership patterns or physical barriers have left communities cut off from the coast. Additionally, any government land situated between a public highway and the ocean must include a perpetual public easement before it can be transferred, ensuring long-term access across public property.

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Incorporating these legal safeguards into long-range planning will be critical for upholding the vision of the Guåhan 2050 Sustainability Plan. As shoreline use increases due to population growth and climate adaptation efforts, a proactive, legally informed strategy for access will ensure that all residents can enjoy Guam's coastal resources. Strengthening shoreline access policies through Parks and Recreation initiatives will support social equity, cultural vitality, and environmental stewardship—core values of a sustainable future for Guam.

6.3.7. Scenic and Visual Resource Protection

Guam's scenic and visual resources are among its most treasured assets, deeply tied to the island's natural character, cultural identity, and quality of life. From limestone cliffs overlooking vibrant coral reefs to historic coastal villages nestled in lush hills, these vistas provide not only recreational and aesthetic enjoyment, but also spiritual and cultural grounding for many CHamoru communities. As development pressures increase and sea level rise encroaches on coastal lands, the protection of scenic resources becomes both a land use and a cultural imperative.

Many of Guam's most iconic views are experienced from public overlooks, roads, trails, and coastal points such as Puntan Dos Amantes (Two Lovers Point), Mount Lamlam, and the overlooks at Cetti Bay and Umatac Bay. These views are often layered with ecological richness and historical significance, offering panoramas of intact limestone forests, coral lagoons, and historically important landmarks. Some of these areas, like Ritidian Point and the Fena Valley watershed, are also important for biodiversity conservation, reinforcing the importance of scenic landscapes as multi-benefit resources.

Current Guam law reflects the importance of protecting these landscapes. One of the objectives for the Seashore Reserve Plan, per Title 21 GCA Section 63107, is: "(E) Public access for maximum visual and physical use and enjoyment of the seashore reserve by the public." Title 21 GCA § 61504 recognizes the unique visual and ecological importance of Guam's beach areas, prohibiting indiscriminate building within 35 feet of the high-water mark and limiting the height of buildings within 75 feet. These restrictions serve not only to reduce environmental harm and preserve public access, but also to protect the visual quality of beachscapes, which are central to the island's identity and tourism economy. This legal framework supports stronger integration of visual quality into land use decision-making and coastal development controls.

Accordingly, the Guåhan 2050 Sustainability Plan elevates visual resource protection as a cross-cutting theme in the Land Use and Vibrant Communities elements. Land use policies VC-30

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through VC-36 emphasize maintaining public access to scenic areas, locating incompatible uses away from critical view corridors, and reinforcing development restrictions near fragile coastal zones. Future land use planning efforts should expand view corridor mapping, designate additional scenic overlooks, and promote climate-resilient public infrastructure in ways that honor and preserve Guam's scenic heritage.

Below is a table of significant scenic viewpoints, which can serve as a basis for protection priorities, interpretive planning, or future updates to zoning and coastal management regulations. Figure 6-9 shows the visual resources identified in the table. Additional viewpoints may be identified through participatory planning and local knowledge sharing.

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Table 6-2. Significant Views and Scenic Resources on Guam.

Name	Village	Significance	Landscape
Puntan Dos Amantes (Two Lovers Point)	Tumon	limestone cliff with panoramic views of Tumon Bay and the Philippine Sea.	Sweeping views of lush volcanic hills, deep blue waters, and historic coastal terrain.
Cetti Bay Overlook	Umatac	Part of the Guam National Natural Landmark (together with Sella Bay and Fena Valley).	Sweeping views of lush volcanic hills, deep blue waters, and historic coastal terrain.
Mount Lamlam and Mount Jumullong Manglo	Agat	Mount Lamlam is often described as the world's tallest mountain from base to peak (from the Marianas Trench base to its summit).	High-elevation views of southern Guam's rugged interior, forests, and coastlines.
Umatac Bay and Fort Nuestra SeÃ±ora de la Soledad	Umatac	Historic Spanish-era village and fort.	Classic southern Guam coastline with hills descending to a picturesque bay.
Ritidian Point (Guåhan National Wildlife Refuge)	Yigo	Northernmost point of Guam; limestone forest, endangered species habitat.	White sand beaches, turquoise lagoons, and dramatic cliffs.
Talofofo Falls and River Valley	Talo'fo'fo'	One of Guam's most accessible waterfalls.	Lush jungle river valley, waterfalls, and scenic trails.
Pago Bay and University of Guam Ridge	Mangilao	Major east coast bay with expansive ocean views and prominent limestone ridges.	Combination of coastal and inland views; coral reef and estuarine habitats.
Inarajan Pools and Coastline	Inarajan	Natural saltwater pools and lava rock formations.	Unique rocky shoreline with tidal pools and reef platforms.
Sella Bay Overlook and Trail	Umatac	Historic trail access to a remote bay.	Limestone hills and scenic coastal views with cultural remnants (e.g., latte stones).
Asan Bay Overlook	Asan	Commemorates the U.S. Marines landing during WWII. Features memorials and interpretive panels about the island's liberation.	Rolling hills and a wide view of the bay and capital city Hagåtña.

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Name	Village	Significance	Landscape
Latte of Freedom	Hagåtña	Symbolizes Chamorro strength and resilience. Located at the Governor's Complex, it offers views of the western coastline.	Towering latte stone structure with a 360Â° viewing platform.
Fort Santa Agueda	Hagåtña	Spanish fort built in the early 1800s. Offers a blend of colonial history and urban scenery.	Elevated views of the capital city and Hagåtña Bay.
Talofofo Bay Overlook	Talo'fo'fo'	Dramatic Views	A black sand beach with dramatic waves and lush cliffs.
Ipan Beach Park Lookout	Talo'fo'fo'	Popular with locals for weekend gatherings and cultural events.	Wide ocean views with peaceful beaches and picnic areas.
Tanguisson Beach and Lookout	Dededo	A hidden gem with ties to ancient Chamorro fishing practices.	Unique mushroom-shaped limestone formations and a rugged shoreline.

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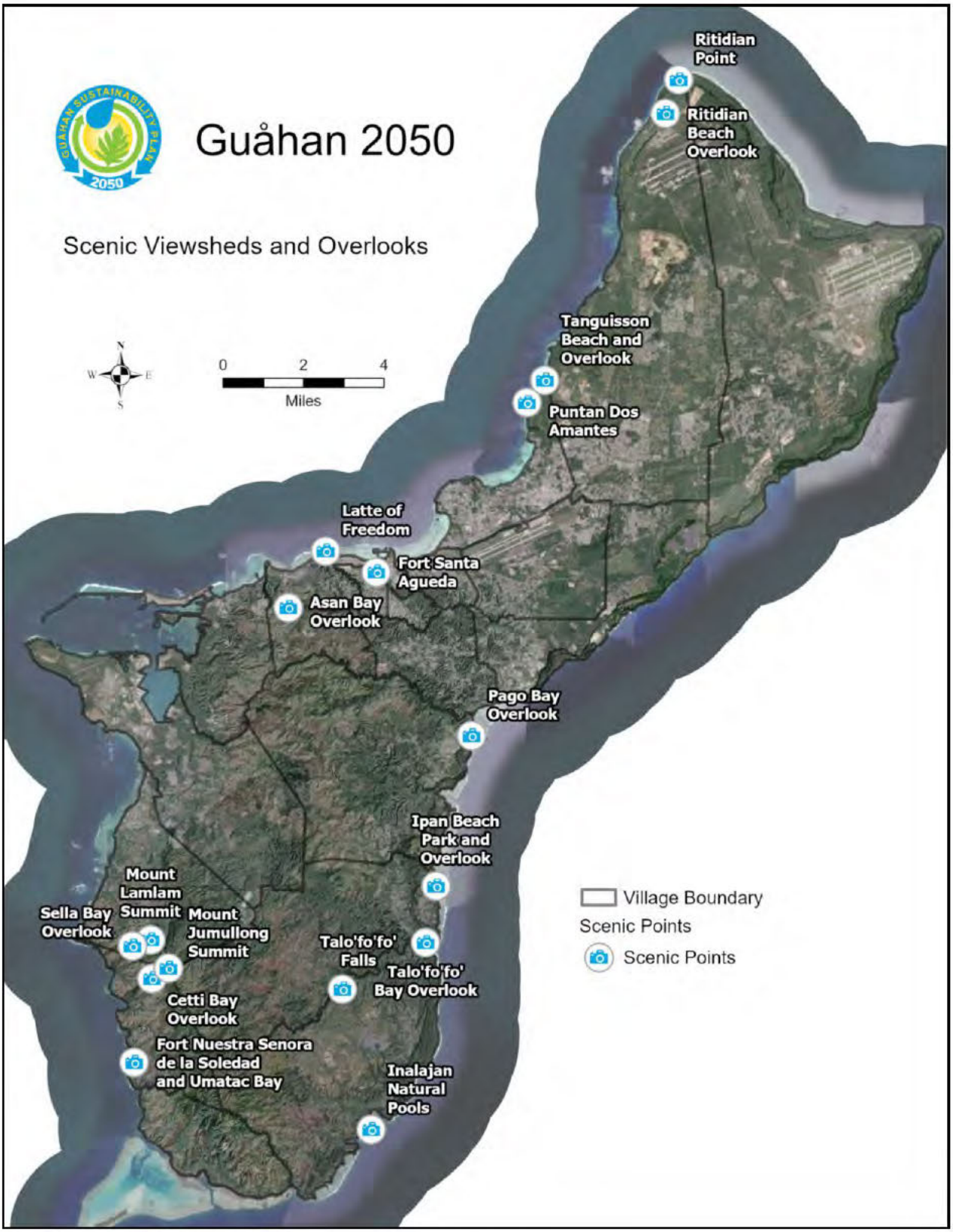

Figure 6-9. Visual Resources Map.

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6.3.8. Community Well-Being and Sustainability



The Vibrant Culture Land Use Policies in Guam's Sustainability Plan demonstrate strong alignment with multiple United Nations Sustainable Development Goals (SDGs), particularly SDG 3 (Good Health and Well-Being), SDG 11 (Sustainable Cities and Communities), and SDG 13 (Climate Action). Policies promote health equity by ensuring that new developments and existing underserved areas have access to essential health services and emergency care. These provisions reflect SDG Target 3.8, which emphasizes access to quality essential health-care services and the importance of universal health coverage, including mental health and culturally competent care.

Other policies further Guam's commitment to promoting healthy lifestyles and public participation by integrating active transportation infrastructure, community gardens, and urban forests into the built environment—advancing SDG 11.7, which seeks to provide universal access to safe, inclusive, and accessible green and public spaces. These policies also support SDG 3.4 by addressing non-communicable diseases through increased physical activity and community-based wellness programs. By embedding evaluation mechanisms and community feedback loops into land use planning, these strategies reinforce the SDG 16.6 goal of accountable and responsive institutions.

G50SP policies also explicitly focus on social equity and environmental justice, targeting disadvantaged communities for vulnerability assessments and ensuring equitable access to parks and public facilities. These priorities align closely with SDG 10 (Reduced Inequalities) and SDG 1.5, which emphasize building resilience among vulnerable populations. Additionally, integrating community voices into the design and stewardship of cultural and recreational spaces supports SDG 17.17, encouraging inclusive decision-making and effective partnerships at the local level.

Finally, the coastal and environmental focus of the plan highlights Guam's commitment to environmental sustainability and climate resilience. Protecting shoreline parks, regulating development in fragile ecosystems, promoting visual quality, and integrating nature-based solutions directly align with SDG 13 (Climate Action), SDG 14 (Life Below Water), and SDG 15 (Life on Land). These policies also support SDG 6.6 and 11.b by promoting water quality and urban resilience. Through these integrated and locally grounded policies, Guam's land use

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strategy models how place-based planning can advance the global goals of sustainable development.

6.3.9. Community Well-Being Land Use Policies

Community Health and Well-Being

VC-24. Expand Essential Community Facilities.
Prioritize the construction of health clinics and emergency services in underserved areas. Upgrade existing facilities to include modern medical technologies and culturally competent care services.

VC-25. New Development.
Require new developments to include provisions for community health facilities, such as clinics, emergency response stations, and wellness centers.

VC-26. Active Lifestyles.
Mandate the inclusion of pedestrian-friendly infrastructure, bike paths, and public transportation connectivity to promote active lifestyles. Designate and protect areas for community gardens, nature reserves, and urban forests to improve air quality and provide mental health benefits. Develop a network of multi-use trails and recreational areas that promote physical activity and social interaction. Introduce programs that encourage the use of parks for fitness, education, and cultural exchange.

VC-27. Monitor and Evaluate Outcomes.
Establish performance metrics to assess the effectiveness of health and recreational policies in improving quality of life. Regularly update the land use plan based on community feedback, demographic changes, and environmental conditions.

Social Equity and Environmental Justice

VC-28. Disadvantaged Communities.
Prioritize vulnerability assessment and response in disadvantaged communities, including provision of public safety/crime prevention and social services, to address domestic violence and other community vulnerabilities.

VC-29. Community Engagement.
Encourage community participation in the design and management of parks, recreational facilities, and cultural sites. Ensure that all communities on Guam have equitable access to parks, recreational areas, and open spaces within a 15-minute walk of residential areas. Establish emergency evacuation routes, shelters, and communication hubs in accessible locations throughout the island.

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Parks and Recreation

VC-30. Public Access (CZM).

The public's right of unrestricted access shall be ensured to all non-federally owned beach areas and all Territorial recreation areas, parks, scenic overlooks, designated conservation areas and other public lands; and agreements shall be encouraged with the owners of private and federal property for the provision of reasonable access to, and use of, resources of public nature located on such land.

VC-31. Recreational Areas (CZM).

The Government of Guam shall encourage development of varied types of recreation facilities that are readily accessible to and usable by individuals with disabilities in accordance with the ADA Standards for Accessible Design, located and maintained so as to be compatible with the surrounding environment and land uses, adequately serve community centers and urban areas, and protect beaches and such passive recreational areas as wildlife and marine conservation areas, scenic overlooks, parks, and historic sites.

VC-31. Preserving Public Shoreline Access and Traditional Rights-of-Way.

All traditional public access routes to the ocean shore, including trails, bull cart roads, and paths established through historic or legal precedent, shall be preserved and protected from obstruction or development unless the routes do not provide access to natural resources, consistent with Title 21 GCA Chapter 75.

VC-32. Regulate Development to Ensure Continued Access.

No development adjacent to the shoreline shall be approved if it blocks or impedes a traditional right-of-way unless an alternative, legally recorded perpetual access route is provided.

VC-33. Acquire and Establish New Public Access Routes Where Needed.

The Guam Department of Recreation shall proactively acquire land or easements to establish new public rights-of-way to the shoreline where traditional access is unavailable or insufficient.

VC-34. Require Public Access Through Government Land Transfers.

No public land between a public road and the ocean shore shall be sold, leased, or exchanged without first establishing a perpetual public access easement.

VC-35. Visual Quality (CZM).

Preservation and enhancement of, and respect for the island's scenic resources shall be encouraged through increased enforcement of and compliance with sign, litter, zoning, subdivision, building and related land-use laws; visually objectionable uses shall be located to the maximum extent practicable, so as not to degrade significantly views from scenic overlooks, highways, and trails.

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VC-36. Fragile Areas (CZM).

Development in the following types of fragile areas shall be regulated to protect their unique character: historic and archaeological sites, wildlife habitats, pristine marine and terrestrial communities, limestone forests, and mangrove stands and other wetlands. Identify and preserve existing scenic views from public places, such as parks, highways, and shoreline areas. Integrate climate-resilient designs in parks and health facilities to withstand typhoons and rising sea levels.

VC-37. Promote Environmental Health.

Reduce urban heat island effects by planting trees and preserving wetlands. Ensure all recreational areas adhere to environmental health standards, including safe water sources and waste management systems.

VC-38. Increase Funding and Partnerships.

Collaborate with public, private, and nonprofit sectors to secure funding for parks, recreation, and health infrastructure projects. Partner with local organizations to deliver community health initiatives and educational programs.

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Chapter 7: **Village Sustainability**

The nineteen villages of Guam are the foundation of the island's identity; each shaped by distinct histories, cultures, landscapes, and community values. From the bustling commercial centers of Tamuning and Dededo to the quiet coastal communities of Malesso' and Humåtak, Guam's villages reflect a wide range of land use patterns, environmental settings, and developmental needs. At the same time, the villages share many of the same aspirations and challenges: sustainable growth, preservation of cultural heritage, protection of natural resources, and increased resilience to environmental hazards. This chapter of the Guåhan Sustainability Plan explores the unique and shared characteristics of Guam's villages, focusing on land use planning that supports vibrant, resilient, and sustainable village life. The first section provides an overview of key themes that guide village-level planning, followed by detailed profiles of each village's priorities and opportunities. As with other chapters of the G50SP, these discussions are informed by various sources, including independent planning analysis, Guampedia.com, BSP's Guam Statistical Yearbook, interviews with mayors from all villages, and community engagement events. The policies of the chapter are guided by the following goal and related land use objectives.

> **Goal:** *Support the unique needs and identities of Guam's villages through context-sensitive development.*
>
> **Land Use Objectives:**
>
> - Align building scale, design, and land use with each village's character and infrastructure.
> - Ensure every village has access to core public services and civic facilities.
> - Engage village leaders and residents in the planning and implementation process.
> - Promote village-scaled eco-cultural tourism and community-centered development.

7.1. Village Diversity and Sustainability

7.1.1. Overview: Village Diversity and Shared Land Use Challenges

While each of the villages on Guam has its own uniqueness and physical context, land use planning must begin with the recognition that village diversity is a strength. Village planning must be sensitive to cultural heritage, the built environment, and the ecological context of each community. For instance, rural southern villages are often closely tied to traditional fishing and farming practices, while central and northern villages serve as residential and commercial hubs.

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Supporting this diversity means allowing for different approaches to growth, while also promoting shared values such as sustainability, equity, and community cohesion.

Despite their differences, villages across Guam face common land use challenges. Infrastructure limitations, pressure from urban sprawl, degradation of natural resources, and vulnerability to climate change impact all communities to varying degrees. Communities consistently call for improvements in public infrastructure—roads, sewers, drainage—as well as better access to parks, public facilities, and essential services. These concerns underline the need for an island-wide policy framework that promotes tailored, but coordinated, village development.



One strategy for achieving sustainable village development is the promotion of well-designed, mixed-use village centers. Many communities envision walkable hubs that combine civic spaces, small-scale commerce, housing, and cultural amenities. Revitalizing or creating these centers helps reinforce village identity while supporting economic activity and social cohesion. Land use planning should encourage pedestrian-scale development patterns that connect residents to services and public spaces and reduce dependence on vehicular travel.

Environmental and cultural stewardship is another cross-cutting priority. Whether protecting coastal ecosystems in Piti, conserving cultural sites in Barrigada, or maintaining agricultural traditions in Hågat, villages are united in their call for land use policies that respect the ecological and cultural landscapes of Guam. Development should be designed to enhance—not erode—the island's natural beauty and historical identity, while also promoting hazard resilience through smart siting, green infrastructure, and disaster-preparedness. The goal of land use planning for Guam's villages is to build sustainable, resilient, and thriving communities that reflect and maintain local values and respond to both immediate and long-term challenges. The policies below provide a foundation for village-level planning throughout the island. In some cases they also resonate with and affirm many similar policies in other chapters of the G50SP.

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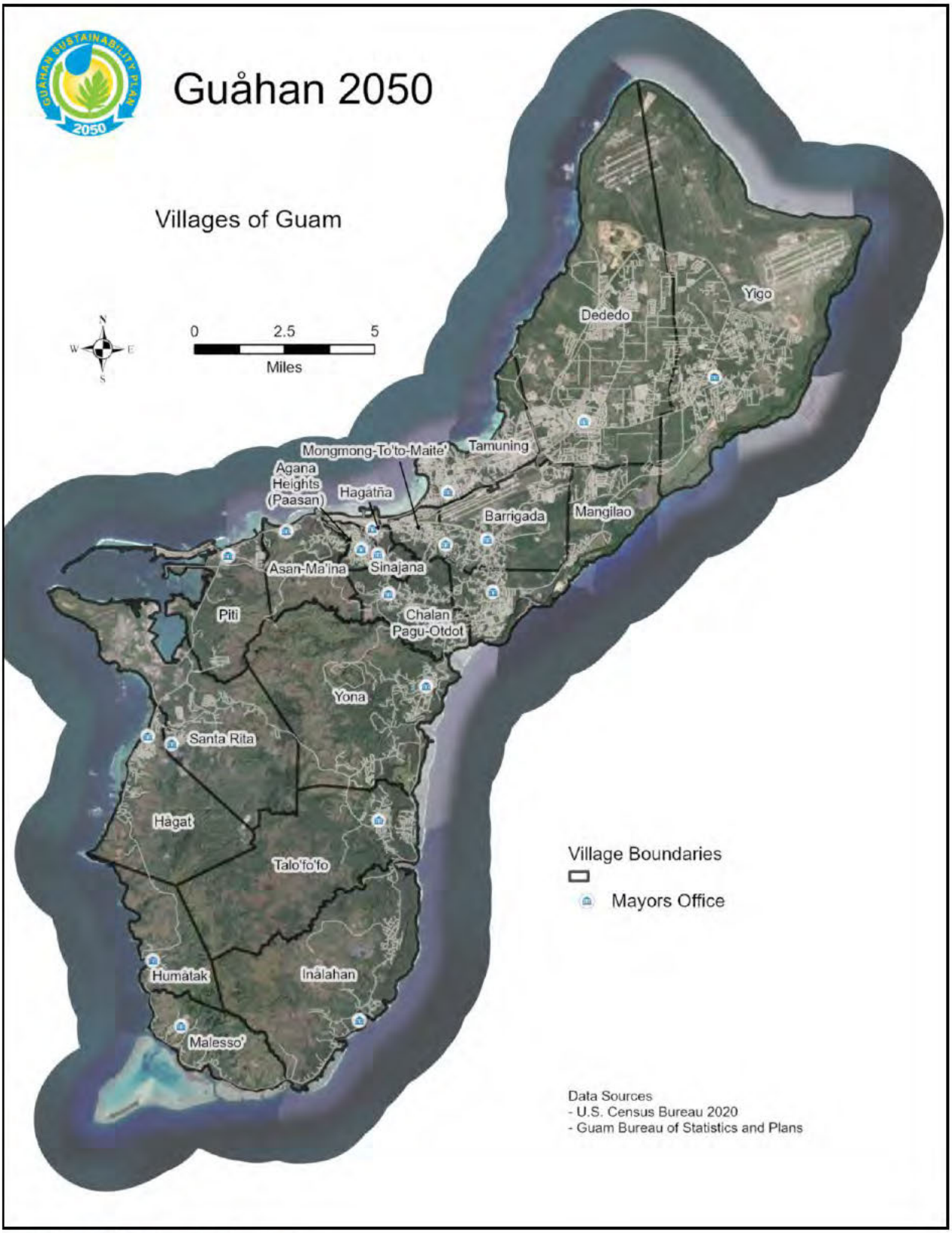

Figure 7-1. The Villages of Guam.

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7.1.2. Village Land Use and Sustainability



The policies for Guam's villages closely align with several of the United Nations Sustainable Development Goals (SDGs), reinforcing Guam's commitment to global sustainability principles while responding to local needs. Policies that promote community facilities, civic spaces, and vibrant village life directly support SDG 11: Sustainable Cities and Communities, particularly targets 11.3 and 11.7, which emphasize inclusive and sustainable urbanization and access to safe, inclusive, and accessible public spaces. By focusing on pedestrian-scale, mixed-use village centers, these policies also contribute to reducing the environmental footprint of development and encouraging social cohesion—core elements of sustainable community design.

The environmental components of the policies—such as protection of local environments, preservation of natural settings, and climate and hazard resilience—are strongly aligned with SDG 13: Climate Action, SDG 14: Life Below Water, and SDG 15: Life on Land. These goals call for strengthened resilience and adaptive capacity to climate-related hazards, as well as conservation of terrestrial and marine ecosystems. For example, policies that encourage green buffers, shoreline adaptation, and the protection of aquifers and coastal ecosystems echo targets like 13.1 (climate resilience), 14.2 (sustainable management of marine ecosystems), and 15.1 (conservation of inland freshwater and terrestrial ecosystems).

Additionally, the emphasis on cultural identity, local governance, and equitable access to infrastructure supports SDG 10: Reduced Inequalities and SDG 16: Peace, Justice and Strong Institutions by promoting inclusive decision-making, preserving cultural heritage, and ensuring fair access to resources across all communities. The integrated nature of these land use policies mirrors the SDGs' holistic approach, recognizing that environmental sustainability, social well-being, and economic development are deeply interconnected. By tailoring these global principles to Guam's unique village landscape, the policies offer a path toward a more resilient, inclusive, and sustainable future.

7.1.3. Island-wide Village Land Use Policies

VS-1. Village Diversity.

Encourage land use decisions that reflect the distinct cultural, historical, and ecological character of each village by incorporating village-level planning processes and community input into development reviews.

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VS-2. Village Character.

Protect and preserve each village's identity by maintaining traditional land use patterns, supporting heritage preservation, and avoiding incompatible development that could erode community character.

VS-3. Community Facilities.

Ensure that every village has access to well-maintained, adequately sized community facilities—including libraries, mayor's offices, innovative school spaces supporting workforce development, and multipurpose centers—to support local programming and services.

VS-4. Public Recreation.

Promote equitable access to public recreational spaces in all villages by investing in parks, sports fields, and nature trails that reflect the community's recreational needs and environmental context.

VS-5. Civic Spaces.

Designate and improve civic spaces in each village center to host public gatherings, cultural events, and local markets, enhancing community connection and public life.

VS-6. Vibrant Village Life.

Support programs and infrastructure that enable vibrant social, cultural, and economic activity in villages, including festivals, local business hubs, and after-school programs.

VS-7. Village Center Development.

Promote development of walkable, mixed-use village centers that combine housing, commerce, civic uses, and public spaces, tailored to the scale and identity of each village.

VS-8. Pedestrian-scale, Mixed Use.

Encourage pedestrian-scale development through zoning and design standards that support mixed-use buildings, complete streets, and accessible sidewalks within village cores.

VS-9. Natural Settings.

Integrate natural features such as ridgelines, coastlines, rivers, and forested areas into land use planning to protect ecological functions and preserve scenic and cultural value.

VS-10. Protection of Local Environments.

Require land use practices that minimize environmental degradation, protect sensitive ecosystems, and incorporate conservation strategies such as green buffers and sustainable agriculture.

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VS-11. Climate and Hazard Resilience.

Ensure that all village land use plans address hazard mitigation and climate adaptation through strategies such as shoreline management, flood mitigation infrastructure, and emergency preparedness.

7.2. The Villages of Guam

The nineteen villages of Guam are the product of centuries of political, cultural, and social transformation. The foundation of village life on Guam originates with the ancient CHamoru people, who established settlements near freshwater sources, fertile land, and coastal areas for fishing and trade. During the Spanish colonial era, beginning in the late 1600s, the Spanish government implemented a policy of population centralization known as the reducción, forcibly relocating CHamorus from dispersed rancherías into organized villages centered around churches and colonial governance (Rogers, 1995). These consolidated settlements laid the groundwork for several of the island's current villages. The subsequent American administration, particularly after World War II, further formalized village boundaries through civil governance reforms and land surveys. Wartime destruction and the postwar reconstruction period also led to the resettlement or merging of communities, such as the relocation of Sumay residents into what is now Santa Rita-Sumai, following the establishment of U.S. Naval Base Guam (Cogan, 2008).

Today, village boundaries define not only political districts and administrative responsibilities—such as the election of village mayors—but also the planning framework for infrastructure, land use, and zoning regulations. These boundaries are used for voter registration, resource allocation, and public service delivery. However, they are not merely administrative divisions; they also reflect deep-rooted community identities shaped by shared experiences, such as historical land dispossession, environmental change, and cultural revitalization efforts (Underwood, 2000). While some villages like Tamuning-Tumon-Harmon have become major centers for tourism and commerce, others like Hågatña—Guam's capital—and Malesso' remain symbolically and historically central to CHamoru identity. Understanding these distinct origins and evolutions is essential for guiding land use planning that respects both the historical context and future aspirations of each community.

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NORTHERN VILLAGES

7.2.1. Dededo



Dededo is Guam's second largest and most populous village, spanning thirty square miles on the island's limestone plateau and sitting above the Northern Aquifer, which supplies 80% of Guam's drinking water (Clement Jr. and Champaco Mendiola 2024). The village name, *Dededu* in CHamoru, may come from the practice of measuring using fingers as the Spanish word for finger is "dedo" and potentially someone measured out the original village this way. Another possibility is that "dededo" is a version of "dedeggo," which is "heel of the foot" or "deggo," which means to "walk on tiptoes" (Clement Jr. and Champaco Mendiola 2024).

7.2.1.1. Community Setting

Once a small farming and ranching community that focused on copra, timber, fruits, vegetables, and cattle, Dededo is now a major commercial and residential hub and is the largest village by population on Guam (Guam Visitors Bureau). It houses the Micronesia Mall, the region's largest mall, and has multiple housing developments built since the 1960s, originally designed with uniform cement homes that have since been modified. There are several small stores and other businesses as well as several vegetable stands selling local crop products off the highway that cater to the local, mostly Filipino community, (Clement Jr. and Champaco Mendiola 2024). "Dededo Village" is an area containing the village square in which the mayor's office, community center, public library, Santa Barbara Catholic Church, and the school are located.

Dededo's history is marked by significant changes in boundaries during the 20th century. Previously, it extended farther south, including present-day Tamuning-Tumon-Harmon. The original village center was relocated after WWII when the US military-built Anderson Air Force Base and Naval Communications Station on Dededo's land. Post-war; agriculture declined as employment at nearby military bases increased. Dededo expanded rapidly after the devastation of typhoons Karen and Olive in the 1960s, leading to new housing projects like Kaiser subdivision and Liguan Terrace. Today, Dededo is a diverse, fast-growing community with a mix of CHamoru and Filipino families. New subdivisions have been rapidly enclosing former ranches and dense jungle.

In 2017, Dededo had 501 establishments and 14,092 paid employees with an annual payroll of a combined $189.7 million ($13,460 per capita) (BSP 2024). Dededo had 17,795 land parcels in 2023 worth approximately $2.8 billion, and 14,291 buildings, including residential, condominiums, hotels, apartments, malls, churches, and cottages worth approximately $3.4 billion (BSP 2024). In 2020, there were 44,908 residents in 13,651 housing units, and in 2023, there were 67 reported homeless households (BSP 2024).

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Key areas of Dededo include:

Route 1: The main road, which splits the village.

Dededo Skate Park: This park is near Santa Barbara Catholic Church and shares land with Lencho Park.

Kaiser Subdivision: Built after Typhoon Karen in 1962 for displaced residents.

Sports Facilities: Including the Robbie Webber Soccer Field, Wettengel Rugby Field, and Guam Sports Complex

Waste Transfer Station

Starts Guam Golf Course and Guam International Country Club

Schools

Tanguisson Beach Park: Located at the bottom of a cliff down a narrow winding road, Tanguisson Beach Park has beautiful mushroom-shaped rock formations in the water, and popular hiking trails with a freshwater sinkhole. It also has remnants of an ancient CHamoru village.

Guam National Wildlife Refuge: Includes the Ritidian Unit of the Guam Refuge with a visitor's center and guided tours of an ancient Guam village. The area has a lovely pristine beach and is a favorite spot for fishermen.

Dededo Community Center: The Dededo Community Center is located along West Santa Barbara Avenue in the village of Dededo, Guam. It is situated near key landmarks such as Santa Barbara Church and Duenas Catering Services, and adjacent to a green open space, making it a central gathering spot for the community. The center is accessible from nearby streets such as Iglesia Circle, Redondo Luchan, and Adela Lane. This area is surrounded by residential neighborhoods, local businesses, and other community facilities, making it a hub for events and activities.



Dededo celebrates two fiestas of patron saints: Santa Barbara's feast day during the first week of December, and St. Andrew Kim feast day on the first Saturday of July (Clement Jr. and Champaco Mendiola 2024). The initiative, *Korason Y Sengsong* (The Heart of the Village), was launched in 2013, featuring a family fitness center where parents can learn parenting skills, tutoring techniques, and access resources for family development. Additionally, Dededo aims to boost community safety by expanding the Community Assisted Policing Effort (CAPE) and increasing volunteer recruitment to address problem areas in the village (Paco 2013).

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Lagu Youth Center: One of three youth resource centers managed and operated by the Department of Youth Affairs and built in October 2008. Offers an array of programs and services that promote positive youth development and is a "safe haven" for community children/ youth. The center primarily services the Northern Villages

7.2.1.2. Land Use Issues and Challenges

As the most populated village, Dededo faces multiple land use issues. The significant presence of U.S. military facilities, including major construction activities related to the buildup, bring added challenges. Dededo is also the location of most of the CHamoru Land Trust lands.

As discussed in prior chapters, residential growth has occurred without adequate infrastructure, including sewer capacity. This places pressure on the aquifer related to water quality and sustainability. Road capacity and services are also inadequate for development patterns, and there is village concern about the loss of rural, agricultural lands that could potentially support a renewal of agriculture on Guam.

Dededo also faces many of the intermittent flooding challenges of heavy storms, despite being on the northern plateau. Inadequate stormwater capacity is a concern, connected to inadequate infrastructure planning for ad hoc residential subdivisions and development. While ponding basins are welcome, they require maintenance, which has not been the case for some. In addition, water lines have been installed under unpaved roads, and they have become exposed as the roads wear away, thus getting damaged. The galvanized water lines in Dededo are old, undersized, and failing.

Dededo also has significant limestone forest habitat areas, though much of this has been impacted by the buildup and expanded development of Camp Blaz. Dededo is also absorbing substantial growth both for more permanent housing and temporary workforce housing to support the buildup. Additionally, there is a need for schools, medical facilities, and dependable transportation to enhance the quality of life.

Residents do not believe the amount of park space in Dededo is adequate for the population. Anticipated new developments due to tourism-related investment and increased military presence make it more important to provide increased recreational areas. Better planning for public spaces and amenities can promote community well-being and satisfaction. Finally, as with any large population, Dededo residents are concerned about crime and a lack of police presence. The Guam Police Department struggles with staffing shortages, particularly in Dededo.

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7.2.1.3. Village Policies and Programs

VS-35. Community Program Facilities.
Maintain facilities for village programs that provide after school programs, tutoring, parenting skills, and anger management, as well as encourage fitness.

VS-36. Dededo Infrastructure.
Promote sustainable growth and development by providing green spaces, and schools and recreational facilities with new housing developments

VS-37. Dededo Community Spaces.
Upgrade the Dededo Flea Market area to include shaded markets and small business hubs.

VS-38. Dededo Area and CHamoru Lands Specific Plan.
Develop a Specific Plan for Dededo Village to concentrate on urban development, provide sustainable infrastructure, facilitate affordable housing, promote small-scale agriculture, protect CHamoru heritage, and enhance recreational and natural open spaces. Evaluate a cross-village CHamoru Heritage Parkway to preserve remaining undeveloped lands for open space, recreation, and rural land use.

VS-39. Community Policing.
Boost community safety by expanding the Community Assisted Policing Effort (CAPE) and increasing volunteer recruitment to address problem areas in the village.

7.2.2. Yigu (Yigo)



Yigo is Guam's largest and northernmost village. The meaning of “Yigo” is unclear. According to some, it comes from the Spanish word yugo which means yoke (the type used to secure a carabao to a cart or plow). However, some sources refer to the area as Asyigo which means the home of (a person known as) Yigo. If this is the case, “yigo” may be an ancient word whose meaning has been lost (Guampedia, 2025).

Yigo spans about 35 square miles from the beaches of Ritidian to the coastal area near Pågat cave. Yigo is home to the Andersen Air Force Base, the only Air Force base on-island. Being the largest village on Guam, there are many housing subdivisions that have been constructed on Yigo, however it still maintains a rural feel in the village with its acres of greenery. Like most northern villages, Yigo sits on top of the Northern Guam Leans Aquifer (NGLA), which is the source of 80% of Guam’s fresh drinking water (Clement Jr. c).

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7.2.2.1. Community Setting

Yigo had, in 2022, 146 establishments and 3,554 paid employees with an annual payroll of a combined $44.6 million, which if divided equally, is roughly $12,500 annually (BSP 2024). Yigo had 9,533 land parcels in 2023 worth approximately $719 million, and 4,928 buildings, including residential, condominiums, hotels, apartments, malls, churches, and cottages worth approximately $705 million (BSP 2024). In 2020, there were 19,339 residents in 6,360 housing units, and in 2023, there were 94 reported homeless households (BSP 2024).

Yigo used to be the location of a large number of villages as evidenced by the latte dwellings found in the Mt. Santa Rose and Mataguac areas. Due to the war in the 18th century, northern residents migrated to the central and southern villages. In the 19th century, rich residents from Hagåtña began purchasing land in Yigo due to its fertile soil that was ideal for growing cocoa, avocado, citrus, and copra. Ranching was also popular in the area. Residents of Yigo were mostly self-sufficient, but they still had to travel to Hagåtña to purchase household goods.



During World War II, most residents of Yigo were able to remain. The wealthy residents of Hagåtña moved to their Yigo ranches to stay out of the conflict. However, at the end of World War II, Yigo was the site of a major battle that destroyed the church and many village homes.

After WWII, Yigo's landscape changed. Displaced Hagåtña families settled ranch lands in Yigo. Although some villagers continued to farm, Yigo's economy shifted to account for the presence of the Andersen Air Force Base. Some civil service and military members who came to Guam permanently settled in Yigo (Clement Jr. c). Yigo is now Guam's second most populated village.



The Yigo Senior Center is located in the village of Yigo, Guam. It serves as a community hub for senior citizens, providing various services and activities for local residents. The center is situated near important community infrastructure and is

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active in local planning and public meetings, including events like municipal planning council sessions.

The most important public spaces in Yigo include the gym and recreational facilities, as well as the senior center, basketball court, and baseball field. The Yigo Senior Citizens Center, which is a key community hub for the area, is located near Gayinero Road, next to the Yigo Baseball Field. It is situated south of landmarks like the Yigo Gym and is a short distance from the local grocery stores and other facilities.

Other key points of interest in Yigo include:

- **Our Lady of Lourdes Church:** The church was founded in 1920. Yigo's fiesta celebrates Our Lady of Lourdes on the second Saturday in February.
- **Schools:** There are five public schools and two private schools in Yigo, as well as schools associated with Andersen Air Force Base.
- **Battle of Yigo Monument:** Commemorating the final battle of World War II, the memorial sits at Route 15 and Chalan Lolan.
- **Pacific Peace Memorial Park:** Japanese erected the memorial at the site of the last Japanese command post to commemorate those who died during World War II.



- **Mt. Santa Rosa:** This mountain is the highest point in northern Guam from which you can see Guam and Rota. There was pineapple farm at its base in decades past (Guampedia).
- **Yigo Race Track (or Guam Raceway Park):** This drag strip and off-road track was built in 2001 off Route 15.

7.2.2.2. Issues and Challenges

The village has several initiatives aimed at improving recreational facilities, fixing roads, and enhancing water and sewer infrastructure. The infrastructure is unable to support the current and future population. Better planning is necessary to implement infrastructure to address issues including flooding and stormwater management. Flooding occurs regularly due to inadequate stormwater drainage. Several roads require repair. The water pressure is low, and the sewer system requires expansion. The sewer system stops at the gym with no more towards the ocean.

There are land use issues in Yigo. Some properties are inaccessible because there are landlocked properties with no easements that occurred during subdividing. One area is proposed for development, but the community is against it until the flooding is addressed; the

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concern is that development will lead to flooding in existing yards because no ponding basin exists.

The village noted that there is a lack of recreational spaces. However, it was also pointed out that Yigo has several government properties that could be repurposed for the community. For example, the Guam Raceway Park could be turned into a park and host events for the village. A gym could also be constructed on the property. Access to the coast via creation of a boat ramp was also noted as a priority.

To encourage economic sustainability, Yigo needs more commercial developments and high-income job opportunities. Yigo could use more office buildings as well. There are underserved communities in Yigo that have no paved roads or water and sewer infrastructure. For example, the Gilbreeze Subdivision has its nearest water source outside the subdivision, the houses are not typically built to code, there are temporary and/or makeshift water storage facilities such as drums and totes, and no drainage or paved roads (Guam Waterworks Authority 2019). Gill Baza is another subdivision in Yigo that experiences the same issues (Pacific Daily News 2024). Using US Environmental Protection Agency funds, Gilbreeze may finally get proper utility hookups (Pacific Daily News 2024).

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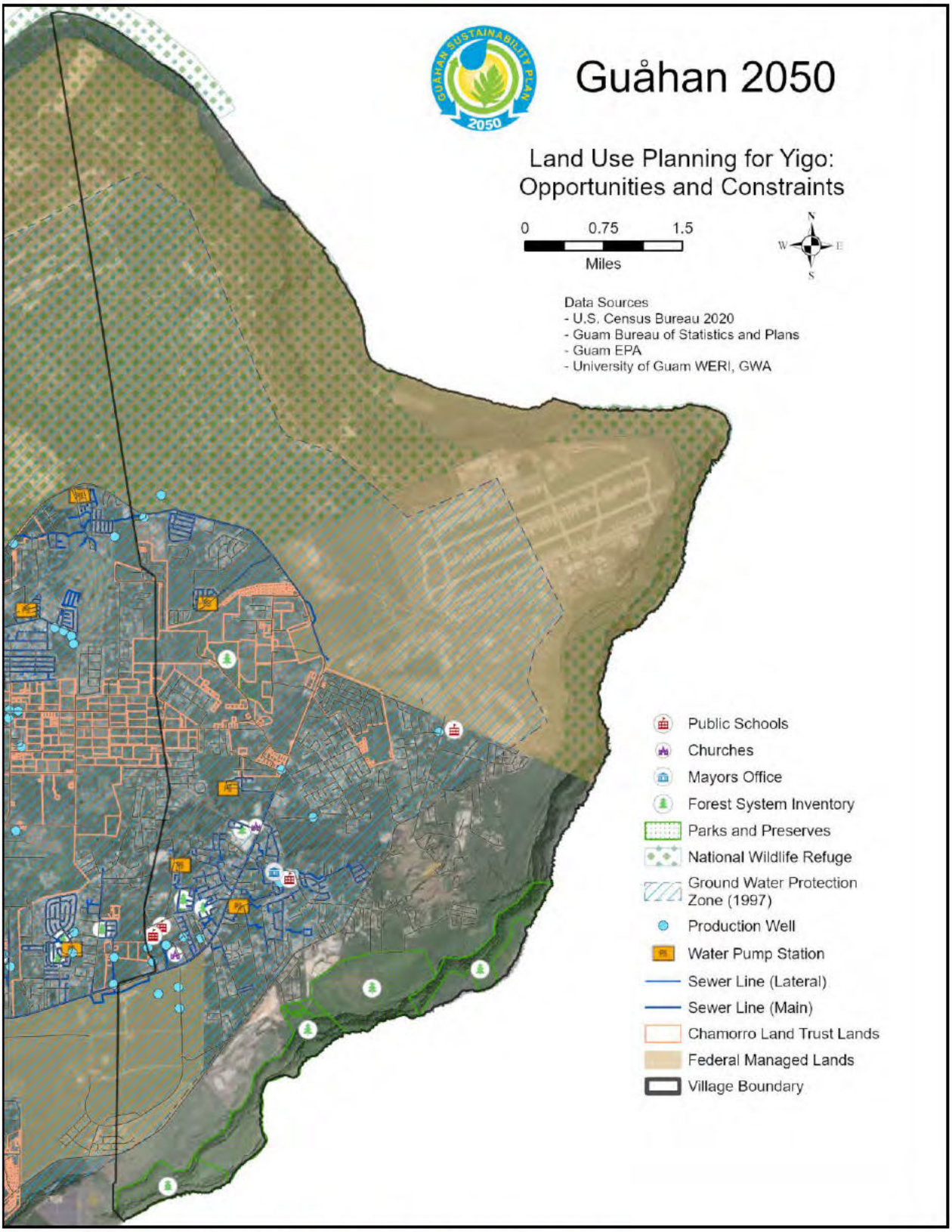

Figure 7-2. Land Use Planning for Yigo: Opportunities and Constraints

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7.2.2.3. Village Policies and Programs

Yigo's development should focus on preserving its agricultural heritage while accommodating residential growth. Initiatives include improving road networks, expanding recreational spaces, and supporting sustainable farming practices. Investment in community facilities and disaster preparedness infrastructure is also essential. Residents voiced interest in more recreational facilities and opportunities, as well as economic development such as restaurants, a movie theater, roller rink, bowling alley, etc. The thought is that the population will be high enough to support that type of economic development in the near future.

The limestone forest near the Racetrack is an important natural asset to Yigo, including Anao Point, while the Racetrack itself is an important economic asset.

The character of the village includes many different cultures including CHamoru, Micronesians, and more. Thus, if village character were to be included in structural designs or motif, the village would prefer to see different cultures represented so that all in the village can have pride. The suggested symbol of the village is the proa, a local sailing vessel.

VS-82. Agriculture.
Preserve agricultural heritage while accommodating residential growth. Protect agricultural land and opportunities.

VS-83. Community Infrastructure.
Provide and improve roads and other infrastructure, including disaster preparedness and recreational facilities.

VS-84. Community Character.
Protect the diversity of the Yigo's built environment and character.

CENTRAL VILLAGES

7.2.3. Agaña Heights



Agaña Heights is in the central part of the island north of Hågatña, the capital of Guam, and is part of the Kattan (Eastern) District. It was a resettlement for many residents of old Hågatña after World War II ended in 1944 (San Nicolas 2024). Prior to being called Agaña Heights, the area was called Tutujan, for which there is disagreement about whether that derives from the CHamoru word *tutuhon* (to begin, start), or from the name of a trail along the cliffside between Fort Santa Agueda and Government House. Alternatively, the name may derive from "*Tutuhon luhan,*" which means someone who becomes scared because of impending doom or is terrified about something (MCOG).

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Prior to World War II, Agaña Heights was a farming community for those living in Hågatña. This included ranching on top of the steep cliffs along the village perimeter (Mayors' Council of Governments (*Konsehelon Mahot Guåhan*; MCOG). Today it is a thriving community that is predominantly residential (San Nicolas 2024).

7.3.1.1. Community Setting

In 2020, Agaña Heights had 3,673 residents in 1,210 housing units (BSP 2024). In 2022, the village had 28 establishments and 405 paid employees with an annual combined payroll of about $4.1 million ($10,227/person annually) (BSP 2024). In 2023, there were 283 land parcels worth approximately $19.1 million, and 172 buildings, including residential, condominiums, hotels, apartments, malls, churches, and cottages worth approximately $24.3 million (BSP 2024).

Agaña Heights is the birthplace of Little League Baseball on Guam. The first Little League game was played in 1955, and they won three consecutive championships from 1955-1957. The Agaña Heights Cougars won the first Guam Major League Baseball Championship in 1974. Many baseball teams continue to play for the village (San Nicolas 2024).

Agaña Heights Senior Center: The Agaña Heights Senior Center is located in the village of Agaña Heights in central Guam, an area close to Hagåtña. The center is situated near Tai Gigo Road and Vicente Salomon Drive, easily accessible via main routes in the area. It serves as an important community hub for senior activities and support and is near notable landmarks like the U.S. Naval Hospital, as Agaña Heights houses part of the military community and educational facilities like McCool Elementary/Middle School.

There are numerous other locations of special interest in Agaña Heights, including public buildings and community facilities:

Sgt. Pedro C. Pangelinan Baseball Field: One of Guam's first and oldest baseball fields (1951). It was the site of the first Little League Baseball game on Guam.

Archbishop's Residence: Constructed in the early 1960s.

Elk's Club: This was relocated to Agaña Heights after World War II.

Government House: This is the Governor's official residence. The design was completed in 1951 by Richard Nuetra and incorporates elements of CHamoru and Spanish cultural heritage.

Our Lady of the Blessed Sacrament Church: This church sits in the center of the village and hosts the annual village fiesta of Our Lady of the Blessed Sacrament in November.

U.S. Naval Hospital: This hospital sits on 47 acres overlooking the capital. It is the primary medical provider for military members and their families.

Fort Santa Agueda: This battery was built for tactical purposes. It sits atop Apugan Hill and is also called Fort Agupan. It is one of the few surviving Spanish forts on Guam.

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Fonte River: This river borders Agaña Heights and Maina. It has a bridge that is the topic of a local ghost story about the "White Lady." Libugon Dam was the first dam built on Guam and was built in this river to provide fresh water for Hagåtña before World War II. The river is a popular swimming spot and hiking trail.

Tutujan Park: This park is also known as Triangle Park and has water and power. It is often reserved for private functions through the Mayor's Office.

In 2023, the University of Guam Sea Grant and Center for Island Sustainability, and Guam Green Growth launched the Yo'åmte project at the Government House. Yo'åmte, the CHamoru word for "traditional healer," focuses on promoting and preserving traditional medicine and healing practices through apprenticeship, training, and outreach (Losinio 2023).

7.3.1.2. Land Use Issues and Challenges

Agaña Heights is largely built out, with most parcels served by public water and sewer. There has been a long-standing issue with some residences currently not connected to the main sewer line relying on aging septic systems.[1] The entire village is within the mapped groundwater protection zone. There are relatively few other land use constraints. The village is adjacent to urbanized areas of Asan-Maina, Hågatña, and Sinajana to the northwest, north, and east, separated from more significant undeveloped areas to the south and southwest by the Chaot and Fonte rivers.

There are a few identified FEMA flood hazard areas in the village, including the ballfield next to the Mayor's office. Infrastructure and best management practices may not be adequate to address peak storm and rain events. Flooding occurs along the Fonte River also, where areas of prime farmland are also mapped by the NRCS soils program. A major wetland and flooding zone lies to the northeast along the Hågatña River (see below). Traffic congestion can be an issue around the Naval Hospital. As discussed in Chapter 6, Agaña Heights does not have as much public green and park spaces as other villages. In addition, there are relatively few, if any, natural habitat areas, and invasive species such as the rhinoceros beetle and brown tree snake are an increasing problem.

7.3.1.3. Agaña Heights Village Policies and Programs

Infrastructure improvements, community facility expansions, and preservation of residential charm should be prioritized in Agaña Heights. Initiatives that enhance public spaces and disaster preparedness will benefit residents. In addition, the village provides an opportunity for

[1] According to the Mayor, there is an issue with private property obstructions and lack of public easements to support adequate sewer system connections.

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initiatives to implement micro farming, or small-scale agricultural systems that can be practiced in urban and rural settings.



VS-12. Agaña Heights Infrastructure and Community Facilities.
Prioritize infrastructure improvements and community facility expansions while preserving residential charm.

VS-13. Agaña Heights Public Space and Preparedness.
Enhance public spaces and disaster preparedness.

VS-14. Agaña Heights Agricultural Opportunity.
Implement micro farming, or small-scale agricultural systems as practices in urban and rural settings.

7.2.4. Assan-Ma'ina (Asan-Maina)



Assan-Ma'ina is located in central Guam, abutting Agaña Bay. It borders Hågatña and Agaña Heights. Assan is a coastal community, while Ma'ina is nestled in a valley between Nimitz Hill and Agaña Heights (Babauta a). The topography is both hillside and flat land, and many of the houses are built on steep roads.

Assan has a large grassy park, called Asan Beach Park, which is the Asan Beach Unit of the War in the Pacific National Historical Park. The other park in the village is Asan Bay Overlook, which is located on Nimitz Hill and hosts a memorial wall of those who died on Guam during WWII, as well as a panoramic lookout over the area in which the Asan battle took place.

Ma'ina is a small community that is spread out between Nimitz Hill to the back of Agan Heights. It has extensive lush vegetation supported by the nutrient-rich soil near the river, as well as Fonte Dam, which provided freshwater to the people in Hagåtña prior to WWII (Babauta a).

7.2.4.1. Community Setting

Assan-Ma'ina is a smaller community, with only 16 establishments and 662 paid employees as of 2022 (BSP 2024). In 2022, there was an annual payroll of only $7 million, which equates, if divided equally, to a salary of about $10,600 per person. In 2023, Assan-Ma'ina had 1,067 parcels of land worth $119.7M, and 512 buildings worth approximately $76.2M (BSP 2024). Assan-Ma'ina had a smaller population of 2,011 in 2020 relative to other villages (BSP 2024).

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Assan-Ma'ina has a vibrant community spirit and a resilient cadre of local enterprises which contribute collectively to the economic sustainability and vitality of the village. Assan-Ma'ina boasts several "mom-and-pop" stores and nurtures its small businesses. There are concerted efforts to honor traditions and foster learning opportunities throughout the village, as well as efforts to provide programs for the elderly population. Community engagement is integral to village life, reflecting a shared sense of identity and pride. Efforts to enhance village spirit and preserve historical landmarks, such as Camel Rock and the Asan Bay Overlook, highlight the importance of cultural heritage. Assan-Ma'ina has a modern basketball facility and dining facility, which is used for many community gatherings.

7.2.4.2. Land Use Issues and Challenges

Assan-Ma'ina has fewer developed areas than other villages in the north and central parts of Guam, but infrastructure resilience is an ongoing concern. There are developed shoreline areas, which are vulnerable to typhoons, storms, flooding, and sea level rise over the longer run. Typhoon Mawar damaged significant infrastructure recently. Thus, the community requires funds to fix or rebuild damaged items, such as Maina's bridge. Despite having underground power lines in Asan, recovery efforts are slower compared to Maina, where aerial posts are utilized. Sewer issues, including backups during floods and blocked stormwater drains, require proactive maintenance to mitigate risks.

Similarly, water supply disruptions in Ma'ina, exacerbated by generator malfunctions post-typhoons, necessitate reliable infrastructure and contingency plans. Road damages, often caused by incomplete repairs after waterworks interventions, underscore the importance of coordinated maintenance efforts. Additionally, shoreline erosion and seawater incursion are issues in Assan-Ma'ina, likely due to sea level rise and erosion. The War in the Pacific Historic National Park has conducted a sea level rise vulnerability assessment, finding moderate to high shoreline vulnerability (NPS, 2005). A breakwater was suggested as an option for reducing sand loss and to protect the pavilions from Adelup to Asan Beach National Park.

Other land use issues include illegal dumping, particularly abandoned vehicles, invasive species (including fire ants, chickens, wild pigs, and stray dogs), as well as concerns about building community infrastructure, such as playgrounds, and the availability of funding for new facilities. Some village residents have raised concerns about land use constraints on new development, such as wetland areas, and the larger ownership by the National Park Service. In addition, wildland fire is a major issue for the upper parts of the watershed in Assan-Ma'ina. Specifically Turner Road. Fire fighting is difficult, as the narrow road access along Turner Road provides limited mobility, and no additional water hydrants are located along the route. Finally, there is a major erosion issue that needs to be addressed at the bottom of this watershed along the shoreline of the Piti Bomb Holes Marine Preserve located next to Santos Park in Piti (DOAG Comments, 10/06/2025)

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Ensuring public safety is a priority for the village, particularly regarding the adequacy of police facilities and presence. There are also some ancestral lands in the village near vicinity of Nimitz Hill.

Finally, the interior upland areas of Assan-Ma'ina boast significant natural areas with hiking trails and important habitat areas. These include large areas of savannah and native volcanic forest. Part of Assan-Ma'ina also overlays the Northern Guam groundwater protection area.

7.2.4.3. Assan-Ma'ina Village Policies and Programs

Assan-Ma'ina is a small village. The village residents prefer not to expand their economy through development of shopping malls, and instead prefer smaller shops and additional housing, including low-income housing. The community empowers their residents by enhancing their skill development through various education activities such as summer school and after-school programs.

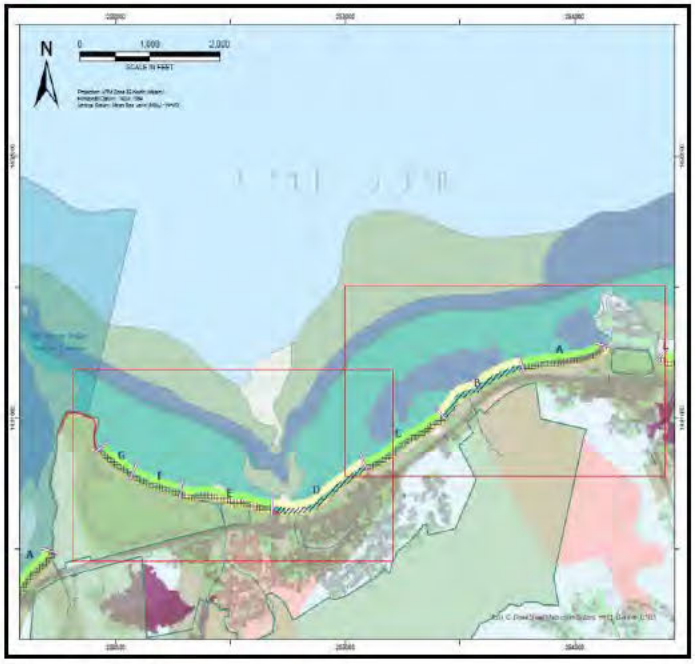

Figure 7-3. Assan-Ma'ina

The village holds a strong stance on balancing development with environmental conservation and management. For example, the mayor aims to balance the need for a school with the significance of parks. The mayor has also promoted recycling initiatives and attempted to protect vulnerable ecosystems by planting trees along beach areas. Safety is a priority in Assan-Ma'ina including a solid police presence, as well as providing adequate public and recreational areas.

Asan-Maina should focus on preserving its historical and cultural significance while addressing infrastructure needs. Enhancing public spaces, promoting heritage tourism, and improving access to services will strengthen its community identity.

VS-15. Priority Development.
Prioritize development of smaller scale shops and commercial development. Large scale commercial development, such as shopping malls, shall be avoided.

VS-16. Affordable Housing.
Facilitate affordable housing at appropriate densities.

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VS-17. Balanced Village Development.
Balance development with environmental conservation and management, ensuring protection of vulnerable ecosystems.

VS-18. Clear Boundaries.
Delineate clear village boundaries to ensure accurate registration for voting and resource allocation purposes.

VS-19. Assan-Ma'ina Recreation.
Ensure adequate public and recreational areas.

VS-20. Infrastructure.
Address infrastructure needs while preserving historical and cultural significance

VS-21. Assan-Ma'ina Community Identify.
Enhancing public spaces, promoting heritage tourism, and improving access to services will strengthen its community identity.

VS-22. Assan-Ma'ina Open Space and Habitat.
Protect and maintain natural habitat areas and public recreational access and open space.

7.2.5. Barigåda (Barrigada)



Barrigada is a land-locked village located near the center of the island on limestone plateau. It stretches from the cliff line overlooking Harmon Industrial Park in the East to Mt. Barrigada in the north. Upscale homes have been developed on Mt. Barrigada, along an area known as Barrigada Heights; overlooking Tiyan, the interior hills of Guam, and the Philippine Sea. To the south is the village of Mongmong-Toto-Maite, and to the east is the village Mangilao (Clement Jr. a).

7.2.5.1. Community Setting

Barrigada is a larger village with 7,956 residents in 2,533 housing units in 2020 (BSP 2024). In 2022, there were 278 establishments and 10,120 paid employees with an annual payroll of a combined $121.6 million (BSP 2024). Barrigada, combined with Mangilao, had 6,949 land parcels in 2023 worth approximately $985.3 million, and 4,739 buildings, including residential, condominiums, hotels, apartments, malls, churches, and cottages worth approximately $984.9 million (BSP 2024). In the past, Barrigada was a popular ranching area for people from Hagåtña. Some parts of the village still have a rural feel attributed to the long winding roads that make their way through hills, valleys, dense vegetation, and wetlands (Clement Jr. a). Barrigada is now a heavily populated residential area bordered by considerable commercial development along routes 8 (Purple Heart Memorial Highway), 10 (Vietnam Veterans Highway), and 16 (US Army Corps Drive). The recently returned former federally-designated land located in Tiyan (formerly

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the Naval Air Station, Guam) has become the site of some government of Guam offices, private businesses, and residential homes.

Barrigada is characterized by ancient latte stones that served as foundations for traditional Chamorro houses. Barrigada has a significant concentration of latte stones, indicating it was a densely populated ancient community. Residents are undertaking conservation measures to ensure their longevity, including stabilizing the structures and protecting them from natural erosion and human interference (Carter 2023).

The Barrigada Community Center is located along San Roque Drive, in the central part of the village of Barrigada. It is near the intersection with Route 10 (Vietnam Memorial Highway) and close to landmarks like San Vicente Catholic Church and the Barrigada Mayor's Office. The area is easily accessible via Guam's main road network, including Routes 10 and 16. The center is a hub for community events and activities in Barrigada, a village known for its cultural events, schools, and central location on Guam.

Other points of interest in Barrigada include:

Schools: 2 elementary schools, 1 middle school, and 1 high school

Main U.S. Post Office Facility

AB Won Pat Guam International Airport Authority

Several Churches: Particularly San Vicente Catholic Church, which is a gathering place for religious ceremonies and events and brings the community together in worship.

Mt. Barrigada: Many upscale homes are located along the hillside of Mt. Barrigada, as is the Guam Memorial Hospital's Skilled Nursing Facility, a senior care facility, and a church.

Former "Naval Air Station Brewer Field": This has softball and football fields and is a favorite walking and running area for residents.

Barrigada has three feast days for the patron saints San Vicente (April), San Roke (August), and San Ramon (also in August). The primary fiesta is the Barrigada Fiesta in April, which showcases Barrigada's cultural traditions through religious processions, traditional dances, music performances, and local delicacies (Carter 2023). Cultural displays exhibit various aspects of Barrigada's cultural heritage, including artifacts, clothing, and other items.

Barrigada grew quickly in the 1940s, which altered its demographic composition and reshaped its landscape and cultural heritage. Traditional practices and customs have been shaped by external influences, which has led to shifts in social dynamics and values (Carter 2023).

7.2.5.2. Land Use Issues and Challenges

Barrigada has four general areas: 1) the airport; 2) developed areas of Barrigada; 3) Barrigada Heights; and 4) the southeastern area of the village consisting mostly of federal military

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holdings. There are also substantial Ancestral Land Commission holdings in Barrigada. There is some indication of farming activity in the undeveloped areas.

Due to the heavy rainfall during the rainy season, some areas prone to flooding are a result of human development and stormwater accumulation. Flash flooding, which occurs frequently in Barrigada, can cause safety hazards, property damage, and ecologically destructive erosion, including in low lying areas and highly developed zones (Guam Watershed Plan 2022). Road infrastructure repairs are critical to ameliorate flooding impacting on local residents. When flash flooding occurs, the fissures and cracks in the already rocky roadways divert to surrounding residential properties, sometimes inundating properties. There are plenty of storm drains, but they can be plugged with debris and require maintenance. There are not enough ponding basins, but Barrigada lacks land for additional ponding basins.

Barrigada also lacks adequate and optimally located recreational and green spaces within the village as a result of poor urban planning, and furthermore these recreational and green spaces are characterized by residential use only. Security is an issue of concern in regards to parks and open spaces. Parks that are located in subdivisions are typically not frequented due to the greater susceptibility to litter, noise after park curfew, etc.

Some structural properties in Barriagada contain hazardous materials or elevated levels of toxic contaminants and cannot be converted for residential or educational use. This is a result of military development and related activities and as a result, can only be zoned for commercial use. Remediation efforts have attempted to abate known contaminants, but currently, these properties can only be zoned for commercial use. In order to continue to develop and grow, it may be that more properties suitable for residential, R-2, zoning are needed.

Much of Barrigada also is situated on top of the Northern Guam Lens Aquifer (NGLA). Adequate and efficient municipal wastewater systems and treatment facilities are needed to preserve and protect domestic water supply. Additionally, there are recurring issues with water outages and maintaining hydraulic pressure for adequate supply to residents. It is imperative that the existing infrastructure is replaced and repaired to avoid persistent issues.

7.2.5.3. Barrigada Village Policies and Programs

VS-23. Enhance Central Development Areas.
Focus on enhancing Barrigada's central location by improving traffic management, creating mixed-use developments, and upgrading community amenities.

VS-24. Cultural Sites.
Preserve cultural sites while promoting modern infrastructure to balance development with heritage.

VS-25. Infrastructure Sustainability.
Ensure adequate infrastructure to protect the limestone plateau and the aquifer.

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VS-26. Increased Development Density.

Increase the availability of R-2 zoned properties with corresponding improved infrastructure to support new development (i.e. ensure no flooding of adjacent properties due to parcel subdivision, install sewer, ensure water supply, and sufficient roads).

VS-27. Community Facilities.

Assess the need for a new mayor's office, library, and field house, as well as conservation of the current community center.

7.2.6. Chålan Pågu-Otdot (Chalan Pago-Ordot)



Chalan Pago refers to the area that was traveled to get from Hagåtña to Pago and is a CHamoru word that means "Pago Road." Ordot is derived from the CHamoru word *otdot*, which means "ant." This could be because the soil type of the village was attractive to some ants.

Chålan Pågu-Otdot stretches halfway across the narrow part of the island, encompassing the land from the south borders of Sinajana and Toto to Pago Bay. Housing is mostly along Route 4 and Pago Bay. It has diverse and rugged topography containing low hills, small valleys, wetlands, and streams. Initially it was the center of ranching for people from Hagåtña due to its fertile soil but is now the two tight-knit communities with several new housing subdivisions.

Chålan Pågu-Otdot has the island's former landfill, which is now closed after village residents held protests due to decades of needing to evacuate their homes for periods of time during fires, stench after heavy rains, excessive flies, and sanitary concerns.

7.2.6.1. Community Setting

Chålan Pågu-Otdot is a medium sized village, with the 2020 census showing 7,064 residents in 2,129 housing units (BSP 2024). In 2022, Chalan Pago-Ordot had 43 establishments and 662 paid employees with an annual payroll of a combined $8.5 million ($12,800/capita) (BSP 2024). Chalan Pago-Ordot had 1,570 land parcels in 2023 worth approximately $111.2 million, and 705 buildings, including residential, condominiums, hotels, apartments, malls, churches, and cottages worth approximately $114.2 million (BSP 2024).

Ordot celebrates San Jaun Bautista's feast day on June 24, while Chalan Pago celebrates the fiestas Our Lady of Peace and Safe Journey in the third week of January, and the Sacred Heart of Mary on the second Friday in June. Chalan Pago-Ordot has a village mural that states "We are Guam, We are Ordot - Chalan Pago" on Route 10 across from Song Market. It was designed by teachers from John F. Kennedy High School and George Washington High School. The teachers led a community of volunteers to complete it.

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There are several institutions that are points of interest within the village, including the Agueda Iglesias Johnston Middle School, Baha'i Assembly, Dominican Child Development Center, Sanctuary Inc., and the Island Community Church. The village also hosts the Frank Perez Park along Pago Bay, which is the only area within Pago Bay that provides easy public access to the shoreline. It is often used by fishermen to launch their day boats or wade for fishing with *talaya* nets or fishing poles. Historic Japanese bunkers built in World War II are south of the park along the shoreline.



7.2.6.2. Land Use Issues and Challenges

Chålan Pågu-Otdot is developed along the major road corridors across the island and down to Pago Bay. Undeveloped areas contain some sensitive habitats and wetland areas. Some of these also overlap with identified flooding locations. Flooding occurs regularly due to insufficient ponding basins. Storm drains are on all routed roads. Most of the village is located over the Northern Groundwater Protection Zone.

Infrastructure has been an issue in the past, including in relation to a controversial Pago Bay hotel development just over the village line in Mangilao. The project may require road widening and expanded sewer capacity. There are also longstanding concerns with the closed Ordot landfill, which must be fully mitigated before it can be converted to a municipal park. More generally, there is a need for road improvements, such as adding shoulders. Water availability also is an issue in Chålan Pågu-Otdot because of changes in pipe sizes, as well as the fact that the pumps are inadequate to provide water. The inadequacy of pumps is an issue, particularly for any additional development in Chalan Pago.

In a 2009 assessment, the Village Road Improvement Plan estimated the cost for non-routed road repair was $68 million for Chalan Pago, and the improvements have never been implemented. Chålan Pågu-Otdot is an LMI village (low-moderate income community). Additional R1 and R2 residential units, particularly medium density housing, and associated

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commercial spaces to support the housing in terms of single story "mom-and-pop" shops, would be welcome in development.

7.2.6.3. Village Policies and Programs

VS-28. Managed Growth.
Balance residential growth with environmental conservation.

VS-29. Community Infrastructure and Sustainable Development.
Upgrade infrastructure, expand community facilities, and protect natural areas to ensure sustainable development.

VS-30. Increased Residential Density.
Expand opportunities for medium density housing and mixed-use areas.

VS-31. Sustainable Housing.
Ensure that new, higher density residential development is connected to public sewer and water systems.

VS-32. Road Design.
Ensure basic two-lane road design with shoulders are developed when parcels are subdivided.

VS-33. Adequate pedestrian infrastructure.
Ensure road right-of-way easements are wider than 20 feet to accommodate sidewalks and road shoulders. Develop sidewalks as feasible.

VS-34. Invasive Species.
Control feral pigs and other invasive species to allow for utilization of residential gardens.

7.2.7. Hagåtña

Hagåtña is derived from *haga*, meaning blood. This is perhaps due to the bloodlines of the families that established the village. On Spanish maps, the village was called Agadña or Agaña, and Agaña on American maps.



Hagåtña is the capital of Guam, located in central Guam between Agaña Bay and the Agaña Heights cliffs. It was declared a city and the capital of the Marianas by Spanish Royal Decree in March 1686. Tamuning and Asan border Hagåtña. Hagåtña has several commercial activities as well as the government offices and the religious center for the Catholic church (Leon-Guerrero 2024).

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7.2.7.1. Community Setting

Despite being the capital, Hagåtña is one of Guam's least populated villages. In 2020, there were 943 residents in 407 housing units (BSP 2024). Although Hagåtña is one of the least populated villages, in 2022 it had 393 establishments and 18,886 paid employees with an annual payroll of a combined $214.8 million, which if divided equally, is roughly $21,400 annually (BSP 2024). Hagåtña has 1,185 land parcels in 2023 worth approximately $190.7 million, and 342 buildings, including residential, condominiums, hotels, apartments, malls, churches, and cottages worth approximately $216.1 million (BSP 2024). Although not included



in the statistics from the Guam Homeless Coalition and Guam Housing and Urban Renewal Authority cited in BSP 2024, there are numerous homeless persons in Hagatña. The Guam Homeless Coalition is currently trying to purchase a building in which to house the homeless.

As the capital, Hagåtña is the seat of Guam's judicial, legislative, and executive branches. There are several commercial activities including law offices, banks, technical and professional services, restaurants, and more. The village has several public facilities as well as important cultural resources.

After World War II, which destroyed more than 1200 homes and several public and private buildings, the federal government and later the Guam government condemned large tracts of land and redrew property lots, redistributing village resources. In some cases, this left original landowners without any property. The village population dropped from about 10,000 to 800 from 1940 to 1950. Although the population increased to 1,642 by 1960 then 2,119 in 1970, it has since declined again. However, as the seat of Guam's government, the center of commerce and trade, and possessing significant historical and cultural heritage, there is a push to

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revitalize the capital and to preserve and protect its heritage and economic vitality (Leon-Guerrero 2024).

There are several points of interest throughout Hagåtña:

Academy of Our Lady of Guam: Guam's only all-girls Catholic school was opened in 1949. It is a four-year high school.

Senator Angel Leon Guerrero Santos Memorial Park / Latte Stone Park: This park has eight latte stone pillars that were transferred by the military from Me'pu and Fena in the southern interior of Guam as the military built new bases in those locations.

Japanese World War II Caves: The man-made caves are located at the base of the cliff line and were used for shelter and supplies storage by the Japanese.

Lujan House: This is one of the few remaining pre-World War II houses in Hagåtña. After being built in 1911 as a private residence for Jose Pangelinan Lujan, it was moved into by the Guam Institute in 1928. The Guam Institute was forced to close during World War II and is now on the National Register of Historic Places. **The Lujan House is now home to the Guam Preservation Trust, which completed rehabilitation of the home in 2010.**

Plaza de España: The plaza served as the Governor's Palace during the Spanish occupation. Most of the palace was destroyed during World War II, but several historical structures survived including the Garden House, Chocolate House, and Azotea and inner court.

Dulce Nombre de Maria Cathedral - Basilica: The Cathedral-Basilica is located on the site of the first Roman Catholic mission in the Mariana Islands. It was renovated in 1998.

Spanish Bridge: This bridge spanned the Hatana River before the river's course was changed after Hagåtña was rebuilt after World War II. *La Sirena*, Guam's legendary mermaid, sits on the south side of the bridge.

Guam Museum: Opened in 2016, the museum is at Skinner Plaza and reflects the diversity, creativity, and resilience of Guam and the Mariana Islands.

- **Guam Congress Building:** This building is newly restored and holds the legislative session hall, hearing rooms, and senators' offices.
- **The Guam Fishermen's Co-op at the Marina:** Specializes in local seafood items caught daily by its members and processed for sales in the store.

7.2.7.2. Land Use Issues and Challenges

Hagåtña Restoration and Redevelopment Authority.

The Hagåtña Restoration and Redevelopment Authority (HRRA) is the lead agency responsible for guiding the revitalization of Guam's capital city. Established by law, HRRA is tasked with promoting the heritage, economic vitality, and redevelopment of Hagåtña through the creation and implementation of the Hagåtña Master Plan. Its mission emphasizes expanding affordable housing, increasing employment opportunities, and fostering the social and economic well-being of the community. HRRA plays a central role in coordinating public and private

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investments, preserving historic and cultural assets, and ensuring that land use decisions align with the city's long-term vision. Through its leadership, HRRA seeks to transform Hagåtña into a thriving, sustainable urban center that reflects the island's cultural identity and supports the needs of its residents and visitors alike.

The Hagåtña Master Plan (HRRA, 2022).
The Hagåtña Master Plan addresses several key land use issues in Guam's capital city, focusing on revitalizing the area as a cultural, civic, and economic hub. The main land use issues identified include the city's declining population and underutilized land, the dominance of government uses, fragmented land ownership, and the presence of incompatible land uses that disrupt community cohesion. Additionally, stakeholders raised concerns about flooding, inadequate parking, and the lack of vibrant tourism and mixed-use development. The limited residential population has impacted the city's liveliness and economic potential, contributing to a downtown area that lacks the vibrancy of a true capital center.

In response, the plan outlines objectives to re-establish Hagåtña as the governmental and cultural heart of Guam through mixed-use development, increased residential opportunities, and preservation of historical and cultural landmarks. The vision centers on creating a vibrant, walkable downtown with civic spaces, commercial areas, and mixed-use neighborhoods that foster social, economic, and cultural activity. A key goal is to encourage more residents to live in Hagåtña, improving housing diversity and affordability, while simultaneously supporting economic growth through infill development, tourism, and local business support.

The policies support these objectives through strategic land use planning and targeted actions. For example, the plan promotes mixed-use nodes around key districts and transit areas, incentivizes redevelopment, and calls for preserving cultural resources such as the Heritage Trail and Spanish-era architecture. Additionally, urban design standards are proposed to enhance walkability, aesthetics, and connectivity. These standards include guidelines for building maintenance, wayfinding, and pedestrian amenities. The waterfront and riverwalk areas are also targeted for redevelopment that respects cultural heritage and environmental sustainability while creating spaces for recreation and commerce.

To support implementation, the plan identifies a comprehensive framework of policies: improving pedestrian and transit infrastructure, encouraging public-private partnerships, and aligning land use with sustainability goals. Historic preservation is integrated into land use decisions, while the plan also calls for improved coordination across government agencies. Overall, the land use component of the Hagåtña Master Plan seeks to transform the city into a dynamic urban center that honors its past while building a resilient, inclusive future.

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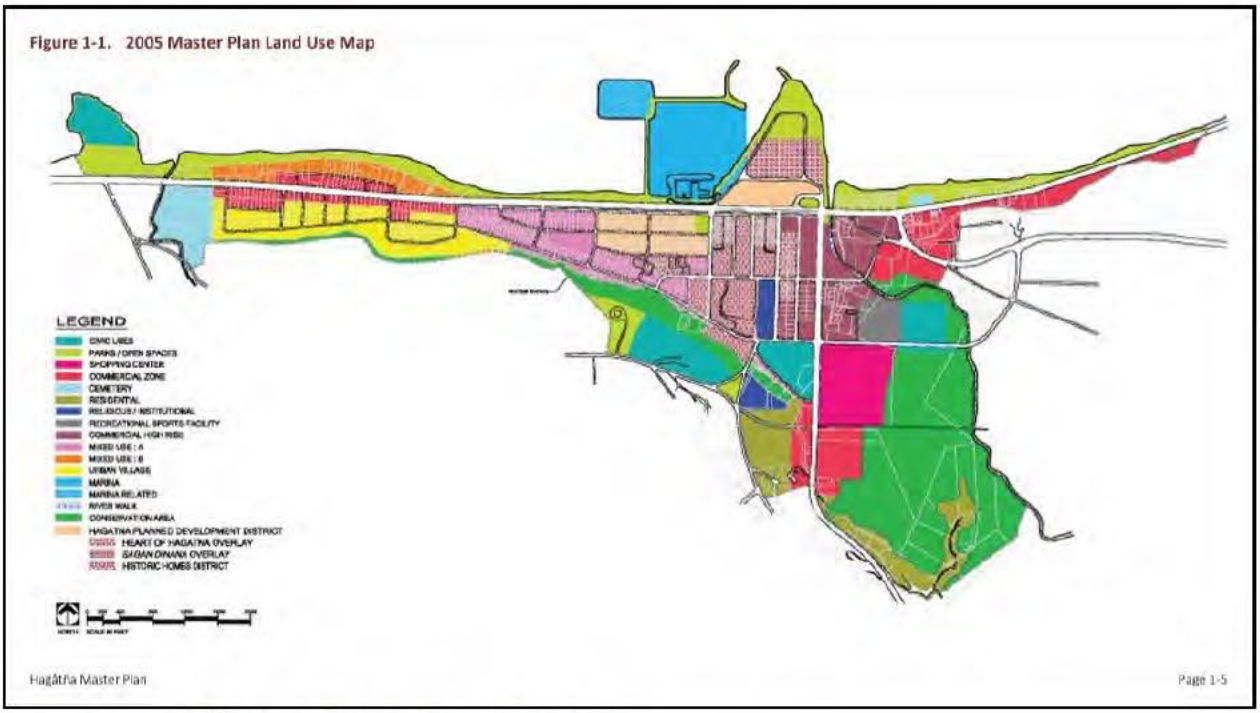

Figure 7-4. Hagåtña 2005 Master Plan Land Use Map.

Hagåtña is interested in expanding their tourism industry, including looking into creating a tourist area in the marina for docking large cruise ships. To do so, the Hagåtña plans would need to be updated. Ideas also include additional restaurants and nightclubs to stimulate the economy through attracting tourists and locals.

Other Issues. The greatest environmental issue in Hagåtña may be the functioning of the wastewater pump station in the village and associated odor. Illegal dumping also is an environmental issue. With respect to erosion, mud runoff goes into the ocean from the river during big rains. There are flooding issues because the drainage is clogged. Additionally, there is insufficient drainage, which is exacerbated by the construction of commercial buildings and lack of repaving roads.

With respect to culture and community, residents feel that drugs have become an issue, causing people to become homeless, which has led to a rise in theft, fights, and squatting in abandoned buildings and parks. Additionally, some feel that the sense of cultural identity is becoming lost, with many children not able to speak CHamoru and losing CHamoru values.

The U.S. Army Corps of Engineers is assessing the feasibility of options in the East Hagåtña Shoreline Protection Project (USACE 2023). For several years, there has been a significant shoreline erosion issue. A seawall that was constructed in the 1990s is being undercut by erosion and on the verge of collapse, despite its intended purpose was mitigation of this exact erosion. Continued erosion will impact the primary roadway, Marine Corps Drive, connecting Andersen Air Force Base and Navy Base Guam, as well as primary access to many villages including downtown Hagåtña.

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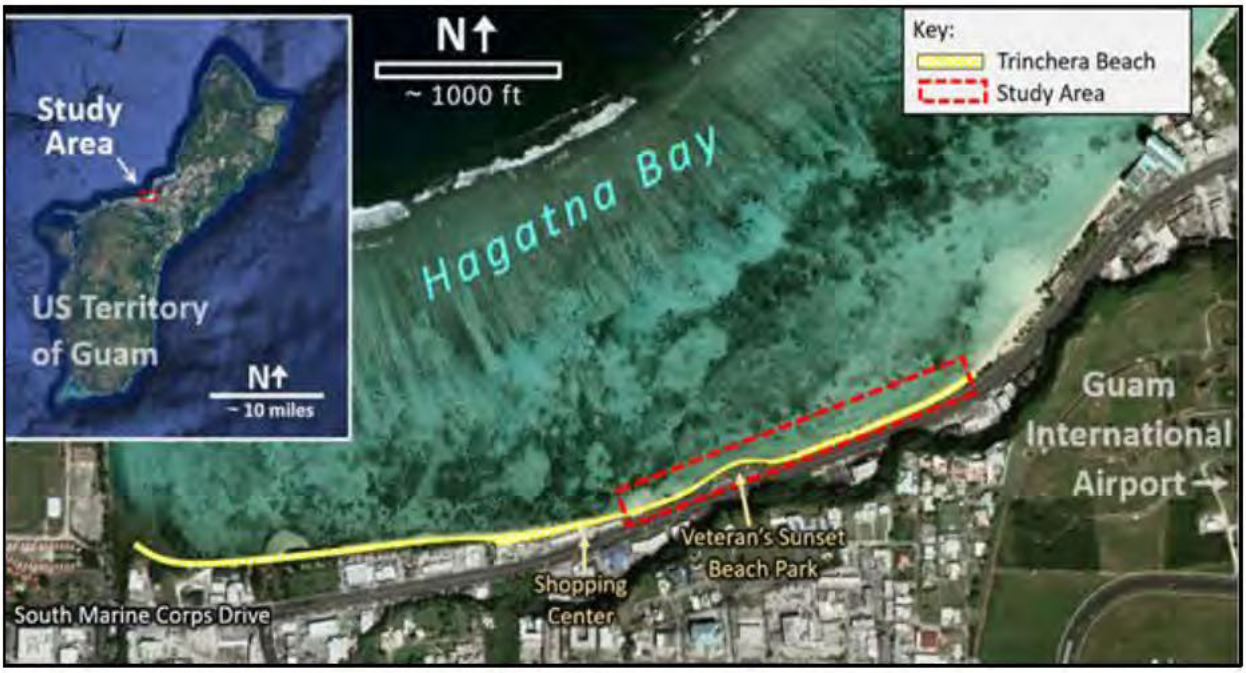

Figure 7-5. Site for the USACE East Hagåtña Shoreline Protection Project.

7.2.7.3. Village Land Use Policies and Programs

As the capital, Hagåtña should prioritize revitalization efforts, including mixed-use developments, improved public spaces, and heritage preservation, consistent with the Hagåtña Master Plan. Supporting cultural events and tourism will reinforce the village's identity as Guam's cultural and administrative center. Development that includes new buildings should focus on a Spanish style design.

VS-45. Hagåtña Master Plan.
Assure that land use planning and development decisions are consistent with the Hagåtña Master Plan.

VS-46. Coordination with Hagåtña Restoration and Redevelopment Authority.
Coordinate implementation of the G50SP by BSP, DLM, and other land use authorities with the Hagåtña Restoration and Redevelopment Authority. Develop a collaborative implementation plan to clarify agency roles, identify and prioritize funding opportunities, address potential gentrification and social displacement, and identify specific tasks for integrating and implementing the objectives of the G50SP and HRRA, such as permitting reforms, demonstration projects, community resiliency strategies.

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7.2.8. Mangilao



Mangilao village got its name from the word *ilao*, which means looking for something (Leon Guerrero 2025). Hunters and fishermen historically went to Mangilao to search for crabs, deer, wild pigs, and fish.

Mangilao is in central Guam between Barrigada and Chalan Pago. It includes several subdivisions such as Latte Heights, Sunrise Village, and lower and upper Pågat. Guam Community College and University of Guam are both located in Mangilao, as well as several government agencies and the prison.

7.2.8.1. Community Setting

The village of Mangilao today is new but has ancient sites dating back more than 1,000 years, including an ancient CHamoru village in Pågat. Pågat has breathtaking cliff lines overlooking the Pacific Ocean, as well as jungle trails leading to freshwater caves and ancient latte (Leon Guerrero 2025).

Mangilao lacks a natural water source, thus it was not repopulated until after water wells were established in the late 1920s. Mangilao began to flourish in the late 1920s with agricultural initiatives. Following World War II, Mangilao became a key agricultural center, attracting workers and leading to significant development. Officially recognized as a separate municipality in 1952, Mangilao has evolved into a dynamic community with educational, governmental, and residential infrastructure.

Mangilao had, in 2022, 126 establishments and 10,256 paid employees with an annual payroll of a combined $81.1 million, which if divided equally, is roughly $7,900 annually (BSP 2024). Mangilao had 2,434 land parcels in 2023 worth approximately $221.7 million, and 1,341 buildings, including residential, condominiums, hotels, apartments, malls, churches, and cottages worth approximately $279.4 million (BSP 2024). In 2020, there were 13,476 residents in 4,656 housing units, and in 2023, there were 13 reported homeless households (BSP 2024).

At present, the central point of the village is the area where the Santa Teresita Catholic Church, Mangilao Community Center, and Mayor's Office is located. Though divided by the main road, Route 10, this area is where night markets, social events, and other village gatherings take place.

Mangilao Senior Center: The Mangilao Senior Center is located near the Mangilao Community Park and Santa Teresita Catholic Church. Additionally, there is a walking path and park sign nearby to help residents access the center and other community amenities. A sign was installed at the Mangilao Night Market that displays walking routes and park maps (University of Guam

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2023). The Mangilao Senior Center is part of the local efforts to enhance community health and engagement.

Other key points of interest in Mangilao include:



- **The University of Guam:** A U.S. Land Grant and Sea Grant Institution in the heart of Mangilao overlooking Pago Bay.
- **Sisters of Mercy Convent:** This is the second convent on Guam.
- **Caves:** Marbo Cave is a freshwater coastal cave. Pågat Cave is on the eastern side along the coastline in a sinkhole at the bottom of a cliff. It contains fresh water.
- **Eagle Field:** This recreational and sports field was recently renovated for youth football leagues. The field is also used by private skydiving companies as a landing site.
- **Thousand Steps:** Roughly 150 concrete, very steep steps provide access to the beach at Mangilao Golf Club. It provides a panoramic view of the Pacific Ocean.
- **Kattan Youth Center:** One of three youth resource centers managed and operated by DYA and built in March 2015. Offers an array of programs and services that promote positive youth development and is a "safe haven" for community children/ youth. The center primarily services the Central Villages.

7.2.8.2. Issues and Challenges

The mayors identified key challenges in Mangilao related to land use, environmental management, infrastructure, and cultural preservation. Land disputes over zoning, access easements, and ownership, especially in residential areas, caused issues with utility billing and mail delivery, while family subdivisions led to infrastructure strain. Housing was generally available, but concerns about affordability remained, particularly for multi-family homes.

Environmental issues included illegal dumping, flooding, and feral pigs encroaching on residential areas due to habitat loss. Infrastructure concerns focused on water access, power, and internet connectivity in underserved areas, along with waste management, law enforcement, sewer, and road improvements. Bus stop additions and enhanced public transportation were suggested. Despite current police and fire protection services being viewed as sufficient, an increase in police presence within the village was suggested. Culturally, access to natural resources for traditional practices was affected by environmental factors such as invasive species.

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7.2.8.3. Village Policies and Programs

VS-53. Educational Land Reserve.
Designate and protect strategic land parcels near existing institutions for future university and community college expansion, including mixed-use developments that support student housing, research facilities, and walkable amenities.

VS-54. Community Recreation Access.
Establish minimum park space standards per capita and prioritize the development of parks, green spaces, and playgrounds within walking distance of all residential areas.

VS-55. Integrated Waste Management Zoning.
Identify and zone land for waste transfer and recycling centers to reduce illegal dumping and improve access to sustainable waste services, while supporting local clean-up efforts with formal infrastructure.

VS-56. Cultural Economy Zoning Overlay.
Create a Cultural Economy Zone near the village center or public markets to support artisans, cultural practitioners, and local food vendors through dedicated space, flexible permitting, and infrastructure for year-round cultural events.

VS-57. Agricultural and Small Business Support.
Promote mixed-use and agri-commercial zones that allow integration of small farms, community gardens, and food-related microenterprises within the village core and outskirts.

VS-58. Resilient Village Design Guidelines.
Adopt village-scale design standards that incorporate climate resilience, walkability, and public health outcomes into all new developments, especially around schools, markets, and community centers.

7.2.9. Mongmong-To'to-Maite' (Mongmong-Toto-Maite)



Mongmong, Toto, and Maite comprise one municipality. Momongmon, which later became Mongmong, describes the sound of a heartbeat. Toto means to recline, and maite means to nudge or touch another person (Leon Guerrero 2025b). Mongmong may also refer to the sound that dirt ridges of holes make as they crumble when people walk on them.

Mongmong-Toto-Maite is north of Hagåtña in central Guam. Mongmong and Toto are mostly rural, residential areas. Mongmong is parallel to Maite and the center of the municipality. It is also the most populated of the three villages. Toto borders Barrigada and has winding roads and swamplands. Maite boasts a beautiful cliffline from which you can watch the sunsets.

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The area of Maite and Toto between Tiyan and Hagåtña is primarily industrial with warehouses, hardware and furniture stores, mom and pop markets, and popular bargain shops. However, prior to the Japanese occupation in 1941, Mongmong-Toto-Maite was mostly used for small-scale farming and raising poultry and other livestock. Most people using the land lived in Hagåtña and would walk to the tri-village area daily to work (Leon Guerrero 2025b). After the war, the tri-villages provided housing to those who used to live in the capital.

7.2.9.1. Community Setting

Nuestra Senora de Las Aguas, Mongmong's Catholic Church, hosts an annual fiesta to honor their patron saint on the last Saturday of January. The Immaculate Heart of Mary Church in Toto celebrates its patron saint's fiesta annually in June. Maite does not have a village fiesta.

Mongmong-Toto-Maite had, in 2022, 66 establishments and 2,815 paid employees with an annual payroll of a combined $35.5 million, which, if divided equally, is roughly $12,600 annually (BSP 2024). Mongmong/Toto/Maite had 574 land parcels in 2023 worth approximately $105 million, and 393 buildings, including residential, condominiums, hotels, apartments, malls, churches, and cottages worth approximately $115.7 million (BSP 2024). In 2020, there were 6,380 residents in 2,277 housing units, and in 2023, there were 4 reported homeless households (BSP 2023).

7.2.9.2. Issues and Challenges

The existing municipal wastewater system needs to be repaired and improved as sewage is a persistent issue throughout the village. The Agaña Wastewater Treatment Plant (WWTP) currently services the village, however, it is not sufficient to meet wastewater effluent from residents and treatment demands. Additionally, the electric grid requires modernization to increase electric capacity to accommodate the current demand by village residents. The principal utility is currently the Guam Power Authority.

PCB soil contamination from the Agaña Power Plant (APP) is an environmental and human health concern in Mongmong (Guam Daily Post 2021) because it borders the Agaña Wetlands, which abuts the APP. The APP used polychlorinated biphenyls (PCBs) as cooling oils for its electrical transformers and switching gears. By 1989, most transformers and related equipment were either removed, or the oils were replaced with non-PCB coolants. In 1998, as part of its standard turnover procedure for the transfer of former industrial properties, the Navy tested traces of chemicals that could be harmful to humans and the environment. PCBs, dioxins, and polycyclic aromatic hydrocarbons (PAHs) were detected in soils and foods at or near APP. The Navy is currently characterizing and cleaning up the contaminated areas (ATSDR 2010).

Many of the locals have migrated out of the village, and there has been an influx of migration in recent years, so the opportunity for local investment is very scarce. There are not many opportunities for investors to develop in the village with the local economy in mind. Crime rates have also increased in recent years, and it is no longer considered a safe and open community.

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There is an increasing demand for modern, suburban and more upscale housing such as townhomes, but the village predominantly consists of rental housing units and is considered at maximum capacity for new housing development projects.

Illegal dumping and abandoned vehicles are a significant concern to residents. The mayor's office can issue fines for abandoned vehicles, but it takes a long time to be processed with the municipal courts and violators are not sufficiently disincentivized. There currently isn't an impound lot, so the vehicles are consequently amassed on public property. Residents also complain about lack of delineated property easements, resulting in frequent disputes amongst property owners. There are no updated assessor maps.

7.2.9.3. Village Policies and Programs

VS-65. Community Facilities and Infrastructure.
Upgrade infrastructure and community facilities as feasible. Strengthen disaster resilience.

VS-66. Sustainable Housing Development.
Promote sustainable housing while preserving natural spaces.

7.2.10. Piti



Piti's name is likely derived from the CHamoru word *puti*, which means hurt or ache (Guampedia.com). Piti is quite large, spanning from Apra Harbor at the south end to Tepungan Beach Park at the north, then at the junction with Asan Beach Park, Piti goes south past Nimitz Hill to Mount Chachao and Mount Tenjo, circles the wastewater treatment plant, then heads west to reconnect with Marine Corps Drive. Piti also hosts the Port of Guam and the Marianas Yacht Club, as well as the War in the Pacific National Historic Park. There are a few recreational beaches, including Family Beach, at the end of Cabras Island and Tepungan Beach Park.

7.2.10.1. Community Setting

The residents have Piti Pride. It is considered a cohesive community that enjoys being together and are proud to be residents of Piti. The village proper is located across from Cabras Island on the cliffside of Marine Corps Drive. It is a small residential area with several older homes dating back to the 1940s-1950s. There are several important points of interest:

Guam Veterans Cemetery: 18 acres of land across from the Jose LG Rios Middle School. It is the resting place for US military veterans and their families.

Our Lady of the Assumption Catholic Church: A small concrete chapel built in 1930 at which a fiesta and procession are held in mid-August annually.

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Piti Guns: One of seven units of the War in the Pacific National Historical Park, the guns are located in the heart of Piti and were built for the Japanese to defend against US naval ships and landing craft.

Santa Cruz Shrine: The shrine is located on a narrow road in the jungle off Marine Corps Drive and has a small shelter for those in the village who make the annual trek to honor the cross. The surrounding swamp is the "Swamp of the Immaculate Virgin."

Atlantis Guam: This is a small peninsula in Apra Harbor, which hosts the Marianas Yacht Club and Port Authority Beach.

Fish Eye Marine Park: Micronesia's first and only underwater observatory that was constructed to show visitors the beautiful undersea wonders. More than 200,000 visitors are logged annually.

Mahogany Forest: The forest is near the Piti Guns. The trees were planted around 1928 as part of the Guam Agricultural Experiment Station.

Piti Bomb Holes Marine Preserve: A designated marine preserve that attracts large amounts of fish and other marine life. Many snorkelers, swimmers, and divers visit annually. The area is named "bomb holes" because it looks as though craters were created by bombs, although they are natural coral formations.

Cabras Island: Once a low-lying finger of land offshore In WWII, it was connected by a causeway to the mainland and extended by the Glass Breakwater. Cabras has both the Port of Guam and important Guam Power Authority generators supplying Guam

Piti is a medium-sized community, with 66 establishments and 2,685 paid employees as of 2022 (BSP 2023). In 2022, there was an annual payroll of $28.8 million, which equates, if divided equally, to a salary of about $10,700 per person. In 2023, Piti had 1,107 parcels of land with an approximate value of $169.7 million and 530 buildings with an appraised value of $111.8 million (BSP 2024). As of 2020, Piti has 1,585 people and 578 housing units, with 3 homeless households in 2023 (BSP 2024). However, interestingly, the residents reported that homelessness is a problem within the village during outreach associated with this project and that people need better paying jobs.



Apra Harbor, for which Piti and Santa Rita host shoreline, is very protected and is the location of most maritime industry as well as the port for US naval vessels. The beach parks are used by the community frequently for village gatherings, events, and sports, such as Christmas in the Park, paddling, and family gatherings.

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7.2.10.2. Issues and Challenges

Improved sustainability of the ocean and its resources was emphasized by the community because previously, the initial focus was on recycling, and as one citizen stated, “Sustainability is so much more than that!” Runoff, erosion, and sedimentation are issues, and flooding continues to worsen due to a lack of drainage under Marine Corps Drive. Removal of pigs, which are a primary cause of watershed degradation, should improve the environment.

Property availability is scarce - available properties are predominantly wetlands (wetland areas with mangroves) or private properties. The feeling is that only the government could develop within Piti due to the lack of available land upon which to develop. For example, the area in the southern part of Piti is Sasa Bay, a marine preserve designated in 1997 for its valuable habitat, which would likely not be developed, nor would residents want development there.

Water infrastructure and roads are a challenge. Water pipes are eroded and leak regularly. Water pressure varies throughout the village. Route 6 needs a better maintenance plan because it requires better drainage, as do other secondary roads throughout the village. These are issues that would need to be addressed prior to additional development. Transportation is an issue for the residents. More residents are relying on the transit system, but it is many hours between buses. Few residents have cars.

7.2.10.3. Village Policies and Programs

VS-67. Marine Environment.

Protect Piti’s coastal and ecological significance, particularly the coral reefs, fisheries’ sustainability, and connections to local culture and the economy. Expand recreational opportunities and improve disaster resilience.

VS-68. Sustainable Development.

Promote small-scale development, such as creating space in the village for a coral nursery and where the community can learn about the reef, rebuilding the canoe house, and creating space for revenue generation such as a restaurant and bar near Santos Park. Explore opportunities on available GovGuam properties for community-related development.

VS-69. Senior Housing.

Provide senior housing and assisted living opportunities for the community.

VS-70. Cultural Resources.

Protect the Latte site and Atantano for their significant cultural importance to the community. Consider cultural education development opportunities, prioritizing the preservation of cultural heritage, medicinal plants, and the historical relevance of Piti’s locale.

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7.2.11. Sinahånña (Sinajana)



Sinajana is believed to be derived from *chinåhan-ña*, which is his or her cooking ground. Yams grew plentiful in this area, which were harvested and cooked in earthen ovens in the ground. That process is called *chinåhan* (Castro).

Sinajana is on the hilltop above Hagåtña between Agaña Springs and Agaña Heights. It borders the Agaña Wetlands. Prior to World War II, Sinajana was an agricultural village, at one time supplying all civilian Guam with coffee. Sinajana took in many families when Hagåtña was destroyed during World War II. After supertyphoon Karen destroyed 80% of the village structures in 1962, "urban renewal" forced the relocation of hundreds of villagers to other parts of the island over the next decade (Castro).

7.2.11.1. Community Setting

Sinajana had, in 2022, 32 establishments and 628 paid employees with an annual payroll of a combined $8.9 million, which, if divided equally, is roughly $14,100 annually (BSP 2024). Sinajana had 5,121 land parcels in 2023 worth approximately $437.5 million, and 3,540 buildings, including residential, condominiums, hotels, apartments, malls, churches, and cottages worth approximately $495.9 million (BSP 2024). In 2020, there were 2,611 residents in 836 housing units, and in 2022, there were 3 reported homeless households for Agaña Heights and Sinajana combined (BSP 2024).

Sinajana is home to the Saint Jude Thaddeus Catholic Church, and their annual village fiesta is celebrated in honor of Saint Jude, patron saint of the impossible, on the last weekend in October (Castro). The village has two schools. The Sinijana Community Center hosts the mayoral administrative houses, Senior Citizen Recreational Center, Guma' Mami Inc. (a nonprofit community-based organization providing support to those with disabilities), and baseball and basketball facilities. The church and community center are in the heart of the village, which is a peaceful area with sidewalks, making it ideal for walking or jogging.

Other key points of interest in Sinajana include:

Ada's Funeral Home: This is the first funeral home to operate on the island.

Butler's Store: Butler's Emporium was founded by Chester Butler, the first person to receive a license to manufacture and sell soda outside the continental US.

Hotno: This old Spanish stone oven can be found in the yard of the old Won Pat store.

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7.2.11.2. Issues and Challenges

One of the predominant concerns in Sinajana is water. Sinajana provides water to the central areas, but during high-demand times, there is low pressure. Four areas have water lines that are constantly breaking.

The residents of the village desire a commercial space, already identified, to provide a laundromat, barbershop, fish shop, and more. The village is also facing increased prices for housing - people from outside the village want to move into the village because of the progress the village has made. Thus, affordable housing is a concern.

Another issue is the border of Sinajana. Sinajana used to be bigger, but the borders were moved because the original straight lines divided people's houses, where one half was in Sinajana and the other half in another village. However, when the border was moved, it resulted in some children going to the wrong school because they could not attend the school in their neighborhood, since the border moved the school to the next village.

Maintenance of culverts and the three ponding basins were noted as problematic. The ponding basins are overgrown and sometimes residents throw yard waste into the culverts, clogging them. Larger drainage systems using 24-inch pipes instead of 12-inch.may be needed also.

The power infrastructure is old and fragile. The village had poor planning during development, and subsequently, the additional megawatts needed were not anticipated. To rectify this, village residents are installing solar, and a new power plant in Hagatna will contribute to Sinajana's electricity.

With respect to flooding, the issue primarily pertains to land use rules regarding retaining walls. The runoff caused by a retaining wall, which doesn't require a permit to build, ends up flooding neighbors' houses and yards.

Lastly, there are insufficient typhoon shelters in Sinajana. Most people shelter in place. The goal is to make the community center a Tier 2[2] location for typhoons that can double as a staging area.

7.2.11.3. Village Policies and Programs

Sinajana's approach to development is holistic, where investments in facilities and programs subsequently foster a positive communal atmosphere, and supports mental and physical well-being of residents of all ages. The most important public space in Sinajana is the community center and the church.

[2] As described in Guam's Hazard Mitigation Plan: "Tier 1 shelters provide immediate, short-term refuge; Tier 2 shelters offer more comprehensive services for longer durations; and Tier 3 shelters are equipped for extended stays, providing full-scale support including, healthcare, food, and long-term accommodation" (Guam Homeland Security, 2024).

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The village has identified places for development using GHURA lands - 3 for community gardens, 3 for open spaces with benches, and 3 where the community would plant native trees. Additionally, a Green Market comprised of a metal structure with a solar panel roof is planned with stalls for selling produce, baked goods, home goods, and more.

VS-71. Community Development Objectives.

Focus on maintaining a small-community feel while upgrading infrastructure and community facilities. Avoid large-scale development. Expand recreational spaces and improve access to services to enhance quality of life. Create spaces that promote walkability and connectivity. Prioritize affordable housing as a paramount objective.

7.2.12. Tamuneng-Tomhom (Tamuning-Tumon-Harmon)



Tamuning was the Carolinian name given to the area where Carolinians settled after a typhoon devastated Lamotrek and Satawal. The name may have come from the Carolinian chief's clan. The Carolinians were relocated to Saipan in the early 1900s. The ancient CHamoru name was *Apurgan* or *Apotgan* (Clement Jr. b).

Major parts of Tamuning include Tumon, Guam's tourism district; and Harmon, Guam's industrial park. Upper Tumon and Harmon are relatively flat, sitting on high cliffs above Tumon Bay. The low plateau of Oka Point divides Tumon and Hagåtña Bays. Tumon has beautiful white sand beaches and protected waters and has been developed over the last 40 years into Guam's tourism center.

Tamuning and its surrounding areas have a large number of latte stones and other archeological finds around Tumon Bay. There are freshwater springs and excellent inshore fishing, making this location a major population center for the island for centuries. In the late 1600s, Tumon was listed as a major village. However, with the resettlement of CHamorus during the Spanish-CHamoru wars, the area was vacated. For the subsequent two centuries, the area was primarily used for ranching, hunting, and fishing. The village of Tamuning was established in 1849 by Governor Perez as a refuge for a group of Carolinians whose islands had been destroyed by a typhoon in 1848 (Clement Jr. b).

After the Carolinians were moved to Saipan by Governor Schroeder, people began to settle permanently in the Tumon-Tamuning-Harmon area during Guam's American naval era. Tumon was a popular fishing and salt-making spot during those years.

Ranchers were restricted from the area during World War II. After the war, CHamorus began to return to the area to find that the US military had taken over their land. Much of the land in Tumon Bay is now off limits because it is a designated Army Air Corps recreation area. The military planned to condemn the entire area but was stopped by one man armed with a shotgun. To prevent public outcry, the military stopped. Areas such as Ipao that had been used by the military for recreation sites were then turned over to the Government of Guam. Subsequently,

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Tumon families built permanent houses where their ranches had been (Clement Jr. b). In the 1980s, rapid development changed Tumon, and many residents moved to other parts of Guam. After the war, Tamuning also changed from ranching to permanent housing for the ranching families as well as refugees from Hagåtña.

7.2.12.1. Community Setting

Tamuning is the most ethnically diverse community since statesiders, Filipinos, Hawaiians, and Asians started moving into the village in the 1960s. They came with the military, federal government, or tourism-related industries (Clement Jr. b). After Yigo, Tamuning (inclusive of Tumon and Harmon) has the highest population on Guam.

Tamuning had, in 2022, 1,616 establishments and 82,508 paid employees with an annual payroll of a combined $985.3 million, which if divided equally, is roughly $11,900 annually (BSP 2023). Tamuning had 1,850 land parcels in 2023 worth approximately $781.2 million, and 1,579 buildings, including residential, condominiums, hotels, apartments, malls, churches, and cottages worth approximately $1.18 billion (BSP 2024). In 2020, there were 18,489 residents in 8,692 housing units in Tamuning as a whole, and in 2022, there were 18 reported homeless households in Tamuning, 25 homeless households in Harmon, and 21 homeless households in Tumon (BSP 2024).



The two-mile long coastline between Ypao Point and Gun Beach forms a broad concave embayment known as Tumon Bay. The bay is bordered at both ends by limestone cliffs. Ypao Point, the south boundary, is a prominent headland more than 200 feet high. There are no streams discharging into the Tumon Bay area, but several storm drain culverts discharge across the shoreline. Beaches extend along most of the Tumon Bay shoreline, the principal ones being Fafai, Gun, Gogna, Naton and Ypao Beaches. They are among the most heavily used recreational beaches on Guam. Much of Guam's hotel development is concentrated along the Tumon Bay shoreline and backshore terrace, with associated residential and commercial development. Tumon Bay is a popular region for net fishing, snorkeling, reef walking, outrigger canoe paddling, stand-up paddle boarding, kayaking, and diving. Tumon Bay is one of five marine preserves on Guam.

The Tamuning Senior Center is located in Tamuning, Guam, situated near key landmarks such as the Guam Memorial Hospital and Antonio B. Won Pat International Airport. Tamuning itself is a bustling village on the island, and the senior center is accessible via Marine Corps Drive, a major road in the area. The center is close to residential neighborhoods, as well as the Guam Memorial Hospital and shopping centers like the Guam Premier Outlets.

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Key points of interest in Tamuning include:

Blessed Diego Luis de San Vitores Church: This church is in the heart of Tumon and has long been a pilgrimage church for Catholics on Guam.

St. Anthony Catholic Church: This church, originally named St. Victor's Chapel, was built after World War II. Although the church has been renamed, St. Victor is still the patron saint of Tamuning.

Schools: There are six schools in Tamuning including public and private schools.

San Vitores Monument: The monument is the site where Blessed Diego Luis de San Vitores was killed by Chief Mata'pang in 1672. His death sparked the Spanish-CHamoru wars. CHamorus have maintained the site since the day he was murdered.

Ypao Beach Park: Also known as Governor Joseph Flores Memorial Park, this is Tumon's largest and oldest beach park. It is at the site of an ancient CHamoru burial ground and was also the location of a leper colony established by the U.S. Naval Government. Today, the beach park is a popular weekend location for festivities, barbeques, and parties. The waters of Tumon Bay off the park are part of the Tumon Bay Marine Preserve, in which fishing is limited, and people are not allowed to take marine life.

Cushing Zoo: Guam's only zoo is located next to Matapang Beach Park.

Matapang Beach Park: Dedicated to CHamoru Chief Mata'pang, this beach park houses outrigger canoes used by local canoe clubs.

Tumon Tourist District: Tumon is the island's tourist district. It contains luxury hotels, high-end shops, several restaurants and bars, dance clubs, and more.

Two Lovers Point: Two Lovers Point is a steep cliff face that marks the northern border of Tumon Bay. It has beautiful views of the ocean and the Guam shoreline.

7.2.12.2. Issues and Challenges

Zoning issues have been raised out of concern that current zoning may not is an issue. There are currently several projects that aim to improve land use policies and ensure zoning regulations reflect ecological considerations and community needs. With respect to the environment, illegal dumping and improved environmental management practices were listed by community members as issues to tackle. Flooding needs to be mitigated.

Tamuning needs investments in infrastructure, including roads, water supply, and stormwater systems. Plans exist to improve recreational facilities and public spaces to enhance community well-being and ensure the facilities meet the needs of all residents.

Due to economic challenges, Tamuning has initiatives aimed at attracting businesses to contribute economically and socially to the community. Residents voiced concerns about preserving the local culture during development. They have undertaken efforts to promote cultural understanding through educational programs.

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7.2.12.3. Villages Policies and Programs

VS-75. Shoreline Management.
Consider establishing a shoreline management district to promote beach protection and tourism, water quality enhancement, public shoreline access and adaptation to sea level rise.

VS-76. Hotel Redevelopment and Enhancement.
Facilitate opportunities for reinvestment and enhancement of existing hotel stock and tourism facilities.

VS-77. Community Circulation and Infrastructure.
Assess circulation and infrastructure constraints, including extreme flooding events, road capacity, and mixed-modal transportation management.

VS-78. Mixed Use Development.
Promote mixed use development in the urban cores.

SOUTHERN VILLAGES

7.2.13. Hågat (Agat)



Hågat may have been named by the first clan who settled the village, or is potentially derived from *aga*, the CHamoru name of the Marianas crow that makes the sound "aga" while flying. It could also be derived from *håga*, which means blood in CHamoru. Hågat is the commercial center of the southern part of the island just south of Naval Base Guam, and boasts some of the finest beaches on Guam (Babauta b).

Prior to World War II, Hågat supported farming, ranching, and fishing. There were rice paddies on the coastal flats and flat inland areas, and coconut trees that produced copra along the coast. The original village site was destroyed by American bombings to clear Japanese positions prior to the US utilizing the beaches of Hågat for entry onto the island. After the war, a new Hågat village was established farther south than the original location (Babauta b).

7.2.13.1. Community Setting

Hågat has several commercial and residential areas along its main route. It also has a group of public buildings, including the Hågat Community Center and mayor's office, as well as Hågat Marina and several parks dedicated to World War II that are part of the War in the Pacific National Historical Park.

The first church in Hågat was established in 1680. There are now three predominant churches in Hågat - Our Lady of Mount Carmel Catholic Church, St. Andrew's by the Philippine Sea, and

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Santa Ana Chapel. Hågat also hosts the Our Lady of Mount Carmel School and the Southern Christian Academy.

Hågat had, in 2022, 35 establishments and 1,893 paid employees with an annual payroll of a combined $20.4 million, which if divided equally, is roughly $10,755 annually (BSP 2024). Hågat had 3,009 land parcels in 2023 worth approximately $236.1 million, and 1,641 buildings, including residential, condominiums, hotels, apartments, malls, churches, and cottages worth approximately $213.9 million (BSP 2024). In 2020, there were 4,515 residents in 1,472 housing units, and in 2023, there were 14 reported homeless households in Hågat and Santa Rita combined (BSP 2024).

Points of interest include:

- **Hågat Beach Unit of the War in the Pacific National Historic Park:** This park has visitor facilities including interpretive displays, picnic pavilions, restrooms, and parking, as well as memorials and monuments.
- **Mount Alifan:** This mountain has many artifacts and locations from World War II, including craters, foxholes, emplacements, caves, and rifle-pits, shell and bomb fragments, and bullets.
- **Taleyfac and Taelayag Spanish Bridges:** These two stone bridges are a couple of the few remaining bridges built using Spanish stone and mortar construction and are listed on the Guam and National Registers of Historic Sites.
- **Hågat Commercial Point Center:** This center hosts restaurants and businesses for the village and is located at the northern entrance to the village.
- **Hågat Sagan Bisita:** The Sagan Bisita is a series of pavilions around a courtyard with a large stage. It hosts the Tuesday Night Market and annual Mango Festival.
- **Hågat Small Boat Marina:** The small boat marina is a modern facility that includes a sea rescue operation, restaurant, and icehouse. It hosts fishing derbies and daily charter fishing trips.
- **Hågat Senior Citizen Center:** This center is where the village seniors can relax and play bingo and other games.
- **Haya Youth Center:** The Haya Youth Center is between the Hågat Gymnasium and Hågat Senior Citizens Center. One of three youth resource centers managed and operated by the Department of Youth Affairs and built in February 2008. Offers an array of programs and services that promote positive youth development and is a “safe haven” for community children/ youth. The center primarily services the Southern Villages.
- **Nimitz Beach:** This beach is a popular public beach and recreational area with pavilions.

Hågat hosts its annual 3-day Mango Festival in May. It includes canoe paddle racing, displays, vendors, kiddie rides and games, arts and crafts, and a mango culinary competition. It also has an associated 2k or 5k run.

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7.2.13.2. Issues and Challenges

Hågat is a medium sized village that lacks a hardened facility to serve as a Tier 2 shelter.[3] The village has a refurbished basketball court, but additional recreational facilities and parks are desired by the village residents. Two parks in Hågat have no water or power, just pavilions.

There is a lot of open land through the Chamorro Land Trust, but there are concerns about enforcement of zoning so that the land is being used for its intended use. For example, some lands that are zoned agriculture are being used as dump sites.

With respect to shoreline erosion, Hågat's beaches have been eroding which not only impacts the recreational areas, but also along with rising tides, can cause issues for the utility poles that are located along Route 2 on the waterfront.

Flooding from heavy rainfall is a concern for residents. The flooding has been more intense in the last 10 years, and the village infrastructure is not designed to handle the amount of rain. Stormwater runoff from the rivers covers the reefs with mud. The flooding also causes backups in several houses. One of the primary drivers is that the roads are now higher, which causes flooding into people's homes. Hågat has existing drainage systems, but they are clogged and have been so for over 10 years.

7.2.13.3. Village Policies and Programs

Hågat's coastal location necessitates a focus on climate resilience, including shoreline protection and sustainable tourism development. Enhancing public spaces, such as parks and waterfront areas, alongside improving access to community services, will benefit residents and visitors alike. Potential improved community service access includes a Tier 2 shelter and a hospital or triage / urgent care facility in addition to the existing lab and pharmacy.

Hågat residents would like to see development that allows them to stay within the village instead of needing to leave to find a recreational facility or store in a neighboring village. The village is looking at incubators for little restaurants and eateries where owners of small businesses can utilize village facilities. However, the goal is to develop the community while resisting commercialization, maintaining the village's identity, perpetuating the culture, and promoting tourism experiences that are authentic to southern Guam.

The village residents are looking at furthering the economy through agriculture (e.g. coconuts, chicken eggs), aquaculture (e.g. tilapia), and fishing. The Hågat Marina provides an excellent location for servicing an aquaculture production in the nearshore area, and development of a co-op would allow fishermen to sell their fish in the village instead of driving elsewhere.

[3] As described in Guam's Hazard Mitigation Plan: "Tier 1 shelters provide immediate, short-term refuge; Tier 2 shelters offer more comprehensive services for longer durations; and Tier 3 shelters are equipped for extended stays, providing full-scale support including, healthcare, food, and long-term accommodation" (Guam Homeland Security, 2024).

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VS-40. Climate and Shoreline Resilience.
New development should facilitate climate resilience, including shoreline protection or adaptation to maintain shoreline line access and coastal resources.

VS-41. Hågat Community Character and Sustainable Development.
Develop the community while resisting commercialization, maintaining the village's identity, perpetuating the culture, and promoting sustainable tourism experiences that are authentic to southern Guam.

VS-42. Village Center and Community Space.
Enhance public spaces, such as parks and waterfront areas. Promote access to stores and recreational areas within the village.

VS-43. Hågat Community Services.
Improve access to community services, including a Tier 2 shelter and a hospital or triage / urgent care facility.

VS-44. Community Agriculture.
Grow the village economy through agriculture (e.g. coconuts, chicken eggs), aquaculture (e.g. tilapia), and fishing.

7.2.14. Humåtak (Umatac)



Humåtak derives its name from *uma*, meaning to carry something on the back or a heavy load on the shoulders. Humåtak is a small village located in southern Guam along Humåtak Bay. There are old houses and ruins along the bay's shoreline, and a bumpy two-lane road runs through the center of the village. The road then crosses the Humåtak Bridge and runs uphill to the ruins of Fort Nuestra Senora de la Soledad, which was constructed to protect the bay from pirates and other European explorers. North of the central part of the village is an overlook to Cetti Bay, which is a beautiful, secluded beach that can only be reached by hiking or sailing (Guampedia, Babauta f, 2025).

7.2.14.1. Community Setting



Humåtak is home to the "Fouha" rock, which the CHamorus believes is the resting place of goddess Fu'una and her brother Puntan. CHamoru legend credits the two for creating the world and its people. The rock is also referred to as the "Creation Point."
Humåtak had a combined 402 land parcels in 2023 worth approximately $54 million, and

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145 buildings, including residential, condominiums, hotels, apartments, malls, churches, and cottages worth approximately $14.8 million (BSP 2024). In 2020, there were 647 residents in 177 housing units, and in 2023, there was one reported homeless household (BSP 2024).



Although Humåtak is a small village, it does have a rich history. Before the Spanish occupation, CHamorus made pilgrimage to the Fouha rock located in Humåtak. In 1521, Ferdinand Magellan landed in Humåtak Bay, marking the start of the Spanish Era in Guam. His landing point is marked on the bay with an obelisk with a statement that says, "Magellan landed here." A reenactment of Magellan's landing is also held every year during Guam History and CHamoru Heritage Day CHamoru Heritage Day. Humåtak was a chief port during the Spanish occupation, during which the Governor moved his residence from Hagåtña to Humåtak. Between 1680 and 1810, various forts were built around Humåtak. There was also a monumental road project planned to link Humåtak and Hagåtña, but it was never finished. Some parts of this project can still be found today in Humåtak, Sella Bay, and Hågat (Babauta f).

Other key points of interest in Humåtak include (Babauta f):

- **Guam Veteran's Memorial:** The memorial park overlooks the hillsides of Humåtak and is dedicated to 74 CHamoru who died in the Vietnam War. A special mass is held annually on Memorial Day at the park.
- **San Dionisio Catholic Church:** The church has been destroyed and rebuilt four times. It's been burnt, destroyed by a typhoon, destroyed by two earthquakes, then rebuilt in its new location in 1939, where it still stands. Ruins of the previous church building are on the National Register of Historic Places.



- **Spanish Forts:** To protect the Humåtak Bay harbor from pirates and privateers, the Spanish built Bateria de Nuestra Senora Del Carmen, Fort Santo Angel, Fort San Jose, and Fort Nuestra Senora de la Soledad. Bateria de Nuestra Senora Del Carmen protects the mouth of the Salupat River and Humåtak Bay. Fort Santo Angel is on top of a large rock structure at the entrance to Humåtak Bay. Fort San Jose is on the hill prior to entering Humåtak Bay from the north. Fort Soledad is now a

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park often visited by tourists and is located on top of a steep bluff that provides an excellent view of the village, Humåtak Bay, the coastline, and mountain range.

Humåtak Pride Outdoor Library: This library is a large, highly decorative cement bookshelf that was built in 1933 to provide a place where villagers could exchange books. It sits next to the village's main road.

F.Q. Sanchez School: In the Guam and National Registers of Historic Places (AIA, 2019).

7.2.14.2. Issues and Challenges

Priorities in the village include addressing flooding, sewer infrastructure, and storm-related erosion of the cemetery. The sewer distribution is insufficient, and the power supply is inadequate. However, water supply experiences only occasional interruptions during storms due to sediment contamination. Road maintenance is hampered by the repairs to water lines.

Regarding environmental concerns, erosion continues along the river and coastline, which is exacerbated by seawater incursion and feral pigs. Flood control challenges seem to be more related to erosion rather than inadequate storm drainage. The village advocates for river dredging and tree planting as solutions. Shoreline erosion at the cemetery is causing the cemetery to sink.

With respect to land use, there are discrepancies in land allocation. Some noted that outside individuals receive land prior to village residents.

Public safety is a concern in Humåtak. There is a shared Humåtak/Malesso' fire station though some observe that the village lacks on-site EMT and ambulances. Additionally, Humåtak lacks typhoon shelters, although efforts are underway to repurpose a FEMA-funded gym to provide shelter from typhoons. Lighting in park areas such as Fort Nuestra Senora de la Soledad Trinidad and Sella Bay can also be improved to enhance safety.



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7.2.14.3. Village Policies and Programs

Humåtak's historical significance requires initiatives that balance preservation with modern needs.

VS-79. Balanced Community Development.
Promote sustainable development that preserves local heritage sites while improving infrastructure. Promote eco-tourism, small-scale businesses, and residential development, while avoiding high-rise developments.

VS-80. Community Facilities.
Develop new and repair existing community facilities such as a gym, senior center, community center, and pavilion. Assure adequate infrastructure for government and community facilities.

VS-81. Natural Beauty and CHamoru Heritage.
Pursue strategic development and economic expansion while retaining the natural beauty and charm of the village and preserving CHamoru traditions and values. Uphold and pursue development consistent with the Humåtak Revitalization Plan

7.2.15. Inalåhan



Inalåhan probably refers to the *åla,* which are large woven coconut leaf harvest baskets that the village was known for. The name also could have been derived from *hålla*, which means to pull something or move it with a rope tied to it. The Spanish changed the l in CHamoru words to r, thus changing the village's name to Inarajan. The official spelling was changed in 2021 to Inalåhan.

Inalåhan is an expansive village located on the southeastern coast of Guam east of Malesso'. Inalåhan is divided into sections, including Lada (near Bear Rock), Belen, Peca, Chagamin Lago, Se'se' (going uphill to Inalåhan Middle School), and Tinaga. One of the biggest sections is Malojloj, which sits uphill and north of the main village (Babauta c).

7.2.15.1. Community Setting

In 2022 Inalåhan had 9 establishments and 102 paid employees with an annual payroll of a combined $699,000, which if divided equally, is roughly $6,800 annually (BSP 2024). Inalåhan had 2,226 land parcels in 2023 worth approximately $217.6 million, and 647 buildings, including residential, condominiums, hotels, apartments, malls, churches, and cottages worth approximately $72.8 million (BSP 2024). In 2020, there were 2,317 residents in 605 housing units, and in 2022, there was 1 reported homeless household (BSP 2024).

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The tranquil village of Inalåhan is rich with both CHamoru culture and Spanish history and is known as the most distinctly Spanish-style village on Guam (Babauta c). Considered the oldest village in Guam, its recorded history predates the island's discovery by Portuguese explorer Ferdinand Magellan in 1521.The subcommunity of Malojloj began as a farming community in the 1950s and has grown over the past twenty years, so that it now has its own Catholic church, San Isidro, as well as a gas station, a convent, a solid waste transfer station, and the Inalåhan mayor's office.

Inalåhan was listed on the National Register of Historic Places in 1977 and is also designated as a folk arts village. Due to an influx of visitors, including tourists and school children, the village is a bit faster paced and one of the one-way roads was expanded into a modern paved two-lane road.

Key points of interest in Inalåhan include (Babauta c):

- **Schools:** There is an elementary and middle school
- **Churches:** St. Joseph Church has been the center of Inalåhan for several hundred years. San Isidro Church is in Malojloj and is a more recent structure.
- **Baptist Church ruins:** The Baptist Church was constructed in the early 1900s. Only one wall remains standing.
- **Gadao's Cave:** Gadao's Cave is at the entrance to Inalåhan Bay and contains ancient pictographs of stick figure people. Chief Gadao was a legendary chief of Inalåhan who outsmarted a chief from Tumon in a strength contest that broke a canoe in half while they rowed in opposite



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directions. A statue of Chief Gadao rowing half of the canoe to Inalåhan is on the shores of the main village.

Historic Homes: Some of the oldest homes in the village have been preserved using federal funds, and the Gef Pa'go Cultural Village gives a tour of the Leon Guerrero House, built in 1901, which housed the village commissioner and his 16 children. The Jose Duenas Cruz House is maintained by the Historic Inalåhan Foundation, and the George Flores building is cared for by the Guam Preservation Trust.

Bear Rock: This is a large, natural formation of rock at the edge of Agfayan Bay that, from some angles, looks like the shape of a bear.

Gef Pa'go Cultural Village: This cultural village, located along Inalåhan Bay, now closed. Elders told stories of their childhood and gave demonstrations of traditional CHamoru cooking, crafts and arts. The cultural center also exhibited ancient CHamoru tools, tours of historical homes in the village, and cultural dances.

Salaglula Pools: These natural pools of sea water are located toward the southern side of the main village.

Talo'fo'fo Bay Beach Park: This black-sand beach was once a popular park for swimmers and family gatherings and is one of the island's prime surfing spots. The pavilions are mostly destroyed. Although it is named Talo'fo'fo Bay park, its facilities are on the southern side of the bay in Inalåhan.

7.2.15.2. Issues and Challenges

Revitalization Plan. Inalåhan has developed the *Inalåhan Historic District Revitalization Plan* (2013), which is a comprehensive blueprint aimed at preserving and revitalizing the historic core of Inalåhan. This area is notable as the island's last remaining example of Spanish-era village life and architecture. Developed through a collaboration between the American Institute of Architects (Guam & Micronesia Chapter), Guam Preservation Trust, the Historic Inalåhan Foundation, and community stakeholders, the plan builds upon decades of preservation efforts and is grounded in community engagement and historical research.

The plan's vision centers on safeguarding Inalåhan's unique sense of place while encouraging sustainable development. It emphasizes the need for revitalization efforts to honor the village's vernacular architecture—characterized by mamposteria (masonry) foundations, steep metal roofs, compact lot layouts, and traditional woodwork—while introducing new development that harmonizes with the historic setting. Equally important is showcasing the village's history, including through interpretive signage, museums, and walking tours that highlight significant local stories, such as those connected to St. Joseph's Church and Father Duenas.

Three guiding principles shape the revitalization strategy: preserving historical character, enhancing vitality and economic livelihood, and improving the public realm. These principles are addressed through an eight-phase implementation plan. Early phases prioritize urgent needs like repairing deteriorating structures, enacting a historic district ordinance, and upgrading

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utilities. Mid and later phases involve streetscape improvements, community parks, interim and permanent open space development, cultural attractions (e.g., Gef Pa'go), and new compatible buildings. A focus on cultural tourism and adaptive reuse is central to the plan, aiming to support small businesses, job creation, and a vibrant village life.

Challenges such as flood hazards, infrastructure deficiencies, unclear building codes, and probate land disputes are acknowledged as major obstacles. The plan recommends clear zoning guidelines, streamlined historic preservation processes, and coordinated infrastructure improvements—such as underground utilities and stormwater drainage—to overcome these issues. Sustainability is woven throughout the plan, promoting the reuse of historic buildings, energy-efficient retrofits, local agriculture, and low-impact development.



Ultimately, the revitalization plan presents a community-centered, culturally rooted, and phased approach to preserving Inalåhan's past while building a sustainable, vibrant future.

Other Issues. Inalåhan sits close to the sea, thus has been hit hard by several typhoons (Babauta 2025). Development may be chilled because of high development costs, though the presence of landfills in the village may lower certain land values. Even with plans and development of appropriately scaled tourist attractions (small, outdoor market/boardwalk for example), the village will need parking and support facilities (restrooms, e.g.) to be successful.

In Malojloj, there is a lack of sewer infrastructure. Slow-paced infrastructure development, particularly in power and water lines, contributes to issues such as low water pressure and new household connectivity. These have amplified during storms, where water and power supply are reduced or altogether absent.

There are extensive challenges with siltation, runoff, seawater incursion, and sea level rise, all of which affect fishing and coral health. Local hunters often slash and burn the mountainsides for easier hunting visibility for deer, but they are not aware that the exposed soil is consequently more susceptible to erosion and runoff into Inalåhan and Acfalle Bays.

Inalåhan and other areas along the eastern side of the island lack a dedicated police station. This results in prolonged emergency response times, which poses a risk to community safety. The community would like a police station in the village to improve response times and residents' safety. The same is true for fire and healthcare - Inalåhan lacks a dedicated fire station and private health care facilities, though the Federally Qualified Southern Region Community Health Center has been in operation since 1984. The number of typhoon shelters

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should be increased in Inalåhan. Solutions include covering a basketball court to serve as temporary housing.

Guam's GTA TeleGuam gained approval in 2023 to build a new cable landing station in Inalåhan. The project site is on the corner of Belen Avenue and Route 4 / Chalan Canton Tåsi, which is near Inalåhan Bay. The proposed landing station will allow GTA to bring up to six new fiberoptic cables onshore (Swinhoe 2023).

Inalåhan is committed to community well-being, ensuring internet services were upgraded, providing online learning during the COVID-19 pandemic, providing year-round opportunities for children, and improving sports facilities and programs.

Development is encouraged in the village, with ambitions for creating a community kitchen to support local entrepreneurs, promote cultural practices, and generate employment. However, development should also be dependent on the appropriate infrastructure, such as ensuring the appropriate water pipe size, as well as in appropriate locations. Development is discouraged in some areas due to concerns about cultural and natural integrity and infrastructure limitations, and there is also resistance to high-rise buildings. Enhancing infrastructure and supporting eco-tourism will boost the village's appeal while meeting community needs. Adaptive reuse of existing structures, like converting them to community centers, could address infrastructure needs and contribute to economic sustainability by creating places for education and recreation. A suggestion is to build a boardwalk between Bear Rock and Inalåhan Pools to stimulate the economy and attract tourists.

The village has placed emphasis on building a boat ramp in the village to improve safety at sea. The length of time is extensive for rescue units from Hågat or Hagåtña to reach the village during search and rescue activities when individuals are lost at sea, particularly at Surf Side Beach in Talo'fo'fo Bay.

Inalåhan is seeking environmentally friendly and economically viable practices for agriculture and farming to improve overall community sustainability. Aquaculture, such as giant clam aquaculture, is identified for development in the village. The village would also welcome green infrastructure and renewable energy projects. Policies supporting responsible land use, biodiversity conservation, and climate change mitigation are vital for long-term environmental sustainability in Inalåhan.

7.2.15.3. Village Policies and Programs

VS-47. Historic Compatibility Requirement.

All development proposals, including new construction, additions, or exterior renovations, must demonstrate compatibility with the Inalåhan Historic District's vernacular architectural style. This includes adherence to traditional building forms (e.g., compact footprints, sloped metal roofs, mamposteria foundations), scale (1–2 story

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structures), spatial orientation (minimal setbacks, close street frontage), and use of historically appropriate materials.

VS-48. Adaptive Reuse and Mixed-Use Encouragement.
Development applications that propose the adaptive reuse of historic or contributing structures for compatible mixed-use purposes—such as artisan workshops, guest accommodations, small-scale retail, and cultural education—shall be prioritized during review. Proposed uses must not compromise the structural or visual integrity of historic features.

VS-49. Cultural Tourism Overlay Use Priority.
Within the designated Cultural Tourism Overlay Zone, land use approvals shall favor uses that promote cultural heritage and public engagement, including museums, interpretive centers, traditional food vendors, and event spaces. Uses must be pedestrian-oriented and contribute to the District's identity as a cultural destination.

VS-50. Public Realm Contribution Requirement.
Development proposals must contribute to public realm improvements proportionate to their scale and location. Contributions may include street-facing landscaping, period-appropriate lighting, public seating, interpretive signage, or improvements to pedestrian connections.

VS-51. Flood-Resilient Design Compliance.
All new construction or major rehabilitation projects within FEMA-designated flood hazard areas must incorporate elevated or bodega-style foundations to mitigate flood risk. Designs should reflect traditional architectural responses to coastal conditions.

VS-52. Interim Land Use Activation Policy.
Vacant or underutilized lots may be temporarily used for low-impact community uses such as cultural demonstrations, open-air markets, gardens, or art installations, provided such uses maintain the integrity and appearance of the surrounding historic fabric. Interim uses must not impede future long-term development.

7.2.16. Malesso' (Merizo)



Malesso' is derived from the CHamoru word *lesso'*, which is a rabbitfish juvenile stage. Schools of juvenile rabbitfish (*mañåhak*) run in the village's bays and inlets at certain times of the year. Groups of people work nets to gather the fish. Malesso' follows the shoreline at the southern tip of Guam. It boasts Cocos Lagoon, which is a large triangular lagoon bordered by Cocos Island. Cocos Lagoon has several protected coral reef areas and vast expanses of sand, including Achang Reef Flat Marine Preserve. In the past, there was a ferry that ran regularly from Bikini Island Club on the

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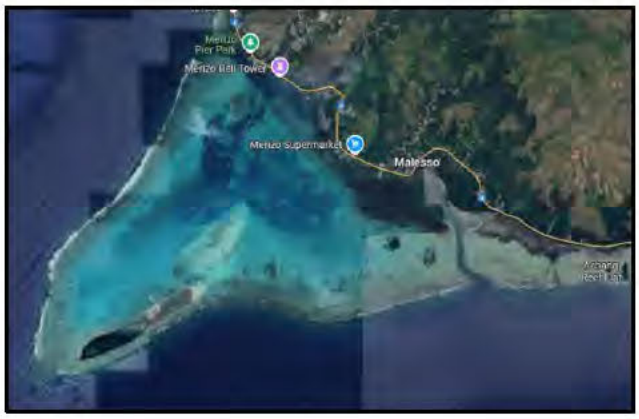
shore of Malesso' to the resort on Cocos Island (closed after Typhoon Mawar).

Malesso' spans from Cocos Lagoon up through nearby mountains that include lush valleys and dry savanna, as well as several rivers. Much of the Malesso' population lives in the rural valleys, which contain residential areas and agricultural lands.

7.2.16.1. Community Setting

Malesso' is a smaller community with 1,604 people, 471 housing units, and 396 buildings as of 2022, worth $44.4 million with only two homeless households (BSP 2024). In 2022, there were 5 establishments, 105 paid employees, and an annual payroll of $1.2 million (BSP 2024). In 2023, Malesso' had 1,290 parcels of land worth $126.5 million.

The Malesso' community holds two festivals annually that celebrate the importance of the ocean and its life-providing sustenance. The *Fiestan Tåsi* (Festival of the Sea) celebrates the importance of the ocean to Guam's past, present, and future and includes boat races and other water sports competitions. The 57th Fiestan Tåsi, a 3-day event, was held in November 2024 at the Malesso Veteran Sons and Daughters Pier Park. The Crab Festival, or Malesso' Gupot Chamoru, is also a 3-day event that is held annually in March. It includes arts and crafts, but most importantly, it includes local land crab dishes such as stuffed crab and crab cakes. There are also culinary competitions, talaya throwing (fish net), coconut husking, and other competitions.



Points of importance include:

Kampanayun Malesso: The Malesso' Belltower dates to 1910 and is on the National Register of Historic Places.

Malesso Kombento: This is the home of the parish priest and office. It was built in the 1800s and restored in 2000 by the Guam Preservation Trust.

Merlyn G. Cook School: Originally housing a naval radio facility in the 1920s, this is now a youth recreation center near the Malesso' Pier Park. It has also served as a village schoolhouse.

Santa Marian Kamalen Shrine: This is a small park that holds a marble statue of Santa Marian Kamalen. This is the site where a fisherman from Malesso' was fishing in the bay when he spotted two golden crabs carrying a statue of the Virgin Mary.

Malesso' Pier and Small Boat Ramp: The pier and boat ramp are a public facility that provides the main pass to Cocos Lagoon, as well as the launch for the majority of Malesso's boat-based fishermen.

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Priest's Pools: The Priest's Pools are natural freshwater pools in the Pigua River, hidden in the hills of Malesso'.

Tinta and Faha massacre sites.[4]

Malesso' is one of the few villages with a Community-Based Management Plan for Malesso' Coastal and Marine Resources (see inset), which is built on collaborative efforts of Malesso' village residents, participants from local business and agencies, federal agencies, and the broader Guam public and other interested organizations (Chargualaf and Mansapit 2014). The Manell-Geus watershed management plan was also completed in coordination with NOAA (see Chapter 5). In addition, reforestation projects have taken plan in Malesso' at Quinene (21 ac) and As Gadao (100 ac) in the Manell-Geus Watershed.

There is an emphasis on tourism in Malesso' with a desire to highlight the unique identity and traditions within Malesso' and to improve economic stimulation. However, there is also an acknowledgement that increased tourism must also be supported by improved infrastructure. Some noted also that there is no explicitly outlined plan for economic development in the village.

[4] https://www.guampedia.com/war-atrocities-tinta-and-faha-massacres/.

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Coastal Stewardship and Land Use in Malesso

Community-Based Management Rooted in Place

Malesso's *Community-Based Fisheries Management Plan* reflects a deep connection between land and sea, underscoring the need to integrate coastal resource management with land use planning. Developed through a collaborative process with residents, traditional leaders (Sainas), and agencies, the plan highlights how upland decisions affect nearshore health—linking watershed management, land development, and marine conservation.

Key Objectives with Land Use Relevance:

- **Conservation:** Protecting marine ecosystems (e.g., coral reefs, seagrass, mangroves) requires upstream land management to prevent runoff, erosion, and pollution—especially near sensitive areas like the Achang Reef Flat and Cocos Lagoon.
- **Socio-Economic:** Preserving access to coastal areas for subsistence and cultural fishing depends on shoreline zoning, infrastructure planning (piers, boat ramps), and balanced tourism development that avoids displacing local use.
- **Governance:** Stronger local involvement in land-use decisions—especially around the coastal zone—ensures traditional knowledge informs policies on access, habitat protection, and compatible uses.

Malesso's Land-Sea Linkages:

- The Geus River and surrounding watersheds drain into Cocos Lagoon, where degraded water quality has impacted fisheries and recreation.
- Land-based activities (e.g., road construction, upland erosion) have cumulative impacts on coastal habitats, underscoring the need for integrated watershed-coastal planning.
- Cultural and recreational spaces—like the Malesso Pier, Youth Center, and festival sites—are coastal landmarks whose land use must balance preservation and access.

Integrated Planning Pathway: The plan offers a framework for managing coastal resources through zoning, education, and community oversight—tools that can also guide shoreline land use and development. Moving forward, coordination between land and marine planning will be essential to sustaining Malesso's identity, ecosystems, and economy.

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7.2.16.2. Issues and Challenges

Tourism-associated activities, including boating, jet skiing, diving, and fishing, are adversely affecting the natural areas around Malesso' (Chargualaf and Mansapit 2014). There is also acknowledgement that Malesso' hosts an array of incompatible human activities and anticipated new uses, and its policies and procedures lack streamlining.

Issues raised at workshops hosted by the WPRFMC included management and enforcement of management objectives of land crabs, establishment of a marine preserve, user conflicts in Cocos Lagoon, and contamination of Cocos Island fishery resources (Chargualaf and Mansapit 2014).

Another issue is infrastructure. When it rains, Malesso' floods. This is particularly an issue because the sewer system cannot handle additional input. Backflows occur in homes. Maintaining free-flowing stormwater drains is part of the issue, while sewage pumping stations are another part. Additionally, access to a local typhoon shelter should be provided for village residents due to the insufficient stormwater drainage and heaving flooding in residential areas.



Substandard lots are an issue in Malesso', as well as property line disputes. Landlocked properties are problematic. And there are setback rules that impact residents' ability to utilize all their land for building their house, as well as a two-story restriction for residential development.

The biggest environmental issue is sewer overflow and runoff. Runoff is damaging the coral. Ideas to address runoff include trenching the mountainside to capture rain. As discussed in Chapter 5, the community participated in development of the Manell-Geus Watershed Management Plan to address such concerns (King, 2014).

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Coastal erosion is an ongoing problem, and sea level rise will become a significant long-term challenge. Increased shoreline management and appropriate adaptation strategies will be needed, particularly in relation to critical infrastructure like the main road.

7.2.16.3. Village Land Use Policies and Programs

The focus of the village should be on protecting its coastal and marine environment while promoting sustainable tourism. Enhancing disaster preparedness, expanding public spaces, and preserving cultural traditions will benefit residents and visitors. Careful development planning will mitigate issues that may arise with respect to overwhelming the infrastructure, especially sewers. The pier is a main focal point for events in Malesso' and future community planning.

VS-59. Sustainable Development.
Limit development to residential and smaller-scale commerce using careful development planning to mitigate overwhelming infrastructure.

VS-60. Sustainable Tourism.
Protect the coastal and marine environment while promoting sustainable tourism.

VS-61. Community Spaces and Traditions.
Enhance disaster preparedness, expand public spaces, and preserve cultural traditions to benefit residents and visitors.

VS-62. Pier and Recreational Facilities.
Maintain the functions of the pier and other recreational facilities.

VS-63. Community-Based Management Plan Objectives.

a. Conservation: Protect, maintain, and restore Malesso's living marine resources, ecosystems and habitats. Monitor and mitigate environmental impacts to ensure the quality and sustainability of the environment as a resource for the health and well-being of the Malesso' Community and its future generations.

b. Socio-Economic: Protehe I Li'na'la'ta! Protect the local (indigenous) rights of the Malesso' Community's resources for the community's sustainable livelihood, health and wellbeing. Educate and promote traditional and cultural practices for present and future generations.

c. Governance: Ensure compatibility between federal, territorial and local management regimes that maximize obligations and local rights to the Malesso' community for sustainable livelihood, health, and well-being.

VS-64. Manage Marine Protection and Community Sustainability.
Balance marine conservation with community interests and sustainability. Maintain and protect community and public access to the shoreline and pier.

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7.2.17. Sånta Rita-Sumai (Santa Rita)



Sånta Rita-Sumai is named after its patron saint, St. Rita of Cascia. The village was established in 1945 to house the residents of Sumai village who were evicted by Japanese forces during World War II; Sumai was subsequently destroyed as American troops regained control of Guam. Sumai was added to Sånta Rita's name in 2021 to recognize the village's evolution prior to World War II. Where Sumai once sat is now part of the Naval base. Sånta Rita-Sumai is south of Apra Harbor in the foothills of Mount Alifan, and is bordered by Inarajan, Talo'fo'foTalofofo, Yona, Piti, and Hågat. The village is surrounded by natural water sources, including Tarzan Falls, Fena Lake, the Guatali River, and Namo River (Babauta d).

7.2.17.1. Community Setting

Sånta Rita-Sumai had, in 2022, 25 establishments and 493 paid employees with an annual payroll of a combined $5.95 million, which if divided equally, is roughly $12,000 annually (BSP 2024). Sånta Rita-Sumai 1,024 land parcels in 2023 worth approximately $63.8 million, and 458 buildings, including residential, condominiums, hotels, apartments, malls, churches, and cottages worth approximately $63.6 million (BSP 2024). In 2020, there were 6,470 residents in 1,956 housing units, and in 2023, combined with Hågat, there were 14 reported homeless households (BSP 2024).

Present-day Santa Rita-Sumai has expanded in the previous years. The village now includes the lower areas of Talisay, the Hyundai Santa Rosa housing subdivision, all the military housing in Naval Station, Naval Magazine and Old and New Apra Heights. To this day, most of Santa Rita-Sumai's residents' families have been there since the village was built during the war. There are some signs of development as several homes have been built in recent years, but a good portion of the village still enjoys a spectacular view of Apra Harbor today.

Sånta Rita-Sumai is a tight-knit community. Village activities typically occur at the Our Lady of Guadalupe Church or the Senior Citizens Center and the baseball field. A memorial mass is held at Our Lady of Guadalupe Church every year to commemorate those who lost their lives during World War II.

The Fena reservoir is in the village, which was intended to provide a dependable water supply to the US Navy, but is now the primary source of water supply in the south (Babauta d). A large population of carabao, now a cultural and historical icon on Guam, resides at the reservoir.

The contour and slopes of Mount Alifan made apportionment of lots difficult. Many postwar houses can still be seen along the precipices and chasms of Sånta Rita-Sumai, raised on stilts to avoid floods during heavy rains (Babauta d).

Key points of interest in Sånta Rita-Sumai include:

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Our Lady of Guadalupe Church: This Catholic church holds processions and fiestas for the village's patron saint of Sånta Rita-Sumai in May and for the patron saint of Our Lady of Guadalupe in December.

Namo Falls Tropical Garden: Two waterfalls in the middle of the village are surrounded by tropical flowers and jungle foliage. It is not open to the public.

Fena Caves: The caves are where Sumai residents took shelter when American troops were advancing on retaking Guam. It is where Japanese soldiers killed many men and women with hand grenades, machine guns, and bayonets. The annual memorial Mass was held here until 9/11, when the military closed off the area because it's within the perimeter of Naval Magazine.

Cotal "Kottot" Conservation Area: This approximate 502-acre forested area is an important natural resource area sharing borders with Talofofo and Yona. The area has had about 50 years of forestry work.

7.2.17.2. Issues and Challenges

Flooding and erosion are significant issues in Sånta Rita-Sumai. The United States Army Corps of Engineers (USACE) and the Government of Guam conducted a flood study to understand flooding across the island (USACE 2020). This included a flood hazard study for Upper Namo River.

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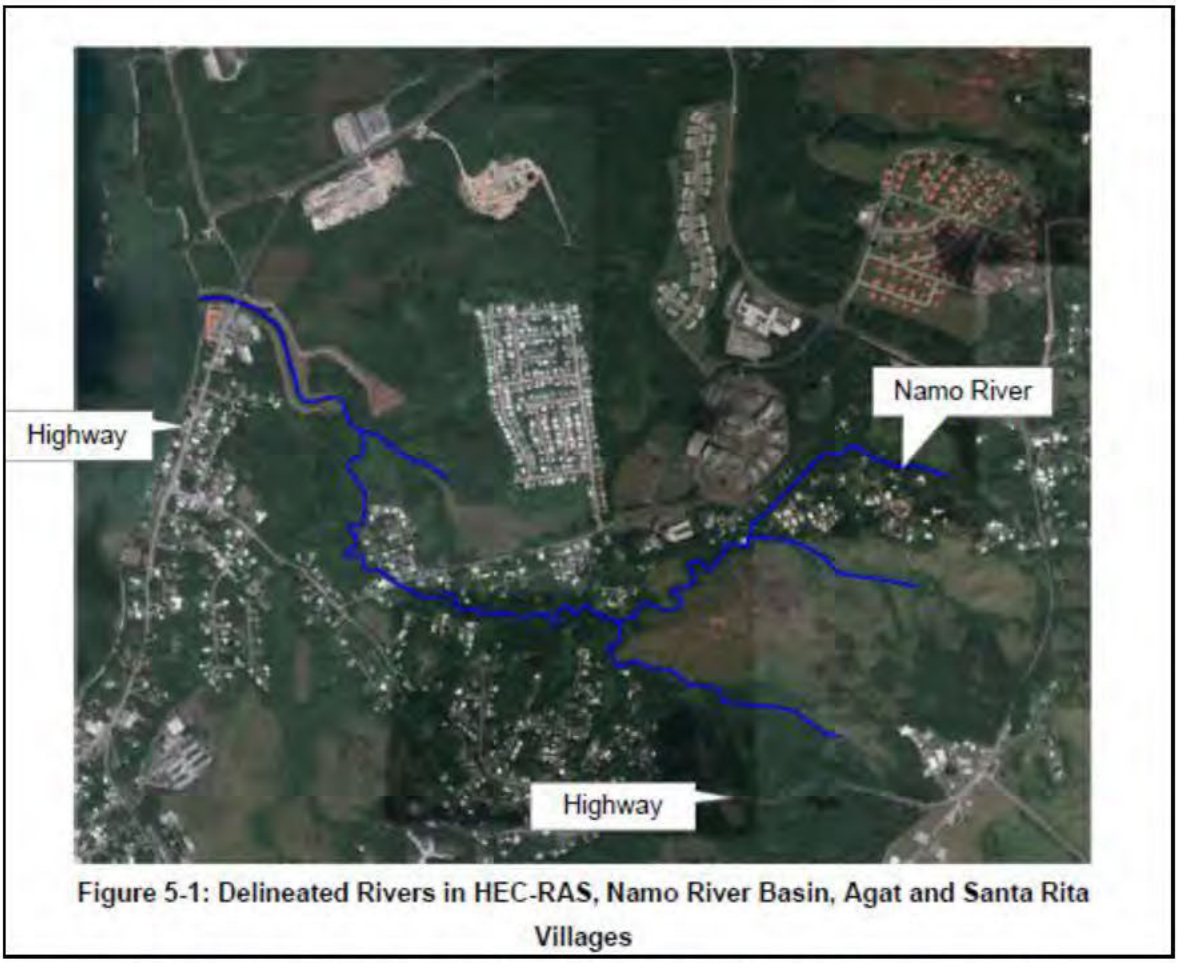

Figure 5-1: Delineated Rivers in HEC-RAS, Namo River Basin, Agat and Santa Rita Villages

Figure 7-6. Rivers in Namo River Basin, Agat and Santa Rita Villages (USACE, 2020, p. 27).

An example of the issue is from a resident who lost approximately four acres of land due to erosion and uncontrolled runoff through his property. The road near his property requires backfilling approximately every six months by the Guam Department of Public Works to prevent it from washing out (USACE 2020). USACE provided alternatives for mitigating against flooding and erosion for the Government of Guam to consider. Residents have also requested from the Government of Guam better storm drainage and installation of a ponding basin (the ponding basin was not suggested by USACE). Unfortunately, land ownership and private property issues have hindered some efforts to resolve the erosion issues. Addressing erosion along the river, though is paramount for flood prevention and protecting environmental resources.

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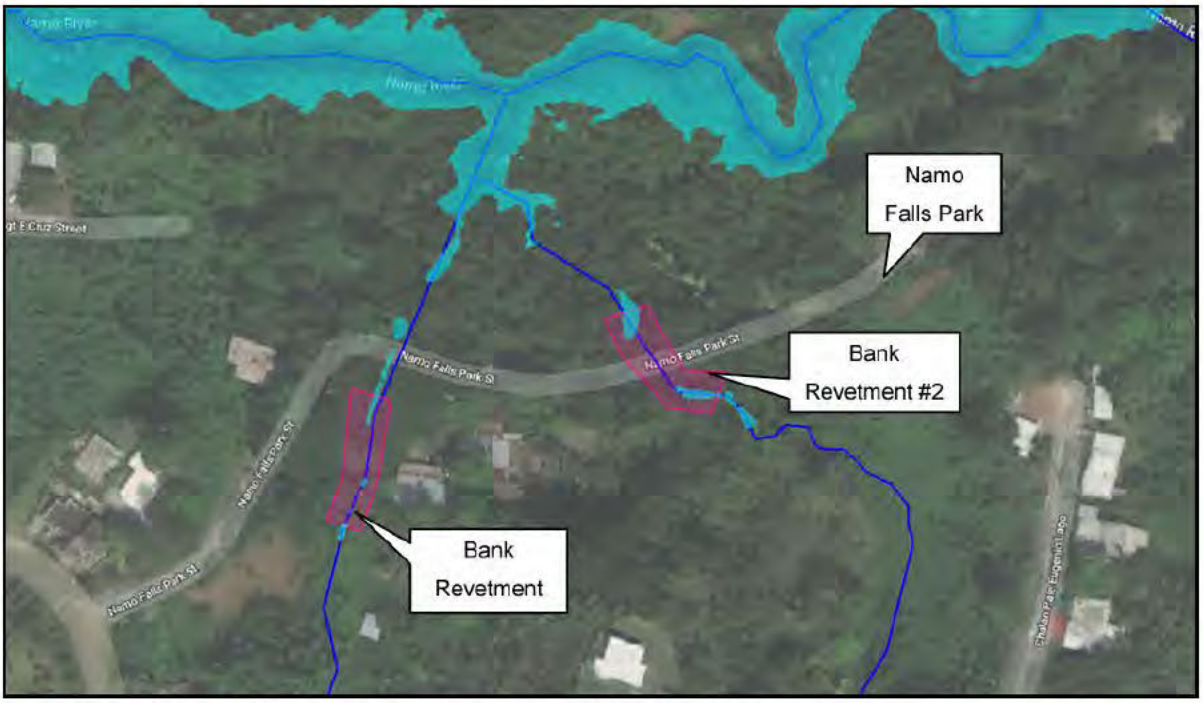

Figure 7-7. Upstream Flooding Areas, Namo River (USACE, 2020, p. 36.).

There is a lack of a comprehensive sewer system due to the costs associated with expansion. Road deterioration is also a concern because road maintenance is costly, although significant investments have recently enhanced transportation networks through the village. Power distribution was noted as being good; however, there are complaints about the length of time it takes to restore power and the generator breaking frequently.

There have been significant challenges to enhance recreational opportunities, despite a strong desire to do so. Part of the issue is a scarcity of suitable land as well as financial constraints. The village's high income status limits access to grant funding, which further complicates the issue. Existing land, although available, is often steep or allocated for other purposes. There is also a lack of central focal point in the village.

Dwindling opportunities for traditional activities like farming and village fiestas pose significant obstacles to preserving CHamoru values. The village, though, is making efforts to restore historic buildings and traditional architectural elements like latte stones and CHamoru huts. Tours of Sumai also demonstrate a commitment to preserving cultural identity and fostering community cohesion.

Illegal dumping is prevalent in the village. This is exacerbating other issues such as erosion and wildlife disturbance. Another environmental issue is invasive species such as rhino beetles, fire ants, and feral pigs, all three of which are detrimental to the limited amount of arable farmable land in the village. Additionally, the pigs go into the village and break water pipes that are laid too shallow as they root for food, and spill trash that is awaiting to pick up.

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7.2.17.3. Village Policies and Programs

VS-71. Community Development Objectives.

Prioritize village tranquility while improving infrastructure. Expand recreational facilities, enhance disaster preparedness, and support sustainable housing developments to accommodate growth. Consider small-scale commercial development such as a mini mall to generate employment opportunities.

7.2.18. Talo'fo'fo (Talofofo)



Talo'fo'fo likely derives its name from the phrase "*entalo'i fe'fo*," which means between the cliffs and *Fo'fo* means a bubbling spring. Since Talo'fo'fo River and Talo'fo'fo Falls are in the village, it could mean "between the bubbling springs" (Guampedia, Babauta e, 2025).

Below the main village of Talo'fo'fo is the coastal community of Ipan, Talo'fo'fo, which has some houses, a beach park, and small businesses such as Jeff's Pirates Cove. The southern boundary of Talo'fo'fo is delineated by the Ugum River that flows into Talo'fo'fo Bay.

7.2.18.1. Community Setting

Talo'fo'fo was coined as "God's Country" by Former Mayor Tito Mantanona, which is now used by many residents and seen on signs throughout the village. Talo'fo'fo is centered around a four-way intersection at its heart, which is also the economic center. North of the intersection is the mayor's office, houses, and the San Miguel Catholic Church. East of the intersection is the Onward Talo'fo'fo Golf Course, and west is Talo'fo'fo Elementary School, Talo'fo'fo Gym, a sports field, and more houses. South of the intersection is Notre Dame High School, a private Catholic high school, and Seventh-day Adventist Church, and then the road heads down to the Talo'fo'fo communities of Ipan and Talo'fo'fo Bay.

The Talo'fo'fo Caves are along the road between the village and the bay. Ipan has several secluded beaches, some houses, and a gas station. Talo'fo'fo Bay is where the Ugum River meets the ocean. It hosts Talo'fo'fo Bay Park, the facilities for which are actually part of Inalåhan.

In 2022, Talo'fo'fo had 20 establishments and 197 paid employees with an annual payroll of a combined $2.5 million, which if divided equally, is roughly $12,800 annually (BSP 2024). Talo'fo'fo had 2,484 land parcels in 2023 worth approximately $231.5 million, and 974 buildings, including residential, condominiums, hotels, apartments, malls, churches, and cottages worth approximately $149.8 million (BSP 2024). In 2020, there were 3,550 residents in 988 housing units, and in 2023, there were 2 reported homeless households (BSP 2024).

Other key points of interest in Talo'fo'fo include:

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Talo'fo'fo Caves: This series of caves on the side of the cliffs of the main village contain many artifacts and pictographs of the ancient CHamorus.

Beaches: First Beach, just before the entrance to the main Talo'fo'fo village, has three large coral holes that form submerged natural pools. Ipan Beach Park has pavilions and barbecue pits. Tongan Beach is a privately owned resort for camping; it has a large pool and restrooms.



Valley of the Latte: The ancient Talo'fo'fo Village is a site of a CHamoru hut and latte stones and is accessible by boat.

Talo'fo'fo Falls: This waterfall is accessed by a road in Malojloj a section within the village of Inalåhan. There are swimming holes at the bottom of the two-tiered waterfall. A replica of Sgt. Shoichi Yokoi's cave, the Japanese soldier who hid in Guam's jungles for 28 years after World War II in a cave not far from the falls (Babauta e).

7.2.18.2. Issues and Challenges

The village identified the need for an expanded sewer system and upgraded water pipes that have corroded and leaked. They also would like enhanced stormwater management to prevent or mitigate flooding during heavy storms. Infrastructure improvements are necessary for enabling the village's development goals and ensuring the well-being of its residents.

Talo'fo'fo has challenges related to land access and market competition. Economic development is geared towards the aquaculture and agriculture sectors, which have been identified both as potential drivers of employment as well as food security. Despite the challenges, there is hope around growth in those two sectors.

The village is addressing youth underemployment through community work programs that engage younger residents in productive activities that benefit the village. The goal is to build a robust local economy that supports Talo'fo'fo's residents.

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Cultural preservation is a priority in Talo'fo'fo. CHamoru language and traditions are stressed as a way to maintain the village's unique identity. Talo'fo'fo has implemented initiatives that aim to integrate CHamoru culture into education and community activities.

Environmental protection is also a concern. The village advocates for safeguarding its natural habitats, particularly against invasive species and development pressures to maintain the biodiversity and ecological balance of the area.

7.2.18.3. Village Policies and Programs

VS-72. Scenic Landscapes and Sustainable Tourism.
Preserve scenic landscapes and promote eco-tourism. Enhance recreational facilities, improve road networks, and support sustainable growth.

VS-73. Sustainable Development.
Create a balanced community that provides necessary amenities and services locally, reducing the need for residents to seek employment and resources elsewhere. Promote residential areas, commercial developments, and tourist attractions that support a sustainable and self-sufficient community with a commitment to preserve the village's cultural identity and natural environment.

VS-74. Natural Habitats.
Safeguard Talo'fo'fo's natural habitats against threats including invasive species and development pressures.

7.2.19. Yo'ña (Yona)



Yo'ña is derived from iyo-ña, CHamoru for possessing material, personal, or spiritual. The village was originally called As Misen, but visitors admired the area's bountiful coconut plantation and when they asked who owned it, the residents would reply "Iyo-ña," or "we own it" (Leon Guerrero 2025c).

Yo'ña, one of Guam's largest municipalities, is on the central eastern side of Guam south of Mangilao and Pago Bay. Yo'ña stretches six miles from

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Pago Bay to Jeff's Pirates Cove in Talo'fo'fo. The village stretches west to Tarzan Falls and south to Chalan Kanton Tåsi. It also includes the area from Pulantat and Manenggon Valley to Lonfit Bridge in Chalan Pago (Leon Guerrero 2025c). Yo'ña is divided into ten sections: Baza Gardens, Windward Hills, Ylig, Manenggon, Camp Witek, Pulantat, Triangle, Central Yona, Tagachang, and As Namo.

7.2.19.1. Community Setting

In 2017, Yo'ña had 30 establishments and 810 paid employees with an annual payroll of a combined $9.8 million, which if divided equally, is roughly $12,100 annually (BSP 2024). Yo'ña had 3,325 land parcels in 2023 worth approximately $473.4 million, and 1,696 buildings, including residential, condominiums, hotels, apartments, malls, churches, and cottages worth approximately $334.8 million (BSP 2024). In 2020, there were 6,298 residents in 1,843 housing units, and in 2023, there were 7 reported homeless households (BSP 2024).

Yo'ña's history dates to ancient times. Many latte stones and ancient burial sites have been discovered in the interior district of Pulantat. Another ancient burial site is approximately 100 feet north of Ylig Bridge. Tagachang Beach Park is believed to have been an ancient CHamoru village.

Yo'ña was a rich farming area due to its fertile soil, good water, and abundant fishing grounds. All but two buildings were built of thatch prior to World War II. It remained a peaceful farming area until the last few weeks of the Japanese occupation of Guam. Japanese ordered people to relocate from their homes to march from one concentration camp to another until they reached the largest campsite in Yo'ña's Manenggon Valley. People used the Manenggon River to wash themselves and their clothes, and for cooking. Many people died of malnutrition or other illnesses or were killed by Japanese soldiers or US air raids. Victims were buried in the riverbanks. When the war ended, Manenggon Valley camp was converted to a refugee camp. As people began to leave the area to return home, Manenggon and other parts of Yo'ña became home to the Third and Ninth Division Marines (Leon Guerrero 2025c).

After Typhoon Karen damaged or destroyed 95% of Yo'ña's buildings in 1962, urban renewal changed Yo'ña as streets were redesigned, damaged structures were restored, new buildings were erected, and new homes were built.

The Yo'ña Community Center is in the heart of the village center between North Chalan Kanton Tåsi and Sister Mary Eucharita Drive. It is next to the Yo'ña fire station and the mayor's office. The community center is a hub for community events including sports activities, cultural programs, and other gatherings.

Other key points of interest in Yo'ña include:

Church of St. Francis of Assisi: This Catholic church originally built in the 1930s has been rebuilt twice after it was destroyed by an earthquake and during World War II. The

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redesigned church was rededicated in 1954. A fiesta in honor of St. Francis of Assisi is celebrated on the first weekend of October.

Schools: The Guam Adventist Academy, M.U. Lujan Elementary School, and St. Francis Catholic School are in Yo'ña.

Tank Farm: The Tank Farm is in the central part of the island. No battle occurred on this site, but the area is littered with rusted World War II tanks put there for target practice for US military gunners.

Tagachang Beach Park: This coastal park is between the limestone cliffs of Yo'ña and the fringing reef of eastern Guam. It is a well-known fishing ground and has a large pavilion and several smaller pavilions.

Turtle Cove: Turtle Cove is an inlet of Ylig Bay that is used as a picnic area.

Guahan Sustainable Culture Food Resiliency Hub, formerly Hamamoto Tropical Fruit World/Hamamoto Gardens (agroforestry project combines agriculture with tourism in a mixed forest interspersed with food-bearing trees) was at risk of being developed for military housing. GSC – a nonprofit – was able to secure the property of Hamamoto Tropical Fruit World: This agroforestry project combines agriculture with tourism in a mixed forest interspersed with food-bearing trees. It's located on Cross Island Road (Route 17).

Windward Hills Country Club: This is the oldest public golf course on Guam.

Country Club of the Pacific: This golf course is along the ocean in YonaIpan.

Leo Palace Resort: The resort is in Manenggon Hills in interior Yo'ña and boasts a 36-hole golf course.

Channel 10 Radio Tower: This tower on Nimitz Hill is noted by residents to have cultural and recreational value for the community.

7.2.19.2. Issues and Challenges

Erosion, particularly roads, is an issue in flood prone areas, and the village is feeling impacts from sea level rise, particularly in the south. Erosion along the riverbanks poses environmental risks.

Landlocked plots from parental subdivisions pose an issue in Yo'ña. Another issue is poorly marked water lines. People sometimes build their houses, not realizing they're building on a water line until the line leaks.

Power distribution is an issue. High costs and occasional brownouts are also concerned for Yo'ña residents. Water distribution is generally good, although there are occasional pressure issues and old lines to resurface in some places. Yo'ña needs updated water lines in certain areas to replace aging lines. Sewage is also an issue, with many homes relying on outdated septic systems that lead to frequent backups.

Stormwater drainage issues arise from development, causing blockages and flooding during heavy rains. Improved engineering and maintenance are required to address this issue.

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Residents suggested a ponding basin be created. Road repairs and construction are an ongoing challenge. Additionally, the roads are narrow with blind spots.

Typhoon shelters require upgrades and increased availability. Existing facilities are often insufficient during natural disasters.

7.2.19.3. Village Policies and Programs

Yona's development should emphasize preserving its natural beauty and rural character. Initiatives include improving roadways, supporting eco-tourism, and expanding recreational spaces to enhance community livability. Yo'ña is looking to strike a balance between development, environmental preservation, cultural integrity, affordable housing, and improved agriculture. There are ongoing efforts to revitalize parks, playgrounds, and baseball fields. The community envisions multipurpose spaces that can host events and gatherings as well as sports.

Most residents prefer minimal commercial development. However, they acknowledge that commercial development is a way to create job opportunities. Traffic would be a concern though with increased development. Hotel development is not viewed positively.

Preserving cultural heritage and fostering education are important for the community given the challenges posed by the erosion of CHamoru language and values. Westernization has led to a decline in traditional practices, and there is an intrinsic connection between language and community values. Efforts to enhance cultural identity within the village including reclaiming symbols like the carabao and latte stone.

While poverty rates in the village are low, the community would like to support lower income families and foster economic resilience.

There is a desire to encourage farming and gardening. Commercial farming would make the village more self-sufficient and would create jobs, as well as result in cheaper vegetables because they would not need to be shipped in.

VS-85. Natural Environment.
Protect the natural environment and rural charm of the village.

VS-86. Sustainable Development.
Balance development, environmental preservation, cultural integrity, affordable housing, and expanded agricultural opportunities.

VS-87. Community Recreation and Health.
Revitalize community parks, playgrounds, and baseball fields.

VS-88. Traffic Capacity.
Assure adequate traffic capacity to support new commercial development

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VS-89. Cultural Identity.

Preserve and enhance cultural heritage and foster education about the CHamoru language and values.

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Chapter 8: **Implementation**

8.1. Introduction

The Guåhan 2050 Sustainability Plan (G50SP) provides a framework for long-term land use planning that balances economic growth, environmental stewardship, and cultural preservation. Successful implementation, though, requires a coordinated effort among government agencies, private stakeholders, and the public. This chapter details the necessary components of implementation, including government actions and financing options to ensure that land-use decisions align with Guam's sustainability goals as set out in P.L. 35-110. It begins with stating the broad implementation goal and the planning objectives for success.

> **Goal**: *Establish a coordinated, accountable, and adaptive system for implementing the Guåhan 2050 Sustainability Plan that turns vision into action, strengthens interagency alignment, empowers community participation, and integrates planning, regulation, and investment across all levels of government*.

LAND USE PLANNING OBJECTIVES

1. **Coordinate and Lead Implementation**
    - Designate the Bureau of Statistics and Plans (BSP) as the lead agency responsible for guiding, monitoring, and reporting on G50SP implementation.
    - Establish a Sustainability Plan Implementation Task Force within Year 1 to formalize agency roles, align efforts, and develop coordination protocols.
2. **Align Institutions and Legal Frameworks**
    - Conduct a comprehensive legal review to align existing laws, permitting procedures, and agency mandates with the policies and land use framework of the G50SP.
    - Propose legislative and regulatory reforms to improve consistency, reduce conflict, and elevate plan compliance in early permitting stages.
3. **Operationalize the Plan through Phased Action**
    - Implement short-term (2025–2030), mid-term (2030–2040), and long-term (2040–2050) strategies across land use, housing, infrastructure, environment, and cultural preservation, prioritizing high-impact and time-sensitive actions.
    - Use tools such as updated zoning codes, development review processes, sustainability dashboards, and public reporting to guide and track implementation.
4. **Enable Integrated Planning and Cross-Plan Consistency**

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- Inventory and align existing government plans with the G50SP to eliminate duplication and promote shared goals.
- Support agencies in updating sectoral plans (e.g., water, housing, economic development) to reflect G50SP principles and priorities.

5. **Establish Financing and Funding Mechanisms**
    - Develop a Sustainability Strategic Financing Plan within the first two years, identifying federal, local, and private-sector sources to support implementation.
    - Pursue innovative financing tools such as Public-Private Partnerships, resilience bonds, and development impact fees to fund priority infrastructure and conservation actions.
6. **Advance Transparent, Inclusive Governance**
    - Institutionalize transparent public engagement and formal village-level consultation mechanisms throughout the implementation process.
    - Strengthen the role of the Application Review Committee (ARC) to ensure consistency reviews and coordinated agency feedback on development proposals.
7. **Foster Adaptive Management and Performance Monitoring**
    - Establish a performance tracking and monitoring system using indicators tied to G50SP objectives.
    - Conduct regular five-year reviews and plan updates to ensure accountability, responsiveness, and continuous improvement based on data and community input.

8.1.1. The Need for an Implementation Plan

An implementation plan or strategy for a comprehensive land use plan serves as the critical bridge between vision and reality - between aspiration and implementation. While the earlier sections of the G50SP articulate long-term goals, guiding land use policies, and desired outcomes, this chapter translates those ideas into concrete, actionable steps. It answers the essential questions of who will do what, when, and how, ensuring that the plan does not remain a static document but becomes a dynamic roadmap for positive change and sustainability in Guam.

Implementation is where planning meets action. Implementation planning provides a framework for comprehensive plans (often called a general plan in some jurisdictions) to operationalize shorter-term, more action-oriented steps - including specific priorities, objectives, and initiatives. It focuses on implementing key goals within a shorter timeframe and often includes measurable performance indicators. It also assigns responsibility to specific agencies and partners, sets timelines for achieving outcomes, and outlines the tools, resources, and funding needed to move initiatives forward. By including measurable performance indicators and establishing a

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framework for monitoring progress, the implementation plan fosters accountability and transparency. It also provides flexibility, allowing for updates and adjustments as conditions evolve. Ultimately, this chapter empowers stakeholders—village representatives, government agencies, community organizations, and island residents—to align efforts and work collaboratively toward a shared vision for a more sustainable, equitable, and resilient future.

8.1.2. The Importance of Collaboration and Accountability

Effective implementation of a comprehensive land use plan depends on strong leadership, clear accountability, and coordinated action across government agencies, community stakeholders, and the private sector. On Guam, land use planning and development intersect with a diverse network of agencies, each playing a vital role in shaping how land is managed, developed, protected, and restored. The success of this plan hinges on the ability of these institutions to work in alignment, guided by shared goals and a commitment to sustainable, culturally rooted development.

Key agencies such as the Bureau of Statistics and Plans (BSP) and the Department of Land Management (DLM)—alongside the Guam Land Use Commission (GLUC) and the Municipal Planning Council in each village—provide essential leadership in setting policy direction, regulatory oversight, and long-term planning. The Department of Public Works (DPW), Guam Waterworks Authority (GWA), Guam Power Authority (GPA), and the Guam Environmental Protection Agency (GEPA) are critical in ensuring that infrastructure development, environmental protection, and utility services align with land use decisions. Meanwhile, agencies such as the Department of Agriculture (DOAG), the CHamoru Land Trust Commission (CLTC), and the Guam Ancestral Lands Commission (GALC) safeguard land stewardship, access, and equity for future generations. The Department of Parks and Recreation (DPR) also plays a key role in maintaining open spaces and supporting community well-being through recreational land uses. Figure 8.1 presents the main government agencies involved in aspects of land use planning and regulation currently, including how they may network in relation to the development review process.

Accountability is strengthened by assigning clear responsibility for each implementation action that may be contemplated for the G50SP, setting measurable outcomes, and committing to regular progress reviews. A successful implementation process must also be adaptive, with mechanisms in place to track performance, evaluate changing conditions, and revise strategies as needed. This includes regular updates to the plan to the Governor, Senators, and Congressional delegate, coordinated inter-agency check-ins, and public reporting on achievements and challenges.

Community engagement is equally essential throughout the implementation process. Ongoing input from village residents, cultural organizations, landowners, and youth will ensure that implementation remains rooted in local priorities, cultural values, and lived realities. As stewards of the land and sea, the people of Guam must remain partners in the process—not just

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in planning, but in monitoring, decision-making, and holding institutions accountable. A transparent, inclusive, and collaborative approach will ensure that the vision laid out in this plan is realized over time in ways that reflect and serve the people of Guam.

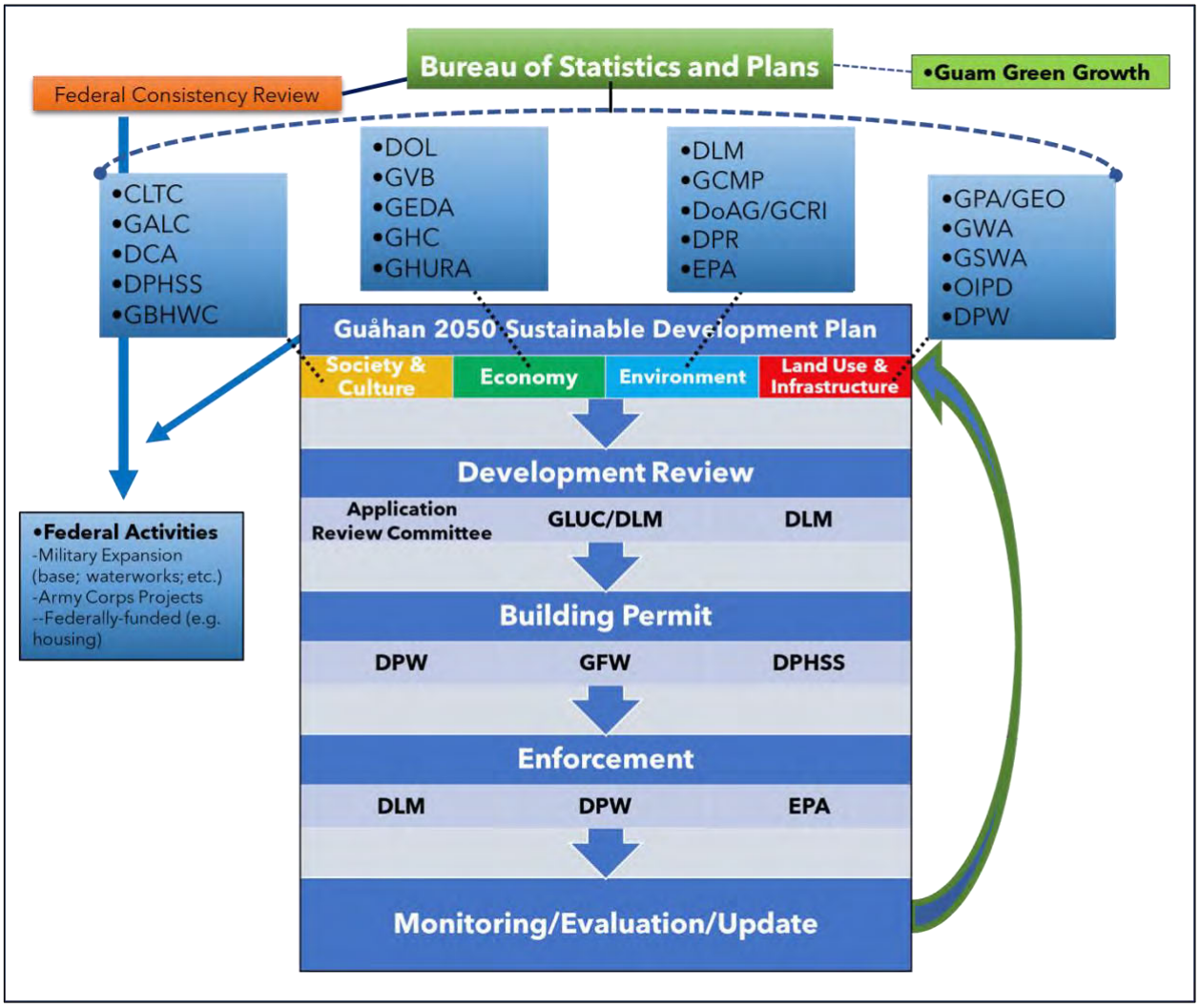

Figure 8-1. Agency Coordination of G50SP Implementation.

8.1.3. From Vision to Action: Linking Principles to Implementation

The implementation strategy is the operational heart of the Guåhan 2050 Sustainability Plan. It ensures that the broad vision, values, and land use priorities expressed throughout the plan are translated into real and measurable actions—over the next five years, the next 15, and the next 25, all the way to 2050. This chapter thus provides the framework for action, rooted in the legislative mandate of Public Law 35-110, which calls for a renewed comprehensive development plan that embraces the principles of sustainability and the needs of both present and future generations of Guam.

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The law specifically requires that land use planning in Guam consider economic, environmental, and cultural sustainability through a long-term lens. These three pillars are reflected in the five organizing themes of the G50SP—*Sustainable Communities, Prosperous Economy, Thriving Environment, Vibrant Culture, and Village Sustainability*—and are guided by the five core sustainability principles: *Limits, Balance, Renewal, Equity, and Engagement*. These principles are not abstract; they are practical values that inform the actions and priorities of this implementation plan. For example, the principle of *Limits* guides policies to avoid overdevelopment in aquifer recharge zones, while *Equity* informs the prioritization of affordable housing, village-scale services, and inclusive public engagement.

Implementation also aligns Guam with global sustainability efforts. The G50SP is designed to help realize the United Nations Sustainable Development Goals (SDGs)—a universal set of targets that include climate action, clean water, affordable housing, sustainable infrastructure, and reduced inequality. By embedding the SDGs into the planning framework, Guam is not only responding to local challenges but contributing to a global sustainability agenda tailored to the unique conditions of island communities. The Guam Green Growth (G3) initiative, launched by executive order in coordination with the University of Guam, is a key local mechanism for activating the SDGs through partnerships and innovation.

The implementation plan is structured to guide actions across multiple timeframes:

- **Short-term (2025–2030)** actions prioritize immediate infrastructure upgrades, affordable housing, hazard mitigation, and foundational governance improvements.
- **Mid-term (2030–2040)** strategies include expanding mixed-use redevelopment, restoring natural habitats, scaling village-level tourism, and aligning zoning codes with sustainable land use goals.
- **Long-term (2040–2050)** actions ensure resilience to climate change, intergenerational equity in land access, and full realization of compact, vibrant, and walkable communities across the island.

In order to succeed, implementation must be coordinated and consistent across agencies. Core government entities such as the Bureau of Statistics and Plans (BSP), Department of Land Management (DLM) and the Guam Land Use Commission (GLUC), Department of Public Works (DPW), Guam Environmental Protection Agency (GEPA), Guam Waterworks Authority (GWA), and Guam Power Authority (GPA) must work in concert to integrate land use, infrastructure, and environmental protection. Equally critical are the roles of the CHamoru Land Trust Commission (CLTC), Guam Ancestral Lands Commission (GALC), Department of Agriculture (DOAG), and Department of Parks and Recreation (DPR), whose work touches on land tenure, food security, recreation, and cultural preservation.

This implementation framework is not static. It is a living system that must be regularly updated, tracked, and responsive to community input and changing conditions. Public Law 35-110 envisioned a plan that is not only forward-looking but adaptive, supported by meaningful

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community engagement and accountability mechanisms. The road to 2050 will be shaped by decisions made now—and by how faithfully those decisions reflect the values, priorities, and policy commitments outlined in this plan.

8.2. Implementation Framework

8.2.1 Implementation Goals and Guiding Principles

The Guåhan 2050 Sustainability Plan (G50SP) is grounded in a set of integrated goals, legislative mandates, and guiding principles that collectively define its implementation vision. As required by Public Law 35-110, the plan must serve as both a short and long-term blueprint for Guam's sustainable development, addressing economic, cultural, environmental, and infrastructure challenges in a holistic and equitable way. This includes meeting Guam's needs in housing, transportation, water, energy, public health, recreation, heritage preservation, and more—through land use decisions that are responsible, inclusive, and future-ready.

The plan is aligned with the United Nations Sustainable Development Goals (SDGs) and the Small Island Developing States (SIDS) framework, offering a global context for local action. These goals inform planning across all sectors—emphasizing poverty reduction, resilient infrastructure, biodiversity protection, and climate adaptation.

To translate these commitments into effective implementation, G50SP is guided by five interlocking sustainability principles:

- **Limits**: Recognizing ecological thresholds and constraints on growth.
- **Balance**: Integrating environmental, cultural, and economic needs.
- **Renewal**: Fostering regeneration of natural and social systems, including redevelopment of existing developed areas.
- **Equity**: Promoting fairness in access to land, resources, and opportunities.
- **Engagement**: Ensuring meaningful public participation and inclusion.

These principles frame key land use planning objectives of the plan, including: concentrating development in suitable areas, protecting natural and cultural resources, encouraging agriculture and food security, ensuring housing affordability, implementing watershed-based planning, promoting right-sized economic development, designing for walkability, and protecting historic sites and cultural landscapes.

8.2.2. Implementation Over Time: Agencies, Tools, and Processes

The implementation of G50SP will unfold in three interconnected phases:

- **Short-term (2025–2030):** Focused on establishing foundational systems, adopting key reforms, launching priority projects, and aligning agency budgets and plans with the G50SP.

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- **Mid-term (2030–2040):** Scaling implementation across agencies and sectors, further refining zoning and regulatory frameworks, integrating land use and climate adaptation tools, and expanding infrastructure aligned with sustainability priorities.
- **Long-term (2040–2050):** Achieving full realization of the plan's sustainability vision, including compact urban growth, restored ecosystems, clean energy transformation, and equitable access to land and services.

Implementation will span multiple sectors—land use, infrastructure, environment, economy, housing, heritage, and agriculture—and involve a network of core agencies. These include the Bureau of Statistics and Plans (BSP), Department of Land Management (DLM) and Guam Land Use Commission (GLUC), Department of Public Works (DPW), Department of Agriculture (DOAG), Guam Environmental Protection Agency (GEPA), CHamoru Land Trust Commission (CLTC), Guam Ancestral Lands Commission (GALC), Guam Waterworks Authority (GWA), Guam Power Authority (GPA), and Department of Parks and Recreation (DPR).

Implementation tools include:

- Planning and zoning updates
- Development permitting and review processes
- Land use monitoring systems and GIS mapping
- Performance tracking dashboards
- Regulatory enforcement
- Public education and engagement
- Programmatic and capital improvement planning
- Agency-specific sustainability initiatives
- Village-level and thematic plans (e.g. watershed or coastal zones)

Integration will occur not only through formal plan updates every five years, but also via the budgeting, permitting, and infrastructure development processes. Capital Improvement Plans (CIPs), environmental assessments, and permitting reviews (as outlined in the *2022 Guidebook to Development Requirements on Guam*) will be key channels for aligning agency actions with the G50SP. Community engagement will remain a continuous thread across all phases, building trust and ensuring responsiveness to evolving needs.

8.2.3. Governance and Institutional Reforms for Integrated Implementation

For the Guåhan 2050 Sustainability Plan to be effective, clear leadership, consistent coordination, and systemic reform are essential. The Bureau of Statistics and Plans (BSP) will serve as the coordinating, plan implementation, interagency alignment, and policy reform lead agency.

Following adoption of the plan by the Legislature, a Governmental Task Force on Sustainability Plan Implementation will be established within the first year. This task force will:

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- Define agency-specific implementation roles and timelines.
- Identify coordination protocols across the Application Review Committee (ARC) and other interagency bodies.
- Initiate a review of existing laws and regulations to identify needed reforms for G50SP implementation.

This legal and regulatory review will assess consistency between the plan's land use policies and the current zoning law, permitting processes, agency mandates, and executive orders such as E.O. 78-37 (Land Use Policies). The goal will be to recommend legislative updates and process reforms that strengthen plan conformity and reduce duplication, fragmentation, and conflict among agencies.

In line with recommendations from the previously conducted agency engagement and roundtable discussions, reforms will prioritize:

- Elevating planning consistency in all land use approvals.
- Front-loading plan compliance into early permitting stages, such as through a pre-application development screening process.[1]
- Enhancing transparency and public access to the land use process.
- Providing clear performance standards and enforcement mechanisms.
- Strengthening village-level engagement and service delivery.

The Application Review Committee (ARC)—composed of BSP, DLM, DPW, GEPA, DOAG, DPR, GWA, and GPA—will be a key implementation mechanism. BSP will coordinate and lead ARC reviews with respect to the G50SP requirements, to ensure that agency comments and land use decisions are directly tied to G50SP principles and land use designations. *Existing authorities and plans will remain in effect to the extent that they do not conflict with the mandates of the G50SP.* Where necessary, institutional reforms such as agency Memoranda of Understandings (MOUs), cross-agency data systems, and formal compliance reporting requirements will be developed to support accountability.

Plan Alignment and Integration

A cornerstone of successful implementation is ensuring plan alignment—that is, integrating the Guåhan 2050 Sustainability Plan with the many sectoral, agency, and regional plans that have been developed over the past several decades. The G50SP is designed to serve as a coordinating framework that unifies and builds upon these efforts, not to duplicate or override them. Guam's planning landscape includes a broad array of strategic and technical documents, ranging from the North and Central Guam Land Use Plan and the Guam Transportation Improvement Plan to environmental strategies like the Guam Coral Reef Resilience Strategy and cultural planning efforts such as the Guam Historic Preservation Plan. These plans represent

[1] For an example: https://opd.gov.mp/library/etc/sw-plan-docs/a6-cnmi-smart-safe-growth-guidance-manual.pdf).

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significant investments of time, data, and stakeholder engagement and contain valuable insights that can strengthen and inform implementation. The G50SP was developed partly based on these many plans, to maximize the alignment of the G50SP with existing and ongoing planning work on Guam.

As such, one key governance priority is to establish formal mechanisms for inter-plan consistency and cross-referencing. During Year One of implementation, the BSP-led task force will inventory and analyze the goals, standards, and recommendations of existing plans to ensure they are either incorporated into, or aligned with, the G50SP, to the extent that this has not already been addressed or taken into account. This effort will include mapping overlaps, identifying gaps, and proposing methods to resolve inconsistencies—whether through agency guidance, legislative amendments, or updates to existing planning documents. Moreover, as agencies prepare updates to sectoral plans such as the GHURA Consolidated Plan, GWA Water Resource Master Plan, or the Guam Forest Action Plan, BSP will provide coordination support to ensure these revisions reflect the land use, sustainability, and community design goals articulated in the G50SP.

In this way, the implementation process will help to create a more coherent and connected planning system for Guam—one in which diverse strategies are not working at cross-purposes but advancing a unified vision of sustainable island development.

8.3. Implementation Action Strategy

8.3.1. G50SP Implementation Action Matrix

The following Implementation Action Matrix provides a detailed, action-oriented framework for realizing the goals, policies, and principles of the Guåhan 2050 Sustainability Plan. Organized by thematic chapters of the plan—including governance, land use, economic development, environmental protection, cultural vitality, and village sustainability—the matrix outlines specific strategies to be carried out by lead agencies in collaboration with partner institutions and community stakeholders. It is a practical tool to coordinate efforts across sectors and ensure that the vision of G50SP is advanced through timely, accountable, and measurable steps.

Each action listed in the matrix is tied to a major policy area within the plan and includes key implementation details: the responsible agency, supporting partners, timeframe for execution, necessary resources, and clear performance indicators. This format supports transparency, monitoring, and adaptive management—allowing the Government of Guam and its partners to track progress, adjust priorities, and ensure continuous alignment with the plan's five sustainability principles and overarching goals. The matrix will also guide annual and five-year progress reviews, informing future budget allocations, program development, and policy updates needed to maintain momentum and remain responsive to emerging challenges.

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Table 8-1. Sustainability Plan Action Matrix.

Topic / Policy	Action / Strategy	Lead Agency	Partners	Time	Resources Needed	Performance Indicators
GOVERNANCE						
Implementation Leadership	Establish a Sustainability Plan Implementation Task Force to coordinate agency roles and responsibilities.	Bureau of Statistics and Plans (BSP)	Governor's Office, DLM, GEPA, DPW, CLTC, GWA, GPA, OTECH, DOAG, GDOL, GEDA, GDOE	Year 1	Staff time, administrative support, executive order or legislation	Task Force formed; agency roles defined
Legal Framework	Initiate a comprehensive review of existing land use and environmental laws to identify any inconsistencies with G50SP policies and propose necessary amendments of existing authorities.	BSP/Task Force	Office of the Attorney General, Legislature, Regulatory Agencies	Year 1–2	Legal staff, consultants, public review process	Review completed; draft amendments proposed
	Submit Adopted G50SP to Coastal Zone Management Program for incorporation into Guam's enforceable CZM policies.	BSP	Other agencies as may be required	Year 1	Legal staff, consultants, public review process	Submission, certification
Plan Consistency	Establish formal policy to ensure all agency and legislative land use decisions are reviewed for consistency with G50SP.	BSP	DLM, Land Use Commission, Legislature	Year 1	Policy drafting support, training for decision-makers	Consistency review policy adopted and implemented
One-Guam GIS Land Use System	Develop and implement an integrated Land Use GIS system for Guam.	BSP	GovGuam land use agencies	Years 1-3	Technical staff, training, dedicated funding	Completion of GIS system

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Topic / Policy	Action / Strategy	Lead Agency	Partners	Time	Resources Needed	Performance Indicators
Plan Alignment	Review GovGuam and other applicable plans for alignment with G50SP. Create a plan update and alignment strategy.	BSP/ Task Force	GovGuam agencies with missions affecting land use	Years 1-2	Staff time, agency commitments	Completion of Plan alignment strategy
Sustainability Strategic Financing Plan	Create an integrated financing strategy for the Guåhan Sustainability Plan	BSP	GovGuam agencies with missions affecting land use	Years 1-2	Staff time, agency commitments, Governor's office support	Completion of Financing Strategy. Funding allocated to G50SP implementation
GovGuam - U.S. Govt Planning Task Force	Establish a task force to coordinate and integrate GovGuam and U.S. government planning objectives, including financing and impact mitigation strategies	Governor, BSP	Legislature	Year 1	Executive commitment, U.S. govt support	Creation of Task Force. Coordinated planning decisions and investments
SUSTAINABLE COMMUNITIES						
Land Use	Designate urban growth areas and enforce urban-rural boundaries to concentrate development.	BSP/Dept. of Land Mngt. (DLM)	DPW, GEPA, CLTC, GWA, DOAG	Years 1–5	Planning staff, updated land use maps, community consultation	Urban growth boundaries adopted and used in permitting
Public Services	Prioritize infrastructure investment in designated urban centers including improving ADA compliance and accessibility.	Dept. of Public Works (DPW)	GWA, GPA, BSP	Years 1–10	Capital improvement planning, interagency coordination	Infrastructure CIP alignment with land use map
Housing	Expand zoning for multifamily and affordable housing in urban areas.	DLM	GHURA, CLTC, BSP	Years 1–5	Zoning update process, stakeholder input	Zoning changes approved; # of affordable units permitted

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Commercial, Industrial, Priority Development	Encourage mixed-use and pedestrian-scale development along key commercial corridors.	DLM	DPW, GEDA, Municipal Planning Councils	Years 2–10	Design guidelines, public-private partnerships	Mixed-use zoning applied; projects approved
Rural and Agricultural Lands	Implement Transfer of Development Rights (TDR) program to protect rural lands.	BSP	CLTC, DOAG, DLM	Years 3–8	TDR policy design, GIS mapping, incentive program	TDR program launched; acres protected
Natural Hazards	Develop and implement neighborhood-scale climate adaptation plans.	BSP	GEPA, Guam Homeland Security, Mayors Council, Other agencies as may be warranted, such GPA and GWA	Years 1–10	Hazard mapping, planning grants, community input	# of villages with adaptation plans in place
PROSPEROUS ECONOMY						
Commercial Redevelopment and Mixed Use	Identify and incentivize redevelopment zones in existing commercial centers with infrastructure upgrades.	Guam Economic Development Authority (GEDA)	DLM, DPW, GWA, GPA	Years 1–5	Incentive programs, infrastructure funding, zoning changes	Redevelopment zones designated; # of projects initiated
Agriculture and Rural Development	Expand protections for prime agricultural land and promote access to land for small-scale farmers.	Dept. of Agriculture (DOAG)	CLTC, BSP, UOG-CIS	Years 1–6	Agricultural planning staff, lease programs, education	Acreage preserved; # of leases to local farmers
Tourism and Cultural Enterprise	Support village-based eco- and cultural-tourism initiatives including artisan markets and trails.	Guam Visitors Bureau (GVB)	GPT, Mayors Council, SHPO, DPR, GEDA, GDOL	Years 2–10	Marketing support, grants, local business partnerships	# of village tourism projects; visitor metrics
Right-Sized Economic Infrastructure	Align economic development infrastructure (ports, telecom, energy) with land use and resilience goals.	GEDA	GPA, GWA, BSP, Guam Power Authority	Years 1–10	Infrastructure master plans, climate resilience funds	Projects approved and aligned with land use plan

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THRIVING ENVIRONMENT						
Healthy Ecosystems	Manage stormwater, promote green infrastructure practices such as permeable surfaces, rain gardens, and green roofs in new developments.	Guam EPA	DPW, DLM, GWA, DOAG BSP	Years 1–5	Technical guidance, incentives, training programs	# of developments incorporating green infrastructure
Watershed Protection	Implement stricter land use controls in the Northern Guam Lens Aquifer protection zone.	GEPA	DLM, BSP, GWA, DOAG	Years 1–4	Zoning overlays, environmental assessments	Land use controls adopted; # of permits reviewed
Habitat Conservation	Designate and map critical terrestrial habitats and adopt new Resource Conservation land use designation.	BSP	DOAG, SHPO, DLM	Years 1–3	Habitat studies, GIS mapping, land designation process	Acres designated; baseline biodiversity assessments
Coastal and Marine Resources	Strengthen enforcement and permitting shoreline development to protect reefs and public access.	GEPA	BSP, SHPO, Dept. of Parks and Recreation	Ongoing	Monitoring staff, legal authority, signage and public education	# of enforcement actions; protected shoreline segments
VIBRANT CULTURE						
Cultural Preservation	Support expanded documentation and protection of cultural heritage sites, including oral histories and traditional place names.	Guam Preservation Trust (GPT)	SHPO, ALC, UOG, Community Groups	Years 1–6	Archivists, cultural liaisons, community workshops	# of sites documented; # of cultural maps produced
Land Justice and Access	Support land return, equitable land access, and stewardship programs for displaced or underserved families.	Ancestral Lands Commission (ALC)	CLTC, BSP, Legislature	Years 1–10	Legal review, land transfer mechanisms, outreach	Acres returned or made accessible; # of families supported

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Community Health and Well-being	Integrate cultural and public health goals in village-level plans and capital improvement projects.	Department of Public Health and Social Services (DPHSS)	Mayors Council, BSP, DPR, Guam Behavioral Health	Years 1–5	Public health data, community design input	# of village plans with health-cultural integration
VILLAGE SUSTAINABILITY						
Village Planning and Design	Support the development of village-scale land use and infrastructure plans aligned with G50SP.	BSP	Mayors Council, DPW, DLM, GWA, GPA	Years 1–5	Technical assistance, GIS tools, community visioning	# of village plans completed and adopted
Resilient Infrastructure	Improve walkability, drainage, and energy systems in villages through coordinated capital projects.	DPW	GPA, GWA, GEPA, Mayors Council	Years 2–10	CIP funding, climate hazard maps, engineering support	Projects completed; hazard risk reduction metrics
Community Engagement and Governance	Establish formal channels for village input in regional land use and sustainability decision-making.	BSP	Municipal Planning Councils, Mayors Council, Legislature	Years 1–3	Facilitation staff, engagement platforms	# of formal consultations held annually; policy influence tracked

8.3.2. Five-Year Priority Actions and Financing Opportunities

Effective implementation of the Guåhan 2050 Sustainability Plan (G50SP) begins with a clear, coordinated focus on priority actions to be launched in the first five years of the plan.[2] These near-term actions are foundational steps that set the stage for long-term transformation. They include governance and policy initiatives, critical land use and infrastructure planning, environmental protection measures, and community-based programs aligned with the core sustainability principles of the plan. The actions selected for early implementation are those that are high-impact, time-sensitive, and logistically feasible within current institutional and funding capacities. Actions range from establishing a Sustainability Plan Implementation Task Force and completing a legal review in Year 1, to expanding affordable housing zoning, enhancing green infrastructure, conserving critical habitats, and encouraging mixed-use redevelopment in subsequent years.

[2] P.L. 35-110, § 1211. Plan Implementation and Financing. (a) The Plan shall contain a schedule of programs and projects to be implemented annually. Funding for such programs and projects shall be identified in the Plan by the project's or program's principal or administering government agency or instrumentality.

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A diverse portfolio of financing options will be necessary to support these early actions. Potential funding sources may include options discussed below, though the federal funding landscape is evolving as of this writing, with many reductions in federal programs occurring or potentially occurring.

- **Federal Infrastructure and Resilience Grants** offer substantial opportunities for infrastructure modernization, energy and water resilience, and climate adaptation.
- **Defense-related funding** from the Department of Defense (DoD), which continues to invest significantly in Guam's infrastructure as part of its Indo-Pacific strategy. These funds can support infrastructure upgrades, hazard mitigation, and environmental protection in areas adjacent to military bases that may benefit the larger community sustainability interests of Guam.
- **Technical Assistance and Capital Grants** through the Department of the Interior's Office of Insular Affairs (DOI/OIA), which can support planning, capacity-building, cultural preservation, and implementation of sustainability programs at the agency or community level.
- **Public-Private Partnerships (PPPs)** allow the government to leverage private capital for public infrastructure, housing, renewable energy, or village-scale redevelopment projects. These partnerships can be structured to align private returns with public goals through tools like tax incentives, joint ventures, or leaseback agreements.
- **Local Revenue Mechanisms**, including development impact fees, infrastructure assessments, or targeted tax measures that generate dedicated revenue for sustainability programs, capital improvements, and plan administration.

Identifying and securing these funds will require coordinated grant writing, stakeholder engagement, and alignment with broader federal and territorial policy objectives. For each priority action, lead agencies should be tasked with identifying the best-fit financing opportunities, initiating applications, and developing internal mechanisms to manage, report, and evaluate the use of funds. Through proactive pursuit of funding and creative financing strategies, Guam can launch a strong implementation phase that turns planning into tangible outcomes, ensuring long-term sustainability, resilience, and equity for the island and its people.

Table 8-2. Five-Year Priority Action Schedule.

Year	Priority Action	Lead Agency/Partner	Potential Funding Sources
2026	Establish Sustainability Plan Implementation Task Force	BSP / Governor's Office, Agencies	DOI, PPP/GHURA Fund
2026	Conduct Comprehensive Legal Review	BSP / Legislature, OAG, Regulatory Agencies	DOI, Local
2026	Designate Urban Growth Areas	DLM / BSP, DPW, GEPA, CLTC	BIL, Local

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Year	Priority Action	Lead Agency/Partner	Potential Funding Sources
2026	Promote Green Infrastructure	GEPA / DPW, DLM, GWA, DOAG, BSP	BIL, PPP
2027	Identify Redevelopment Zones	GEDA / DLM, DPW, GWA, GPA, DOAG	PPP, Local
2027	Document Cultural Heritage Sites	GPT / SHPO, ALC, UOG, Community Groups	DOI, Local
2027	Develop Village-Scale Plans	BSP / Mayors Council, DPW, DLM, GWA, GPA, DOAG	DOI, Local
2028	Expand Affordable Housing Zoning	DLM / GHURA, CLTC, BSP	PPP, Local
2028	Implement Watershed Protection Measures	GEPA / DLM, BSP, GWA, DOAG	BIL, DoD
2028	Support Eco-Tourism Initiatives	GVB / GPT, SHPO, DPR, DOAG, Mayors Council	PPP, DOI
2027-30	Ensure Plan Consistency	BSP / DLM, Legislature	Local
2029	Enhance Resilient Infrastructure	DPW / GPA, GWA, GEPA	BIL, DoD
2029	Conserve Critical Habitats	BSP / DOAG, SHPO, DLM	DOI, Local
2030	Protect Agricultural Lands	DOAG / CLTC, BSP	DOI, Local
2030	Support Land Justice Programs	ALC / CLTC, BSP	DOI, Local
2030	Encourage Mixed-Use Development	DLM / DPW, GEDA	PPP, Local

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Funding Source Key: BIL – Bipartisan Infrastructure Law
DoD – Department of Defense
DOI – Department of the Interior (Office of Insular Affairs)
PPP – Public-Private Partnerships
Local – Local Revenue Measures (e.g., impact fees, taxes)

8.3.3. Detailed Financing and Funding Assessment - Five-year Priorities

The previous section presents strategic actions for the next five years to implement the G50SP across infrastructure, energy, environment, economy, housing, and climate resilience. This section identifies past and potential future funding sources and financing strategies by sector/policy area, including program descriptions, relevance to Guam, and connections to the G50SP priority actions. Significant changes have occurred in the federal government funding landscape since publication of this plan, and parts of the following discussion may no longer be relevant. Potential funding will need to be reassessed as implementation goes forward.

Infrastructure and Utilities

- **Bipartisan Infrastructure Law (BIL) – Federal Infrastructure Grants:** The 2021 BIL (Infrastructure Investment and Jobs Act) injected billions into roads, bridges, ports, water systems, broadband and more. Guam is slated to receive significant formula funding and grants under the BIL. For example, over five years Guam expects about $96 million for highways and bridges and at least $70 million for clean water projects. As of 2023, $173.9M in BIL funds had already been announced for Guam, including $18.4M in highway upgrades and expansions of rural internet access.[3] BIL-funded programs relevant to Guam's 5-year priorities include: Federal Highway Administrative funds to improve roads and traffic flow, Department of Transportation grants for safer streets, EPA's State Revolving Funds to upgrade water/wastewater infrastructure, and Federal Aviation Administration Airport Infrastructure Grants (e.g. $3.2M to Guam's airport for a solar-ready roof).[4]

  Relevance to G50SP: These funds help modernize critical infrastructure – aligning with G50SP calls for reliable transportation and utilities. Near-term plan actions like repairing roads, expanding wastewater facilities, and improving village infrastructure can be tackled with BIL support. **Under Review – may not be available**.

- **American Rescue Plan Act (ARPA) – Territory Fiscal Recovery Funds:** In the past Guam received substantial ARPA funds which were deployed for infrastructure and utilities. Notably, in 2025 Guam invested $35.4 million of ARPA funds to construct a new power substation in Mangilao, bolstering grid reliability for the island's fastest-growing area

[3] bidenwhitehouse.archives.gov,
[4] transportation.gov.

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and its planned new hospital.[5] This ARPA-funded project improves redundancy (two substations instead of one) and speeds power restoration after storms. ARPA funds are no long available for implementation of the Sustainability Plan.

Relevance to G50SP: Hardening the power infrastructure and ensuring reliable electricity for critical facilities addresses the plan's 5-year resiliency goals (e.g. "build a stronger, more resilient Guam" through upgraded utilities). Guam can continue to allocate ARPA or other federal recovery funds to priority utility upgrades (water, sewer, energy) identified in the plan. **Under Review – may not be available**

- **Department of Defense (DoD) Contributions – Defense-Related Infrastructure:** Guam's role as a strategic military hub means DoD is investing heavily in the island. As discussed in Chapter 2, billions in military construction is planned on Guam.While most funds build on-base facilities (Marine Corps Base Camp Blaz for 5,000 Marines, etc.), DoD also supports civilian infrastructure impacted by the buildup. For example, DoD's Defense Access Roads program and other partnerships address road improvements near bases, and DoD's Office of Local Defense Community Cooperation (OLDCC) provides grants for off-base utilities and schools. The Readiness and Environmental Protection Integration (REPI) program is another DoD funding source that has been working on habitat conservation projects in Guam (FY21–23) to buffer military lands and protect habitats. Guam received over $5.7 million in REPI funds and partner contributions recently for conservation easements and watershed management[6] – supporting water resources and land resilience. Prioritize funding to the Department of the Army for Engineering with Nature for Guam projects.

  Relevance to G50SP: These defense-linked funds can be leveraged to upgrade roads, ports, and utilities that both serve the military and advance Guam's civilian needs. For instance, as Marines relocate, federal dollars are flowing for port upgrades and highway expansions (G50SP Chapter 2 notes that federal military expansion may invest more than $7 billion in the next five years in military construction that supports growth). G50SP's priority to harden critical infrastructure against disasters can align with DoD projects (e.g. jointly undergrounding power lines or expanding water capacity for both base and villages – a "One Guam" approach). As contemplated in G50SP Policies IP-3 and IP-4, DoD funding opportunities should be addressed through coordinated sustainability planning between the Government of Guam and the DoD.

- **DOI Office of Insular Affairs (OIA) – Capital Improvement & Technical Grants:** OIA administers annual Capital Improvement Project (CIP) funds and technical assistance

[5] governor.guam.gov

[6] https://www.repi.mil/Portals/44/Documents/State_Fact_Sheets/Guam_StateFacts.pdf#:~:text=Total%20Acres%20Protected%2C%20Managed%2C%20or,DOD%20personnel%2C%20contractors%2C%20and%20their.

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for territories. Guam was awarded $7.08 million in FY2024 CIP funding, used for projects like the Department of Youth Affairs administrative building and renovating the Chamorro Village marketplace.[7] In addition, Guam entities received $2.59 million in FY2024 Technical Assistance Program (TAP) grants for various purposes including modernization of customs systems, public safety equipment, and training. OIA also runs the Energizing Insular Communities program (covered under Energy below) and provides other grants for infrastructure planning.

Relevance to G50SP: CIP funds can support public facility upgrades, e.g. expanding healthcare or emergency facilities, improving wastewater plants, etc., which are part of the plan's near-term infrastructure agenda. Technical Assistance grants can fund planning studies, capacity building, or pilot projects needed to implement new sustainability policies. According to the Bureau of Budget and Management Research, Guam anticipates receiving the same level of funding for the foreseeable future so long as the Government of Guam complies with reporting requirements, positive audit results, and other requirements. This can support priorities like modernizing utilities, improving solid waste management, and enhancing public buildings (all cited in the plan's 5-year action lists).

- **USDA Rural Development – Water, Waste, and Community Facilities:** As a rural community by federal definition, Guam is eligible for USDA loans/grants. USDA has financed Guam's water and sewer improvements and community facilities in the past. For example, USDA's Water and Waste Disposal program and Community Facilities program have provided funding (in one recent period, Guam received ~$916,000 in community facility grants along with CNMI and American Samoa).[8] USDA also offers Emergency Community Water grants post-disaster and Rural utilities loans that Guam Waterworks Authority (GWA) can apply for system upgrades.

  Relevance to G50SP: The plan's priority to "eliminate septic systems and expand sewer lines" and improve drinking water infrastructure can be supported by USDA's low-interest financing. Likewise, building new community health centers or resilience hubs (social infrastructure) could utilize USDA Community Facilities loans. Guam should coordinate with USDA's Pacific Region office to package projects (e.g. village water pipeline extensions or a new public market facility) for these funding opportunities.

- **Public-Private Partnerships (PPP) and Concessions:** Engaging private sector capital through PPPs is a viable strategy for large infrastructure in Guam. The island's first large PPPs are emerging in energy (IPPs building solar farms – see Energy section), but PPPs could also finance infrastructure like waste management facilities (e.g. a private waste-to-energy plant under a long-term contract) or port expansions. Private concessionaires

[7] governor.guam.gov.

[8] https://www.doi.gov/sites/doi.gov/files/uploads/12-USDA-Economic-Development-Loans-and-Grants-COMBINED.pdf#:~:text=,Guam%2C%20CNMI%20and%20American%20Samoa.

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can design-build-operate infrastructure in exchange for user fees or availability payments. Guam law allows issuance of Private Activity Bonds (tax-exempt bonds for private-led public projects) which GEDA can facilitate.[9]

Relevance to G50SP: If public funds are insufficient for big-ticket projects (a modern wastewater treatment plant, a transit system, etc.), PPPs can fill the gap. They align with 5-year actions requiring major capital – for instance, a PPP could help deliver a new solid waste facility or transit hub sooner, with private financing repaid fees. The plan's adaptive management goal of securing ongoing funding for infrastructure suggests exploring innovative financing like PPP to augment government budgets.

- **Local Funding Mechanisms – Impact Fees and Special Districts:** Guam can enact local financing tools via legislation to fund infrastructure. One mechanism is developer impact fees – one-time charges on new development to pay for expanding water, sewer, roads, parks, etc. Guam already has a form of impact fee through GWA's System Development Charge (SDC) on new water/sewer connections (required by law via the Island Water & Wastewater Infrastructure Fund).[10] Expanding impact fees to cover roads or schools in high-growth areas (like Mangilao or Dededo) could generate revenue to implement the plan's growth management and infrastructure upgrades. Another tool is Special Assessment Districts – for example, establishing a business improvement district in Tumon Bay where hotels pay an extra fee dedicated to street, lighting, and pedestrian improvements in the tourism zone. Similarly, a stormwater utility fee could be levied on property owners based on runoff contribution, creating a fund for much-needed drainage projects (aligning with the plan's call to improve drainage and flood management).

  Relevance to G50SP: These local financing mechanisms would directly support 5-year priority projects: e.g. impact fees on new housing developments could fund nearby road widenings or sewer lines (ensuring growth "pays for itself" as the plan envisions), and a stormwater fee would bankroll priority drainage fixes to reduce flooding in village centers. Legislative action to enable tools like Tax Increment Financing (capturing rising property taxes in redevelopment areas) or bond financing for utilities (see Resilience/Green Bonds below) would greatly enhance Guam's ability to implement infrastructure commitments in the plan.

Renewable Energy and Energy Resilience

- **U.S. Department of Energy (DOE) Grants – Grid Resilience and Innovation:** New federal energy programs are targeting grid hardening and clean energy – crucial for Guam's renewable energy goals. Under the BIL, DOE's Preventing Outages and Enhancing Resilience (Section 40101d) program is granting Guam about $864,000 per year for 5

[9] https://www.investguam.com/geda-grant-programs/#:~:text=,Fiscal%20Reports
[10] https://www.guamccu.org/.

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years to reinforce its electric grid. In 2023, DOE awarded $1.7 million (first two years' funds) to Guam Power Authority (GPA) to underground critical power lines serving Guam Waterworks facilities. This will protect water and wastewater services from typhoon damage by hardening transmission lines.[11] DOE has also funded microgrid development in Guam: in 2024 GPA received ~$917,000 from the DOE Office of Electricity for a modular microgrid control project to improve reliability in remote areas.[12] Guam is an ideal candidate for further DOE grants (e.g. Solar Energy Technology grants, energy storage pilots, etc.), especially with its aggressive renewable target of 50% by 2035 and 100% by 2045.

- Through the Guam Energy Office's Energy Efficiency Conservation Block Grant (EECBG) solar panels were installed at the Lagu and Haya Youth Centers in August and September of 2025. Benefits include renewable energy, reduced greenhouse gas emissions, low carbon footprint, long term energy cost savings, sustainable development and improved air quality

  Relevance to G50SP: The plan prioritizes energy resilience and renewable projects in the near term – e.g. deploying solar plus battery storage, grid modernization, and village-level energy independence. DOE funding directly supports these actions by financing solar microgrids, hardening the distribution network, and integrating more renewables. GPA's 5-year action plans (like new solar farms and storage to replace aging oil-fired plants) can be accelerated with these grants, helping meet the G50SP policy of affordable, reliable power for all communities. **Under Review – may not be available**

- **DOI Energizing Insular Communities (EIC) Grants – Territorial Clean Energy:** DOI's EIC program annually funds sustainable energy projects in U.S. territories. In FY2024, Guam was awarded $5.47 million in EIC grants. Key projects include $3M for "Guam 100" (a roadmap to 100% renewable energy), over $2.03M for solar PV + battery systems at Guam Community College (making campus buildings net-zero), and $335k to replenish Guam's local EV rebate program for electric vehicles. These grants explicitly support Guam's self-determined energy goals and reduce reliance on imported fuel.[13]

  Relevance to G50SP: The Sustainability Plan emphasizes transitioning to renewable energy and promoting clean transportation. EIC-funded projects like campus solar microgrids and EV incentives are directly in line with 5-year actions to increase solar

[11] https://www.tdworld.com/intelligent-undergrounding/article/21278904/guam-power-authority-to-invest-in-grid-resilience#:~:text=Dec.

[12] https://www.facebook.com/GuamPowerAuthority/photos/gpa-awarded-916885-from-usdoe-for-microgrid-advancement-partners-with-national-l/989913763144784/#:~:text=Guam%20Power%20Authority%20,to%20develop%20a%20Standardized.

[13] https://www.doi.gov/oia/press/OIA-Awards-%2410.7-Million-in-Energizing-Insular-Communities-Grants#:~:text=Agency%20or%20Office%2F%20Project%20Title,Vehicle%20Rebate%20program%2C%20previously%20funded

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energy adoption and electrify transportation. For instance, the plan calls for renewable energy in new development and community education on clean energy – the EIC grants help implement such priorities on the ground (solar installations, EV adoption). Guam should continue pursuing EIC funding for initiatives like expanding rooftop solar in villages, energy efficiency in public buildings, and purchasing electric buses, all of which would advance G50SP energy and climate objectives. **This program may not be available in the future.**

- **Inflation Reduction Act (IRA) – Clean Energy Tax Credits (Direct Pay):** The IRA of 2022 created huge incentives for renewable energy and made them accessible to Guam's public entities. IRA allows territorial governments, utilities, and nonprofits to receive direct cash payments for the full value of federal clean energy tax credits (through a "direct pay" mechanism).[14] This means GPA, Guam agencies, or even non-profit hospitals can get 30%+ of a project's cost reimbursed for installing solar panels, battery storage, wind turbines, EV chargers, etc., even though they have no tax liability. For example, if GPA builds a $10 million solar farm, it can receive ~$3 million back from the IRS via direct pay of the Investment Tax Credit – effectively federal funding without a grant competition. IRA also expanded credits for renewable fuel projects, microgrid controllers, energy efficiency upgrades, and more, all eligible for Guam entities.

  Relevance to G50SP: This is a game-changer for financing the plan's renewable energy projects. Guam can now plan solar and wind projects for public facilities (schools, water pumps, wastewater plants) and count on IRA credits to cover a significant portion, reducing local cost. The plan's 5-year priority to "incorporate renewable energy systems in new housing where feasible" could be facilitated by partnering with nonprofits or developers who utilize these credits (via direct pay or through third-party tax equity). Likewise, goals to expand community solar or install EV infrastructure can leverage IRA incentives (e.g. the Commercial Clean Vehicle credit direct-pay for government fleets). Maximizing IRA direct-pay opportunities will be critical for Guam to finance its transition to clean energy as outlined in G50SP. **Under Review – may not be available**

- **Private Sector Investment via Power Purchase Agreements (PPAs):** Guam has successfully attracted private investment for utility-scale renewable energy through PPAs. GPA contracts with independent power producers who finance, build, and operate solar photovoltaic farms in exchange for a fixed rate paid per kWh. For instance, the 25.5 MW Dandan Solar Farm and upcoming 60 MW solar projects were developed by private firms under long-term PPAs with GPA.[15] Investors (including global energy companies and infrastructure funds) are interested due to Guam's solar potential and guaranteed

[14] https://www.energy.gov/sites/default/files/2024-08/Elective_Pay_Fact_Sheet_Territories_073124.pdf#:~:text=What%20is%20Elective%20Pay%3F%20Cash,application%20and%20allocation%3B%20see%20below

[15] https://www.pv-tech.org/guam-power-authority-sings-ppas-for-120mw-of-solar-projects/#:~:text=Guam%20Power%20Authority%20signs%20PPAs,Hanwha%20Energy%20and%20a

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offtake. Similarly, private companies can invest in battery storage or wind projects, with GPA or GovGuam as the off taker.

Relevance to G50SP: Using PPAs means Guam can add renewable capacity without upfront public capital – the private sector carries the financing burden. This directly supports the plan's near-term renewable energy targets and energy security aims, as new solar farms and potential wind projects can come online quickly via private financing. The cost is paid overtime through electricity rates (which are coming in lower than oil-based generation). In the plan's first five years, leveraging additional PPAs could enable Guam to reach interim renewable milestones (e.g. replacing retiring generators with solar+storage by 2030). Guam is already seeing results: two 60 MW solar PV projects (Hanwha Energy and KEPCO developers) were secured with PPAs to provide low-cost solar power. Continuing this model – potentially with battery or microgrid PPAs – will help fulfill G50SP's vision of affordable, clean energy for the community.

- **Green Bonds and ESG Financing:** As Guam pursues large-scale renewable and resilience projects, it can tap into green finance markets. Green bonds are debt instruments earmarked for environmental projects – for example, GovGuam or GPA could issue a Green Bond to fund a new wind farm or islandwide smart grid. Investors are attracted to green bonds for their sustainability impact; many jurisdictions have successfully raised capital this way. A green bond functions like a regular government bond but is marketed to climate-focused investors and must fund eligible green projects.[16] Guam's power utility or government could also explore sustainability bonds or climate bonds (with third-party certification from Climate Bonds Initiative, etc.) to finance climate adaptation infrastructure. Additionally, ESG investors (Environmental, Social, Governance) might be interested in public-private investment funds for Micronesia renewable projects or emerging technologies (ocean energy, for instance).

  Relevance to G50SP: Green bonds and related instruments provide upfront capital for projects that are urgently needed in the next five years – e.g. a bond issuance could fund a portfolio of solar-plus-storage installations at critical facilities, or widespread energy efficiency retrofits, all of which pay back through energy savings. By labeling it a Green Bond, Guam may achieve lower interest rates or access new investor pools.[17] Since the Sustainability Plan calls for clean energy transformation and climate resilience, financing these through dedicated green debt would ensure accountability and alignment with the plan's goals. Guam can develop a Green Bond framework tied to

[16] https://www.investopedia.com/terms/g/green-bond.asp#:~:text=A%20green%20bond%20is%20a,linked%20and%20backed%20by

[17] https://gca.org/what-are-resilience-bonds-and-how-can-they-protect-us-against-climate-crises/#:~:text=Resilience%20bonds%2C%20a%20sub,specifically%20for%20climate%20resilient%20investment

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G50SP objectives and begin with a pilot issuance for a priority project (such as a "Resilience Bond" for upgrading the grid – see below).

- **Utility Surcharges and Energy Efficiency Funds:** Another local financing strategy is instituting small charges on utility bills to fund renewable and resilient infrastructure. For example, GPA could implement a Renewable Energy Fund surcharge – a few mills per kWh – that goes into a fund for solar installations on public schools or a rebate program for home solar water heaters. Guam Power Authority already has a fuel surcharge – Levelized Energy Adjustment Clause (LEAC); a reorientation of a portion toward a "Green Energy Fund" could generate millions annually. Similarly, a Demand-Side Management charge could fund energy efficiency upgrades and conservation programs (many mainland utilities collect such fees to support rebates for efficient appliances, home insulation, etc.). For water utilities, a watershed protection fee could be charged per gallon to fund reforestation and aquifer protection projects (keeping water resources sustainable). Any increase in rate-payer fees would need careful consideration.

  Relevance to G50SP: These surcharges create a steady local funding stream for the plan's energy and water initiatives without solely relying on grants. In the next five years, Guam could establish, for instance, an Energy Efficiency Fund that retrofits government buildings with efficient lighting/AC and rooftop solar – directly reducing costs and meeting plan targets for public sector sustainability. While politically sensitive (as it affects rates), even modest fees can be framed as investments in self-sufficiency that will save consumers money long-term (through lower fuel imports and improved service reliability). The plan's stress on adaptive management and recurring funding underlines that sustainable revenue mechanisms like these will be needed to maintain momentum on G50SP energy actions.

● *Agricultural and Conservation Land Protection*

- **USDA Natural Resources Conservation Service (NRCS) Programs – Sustainable Agriculture:** Guam's farmers and landowners can access NRCS programs such as the Environmental Quality Incentives Program (EQIP) and Conservation Stewardship Program (CSP). These provide technical assistance and cost-share grants for practices like soil conservation, drip irrigation, forest buffers, and invasive species control.[18] Through EQIP, producers in Guam can get funding to implement conservation measures that protect soil and water (for example, planting cover crops to prevent erosion on hillsides, which also reduces sediment runoff to reefs – a G50SP priority). NRCS also offers the Agricultural Conservation Easement Program (ACEP) which could help preserve Guam's prime agricultural land by compensating landowners who agree not to develop their land. Another USDA initiative is the Micro-Grants for Food Security

[18] https://www.nrcs.usda.gov/programs-initiatives/eqip-environmental-quality-incentives#:~:text=EQIP%20is%20NRCS%27%20flagship%20conservation,integrate%20conservation%20into%20working%20lands

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Program (MGFSP), created by the 2018 Farm Bill specifically for territories and Freely Associated States. Guam's Department of Agriculture runs this program, giving small grants to families and communities to start gardens, aquaculture, and livestock projects to increase local food production.[19]

Relevance to G50SP: The plan emphasizes food security and preserving agricultural land in its first five years. USDA programs directly support these goals: EQIP and related NRCS grants can fund sustainable farming practices (aligning with the plan's call to support sustainable agriculture for food security and lower emissions), while MGFSP and other agriculture grants increase local food supply and community resilience. Guam should actively promote these federal programs among its farmers and utilize them to implement plan actions like restoring soil health, expanding community gardens, and protecting watersheds from agricultural runoff.

- **USDA Rural Development – Land and Community Investments:** Beyond farming-specific aid, USDA Rural Development offers grants and loans that indirectly benefit land conservation. The Rural Business Development Grants and Value-Added Producer Grants can help agriculture enterprises (e.g. a cooperative for local produce) which keeps land in productive, green use. The Community Facilities Program can fund agricultural fairs, educational farm centers, or farmers' markets infrastructure. Under the Inflation Reduction Act, USDA is also investing in climate-smart agriculture – e.g. grants to deploy agroforestry, restore forests, or capture carbon in soils. Guam could pursue these funds (should they remain available) to support the planting of climate-resilient tree species on degraded lands or promote regenerative agriculture techniques on island.

  Relevance to G50SP: Keeping Guam's rural landscapes intact and productive is central to the plan's environmental and cultural objectives. By leveraging USDA funding, Guam can implement 5-year actions like establishing an agricultural research/demonstration site for best practices, or improving irrigation infrastructure for local farms, or supporting young farmers – all contributing to preserving agricultural/open space and reducing reliance on imported food. These programs also promote equity, as they often target assistance to small-scale and indigenous producers, aligning with the plan's social equity focus.

- **Department of Interior (DOI) – Land and Conservation Grants:** DOI channels certain conservation funds to territories. For instance, Guam receives support through the Coastal Zone Management Act grants (administered by BSP's Guam Coastal Management Program) for habitat restoration, conservation planning, and public access to natural areas. Guam also is part of the Coral Reef Initiative, getting federal grants for reef conservation and watershed protection (often via NOAA but in coordination with

[19] https://DOAG.guam.gov/wp-DOAG-content/uploads/2024/05/MGFSP-4-Informational-Slides.pdf#:~:text=%5BPDF%5D%20Micro,gardening%2C%20herding%2C%20and%20livestock

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DOI). In the past, DOI's OIA has funded invasive species removal (e.g. brown tree snake control programs) and the Insular Forest Restoration grants. Additionally, the Land and Water Conservation Fund (LWCF), a federal program, has historically provided money to Guam for outdoor recreation and conservation land acquisition – for example, creating parks or conservation areas.

Relevance to G50SP: The plan identifies protecting Guam's limestone forests, wetlands, and reefs as a top priority for the next five years. DOI and NOAA conservation grants can be tapped to implement these actions: e.g. funding to establish new Marine Protected Areas or conservation reserves, to reforest watersheds (reducing flooding and sedimentation per plan goals), or to acquire ecologically sensitive lands for permanent protection. Guam should prepare shovel-ready conservation projects (like restoring the Southern Ridge watersheds or expanding the Guam National Wildlife Refuge overlay) and pursue these competitive grants. Success will mean both safeguarding natural heritage and meeting the plan's resilience targets (since healthy ecosystems also protect communities from storms and climate change).

- **Micronesia Challenge and International Partnerships:** Guam is a signatory to the Micronesia Challenge, a regional commitment to conserve at least 30% of near-shore marine resources and 20% of terrestrial resources. Through this initiative, an endowment was established (with contributions from The Nature Conservancy, Global Environment Facility, etc.) to fund conservation in Micronesian island.[20] The Micronesia Conservation Trust (MCT) manages these funds and provides small grants for local conservation projects in member jurisdictions, including Guam. While Guam as a U.S. territory also has U.S. funding sources, the regional partnerships bring additional resources, expertise, and visibility. For instance, MCT or Micronesia Challenge funds could support community-based marine conservation around Guam or environmental education programs. Other philanthropic organizations – e.g. the Waitt Foundation's Blue Prosperity program or Conservation International – may also offer grants or technical support for sustainable fisheries, marine protected areas, and ecotourism development in Guam.

  Relevance to G50SP: The plan's five-year actions around coral reef protection, fisheries management, and expanding conservation areas dovetail with Micronesia Challenge targets. By engaging in these partnerships, Guam can secure philanthropic and international funding to execute projects like reef restoration, endangered species protection, and watershed rehabilitation – all key to the plan's "Thriving Environment" and climate resilience aims. These funds complement U.S. federal grants, filling gaps and enabling innovative community-driven projects that the plan encourages.

[20] https://sdgs.un.org/partnerships/micronesia-challenge#:~:text=Micronesia%20Challenge%20,Environment%20Facility%2C%20with%20a

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- **Local Conservation Financing – Preservation Trust & Green Fees:** Guam has local entities like the Guam Preservation Trust (GPT), which is funded by development permit fees and is tasked with protecting cultural and natural resources. GPT and similar bodies can be channeled to support land conservation (e.g. purchasing land or easements for conservation, or funding historic site restorations that maintain open space). Guam might consider establishing a dedicated Green Fund or Conservation Land Trust for the 2050 Plan, funded through creative means such as a "green fee" on tourists (for example, a $10 environmental fee per visitor that goes into a conservation fund – other island destinations have implemented such fees successfully). A transfer of development rights (TDR) program could also be explored: landowners in designated conservation zones could sell development rights to developers in growth zones, thus compensating them for leaving land undeveloped.

  Relevance to G50SP: These financing mechanisms ensure sustained local funding to "preserve Guam's most important environmental resources". In the near term, a tourism green fee could raise substantial revenue to kickstart priority conservation projects (reef recovery, boonie stomper trail maintenance, etc.) that enhance the very natural assets tourists come to enjoy. Likewise, empowering entities like GPT with more funding will help achieve the plan's land conservation targets within five years – for example, acquiring critical limestone forest tracts or coastline for public benefit. Legislative support for such tools will solidify Guam's commitment to its sustainability vision.

- **Guam Forestry's Forest Stewardship Program:** The DOAG program assists private forest landowners in sustainably managing their land through technical advice and assistance. The program supports landowners in creating Forest Stewardship Plans and can provide help with conservation, reforestation, and forest health activities like invasive species control. This helps improve forest health, protect natural resources like water, and enhance wildlife habitats across the island.

  Relevance to G50SP: Forest Stewardship Plans can help implement watershed protection and restoration policies and habitat protection policies of the plan.

Economic Redevelopment and Tourism

- **U.S. Economic Development Administration (EDA) Grants:** The EDA (within the Dept. of Commerce) offers grants for public infrastructure and economic recovery projects that create jobs. Guam has had success securing EDA funds, particularly for disaster recovery and strategic planning. Notably, in 2021 EDA awarded $2.4 million to the Port Authority of Guam for installation of a disaster-resilient fuel pipeline connectivity between F-1 Fuel Pier and Golf Pier.[21] This project (matched by local funds) improves fuel supply reliability during and after typhoons and supports the broader economy and

[21] https://sdgs.un.org/partnerships/micronesia-challenge#:~:text=Micronesia%20Challenge%20,Environment%20Facility%2C%20with%20a

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military by ensuring port operations can continue in disasters.[22] EDA also provided $1.2M in CARES Act funding in 2020 to Guam for economic recovery planning and diversification efforts.[23] Guam can pursue EDA's Public Works grants for projects like industrial park expansions, vocational training centers, or tourism infrastructure (e.g. pedestrian amenities in Tumon). Additionally, EDA's Travel, Tourism & Outdoor Recreation grants could be targeted for Guam to help rebuild the tourism sector after COVID-19 (for example, funding the new Guam Cultural Center or upgrading parks and attractions).

Relevance to G50SP: The plan highlights the need for a resilient, diversified economy – reducing over-reliance on tourism while strengthening it and leveraging federal investment (like the military buildup) for local benefit. EDA grants can directly fund many 5-year economic priority actions: e.g. constructing a small business incubator, rehabilitating the fishermen's co-op facility to bolster fisheries (food economy), or improving village market infrastructure to promote entrepreneurship. The PAG fuel pipeline **c**onnectivity project also maps to the plan's resilience and economic security goals, demonstrating how "building back better" infrastructure supports both economic and sustainability outcomes. Guam should maintain an active Comprehensive Economic Development Strategy (CEDS) to stay eligible and align EDA proposals with G50SP projects (such as renewable energy tech jobs, agriculture industry development, etc.).

- **Tourism Recovery Funds (ARPA, etc.) and HUD Community Development:** To revitalize tourism and village economies, Guam can utilize funds from pandemic recovery programs. ARPA included State and Local Fiscal Recovery Funds that Guam allocated partly to tourism marketing and facility improvements (for example, enhancing parks or public restrooms in tourist areas). The U.S. Commerce Department's Economic Adjustment Assistance funds (part of ARPA) also had set-asides for tourism-related capital projects. While ARPA funds are no longer available, HUD's Community Development Block Grant (CDBG) and related programs (CDBG-CV for COVID, CDBG-DR for disasters) can be used for economic revitalization of communities. Guam's annual CDBG entitlement (through GHURA) often funds infrastructure in low-income areas – this could include upgrades to public markets, community centers for workforce training, or facade improvements in historic village cores to encourage heritage tourism.

  Relevance to G50SP: A key near-term plan focus is fostering vibrant village centers and supporting tourism at an appropriate scale (especially ecotourism in southern Guam). Using community development funds to beautify villages, improve visitor amenities, and create business opportunities to align perfectly. For instance, a CDBG-funded streetscape project in Hågatña or Inalåhan could stimulate small businesses and

[22] https://www.eda.gov/news/press-release/2021/06/10/us-department-commerce-invests-24-million-build-disaster-resilient#:~:text=the%20damage%20caused%20by%20Typhoon,%E2%80%9D
[23] https://www.eda.gov/archives/2022/news/press-releases/2022/06/21/barrigada-guam.htm#:~:text=U,CARES%20Act%20Recovery%20Assistance

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cultural tourism, fulfilling plan objectives for economic development that preserves culture. Guam's priority to diversify tourism (e.g. sports tourism, cultural festivals, eco-parks) might be jump started by one-time federal funds to build necessary facilities. Coordinating funding sources can ensure that within five years, Guam's tourism is not just back to pre-pandemic levels but is more sustainable and community-oriented per the 2050 vision.

- **Guam Economic Development Authority (GEDA) Incentive Programs:** Guam has local tools to spur private investment in redevelopment and targeted industries. The Qualifying Certificate (QC) program, administered by GEDA, offers tax incentives (like abatements on corporate tax, property tax, or rebates on income taxes) to companies investing in priority areas – tourism facilities, affordable housing, renewable energy, etc. In return, QC beneficiaries often must contribute to community programs. For example, a QC beneficiary (Century Insurance) funded a Southern Sports Grant Program to support youth sports teams.[24] GEDA is leveraging QC contributions for community grants (education, healthcare, cultural projects). Another GEDA initiative is the Guam Opportunity Zone investments: under the 2017 federal Opportunity Zones program, Guam designated 25 zones across the island where investors can get capital gains tax deferral for equity invested in businesses or real estate. This has potential to channel private capital into projects like hotel redevelopment, new industries in Harmon or Tiyan, or renovation of blighted properties in the zones. GEDA provides guidance on Opportunity Zones to attract such investment. Additionally, GEDA can issue industrial revenue bonds or private activity bonds for projects (like solid waste facilities or affordable housing – see Housing section).

  Relevance to G50SP: The plan calls for redevelopment of derelict or underused sites, reinvigoration of village centers, and growth of new sectors (technology, aquaculture, etc.) for a robust economy. QC tax incentives can entice developers to undertake those projects that align with sustainability goals – e.g. a company building a solar farm or an eco-friendly resort could receive QCs (some QCs have been given for renewable energy installations before). Opportunity Zones cover many of Guam's central and southern areas, providing a tool to direct private capital into sustainable development – such as affordable housing in Dededo or a new industry at the Econo industrial park – without direct government spending. Over the next five years, using and perhaps refining these incentive programs will help achieve G50SP economic actions like creating jobs in renewable energy, encouraging investment in village economies, and guiding growth to the right locations (the plan emphasizes incentivizing development in already-built areas versus sprawl).

[24] https://www.investguam.com/geda-grant-programs/#:~:text=Southern%20District%20Youth%20Sports%20Grant,Program

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- **Small Business and Industry Grants/Loans:** Diversifying Guam's economy and supporting local entrepreneurs is a priority in G50SP's early years. Various funding opportunities exist: the Small Business Administration (SBA) offers microloans, 504 loans (for real estate/equipment), and recently, Community Navigator grants to support underserved entrepreneurs. Guam can bolster usage of SBA programs through outreach and potentially create a local matching fund. The U.S. Department of Agriculture Rural Business Grants can also assist businesses in aquaculture, fisheries, or farm product processing – sectors Guam wants to grow. Furthermore, private philanthropic grants (e.g. from the Asia-Pacific Islander Fund or global tech companies) could be sought to fund innovation hubs or digital economy training on Guam – tying into the plan's vision of a more knowledge-based economy (Guam is already working on a digital equity plan and better broadband, supported by federal BEAD funds for broadband expansion).

  Relevance to G50SP: Building local capacity and entrepreneurship – whether in traditional crafts, agriculture, or new fields – improves economic self-sufficiency and equitable growth, which the plan identifies as crucial. Seed funding and technical assistance for small businesses will help realize five-year actions like establishing village markets for local products, increasing participation in the digital economy, and expanding opportunities for Chamorro-owned businesses. Guam can create a "Sustainability Business Challenge" fund (potentially with ARPA or local funds) to grant small amounts to startups or cooperatives that address sustainability challenges (e.g. recycling businesses, sustainable farming ventures, renewable energy startups) – this would directly implement the plan's integrated approach to economic and environmental progress.

- **Tax Increment Financing (TIF) and Special Economic Zones:** For larger redevelopment projects (revitalizing a downtown area or developing an economic zone), Guam could utilize TIF if enabled by law. TIF would allow a portion of new tax revenue generated by a project to be reinvested into infrastructure for that project. For example, designating a TIF district in Hagåtña could help finance street improvements, utilities, and public spaces as new private developments (offices, housing) come in – essentially self-funding the rejuvenation. Tumon could also benefit from such financing to support refurbishment or removal of dilapidated buildings. Guam could also consider special economic zones with tailored incentives – perhaps a "Green Industrial Zone" where sustainable industries (recycling, solar equipment assembly, etc.) get tax breaks and expedited permitting. While not direct funding, these mechanisms make projects financially viable.

  Relevance to G50SP: The plan includes a policy directing collaborative implementation between BSP and the Hagåtña Restoration Authority, which could be used to create an implementation framework for the Hagåtña Master Plan or other village redevelopment as envisioned by G50SP. TIF is commonly used in the States for that purpose and could be replicated. Within five years, Guam could pilot a small TIF for a project like the Guam

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Fisherman's Wharf area or the DFS area redevelopment. The increase in business activity would generate taxes that pay for public improvements – a virtuous cycle that leaves the government with a revitalized economic center at minimal net cost. This aligns with G50SP's goals of efficient land use, economic vitality, and improved community design.

Affordable Housing and Social Equity

- **HUD Formula Grants – HOME, CDBG, ESG:** Guam annually receives funding from HUD aimed at housing and community development. The HOME Investment Partnerships Program (administered by GHURA) provides federal dollars to build, buy, or rehabilitate affordable housing and to provide direct rental assistance. Guam's HOME funds have been used to support developments like GUMA apartments and Habitat for Humanity projects. Community Development Block Grants (CDBG), as mentioned, can also fund housing-related infrastructure (site improvements, clearance of blighted structures, etc.) in lower-income areas. The Emergency Solutions Grants (ESG) help with homelessness prevention, shelter operations, and re-housing – relevant as Guam addresses homelessness and housing insecurity. In addition, Guam has benefited from special HUD allocations: after major typhoons, Congress sometimes awards CDBG-Disaster Recovery (CDBG-DR) funds (e.g. Guam is hoping for CDBG-DR after Typhoon Mawar 2023 to aid long-term housing recovery). Also, HUD's Neighborhood Stabilization Program in the past helped GovGuam acquire and rehab foreclosed homes – a similar approach could be revived to tackle abandoned homes or convert them to affordable units.

  Relevance to G50SP: A core pillar of the plan is "Sustainable, Affordable and Safe Housing" for all Guam residents. HUD funding is the backbone of Guam's affordable housing efforts. In the next five years, Guam can deploy HOME funds to partner with non-profit or private developers on new affordable housing projects (rental apartments or homeownership programs) – directly implementing the plan's call for more housing stock that is resilient and affordable. CDBG can be used to improve infrastructure in public housing neighborhoods or to support facilities like daycare or job training centers that benefit low-income families (promoting social equity). ESG and related funds will help achieve the plan's priority actions on homelessness (e.g. expanding emergency shelter and transitional housing). Maximizing and properly planning the use of these HUD grants each year, in line with G50SP objectives, will ensure steady progress on housing goals.

- **Low-Income Housing Tax Credit (LIHTC) Program:** LIHTC is a critical financing tool for affordable rental housing development. Guam, through GHURA, is allocated LIHTCs which awards developers of qualified affordable housing projects. LIHTC attracts private equity investment by providing investors with a dollar-for-dollar reduction in federal tax liability over 10 years. Guam's first LIHTC projects have already been built – Summer Town Estates in Dededo (240 units for low-income seniors) was financed with LIHTC

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and was the island's first senior LIHTC community.[25] That $64M project was part of a larger revitalization, including a commercial center financed by New Markets Tax Credits.[26] More LIHTC projects (Ironwood Estates, etc.) have followed, delivering hundreds of affordable homes.

Relevance to G50SP: LIHTC is perhaps the most powerful tool Guam has to create new affordable housing at scale, which is a clear five-year priority in the plan (addressing the shortage of decent, affordable units). By supporting GHURA in efficiently allocating credits and helping projects overcome hurdles (like high construction costs), Guam can ensure at least one LIHTC development starts each year. The plan's emphasis on "directing growth to already-urbanized areas" is exemplified by LIHTC projects which often revitalize existing neighborhoods (Summer Town Estates replaced derelict areas in Dededo with vibrant housing for elders). Additionally, the Project-Based Section 8 vouchers can be paired with LIHTC to make units deeply affordable – Guam did this for 112 units at Summer Town (converting tenant vouchers to project-based subsidy). In summary, continued use of LIHTC will be central to meeting G50SP's near-term housing production and rehabilitation targets.

- **American Rescue Plan Housing Programs:** ARPA created several one-time funding streams for housing: the Homeowner Assistance Fund (HAF) to help homeowners avoid foreclosure, the Emergency Rental Assistance (ERA) to help renters in COVID-related distress, and additional HOME-ARP funds specifically to develop housing or services for homelessness. Guam was allocated millions in ERA and has used it to pay rent/utilities for thousands of households during the pandemic. Guam's HAF (administered by GHURA or Dept. of Administration) is helping households catch up on mortgages and property taxes. The HOME-ARP tranche Guam received can be used to create affordable rental units for people experiencing or at risk of homelessness, domestic violence survivors, etc.

∉ **Relevance to G50SP:** While these are short-term programs, they address urgent needs and free up capacity to pursue longer-term solutions. By preventing evictions and foreclosures, ERA and HAF keep people housed – aligning with the plan's social equity commitment to reduce homelessness and housing instability. Moreover, if Guam uses HOME-ARP to say, convert a building into supportive housing or build a small shelter, that directly accomplishes a five-year action the plan likely has (to provide shelter and housing for vulnerable populations). The key is to integrate these ARPA-funded efforts into the broader plan of implementation, ensuring they complement permanent programs like LIHTC or HUD HOME. For example, data from ERA can inform where rental

[25] https://www.housingfinance.com/developments/development-is-the-first-lihtc-community-for-seniors-in-guam_o#:~:text=Summer%20Town%20Estates%20is%20the,on%20the%20island%20of%20Guam
[26] https://www.housingfinance.com/developments/development-is-the-first-lihtc-community-for-seniors-in-guam_o#:~:text=The%20%2464,Credit%20transaction%20on%20the%20island

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assistance or affordable units are most needed for the long run, guiding plan implementation priorities. ARPA funds are not long available for implementation of the Sustainability Plan.

- **Resilience Bonds for Housing and Infrastructure:** Mentioned earlier, Resilience Bonds could be applied in the housing sector as well – for example, to finance retrofits of homes for typhoon resilience (roof reinforcement, shutters, elevation in flood zones). Guam might explore a pilot resilience bond where investors provide capital to strengthen a set of public housing complexes or to build a resilient affordable subdivision, and the "rebate" comes from reduced insurance premiums or disaster recovery costs (this model ties into cat bond insurance mechanisms).[27] Similarly, Green mortgages or loan guarantees for green building could be sought via USDA or DOE to encourage private housing developers to include solar panels, rainwater catchment, etc.

  Relevance to G50SP: Housing must also be safe and climate resilient as per the plan (e.g. built to withstand typhoons and floods). Financing mechanisms that lower the cost of resilient construction will further the plan's goals. If Guam can package a proposal for a resilience bond or find insurers willing to partner, it could unlock private financing to harden hundreds of homes in the next few years – thus meeting hazard mitigation and housing quality targets together. While innovative, these approaches show promise in other regions and could be tailored to Guam's needs (for instance, a Forest Resilience Bond model has been used in California to fund wildfire risk reduction[28] – Guam could adapt this concept for watershed protection to safeguard villages from landslides, flooding, and wildfires).

Natural Hazards Mitigation

- **FEMA Hazard Mitigation Grant Program (HMGP):** After federally declared disasters, FEMA provides HMGP funds to the affected area equal to a percentage of the disaster recovery costs, for projects that reduce future risk. Typhoon Mawar (2023) triggered significant HMGP eligibility for Guam – potentially tens of millions of dollars dedicated to mitigation projects. These funds can be used for projects like hardening public buildings (roof upgrades, generators), flood mitigation (culvert upgrades, floodwalls), undergrounding utilities, and even home retrofits. In the past, HMGP was used in Guam for things like wind-resistant roofs on schools and storm shutters for public facilities.

  Relevance to G50SP: The plan emphasizes protecting communities from typhoons, flooding, and other natural hazards in the near term – e.g. fortifying housing, improving drainage, and safeguarding critical infrastructure. HMGP is a prime source to fund these

[27] https://www.brookings.edu/articles/financing-infrastructure-through-resilience-bonds/#:~:text=One%20way%20for%20cash,out%20how%20these%20would%20work
[28] https://www.blueforest.org/finance/forest-resilience-bond/#:~:text=Forest%20Resilience%20Bond%20%28FRB%29%20,the%20costs%20of%20forest

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protective measures. For instance, a G50SP five-year action to “assess and improve drainage systems to address peak storm events" could translate into an HMGP-funded project to rebuild culverts and storm drains in an often-flooded village. Similarly, if the plan calls for creating emergency shelters or safe rooms, HMGP can fund new resilient community centers or the hardening of school gyms to serve as shelters. It’s crucial that Guam integrates the plan’s mitigation priorities into the formal Hazard Mitigation Plan updates, so they are eligible for HMGP. With Mawar fresh in memory, this is a rare window to secure large mitigation investments that directly fulfill G50SP resilience objectives.

- **FEMA Building Resilient Infrastructure & Communities (BRIC) Program:** BRIC is FEMA’s nationwide competitive grant program (replacing earlier Pre-Disaster Mitigation grants) aimed at innovative, large-scale resilience projects. Each year, billions are available, and small states/territories have set asides (Guam can get an allocation or compete in the national pool). BRIC funding can cover projects like shoreline protection, floodplain restoration, seismic retrofits, and utility resiliency. Guam has applied for BRIC technical assistance and potential projects such as a proposal to develop a comprehensive underground utility plan and to construct nature-based coastal defenses could be strong candidates.

  Relevance to G50SP: Many big-ticket resiliency projects in the plan – such as “promote nature-based shoreline protection” to guard against coastal erosion or establishing resilience hubs with solar microgrids in each village – could be funded through BRIC. Given Guam’s exposure, a BRIC grant could be sought to, say, build a pilot living shoreline (mangrove and reef restoration combined with berms) to protect a flood-prone coastal community, achieving a plan action for ecosystem-based adaptation. Guam should develop competitive applications by packaging multiple benefits (e.g. ecological and societal) as BRIC values innovative, cost-effective risk reduction. Over five years, even one major BRIC award (potentially $10–50M) would dramatically advance Guam’s resilience agenda as laid out in G50SP. **As of this writing, the availability of BRIC funding is unclear.**

- **NOAA and USGS Grants – Coastal Resilience and Hazard Research:** NOAA administers programs like the National Coastal Resilience Fund in partnership with National Fish and Wildlife Foundation (NFWF) and Regional Coastal Resilience Grants, which can support projects in Guam such as coral reef restoration for wave attenuation, or developing comprehensive flooding models. Guam’s reefs are natural breakwaters; restoring them has hazard mitigation value. NOAA also supports the Pacific Islands Climate Adaptation Science Center (which Guam partners with) for research and tools – these can indirectly fund planning that informs on-the-ground actions (e.g. updated flood maps, coastal erosion monitoring). The USGS and FEMA have programs for earthquake and tsunami preparedness (Guam lies in a seismic zone). Grants for early warning systems, hazard

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education, and mapping high-risk areas (landslide susceptibility maps, etc.) all contribute to mitigation.

Relevance to G50SP: The plan calls for science-based policies and adaptive management. Using NOAA and USGS resources will help Guam implement smart hazard mitigation strategies. For example, a five-year action to "protect new development from coastal storms and hazards" can be executed by first having good coastal inundation models – something NOAA grants could fund – and then using that data to shape zoning or construction standards. Additionally, NOAA's coral and fisheries grants can be leveraged to achieve both conservation and hazard mitigation (healthy reefs and mangroves = natural storm buffers, as noted in the plan). Guam should continue active participation in regional resilience networks (e.g. Pacific Risk Management Ohana) to access these federal resilience initiatives.

- **Insurance and Catastrophe Bonds:** In terms of financial mechanisms, Guam can explore transferring risk and financing recovery via insurance tools. Parametric insurance (paying out a set amount when a parameter like wind speed or rainfall threshold is exceeded in a storm) could provide immediate funds for disaster response and rebuilding, supplementing FEMA. Some Caribbean islands have joined multi-island catastrophe insurance pools – Guam might coordinate with other territories for a similar approach or join an existing pool. Meanwhile, Catastrophe Bonds (or resilience bonds, as discussed) could be issued by insurance or reinsurance markets with payouts to Guam if a disaster occurs, offsetting public costs. While these don't fund mitigation projects directly, they ensure financial resilience and could free up budget to invest in prevention (knowing that post-disaster funds are secured).

  Relevance to G50SP: Financial resilience is part of community resilience. The plan's adaptive management framework likely includes securing funding for both proactive and reactive needs. By the end of five years, Guam could aim to have a more robust disaster risk financing plan – for instance, setting aside monies in a Resilience Bond structure that not only provides insurance but also rebate premiums into mitigation projects (the resilience bond concept).[29] Implementing such innovative financing would strengthen Guam's ability to bounce back from hazards, which is a cornerstone of the sustainability plan. It would also complement physical mitigation efforts by providing quick capital for recovery, thus shortening downtime for the economy and society after an event.

- **Local Mitigation Funds – Hazard Mitigation Fee or Trust Fund:** Guam might consider establishing a local hazard mitigation trust fund, possibly funded by a small surcharge on property insurance or a fraction of real property taxes. This fund could accumulate and then be used to match federal grants or fund smaller-scale mitigation (like clearing

[29] https://www.brookings.edu/articles/financing-infrastructure-through-resilience-bonds/#:~:text=One%20way%20for%20cash,out%20how%20these%20would%20work

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storm drains annually, maintaining sirens, trimming trees near power lines). Another idea is implementing developer requirements for mitigation – for instance, requiring large developments to contribute to a "Hazard Mitigation Fund" or directly install certain protective infrastructure (retention basins, fire breaks) as part of their permit.

Relevance to G50SP: Making resilience a routine part of development and budgeting will ensure the plan's safety goals are met continually. A local mitigation fund could ensure that even if federal funds ebb, Guam can continue upgrading infrastructure (perhaps one village flood project per year, etc.). The five-year period could be used to seed such a fund (maybe with an initial injection from ARPA or a one-time legislative appropriation, as a legacy of the plan's launch). This creates a sustainable financing loop for hazard mitigation that lasts well beyond the initial plan implementation period.

Climate Adaptation and Community Resilience

- **EPA Climate Pollution Reduction Grants (CPRG):** The EPA's CPRG program (funded by the Inflation Reduction Act) provided planning grants to states and territories to develop climate action plans. Guam received a $1M planning grant and produced the Guam Priority Climate Action Plan (PCAP) 2024, which outlines strategies to cut greenhouse gases and adapt to climate impacts.[30] Guam will be eligible for implementation grants from the $4.6B pot of CPRG competitive funds in 2024–2025. These could finance projects that reduce emissions or increase resilience – for example, electrifying government vehicle fleets, establishing composting and waste diversion programs, or creating urban green spaces to mitigate heat.

  Relevance to G50SP: The PCAP complements the G50SP by focusing on near-term climate action. CPRG implementation funds can directly support G50SP five-year actions, such as community education on climate resilience and demonstration projects for renewable energy and sustainable agriculture (all identified in the plan's climate policies). By aligning PCAP priorities with G50SP (which has been done through BSP's coordination), Guam can use EPA funds to kick-start high-impact projects like a pilot energy-efficient affordable housing development or a methane capture project at the landfill – achieving mitigation and adaptation synergy.

- **Community Resilience Hubs – Philanthropic and Federal Support:** A big focus in resilience planning is establishing resilience hubs – community centers that can serve residents year-round (providing services, workshops, internet access, etc.) and also support the community during disasters (as shelters, distribution points, charging stations). Guam could seek funding for resilience hubs from philanthropic sources (e.g. the Rockefeller Foundation has supported Resilient Cities initiatives; the American Red

[30] https://www.epa.gov/system/files/documents/2024-04/guam-pcap.pdf#:~:text=Guam%E2%80%99s%20Priority%20Climate%20Action%20Plan,and%20the%20University%20of%20Guam

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Cross and other NGOs have grants for preparedness). Federal programs such as FEMA BRIC (mentioned) or HUD could also fund multi-purpose community safe centers. For example, a new village resilience center could be funded by a combination of CDBG (for the community center aspect) and FEMA funds (for the safe room aspect).

Relevance to G50SP: Strengthening community resilience and cohesion is woven throughout the plan – it calls for "full community education and engagement effort around climate resilience" and improving public health and safety infrastructure. Establishing resilience hubs in vulnerable villages within five years would be a tangible accomplishment of those goals. They would provide venues for climate education (as the plan mandates) and improve emergency preparedness. By leveraging a mix of funding – perhaps a grant from a foundation that focuses on climate justice, plus federal funds – Guam can pilot at least one or two resilience hubs (e.g. refurbishing a community center with solar + battery, communications equipment, and supplies). This also demonstrates an equitable approach, bringing resources to underserved communities, aligning with the plan's social equity principles.

- **Nature-Based Adaptation Funding:** Many adaptation strategies in Guam will rely on restoring natural systems (reefs, wetlands, forests). We've touched on conservation funding, but specifically for climate adaptation, there are emerging sources: The Resilient America Program (Administered by NOAA) and the Climate Ready Fisheries initiative can fund projects that help ecosystems and dependent communities adapt (such as helping fishing communities adjust to coral reef changes). The Global Environment Facility (GEF) and Green Climate Fund typically fund developing nations, but Guam (through regional partnerships like the Micronesia Challenge) sometimes indirectly benefits from such funds for regional resilience-building that includes Guam's ecosystems.[31] Even the U.S. Army Corps of Engineers has authority for ecosystem restoration projects (e.g. under their Continuing Authorities Program, Section 1135 or 206 can fund restoration that also provides storm risk reduction). Guam could partner with USACE for a small coastal restoration project (which they largely fund).

  Relevance to G50SP: Nature-based solutions are explicitly favored in the plan (e.g. using "green infrastructure in urban areas" and protecting reefs and wetlands as buffers). Capitalizing on these funding streams will allow Guam to implement, in the next five years, projects like planting mangroves in suitable coastal areas, stabilizing shorelines with vegetation, and enhancing reef resilience (through coral gardening or reducing land-based pollution). These efforts protect communities from storm surge and erosion, thus meeting adaptation goals. Additionally, they often have co-benefits for tourism (healthy reefs) and fisheries – tying back to economic and food security aspects of the sustainability plan.

[31] https://sdgs.un.org/partnerships/micronesia-challenge#:~:text=Micronesia%20Challenge%20,Environment%20Facility%2C%20with%20a

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- **Local Climate Resilience Bonds or Fees:** Finally, Guam can invest in resilience through local finance: issuing a Guam Resilience Bond (a government bond dedicated to funding climate adaptation projects). This could be structured as a general obligation or revenue bond and labeled as a resilience bond to attract impact investors. The proceeds could fund a bundle of projects – for example, flood mitigation in northern Guam and drought mitigation (water reuse) in southern Guam. Another approach is a modest "Climate Adaptation Fee" on certain activities – for example, a levy on quarried aggregates or carbon-intensive products that goes into a climate fund. While novel, these could generate local matching funds to pair with federal grants.

  Relevance to G50SP: Many of the plan's community resilience projects will require matching funds or partial local funding. Establishing a dedicated resilience fund via bonds or fees ensures Guam has "skin in the game" and can fully execute projects instead of leaving federal money on the table for lack of match. It also institutionalizes the commitment to sustainability beyond political cycles. Within five years, Guam could float its first resilience bond to finance, for instance, the overhaul of the island-wide stormwater management system (a multi-year plan the bond could kickstart). The investment now would pay off by reducing future disaster costs – a point that can be communicated to the public as well as investors (some resilience bonds globally have quantified the future savings from risk reduction).[32] Aligning financial policy with climate resilience in this way would be a hallmark achievement of G50SP implementation.

Mapping Funding to G50SP Priority Actions:

The above funding sources and financing tools correspond directly to the Guåhan 2050 Sustainability Plan's five-year priority actions across all sectors. For instance, federal infrastructure funds (BIL, FEMA) would enable upgrading wastewater systems and eliminating septic tanks in critical aquifer zones as called for in the plan. Clean energy grants and private solar investments could support the plan's push for renewable energy in new development and grid resilience. Conservation and agriculture programs fund watershed protection, reforestation, and sustainable farming initiatives that the plan identifies for food security and climate resilience. Economic and community development funds (EDA, HUD, QC incentives) help realize revitalized village centers, diverse tourism offerings, and new economic opportunities in line with G50SP's Prosperous Economy and Vibrant Communities elements. Housing and social programs (HUD, LIHTC, ARPA) are mapped to building affordable, typhoon-safe housing and reducing homelessness, meeting the plan's goals for equity and safety. Hazard mitigation and climate funds (FEMA BRIC/HMGP, NOAA, CPRG) address coastal protection, flood control, and community preparedness, which feature prominently in the plan's Climate Resilience and Safety priorities.

[32] https://www.brookings.edu/articles/financing-infrastructure-through-resilience-bonds/#:~:text=The%20idea%20is%20to%20link,only%20payout%20when%20disasters%20strike

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By cross-referencing the G50SP action items with these funding opportunities, Guam's Bureau of Statistics and Plans and partner agencies can develop a financing roadmap for each priority. For example, if a five-year action is to "Establish a nature-based coastal defense pilot project," the roadmap might pair NOAA resilience grant funding with local match from a tourist green fee. If another action is "Construct 100 new affordable housing units," the roadmap could combine LIHTC equity, HOME funds, and perhaps an EDA economic adjustment grant if the project also catalyzes construction jobs. This strategic layering of funding will be crucial.

Conclusion and Steps to Secure Funding: The path to Guam's sustainable 2050 runs through effective utilization of diverse funding sources – federal, territorial, private, and innovative financing mechanisms. Fortunately, as detailed above, Guam has access to many programs with a demonstrated track record (BIL, ARPA, DoD/OIA, HUD, USDA, EPA, etc.) and new emerging funds targeted at climate adaptation and infrastructure renewal. Coupled with local reforms (impact fees, green bonds, QC incentives), these resources equip Guam to kick-start the Sustainability Plan's priority projects immediately.

By mapping each dollar to the plan's action matrix, GovGuam can ensure that every grant or investment directly advances a G50SP goal, whether it's a solar array on a school, a coral nursery in the bay, a farmers' market in a village, or a fiber-optic broadband link to rural homes. The next five years present an unprecedented opportunity to leverage funding for transformative change – aligning policy vision with financing. In doing so, Guam will make tangible progress toward the 2050 vision of a prosperous, healthy, and climate-resilient island community, setting a model for sustainability in the Pacific and beyond. Implementing a financing strategy will be critical to success, and involves at least four steps:

1. **Identify Eligible Programs:** Align G50SP initiatives with the objectives of available federal and local funding programs such as those discussed above. **As noted in places, the federal funding landscape has changed dramatically since the drafting of this plan and will need to be tracked closely going forward.**
2. **Develop Comprehensive Proposals:** Prepare detailed applications that clearly articulate project goals, benefits, and alignment with funding criteria.
3. **Engage Stakeholders:** Collaborate with community organizations, private sector partners, and other stakeholders to build support and strengthen applications.
4. **Monitor and Comply:** Ensure adherence to grant requirements, timelines, and reporting obligations to maintain eligibility for future funding. This may be facilitated by improved internal management of funding, such as centralized oversight, monitoring, and transparent reporting. A framework for ongoing evaluation could also be developed.

Capital Improvements for Sustainability

The action plan contemplates creating an integrated financing strategy for the Guåhan 2050 Sustainability Plan that would involve all relevant Government of Guam agencies and other entities. This is important to effect maximum leverage of existing funding opportunities focused

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on the shared objectives of the G50SP, especially for capital improvements and larger investments. This ongoing collaboration will be critical as new funding opportunities emerge.

For example, in December 2024, Guam secured over $500 million in federal assistance through the Community Development Block Grant-Disaster Recovery (CDBG-DR) program to aid in recovery from Typhoon Mawar. The allocation includes $435.5 million for addressing unmet needs and $65.3 million dedicated to mitigation efforts aimed at enhancing the island's resilience to future disasters (CDBG, 2025)

The Guam Housing and Urban Renewal Authority (GHURA) is tasked with administering these funds. Their responsibilities encompass distributing aid to affected families, overseeing infrastructure projects, and implementing mitigation strategies. To manage this substantial influx of funds, GHURA plans to hire 40 temporary, full-time employees. Additionally, approximately $25 million from the total allocation is earmarked for administrative costs associated with managing the recovery efforts.[33]

The CDBG-DR funds are versatile and can be allocated toward various initiatives, including:

- **Housing Reconstruction:** Repairing and rebuilding homes damaged by Typhoon Mawar.
- **Infrastructure Enhancement:** Upgrading public facilities such as sports complexes and community centers.
- **Economic Revitalization:** Supporting local businesses and stimulating economic growth in affected areas.
- **Disaster Mitigation:** Implementing projects designed to reduce the impact of future typhoons and other natural disasters.

While the primary focus of these funds is disaster recovery, there is potential for alignment with the objectives of the Guåhan 2050 Sustainability Plan (G2050SP). The G2050SP outlines a vision for Guam's sustainable development, emphasizing areas such as:

- **Sustainable Growth:** Managing population growth and development to ensure environmental preservation.
- **Affordable and Safe Housing:** Providing housing that is both affordable and resilient to natural disasters.
- **Prosperous Economy:** Diversifying Guam's economy to reduce reliance on tourism and military spending.
- **Thriving Environment:** Protecting natural resources and promoting environmental conservation.
- **Vibrant Culture:** Preserving and promoting CHamoru culture and heritage.

By strategically allocating portions of the CDBG-DR funds, GHURA can support initiatives that not only address immediate recovery needs but also contribute to the long-term sustainability

[33]https://www.facebook.com/story.php?id=100064441793883&story_fbid=1063539445804105&utm_source.

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goals outlined in the G2050SP. For instance, investing in resilient infrastructure and housing can mitigate future disaster impacts, aligning with the plan's emphasis on sustainable and safe housing. Furthermore, economic revitalization efforts can be directed toward diversifying Guam's economy, fostering resilience against external shocks.

To maximize the synergy between disaster recovery efforts and sustainability objectives, it is crucial for GHURA and other stakeholders to coordinate closely with the Bureau of Statistics and Plans (BSP), which oversees the implementation of the G2050SP. Such collaboration can ensure that recovery projects are designed and executed in a manner that advances Guam's long-term sustainability vision.

8.4. Plan Implementation Monitoring and Evaluation

Ongoing monitoring and evaluation are essential to ensuring that the Guåhan 2050 Sustainability Plan (G50SP) remains a living, responsive document that drives real progress. The Bureau of Statistics and Plans (BSP), as the lead coordinating agency, will oversee a structured system of performance tracking to assess implementation of plan actions, measure outcomes, and adapt strategies as needed.

8.4.1. Annual Reports and Dashboards

Progress will be tracked through publicly available annual implementation reports, which will summarize agency activities, completed projects, and key performance indicators for each of the plan’s thematic areas. The BSP Director will provide updates to the Governor for consideration in the Annual State of the Island Address. These reports will be informed by data collected from lead and partner agencies and will help evaluate whether actions are being completed on schedule. To support transparency and community engagement, BSP will also maintain an interactive online dashboard with metrics updated in real time or annually where feasible. This dashboard will display performance indicators such as new affordable housing units built, renewable energy installed, or miles of sewer lines upgraded—providing a clear view of Guam’s progress toward sustainability goals.

8.4.2. Scheduled Plan Reviews and Updates

To ensure long-term relevance, the G50SP will undergo a formal review and update every five years, in coordination with government agencies and public stakeholders. These reviews will re-evaluate goals, policies, and priorities based on progress achieved, changes in conditions, and emerging needs. A more comprehensive update may occur at the 10-year mark (2035), including new land use and development forecasts. BSP will prepare a status report as part of each five-year review to inform adjustments to the implementation strategy. Consider updating every three years if additional funding is available.

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8.4.3. Adaptive Management and Course Correction

If monitoring shows that certain strategies are underperforming or that new opportunities or risks have emerged, the plan allows for adaptive management. This includes revising implementation actions, reallocating resources, and modifying timelines where necessary. The annual reporting cycle and agency coordination mechanisms—such as the Implementation Task Force—will serve as forums for evaluating challenges, sharing best practices, and revising courses when needed. By linking plan implementation to data, community input, and agency performance, the monitoring system will help ensure that G50SP remains responsive, effective, and aligned with the island's evolving needs.

8.5. Public Engagement and Transparency

The success of the Guåhan 2050 Sustainability Plan (G50SP) depends not only on government leadership and interagency coordination, but also on sustained and meaningful community engagement. The plan's core principles of Equity and Engagement emphasize that all residents of Guam—across all ages, sectors, and regions—should have opportunities to help shape and sustain the island's future. This involvement must extend well beyond the planning phase and be embedded throughout implementation.

8.5.1. Community-Based Implementation and Feedback Loops

The Bureau of Statistics and Plans (BSP), in collaboration with agency partners, village mayors, and community organizations, will continue to engage the public through ongoing outreach, consultation, and education efforts. These may include regular community briefings, stakeholder forums, village-based implementation workshops, and issue-focused listening sessions. Residents will help identify local priorities, monitor progress, and refine implementation strategies. Public input will be incorporated into annual implementation reports and five-year performance reviews, ensuring the plan remains grounded in community values and everyday experiences.

As a trusted convener and catalyst, Guam Green Growth (G3) will serve as a key partner in these engagement efforts. G3's community-based initiatives, circular economy programs, and education and innovation platforms offer dynamic opportunities for public participation. Through the G3 Conservation Corps and related workforce development programs, G# Circular Economy Makerspace and Innovation Hub, and the G3 Action Framework and Dashboard, G3 can help bridge grassroots knowledge with institutional planning, fostering broad-based, community-driven implementation of G50SP.

8.5.2. Public Access to Progress and Performance

Transparency is essential to building trust and maintaining momentum. BSP will ensure open public access to implementation materials, including project updates, funding information, performance dashboards, and meeting summaries via an interactive online platform. Annual

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progress reports and five-year updates will clearly communicate the status of plan actions and identify emerging challenges or opportunities.

G3's communications and outreach infrastructure can support this work by helping translate technical data into community-relevant formats. Public art installations, social media campaigns, student-led storytelling, and accessible data visualizations will all play a role in bringing plan performance to life and keeping the public informed. Through collaboration with G3, BSP can broaden the reach and accessibility of sustainability communications, especially youth, schools, and underrepresented communities.

8.5.3. Education, Youth Involvement, and Co-Design Opportunities

A thriving culture of sustainability must be nurtured across generations. The plan prioritizes outreach to schools, universities, and youth-serving organizations to build knowledge, skills, and shared ownership of Guam's sustainable future. Young people will be engaged through civic learning projects, innovation challenges, and resilience planning activities that connect local priorities with global goals.

Through the G3 Education, Capable & Compassionate Island working group, Guam Green Growth provides a strong platform for engaging students, young professionals, and entrepreneurs in co-creating sustainability solutions. G3's Science, Technology, Engineering, Arts, and Mathematics (STEAM)-based learning, creative challenges, and career development programs align directly with the plan's goals to embed sustainability across education and economic development systems. Public agencies will also create co-design opportunities where residents can actively participate in shaping projects such as community parks, resilience hubs, village-scale planning, and cultural preservation programs.

8.5.4. Institutionalizing Engagement

Public engagement must not only be meaningful—it must be consistent and embedded in governance. Through the Sustainability Plan Implementation Task Force, agency working groups, and interagency coordination structures, mechanisms will be developed to institutionalize engagement in plan implementation. These may include community advisory boards, standing public comment opportunities, village planning liaisons, and participatory budgeting pilots that allocate funds based on resident input.

With its cross-sector reach and commitment to local empowerment, Guam Green Growth will play a vital supporting role in sustaining public participation, civic learning, and innovation throughout the lifespan of the plan. By cultivating shared ownership, transparency, and collaboration, G50SP aims to model inclusive governance that delivers real, lasting change. A sustainable, resilient, and equitable Guam will only be achieved with the full engagement of its people—and through partnerships that build capacity and shared purpose from the ground up.

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Glossary of Key Terms

CHamoru
The Indigenous people of Guam and the Mariana Islands, who have inhabited the archipelago for over 4,000 years. The CHamoru worldview emphasizes harmony with nature, communal land stewardship, and the cultural identity of the taotao tano'—"people of the land."

CHamoru Land Trust Commission (CLTC)
Established by Public Law 22-18 in 1975, the CLTC manages public lands designated as CHamoru homelands, leasing parcels for residential, agricultural, and commercial uses to promote cultural and economic self-sufficiency for CHamoru beneficiaries.

Eco-Cultural Tourism
A sustainable form of tourism that integrates environmental stewardship with the celebration of CHamoru and Pacific heritage. It supports education, local economies, and preservation of natural and historic sites while preventing overdevelopment.

Guåhan
The CHamoru name for Guam, used to emphasize Indigenous identity, stewardship, and connection to land and sea. The Guåhan 2050 Sustainability Plan adopts this name to reflect cultural grounding in planning practice.

Guam Hazard Mitigation Plan (GHMP)
Guam's territorial framework for assessing and reducing risks from natural hazards, including typhoons, flooding, and sea-level rise. It supports disaster resilience through coordinated infrastructure and community planning.

Håfa Adai Spirit
The cultural ethos of hospitality and friendliness that defines Guam's social character and tourism branding. It embodies respect, generosity, and a welcoming attitude toward residents and visitors.

Inafa'maolek
A central CHamoru value meaning "to make good." It reflects harmony, interdependence, and mutual respect among individuals and within the community—an ethical foundation for social and environmental balance.

Land Access and Readiness Overlay Zone
A proposed zoning designation to expedite rezoning, rights-of-way, and infrastructure access for ancestral and trust lands while ensuring that development maintains cultural integrity and stewardship values.

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Latte Stones
Megalithic stone pillars unique to the Marianas Islands that served as foundations for ancient CHamoru houses. They symbolize strength, ancestry, and the enduring cultural presence of the CHamoru people.

Northern Guam Lens Aquifer (NGLA)
The island's principal source of fresh groundwater, located beneath the northern limestone plateau. Protected through land-use controls and wastewater regulations to maintain long-term water quality.

Resource Conservation Zone (RC)
A zoning category for sensitive lands and waters designated for permanent protection under conservation management, often overlapping with federal holdings such as USFWS refuges or National Park Service lands.

Sustainable Communities
Urban and village developments that integrate housing, infrastructure, mobility, and open space in a way that promotes resilience, equity, environmental health, and community cohesion.

Sustainability
The balanced integration of economic growth, environmental protection, and cultural preservation to ensure that the needs of the present are met without compromising those of future generations.

Village Centers
Mixed-use community hubs that reflect traditional CHamoru settlement patterns by clustering housing, commerce, public facilities, and cultural spaces to strengthen social ties and reduce sprawl.

Village Sustainability Policies (VS)
Localized planning directives within each village that guide sustainable land use, infrastructure, housing, and environmental stewardship consistent with the island-wide sustainability goals.

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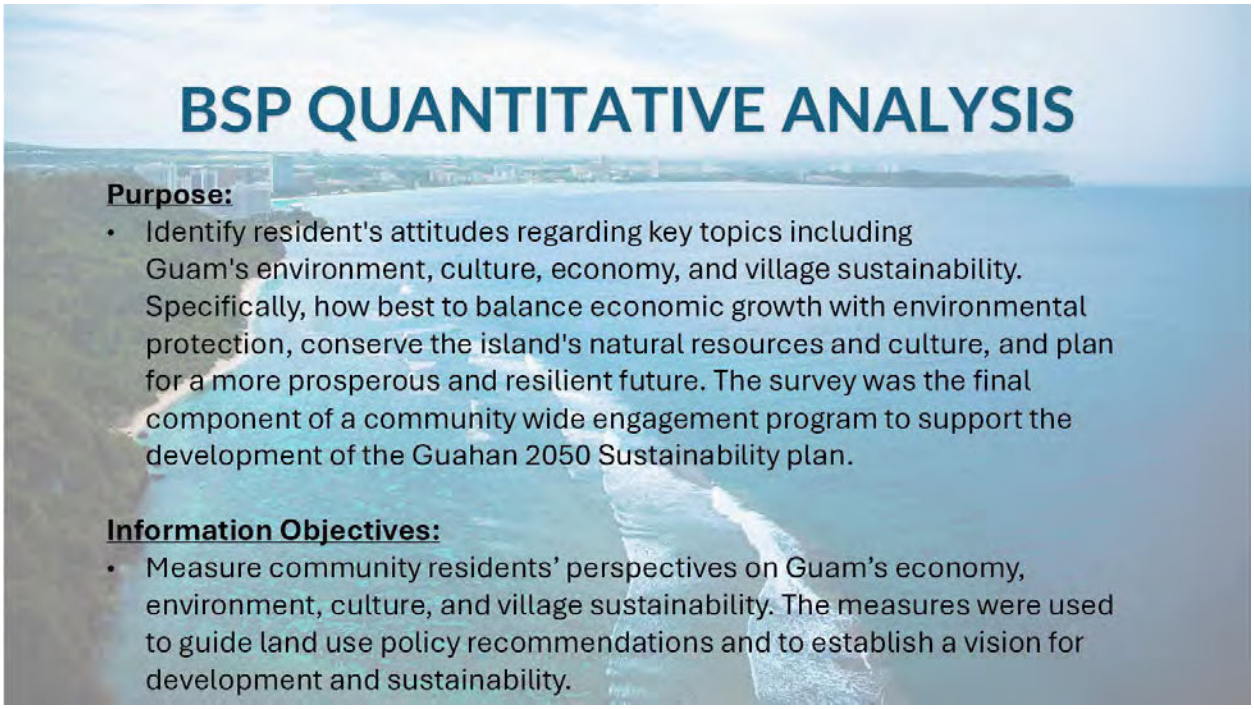
Appendix A: **Residential Survey Results**





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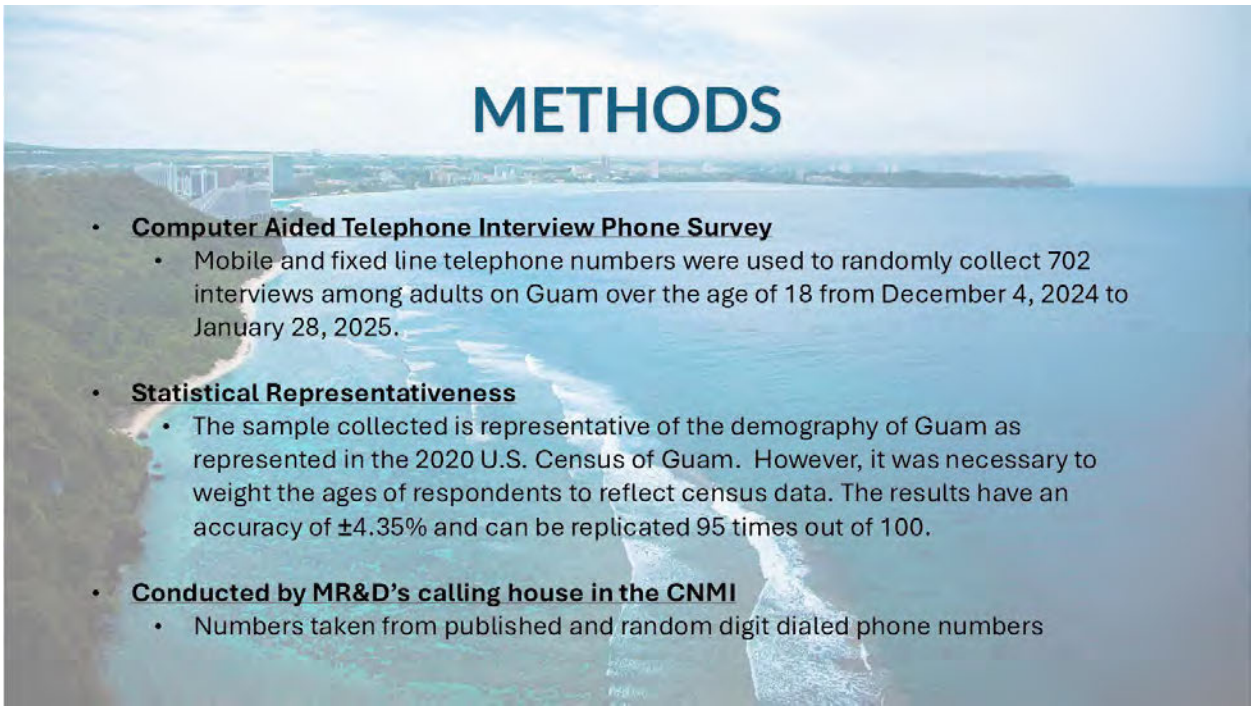



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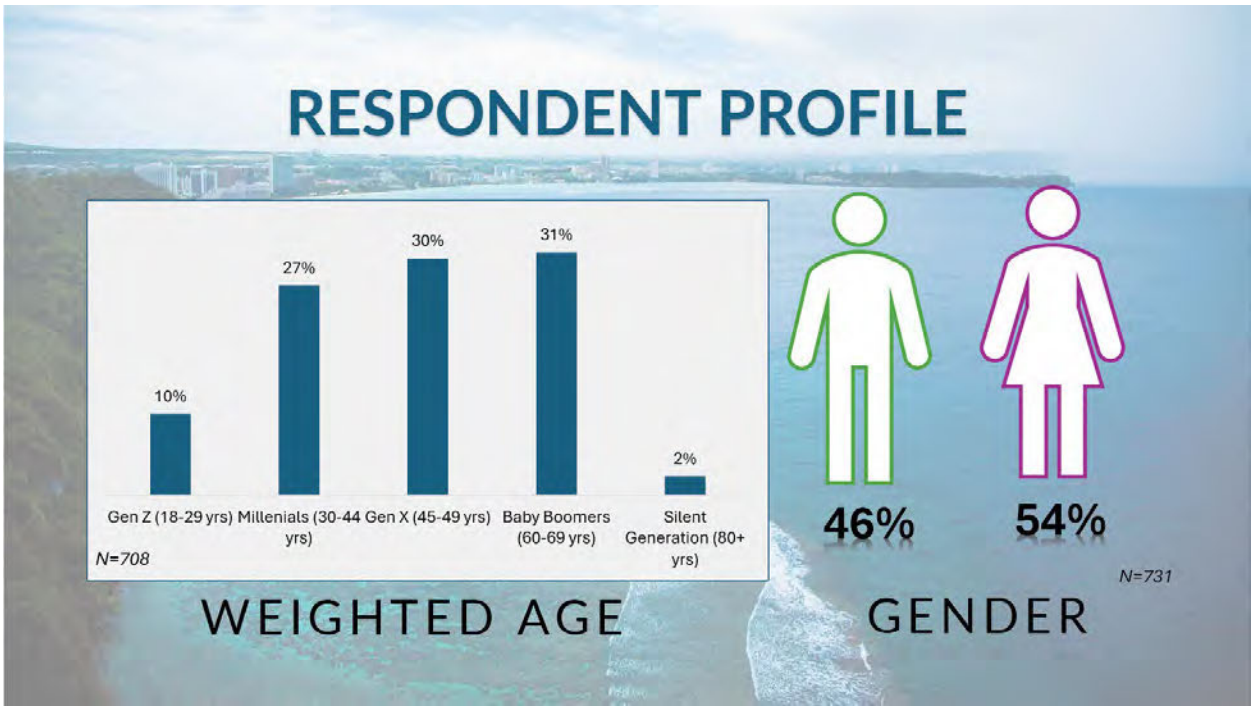

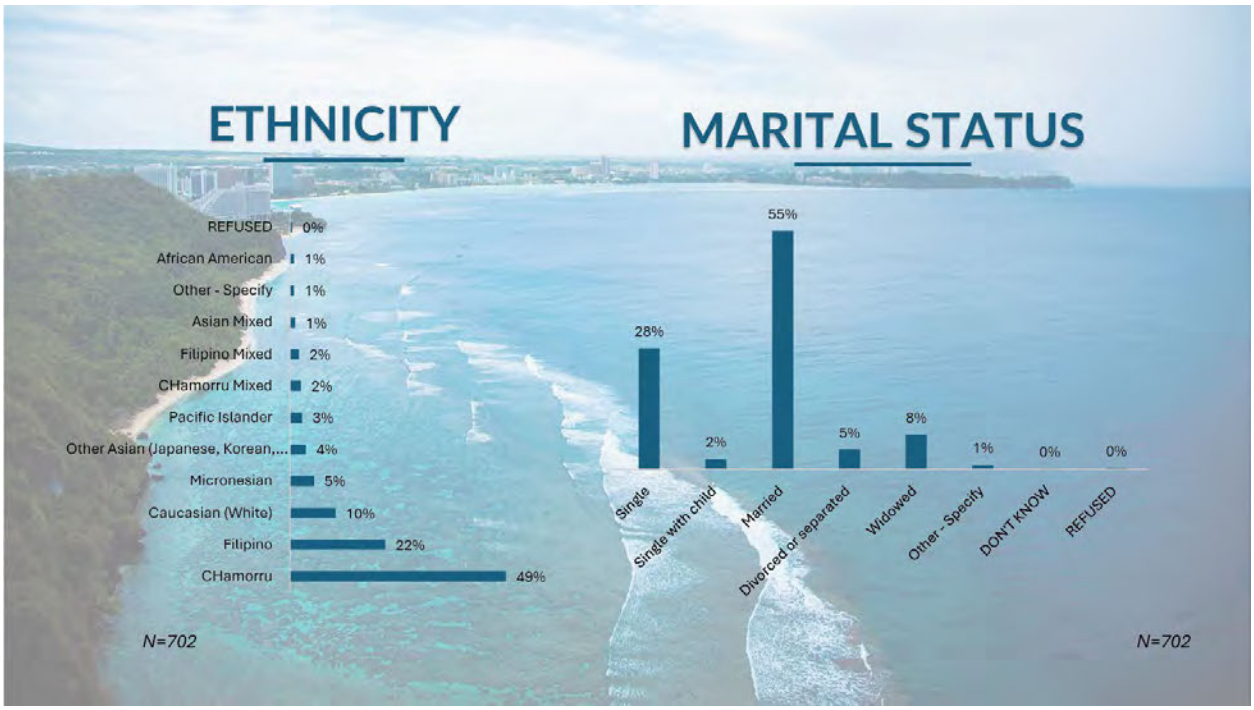

APPENDIX A- 3

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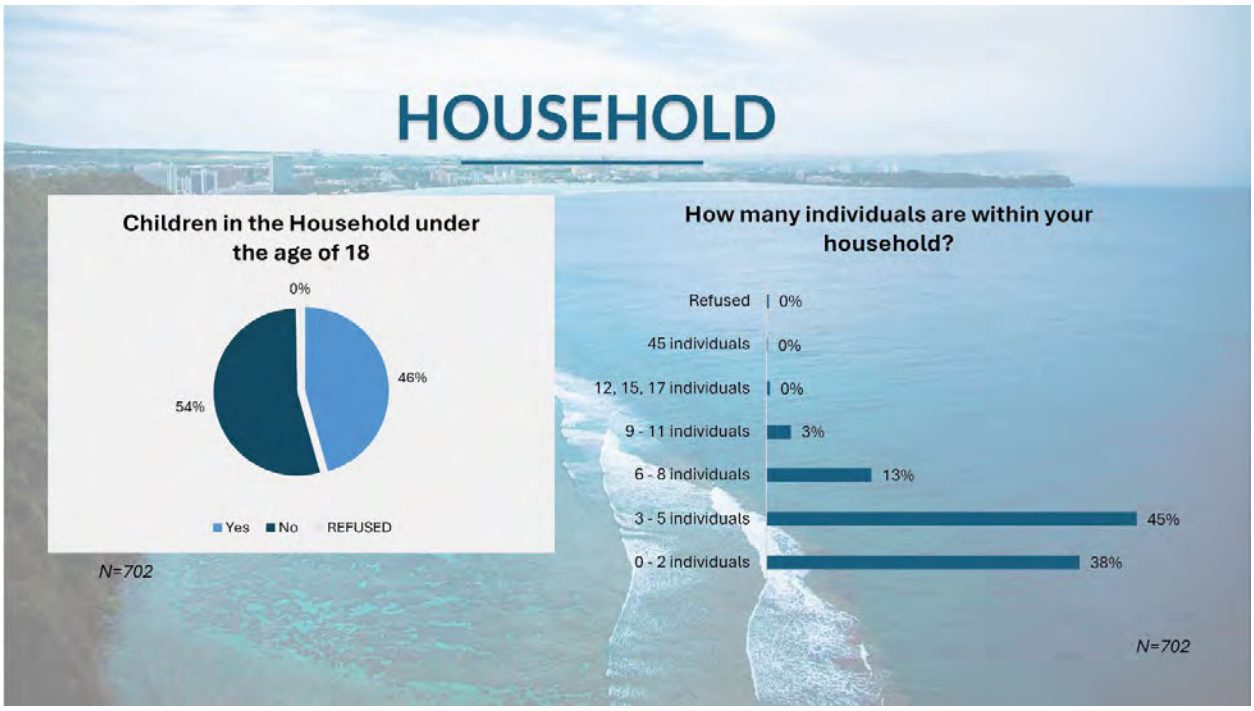



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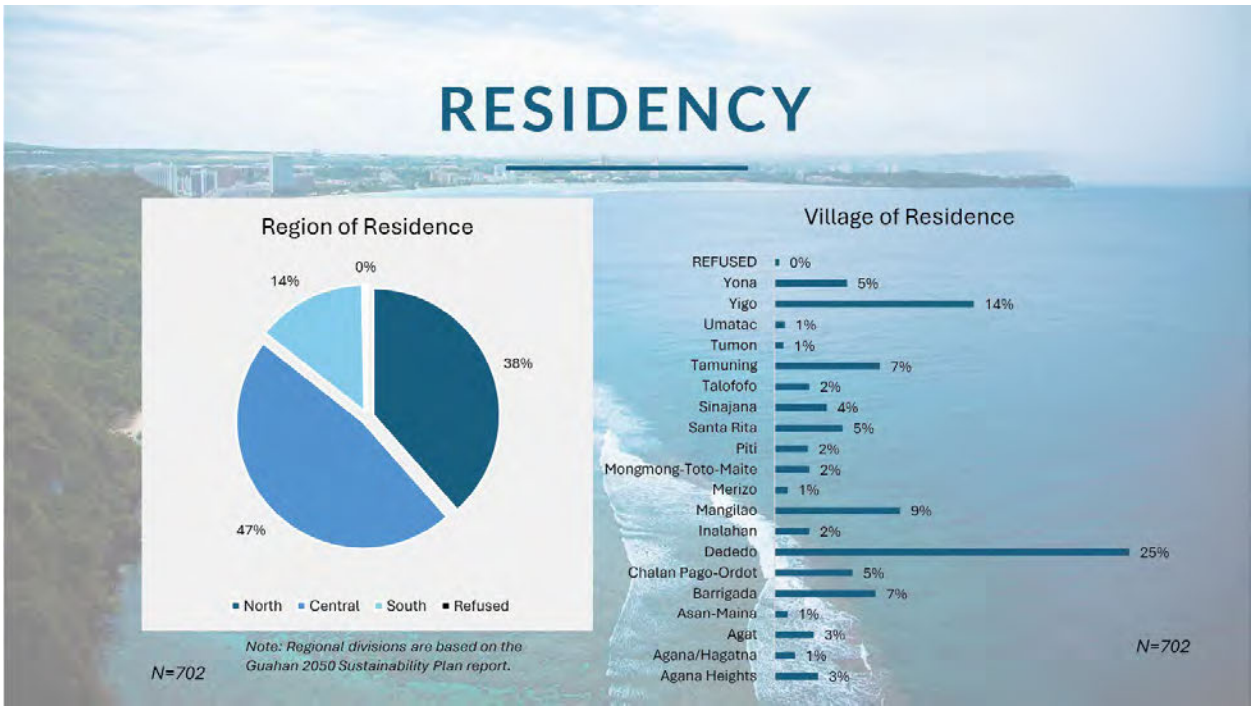

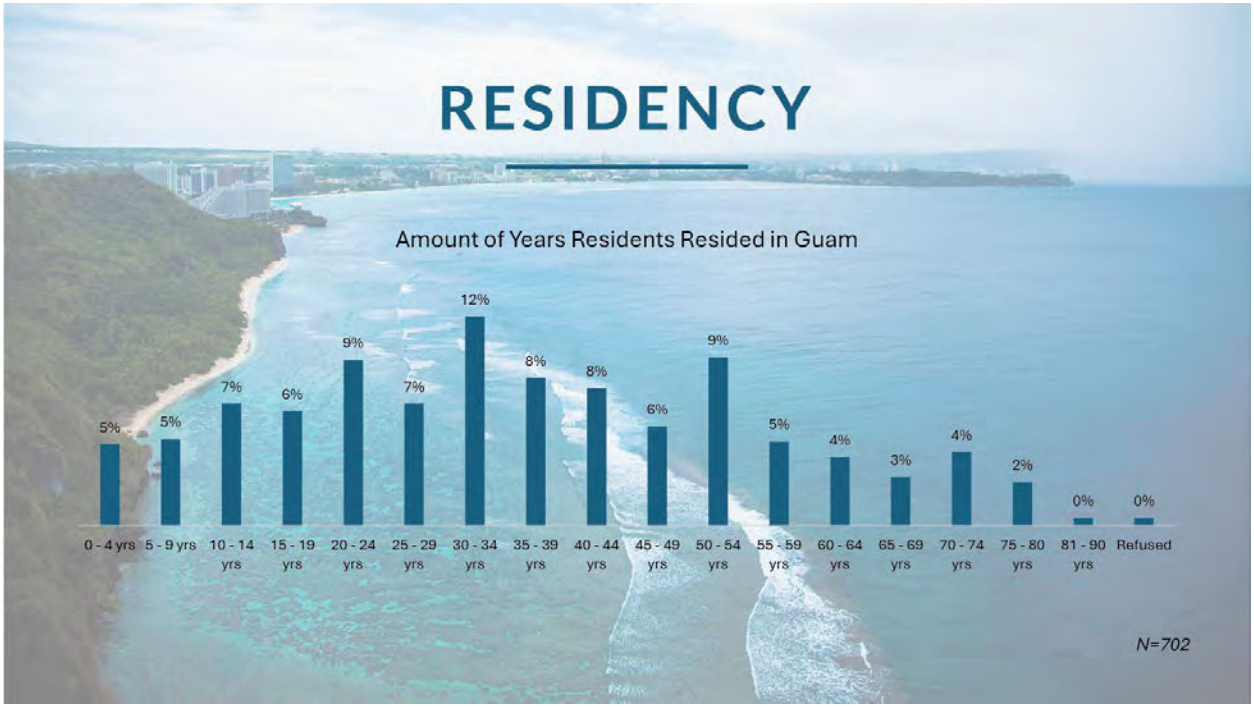

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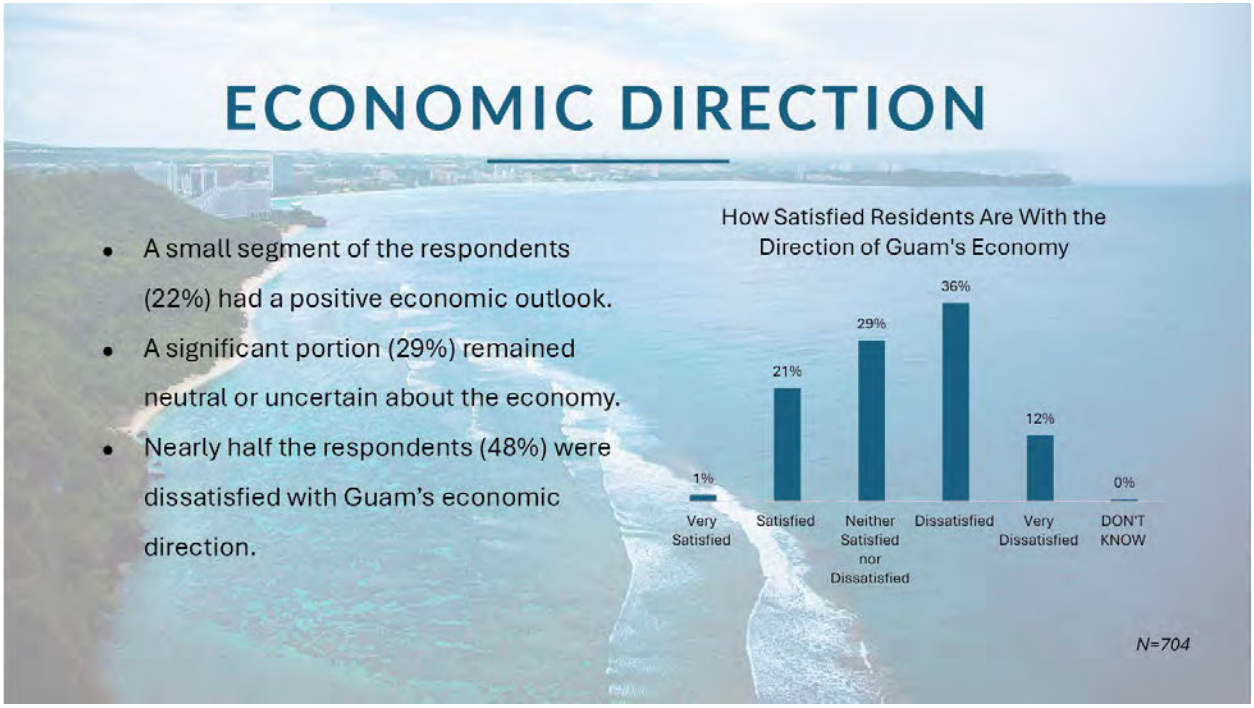

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FUTURE GROWTH & DEV.

- Majority of the respondents (79%) preferred development tailored to the character of their village, which could convey concerns about over-development or loss of local identity.
- There was limited desire (10%) for No Change.
- Nine-percent (9%) of respondents favored replicating the northern and central models of development in Guam.
- Uncertainty regarding Guam's future economic growth and development was low (2%).



ECONOMIC PROSPERITY

- Among the options, community and social infrastructure development was a priority for most respondents (39%).
- 14% of respondents believed farming and sustainability initiatives would improve their villages economy.
- 13% were content with the status quo.
- There was moderate support (11% respectively) for residential and commercial development, with some respondents specifically mentioning the need for affordable housing.
- Write-in responses indicated:
  - Infrastructure and economic concerns (i.e., fixing roads, improving safety, and reducing crime.)
  - Affordable housing and better business opportunities.



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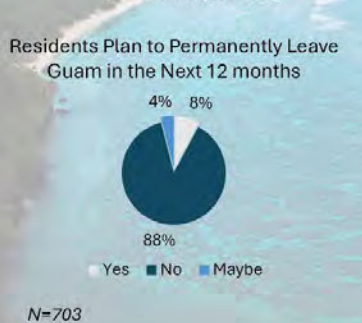
ECONOMIC AGRICULTURAL ACTIVITIES

- A large majority of the respondents (85%) across all incomes supported having more agricultural initiatives and activities in their village.
- There was strong support for agricultural initiatives across all age groups.
  - Gen Z (91%), Millennial (90%), and Gen X (89%) respondents showed the highest rates of agreement.
  - The highest rates of disagreement were from Silent Generation (17%) and Baby Boomer (10%) respondents.



OUTMIGRATION FROM GUAM

- 8% of respondents were planning to permanently leave Guam over the next 12 months, and an additional 4% are not are considering leaving but are not sure.
- The three most frequently mentioned reasons why respondents are planning or considering emigration were: Job Opportunities/Higher Income (23%), Cost of Living (22%), and Access to Goods and Services (14%).
  - 56% of Gen Z respondents and slightly less than a third (29%) of Gen X were planning to leave because of the cost of living and job opportunities and better incomes elsewhere.
  - Older individuals (35+ yrs) were more likely (7.5%) to select "Join Family" as a primary reason they are considering leaving





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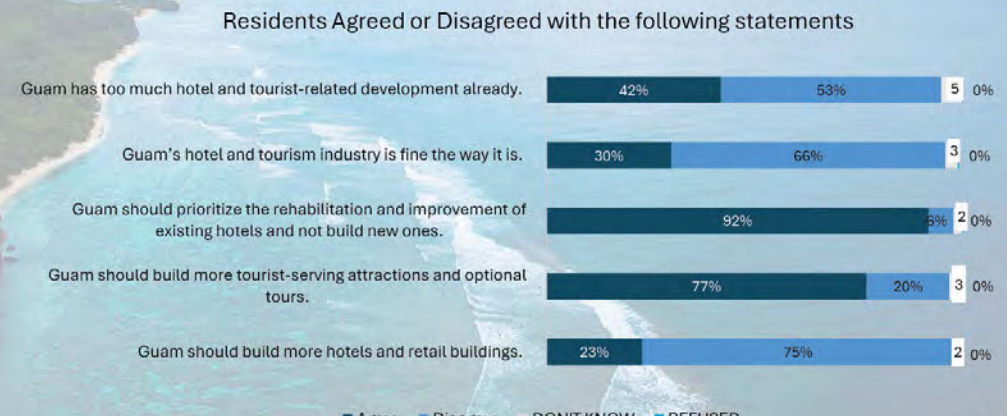
TOURISM RELATED OPINIONS

- Perceptions on whether there was already too much tourism-related development were divided.
  - Although only a weak-to-moderate statistical association, results indicated retirees (30%) and federal employees (32%) were more likely to agree, while Gov. Guam, private sector, and self-employed individuals are more likely to disagree.
- Most respondents (66%) disagreed that the hotel and tourism industry were fine the way it is.
- Almost all respondents (92%) believed/preferred improving existing hotels than building new ones.
  - Seventy-five percent (75%) of respondents disagreed to building new hotels and retail buildings.
- Seventy-seven percent (77%) of respondents' supported building more tourist attractions and optional tours for tourists.
  - Highest incidence of agreement was seen among the 40-59 yr age group.
  - Younger groups (20-29 yrs) were more likely to disagree.

N=703

TOURISM RELATED OPINIONS



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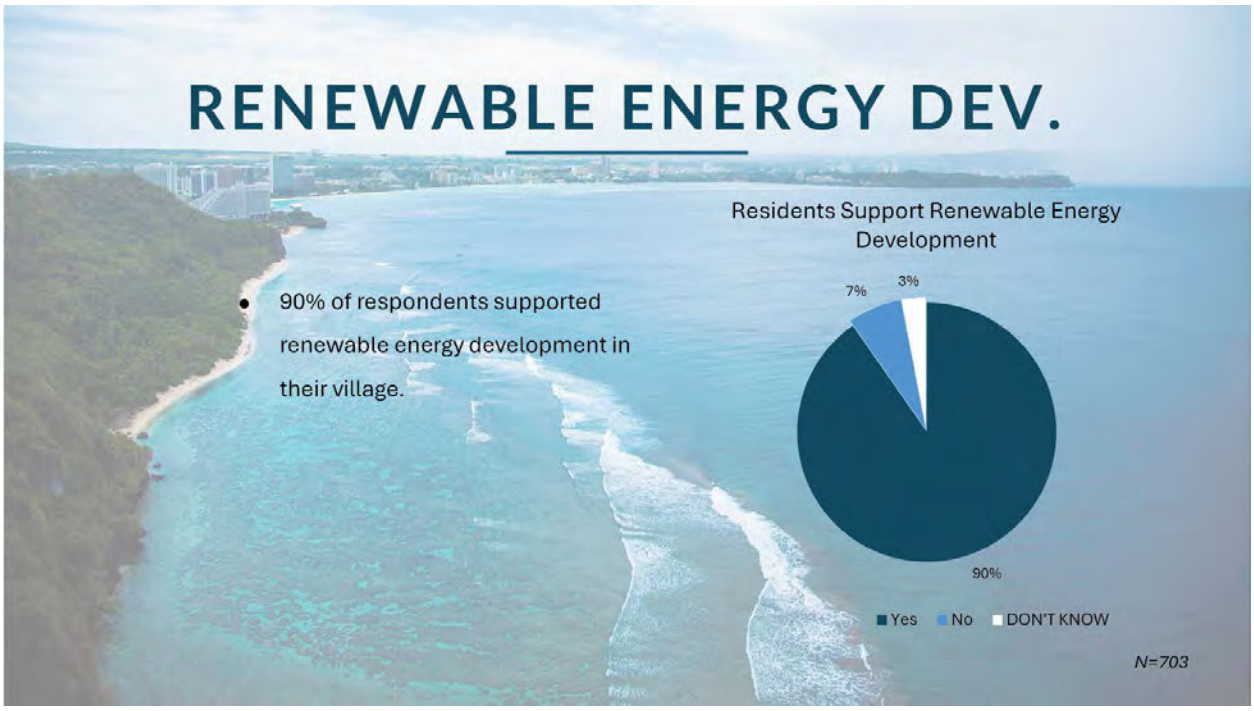



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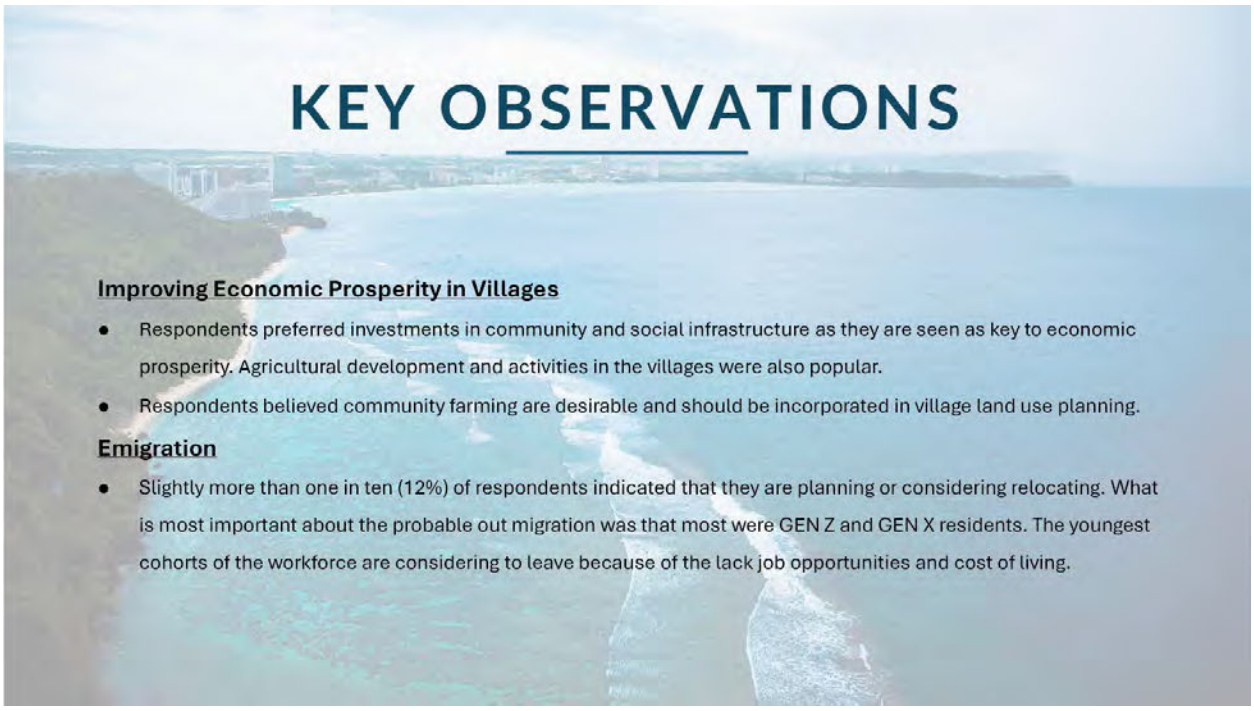

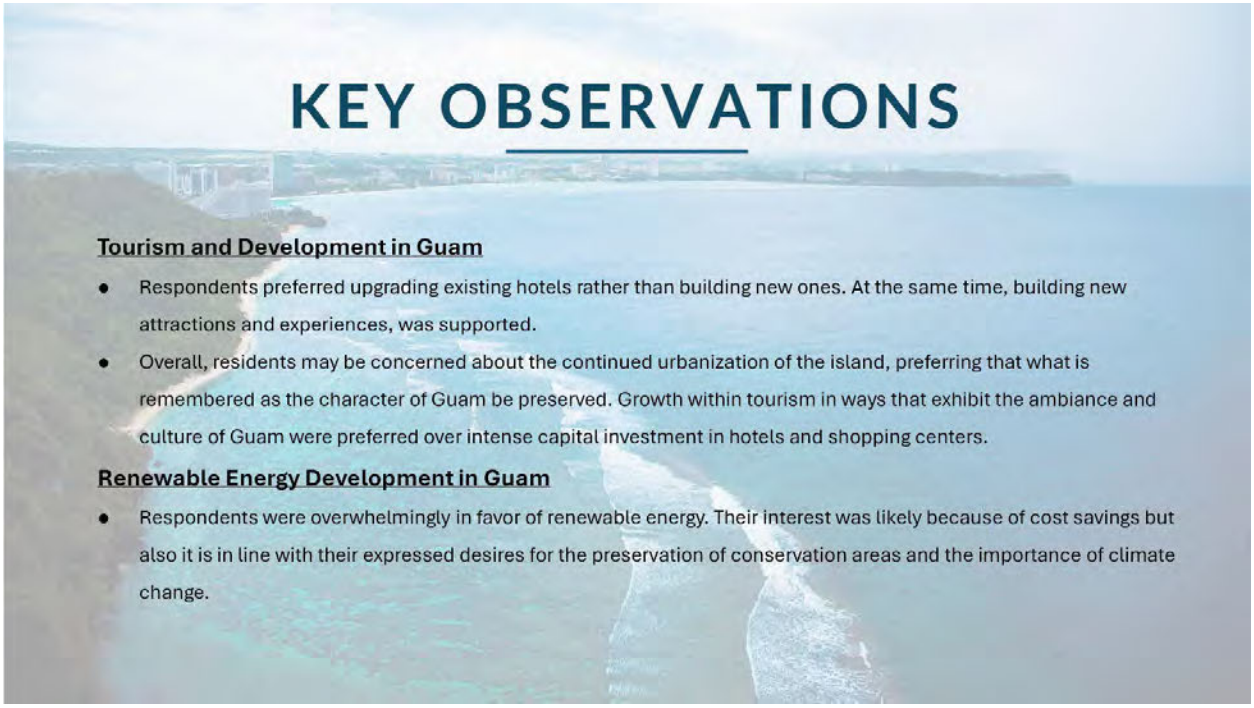

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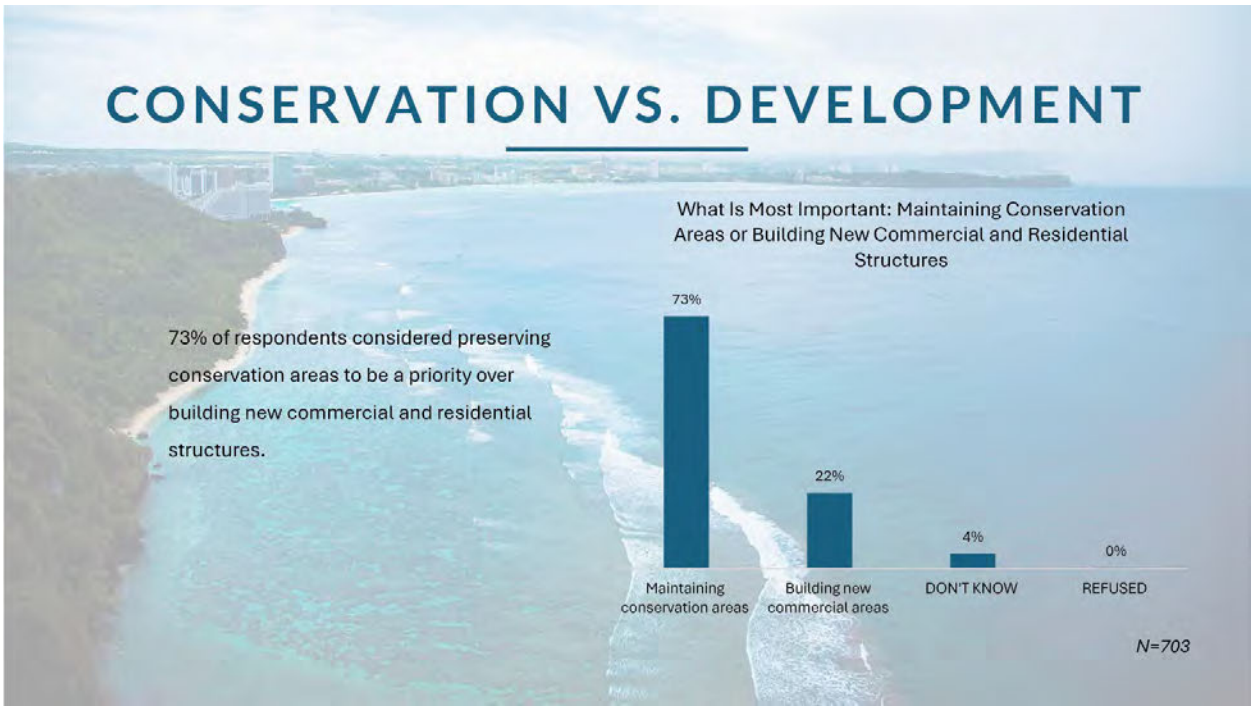

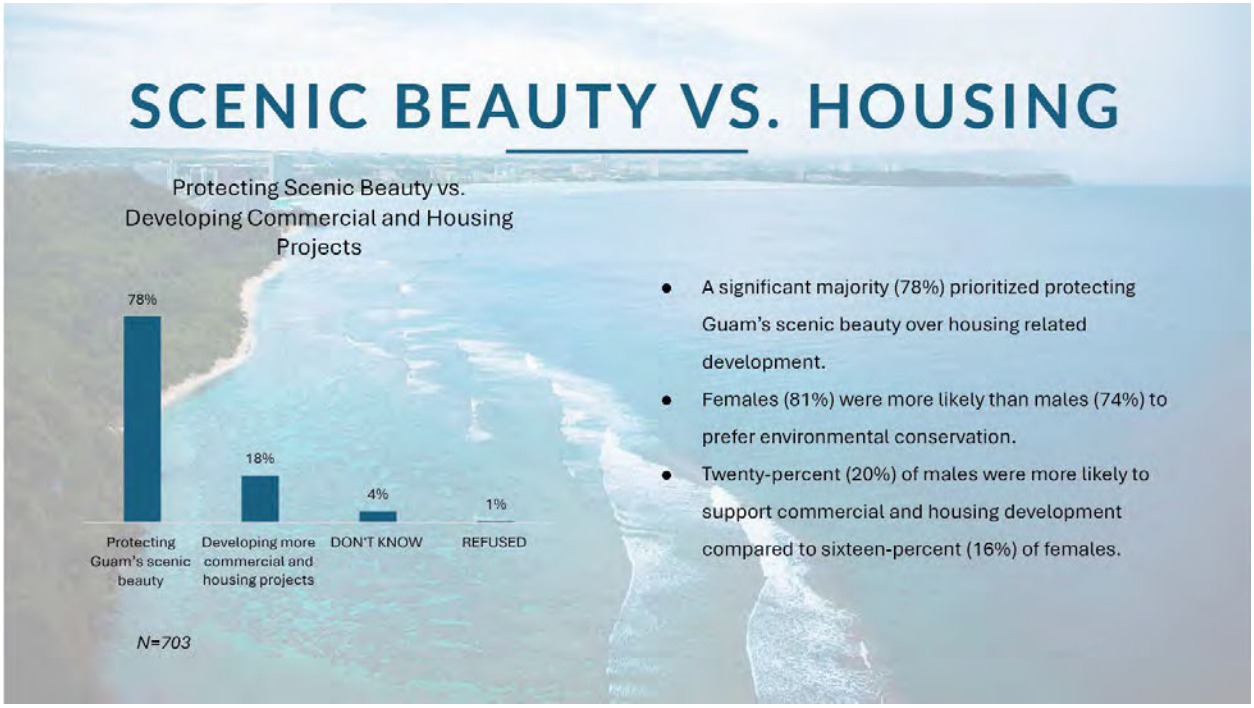

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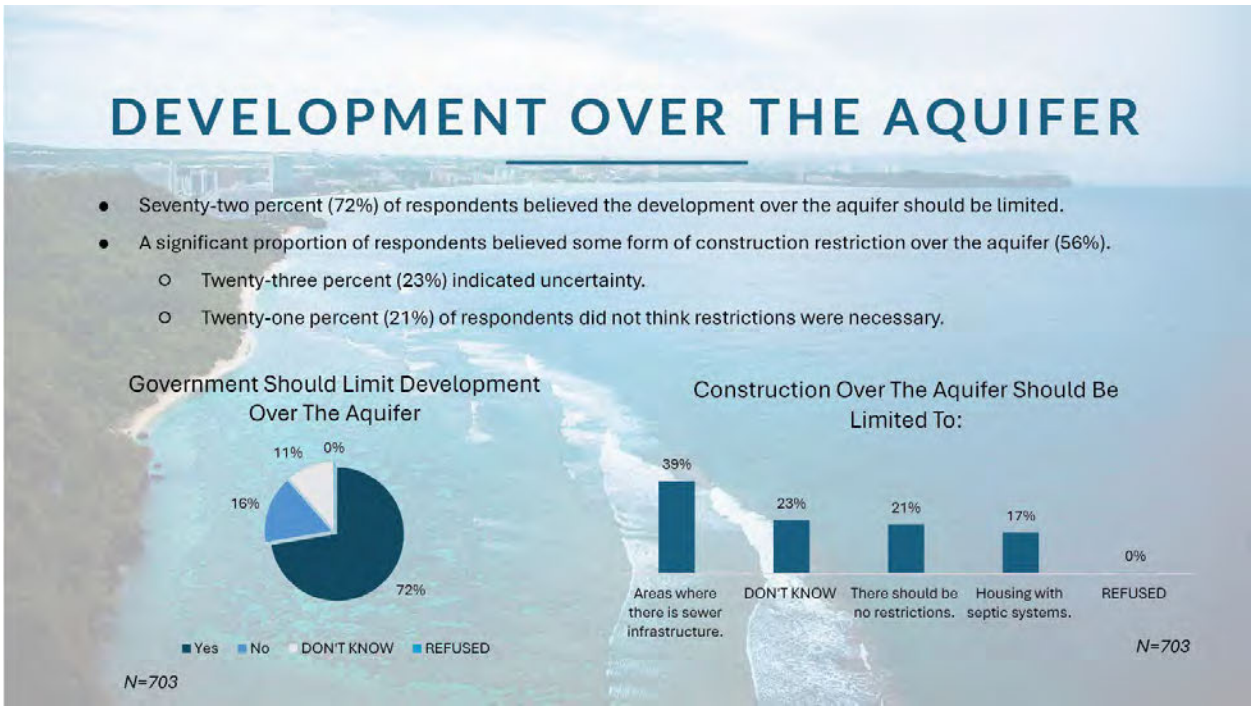

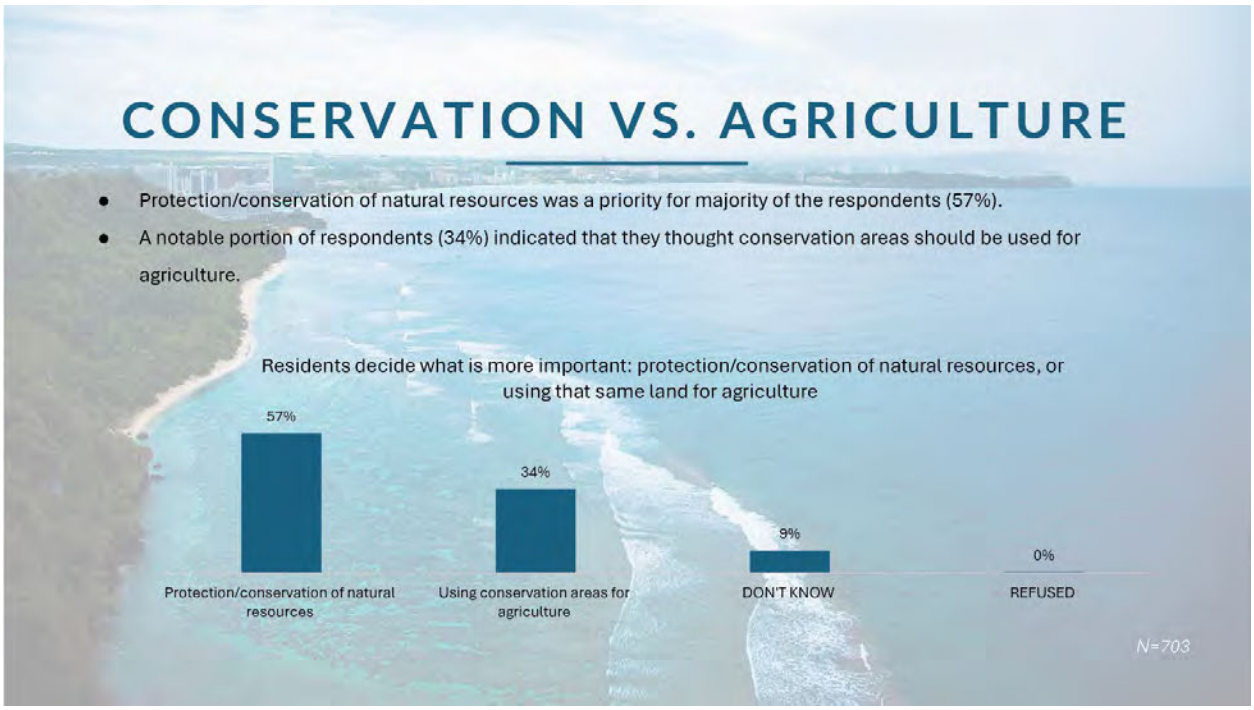

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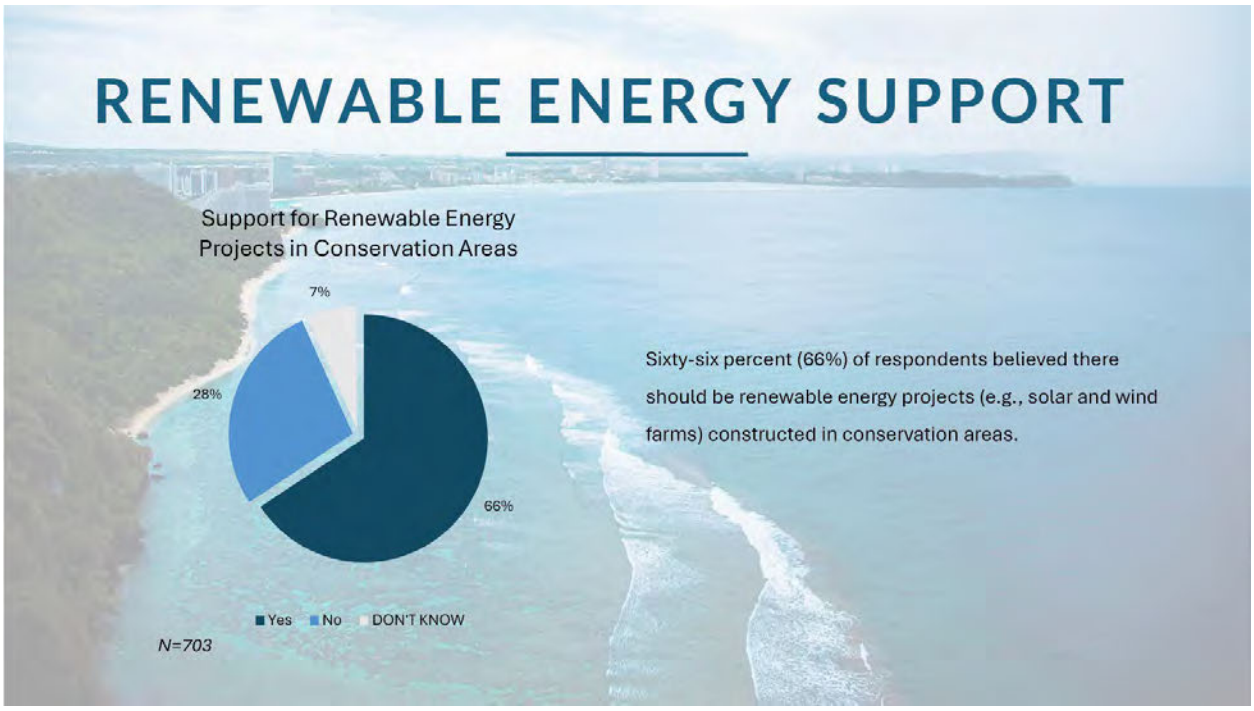

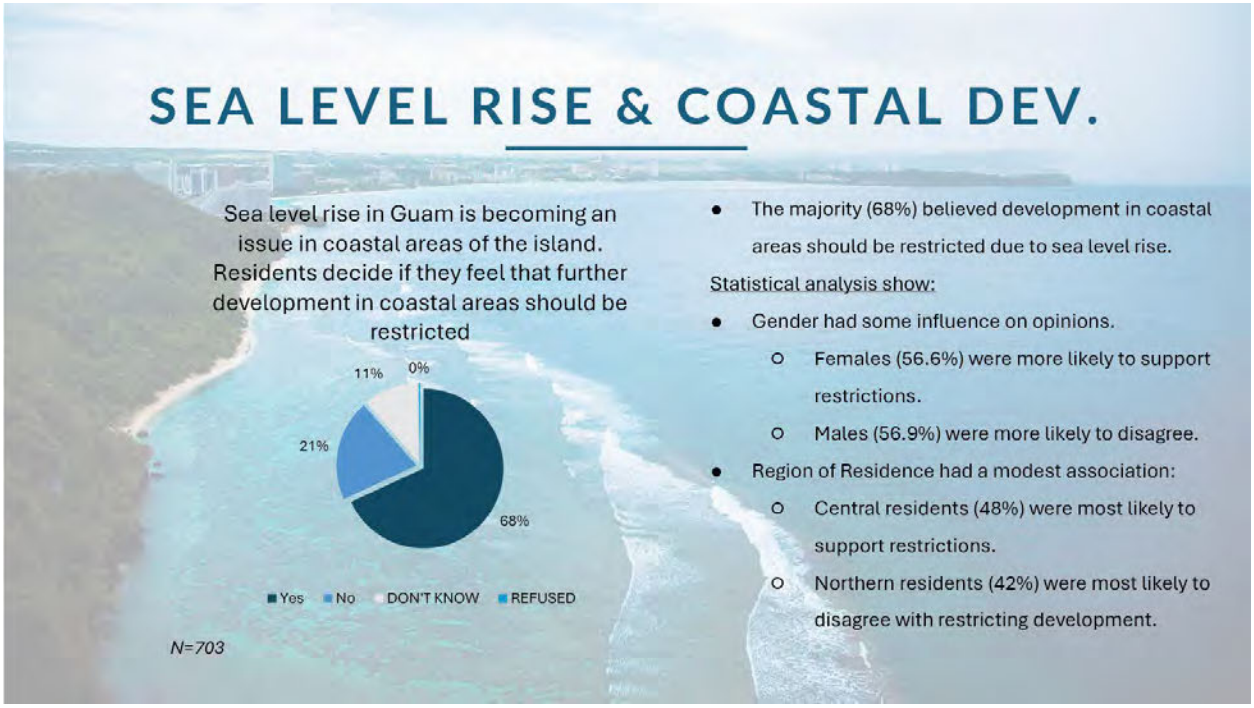

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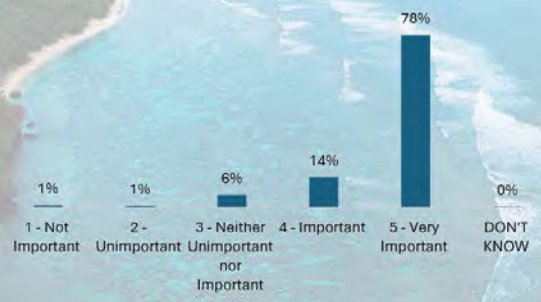
HISTORICAL & CULTURAL SITE PROTECTION

How important it is to protect historical and cultural sites on the island



N=703

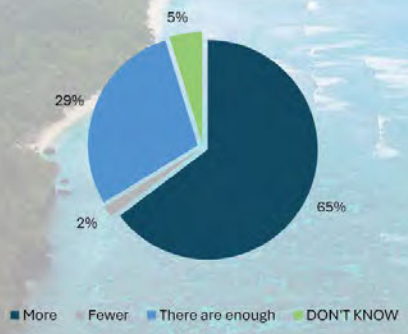
- Majority of respondents (78%) thought historical and cultural site protection is very important.

A weak yet statistically significant relationship between income level and historical and cultural site protection existed.

- 47% of higher-income respondents ($70k+) completely disagreed that protection is important.
- 37% of middle-income respondents ($30k-$69k) supported protection.
- 24% of lower-income respondents (<$30k) had mixed views but were less likely to completely disagree with protecting sites.

CULTURAL SITES

Views on the Number of Cultural Sites to Preserve



N=703

- 65% of respondents thought more cultural sites should be preserved.
- 29% believed there are enough that are already preserved.
- A minority (2%) believed fewer sites should be preserved.

Statistically, income range showed a weak but significant relationship.

- Across all income ranges, majority of respondents believed more cultural sites should be preserved:
  - 73% of those earning less $30,000
  - 65% of those earning $30,000-$69,000
  - 64% of those earning $70,000 or above

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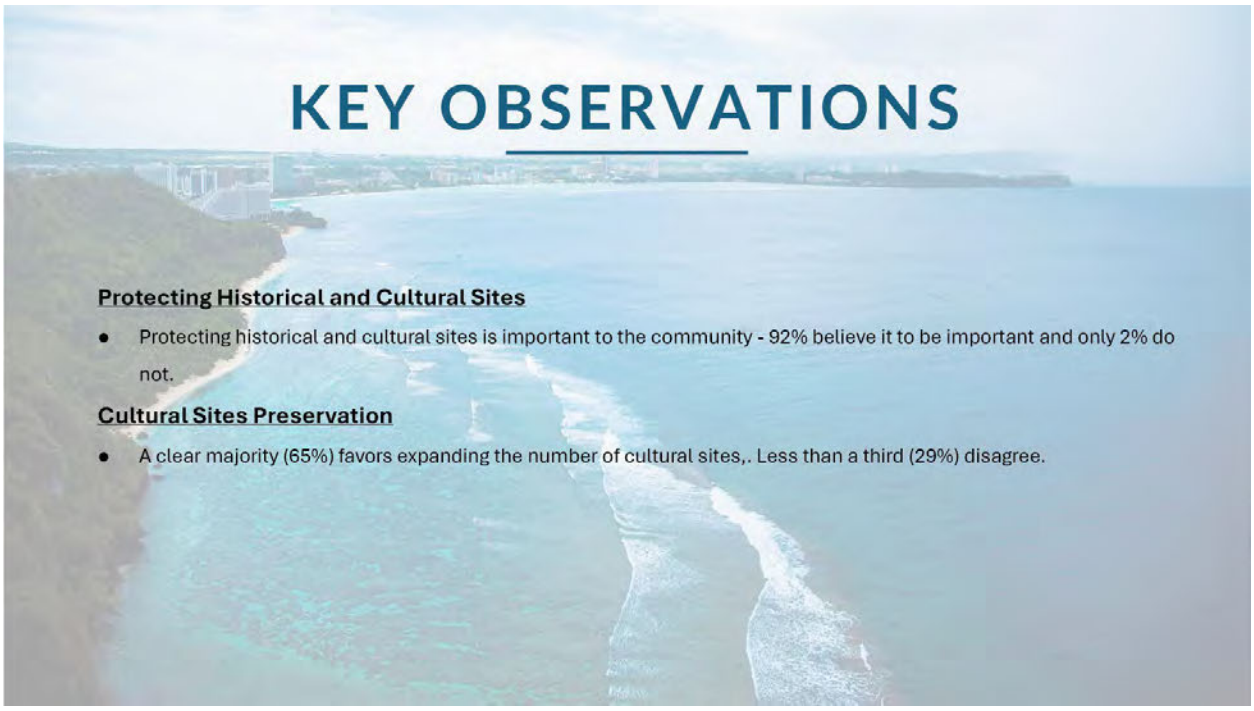



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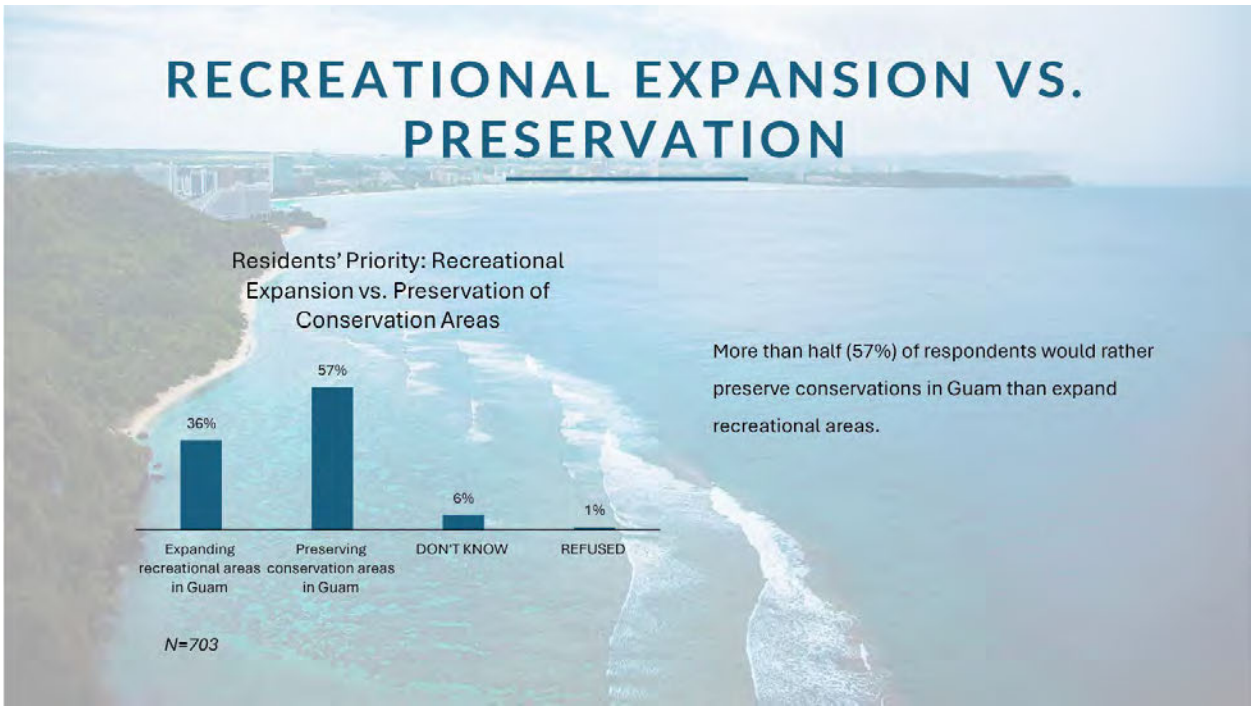

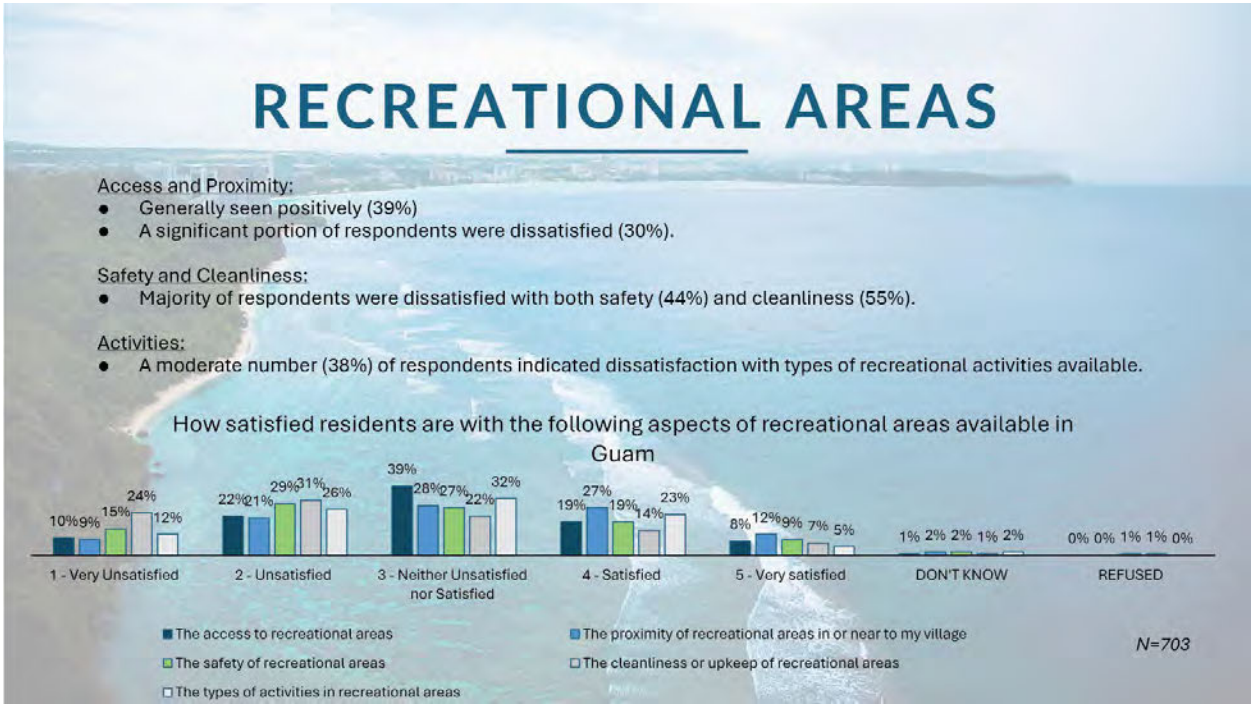

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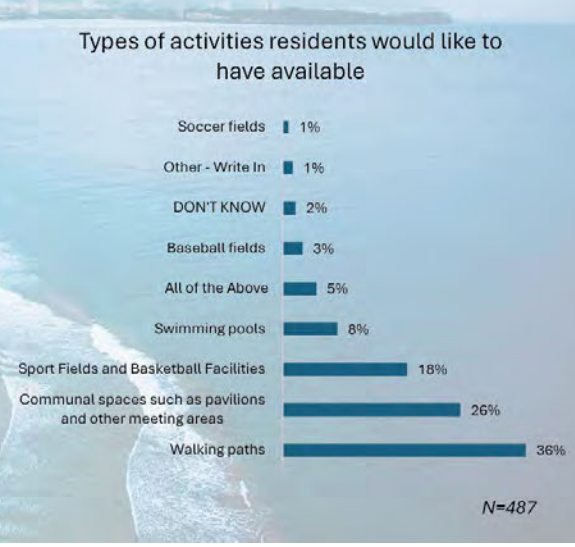
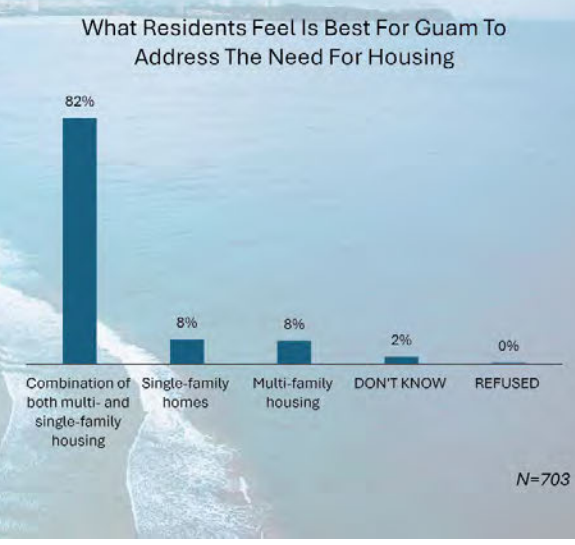
RECREATIONAL ACTIVITIES

- A plurality of respondents (36%) would like to see more walking paths in recreational areas.
- 26% would like more pavilions and communal meeting areas for social gatherings.
- 22% wanted more sports facilities and fields.



HOUSING NEEDS

- Majority of respondents (82%) believed a combination of both multi-family and single-family housing is the best approach to address Guam's housing needs.
- Only 8% preferred single-family homes, and another 8% support multi-family housing exclusively.



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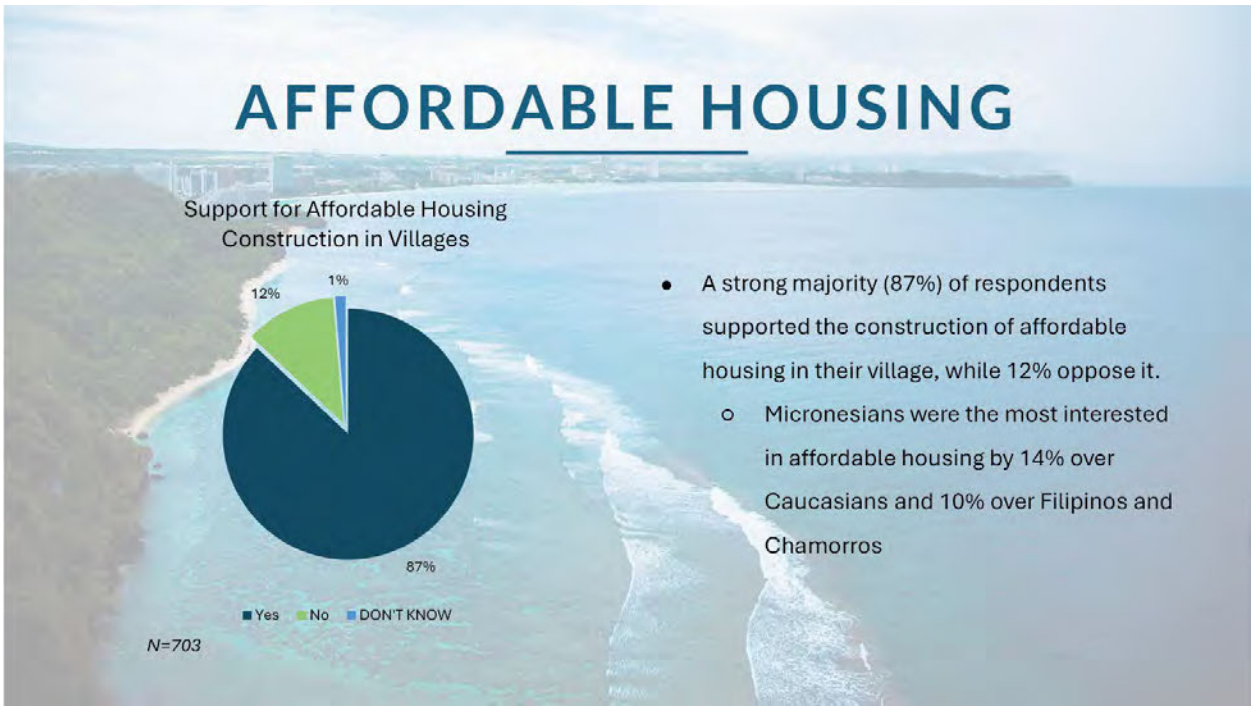

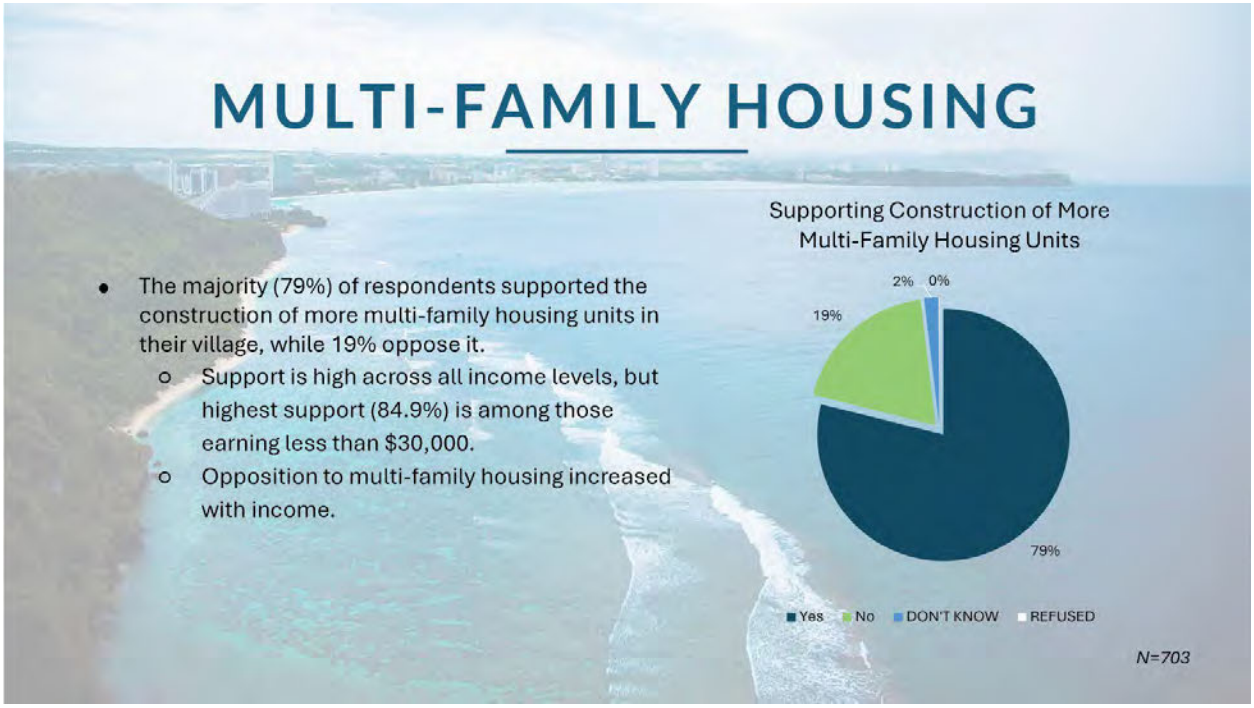

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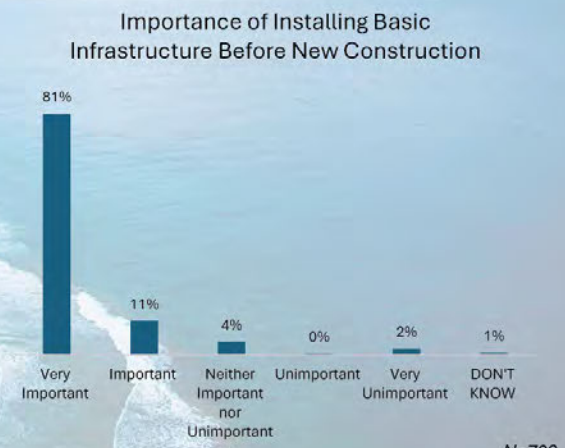
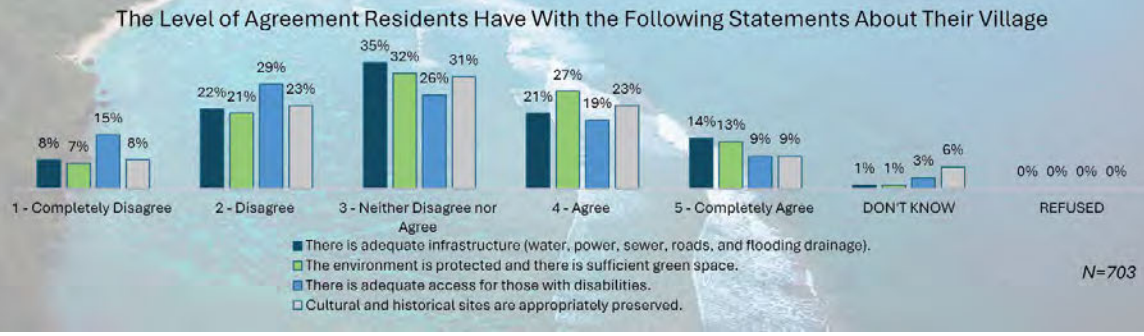
INFRASTRUCTURE

- Nearly all (92%) of the respondents believed it is important to have basic infrastructure (water, power, sewer, and roads) installed before completing new residential and commercial construction, with 81% saying it was *very important* and 11% saying it is *important*.



VILLAGE PERCEPTIONS

- **Infrastructure Adequacy:** 35% of respondents were neutral about the adequacy of infrastructure (water, power, sewer, roads, and drainage), while 30% disagreed, and 35% agreed.
- **Environmental Protection & Green Space:** 40% agreed that the environment was protected and there was sufficient green space, while 28% disagreed, and 32% were neutral.
- **Disability Access:** 44% disagree that there was adequate access for those with disabilities, while only 28% agreed, and 26% were neutral.
- **Cultural & Historical Site Preservation:** Views were split, with 32% agreeing that sites were appropriately preserved, 31% neutral, and 31% disagreeing.



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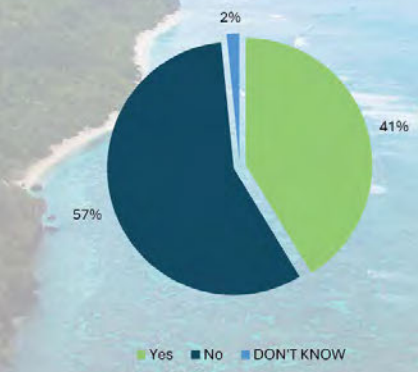
RETAIL BUSINESSES

Desire for More Retail Businesses Within Walking Distance from Homes



N=702

More than half (57%) of respondents did not want more retail businesses within walking distance from their home, while 41% supported the idea.

KEY OBSERVATIONS

Priorities for Guam

- Preserving conservation areas was the clear priority for the majority, emphasizing the importance of maintaining natural landscapes and biodiversity.
- While recreational areas are also valued, the fact that a significantly larger portion favors conservation suggests a general preference for environmental protection over development.

Satisfaction with Recreational Areas

- Access to and safety in recreational areas are areas of concern for many respondents, with significant dissatisfaction reported for both.
- The cleanliness and upkeep of recreational areas shows the highest levels of dissatisfaction. There was significant dissatisfaction regarding the activities offered.
- Respondents indicated a need to improve safety, maintenance, and access to recreational areas to improve public satisfaction.

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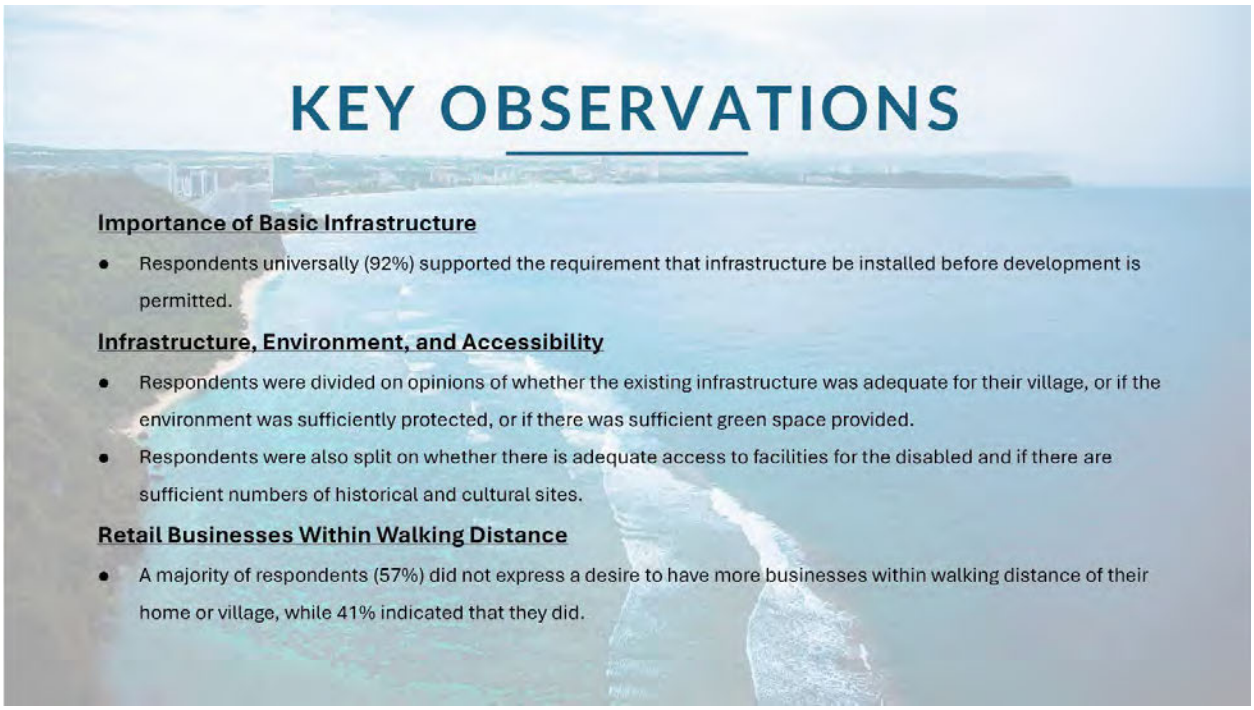

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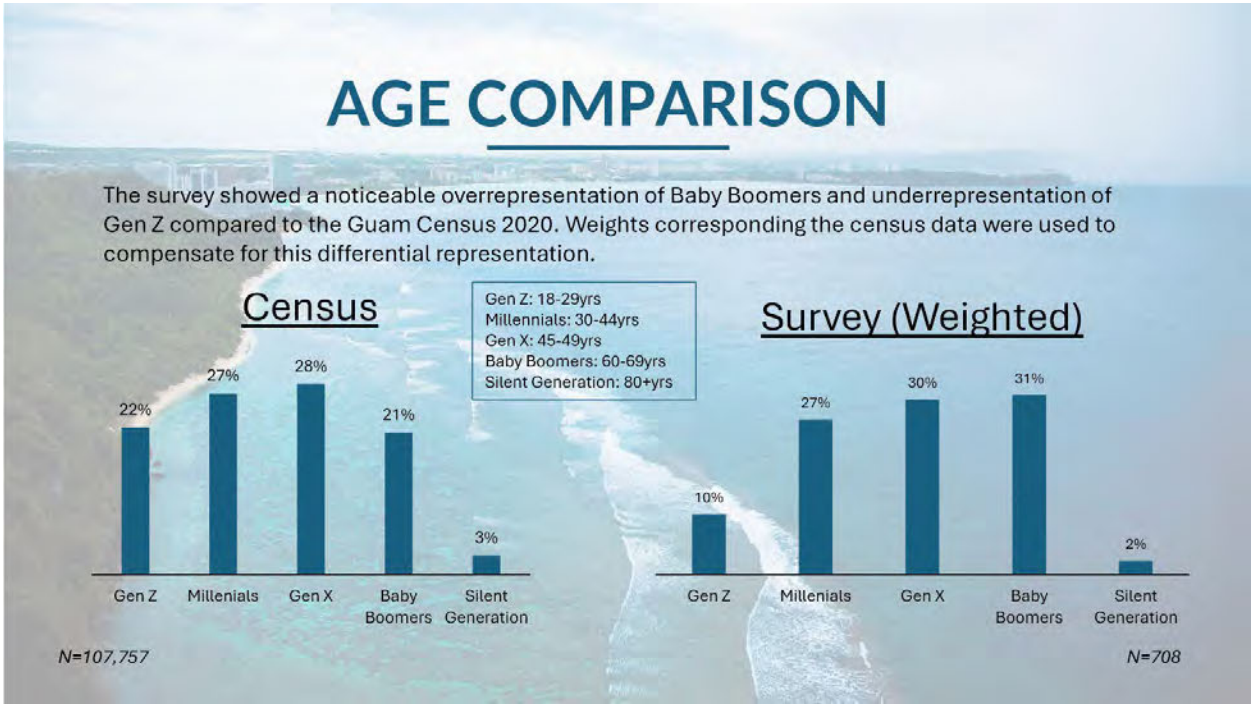

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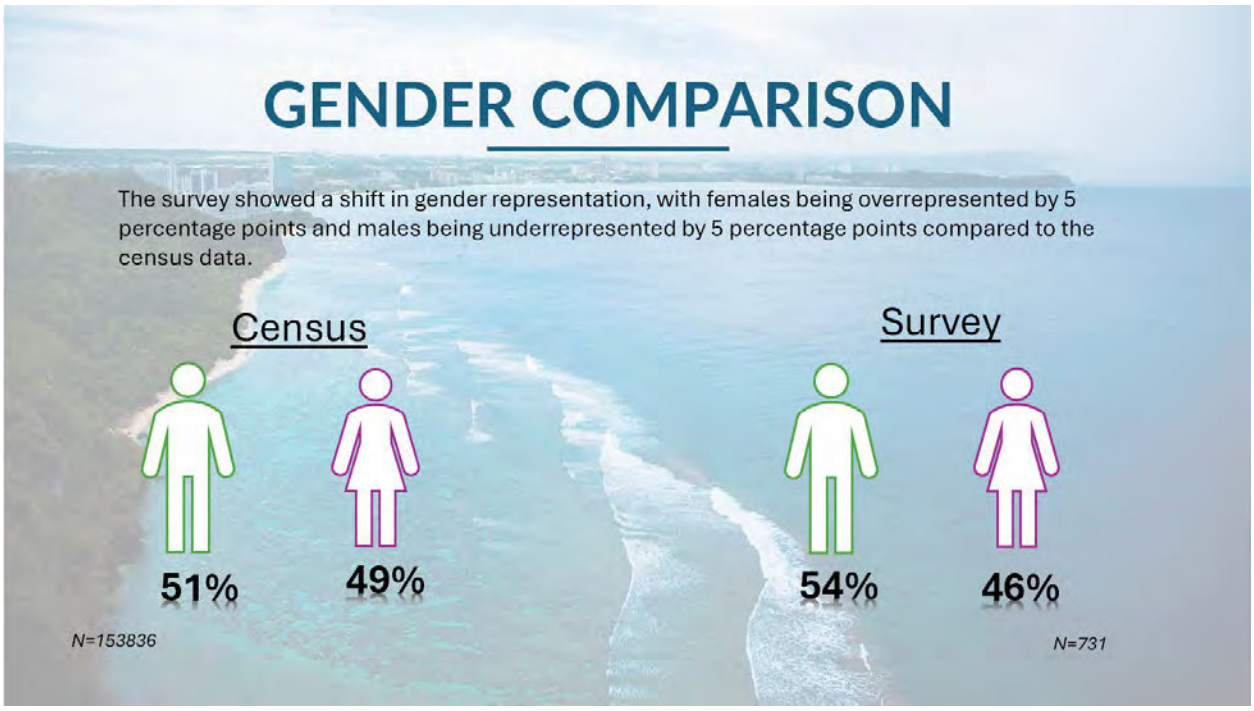

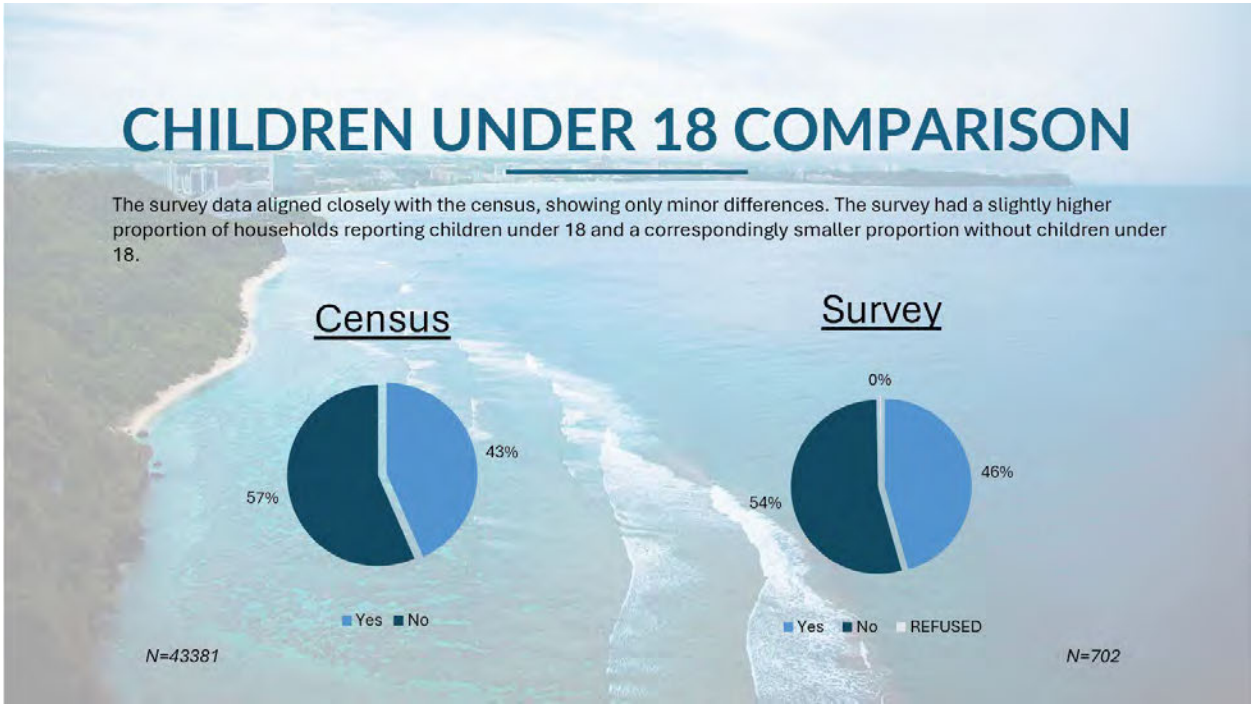

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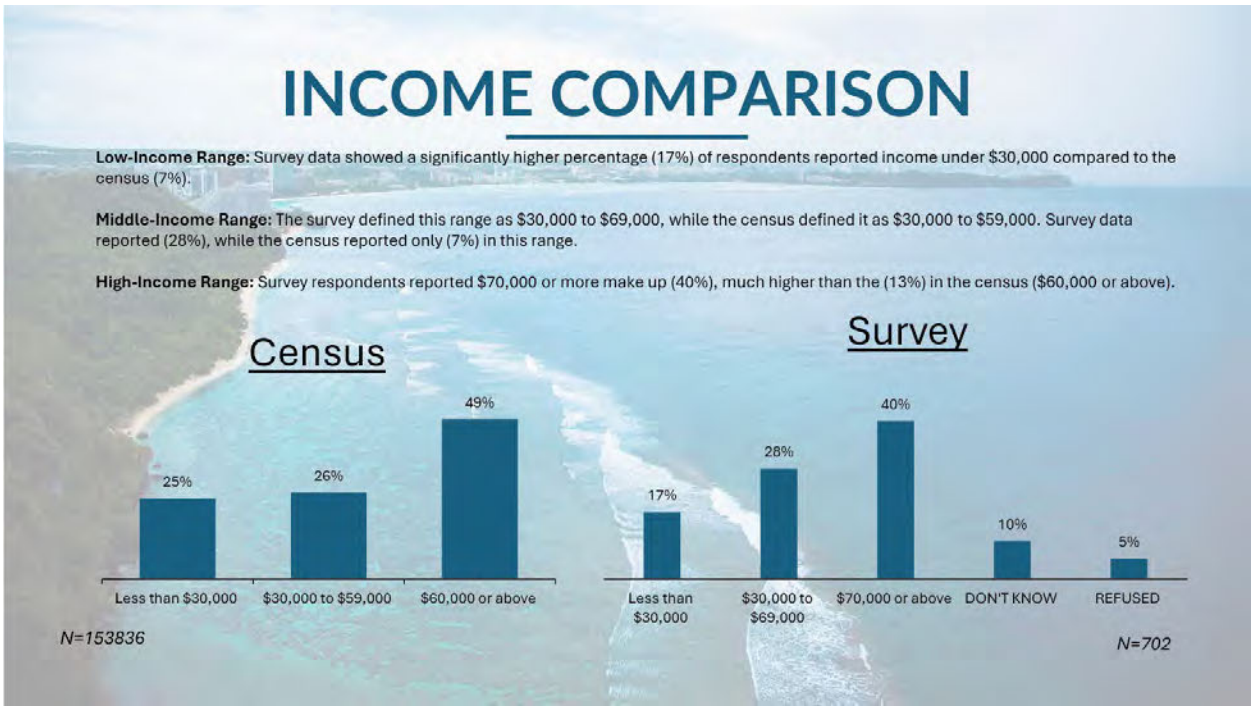

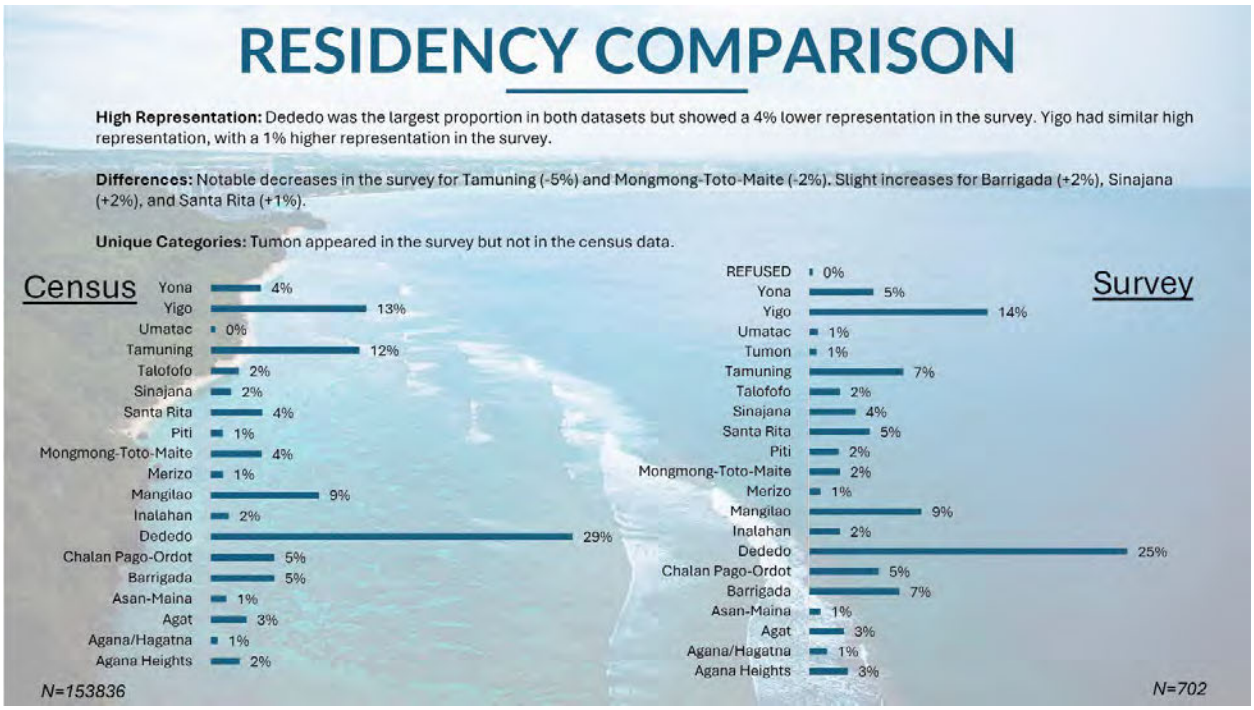

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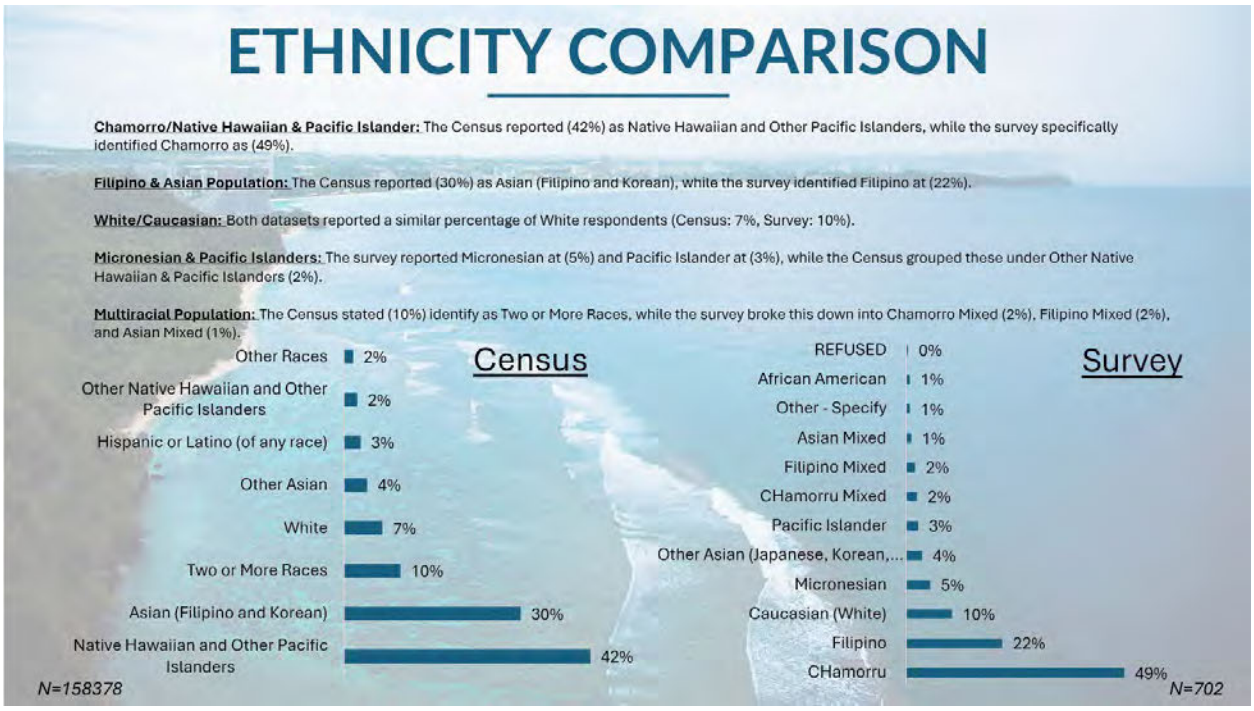



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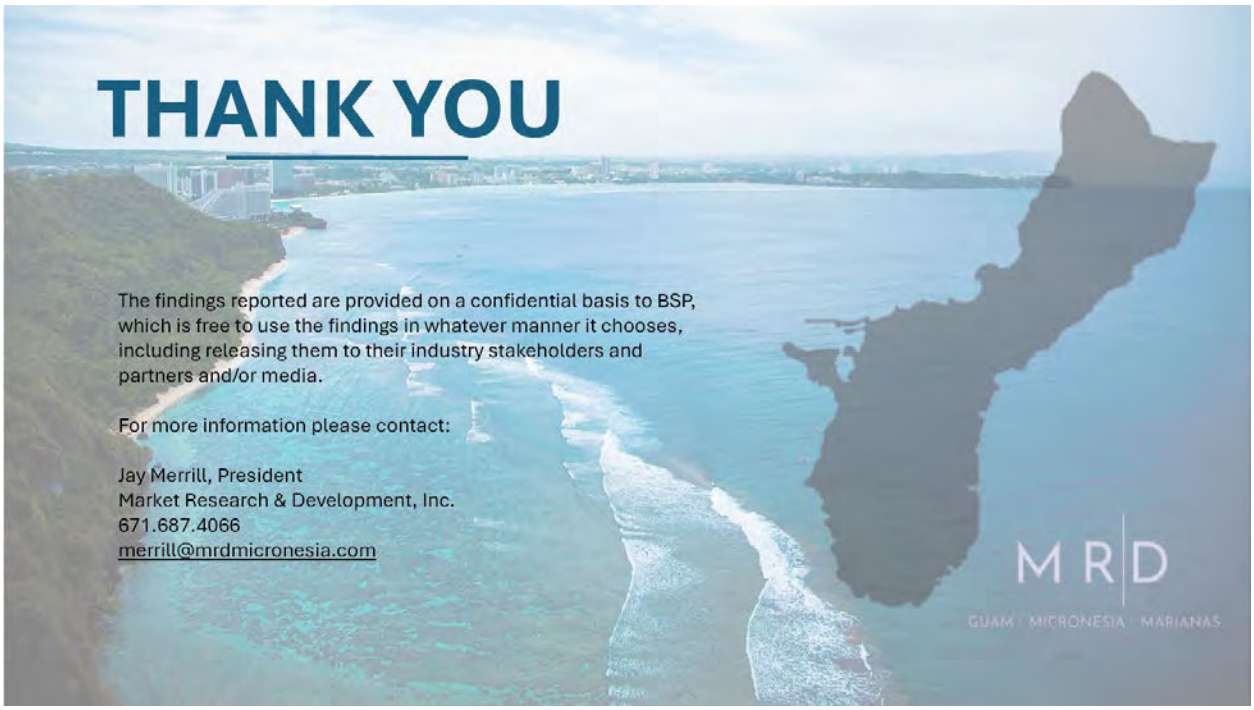

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Guåhan 2050

Village of Mongmong-To'to-Maite': Land Use and Community Features

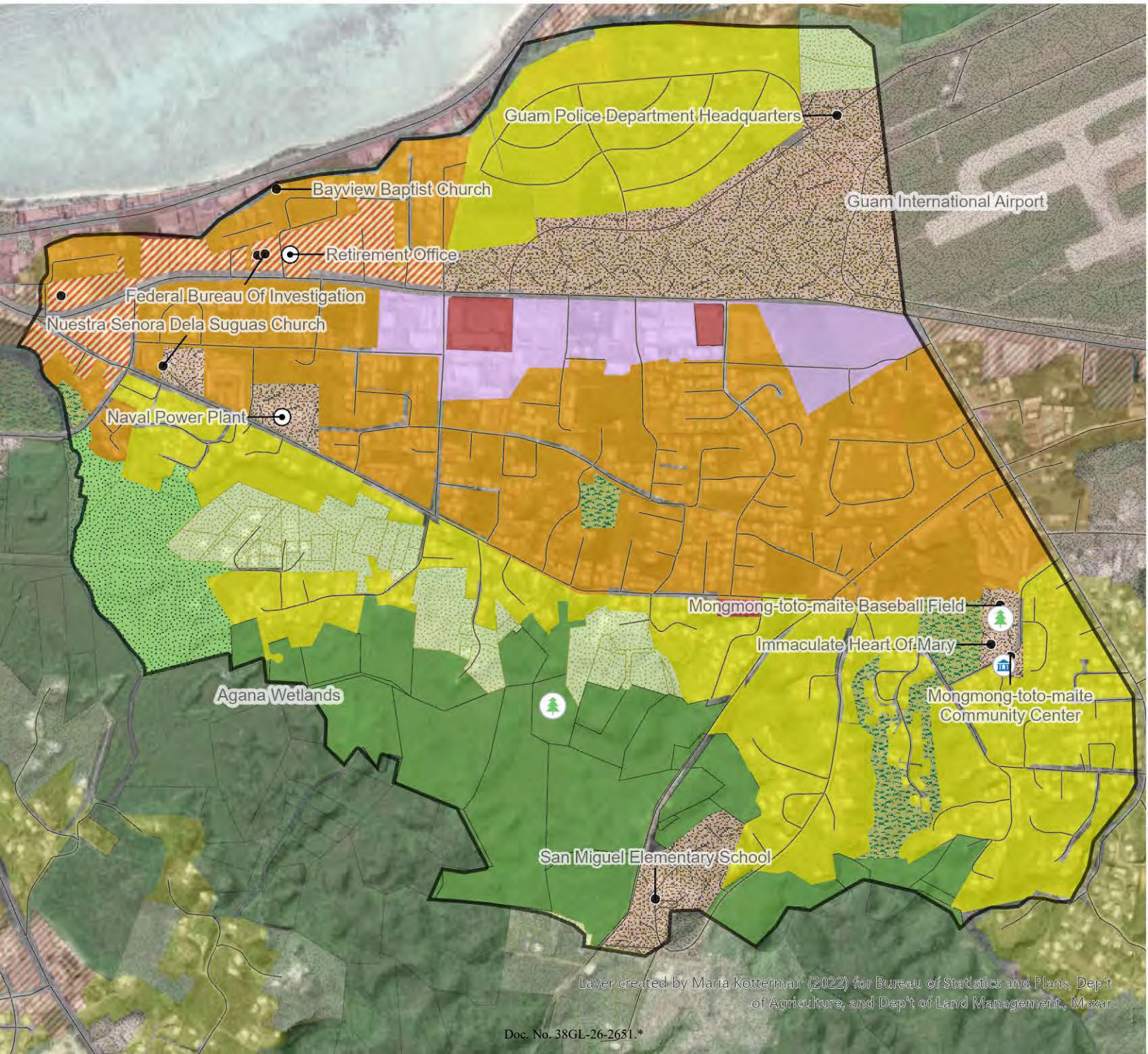
N W E S

0 0.25 0.5

Miles

Guahan 2050 Land Use

- Resource Conservation
- Parks, Recreation, and Open Space
- Agriculture
- Rural Lands
- Single-Family Dwelling
- Multiple-Family Dwelling
- Planned Unit Development
- Mixed Use
- Commercial
- Resort-Hotel
- Public Facility and Civic Uses
- Light Industrial
- Heavy Industrial
- Federal-Military
- Forest System Inventory (Green Space, Parks, and Conservation)
- Rivers and Streams
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary



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Guåhan 2050

Land Use Planning for Mongmong-To'to-Maite': Opportunities and Constraints

- Forest System Inventory (Green Space, Parks, and Conservation)
- Rivers and Streams
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary
- Guam Forest System Inventory
- Ground Water Protection Zone (1997)
- Production Well
- Pump Station
- Sewer Lateral
- Sewer Main
- Public_Schools
- CHamoru Land Trust
- Ancestral Lands
- FEMA Flood Zone
- Tsunami Evacuation Zone

N W E S

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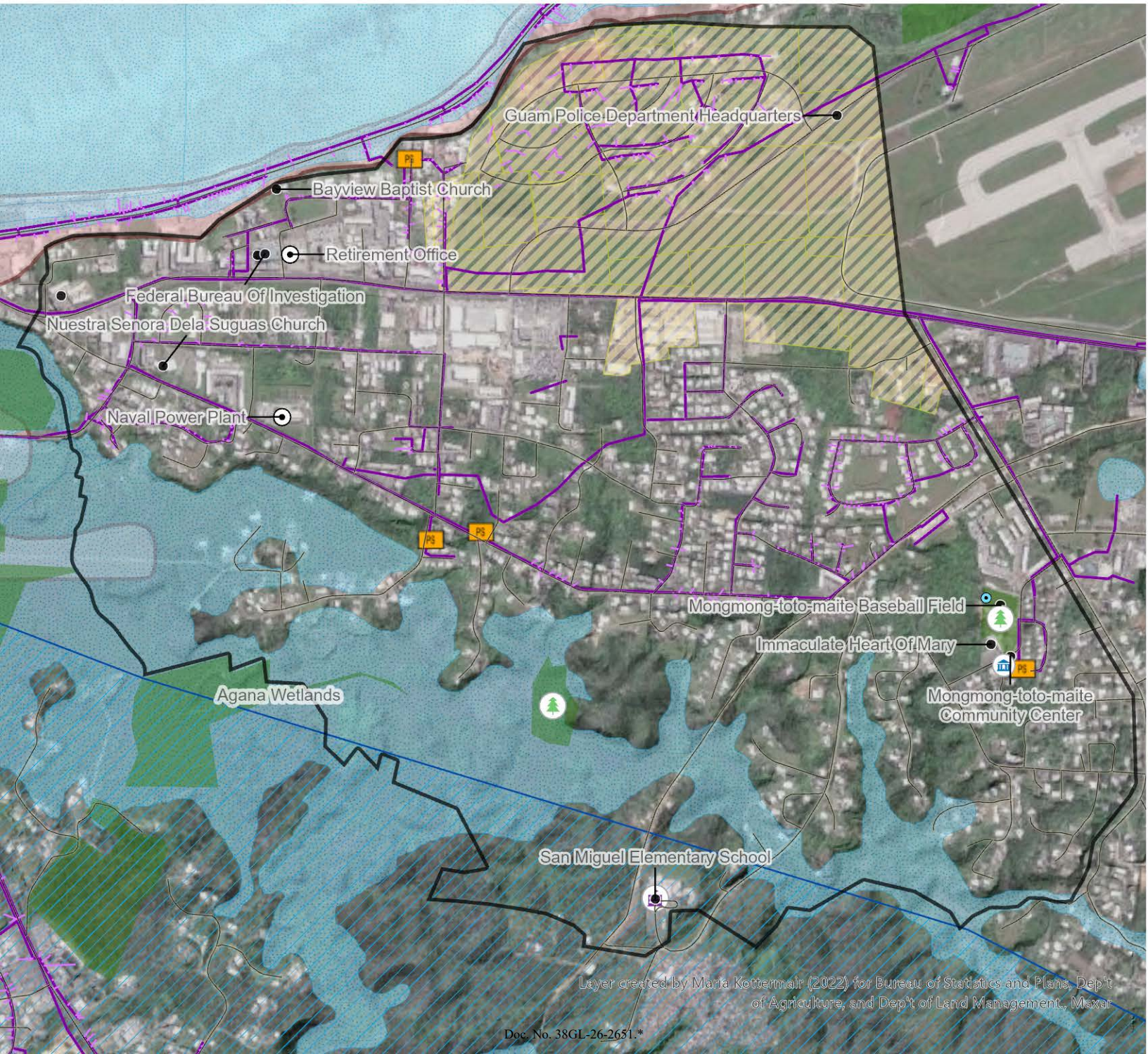
Miles



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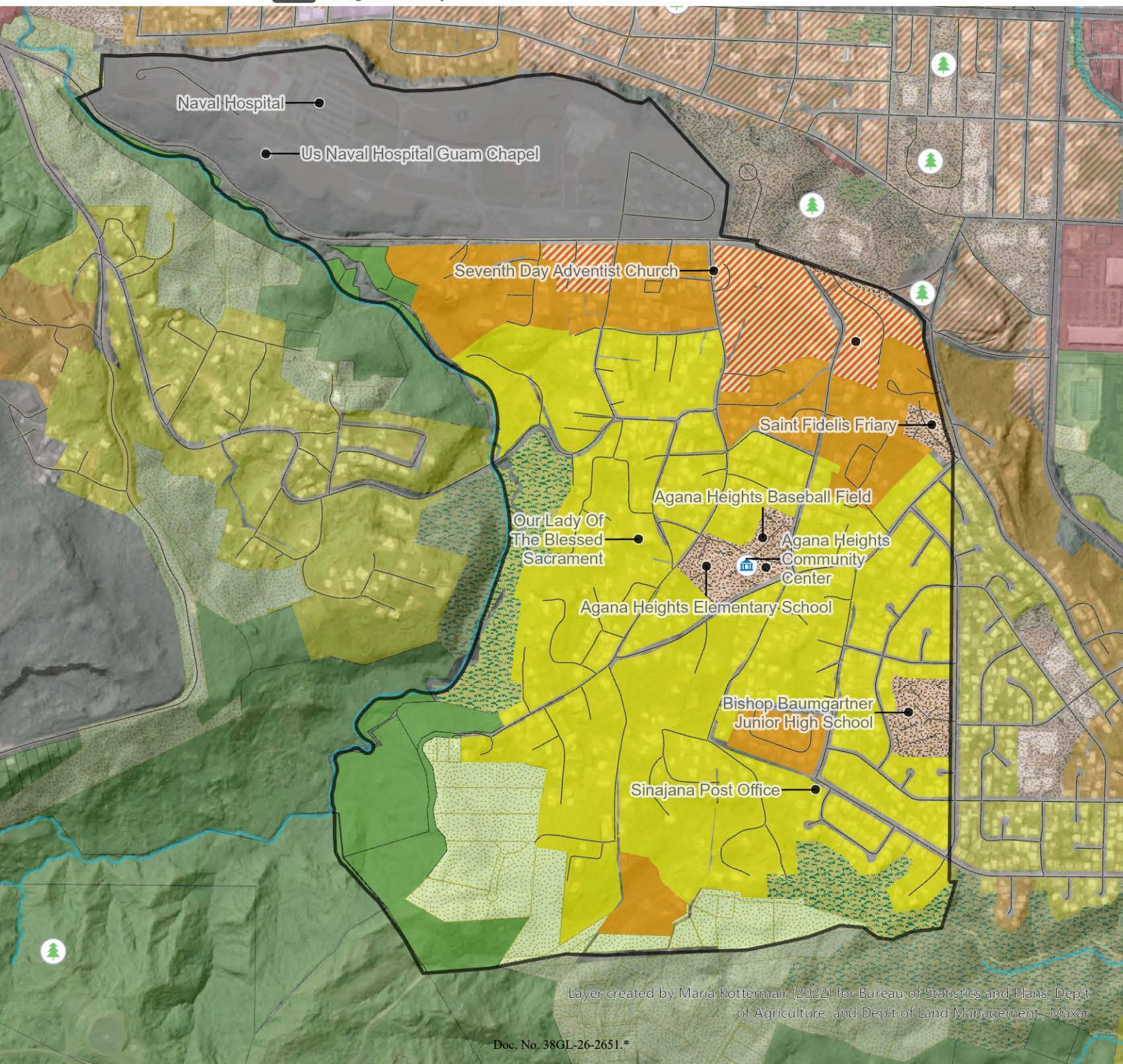
Guåhan 2050

Village of Agana Heights: Land Use and Community Features





Doc. No. 38GL-26-2651.*

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- Forest System Inventory (Green Space, Parks, and Conservation)
- Rivers and Streams
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary
- Guam Forest System Inventory
- Ground Water Protection Zone
- Production Well
- Pump Station
- Sewer Lateral
- Sewer Main
- Public_Schools
- FEMA Flood Zone
- Guam HCP - Key Habitat Type
- Federally Managed Land

Guåhan 2050

Land Use Planning for Agana Heights: Opportunities and Constraints

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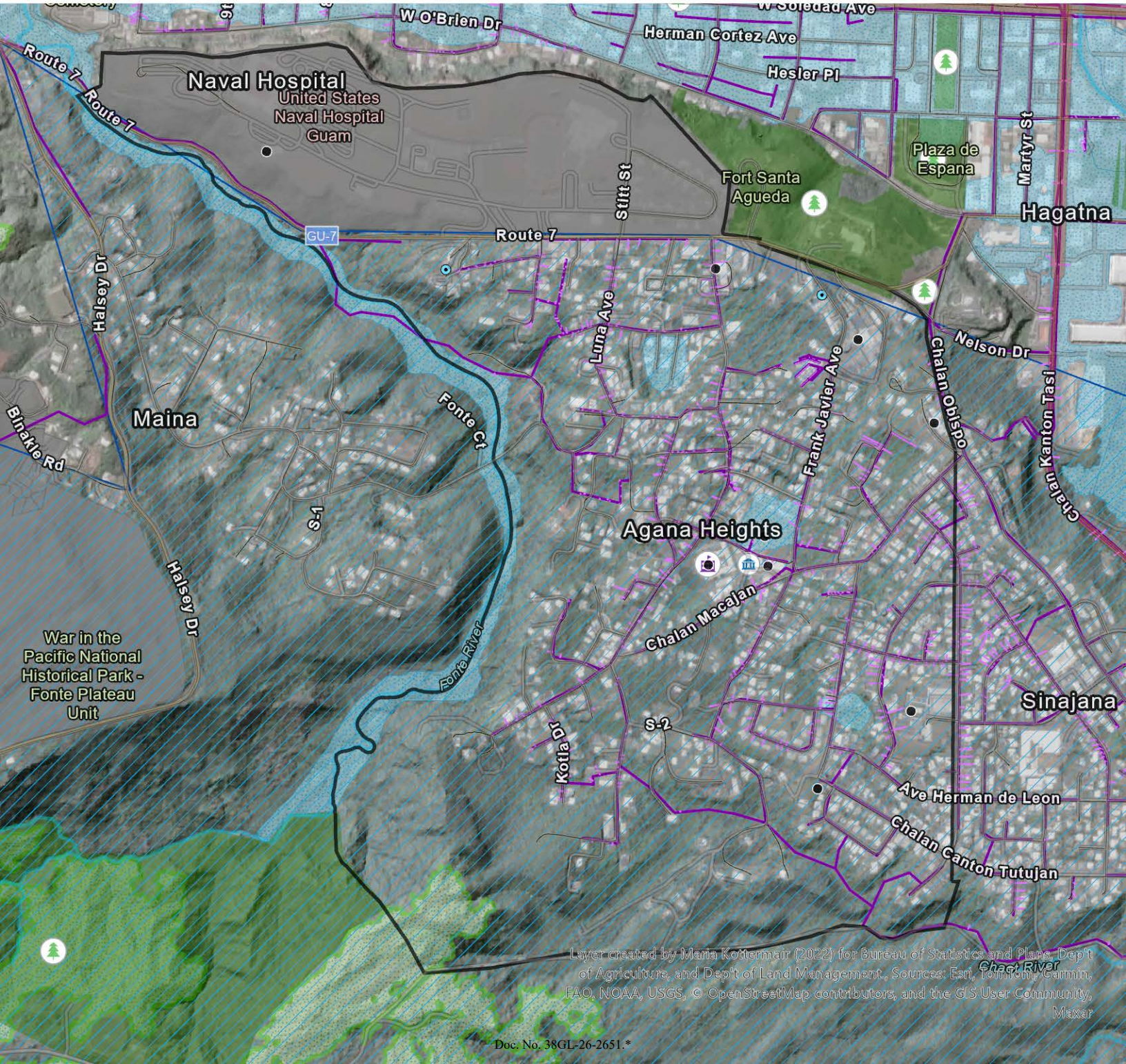

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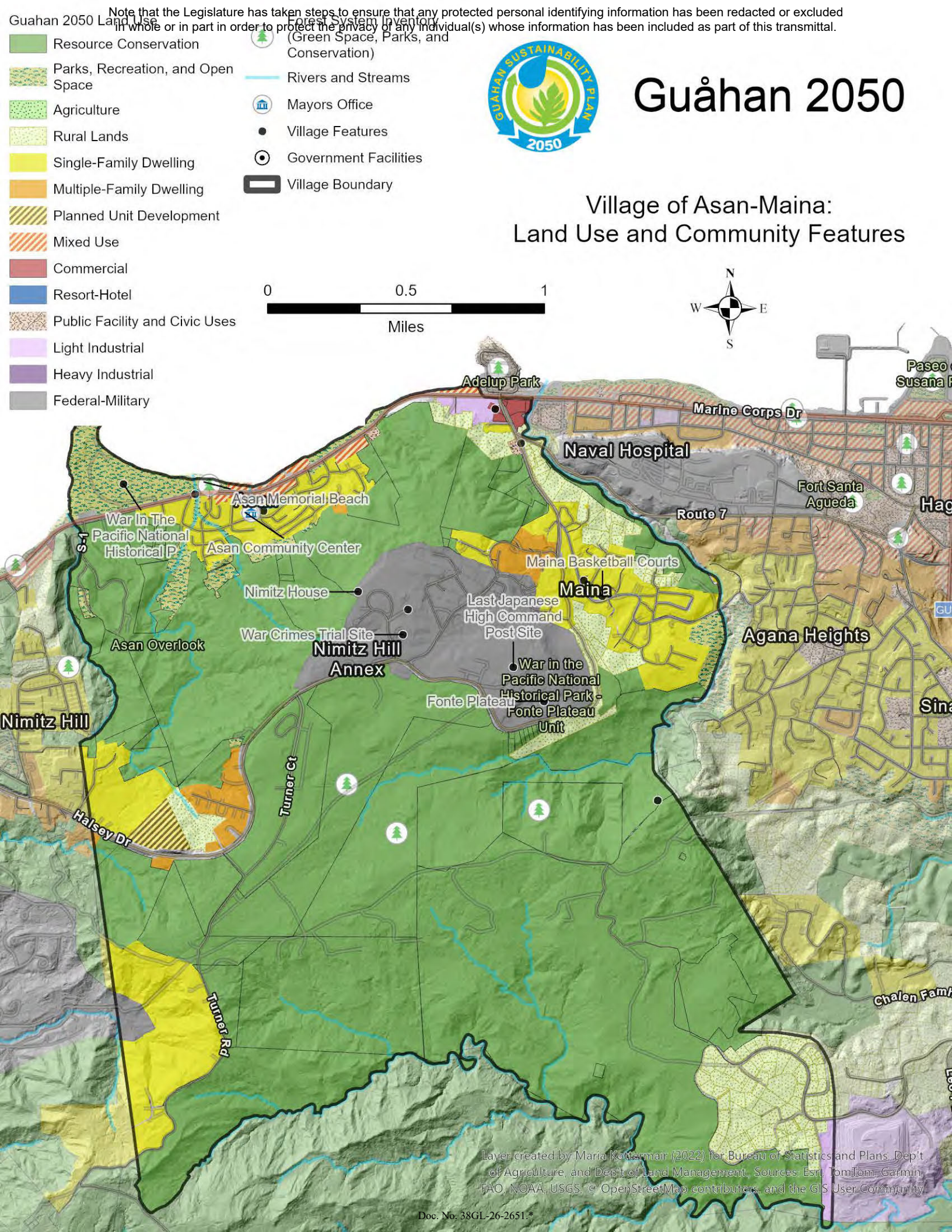
Guåhan 2050

Village of Asan-Maina: Land Use and Community Features



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- Scenic Point or Viewshed
- Forest System Inventory (Green Space, Parks, and Conservation)
- Rivers and Streams
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary
- Guam Forest System Inventory
- Ground Water Protection
- Production Well
- Pump Station
- Sewer Lateral
- Sewer Main
- Public_Schools
- FEMA Flood Zone
- Tsunami Evacuation Zone
- Guam HCP - Key Habitat
- Federally Managed Land

Guåhan 2050

Land Use Planning for Asan-Maina: Opportunities and Constraints

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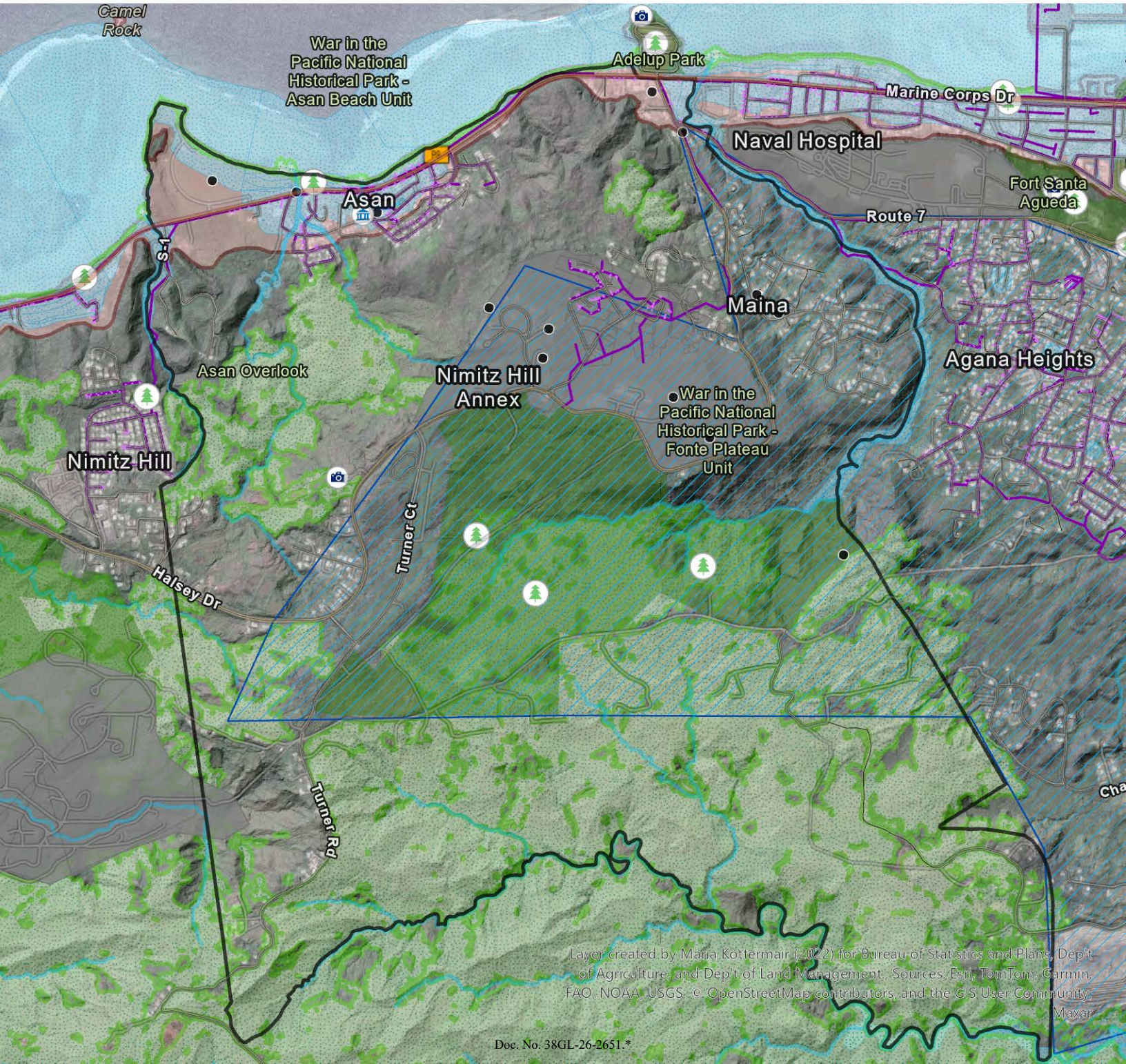

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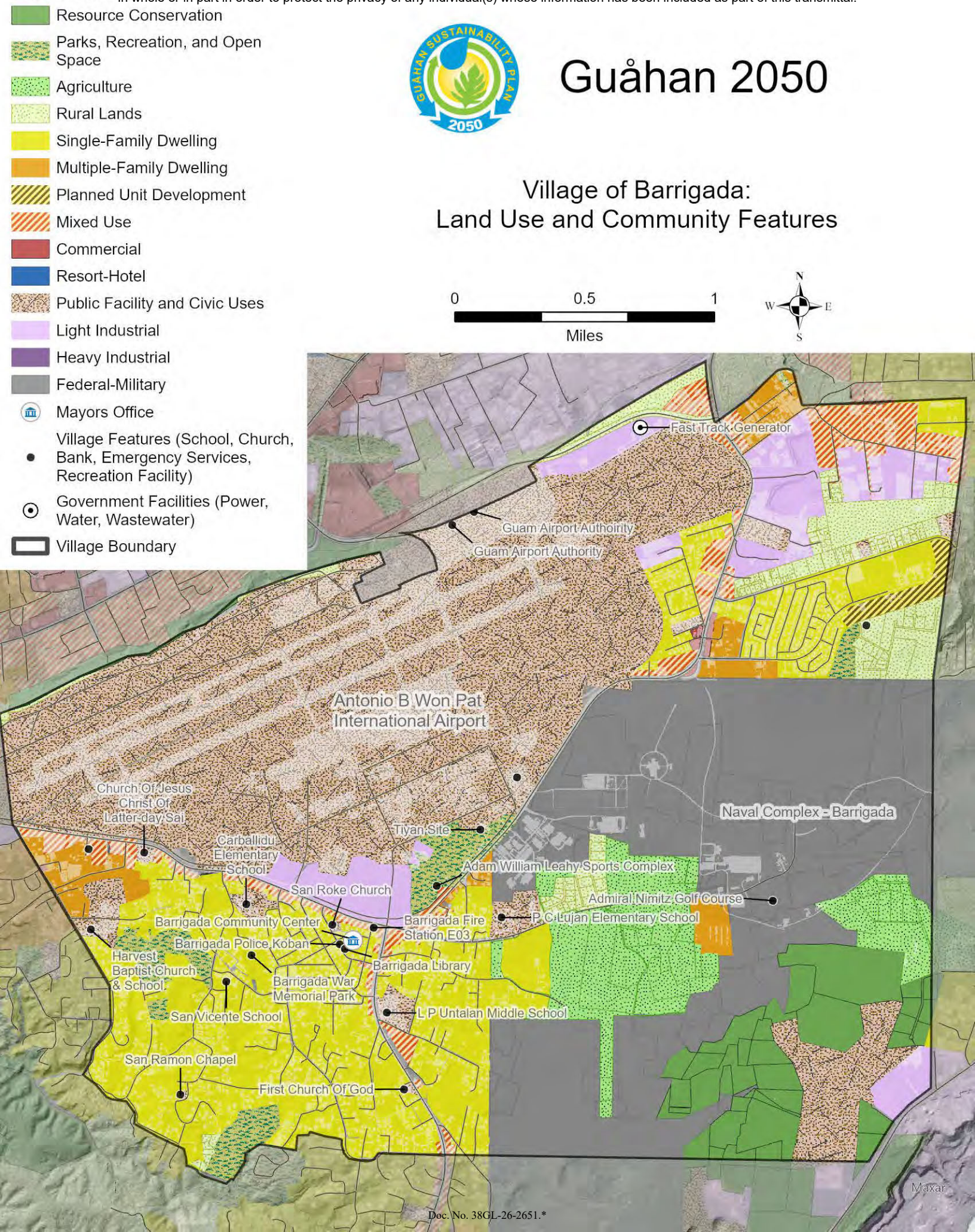
Guåhan 2050

Village of Barrigada: Land Use and Community Features



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Guåhan 2050

Land Use Planning for Barrigada: Opportunities and Constraints

- Rivers and Streams
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary
- Ground Water Protection Zone (1997)
- Production Well
- Pump Station
- Sewer Lateral
- Sewer Main
- Public_Schools
- FEMA Flood Zone
- Potential Prime Agriculture Parcels

Guam International Airport

- Airport ground
- Airport runway

Federally Managed Land

- Dept. of Defense

0 0.5 1
Miles

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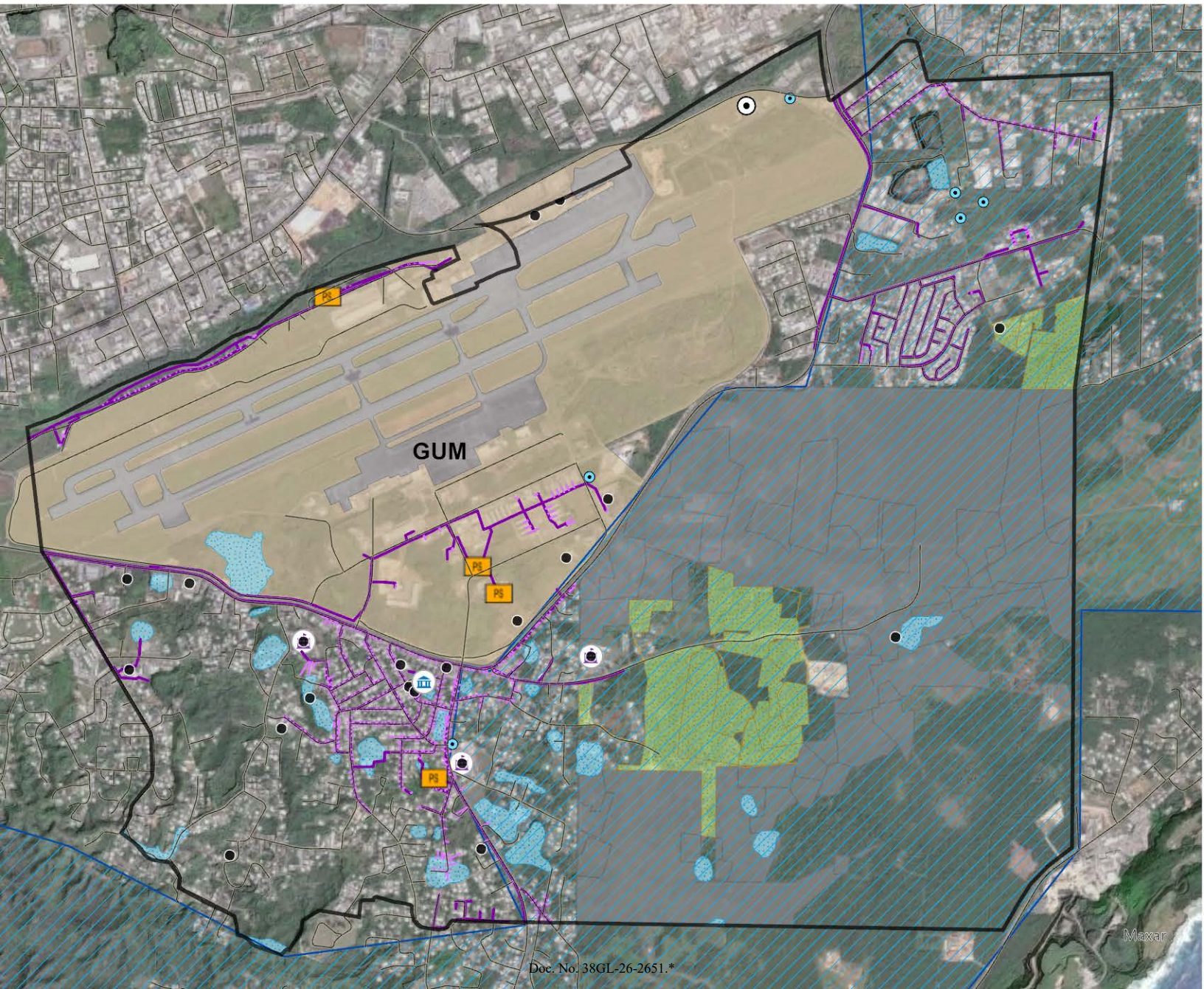
S



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Guåhan 2050

Village of Chalan Pagu-Otdot: Land Use and Community Features

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Miles

Guahan 2050 Land Use
- Resource Conservation
- Parks, Recreation, and Open Space
- Agriculture
- Rural Lands
- Single-Family Dwelling
- Multiple-Family Dwelling
- Planned Unit Development
- Mixed Use
- Commercial
- Resort-Hotel
- Public Facility and Civic Uses
- Light Industrial
- Heavy Industrial
- Federal-Military

- River
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary

N
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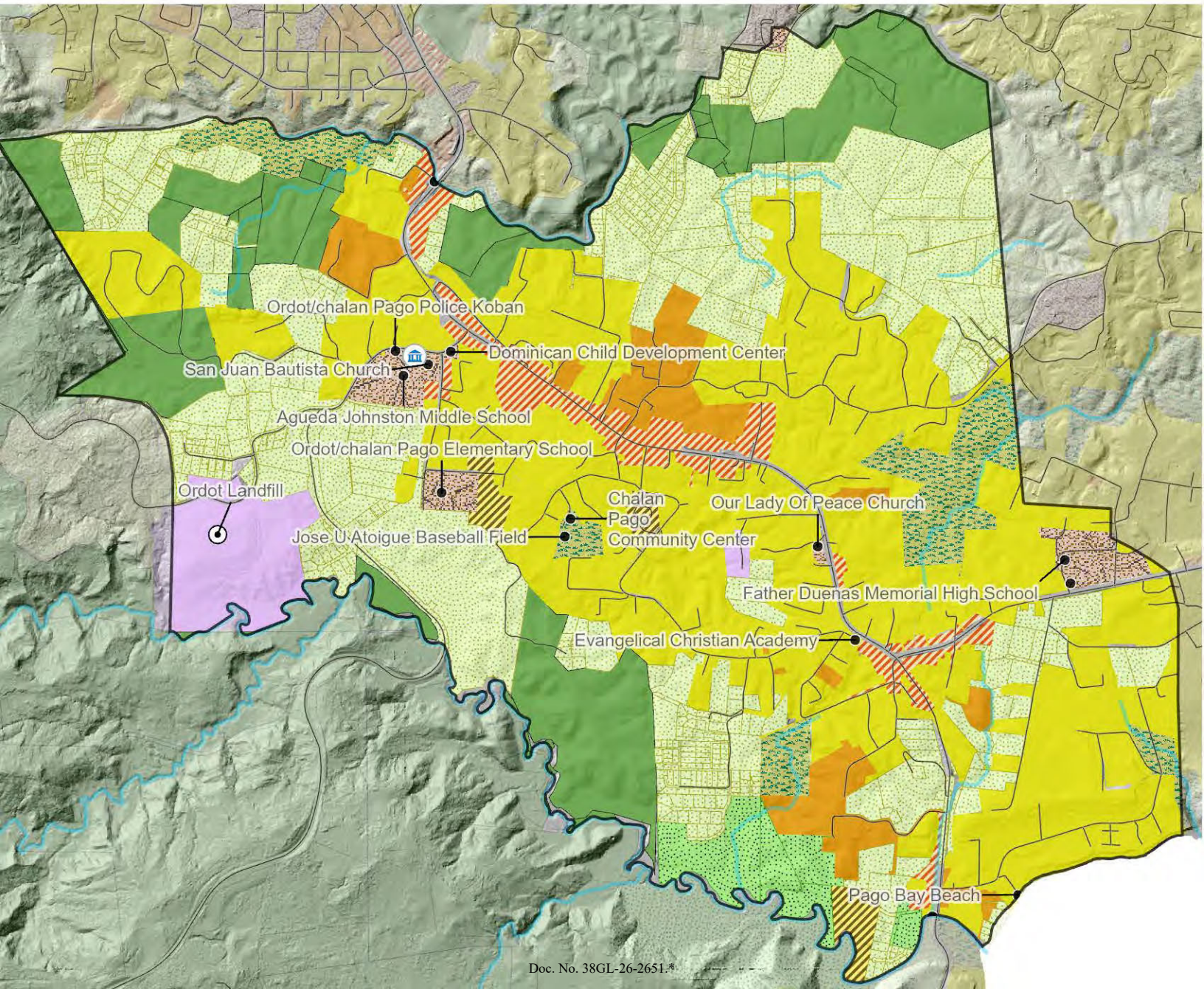

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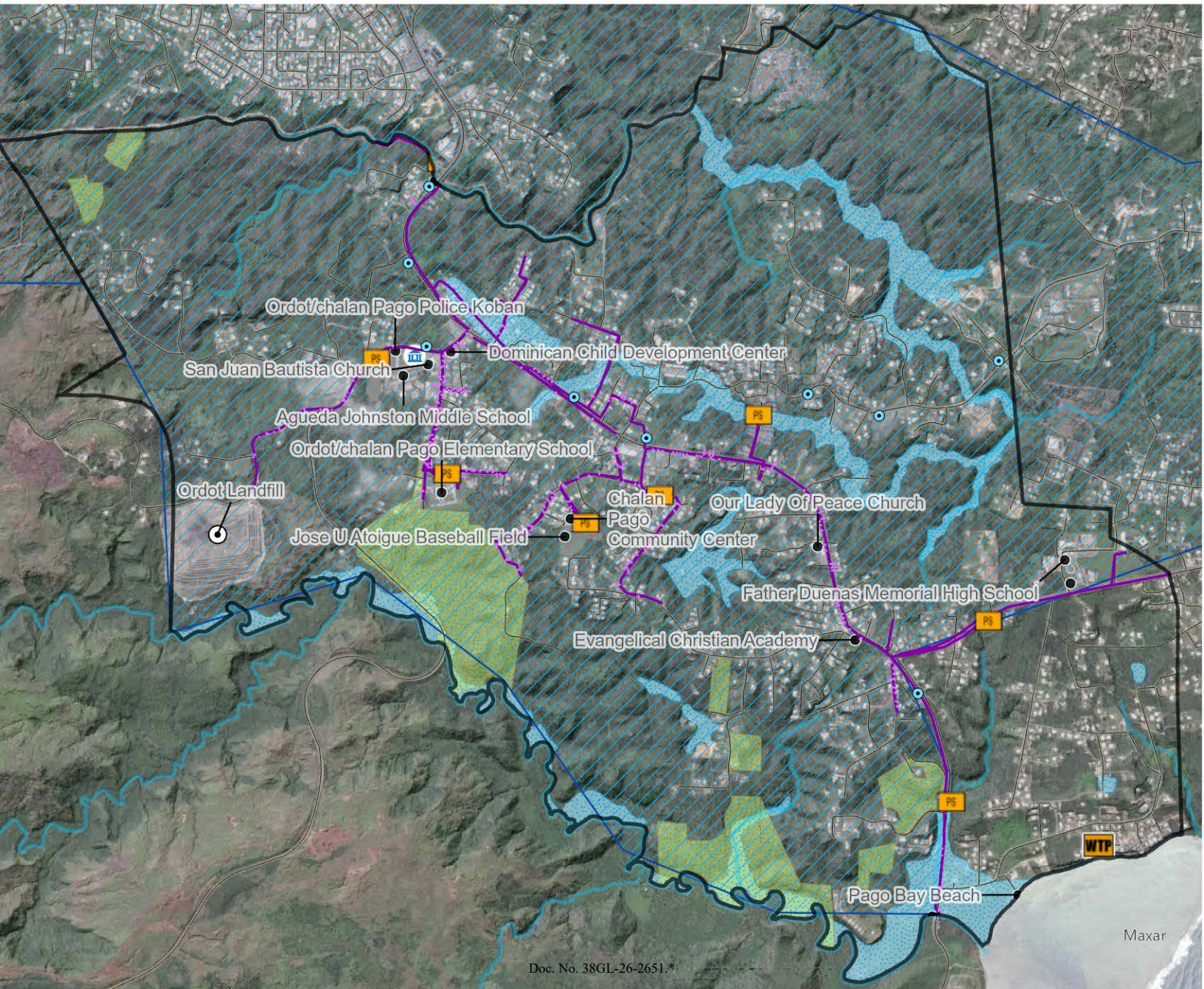
Guåhan 2050

Land Use Planning for Chalan Pagu-Otdot: Opportunities and Constraints

0 0.5 1
Miles

- Rivers and Streams
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary
- Ground Water Protection Zone (1997)
- Production Well
- Pump Station
- Wastewater Plant
- Sewer Lateral
- Sewer Main
- FEMA Flood Zone
- Potential Prime Agriculture Parcels

N W E S



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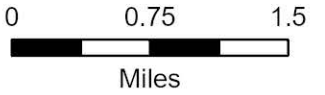
Guåhan 2050

Land Use Planning for Dededo: Opportunities and Constraints





- Public Schools
- Churches
- Mayors Office
- Forest System Inventory
- Forest System Inventory (2024)
- National Wildlife Refuge
- Ground Water Protection Zone (1997)
- Production Well
- Water Pump Station
- Sewer Line (Lateral)
- Sewer Line (Main)
- Potential Prime Agricultural Parcels
- CHamoru Land Trust Lands
- Federal Managed Lands
- Village Boundary

Data Sources
- U.S. Census Bureau 2020
- Guam Bureau of Statistics and Plans
- Guam EPA
- University of Guam WERI, GWA

Layer created by Maria Kottermair (2022) for Bureau of Statistics and Plans, Dep't of Agriculture, and Dep't. of Land Management. Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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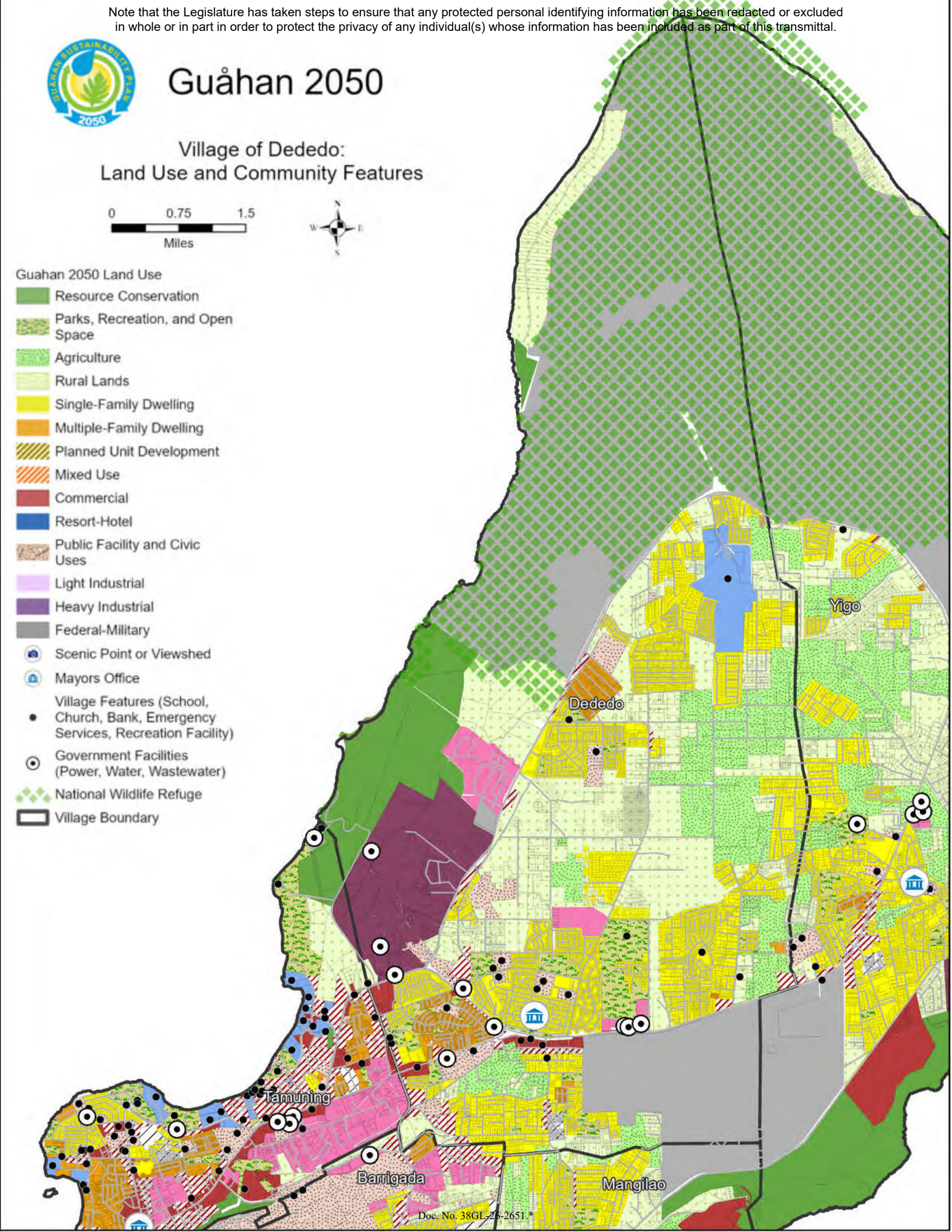
Guåhan 2050

Village of Dededo: Land Use and Community Features



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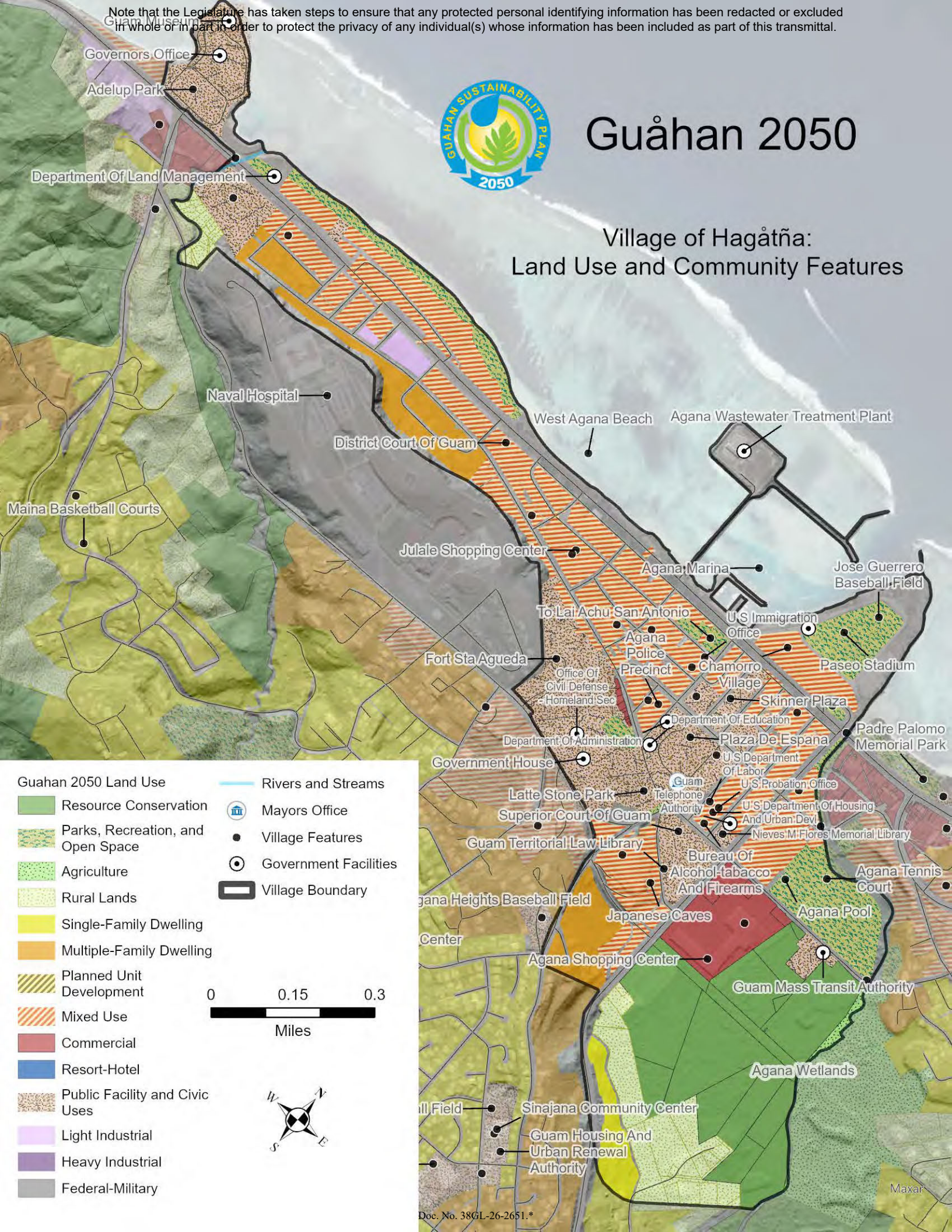
Guåhan 2050

Village of Hagåtña: Land Use and Community Features



Guahan 2050 Land Use

- Resource Conservation
- Parks, Recreation, and Open Space
- Agriculture
- Rural Lands
- Single-Family Dwelling
- Multiple-Family Dwelling
- Planned Unit Development
- Mixed Use
- Commercial
- Resort-Hotel
- Public Facility and Civic Uses
- Light Industrial
- Heavy Industrial
- Federal-Military

- Rivers and Streams
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary

0 0.15 0.3

Miles

N W E S

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Guåhan 2050

Land Use Planning for Hagåtña: Opportunities and Constraints



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Guåhan 2050

Village of Hågat: Land Use and Community Features

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Miles

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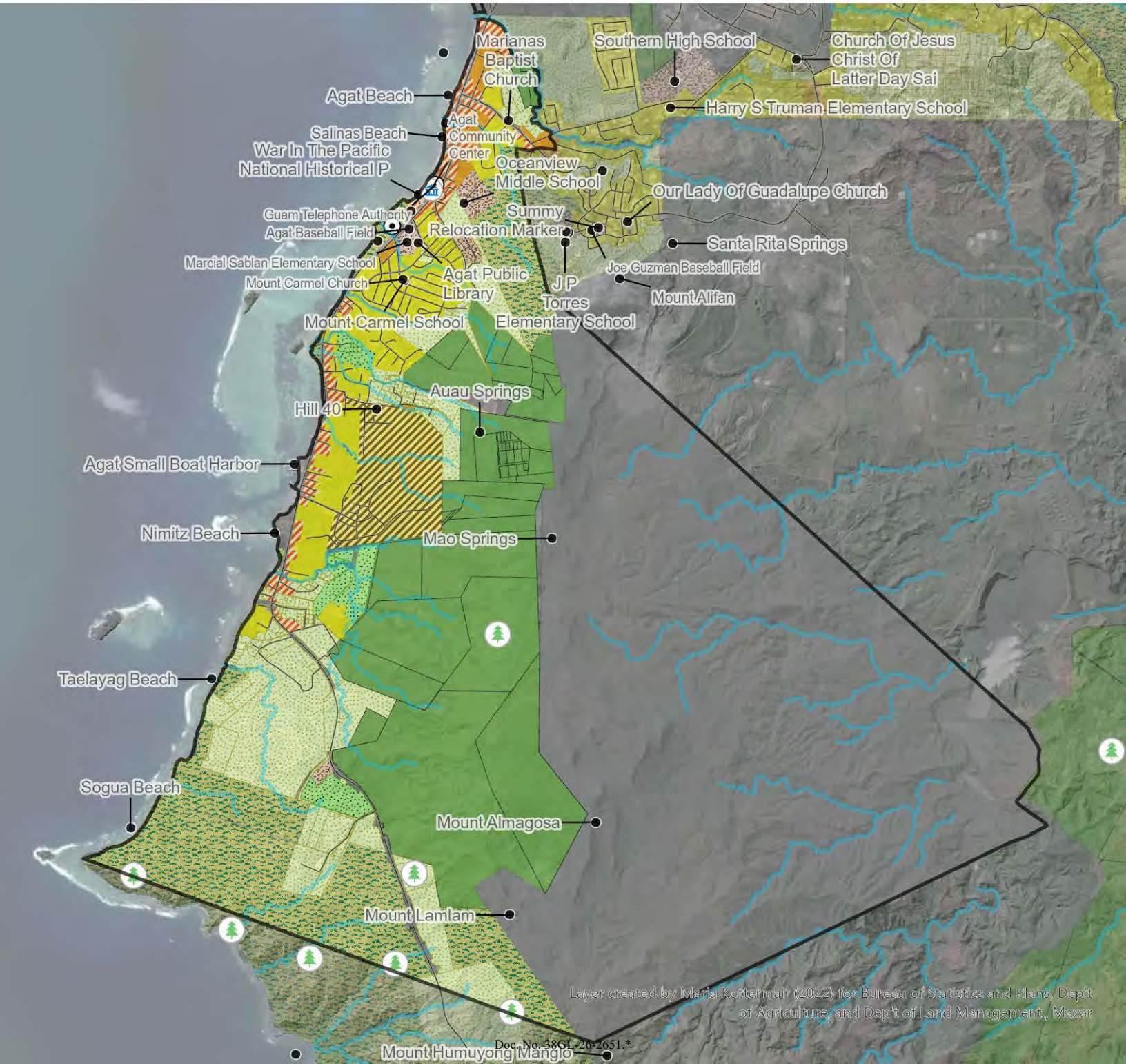
Guahan 2050 Land Use

- Resource Conservation
- Parks, Recreation, and Open Space
- Agriculture
- Rural Lands
- Single-Family Dwelling
- Multiple-Family Dwelling
- Planned Unit Development
- Mixed Use
- Commercial
- Resort-Hotel
- Public Facility and Civic Uses
- Light Industrial
- Heavy Industrial
- Federal-Military
- Forest System Inventory (Green Space, Parks, and Conservation)
- Rivers and Streams
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary



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Guåhan 2050

Land Use Planning for Hågat: Opportunities and Constraints

0 0.5 1
Miles

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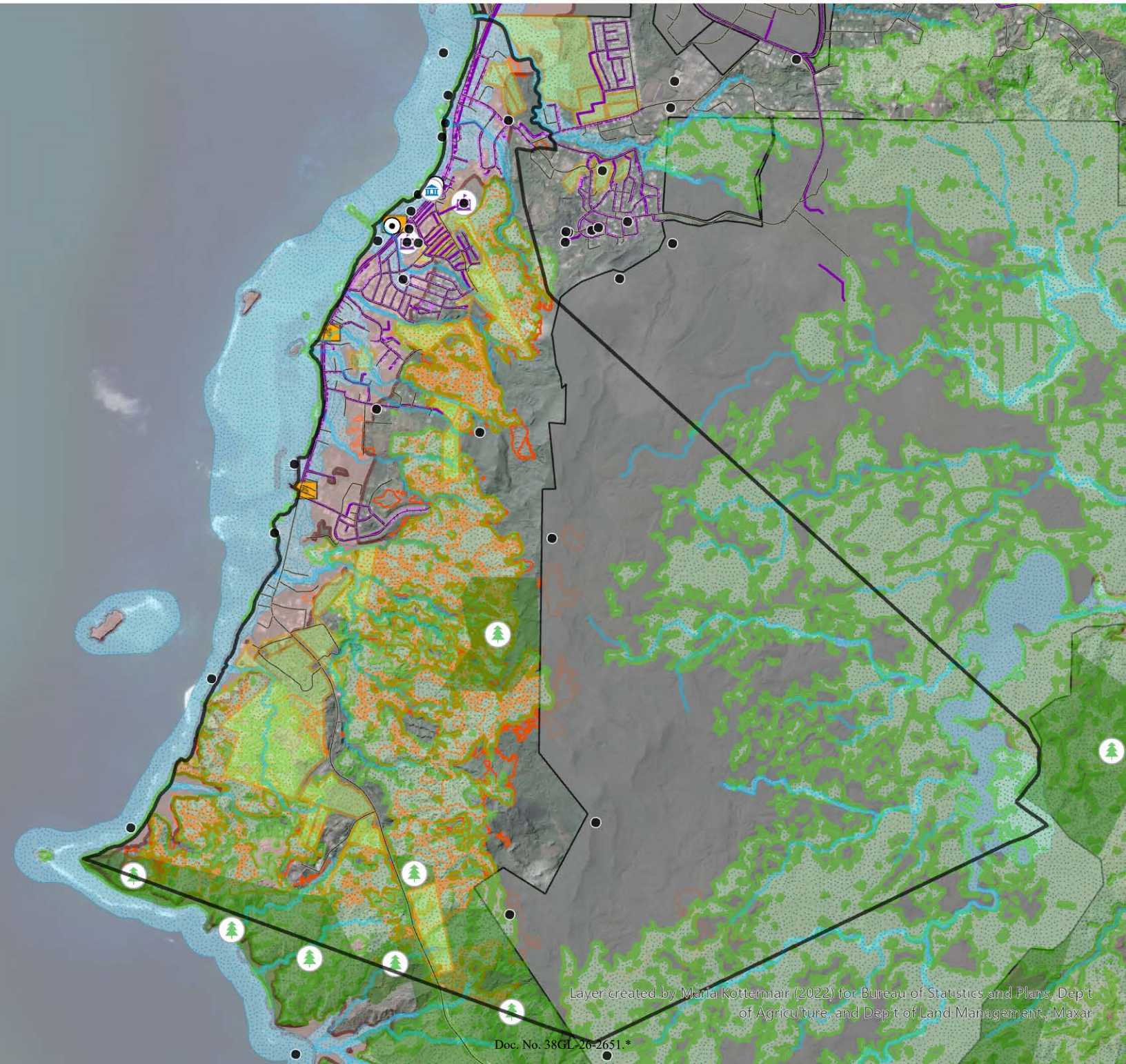
S

- Forest System Inventory (Green Space, Parks, and Conservation)
- Rivers and Streams
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary
- Guam Forest System Inventory
- Production Well
- Pump Station
- Sewer Lateral
- Sewer Main
- Public_Schools
- FEMA Flood Zone
- Tsunami Evacuation Zone
- Guam HCP - Key Habitat Type
- Potential Prime Agriculture Parcels
- Federally Managed Land
- Wildfire Impacts 2015-2024



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Guåhan 2050

Village of Humåtak: Land Use and Community Features

0 0.5 1
Miles

N W E S

Guahan 2050 Land Use

- Resource Conservation
- Parks, Recreation, and Open Space
- Agriculture
- Rural Lands
- Single-Family Dwelling
- Multiple-Family Dwelling
- Planned Unit Development
- Mixed Use
- Commercial
- Resort/Hotel
- Public Facility and Civic Uses
- Light Industrial
- Heavy Industrial
- Federal-Military
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary



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Guåhan 2050

Land Use Planning for Humåtak: Opportunities and Constraints

0 0.5 1
Miles

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- Scenic Point or Viewshed
- Forest System Inventory (Green Space, Parks, and Conservation)
- Rivers and Streams
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary
- Guam Forest System Inventory
- Production Well
- Pump Station
- Sewer Lateral
- Sewer Main
- Public_Schools
- FEMA Flood Zone
- Tsunami Evacuation Zone
- Guam HCP - Key Habitat Type
- Federally Managed Land
- Wildfire Impacts 2015-2024



Doc. No. 38GL-26-2651.*

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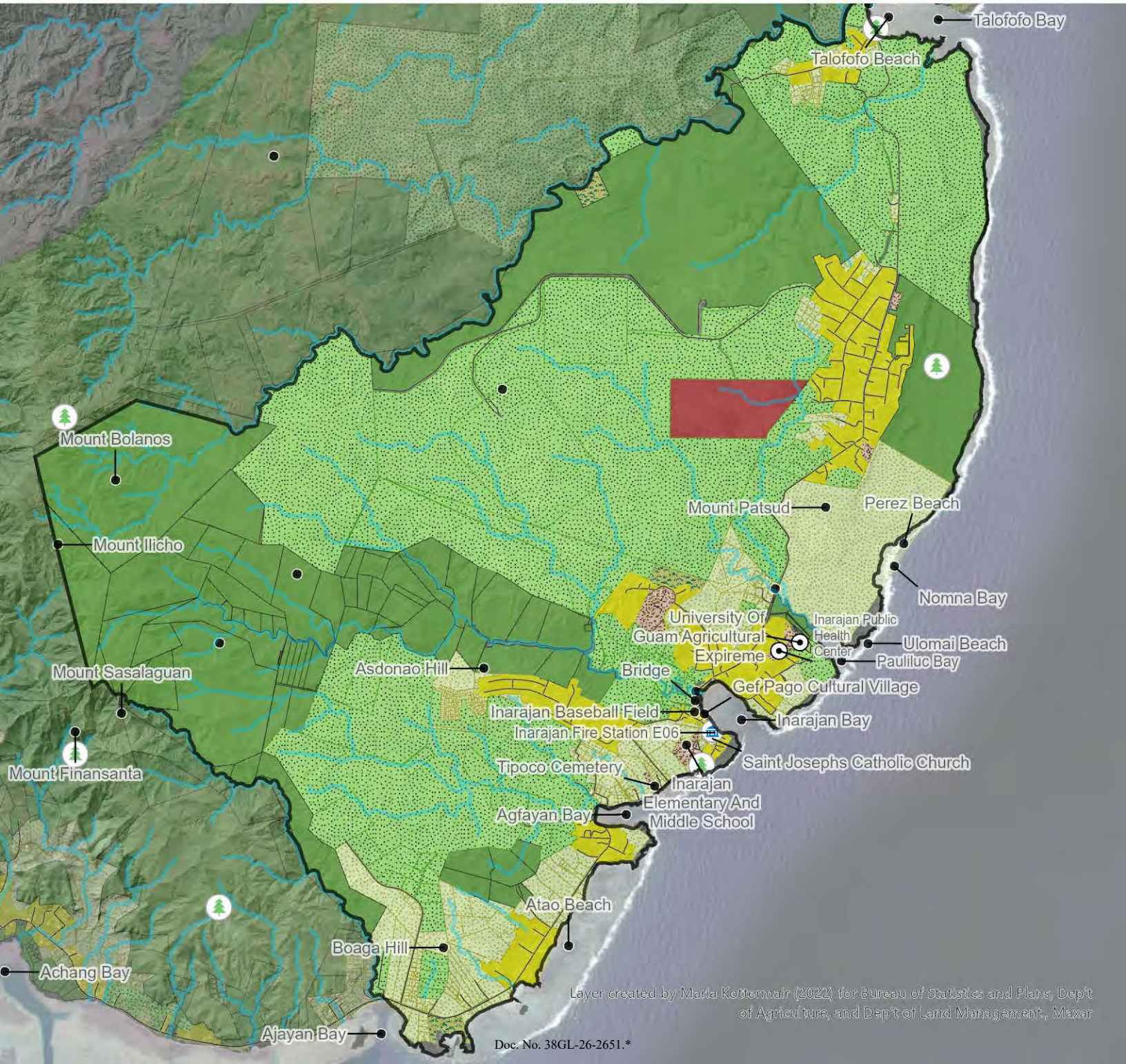
Guåhan 2050

Village of Inålahan: Land Use and Community Features

0 0.5 1
Miles

N
W E
S

Guahan 2050 Land Use
- Resource Conservation
- Parks, Recreation, and Open Space
- Agriculture
- Rural Lands
- Single-Family Dwelling
- Multiple-Family Dwelling
- Planned Unit Development
- Mixed Use
- Commercial
- Resort-Hotel
- Public Facility and Civic Uses
- Light Industrial
- Heavy Industrial
- Federal-Military
- Forest System Inventory (Green Space, Parks, and Conservation)
- Rivers and Streams
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary



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Guåhan 2050

Land Use Planning for Inålahan: Opportunities and Constraints

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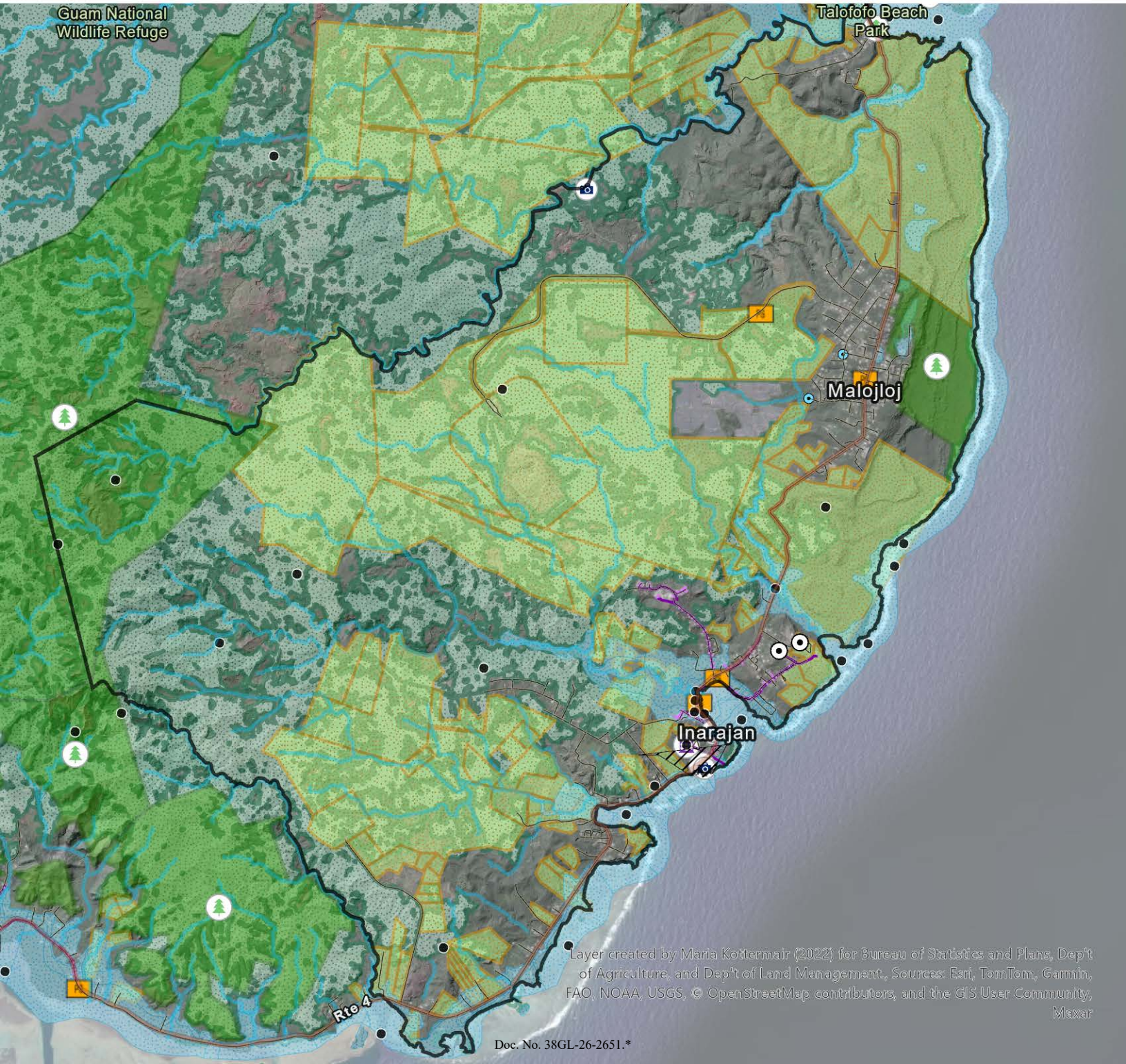
Miles

N
W E
S

- Scenic Point or Viewshed
- Forest System Inventory (Green Space, Parks, and Conservation)
- Rivers and Streams
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary
- Guam Forest System Inventory
- Production Well
- Pump Station
- Sewer Lateral
- Sewer Main
- Public_Schools
- FEMA Flood Zone
- Guam HCP - Key Habitat Type
- Potential Prime Agriculture Parcels
- Federally Managed Land
- National Historic Register - Cultural District



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Guåhan 2050

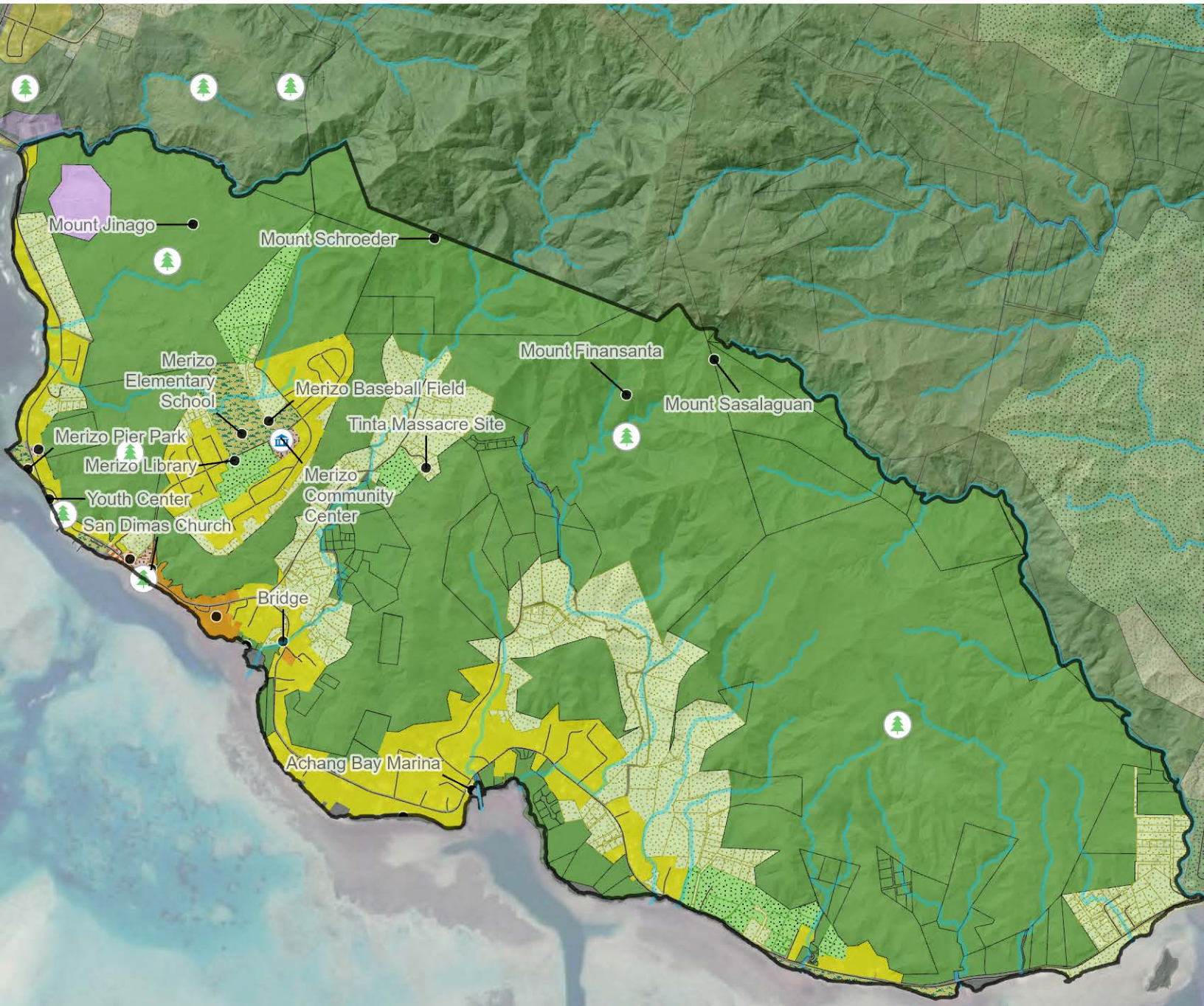
Village of Malesso: Land Use and Community Features

0 0.25 0.5
Miles

N
W E
S

Guahan 2050 Land Use
- Resource Conservation
- Parks, Recreation, and Open Space
- Agriculture
- Rural Lands
- Single-Family Dwelling
- Multiple-Family Dwelling
- Planned Unit Development
- Mixed Use
- Commercial
- Resort-Hotel
- Public Facility and Civic Uses
- Light Industrial
- Heavy Industrial
- Federal-Military

- Forest System Inventory (Green Space, Parks, and Conservation)
- Rivers and Streams
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary



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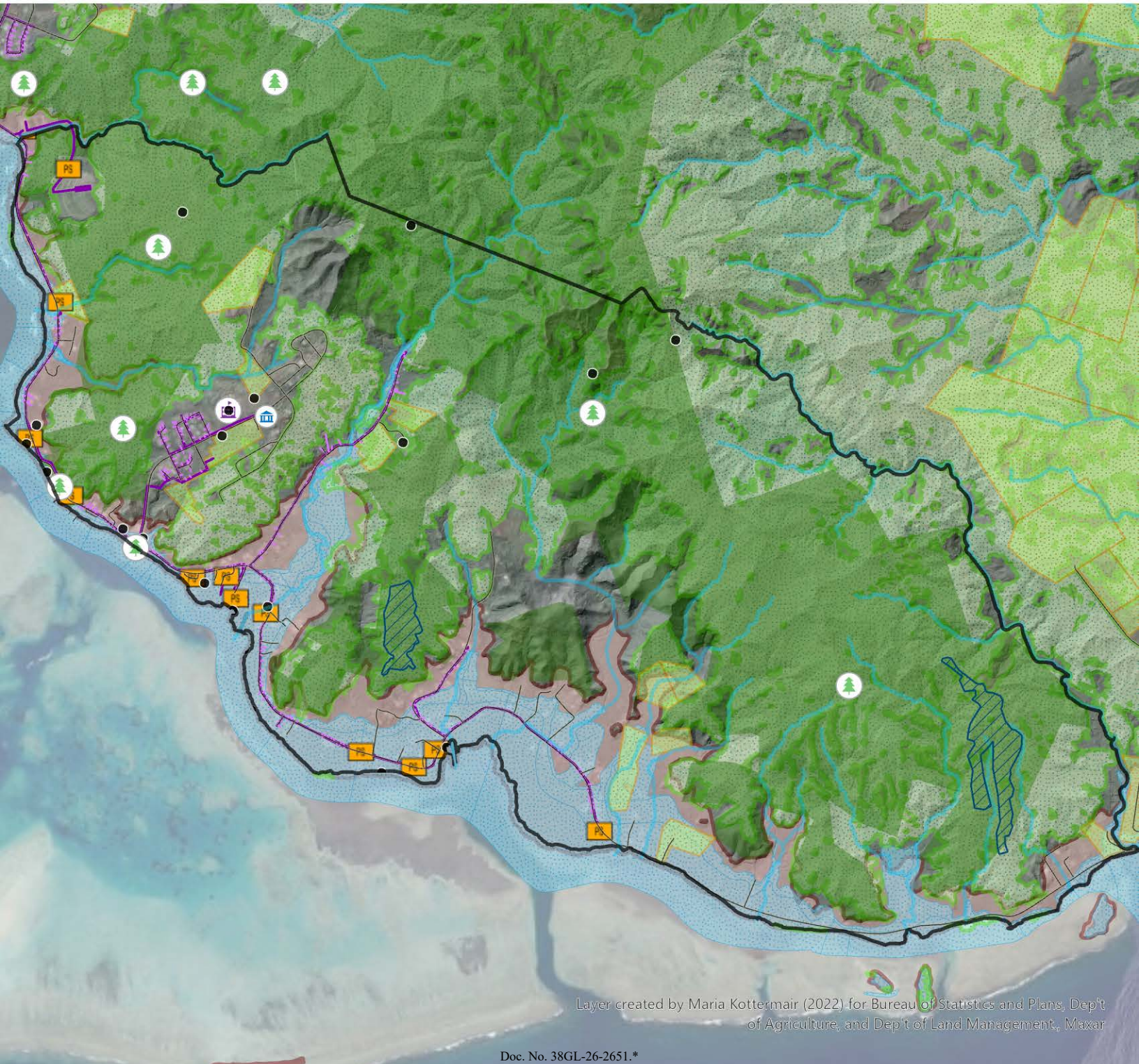
Guåhan 2050

Land Use Planning for Malesso: Opportunities and Constraints

0 0.5 1
Miles

N
W E
S

- Forest System Inventory (Green Space, Parks, and Conservation)
- Rivers and Streams
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary
- Guam Forest System Inventory
- Production Well
- Pump Station
- Sewer Lateral
- Sewer Main
- Public_Schools
- FEMA Flood Zone
- Tsunami Evacuation Zone
- Guam HCP - Key Habitat Type
- Potential Prime Agriculture Parcels
- Reforestation Sites (2025)



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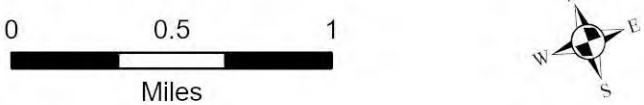
Guåhan 2050

Village of Mangilao: Land Use and Community Features



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Guåhan 2050

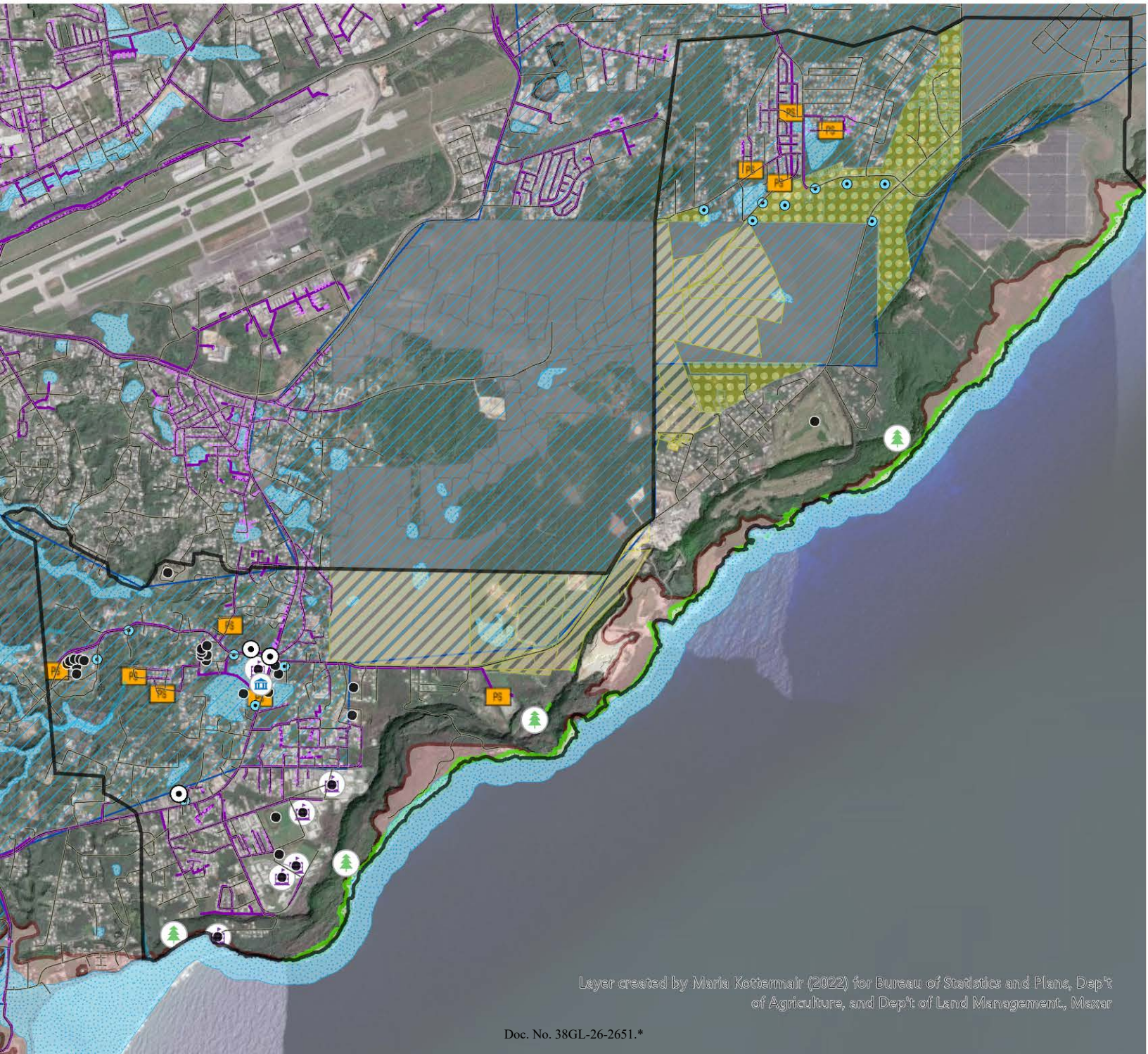
Land Use Planning for Mangilao: Opportunities and Constraints

0 0.5 1
Miles

N
W E
S

- Forest System Inventory (Green Space, Parks, and Conservation)
- Rivers and Streams
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary
- Ground Water Protection Zone (1997)
- Production Well
- Pump Station
- Sewer Lateral
- Sewer Main
- Public_Schools
- CHamoru Land Trust
- Ancestral Lands
- FEMA Flood Zone
- Tsunami Evacuation Zone
- Guam HCP - Key Habitat Type

Federally Managed Land
- Dept. of Defense



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Guåhan 2050

Village of Piti: Land Use and Community Features

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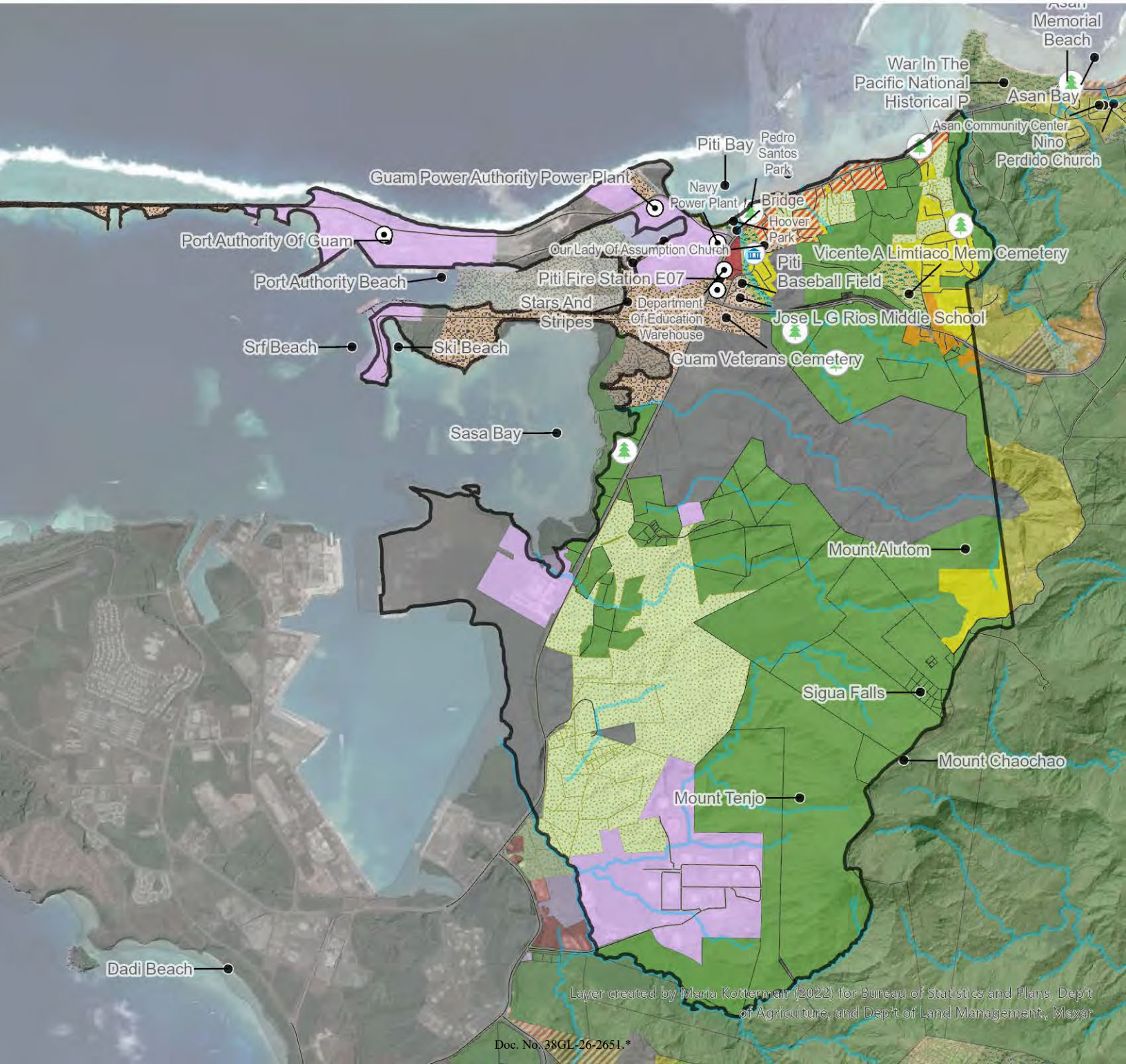
Guahan 2050 Land Use
- Resource Conservation
- Parks, Recreation, and Open Space
- Agriculture
- Rural Lands
- Single-Family Dwelling
- Multiple-Family Dwelling
- Planned Unit Development
- Mixed Use
- Commercial
- Resort-Hotel
- Public Facility and Civic Uses
- Light Industrial
- Heavy Industrial
- Federal-Military
- Forest System Inventory (Green Space, Parks, and Conservation)
- Rivers and Streams
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary



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Guåhan 2050

Land Use Planning for Piti: Opportunities and Constraints

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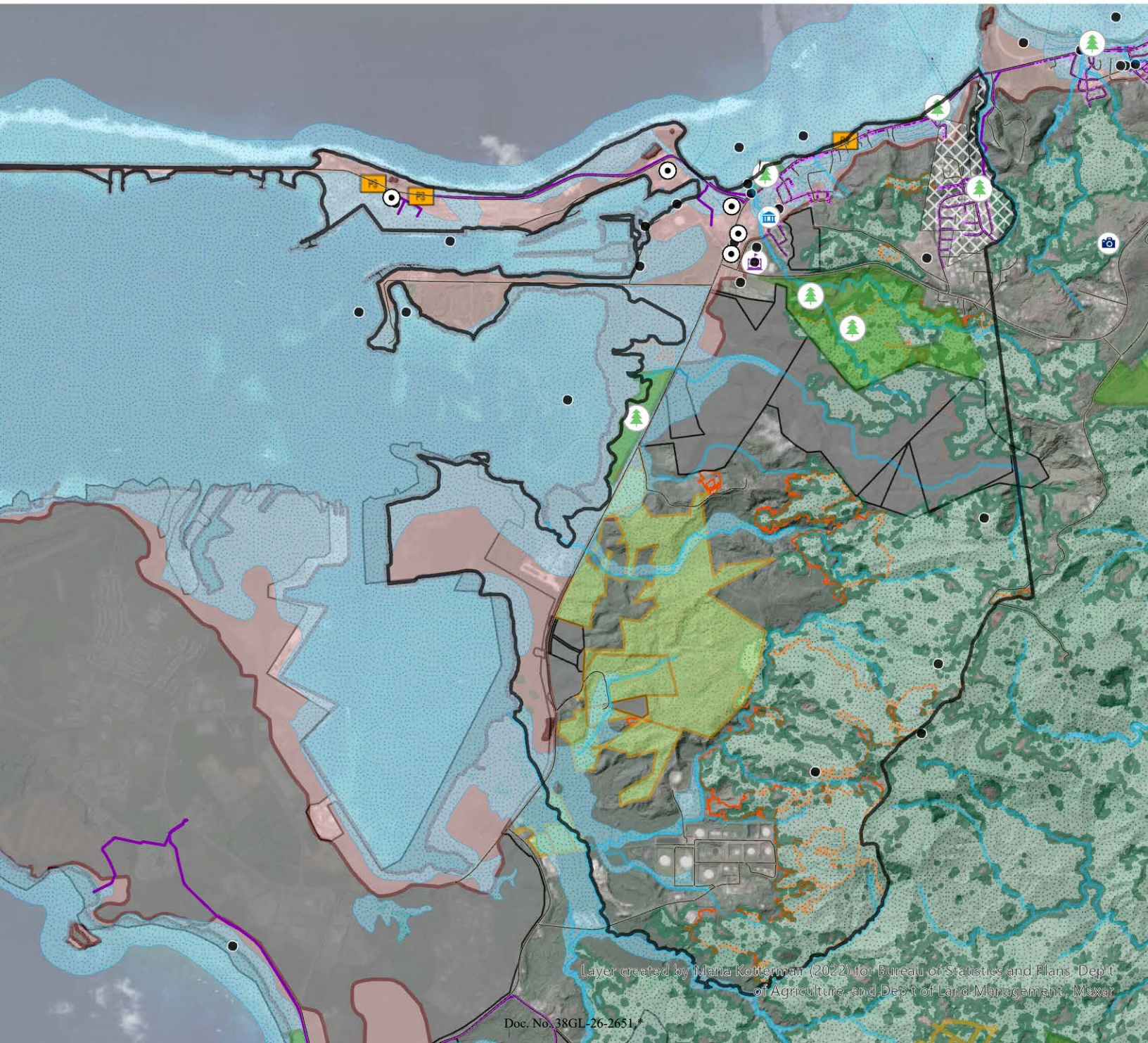
- Scenic Point or Viewshed
- Forest System Inventory (Green Space, Parks, and Conservation)
- Rivers and Streams
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary
- Guam Forest System Inventory
- Production Well
- Pump Station
- Sewer Lateral
- Sewer Main
- Public_Schools
- FEMA Flood Zone
- Tsunami Evacuation Zone
- Guam HCP - Key Habitat Type
- Potential Prime Agriculture Parcels
- Federally Managed Land
- Wildfire Impacts 2015-2024
- Historic Register - Cultural Site
- National Historic Register - Cultural District



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Guåhan 2050

Village of Santa Rita: Land Use and Community Features

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Miles

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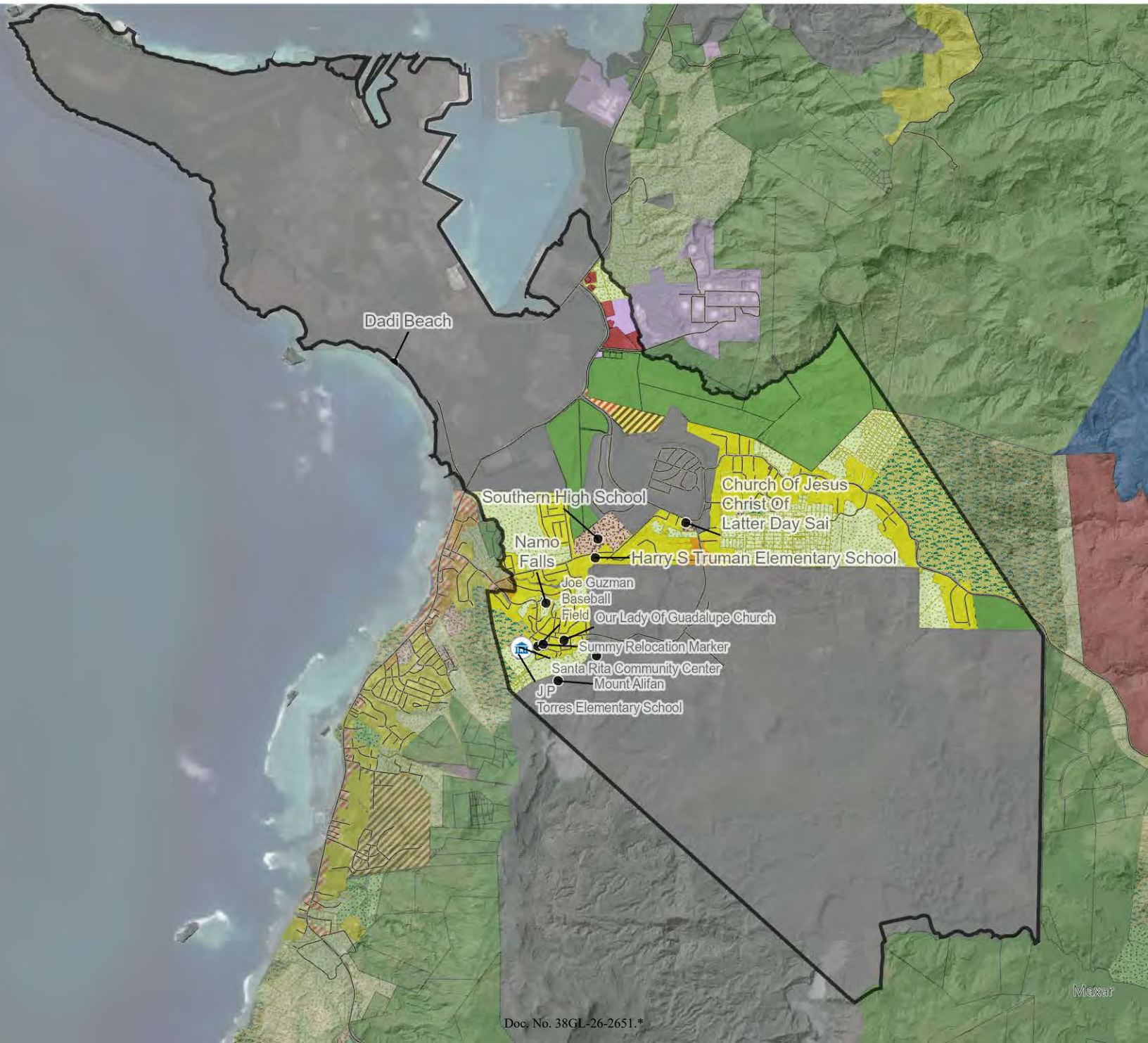
Guahan 2050 Land Use

- Resource Conservation
- Parks, Recreation, and Open Space
- Agriculture
- Rural Lands
- Single-Family Dwelling
- Multiple-Family Dwelling
- Planned Unit Development
- Mixed Use
- Commercial
- Resort-Hotel
- Public Facility and Civic Uses
- Light Industrial
- Heavy Industrial
- Federal-Military
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary



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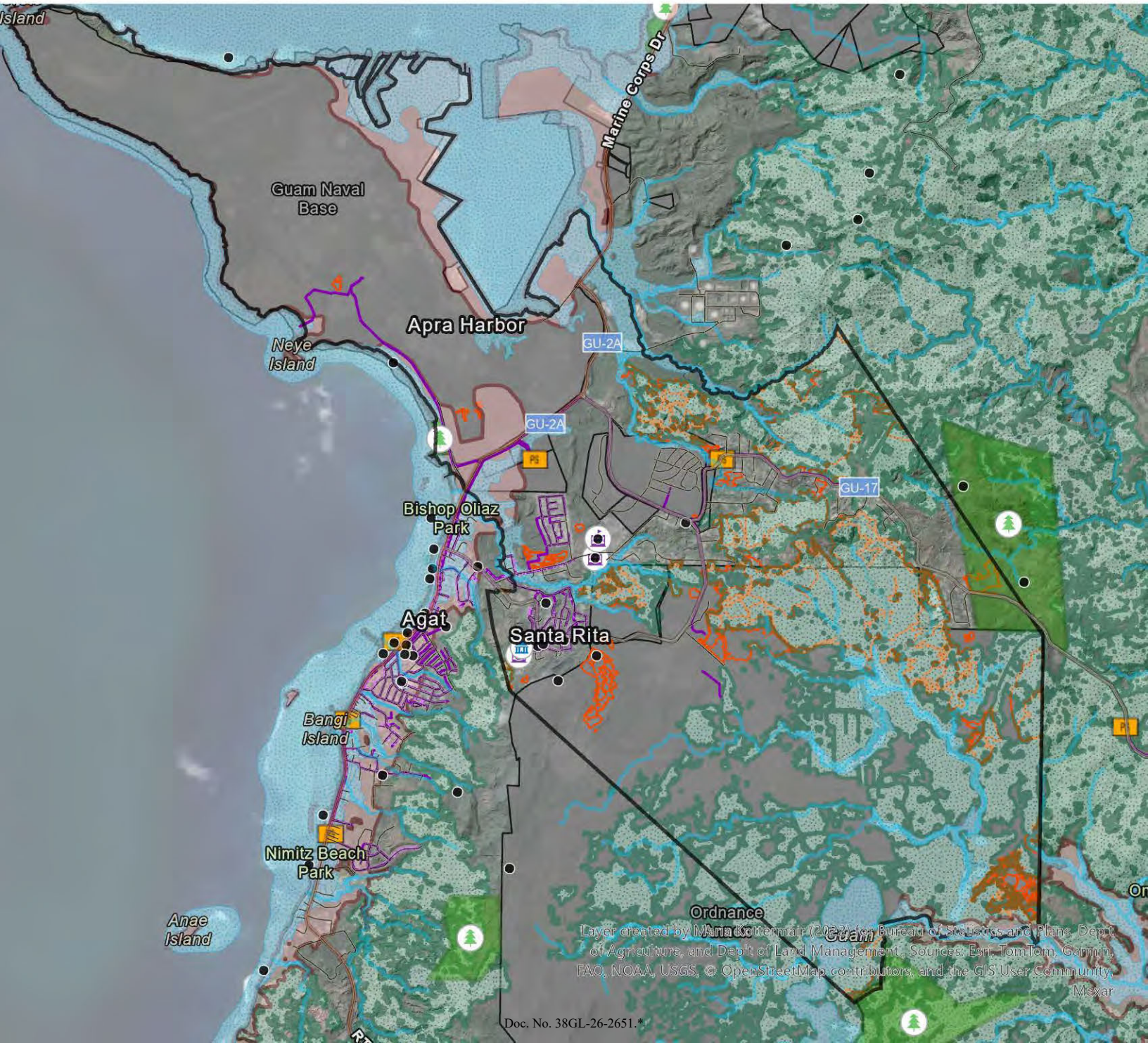
Guåhan 2050

Land Use Planning for Santa Rita: Opportunities and Constraints



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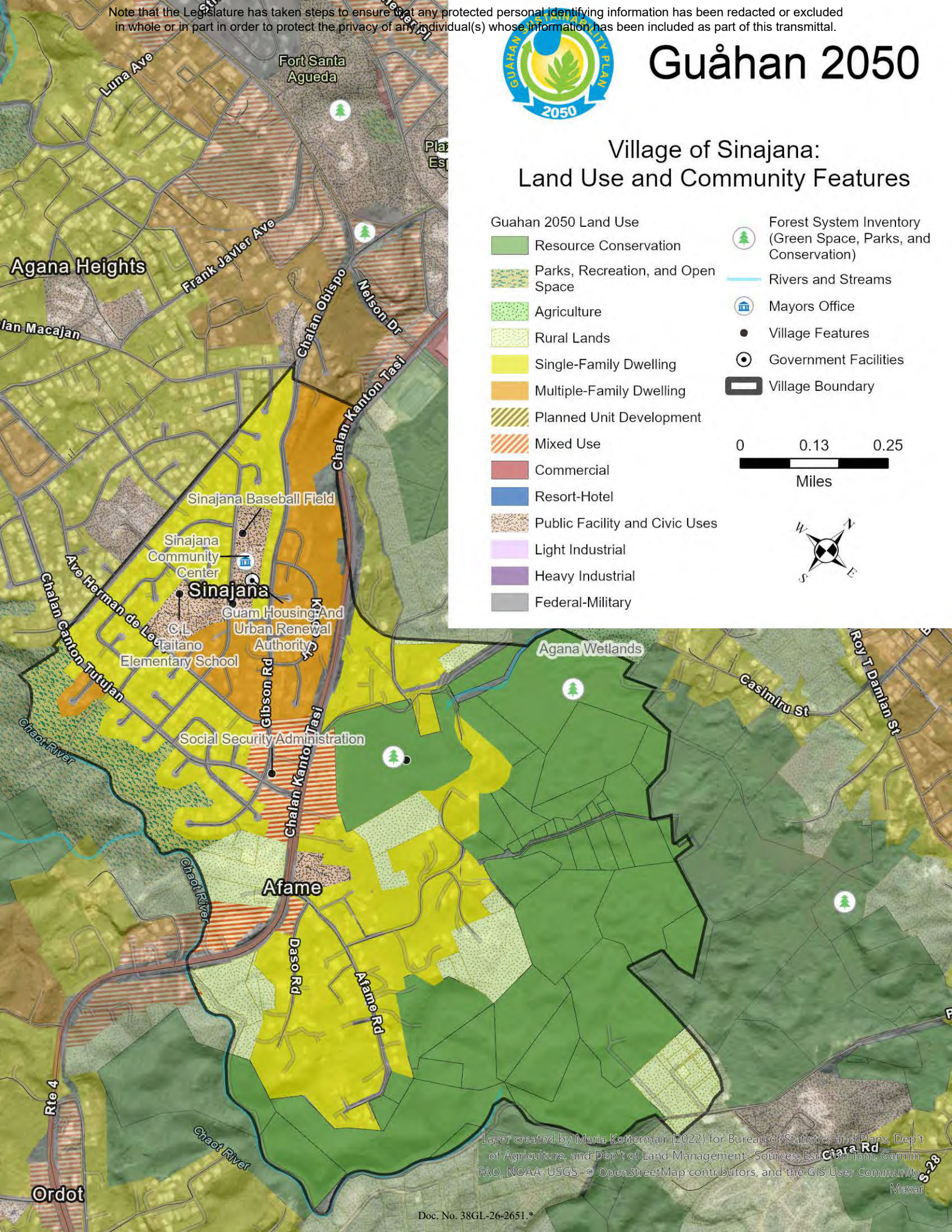
Guåhan 2050

Village of Sinajana: Land Use and Community Features



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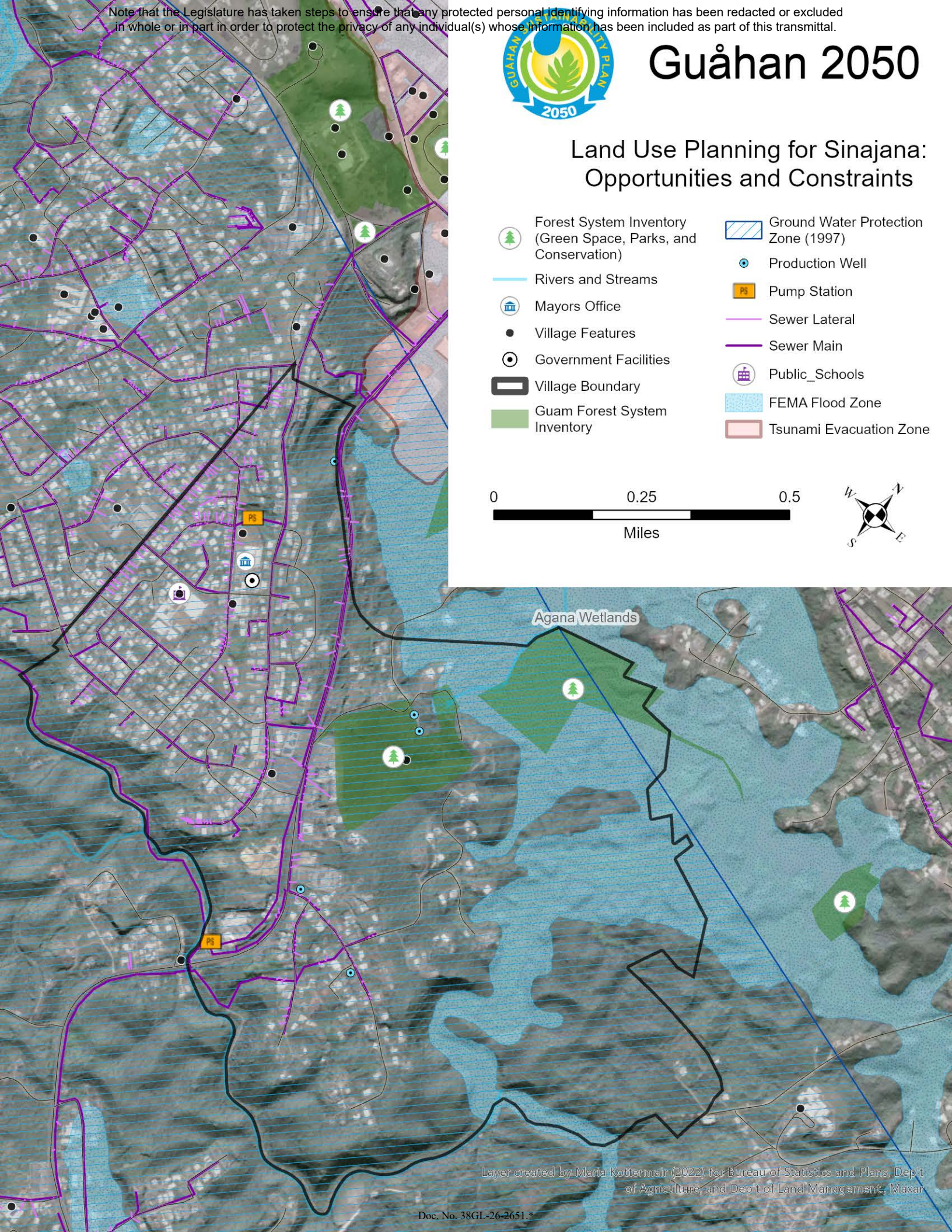
Guåhan 2050

Land Use Planning for Sinajana: Opportunities and Constraints



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Guåhan 2050

Village of Talo'fo'fo':
Land Use and Community Features

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Miles

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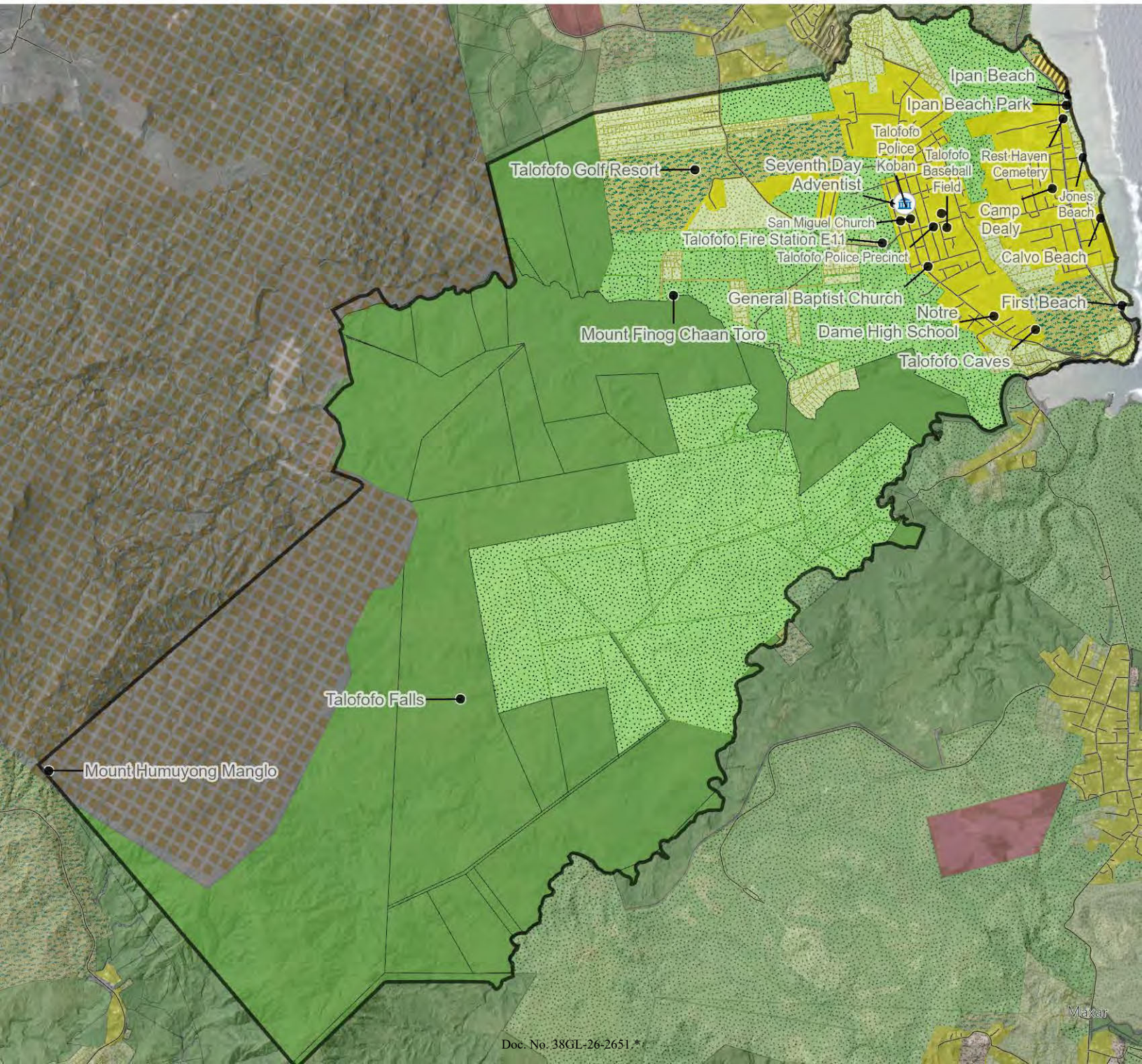
S

Guahan 2050 Land Use

- Resource Conservation
- Parks, Recreation, and Open Space
- Agriculture
- Rural Lands
- Single-Family Dwelling
- Multiple-Family Dwelling
- Planned Unit Development
- Mixed Use
- Commercial
- Resort-Hotel
- Public Facility and Civic Uses
- Light Industrial
- Heavy Industrial
- Federal-Military
- Mayors Office
- Village Features
- Government Facilities
- National Wildlife Refuge
- Village Boundary



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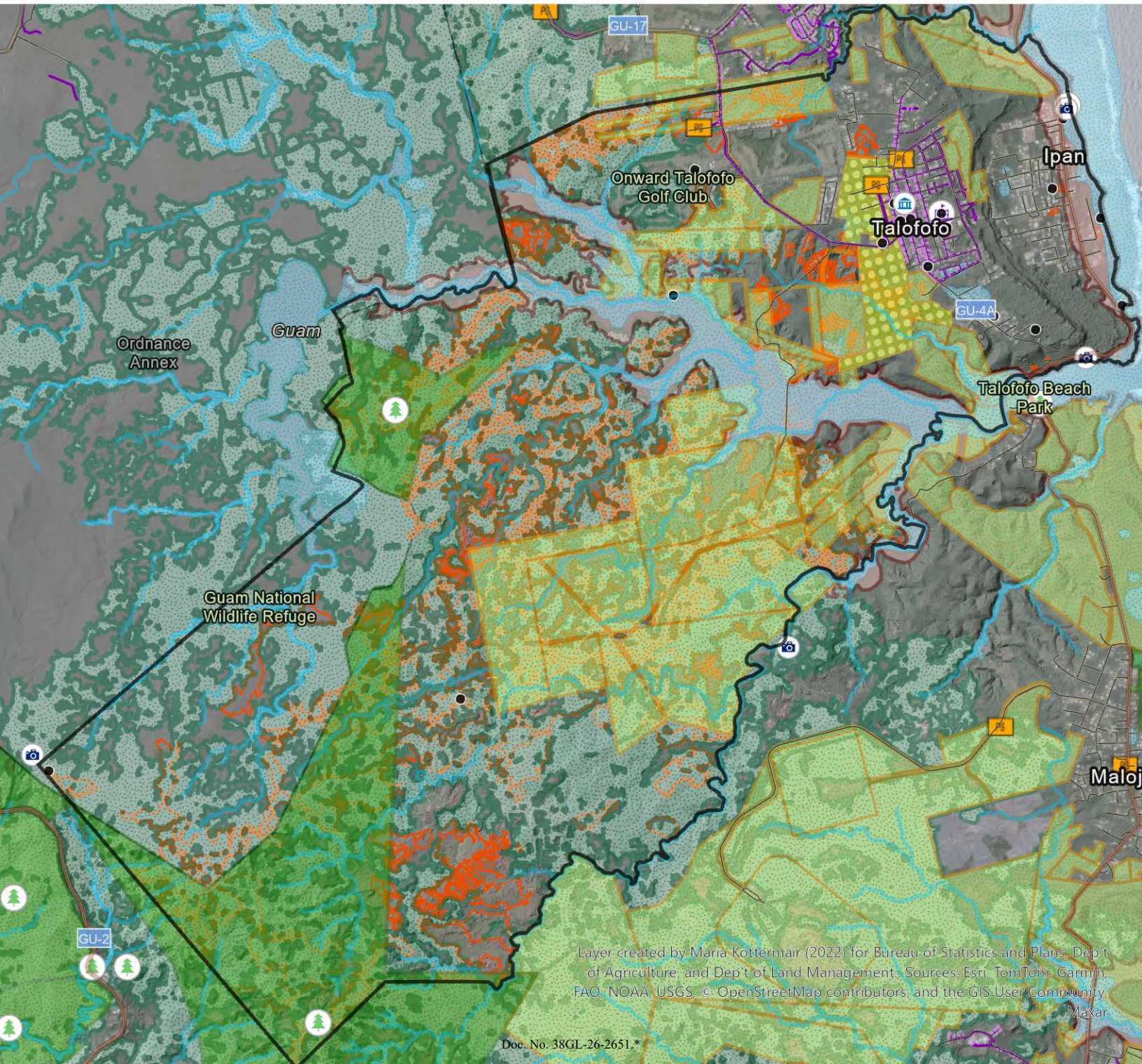
Guåhan 2050

Land Use Planning for Talo'fo'fo': Opportunities and Constraints

0 0.5 1
Miles

N W E S

- Scenic Point or Viewshed
- Forest System Inventory (Green Space, Parks, and Conservation)
- Rivers and Streams
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary
- Guam Forest System Inventory
- Pump Station
- Sewer Lateral
- Sewer Main
- Public_Schools
- CHamoru Land Trust
- FEMA Flood Zone
- Tsunami Evacuation Zone
- Guam HCP - Key Habitat Type
- Potential Prime Agriculture Parcels
- Federally Managed Land
- Wildfire Impacts 2015-2024



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Guåhan 2050

Village of Tamuning: Land Use and Community Features



Guahan 2050 Land Use

- Resource Conservation
- Parks, Recreation, and Open Space
- Agriculture
- Rural Lands
- Single-Family Dwelling
- Multiple-Family Dwelling
- Planned Unit Development
- Mixed Use
- Commercial
- Resort-Hotel
- Public Facility and Civic Uses
- Light Industrial
- Heavy Industrial
- Federal-Military
- Mayors Office
- Village Features (School, Church, Bank, Emergency Services, Recreation Facility)
- Government Facilities (Power, Water, Wastewater)
- Village Boundary

Tanguisson Beach
Tanguisson Beach Park
Two Lovers Point
Harmon Power Plant
Fafai Beach
20Th Air Force H Q Site
Gun Beach
Battle Of Finegayan
Gognga Beach
Naton Beach
Cushing Zoo
Guam Telephone Authority
East Track Generator
Matapang Beach Park
Matapang Beach
Public Utility Authority Of Guam
Tumon Police Koban
Ypao Beach
Department Of Public Works Highway Offic
Chinese Park
Ypao Beach Park
Old Gmh
Guam Visitors Bureau
Guam Memorial Hospital
Guam Mental Health
Tamuning Police Koban
Tamuning Fire Station E01
Tamuning Community Center
Tamuning Post Office
Barrigada Fire Station E03
Dungca Beach
Barrigada Community Center
Barrigada Police Koban
Guam Police Department Headquarters
Barrigada Library
Barrigada War Memorial Park
Trinchera Beach
East Agana Beach
Retirement Office
Mongmong-toto-maite Community Center
Padre Palomo Memorial Park
Agana Marina
Guam Mass Transit Authority
Naval Power Plant
Agana Wastewater Treatment Plant
To Lai Achu San Antonio
Maxar

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Guåhan 2050

Land Use Planning for Tamuning: Opportunities and Constraints

0 0.5 1
Miles

N W E S

- Forest System Inventory (Green Space, Parks, and Conservation)
- Rivers and Streams
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary
- Ground Water Protection Zone (1997)
- Production Well
- Pump Station
- Sewer Lateral
- Sewer Main
- Public_Schools
- Ancestral Lands
- FEMA Flood Zone
- Tsunami Evacuation Zone
- Guam HCP - Key Habitat Type

Guam International Airport

- Airport ground
- Airport runway



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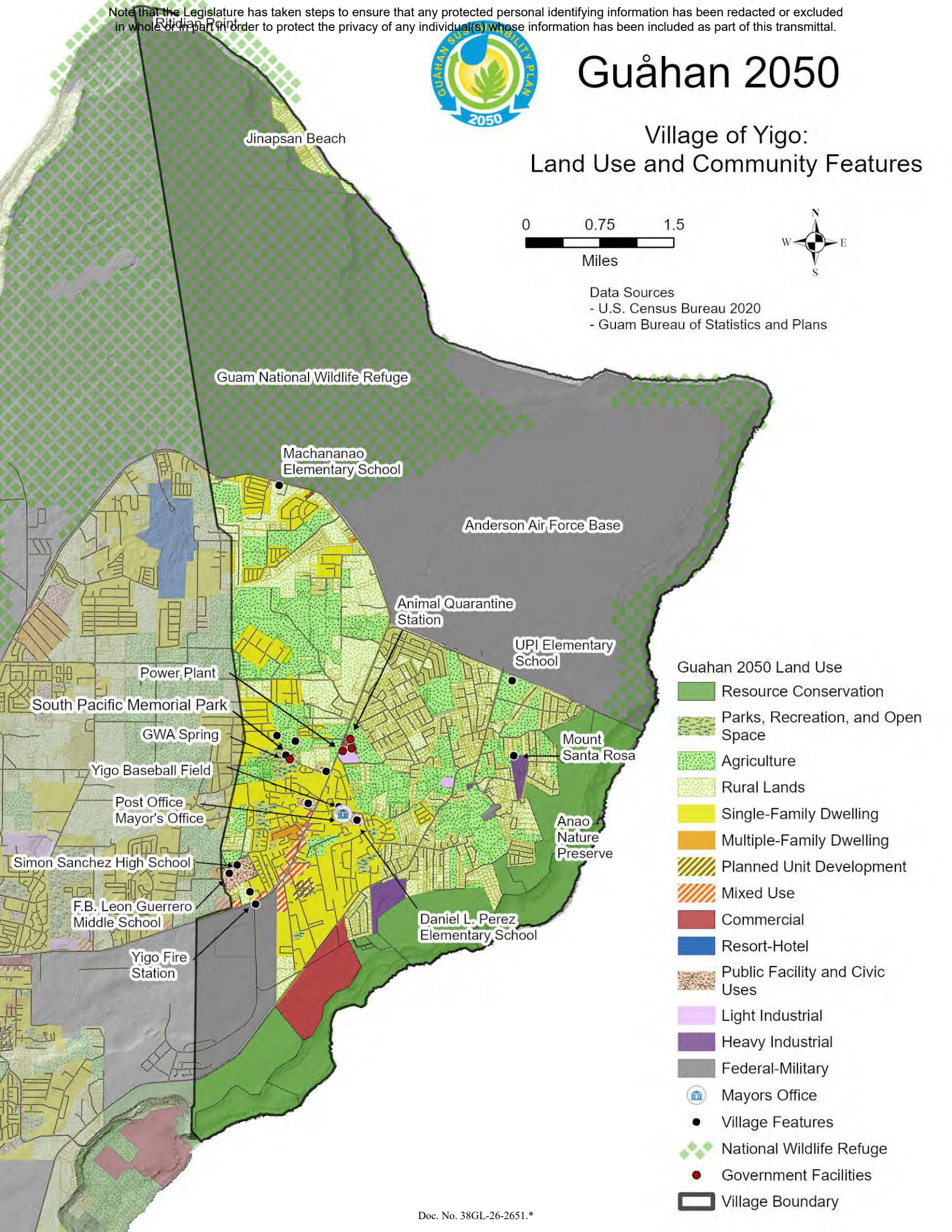
Guåhan 2050

Village of Yigo: Land Use and Community Features



Data Sources
- U.S. Census Bureau 2020
- Guam Bureau of Statistics and Plans

Guahan 2050 Land Use
- Resource Conservation
- Parks, Recreation, and Open Space
- Agriculture
- Rural Lands
- Single-Family Dwelling
- Multiple-Family Dwelling
- Planned Unit Development
- Mixed Use
- Commercial
- Resort-Hotel
- Public Facility and Civic Uses
- Light Industrial
- Heavy Industrial
- Federal-Military
- Mayors Office
- Village Features
- National Wildlife Refuge
- Government Facilities
- Village Boundary

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Guåhan 2050

Land Use Planning for Yigo: Opportunities and Constraints

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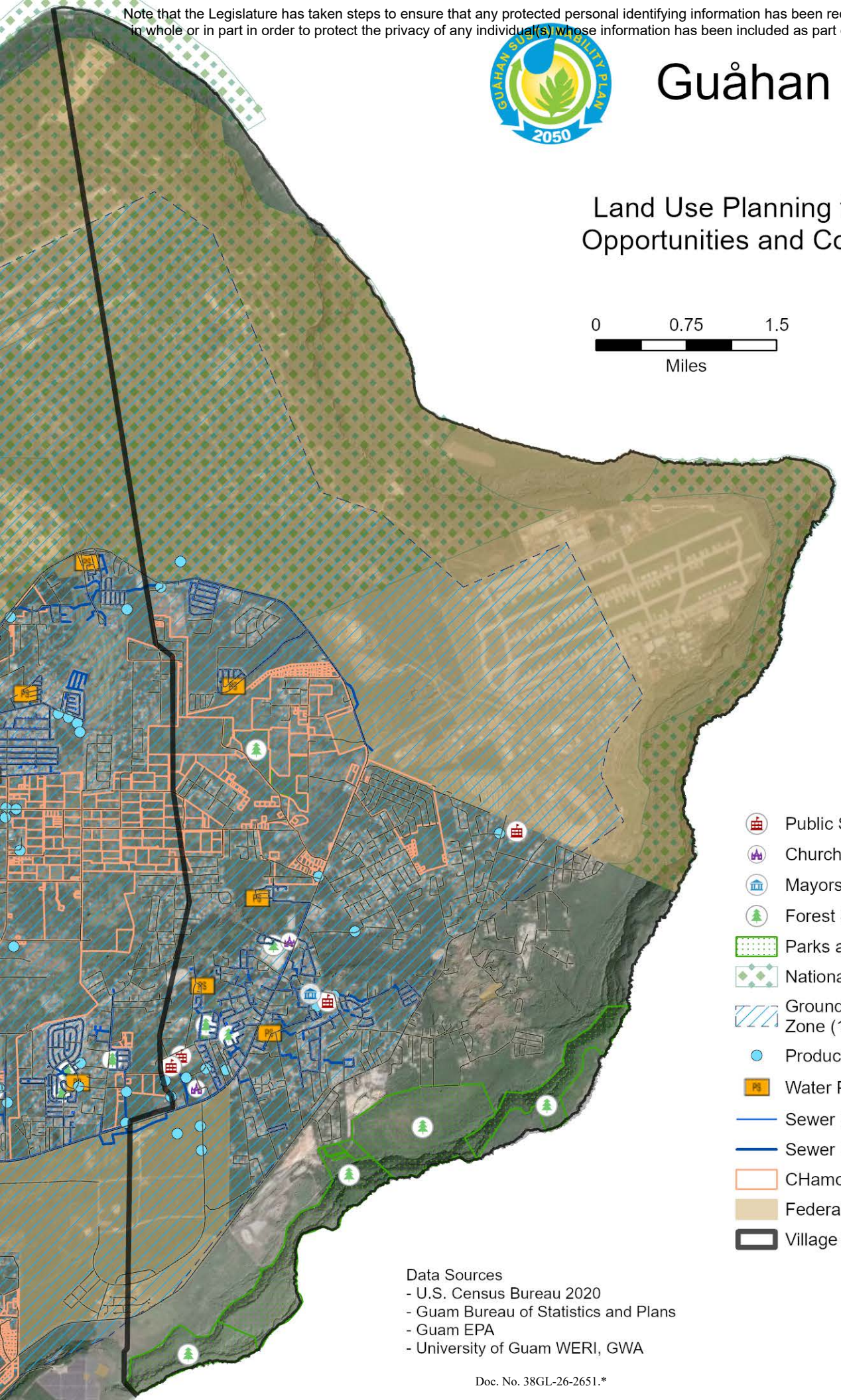

- Public Schools
- Churches
- Mayors Office
- Forest System Inventory
- Parks and Preserves
- National Wildlife Refuge
- Ground Water Protection Zone (1997)
- Production Well
- Water Pump Station
- Sewer Line (Lateral)
- Sewer Line (Main)
- CHamoru Land Trust Lands
- Federal Managed Lands
- Village Boundary

Data Sources
- U.S. Census Bureau 2020
- Guam Bureau of Statistics and Plans
- Guam EPA
- University of Guam WERI, GWA

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Guåhan 2050

Village of Santa Yona: Land Use and Community Features

0 0.5 1
Miles

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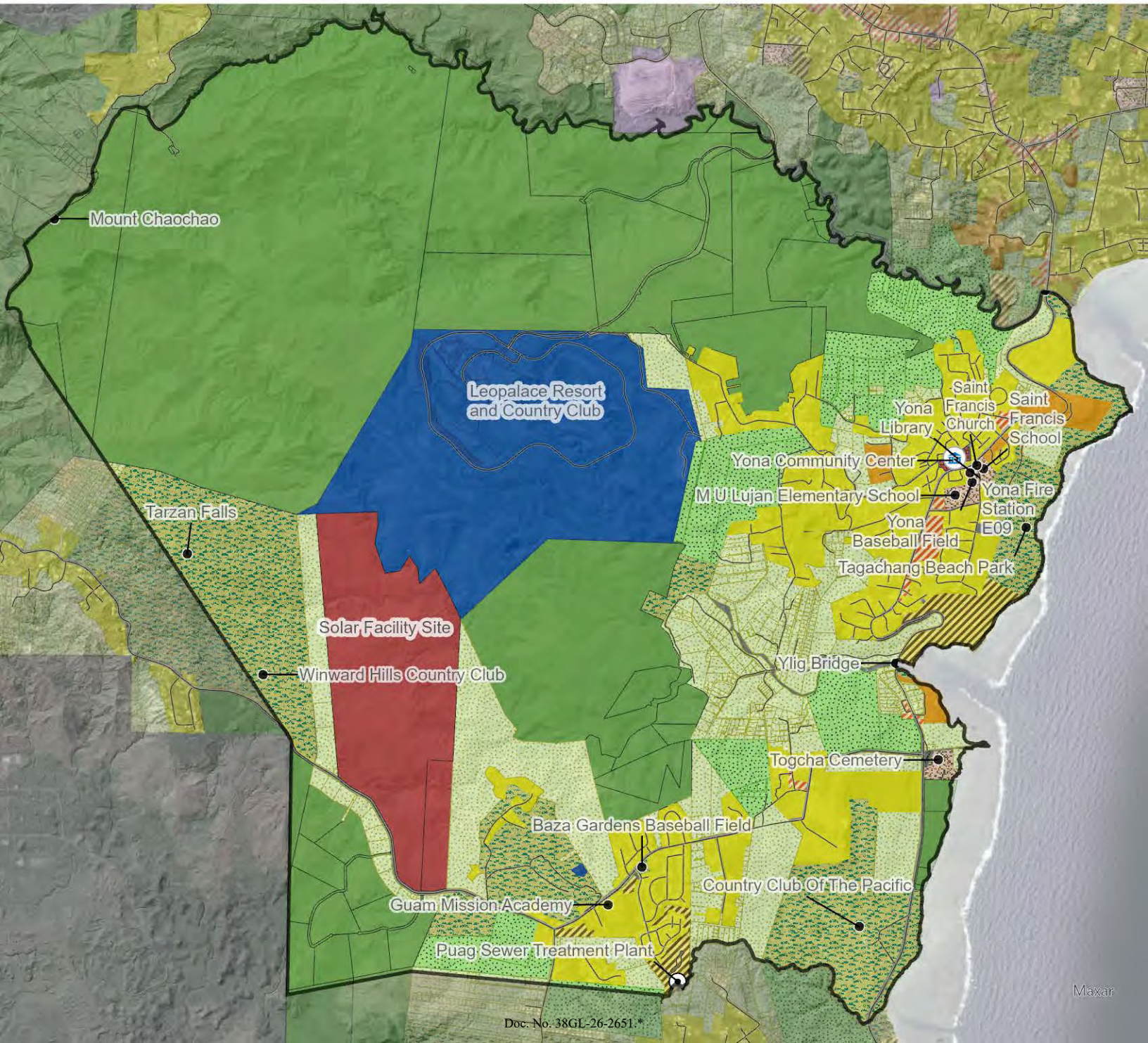
Guahan 2050 Land Use

- Resource Conservation
- Parks, Recreation, and Open Space
- Agriculture
- Rural Lands
- Single-Family Dwelling
- Multiple-Family Dwelling
- Planned Unit Development
- Mixed Use
- Commercial
- Resort-Hotel
- Public Facility and Civic Uses
- Light Industrial
- Heavy Industrial
- Federal-Military
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary



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Guåhan 2050

Land Use Planning for Yona: Opportunities and Constraints

0 0.5 1
Miles

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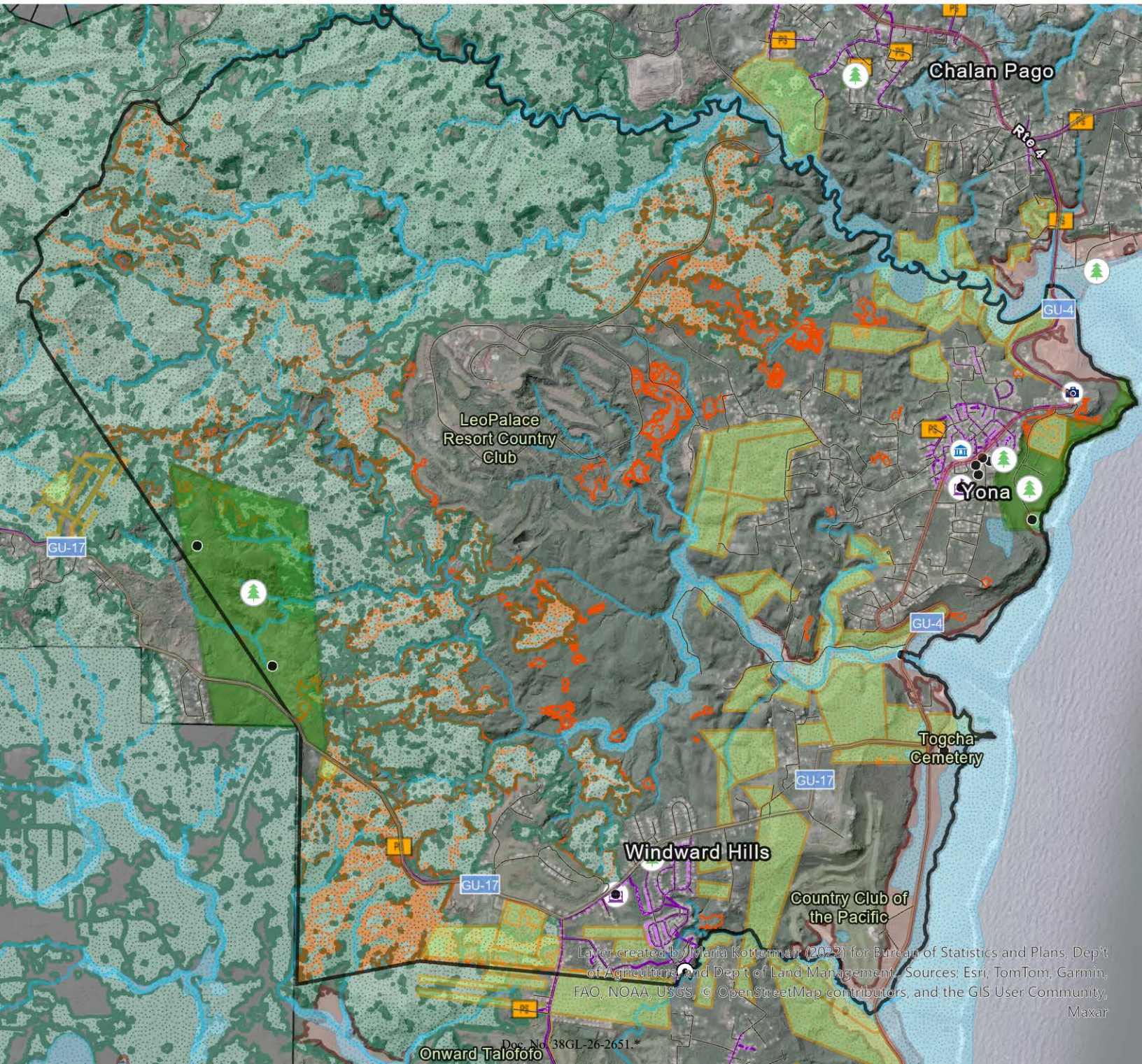
- Scenic Point or Viewshed
- Forest System Inventory (Green Space, Parks, and Conservation)
- Rivers and Streams
- Mayors Office
- Village Features
- Government Facilities
- Village Boundary
- Guam Forest System Inventory
- Production Well
- Pump Station
- Sewer Lateral
- Sewer Main
- Public_Schools
- FEMA Flood Zone
- Tsunami Evacuation Zone
- Guam HCP - Key Habitat Type
- Potential Prime Agriculture Parcels
- Federally Managed Land
- Wildfire Impacts 2015-2024



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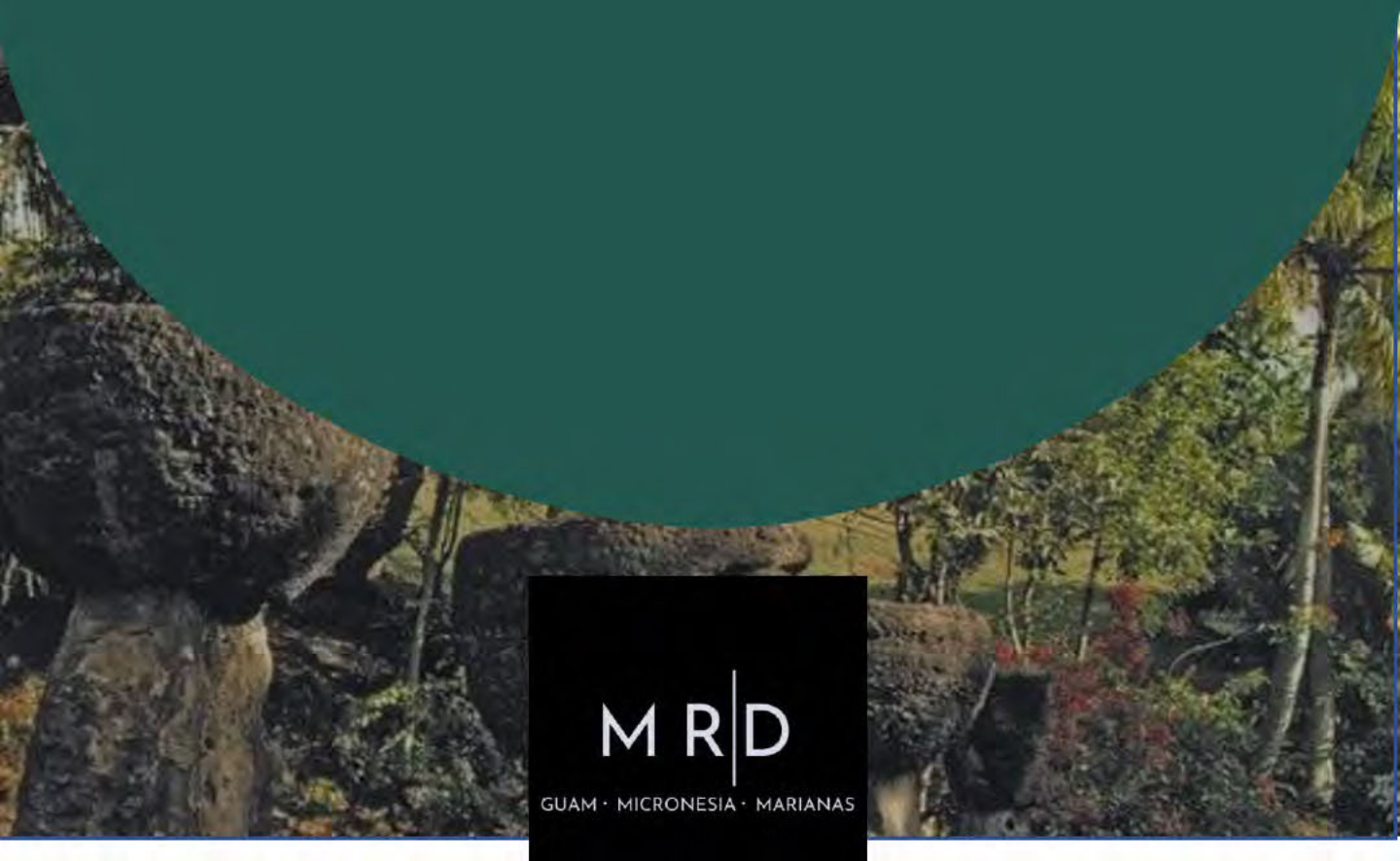
BUREAU OF STATISTICS & PLANNING

PROFESSIONAL SERVICES FOR COMMUNITY READINESS SURVEY

RFP2021-001



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GUAM · MICRONESIA · MARIANAS

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ABSTRACT & ACKNOWLEDGEMENTS

ABSTRACT

Guam Public Law 35-110 (2020) requires Guam's Bureau of Statistics and Plans to prepare a Guåhan 2050 Sustainability Plan (GSP) that proactively sets out a plan for island sustainability by balancing the interdependent economic, cultural and environmental concerns of Guam. In preparation for this planning, Market Research and Development (MR&D) conducted general background research, interviews with subject matter experts on Guam, focus groups with residents and organizational interests, and an island-wide quantitative survey of Guam's residents to assess the community readiness of Guam to undertake sustainability planning.

The research supports a general finding that Guam is ready to undertake the sustainability planning contemplated by Public Law 35-110. Many experts and residents are clearly concerned about the health of Guam's economy as it emerges from the pandemic; the state of critical infrastructure such as the roads, schools and health care system; the degradation of Guam's environment and what climate change may bring; and the need to support and strengthen Guam's diverse and open culture.

The research also shows that while there are significant agency programs and on-going efforts to address various aspects of Guam's sustainability, there is also a need to synthesize this agency information, conduct additional planning research and analysis, and integrate agency efforts around the objective of governing for island sustainability. There is also a fundamental need to engage the community to help identify a shared vision for Guam's future that effectively balances the unique economic, cultural and environmental dimensions of Guam.

ACKNOWLEDGEMENTS

Market Research & Development (MR&D) would like recognize the invaluable assistance of Dr. Charles Lester (PhD) for his advice and guidance as well as providing necessary information regarding project planning and valuable input on the construction of this report.

The team would also like to express our gratitude to Edwin Reyes and Brandy-Jose Martinez for their assistance in developing discussion topics relevant to the information objectives required and determining the appropriate business individuals to provide valuable opinions on the matter.

Finally, our deepest appreciation to all participants who provided valuable insights on the four dimensions of sustainability and their opinions on various matters within those dimensions.

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TABLE OF CONTENTS

CHAPTER 01

INTRODUCTION.....03
Background & Framework.....03
Frameworks for the Community Readiness Research.....06
Methodologies.....13

CHAPTER 02

SUBJECT MATTER EXPERT ASSESSMENT.....14
SME Qualitative Exploration Report.....15

CHAPTER 03

BUSINESS PROFESSIONAL & RESIDENTIAL DISCUSSIONS.....38
Business Professionals' Discussions.....39
Discussions with Residents.....59

CHAPTER 04

RESIDENTIAL SURVEY.....72
Frequency Analysis Report.....73

CHAPTER 05

CONCLUSION & RECOMMENDATIONS.....91
Overall Readiness of Guam to Conduct Sustainability Planning.....92
Challenges to be Addressed in Successful Sustainability Planning for Guam...96
Next Steps for Focusing a Pragmatic Sustainability Planning Project.....101

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CHAPTER 01

INTRODUCTION & BACKGROUND

This report was prepared for the Guam Bureau of Statistics and Plans (BSP) and presents the research findings of Market Research and Development (MR&D) regarding the community readiness of Guam to undertake sustainability planning as anticipated by Guam Public Law 35-110[1] (Appendix 1). This law requires BSP to prepare a *Guåhan* 2050 Sustainability Plan (GSP) that proactively sets out a plan for island sustainability by balancing the interdependent *economic*, *cultural* and *environmental* concerns of Guam.

From January to September 2022, the MR&D research team conducted general background research, interviews with subject matter experts on Guam, focus groups with residents and business and other organizational interests, and an island-wide quantitative survey of Guam's residents, concerning different aspects of sustainability planning for Guam. The research supports a general finding that Guam is ready for and would benefit from undertaking the sustainability planning contemplated by Public Law 35-110, and that the framework provided by the statute is appropriate for structuring this planning. Many experts and residents are clearly concerned about the health of Guam's economy as it emerges from the pandemic; the state of critical infrastructure such as the roads, schools and health care system; the degradation of Guam's environment and what climate change may bring; and the need to support and strengthen Guam's diverse and open culture.

The research also shows that while there are significant agency programs and on-going efforts to address various aspects of Guam's sustainability, there is also a need to synthesize this agency information, conduct additional planning research and analysis, and integrate agency efforts around the objective of *governing* for island sustainability. There is also a fundamental need to engage the community to help identify a shared vision for Guam's future that effectively balances the unique economic, cultural and environmental dimensions of Guam. Together with the concerns of Guam's residents for the future of Guam, there appears to be a strong foundation for embarking on the sustainability planning envisioned by P.L. 35-110.

Background on the PL 35-110 Sustainability Planning Framework

The Guam legislature passed Public Law 35-110 on December 1, 2020[2]. This law requires the Bureau of Statistics and Plans (BSP) to prepare a *Guåhan* 2050 Sustainability Plan (GSP) that proactively sets out a plan for island sustainability by balancing the interdependent *economic*, *cultural* and *environmental* concerns of Guam.

1 The research and report were funded by BSP pursuant to RFP BSP 2021-001 and associated contract.
2 Guam Legislature, https://www.guamlegislature.com/Public_Laws_35th/P.L.%20No.%2035-110.pdf.

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The legislature made broad findings about the importance of addressing sustainability in Guam including that:

> *Due to adverse impacts and changes to our environment and those across the globe, we need a more sustainable and integrated strategy that encompasses the principles of sustainability and responsible uses of our finite island resources. It is imperative that we better meet the needs of the present without compromising the ability of future generations to meet their needs.*

The legislature also found that:

> *. . . sustainability and climate change are some of the defining issues of our time; thus, we are at a pivotal moment in history. It is clear that our stewardship of Guam's resources is not just a responsibility for the future, and we must act now to protect our economy, our island way of life, and our culture.*

The legislature further concluded that Guam's "economy, land, community health, individual well-being, and the *CHamoru* culture are deeply intertwined" and that in order to meet the economic, cultural and environmental challenges that Guam is facing, it is necessary to develop and implement a sustainable development plan that will "require an unprecedented level of a coordinated effort by the community, the private sector, academic research organizations, and institutions of the government of Guam to reach across their divides and work together to develop long-term integrated approaches."

United Nations Sustainability Frameworks

The primary direction of P.L. 35-100 was that BSP prepare a sustainability plan for Guam out to the year 2050 that provides:

> *. . . short and long-range guidance (between 2020 and 2050) for the social, economic, infrastructure, supra structure, and physical sustainable development of Guam, and which shall contain a statement of sustainable development objectives, standards and principles with respect to the most responsible use of land and resources within Guam for residential, recreational agricultural, commercial, industrial, and other uses completely serviced by an access and circulation network and infrastructure consistent with proper protection and accountability to enhance the quality of the environment and preserve Guam's natural beauty and historical heritage.*

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CHAPTER 01

INTRODUCTION & BACKGROUND

It is notable that the legislature directed that the development of the plan be guided by, but not limited to, the United Nations (UN) Global Programme of Action for the Sustainable Development of Small Island Developing States (SDSIDS) and the UN's Sustainable Development Goals (SDGs) as applicable to Guam.[3]

The 17 UN Sustainable Development Goals (SDGs) (Figure 1) were adopted by all United Nations Member States in 2015 in the 2030 *Agenda for Sustainable Development*.[4]

This agenda "provides a shared blueprint for peace and prosperity for people and the planet, now and into the future." The SDGs "recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests."[5] The SDGs are monitored and evaluated with a global indicator framework and data produced by national statistical systems and information collected at the regional level.[6] In Guam, the Guam Green Growth Initiative is a public-private partnership working on solutions to sustainability challenges, based in part of the UN SDGs.[7]



Figure 1. The United Nations Sustainable Goals

The United Nations program for Sustainable Development of Small Island Developing States pre-dates the adoption of the SDGs, but it is an important program now translating the most relevant SDGs to the context of the sustainability of islands such as Guam.

These include sustainable food production, climate action and protecting ocean and coastal environments, and recognition of the unique sustainability challenges that islands like Guam face, including economic, environmental and cultural challenges. [8]

3 (A/CONF.167/9), https://undocs.org/en/A/CONF.167/9; and United Nations SDGs, https://sdgs.un.org/.
4 https://sdgs.un.org/2030agenda.
5 https://sdgs.un.org/goals.
6 https://sdgs.un.org/goals#implementation.
7 https://guamgreengrowth.org/.
8 https://sdgs.un.org/topics/small-island-developing-states. The Small Island Developing States focus identifies SDGs 2, 5, 6, 7, 12, 13, 14, 15 and 17 as particularly relevant for Small Island States.

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Specific Required Plan Elements

In addition to using the UN SDGs and Small Island States programs as guidance, Guam's new sustainability planning law also lists twenty specific elements that must be addressed in the required sustainability plan:

01	Land Use	11	Recreation
02	Community Design	12	Safety
03	Transportation	13	Tourism
04	Regulations	14	Sustainable Development Policy
05	Public Facilities	15	Capitol Improvements
06	Public Lands	16	Preservation
07	Public Buildings	17	Indigenous Connections and Rights
08	Housing	18	Community Mental & Physical Health
09	Redevelopment	19	Policy Statements
10	Conservation	20	Other Elements

Table 1.0. Specific Sustainability Elements

In addition to these elements, the Plan must include a schedule of programs and projects and identified funding that will be implemented and reported on annually. The statute further expects that any "committee, commission, task force or body mandated to engage in planning for Guam, or for particular areas or jurisdictions within Guam" conduct and support such planning in accordance with the Sustainability Plan, and that coordination occur between such agencies.

Frameworks for the Community Readiness Research

Given the breadth of P.L. 35-110, it was necessary to focus MR&D's research effort to meaningfully address BSP's desire for a community readiness assessment. To do this, the guiding elements and specific content requirements of P.L. 35-110 were first compared. Table 1 summarizes the P.L. 35-110 elements, SDSIDS priority areas as set out in the original UN 1994 annexes, and UN SDG goals. Though there are some differences in categorization

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and coverage between the three lists, each also generally conveys a comprehensive set of integrated topics that fall into the economic, cultural (or social) and environmental concerns that might be addressed in a sustainability plan as set out by P.L. 35-110. The specific elements to be included in the plan, together with the SDSIDS objectives and SDGs also include components that might be said to fall into a fourth category of "governance" concerns.

Items in each of the lists of Table 1.1 are part of the general thinking and practice of sustainability planning, which seeks to establish a set of integrated socio-economic and environmental objectives for implementation at state and local levels. Importantly, each program addresses climate change, with SDSIDS priorities specifically calling out sea level rise, the SDGs calling for climate action, and P.L 35-110 identifying climate change with sustainable development policy.

To further focus MR&D's research, the topics and areas of Table 1 were considered in relation to four typical major aspects of sustainability planning: Economy, Environment, Cultural/Social and Governance (Figure 2). Each of the items were categorized to better organize and understand their potential relatedness. The categorization of any particular item can be done differently, depending on one's focus of attention, but the exercise is important because it illustrates the logical (and actual) interconnectedness of economic, cultural and environmental concerns through the lens of sustainability. For example, assuring a sustainable and adequate public water supply is important for human health (safe supply), economic prosperity (adequate infrastructure for existing and new development), and environmental health (avoiding overdraft, e.g.).

Guam PL 35-110 Elements	Sustainable Development of Small Island Developing States	UN Sustainable Development Goals
Land Use	Climate Change and Sea Level Rise	No Poverty
Community Design	Natural and Environmental Disasters	Zero Hunger
Transportation	Management of Wastes	Good Health and Well-Being
Regulations	Coastal and Marine Resources	Quality Education
Public Facilities	Freshwater Resources	Gender Equality
Public Lands	Land Resources	Clean Water and Sanitation
Public Buildings	Energy Resources	Affordable and Clean Energy
Housing	Tourism Resources	Decent Work and Economic Growth
Redevelopment	Biodiversity Resources	Industry, Innovation & Infrastructure
Conservation	National Institutions and Administrative Capacity	Reduced Inequalities
Recreation	Regional Institutions and Technical Cooperation	Sustainable Cities and Communities
Safety	Transport and Communication	Responsible Consumption and Production
Tourism	Science and Technology	Climate Action
Sustainable Development Policy	Human Resource Development	Life Below Water
Capital Improvements	Implementation, Monitoring and Review	Life on Land
Preservation		Peace, Justice and Strong Institutions
Indigenous Connections and Rights		Partnerships for the Goals
Community Mental Health, Physical Health and Well-being		
Policy Statements		
Other Elements		

Table 1.1. Sustainability Planning Elements and UN Priorities & Goals.

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Narrowing the Framework of the Study

MR&D's research on community readiness was further focused by first considering that an ideal sustainability planning process would be informed equally by an understanding of trends and causal connections in every possible sector. However, limited resources will necessitate identification of priorities, and organization into groupings that will allow for meaningful and pragmatic integration across sectors in the context of planning for island sustainability. These priorities, and their organization, helped structure MR&D's research strategy, methods and questions.

To facilitate setting of priorities, MR&D considered the institutional structure of Guam's current governance system as an organizing factor. Guam has a rich governmental structure. Without including the offices of the Governor and Lieutenant Governor, Legislature and Judiciary, the Government of Guam includes at least 64 distinct departments, bureaus,



Figure 2. Four Major Dimensions and Sub-Areas of Sustainability.

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commissions, authorities, agencies, and other governmental entities (Figure 3).

MR&D grouped these agencies by sustainability sector (Economy, Culture and Environment), and organized them as shown in Table 2. Again, the categorization and organization can be done in different ways, particularly since many agencies themselves cover multiple sectors. Most clearly, for example, BSP is concerned with Environment, Economy and Social/Cultural issues. But the exercise of grouping Guam's existing governing agencies and programs into sustainability sectors helped further focus the research effort.



Figure 3. Government of Guam Agencies & Organizations.

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CHAPTER 01

INTRODUCTION & BACKGROUND

Considering the mandates of P.L. 35-110, SDSIDS, and SDGs in relation to the government institutions of Guam suggested an organizing research framework with five core elements: Environment, Economy, Infrastructure, Culture and Governance.

Culture/Social	Economy	Environment
Bureau of Women's Affairs	Airport Authority	Dept. of Land Management
Chamorro Land Trust Commission	Bureau of Budget and Management Research	Dept. of Parks and Recreation
Commission on Decolonization	Office of Technology	DPW- Solid Waste Management
Dept. of Chamorro Affairs	Dept. of Agriculture	Board of Professional Engineer, Architects and Land Surveyors
Dept. of Corrections	Dept. of Labor/AHRD	Environmental Protection Agency
Dept. of Integrated Services for Individuals with Disabilities	Dept. of Military Affairs	Guam Preservation Trust
Dept. of Mental Health and Substance Abuses	Dept. of Public Works	Hagatna Restoration and Redevelopment Authority
DMHSA – PEACE Office	Dept. of Revenue and Taxation	
Dept. of Public Health and Social Services	Board of Accountancy	
Dept. of Youth Affairs	Guam Contractors License Board	
Guam Ancestral Lands Commission	Customs and Quarantine Agency	
Commission for Educator Certification	Economic Development and Commerce Authority	
Guam Community College	Educational Telecommunication Corp.	
Council on Arts & Humanity	Fire Department	
Dev. Disabilities Council	Homeland Security	
Retirement Fund	Housing Corporation	
Medical Referral Office	Housing and Urban Renewal	
Memorial Hospital Authority	Police Department	
Public Library System	Power Authority	
Public School System	Public Utilities Commission	
Chief Medical Examiner	Regional Transit Authority	
Public Defender	Visitors Bureau	
University of Guam	Waterworks Authority	
Veteran's Affairs	Port Authority	
Cross-Cutting		
Bureau of Statistics & Plans	Public Auditor	Attorney General
Guam Election Commission	Dept. of Administration	Mayor's Council
Congressman's Office	State Clearing House	

Table 2. Guam's Agencies Across Sustainability Sectors.

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As represented in Figure 4, these five elements capture the broad aspects of sustainability planning for the Island of Guam, and also illustrate the interdependence of each with the other. Again, while the groupings could be accomplished in multiple, differing configurations, the important framing concepts for the research relates to the interdependence of the elements and sub-parts, and the fact that island sustainability will depend on addressing current and future conditions within each element and subpart. In addition, the centering of "sustainability governance" as the place where each of the other areas comes together focuses attention on the critical importance of considering the integration of planning and implementation among the various departments, boards, agencies, commissions and other actors of Guam's government as Guam pursues a more sustainable future.

The organizing frame in Figure 4 helped MR&D to identify appropriate subject matter experts (SMEs) that could speak to each of the four substantive elements represented (Environment, Economy, Infrastructure, Culture). In addition, the complexity of subsectors within each element suggested that it would be advantageous to identify SMEs that might speak to the overarching element, not only a sub-component or components. At the same time, it was clear that certain sub-components should definitely be represented, such as an SME that can speak to Chamorro cultural preservation issues (including potentially two distinct aspects: cultural and land use-related); or that could directly address tourism, and core public services, such as water supply. The framework also highlighted that the governance issue area should be developed by considering input from all of the SMEs, as this is a cross-cutting concern for everyone involved in the government planning and decision process.

Finally, the organization of sectors in Figure 4 became central for purposes of developing a survey instrument and focus group questions that considered each of the five elements and subparts. In addition, MR&D in part structured and conducted the research with the explicit consideration that the idea of "community readiness" could be usefully explored by framing questions across the five typical functional planning tasks that might support the ultimate effort to develop a sustainability plan. These tasks are clarification of community sustainability goals; understanding trends on Guam within each element and subsector; analyzing the causal factors and processes within and among the elements/subsectors; thinking about and projecting possible futures for Guam; and considering various alternatives for achieving community goals and the idea of sustainability. For example, persons were queried about the relative importance of different parts of the sustainability framework; their understanding of current conditions, identification of issues of concern (factors), and possible visions for the future and how to achieve them within each area of concern to them.

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CHAPTER 01

INTRODUCTION & BACKGROUND



Figure 4. Core Elements and Subparts of the Sustainability Framework.

Frameworks for the Community Readiness Research

Once the general research framework for considering sustainability was developed, MR&D began the directed research of Guam's readiness to conduct sustainability planning. The research plan had three main components: (1) interviews with subject matter experts selected for their ability to speak broadly about the priority sustainability sectors identified in the research framework; (2) a series of small focus groups with both residents of Guam, and participants from a variety of business and other non-governmental organizations; and (3) a statistically-significant quantitative survey of 501 residents concerning the different dimensions of potential sustainability planning for Guam. Each of these efforts is described in the following chapters 2-4 of this report. Chapter 5 of the report synthesizes the research of the three focused efforts and highlights important observations for BSP to consider as it embarks on the sustainability planning effort for Guam. Overall, MR&D's research suggests that Guam is not only ready to undertake such sustainability planning, but that this planning is needed. Such sustainability planning would be a valuable community process for helping Guam move forward in a time of great change with a focused effort to strengthen its economy, protect its environment, and embrace its cultural heritage for the benefit of all of Guam's residents.

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CHAPTER 01

INTRODUCTION & BACKGROUND

Methodologies

In order to ascertain the public's readiness of an island wide sustainable practice. MR&D utilized both qualitative and quantitative research methods to collect a series of evidence from subject matter experts (SME), business professionals and residents to get a clearer depiction of the community's acceptance. It was decided that evidence from both research methods would provide sufficient evidence for this study.

Qualitative Research

Qualitative research refers to, a range of methodological approaches which aim to generate an in-depth and interpreted understanding of the social world, by learning about people's social and material circumstances, their experiences, perspectives. For the purpose of this study the team selected:

Focus groups
Focus groups are small discussion groups of usually 6 to 8 participants with diverse backgrounds and perspectives but with a unifying characteristic. A moderator leads the participants to openly discuss and opine about the subject. In some cases, groups were held virtually to adhere by safety guidelines.

One-on-One interviews
Often done in-person or remotely, one-on-one interviews offer insight into an individual's motivations, concerns and needs isolated from the influence of other participants. This method was intended for particular individuals that would be difficult to interview with others, based on conflicting schedules or unforeseen situations.

Quantitative Research

Quantitative research is a systematic investigation of phenomena by gathering quantifiable data and performing statistical, mathematical, or computational techniques. Quantitative research collects information from existing and potential customers using sampling methods and distributing online surveys, polls, and questionnaires for example.

The results of which can be depicted in the form of numerical. After careful understanding of these numbers to predict the future of a product or service and make changes accordingly.

Computer Aided Telephone Interview
Computer-aided Telephone Interviewing (CATI) is a form of automated survey that uses software to provide the interviewer with a script. Which is then read over the phone for respondents to participate in.

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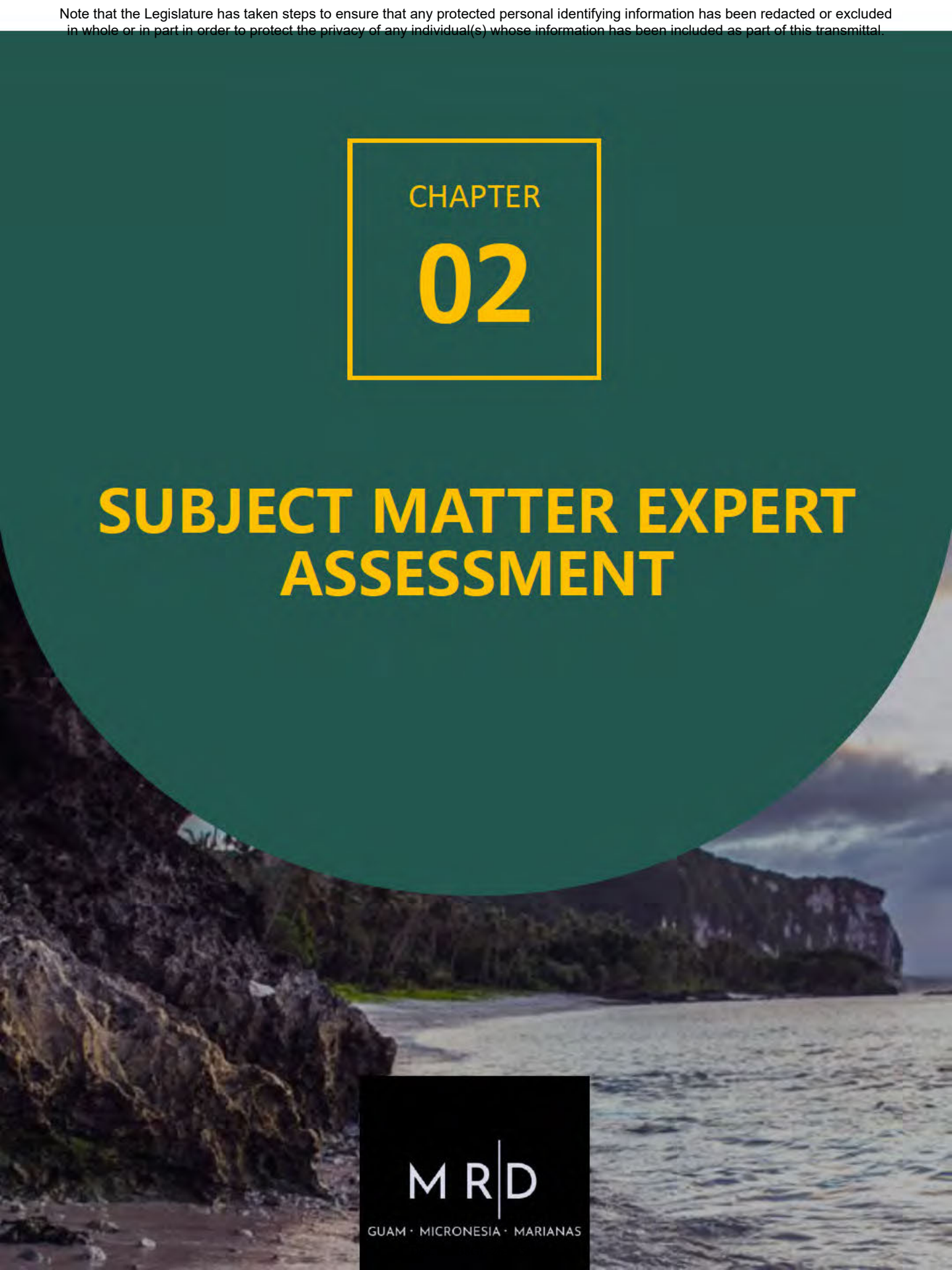
CHAPTER

02

SUBJECT MATTER EXPERT ASSESSMENT



MRD

GUAM · MICRONESIA · MARIANAS

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CHAPTER 02

SME ASSESSMENT

Research Methods & Participants

MR&D collected qualitative data from twelve subject matter experts (SME) regarding four sectors of Guam's society:

1. ECONOMY
2. INFRASTRUCTURE
3. ENVIRONMENT AND
4. CULTURAL/SOCIAL CHARACTERISTICS OF GUAM.

These discussions were held between January and February of 2022.

From these discussions the team was able to ascertain ideas and sentiments that SMEs came to a consensus about as well as issues that they had different opinions about. The discussions also identified many of the issues that were of major concern that should be addressed by the planning team once selected.

Interviews were conducted with the following SMEs:

DR. MICHAEL BEVAQUA	Guam Museum Curator & Chamorro Educator
DR. JASON BIGGS	Associate Professor of Molecular Ecology
ROD BOSS	CEO of Docomo Pacific
JESSE CRUZ	Guam Environmental Protection Agency
JOHN CRUZ	Assistant General Manager GPA (SPORD)
DR. ANNETTE DAVID	Preventative Medicine & Public Health
STEVEN DIERKING	Guam Costal Management
MAYOR ROBERT HOFFMAN	Sinajana Mayor
JULIAN JANSSEN	Federal Consistency Coordinator
DR. LISA NATIVIDAD	Professor of Social Work, University of Guam
SIMON SANCHEZ	Businessmen & Member of the CCU
DAN SWAVELY	Land Use Planning Consultant

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CHAPTER 02

SME ASSESSMENT

Concept of Sustainability

To begin the discussion, Subject Matter Experts were asked to give their definition of sustainability as well as select from a list of provided definitions of the term.

Most of the participants expressed that the term sustainability was somewhat general and was more of a theoretical concept than a practical guide for planning. They did not believe that the concept was well known or understood in the community.

Nonetheless they concurred that the term "sustainability" was associated with the idea of resiliency or being able to meet the needs of the community without damaging effects.

"You know, to me, it's really made up of our three pillars--economy, society, and the environment. More so in Guam, I think people look at it in terms of cultural aspects and the environment. But I too, think we need to further define this as it's not something on the top of my radar, really."

"sustainability...the processes that we can use and still maintain without having a real detrimental effect on either bringing in more resource, consuming more resources than need to be."

"Sustainable is development that meets the needs of the present, but also limits growth to meet the environmental and social needs, it avoids the development of technology that may have irreversible negative consequences on society, but at the same time, does not compromise future generations in their ability to meet their own needs".

"it's making ensuring there are no difficulties for the next generation."

Sustainability Definitions

SMEs were given the following statements and asked to determine which one most closely described their idea of sustainability.

1. **SUSTAINABILITY MEANS THAT DEVELOPMENT MEETS THE NEEDS OF THE PRESENT WITHOUT COMPRISING THE ABILITY OF FUTURE GENERATIONS TO MEET THEIR OWN NEEDS.**

"Yeah, I guess the first one would, if you can wrap it as broadly as possible, yeah, it would make sense to me. And then, certainly technology is going to kind of help sustainability. It's just a concept, which I do not find in my workday. I don't run across it."

2. **SUSTAINABILITY CAN BE ACHIEVED THROUGH TECHNOLOGICAL ADVANCES TO SUPPORT CONTINUED ECONOMIC GROWTH AND DEVELOPMENT.**

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3. **SUSTAINABILITY REQUIRES THE RECOGNITION OF ENVIRONMENTAL AND SOCIAL LIMITS TO GROWTH, AND THE AVOIDANCE OF DEVELOPMENT AND TECHNOLOGY THAT MAY HAVE IRREVERSIBLE NEGATIVE CONSEQUENCES ON SOCIETY OR THE ENVIRONMENT.**

4. **SUSTAINABILITY REQUIRES A BALANCE BETWEEN THE ECONOMY, ENVIRONMENT AND SOCIETY TO CREATE THRIVING AND RESILIENT COMMUNITY.**

> *"I think what comes closest to what I was thinking about is number ...both building and maintaining adequate infrastructure, supporting high value-added activities for Guam's working population and preserving historic resources, preserving some elements of the environment, obviously. When you're doing resource extraction, do it, responsibly, focusing on limiting excessive pollution, and trying to make sure that when it is going to occur, it's going to occur in a responsible manner."*

There was no consensus on any one definition, rather a belief that some combination of definitions one, three and four most closely aligned with their perceptions. None believed that sustainability could be achieved through technological advances. More than one SME indicated that issues of equity, and traditional values must also be included in any definition of sustainability for Guam.

"So, of those four options, I would choose number three, and the reason I'm most drawn to in that definition, is the reference to being conscious of development that results in irreversible change. Right, so if it's something that's irreversible and does damage then absolutely it should not be even on the table for us and so that's why I'm going to go with definition number three."

"I would say something to the effect of reconnecting with our, with the traditional ways that we cared for and respected the environment."

Sectors of Sustainability

Once Subject Matter Experts had identified their ideal definition of sustainability, they were asked how they would apply their definition idea to issues associated with each of the sectors (social/cultural characteristics of Guam, the island's economy, environment & infrastructure).

"it's never one priority or over the other, honestly."

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CHAPTER 02

SME ASSESSMENT

"The economy's the most important on it. It, you know, what's the use of saving the world, if I can't give any of my grandkids."

"always make basic infrastructure number one. If you don't have water and energy, you don't have Guam."

"sustainability requires a balance between the economy, environment and society to create a thriving, healthy, diverse, and eco resilient community."

"[Most important area of the plan] *For me, it's the environment. Everything stems from that. We don't have water, there's no land, there's no fish, there's no corals--no one's going to want to come to Guam."*

Sector Ranking

Although some SMEs identified a specific priority, in general there was no consensus on the ranking of the subject areas (the economy, infrastructure, environment and the social and cultural characteristics of Guam) over another. In other words, a successful sustainability plan must create a vision seeks to balance each these areas and links them into a coherent and synergistic matrix of policies and regulations to support its implementation.

The objective was to identify what was necessary to create sustainability for Guam's unique cultural and social characteristics and how that should be reflected in the Guahan 2050 Sustainability Plan. SMEs were also asked to identify the level of importance of this subject should be assigned in comparison to the other subject areas in the plan.

Cultural Identity

Many of the SMEs stated that it was Guam's cultural identity and adherence to "Infa'Maolek" (to strive for harmony, to make good) that must shape the vision of the plan if it was to be adopted and believed in.

"But it's really just the raw talent of the people there, in preserving the culture, doing stuff together as a community."

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CHAPTER 02

SME ASSESSMENT

"To maintain the unique culture that has been on this island, it requires investments in the environment."

The giving and accepting nature of the community must be the foundation for the sustainability of the island and its society.

"You know, even the traditional navigators are reinventing words and reinventing their ways. So, it's cultural enrichment. But is it really cultural preservation? No."

"There's something about coming from Guam that's so far seams, to work really well, you know, family values, friendships, keeping Guam good, you know, Inafa' Maolek, where we all try to get along, right? That's always been a big part of Guam. But there's concern that, you know, some of that eroding."

Political Status & Military Presence

For many of the SMEs, it is important that a plan consider the island's political status and perceived limitations in implementing policies best for the island. The island has spent decades debating the best political status option, leading to the creation The Commission of Decolonization to further education residents of the options available and the impact each status will have on the island.[1]

"We as colonial subjects don't have the political power, to be able to institute a lot of things that we need to protect ourselves and develop a thriving sustainable community."

"You got to have something on political status because if you are a territory of the United States, you're being a territory shapes what you can and can't do."

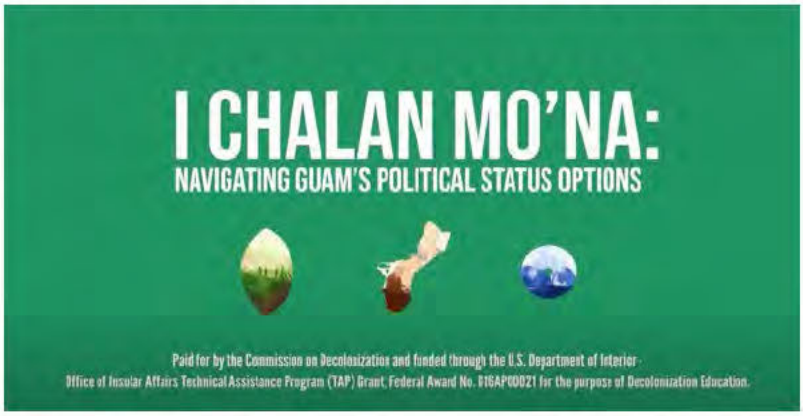

Figure 1. PBS Guam Political Status Education Video.

"For success in it, you know, I think, for success in the development, in the UN Sustainable Goals, the UN one, political status would be key...For locally in the development plan, I don't think it matters at all. I think as long as we have the political will, the know how and the proper people in place to kind of do certain things, it's great. And it would work. But you know, we're at the helm of the US in terms of shipping, the Jones Act, so our food prices cost different."

1 Navigating Guam's Political Status Options. I CHalan Mo'na: Navigating Guam's Political Status Options. - YouTube

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At the same time, the role and power of the military in shaping public policy in the areas of land use and infrastructure must also be addressed.

"The military presence plays a big role in how sustainable Guam can be because it, it occupies 29, 30% of the island. And so, you can make rules for the areas outside of that, but sort of the things that happen in that 29, 30% of the island, it definitely affects what happens elsewhere."

In both cultural identity and political status instances it was perceived that the needs of the federal government took precedence, and that local values and desires were not sufficiently aligned with federal interests to allow for the achievement of a truly sustainable approach to development.

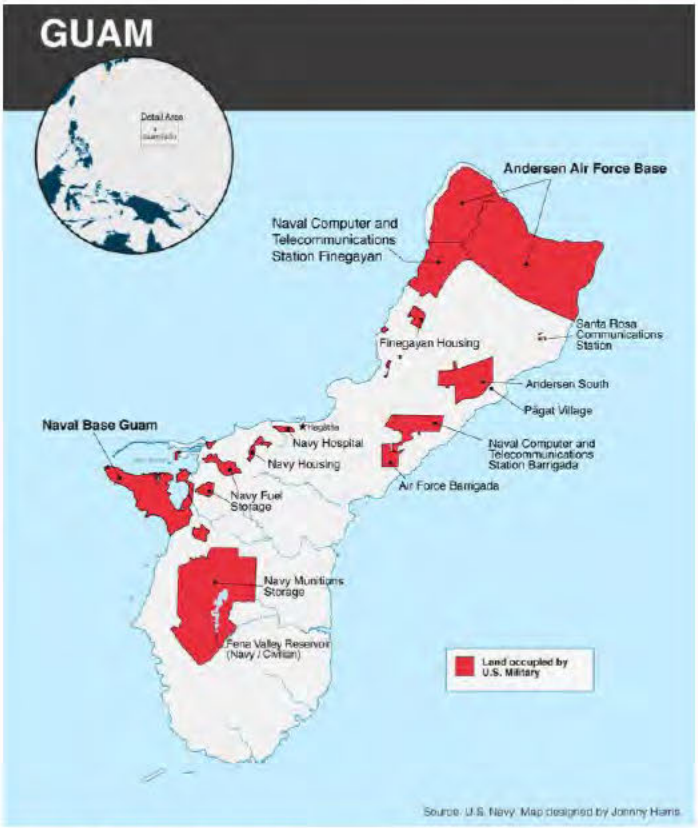

Figure 2. Visual representation of military land occupation.

"The idea of controlling the military's polluting effects on our environment, right, we have the health data that shows we have a study on particular, that was done in the 90's that looked at cancer death rates on islands over a 25-year period. That study clearly showed that when the proper, you know, epidemiological adjustments were done, that the villages of Santa Rita and Yigo, had the highest rates. So, this whole thing about military waste, you know, is a very big thing, is a real thing."

"So, how do we go about protecting those rights as indigenous peoples to be able to access traditional fishing grounds so that we can then have the diet that is consistent coming from our own community? Right, that to me is the goal."

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Social Safety

Those SMEs directly involved in the development of policies for public health and the social safety net indicated that the policy response to COVID, the challenges of food security, and public safety was at par or exceeded other communities of similar size in the United States.

"priorities have, in some way shifted because of the pandemic, but also how they have highlighted some preexisting issues, particularly suicide and mental health, non communicable disease, because I think people saw how much of an impact chronic diseases had on your likelihood to die from COVID."

"The social safety nets are I know many, many people who avail themselves of the programs that are there. And if it wasn't for that, they'd be, we would have a huge homeless and a huge problem. I don't even know if they wouldn't even make that conscious choice to stay here."

Several believed that drug abuse was a significant problem, and that mental health facilities and services were not sufficient but improving.

"Drugs and alcohol is doing more to screw us up than all the temporary remote learning or Chamorro language ...Yeah, it's drugs. To me, it's drugs and alcohol. I sat on the grand jury for a couple of terms. And, boy, what an eye opener that is to all the family abuse and violent crimes that are committed just because of drugs and alcohol."

"What's causing most crime right now is the economy and the availability of the drugs."

"Homelessness again, it's, you know, it's the lack of the affordability, there's homes out there, we see it all the time. But the island right now is priced to attract a military client versus a starting out family or a family of three or four. And so, wages aren't at a point where they can afford the monthly rentals or the monthly mortgage payments."

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Social Equity & Welfare

Social equity was a topic that SMEs raised. There is a concern that ethno-centrism colors institutional bias and that it must be addressed in order for the concept of "Inafa' Maolek" is to be realized as part of Guam's vision.

This is symptomatic of the need to prioritize the welfare of the people in the plan. In this instance, welfare was strongly defined by equal access to community resources and services and a dedication to diversity in the plan.

"I think equity, certainly, we live in a very diverse and multiethnic society right now, but not everyone has the same seat at the table, not everyone's voice is heard equally loudly in our community. So, I think we have to confront and grapple with the issues of inequity, that exist right now."

"There is a lot of, I would say, almost institutional bias against certain racial groups in our community, certain stereotypes that pigeonhole people based on their ethnicity, and that needs to be addressed."

"I think it's got to prioritize the people's welfare and well being. And I'm a physician, so I think a healthier future is something that is fundamental to that vision."

As part of these concerns SMEs identified that transparency and inclusion of all strata in the community was essential for the success of the plan. The very poorest as well as those that are well off need to have their needs and desires reflected in the plan regardless of race or ethnicity.

"Most of these jobs that they have won't offer it so they're looking for these clinics, these vaccination clinics, they're looking for immunization clinics, they're looking for health screenings, and a mobile van for mammograms and cancers. So that's one and is it available to them, they'd like it available."

Education

Those SMEs from the private sector were concerned about the quality of public K-12 education. Those SMEs involved with public health believed that more should be done to create locally educated professionals such as nurses and eventually Guam should have a medical school but, in the meantime, should be providing residency experience to doctors from Asian countries.

*"My personal opinion is that **there has to be a better way** to do, even just educating, the standard models are not working."*

"They're [students] learning common core math, it became confusing for the parents, then the parent became disengaged with the child because there are things that they can't teach anymore."

"But having the teacher workforce, my understanding is that it's always a challenge to recruit good teachers."

"we talked about a medical hub, why not make Guam a, you know, a career hub for training professionals."

"You gotta have education that trains and educates people for these jobs."

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Subject Matter Experts were then asked what was required, and what should be included in the Guahan 2050 sustainability plan to help ensure and improve the sustainability of Guam's economy. Also, unique conditions and economic characteristics unique to the island that affect sustainability were explored and discussed.

Current Economic Dependence

All of those interviewed recognized that Guam was dependent on three sources of external revenue: 1) Tourism receipts from foreign visitors, 2) The U.S. military investments infrastructure, and the provision of jobs and 3) the federal government through transfer payments and the allowance of all local tax revenues to be captured by the local government without the requirement to remit funds to the U.S. treasury.

"The federal presence, provided a sustainable energy solution working and we've modernized the way we handle wastewater. It will be a world class facility and be as good as any place in America. But it was paid for by other people on this call."

"Know what they [Military or Foreign entities] want to do, and make sure you know how it will make an impact, what impacts are created in the civilian community and negotiate with them on how to deal with their impact."

At the same time, even though the U.S. strongly influences the economy, the island is strongly impacted by foreign countries, particularly South Korea, Japan, the Philippines, and Taiwan. These countries provide foreign exchange through visitors. This makes Guam unique from other U.S. jurisdictions.

Some SME's felt the impact of COVID-19 has been more extreme on Guam's economy than other U.S. communities because not only was the island more vulnerable due to the lack of healthcare services, but the island was also more impacted because so much of the economy was dependent on tourism, which was virtually shut down by COVID-19.

"I think a lot of this is out of our control. Our purpose, our tourism, must continue to hold primacy in our economic development."

"I've been talking about Guam's economy is based in almost entirely upon the whims and values of foreign entities and by foreign, I just mean they don't live here. Military spending, federal spending, and tourism both of which are external forces that have changing opinions and definitions of what is good and how could we ever sustain our environment when we have to cater to these external wishes and desires rather than our internal needs."

"If you look at the data, our economy is primarily fostered by the military and by tourism, and the past two and a half years have taken a super hard. So clearly, I think, and again, like I say, the COVID-19 experience has really served as a lens to sharpen the focus on the issue of sustainability, it's clear that we need to broaden our sources of revenue beyond tourism and the military."

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New Opportunities

SME's had different views regarding the need to diversify the economy depending upon their orientation. Those from the private sector were adamant that the return of tourism was critical to the recovery of the economy. Those that were employed by government entities indicated that the time has come to replace the island's dependence on tourism because of its fragility.

> *"my solution was to create **blue economy based on the strengths of our biodiversity**. Aquaculture and especially the aquarium fish trade, to build a new economic sector that would release us from external forces, and therefore, we would be able to have the opportunity to make more environmentally sound decisions that would protect that ability of future generations to have the same quality of life that we have."*

There was reference to efforts to explore the development of industries (aviation, technology, manufacturing, etc.) to replace or supplement tourism but those involved in the private sector were far less open to ideas that have not been proven. For example, several indicated the need to develop agriculture, but those in the private sector indicated that agriculture has not succeeded because imported agricultural products, due to economies of scale, will always be less expensive.

Others advocated the consideration of "community gardens" to improve the diet of the local population. Guam has one of the highest diabetes incidence in the U. S. and the improvement of local dietary choices.

> *"One thing that comes to mind is, we were recently in the planning symposium that we just had, and one of our guest speakers was the gentleman from Resonate, a company that deals with sustainable products. These were building materials made of recycled wool, plastics, I think our island needs to get more in line with these practices of using plastics, to reuse plastics, to reuse our trash, to reuse disposable glass bottles into road and infrastructure that we can definitely use that."*

> *"So, our oceans are kind of the walls that and then you have certain restrictions on the shipping and airlines. I think if we had control of our airlines, or you know, or the airspace and whatever else like that, I think we could get a lot of foreign airlines here and more tourists but, you know, tourists are only allowed what state department allows Guam to visit."*

Still others indicated that the development of the production of pharmaceuticals in much the same way Puerto Rico did could provide a means for U.S. manufacturers to maintain patent protections while having a source of production closer to Asian markets.

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Engaging Local Workforce

The productivity of the local workforce is restrained by the lack of skills and educational attainment. This results in lower wages which further discourage workforce participation. Average wages for skilled positions are below those offered in the U.S. which prompts people to leave once they have acquired sufficient skills to work elsewhere perpetuating the problem.

> *"it's more so when it's taught. So, for the trade skills, a lot of these boot camps that have been offered lately, happen during regular work time. They already have a job, they can't stop their job for 13 weeks, or six months to pick up a learn a new trade. Who's going to afford, they can't afford it."*

U.S. federal contracts mandate higher wages and Guam's wages are higher than surrounding economies, but sufficiently lower than in the U.S. such that sustaining a local skilled workforce has been difficult to achieve. The problem is not as great as it was before, but it persists and continues to create the need to import higher skilled lower wage foreign workers and to import technical services.

> *"we have a very good community college, we have a very good university, those have grown over the years. They are regional in nature in terms of training. So, there's a good example of, okay, let's keep doing more of that. We want UOG to grow, let's have GCC grow, but the Trades Program for construction, you can't pay people, you can't pay the average Guamanian young person enough to go be in that industry."*

This is particularly true in field of nursing. The discrepancy of wages paid for nurses recruited to come to Guam during the pandemic compared to what nurses in Guam are paid was significant. So, while the nursing school at UOG continues to train local nurses they leave as soon as they achieve certification for higher wages in the U.S.

The result is chronic shortage of qualified nurses. The SMEs believed this problem across all industries and job classifications needs to be addressed to develop a workforce that can support economic diversification and attract the level of investment needed to achieve the quality-of-life expectations of the local population. The economy needs to be able to create more careers and be less dependent on lower skilled, lower wage jobs.

> *"I understand **digital jobs are the future**, tech jobs in the future. But we're not training anybody here locally in those digital and tech jobs, or universities still, in a certain aspect, only doing certain things. And so, **if we're not training them here, our people are leaving.**"*

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CHAPTER 02

SME ASSESSMENT

This subject area helped gain insight to the key environmental issues that the sustainability plan should address and the issues that need to be addressed to assure the implementation of a sustainable plan for Guam's environment.

Environmental Protection

"Man, I think we're in overdrive on protecting the environment right now."

As a small isolated island in the Western Pacific the community has had the tendency to take for granted the relatively pristine, air, water and sea conditions that exist when compared to other U.S. or Asian communities of similar size. Economic issues, jobs and more importantly the cost of living is far more important.

At the same time, SMEs are concerned about several environmental issues stemming from the potential pollution of the island's freshwater aquifers, invasive species, runoff silting rivers and reefs or solid waste management. It is recognized that the environment is critical to the maintenance of growing visitor industry.

"Some people are saying if that solar farm is going to make my power bill cheaper, I'm all for it. And you know, there was one casualty there, most people didn't know about Marbo Cave until it came up. Most people didn't go down there, but they're more thinking about what they need to pay the end of the month for their power bill."

"the care for the environment will take a backseat if they can't afford power and water."

*"Well, one, **Chamorro culture is defined by their natural resources**, especially their coastal and pelagic resources. Two, our tourism economy is defined by those natural resources. And three, much of our quality of life has to do with the interaction with their resource, you know, there have been movements that have changed that dog move for many Chamorros, seeing as how more than half of us don't even know how to swim now."*

Yet, some felt that the current regimen of environmental laws and regulations are recognized to be hindering development and slowing the expansion of housing and commercial projects needed to create jobs. It is unsure if the community has a clear understanding of what that balance between growth and environmental protection should be.

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"I think it's [climate change] a big bell and whistle that everybody likes to throw things under, but as it pertains to Guam, we are uniquely somewhat safer than many."

*"**We would really need to consult with our traditional healers so that we ensure to protect the spaces** especially to kind of propagate because a lot of those plants are already contained primarily behind the military fences, right? So how do we replicate those conditions outside of the fences in such a way that it's able to produce the amount that we need for our current needs as a society as well as to have it available as we move into the future for the next generations."*

Waste Management

A particularly vexing problem facing the community is solid waste management. The existing sanitary land fill is not sufficient to accommodate the expected growth from military expansion and tourism. Local "clean-up" efforts of beaches and roadsides and recycling of plastic are popular, indicating the public's concern about littering. Also, the acceptance of the elimination of plastic bags from retail stores, offers further evidence of the public's concern for the environment.

*"**All we're doing is shipping to another country versus actually doing something with it**. And so, it's kind of out of sight, out of mind. We're not the ones recycling, we're cleaning it up, but we're sending it to another country to try to repurpose, so we're at their will, in terms of cost."*

*"Them taking the personal initiative to recycle is not something that I see readily available for them, because they're not going to pay a disposal. **They'll wait for cleanup program that government's going to do, they'll wait for, you know, to them, it's I'm paying taxes. So, the government should do this for the environment**."*

"things have been happening here in Guam that have helped to support or reinforce the idea of recycling, of being good stewards of the environment. So, for instance, you know, the use of reusable containers is now something that is commonplace on island, whereas five years ago, people would have thought that was weird."

Nonetheless, solutions for the larger issue of solid waste management remains elusive, frustrated by land use challenges, funding and the refusal of the legislature to approve waste to energy as a possible solution. SMEs indicated that political and infrastructure initiatives by the government is hindering progress in addressing the issue.

*"But **our realities are different in some ways, and we struggle sometimes to understand that**. I mean, one of the things that I often point to for people is the trash issue or recycling issues on Guam, a lot of people focus on littering and, and littering sucks on the island. That's absolutely true. But well, finally there's going to be sort of a plastic bag ban, but we see other island nations banning the importation of plastic bottles, you know, plastic items, cans, because there's a recognition that this is our reality. It's that everything we bring in here, we have to pay somebody to take off the island, or we have to bury it in our own land. So, **most people's understanding of how trash works, imagines that we are part of a big continent, and we don't have to worry about these things**."*

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Natural & Government Impacts

SMEs also indicted that the siloed nature of government regulation and enforcement of environmental issues such as over harvesting the reef, or the enforcement of environmental regulatory violations by businesses and developers frustrate the ability of the government to do more to effectively support environmental protection.

*"**There is a law, they are breaking a law, but DAWR and the Department of Ag does not enforce those laws.** That's the jurisdiction of Port Authority. Port said they don't enforce laws; they don't have an enforcement section. I'm like, well, **those people just slipped through the cracks.**"*

"One, reforestation of watersheds, enrich to trench approach. Two, biodiversity is a major issue on Guam and loss of biomass in general, not just biodiversity, but the actual standing biomass of our resources is dwindling."

*"Invasive species, they call it that, but there's also you know domestic species, dogs, cats, pigs. **If we don't get much more of a handle on culling those populations, we have serious issues** that will bleed into many other sectors of society, especially with our social interactions."*

*"The Dusit Thani environmental fiasco when they flooded during Typhoon... whatever the one right before Yutu. **They were pumping out their bottom floor lobby onto the street**, which was then running back into Tumon Bay MPA, **which inadvertently dropped the water quality and dropped the salinity of the water and killed all of the corals** of Laurie Raymundo's marine lab coral nursery."*

"Military acting as their own country, as their own jurisdiction, as their own everything, puts a real strain on our capacity to be sustainable on this island. We don't control over a third of our land, terrestrial and sea resources."

Also, there has been in place a pro-growth and pro-development position by the government for most of the past 20 years. Without an agreed upon land use plan creating an effective balance between environmental protection and growth, the development direction of the island has been viewed as confusing and ad hoc.

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CHAPTER 02

SME ASSESSMENT

SMEs were asked questions related to physical infrastructure in Guam. The importance of the island's infrastructure was compared to the other subject areas, as well as what the vision for a sustainable island infrastructure would be.

Infrastructural Development

Most of those interviewed indicated that the long-term planning for sustainable power generation, water and wastewater management as well as the roads and ports on Guam was generally well managed. The Guam Power Authority, the Guam Water Authority as well as the Ports Authority and the Guam International Airport Authority were viewed having well thought through and well managed plans for sustainability.

*"**The communication infrastructure domestically is very, very easy to expand**. It's cheap to put up cell towers and rent run fiber optics compared to sewer lines and water lines. And so, a data center, it has far less needs for water and sewer, and that kind of infrastructure than a data center does. Right. A hotel creates a certain level of jobs, blue and white. And data center also create a different type of job where the value of the pay and the job may be higher than someone working in a laundry or at a hotel. And that's **a good diversification of opportunities that are available to future Guamanians**."*

"Little did we know that now we're putting data centers in Guam, because we want to speed up gaming between a kid in LA and a kid in Tokyo, who's got too much of a lag if the signals being routed from LA, but same time, essentially same time zone, more instant reaction if the data is flowing through Guam and then to Asia."

*"There is one aspect of infrastructure that I think we could vastly improve on. And that is, we have to keep growing or stop having babies or stop allowing imports. So, we have to keep growing. So, we need more land for housing, for instance. And like it or not, the preferred lifestyle for housing, for people who live on Guam, is single family housing, which is not an efficient land use. And **we have so much of our property that is denied development opportunities, because it doesn't have wastewater treatment**."*

Of concern to SMEs is the fact that the land area is obviously static and as the island continues to grow there is an increasing need for housing and attendant commercial space. The current concept of infrastructural development is based upon its feasible installation and the need to reduce costs. Given the costs of construction and limited land area SMEs are concerned that there is no integration of Guam's land use objectives and economic development objectives.

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"I think modernization of current infrastructure would be one of the ways because there currently are a lot of waste associated with the infrastructure for drinking water development. And with all the leaks and things like that, that are associated with that, with the infrastructure for power, the redundancy and I guess pardoning of the power line. So, there's more sustainable inclement weather and won't be wasting other resources to replace some poles and manpower and things like that. Trying to get them up again, if there are more pardon. So, I guess it's just ***more modernization and upgrade for the infrastructure.***"

"***I think for infrastructure itself is use what we currently are, the current footprint we have should be more than enough*** *to add another 20-30,000 people on this island before it kind of gets out of hand in a way but, you know, it's, I think for, for most people, that's kind of their view is there's a lot of unoccupied places. And then for rent, rent is too expensive."*

Issues with Utilities

The lack of a coherent land use plan has frustrated the ability of the utilities to plan for the increase of their facilities. The lack of housing construction of the last few years coupled with the increase in military residents have driven up rents.

"probably the biggest issue for me, you know, having power, you know, far as, you know, outages and reliability of mine. I lose power, I lose my services, you know, and we've got our own backup systems for our vital infrastructure, even what I talked about you to, in Saipan, when that storm hit, our mobile network never went down. You know, mobile networks are pretty resilient these days."

"Reduce the cost of energy on Guam, that is the single most, it's the biggest proportion of your personal and company income goes to a huge boost of power."

The cost of living remains a primary concern for residents. The cost of power is a major cause for that concern. The number one priority of GPA is to try and reduce the cost per KWH. The Authority's plan to have 40% of the islands power generation by 2030 is key to those plans as is the construction of a more efficient power facility in the Okkodo region of the island.

"Fixing the leaks in the distribution system for GWA so that we don't have to draw as much water from the aquifer on a daily basis, we can reduce our draw in the aquifer 60 to 80%."

"I think land use on Guam is pretty well settled for the foreseeable future. And we know that tourism is going to be mostly in Tumon, tourism of scale. Now you're seeing more B&B is located in other parts of the island. I mean, you're not going to get some scale, but you're seeing some of that. But in terms of scale and volume and employing 1000s of people versus 50 people, you know, tourism is still where it's at."

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GWA's major concern is the loss of potable water through water lines installed more than 50 years ago. By repairing and reinstalling water lines GWA believes it can maintain the current levels of the freshwater aquifers and support a population in excess of 200,000 on Guam.

"The utility costs are what my most, majority of the calls I've gotten in December, in January, were all about utility costs rising, and so they don't know what to do anymore. And so that's gonna be something that's kind of for planning wise is ***how do we make those things cheaper, and more affordable for them and more available to them, so they can ease up on some of the things so they're having to make difficult decisions on what they pay for****."*

"[We] use what's existing out there, we see so many unoccupied buildings*. So, what can it be repurposed for and redone in some of these landlords can be taught or educated about what else can be done in those zoning areas, because most residents don't want industrial or commercial zones near their housing anymore."*

Growing Industries

Telecommunications has been one component of the island's infrastructure that Guam has excelled at. The speed and availability of mobile and fixed data services ranks in the top 95% of all communities in the U.S. Guam is the hub for several of the undersea fiber cables linking North America and Asia. While the attractiveness of growth in this sector is enticing the lack of skilled technicians, the small population, and inclement weather make it difficult to envision Guam being a major telecommunications center.

"think a strategic move that Guam needs to consider is how can we upgrade our current health infrastructure so that we serve not just our local community, but the communities in the outlying islands and Micronesian countries around us who may not be able to afford the physical and the human infrastructure for healthcare in their locations."

"the limitation with just building a hospital is it just serves inpatient needs, right. But in truth, many inpatients who then get discharged need follow up care and then also if you wanted to reduce hospitalizations, you would have to provide outpatient preventive and diagnostic and curative services to help reduce the burden on to the hospital. So really what you need is an ecosystem where you have an inpatient facility that is supported and augmented by an outpatient facility."

The infrastructure of the healthcare industry is another concern of SMEs. Guam needs a new hospital and a better network between outpatient facilities and the two existing hospitals. Instead of building the overall healthcare network the new private hospital attempted to bring in their own specialists to compete with existing doctors further deteriorating the benefit of their addition to the healthcare infrastructure on Guam.

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Subject Matter Experts were also asked who should be involved in this planning process and how much influence should they have over the planning process.

Community

All SMEs believed that there needed to be a strong and sustained engagement with the community if the plan had any chance of succeeding. An SME also mentioned that there should be outreach to the region rather than Guam itself.

> *"Not listening to each other and following secret agendas that line other people's pockets rather than look at the community as a whole. And recognize there's this interconnectedness."*

They believed that process need to be transparent and be forged through partnerships developed with the community, as well with the private sector interests.

The goal of the process has to be to forge a commitment to work towards a singular vision for Guam sustainability.

> *"**I would form an alliance; it's got to be all of us**. If it's all government, some need for getting reelected and getting back power. Private interests, as well, as a community, and government."*

> *"I think that what is absolutely key is that the high-level stakeholders like, significant business interests and politicians, especially the ones who can really stop the whole thing, like the legislature, they need to feel like there is a stake in it for them, you know, so they'll feel like they're getting something out of the process."*

> ***"That partnership with community is absolutely critical, if the plan is going to succeed."***

> *"So, I think that's one of the main things is that each sector has their own individual goals, but there's not one overall arching unifying goal that the island should work towards."*

SMEs were split whether the planning process should employ a top-down government directed approach or instead a bottom-up grass roots directed approach to developing the singular vision for the plan.

> *"decentralize the power, put it back into the stakeholder who lives next to the resource as the first clearing house."*

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"I think we probably need to take a step back from that first and really have a shared vision for Guam in the future, I think that's got to be key is, you know, what is our community's vision for how we want the future to be and then build off that."

"I think it still goes back to the key of having a shared vision that everyone buys into. *Without that shared vision, without the communities, the villages buying into that, it's going to be difficult to implement, right?"*

Those advocating the "top-down" approach worried that the community had too many individual special interests and it would be impossible to gain consensus among the island's 19 separate villages.

> *"I think a singular vision, not from the village level, I mean, as much as it pains me to say that, because then it's going to be like, you're going to have a migration issue. And you're going to-- it's like the states, if one state is failing, somebody can pack up and move to another village, where it's better opportunity, better lifestyle. And so, you're going to end up, you know, if there's one vision and all of us can agree on, then it kind of works for everybody."*

Those advocating the "bottom-up" approach indicated that the political system is not mature enough to abide by a long-term plan. Every four years a new Governor could be elected proposing a different vision making the plan irrelevant.

"my experience has been that the grassroots approach [is the best], the bottom-up approach, over the long term, is what is sustainable. Because with the top-down approach, you know, the reality is elected leaders change, administration's change. And whenever they change, their priorities also change."

All indicated that some kind of balance was needed to ensure that the benefits of both approaches could be had.

> *"I think that a more holistic view of hitting the sectors at the same time with more modest efforts spread across would be more, at least from a Chamorro standpoint, with inafa'maolek, being still strong in our culture. Everybody having the opportunity, whether or not they choose to exploit that opportunity, or not, just having the opportunity is enough to appease most people."*

Another idea that was floated was to create an independent commission, like the PUC which would be responsible for the implementation of the plan. Its members would be elected for periods that did not coincide with the gubernatorial election cycle. In this way the influence of partisan politics might be avoided. SME's thought that such a system had merit and should be explored.

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Government

All SMEs agreed that if the government is involved in the planning process that its involvement needed to be limited and able to be checked by community interests. It is also critical that there be complete transparency to the government's involvement.

"If we don't have our act together, at the family level, that is going to work its way up on, you know, on who we are, and what we are to businesses and development, etc., etc., and tourism as well. I think we need to get that under control first."

"Clearly, we need the government, so the government does good things. I just think there should be less regulation and more guidance by the government."

"I would love it if some of these issues were brought back to the village level. I think that that would be a very important thing. It would just be hard to prop up, it would get hard to start because people already have a different sense of how we relate to each other."

"Pull all the primary critical players together and develop a meaningful plan that will transcend administration to administration, whatever way that that happens, right."

"I'm torn between the government to be the main lead, but as we all know, every four to eight years, there's a change in outlook and goals and priorities, depending on who sits down at Adelup...If there's a consistent agency or department semi-independent from Adelup and expand multiple terms, then the government will, be the main lead."

"it's actually implementing policy, and boy, you better be flexible, you better learn from the latest of what's going on in that area that you're involved with, whether it's energy or whatever it is, and revisit your plans on a regular basis."

Because of a long history of "spot zoning" and influence placed by both the legislative and administrative branch on land use issue a level of distrust of government involvement has developed, which should not be ignored.

Regardless the plan must provide sufficient flexibility to adapt to changing demographic, economic and cultural conditions.

"So ultimately, does the government have the trust of the people of Guam? No."

"I think government is convener, government is coordinator, government is what brings together the resources and the people to do the planning and also has a steward function in ensuring that, you know, the plan is incorporated into the policy, the broader policy environment, so that there is an anchor, there's a political anchor to the plan. But to have government decide what the plan is, I think is not a very wise way to approach it."

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CHAPTER 02

SME ASSESSMENT

From the interviews the following information objectives were identified to form the discussion guide for the qualitative research of Task 2 (Discussion Among Business Professionals and Residents).

Social & Cultural Aspects

1. Should inafa'maolek be the main vision of the sustainability plan?
2. How can inafa'maolek be incorporated to the entirety of the sustainability plan?
3. How can it be ensured that all goals and objectives move toward this one sentiment?
4. How does the public feel about the impact of the island's political status on the success of a sustainability plan?
5. How does the public view the military's impact on the development of the island?
6. Should the public have more influence on the military's infrastructural development?
7. How does the public view the islands' reaction to challenges brought on by the COVID-19 pandemic?
8. Do people feel safe in public again? If the need to be hospitalized arises, do they feel they will be in a safe environment?
9. What can the island do to reduce homelessness? Unemployment? Poverty?
10. What can be done to increase the success of efforts already in place?
11. Are there affordable/equity housing, workforce, education plans that can help? What would these look like?
12. What types of initiatives should be taken so that indigenous practices are protected? (language, food, history, medicine)
13. What efforts can be made to aid subjects of domestic violence, mental health rates on island?
14. How can we ensure all ethnic groups are being heard in the planning of this sustainability plan?
15. How to ensure institutions avoid creating a bias based on ethnic background?
16. How to create a better healthcare program/opportunities based on income?
17. How can the current public education programs be changed to better aid students?
18. What education model should Guam follow to increase students educational progress?
19. Is there more than one education model that can be implemented?
20. Are there grants or federal assistance programs that can be created to assist parents with taking more control of their children's education?
21. What incentives can be given to increase the number of educators on island?

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CHAPTER 02

SME ASSESSMENT

Economy

1. Will the tourism industry be enough to recover the islands economy after the impact of COVID-19?
2. Will the tourism industry recover once travel restrictions are lifted globally?
3. Should the island consider diversifying the economy to relieve the burden of the tourism industry?
4. How can the island promote the implementation of diversification in the economy?
5. What types of industries provide viable solutions to relieve the tourism industry?
6. How does the island develop a workforce that will support these new opportunities?
7. Should the government implement paid educational or internship programs that will aid those who seek new opportunities?

Environment

1. Are there effective regulations and planning protocols that can be followed to increase development but avoid environmental mishaps?
2. Are there areas of environmental protection that require less focus or areas that should require more focus?
3. What are other methods for recycling/repurposing can be implemented?
4. How can the current waste management solutions be improved?
5. What methods can be used to reduce the cost of properly disposing of waste materials?
6. Will the efforts of this plan be destroyed by frequent natural disasters?
7. How can certain environmental areas which have impacts on cultural practices be made available? (medicinal practices, etc.)
8. What alternatives can/should be made if environmental areas cannot be accessed (military restrictions to certain regions)?
9. What pollution cleaning efforts should be made? (air, land, sea)

Infrastructure

1. How can the planning committee ensure that the island's development does not increase the current footprint?
2. Is it viable to further develop the islands infrastructure without increasing the footprint?
3. Is the current land use planning (residential, business and government) system sustainable for the island?

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4. What do you think a land use assessment should focus on?
5. Should there be a movement to repurpose old buildings? Rezoning?
6. Can the island support the infrastructural development needed for technological and telecommunications industries?
7. Can the current infrastructure be repurposed to support the development needed for these industries?
8. How much will the island need to invest to ensure the infrastructure will support these industries? Will the ROI be beneficial to the island?
9. How much will the island need to invest to improve current public facilities to reduce the residents' monthly utilities costs?
10. Can there be an alliance between hospitals and providers to ensure better outcome of resident's long-term recovery?
11. What terms and conditions would be needed to create this alliance?
12. Is the ratio between provider and patient sufficient to ensure the success of this alliance?

Planning

1. Can a singular credible and achievable and inspirational vision for Guam be accepted by the entire community?
2. Should the vision and the plan be created from the villages up or from GovGuam down or if in combination, what combination would be most effective?
3. What type of influence and/or responsibility should GovGuam have with this sustainability plan?
4. What barriers do you see, political or otherwise, to effective implementation of this plan?
5. How will it be known that there has been sufficient public involvement in the development of the plan?
6. How can we ensure that there will be an effective relationship between departments that will communicate and work on short term goals as well as the general goals of the plan?
7. What role should the military play in the development of the plan, what best describes their involvement?
8. The community's attitude about "going green" and determine what they believe that means.
9. The changes if any that need to be made to how land use in Guam is determined and designed.

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CHAPTER

03

DISCUSSION AMONG BUSINESS PROFESSIONALS & RESIDENTS



MRD

GUAM · MICRONESIA · MARIANAS

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Research Methods

This report presents the findings from eight focus groups among residents in June and July of this year. All the residential focus groups began with a discussion of what sustainability means to themselves, their families, and the community. The sessions ended with a discussion of the special governance and planning issues associated with creating and maintaining an effective sustainability plan. In addition, specific hypotheses and ideas raised during the SME interviews were discussed about the island's infrastructure, economy, environment, and the unique social and cultural aspects of Guam. Each participating resident was selected based upon specific demographic and attitudinal characteristics. Eight focus groups were conducted for each of the specific characteristics. Specifically:

- **INFRASTRUCTURE**: Two groups were conducted among management of the major utilities, as well as engineers, architects, planners with businesses directly involved in projects and programs involving Guam's infrastructure.
- **ECONOMY**: Two groups were conducted among business leaders involved in tourism, retail, service industries, real estate development as well as economists engaged in studying Guam's economy.
- **ENVIRONMENT**: Two groups were conducted among environmental planning firms, environmental non-profit groups and representatives of the Sea Grant program and the Center for Island Sustainability at the University of Guam.
- **SOCIAL AND CULTURAL ASPECTS**: Two groups were conducted among healthcare enterprise professionals, educators and non-profits engaged in social work.

The groups were conducted virtually utilizing Microsoft Teams. The groups involved video and audio recorded sessions of approximately two hours in length. Transcripts of the groups will be provided to BSP.

The views in this report were not necessarily representative of all businesses in Guam. The concepts and ideas discussed should be viewed as insights regarding the topic discussed. To ascertain the representativeness of these concepts a quantitative assessment of the hypotheses raised was conducted separately to offer evidence of their veracity and will be reported separately.

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Research Participants

Felix Benavente	Real Estate Developer, Benavente Planning
Laura Biggs	Associate Professor of Biology, UOG
Miguel Bordallo	General Manager, GWA
Catherine Castro	President, Guam Chamber of Commerce
Mark Cruz	Regional Environmental Coordinator, Joint Region Marianas
John Duenas	Principal, Duenas, Camacho & Associates, Inc.
Noel Enriquez	Civilian Aide to the Secretary of the Army, GUARNG
Maria Eugenia Leon Guerrero	COO, Bank of Guam
Dr. Roseann Jones	Professor of Economics, UOG
Brad Kloppenburg	President & COO, Kloppenburg Enterprises, Inc.
Jovyna Lujan	Merchandise Manager, DKSH Guam Inc.
Melinda Mafnas	General Manager, GPA
John Mafnas	President, MAXAM Consulting
Monty McDowell	CEO & Principal Broker, Advance Management, Inc.
Bill Nault	Executive Director, Rakuten Travel & Nautech Guam Corp.
Dr. Mary Okada	President, GCC
Paul Packbier	PCR Environmental, Inc.
Joanna Pascual	Assistant to COO, Bank of Guam
Robert Perron	Managing Director, REM & Associates, LLC
Lillian Perez-Posadas	Hospital Administrator, GMHA
Steve Ruder	President, RiMS
Robert Shambach	Project Manager, EA Engineering
Dr. Austin Shelton	Director, Center of Island Sustainability & UOG Sea Grant
Tyrone Taitano	Director, Office of Infrastructure Policy
Akihiro Tani	General Manager, Fish-Eye
David Tydingco	Director & CEO, Valley of the Latte
Luis Villagomez	Director of Marketing-Growth Segments, Docomo Pacific
Brent Wiese	Managing Principal, RIM Architects
Inna Wiese	President, AIA
Felix Benavente	Real Estate Developer, Benavente Planning
Laura Biggs	Associate Professor of Biology, UOG
Miguel Bordallo	General Manager, GWA
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Sustainability

All the enterprises interviewed expressed familiarity with what sustainability meant. What they believed it represented varied. To some sustainability was viewed as survival in large part because of the extraordinary difficulties their enterprises had encountered during the pandemic. Businesses were shuttered and tourism was closed for nearly two years. The recovery of the economy was viewed as still being some time off. Among others, sustainability was all about conducting business in a way that will allow the enterprise and its employees to sustain for long into the future. There was consensus that actions taken today must be done with an eye on what impact it will have on the future.

"But sustainability, for me provides is a platform by which in my particular business will allow an ongoing concern that will be relevant not just today, but down the road in the future and you know, putting all the little nuts and bolts to go to tying it together so that you know, we actually are well, not us, but necessarily but what we've developed will be around many years from now. So, that was just my initial thoughts."

"So, sustainability is how do we use what's already here and the most efficient way and leave something for others to build upon not just human beings but other species that and plants and, and the richness of our environment."

"When we discuss our sustainability, of course, my mind it was environmental issues and also development or tourism area. The center is a discussion with some professionals about how we can contribute, maintain sustainability. And then well by idea we came up with is a tourism site is an economy kind of site."

Still others felt that sustainability was really a balance between preserving the environment and economic growth. Not surprisingly, businesses generally believed that the there was a "thumb on the scale" for environmental preservation among government regulators. However, there was consensus that most of the business community understands that taking care of the environment equated to taking care of their own businesses. Sustainability was viewed as a key business objective for several of the tourism related businesses that were interviewed. They believed that a key differentiator that Guam has as a destination is the quality of its environment both physical and social. The preservation of both were deemed essential to maintaining Guam's position in the overseas travel market.

"Our business promotes culture and environment. It's trying to drive people's awareness of how important it is to rather than overdeveloped we take what's there and enhance it, but not to the point where you take away the natural beauty and the flora and the fauna. So, it's really tied to my economics. It makes sense for me that way."

"Sustainability is about that future, about creating a future that we want to have. Everybody has to see themselves in this plan. And I think that if it was, if there are if there's a diverse enough and wide enough group that is part of the process that people will be able to see themselves in this planet that comes together in that way."

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In the end all the groups interviewed believed that to be sustainable Guam as a society must meet the needs of its people today in ways that will ensure that the needs of future generations will also be met. The groups were also universally in agreement that the pursuit of sustainability was essential to survival of Guam as a community and as a society. Pursuing sustainability was an important initiative that they all believed should be pursued.

However, they worried if the development of such a plan would be implemented and enforced. The most prevalent complaint about environmental regulations was the inconsistent enforcement of existing laws. They believed that enforcement was not adequately funded or manned by the government. The next most frequent concern was that a sustainability plan would not be implemented. "A large allocation of funding that results in a plan that sits on a shelf," was mentioned as a key concern by many. They also were concerned about the political commitment to implementing such a plan. How would it be protected from changing administrations altering its direction or throwing it out? Regardless, they believed that developing a vision for sustainability and a plan to implement it was needed and would be supported.

"I believe that there are some in place, it's the implementation and enforcement. It's sometimes you know, there's things that fall into the crack and then you'll just find out later when there's an environmental issue to deal with. So, I feel there are some in place could be this revisited, because I know ***some [plans] of those have been in place for years and years and we've evolved, and things change and needs to be relooked at updated****."*

"But, you know, other than that, I think there's very little enforcement in terms of what the rules are supposed to be. So, I mean, I think there's ways that the public can be held more accountable for our daily impacts on the resources, but I think that it's not just the public, there's a much broader impact that is beyond our control"

Economy

The participants recognized that the pandemic caused an enormous shock to many private enterprises in Guam. They also felt that the brunt of that shock was not evenly distributed. They expressed that most of the local service and retail businesses that depend on local patrons were subsidized by government grants and loans and did not close or lay off workers as much as others. Additionally, they recognized that construction companies and their workers buoyed by large scale military construction contracts also did not experience the economic impact of COVID-19 to any degree as much as those in the largest sector – tourism. While visitor industry businesses did qualify for government assistance, the duration of the period they were required to be shut down was longer than other businesses. Also, because of the nature of their businesses and the size of the local market, they continue to struggle to survive. Recovery to pre-pandemic visitor arrivals was viewed as being six months to a year ahead.

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CHAPTER 03

BUSINESS PROFESSIONALS' DISCUSSION

Businesses in the tourism sector were three times more likely to close either temporarily or permanently in 2020. The impact of that disruption is still being felt and has impacted the quality and breadth of the tourism product Guam offers.

The participants also felt that the advent of the economic effects of the pandemic has caused those in the private sector and particularly those in the tourism industry to wonder if the time has come to take a pause and begin to rethink how the sustainability of tourism and Guam's economy can be improved. Among the areas mentioned most frequently were:

- The need to diversify the industry/commercial base.
- The need to increase the quality and quantity of the workforce. And,
- The relaxation of regulations slowing and frustrating recovery and growth.

It was generally recognized that the pandemic showed that Guam could not rely as much on tourism as it has in the past. There was recognition that some other industrial or commercial sector is needed. At the same time, it was clear that there is no other industry present, or foreseen in the near term, that would be able to replace the jobs or opportunities that Guam enjoyed without tourism. So, the concept of diversification should also include changing the nature of tourism to Guam.

"...at the onset of the pandemic all of our businesses in tourism were compelled to pivot our business directions. I mean, it began with the lockdown. We were not permitted to operate we needed to comply to the health requirements etc. And so, over the last two years sustainability to me, anyway, is very well represented by the initiatives that our company has had to take to embrace the pandemic to find new ways to generate income when virtually we had no little or no inbound visitors. We had to find new ways to stay in contact with our customers. find other ways to keep our business going. Sustainability, I guess you could say entailed all of that."

Participants felt that as tourism recovers, perhaps it can be somehow shaped to concentrate more on quality than quantity. One participant said, "At my visitor dependent business I would rather have 100 customers spending $200 a head than 200 customers spending $100." They felt that Guam needs to improve its image and offer a product that will attract higher spending, longer staying visitors.

"...I would rather have 100 people, visit my place and spend $200 than 200 people come and visit my place and spend $100. It's not about you know, it's us figuring out how do we provide sustainable and make a conscientious decision that this is what we are going to do for our island now the one thing I think that's important, an important lesson from the pandemic."

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Regarding alternative industrial/commercial avenues for diversification several were mentioned. The development of Guam as a pharmaceutical manufacturing center using Puerto Rico as a model was mentioned. Also, expanding Guam's small agricultural industry to improve food security was also mentioned. While the development of large-scale agriculture may not be feasible the development of smaller community gardens where vegetables and fruits should be explored to supplement or replace a small portion of imports may be feasible. In addition, the development of Guam as a center for data storage and transfer utilizing Guam's unique location at the nexus of most of the undersea fiber optic cables linking Asia with north America was discussed. One participant suggested that the development of general aviation could provide an avenue of growth improving both passenger and cargo services in the region. That same participant said it may be possible for Guam to attract corporate headquarters for companies currently looking to leave Hong Kong because of the changes made to Hong Kong's political status by China.

"If we look at the demand for general aviation... We have folks from Japan saying we would relocate our private jets here. It's cheaper, it's efficient. I envision a section of the island that could be corporate headquarter for places like Hong Kong, Taiwan, Japan, the Philippines to do real time business here, and I think that we'd see a different kind of pathway, not the small diversification we imagine with agriculture and aquaculture and all that other stuff."

In the end it was recognized that such initiatives will take time. While initiating the exploration of such ideas was important, it is critical that the current economic framework be sufficiently repaired to bring back jobs and revenue as soon as possible. It was recognized that the government subsidies that had kept the government afloat will run out soon and the economy needs to grow if it is going to sustain the quality of life that Guam has grown to expect.

> *"the other leg of the economy is the military here and they are a big consumer of everything and a big generator and whatever strategy we put together, we cannot have a strategy inside the fence and a strategy outside the fence. There's got to be a unified Guam strategy."*

The participants felt that the military construction boom that is continuing represents a bright spot in the economy. The construction sector was able to survive and flourish during the pandemic because of the enormous investment the U.S. is making to sustain and increase American military presence in the region. The businesses interviewed felt their involvement in Guam's economy was a significant reason the local government was able to reduce its deficit. Also, the military was viewed as being useful in the development of the sustainability plan. They were perceived as having valuable expertise that could be used to develop the plan. It was also viewed that they should have "a seat at the table" when the plan is developed.

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"if they[military] can bring their resource, their information, their technology, to be to be part of the overall program here, then I think more power to us, right. All that being said, I don't think they should be wants to dictate what the economy should look like."

A major impediment to the recovery of economy was the lack of suitably skilled workers both to assist the economy today and to help it transition to a more sustainable model. Businesses were concerned that workers were getting harder and harder to find and that younger workers were no longer satisfied with working environments and wages that were sufficient in the past. So as workers need to be educated and trained for a more sustainable economy, employers are struggling to identify the changes they need to make to ensure a stable, sufficiently large, and adequate workforce will be available. Few solutions were offered, but several times, competition from higher paying jobs made possible because of the military construction boom that is under way as well as mandated federal wages for businesses working with the military was identified as significant disruptors to the recovery of the economy.

"there's a different workforce of the future... significantly different from what we have today. If you talk to a 20 year, 30-year-old, they're not looking for an eight to five job where they go to five days a week. They're looking for a job that is flexible, that they can work from home, maybe on most of the days so that they don't have to drive in their car, they're looking for flexibility. They're really looking for something different. and does that help us in terms of sustainability? Probably because we don't need as many buildings as you know, we thought we needed just like how businesses have adapted now to remote work and telework."

"the increased tempo of military activities on Guam [due to foreign threats] and the amount of projects that are coming down in the future, just adds to our challenge with the DOD."

Participants recognized that sustainability will only be realized by utilizing what Guam has, more efficiently and effectively. They expressed the need to reduce the need for reliance on automobile travel and improve public transportation. The idea of reexamining waste to energy was identified as a viable approach to solid waste management.

"What comes to mind immediately is living within our means... And we need probably an environmentally sound, transportation system or infrastructure. They all have their own cars here. And if we do away with those kinds of that kind of necessity that we've all grown dependent on and recapture some of the land for green space. That to me is this tangible, visible sign that we've made a difference?"

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Finally, the role of government in Guam was discussed in two ways. The first was that government can effectively work to change behaviors and expectations of residents, which was felt to be key to sustainability. The example of the elimination of plastic bags was identified as one that showed that long standing behavior can be shaped by policy, something that all the participants believed would be necessary to achieve and maintain a sustainable economy. Another example was the development of fish preserves that have turned Tumon Bay into a world class tourism asset. These ideas succeeded because they were effectively communicated and while controversial and even contentious in the short run the government followed through and now are viewed as positive additions to the community. The same approach will be required if sustainability is to be achieved and maintained.

"We need to think about behavioral changes at a grassroots level and how to effectuate and impact people in a practical way so they can continue to survive, but also change behaviors to help the planet survive in the future right, or in this case, our island to survive and thrive"

At the same time, there was concern that the government has too many regulations, permits and restraints that constrain innovation and diversification. The length of time and difficulty to obtain building permits was mentioned along with the permitting requirements to start a new business or even to reopen a business after COVID-19 restrictions were lifted were identified as examples of how government is restraining the recovery of the economy. It was said that the government needs to get out of its own way to achieve a successful sustainable economy. It was also mentioned that any strategy must be done in cooperation with the military. Having one strategy "inside the fence" and another "outside the fence" is not sustainable. There needs to be synergy between the government and the military about establishing a vision for Guam in 2050.

In the end the participants believed that reaching consensus on a direction that encompasses the values of sustainability would be a good thing and is essential. However, in doing so, the participants felt it must be recognized that Guam is clearly the most developed and successful economy in the region.

At the core of achieving a sustainable economy will be the ability to change community and individual behavior. Fundamental issues that inhibit achieving a successful balance between economic development and environmental preservation must be resolved. They mentioned things like cleaning up the trash in the community, removing dilapidated buildings, improving basic infrastructure, creating a better transportation system must be concentrated on first. If those things can be successfully addressed, then more complex and more difficult change will become possible.

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For that to happen a critical component will be to engage the younger generation as a target and participant in a large-scale community education and communications strategy.

"I would say an incredibly strong middle. I think we need both. We just need different things from both sides.... finding that solid footing from which to get both sides to contribute the best they have to offer."

"we really need to bring those young minds in to figure out what they really want because that policy decision is going to then drive the future of their children."

Infrastructure

Participants agreed that the power system and water and wastewater systems in Guam have improved a great deal. The Guam Power Authority (GPA) and the Guam Waterworks Authority (GWA) were recognized as having viable long-term plans and that those plans appear to be working. It was also recognized that a lack of a consistent and island wide land use plan makes the job of planning for the island's infrastructural needs difficult.

Most participants viewed the lack of a coherent island wide land use plan was creating inefficiencies and a hodgepodge patchwork of water and power network planning. It was also noted that there needs to be more coordination of public works development and maintenance. Roads are dug up for a power connection paved over and then dug up again for water or wastewater installations.

"I think the power is probably the best organized and, and kudos to GPA because when we were doing the energy code, everyone expected as well..."

"And I think that GWA is, you know, you know, right behind that I wish they were parallel. But, you know, I see there's that, you know, coming forth, right. But I think what's really important is that, you know, we need to and we've talked about this all the time, about enforcement..."

Developing better coordination between GPA, GWA and Public Works was viewed as a necessity to implement any long-term sustainability plan effectively. Nonetheless it was felt that GPA and GWA were well run. It was also felt that GPA's plan to have fifty percent of the islands power generation from renewable energy source by 2050 looked to be realistic and a viable way of bringing down the cost of power.

Guam's transportation system was viewed as not being well run nor properly planned for. The state of the island's roads, while recently improving do not meet community expectations. It was feared that the recent windfall in infrastructural funding obtained from the federal government might not be managed well. As for public transportation, it was viewed being virtually nonexistent. The participants offered no solutions to the problem but were roundly critical of the government's inability to provide a viable transportation system.

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The lack of such a system was viewed as a major impediment to attracting workers back to the workplace. The need for a viable public transit program will identified as essential to establishing and maintaining a successful sustainability plan.

"I was curious, because up until mentioned transportation, I would have thought that in a sustainability plan. That would be a key one in order to try and reduce emissions and reduce the impact on roads and so forth. In your experience, why is it that transportation has been so difficult to plan for adequately developed on one on one?"

The other area of great concern was solid waste management. The failure of the system was viewed as being both a failure in communicating with the public in ways that could improve the public's continued littering and planning for the solid waste requirements of the future. The only improvement to the system was deemed to have occurred when the solid waste management program was under federal receivership. Now that Guam has control once again there was a lack of confidence that the local government was up to the task of managing the system effectively. Several of the participants indicated that a waste to energy solution should be explored by GPA as part of their long-term planning. The solution was viewed showing how two problems could be addressed through a unified strategy.

"I think number one is just somehow dealing with the trash. You know the uncontrolled dumping along the pipelines, the roads everywhere. I know that there's some plans in place to make it, you know, make trash collection service available to everyone on island, you know, through the government. That concerns me a little bit."

"wasted energy producing electricity... what would it costs for the waste to energy component of our bus system here a very good small system."

Environment

The businesses that participated all believed that while there are definite environmental problems that Guam is grappling with, overall, the government is doing an acceptable job with environmental preservation. There are adequate laws and regulations in place and the island has progressed a great deal in developing plans that help to preserve the environment. That said many of the participants indicated that many of those improvements came because of the federal government forcing improvements through imposing receiverships on Solid Waste Management, the Guam Power Authority, and the Guam Waterworks Authority..

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As a result, the cost of those improvements were substantially higher than what it would have cost of Guam had been more proactive in the past. Additionally, while there may be adequate regulations and laws in place, enforcement has not been managed well. Agencies tasked with enforcing illegal dumping, or illegal fishing as well as illegal burning and off roading are not provided adequate resources to effectively enforce the laws that the community has agreed.

"But the government does a good job at what they're able to do. You know, I think, when they're when they have the resources, they're able to, to get things done."

"I would say like compliance, and making sure people are following the rules and doing things the right way like you know, we have illegal fishing, hurrying but we only have so many conservation officers to surveil the whole island, right. They can't be everywhere all the time. We have very limited financial resources to manage the implementation of those rules that we do have. How effective are those laws or regulations if we can't enforce them? It's all about enforcement and compliance."

As a result, Guam continues to endure unnecessary pressures on the environment. The participants all agreed that the proposed sustainability plan needs to identify adequate enforcement of existing environmental regulations as a performance indicator. Participants mentioned that this is important because Guam's largest industry, tourism is dependent upon the quality of our environment. Hence there is a vested interest in continued preservation of the environment.

"When we proactively did this same with universal waste pickup and cleanup, it's costly to clean up waste. So, the enforcement and the reluctance to actually put those regulations in place are really what's costing us. We need to pay for it now and recognize it. And we do we'll save the money."

"So, we really just have an enforcement issue largely because of lack of resources, and also perhaps lack of public education and probably lack of training to how that process should work."

Participants also noted that the University, through the various sustainability programs managed through the Center for Island Sustainability and Sea Grant have kept the importance of environmental sustainability high on the list of public policy priorities. Participants mentioned that for the last 10 years UOG has been holding conferences educating the community about the importance of our carbon footprint and the development of a 360-degree economy reducing waste through recycling and changing the ways doing business on Guam.

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"We get constant support from the governor and lieutenant governor to ensure that the agencies are participating that we have administrative support and access to letters of support for funding or just a whole bunch of different ways to be present throughout agencies, nonprofits, all the different business partners. The government is not controlling the whole thing, but they are definitely supporting in many ways to make this thing a reality. Let the members lead it and they review it. They adopt the process, but I don't think I've ever seen the governor or Lieutenant Governor say that. No, you should tell the working group that you should do it this way and then we'll approve it. They've accepted all of the plans that have come from all of these groups."

Such initiatives were deemed effective in improving sustainability and impactful in improving environmental sustainability on the island. Additionally, the participants believed that clearly sustainability is not only a laudable goal but a business imperative. None indicated that they did not feel responsible for managing their businesses in ways that do not improve the quality of life and the environment they live in. They believe that sustainability is all about building for a better future for your business and for the community. That is not to say that participants felt there were no problems.

"You need to educate the public, so they know, and they respect it and you know, they're more compliant if they understand what it's for. And then we have rules and laws in place, but monitoring and enforcing those laws and, you know, penalties. You know, people don't want to pay money to bottom line."

The first issue that was raised was the community's inability to control solid waste effectively. The accumulation of trash along the roadways and back roads of Guam was viewed as an endemic problem caused by a long history of government mismanagement and the inability to enforce existing environmental regulations. It was felt that the government has failed to educate the community and change the public's behavior about household trash disposal. This is exacerbated by the lack of public trash collection and the cost to residents for adequate trash collection services. And then over arching these problems have been the failure in the past in adequately managing the land fill. That resulted in a federal receivership that has only recently ended. The participants felt that there is no consistent plan for solid waste management that will help remove the looming threat that the existing land fill will reach capacity well before originally intended with no clear alternative identified.

"I know that there's some plans in place to make it, you know, make trash collection service available to everyone on island, you know, through the government. That concerns me a little bit. I'm sure it concerns Bob and probably the operator of the landfill as well. Because I don't think that plan is very well thought out. But obviously, you know sorry to say it but Guam has gotten a lot dirtier from what I remember, you know, 20 years ago 25 years ago when I got there, you know it was beautiful and an oasis and yeah, there was there was trash and stuff and you know, junk cars along the road. But I think driving around, you know, the past couple of years it is just looked a lot more trash here. And maybe that's because there is more trash being dumped."

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The second greatest problem facing the environment involves surface runoff exacerbated by uncontrolled burning, off-roading, and development without adequate regulator oversight. The incidents at Marbo Cave and at Pago Bay where excavating lead to extreme surface runoff were sited but also, recreational off roading and even the large population of feral pigs all we offered as examples where the lack of regulatory enforcement was placing avoidable pressure on the environment, suffocating the island's reefs, and damaging the achievement of a sustainable environment.

"The second thing if you go from an environmental point of view impact is the uncontrolled burning. That happens, especially in the south here every year and most of those fires are set intentionally. I've seen the south of Guam change in the 32 years I've lived here from jumbo land to just Badlands is just dirt to soil, it's just luffing off and nothing grows there anymore, and it all ends up in the ocean on coral reefs, which affects our fisheries."

"Our waste management. Find that to that because you've got a lot of stormwater being pumped into the sewer system which overflows the system and then you end up with sewage water runoff carrying dirt and debris into the ocean and kind of choking off the reef. And so, I think stormwater master plan and a smart water management system that needs a lot of improvement would be really helpful to the environment. Infrastructure, right? I mean, that's part of infrastructure there."

At the same time the group indicated that there are federal regulations that are strangling necessary development. The reconstruction of Simon Sanchez High School has been halted because of the discovery of a tree with a rare species of tree snails. The group was frustrated because federal regulations frustrate the removal and relocation of the snails to another location on the island for fear it would harm the species. To the participants these kinds of decisions seemed non-sensical and prevented an even more important goal of repairing or replacing an unsafe environment for students. As military and private sector development has increased, these forms of regulatory intrusion were perceived a becoming more prevalent and needs to be addressed in the sustainability plan. The participants hoped that federal environmental regulations that stall the installation of facilities and infrastructure deemed important to the sustainability plan be allowed to be negotiated in a timelier fashion.

The participants all viewed the military will present itself as a cooperative partner in achieving a sustainability plan. At the same time, the mission of the military will take precedent over local policy prescriptions. . The military will not be able to stop development on lands that contain natural and archeological artifacts important to the people of Guam. Instead, they will seek to mitigate the impacts as best they can either through plan modification or paying for paying for facilities or improvements Guam deems

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important. While most private businesses view this as a reasonable trade-off, for some non-profit and community enterprises this approach creates a tension that will continue as long as the military is such a potent economic and political force in Guam.

"So that's, that's a difficult conversation, but it's a necessary conversation that we've been having for many years. So that is, kind of going the opposite way. So how does the military come into play? With these visions, it's basically to minimize to minimize those impacts and offer mitigation."

"And ***they should be a part of it, because we can learn from each other****. They could share some things that could be helpful, and they could also hear the general public sentiment, you know, and once you get talking, then you understand each other and then we will probably, you know, would be on the same page and not have this, like Laura said frenemy situation, which is like they should have a role in shaping the vision for one that's a good question, because some of them you know, the nature of the military is they change from and they leave people, you know, there's turnover, but doesn't mean because of that they shouldn't be involved and engage."*

At the same time most of the participants believed that the military has done far more extensive and competent environmental planning than the local government. The businesses in the group indicated that the environmental mitigation expenditures made by the military had dramatically improved our wastewater treatment capabilities. They also were responsible for assisting GWA with sharing the rights for water and helped with the protection of the freshwater aquifers in the northern end of the island as well as purchasing power from GPA and water from GWA which had been important to the financing of increased power production facilities needed by all of Guam, not just the military.

"So, they provide even better facilities, they maintain their facilities better if you drive in the base versus driving out here in you know, outside of base, you see buildings that are maintained well, and I think it's because they have all those requirements, and they adhere to the standards. They adhere to the maintenance and operations and then they have good programs. So, but in terms of sustainability, they have federal requirements for high, sustainable, high performing sustainable buildings and even most of them require third party certification, LEED certification or all those things to ensure that the building performs, and they follow their mission, you know, of having energy efficient buildings and sustainable work for the role."

In the end the group believed that it would be possible to strike a balance between environmental preservation and economic growth. The creation of a plan based on such a balance will be key its success. However, without substantial public engagement throughout the process and the recognition that regulatory enforcement will be essential the project will not likely succeed.

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Social & Cultural Aspects

Guam's culture has endured through colonization by the Spanish, the acquisition of the United Stated, the war-time occupation of the Japanese, and the subsequent re-annexation by the U.S. Through it all, the people of Guam have been able maintain the values and characteristics that make the island's society unique. For the past 125 years Guam has been an Unincorporated Territory of the United States. Over that time the island has largely come to accept and cherish its relationship with the U.S. Most people do not wish to change the political and cultural ties it has with the U.S. However, that relationship is viewed is having created pressures on the core values that was concerning to most of the respondents interviewed.

The values that respondents believe differentiate Guam from other places, core to the CHamoru culture include:

1. **Respect for One's Elders, the Community and Oneself.** This was usually the first core value that was mentioned.
2. **Family.** the next most frequently mentioned value was the importance of family as the framework for the social network of the community as well as the true social safety-net for the people.
3. **Acceptance and Inclusion.** The social acceptance, friendliness, and welcoming nature of the CHamoru people to all, no matter their race or creed is perhaps the most evident characteristic of Guam's culture to visitors.
4. **Faith.** Also, frequently mentioned was faith, and adherence to the teachings of the Catholic Church.

The respondents felt that all these values were beginning to erode. For most of the CHamoru focus group participants, that erosion was triggering the loss of identity for the CHamoru people. Some of the participants felt that the indigenous people of the island no longer know who they were. One participant said, "What does it mean to be a CHamoru?" This loss of identity was evident by the decline in the ability of CHamorus to speak and understand the CHamoru language as well as the decline in the practice of cultural traditions such as weaving, coconut oil production, and the utilization of natural herbs and plants for healing. Participants also expressed that the loss of identity was eroding self-esteem. An educator said that her CHamoru students told her they felt they were less competent than U.S. or foreign students.

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A communications professional believed that the loss of self-esteem was contributing to Guam's growing drug problem and poverty Guam is experiencing.

"I think we're at a critical point on an island where we have many generations. So, there's a certain generation that remember the war and appreciate that the military is here, because they, you know, got rid of the Japanese, you know, and so whatever the military wants, the military gets, and there's a whole generation that feels very strongly about that. And now you have this younger generation, we have no connection and don't really listen to their great, great grandfathers. They say 23% or 24% of the islands are owned by the federal government. So, there's a sense of identity loss, and it's important that doesn't happen, because out of that becomes anger and resentment, and it doesn't have to be that way. So, bringing back the language... the villages are now reverting back to the Chamorro names... bringing back the culture that made the islands so strong, and it's the strong family groups, you know, and it's the connections between generations together in that family group, and were separated. It's getting lost... preserving that and making it more about who we are on island, I think is essential."

At the same time, immigrants to Guam that have made their home on the island, people that have come from the U.S., the Philippines, Japan, and Korea that participated in the focus groups, all expressed admiration for how much more the core values that make Guam unique are still evident, much more so than in the places they came from. The warmth, the acceptance, and sense of community felt in Guam was far superior to the places where they were born.

*"And **I'm very concerned about the island culture.** When I think about the role of the Catholic Church has diminished. The role of families is changing. The respect for manamko is changing. The shifting of families caring for members of their family to the government providing us support for our elderly is changing. The drug uses the crime, I'm looking at all of this and saying our culture of respect of leadership, of elders are changing."*

Nonetheless, the consensus of those interviewed was that the society of Guam is changing and while the values that make it special still exist, and may be more evident than in other places, the indigenous people felt they were in decline.

The business representatives that participated believed that the reasons for this decline stemmed from a lack of personal responsibility. The breakdown of respect for community and for oneself was something that came from a breakdown of the family. Drug abuse, crime, the lack of self-esteem all stemmed from the weakening of the extended and core family ties that were felt to be much stronger in the past. For years it was felt that the U.S. government and the local government has tried to make up for the growing gaps in the social safety net which was primarily provided through the family with government programs and subsidies. The participants felt this has had the unintended consequence of further weakening reliance on the family as a primary safety net, and as a result the entire family structure has weakened.

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There were other things mentioned that were equally important. The growth of drug abuse has created broken families, as well as the fact that too many young people no longer feel Guam has the career opportunities they desire, enticing many to leave Guam for the U.S. making it more difficult for local businesses to find the talent they need to succeed and expand.

> *"We have so much crystal meth that circulates our island. And what doesn't make sense to me. I'm not saying that we're going to stop it. But if we're going to try and stem the flow, you cannot get rid of a drug task force in your public. Your police department can't. You just can't. That was one of the first things that said this is not about the administration, but that was one of the first things they did is disband the drug. Now if they had an alternative and a different idea or concept that they thought would work, but there's no alternative. And so, and I'll always go back to it.* ***The greatest issue of public safety for me is crime prevention through education...*** *And if you don't have that family system, if you don't have that father figure or that mother figure or have two parents, or they're not paying attention to you because they're working two or three jobs because they have jobs, not careers, because the cycle is vicious because they weren't educated. This is what we're going to run into."*

Businesses felt that higher education in Guam was producing competent graduates, but too many were leaving for the U.S. As for the K-12 system, they rated it poor to mediocre. Schools are dilapidated, the Department of Education hires teachers that are not competent nor are the competent teachers properly compensated. They felt management has been poor and the provision of preparatory key skills training in the high schools for trades workers, was insufficient. They blame these challenges for an ill prepared work force at a time when Guam needs workers for the economy to recover.

> *"I just don't see sustainability happening at the pace it should happen and to the degree it should happen. We are absolutely broken. Just can't get fixed"*

Another challenge to the community mentioned by businesses was the poor state of healthcare on the island. They mentioned that Guam has one of highest rates of diabetes and obesity in the U.S. and the improvement of local dietary choices. In response the island has failed to create an affordable and accessible health care system. Guam has two few hospital beds for a community of its size and the publicly owned hospital and participants felt it was in woeful shape. Enterprises in the healthcare industry complained that there is no plan for health services delivery for the island. There is no unified electronic health record system and providers, insurers, clinics, and the hospitals do not coordinate patient care.

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CHAPTER 03

BUSINESS PROFESSIONALS' DISCUSSION

"I think the healthcare system we look at right now we're having a discussion of whether you were to build a new hospital and we're going to go back to that although I think a new hospital will be built. ***I think that's more a political recommendation and solution than it is about healthcare. But I think what we have here is we have a system that will never be where it's supposed to be. It just never will be.*** *We're going to get a couple of really good quality doctors. As a matter of fact, we're going to get some great doctors and then we're going to get the other ones that came to Guam for other reasons. Some people come here because they couldn't make it out in the States. Some people came out here because they were looking for opportunity. But we're not going to be the first place the people choose. And whenever that happens, we almost must just settle for what is good enough. Now when they build this new hospital, is it going to be state of the art in terms of equipment and are we going to care about how it's run? And to me that's the key."*

Since the disbandment of the government's health planning agency in the 1980's there has not been a community wide health services plan developed. At the same time there are two few doctors, and too few medical specialists given the size of Guam and its healthcare needs. Guam does not have a medical school and cannot attract doctors to do their residency at the public hospital because the hospital has lost accreditation.

Compounding this, Guam is facing substantial reductions in the Medicaid match that the federal government has been providing because the U.S. treats Guam differently, providing a smaller proportion of Medicaid matching funds than states are provided. Emergency matching funds the U.S. made available during the pandemic will no longer be provided in 2023. Healthcare providers believe this will challenge the provision of health services to otherwise Medicaid eligible patients. In addition, the mental health and substance abuse treatment services available were viewed by the health professionals interviewed as being inadequate. There are two few mental health professionals to meet the island's needs. The perception expressed was of a system that is functioning despite the many challenges it faces. It was hoped that the sustainability plan could work to coalesce an improved approach to healthcare services planning.

"I'm always thinking about ways that we can have the community find sustainability relevant to them. And I think that one of a big concern right now socially is the increase in poverty."

Regarding poverty, the businesses interviewed believed that the growth of the homeless population was a direct result of the increase in drug abuse. Nonetheless, they felt that Guam was attempting to address the problem and was doing about as good as could be expected.

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They did not view the problem as urgent or critical but more as a nuisance or an "eye-sore" with an increasing number of panhandlers on corners and at intersections. The health service enterprises that participated had a different view. They indicated that the hospital is having to keep indigent patients in the hospital with underlying drug abuse and mental health issues because there is nowhere for the patients to go. They have no income, or family to support them and thus they remain in the hospital even though they could be discharged. While not the greatest challenge it exemplifies the problems created when the social safety net of the extended family begins to break down, and the community lacks the resources to deal with what they feel is growing and concerning problem.

*"**when you are worried about meeting your day-to-day needs, you're not going to be thinking very much about sustainability** or building renewable energy into your building or putting a nice water tank, just you're concerned with your day-to-day needs, taking care of yourself or with your family. We need to find more ways to help with those social issues. Those are coming in with poverty, homelessness, and drug use. We must solve some of those things in order to move on to the higher-level things of creating that sustainable future. And we can't leave any segment of our society behind as we're trying to achieve sustainability by 2050."*

The last social service discussed involved public safety. The businesses interviewed all felt that crime was increasing on Guam. While each of those interviewed felt safe on Guam and recognized that Guam was probably safer than many other communities of similar size in the U.S. all recognized that there were areas on the island that did not feel safe but once were. Yet they felt that the rise in crime was not because of a decline in policing or problems with the judicial system. They felt it was more the outgrowth of the island's changing society and that the Department of Public Safety was doing about a well as could be expected in keeping addressing crime.

"I feel safe. But I don't know how I feel when I'm separated from my wife and my children, that they're not safe. If I'm in my house, right I mean, I've got, you know, security alarm cameras. I feel safe because I can afford to put in some of the safeguards. If I didn't have those, I don't know. I feel safe in our house. Don't necessarily feel safe when we're separated. I mean, social media has certainly caused a lot of panic. I'm sure not just for me, but a lot of people because news is immediate, right? And we get it all over the place. So, you don't have to wait for the newspaper the next day. A person who was just pulled over for speeding, and they found meth, right, that happens instantaneously. And we get it four or five times from the local media outlets. But it's not even just, you know, drugs or crime. You see fatalities..."

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Planning

Regardless of the shortcomings identified those interviewed all indicated they were dedicated to Guam and would not want to live anywhere else. When asked if they felt crafting a vision for helping Guam to achieve a more sustainable community was possible, there was universal agreement. While indicating that such a job would not be easy, they all believed it was a worthwhile and important initiative. They stressed that it had to have clear "buy-in" from the community and that the community had to be involved in its development. They felt that if it was solely a government driven initiative it would fail, and after subsequent elections the plan could be changed or scrapped. If, however, it reflected the voice of the people and the people were somehow involved in its creation and future changes, it could succeed.

> *"It resonates with me it should be a part of the planning process, but I don't think it can be the only said central part because then that's another way for other groups to get left out ... And we'll hold on to all of these traditional values, we still need to figure out how to make this inclusive for everybody on island and make it relevant to our different sectors of our population."*

As for who should manage the plan once developed, there were varied answers. Some believed that it should be managed by the Guam Land Use Commission. Others felt it should be managed by an independent commission either appointed or elected.

> *"There's a lot of embedded Island wisdom here. And so, the sustainable solutions that will be part of this plan can't all come from outside. I think that there needs to be a blend of innovation and creativity that considers the traditional values, the island wisdom, all of the solutions that we have that that worked for us."*

Still others believed that if civil service employees of the government could be empowered to manage the process with community input that it could be successful. After every focus group discussion, the participants were asked if they would be willing to participate in public meetings to discuss the plan, all indicated they would.

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CHAPTER 03

DISCUSSION WITH RESIDENTS

Research Methods

This report presents the findings from eight focus groups among residents in June and July of this year. All the residential focus groups began with a discussion of what sustainability means to themselves, their families, and the community. The sessions ended with a discussion of the special governance and planning issues associated with creating and maintaining an effective sustainability plan. In addition, specific hypotheses and ideas raised during the SME interviews were discussed about the island's infrastructure, economy, environment, and the unique social and cultural aspects of Guam. Each participating resident was selected based upon specific demographic and attitudinal characteristics. Eight focus groups were conducted for each of the specific characteristics. Specifically:

- **YOUNG & OLDER RESIDENTS**: Two groups were organized that comprised of residents between 18 and 35 years old and those over the age of 50.
- **FILIPINO & CHAMORU RESIDENTS**: A group was organized that comprised both CHamoru and Filipino residents.
- **GOVGUAM AND PRIVATE SECTOR EMPLOYMENT**: A separate group was organized among residents employed by the private sector or the government of Guam.
- **SOUTHERN RESIDENTS**: Another group was organized that comprised of residents of southern villages (Agat, Inarajan, Malesso, Santa Rita, Talofofo, Umatac & Yona).
- **CHAMORU ACTIVISTS**: A final group was organized among self-identified CHamoru activists.

The groups were conducted virtually utilizing Microsoft Teams. The groups involved video and audio recorded sessions of approximately two hours in length. Transcripts of the groups will be provided to BSP.

The views in this report were not necessarily representative of all businesses in Guam. The concepts and ideas discussed should be viewed as insights regarding the topic discussed. To ascertain the representativeness of these concepts a quantitative assessment of the hypotheses raised was conducted separately to offer evidence of their veracity and will be reported separately.

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Sustainability

Participants were first asked if they felt Guam was headed in the right direction and were they confident about Guam's future. As a group they were uncertain. Some thought Guam was doing ok, that the pandemic had been handled better than it could have and that the assistance the government provided had been effective. Others were concerned that Guam is not what it was. The culture is declining, and the cost of living was rising too fast. It was getting to the point that some thought they could no longer recommend their children to stay on Guam. There were not the opportunities needed to sustain the quality of life they wanted for their family. They also expressed concerns that families are breaking down which is causing too many to go homeless and become addicted to drugs. When considered together the views of the participants portrayed uncertainty and anxiety that the Guam they once knew was slipping away.

"Well, the thing is it's affecting our younger people tremendously. It's affected the education of our children, particularly if you're in middle school or high school, their social is admin social. They're lacking in a lot of skills that they should have learned."

"I agree in in a similar way. And touching on the issue with you know school I don't have kids but touching on the issue with loss of education but also social. You know that the kids are not out it's they weren't out at school with their friends. they're online all the time. And it's like, man when I grew up here in Guam, the jungle next to my parents house I was with a machete, and I built a camp there. I cut down coconut trees then I built up a little camp when I was a little kid and friends would come over and we'd even barbecue as kids. It was so cool. And then I used to ride my bike from Dededo where I was staying with my parents all the way down to NCS all the way up and even up towards Marbo Cave and back now you can be safe"

"It's hard to ask you that because I feel like there's obvious progression. But when I look at like, crime, health care, those are two things that come to mind that I feel like there hasn't really been anything. Maybe I noticed those more are affected by those. The same thing drove straight on like schools, high schools not good environments."

"The direction right now is not clear or in terms of direction and we're just not making much progress."

"We're not developing really fast. We're not behind the technology. I'm not quite sure what direction we're going. But I do believe that we are providing an adequate lifestyle to meet your needs. I want to strike a balance between development and retaining the island life"

"So, number one, infrastructure and infrastructure the economy I want to say that environment because that's something physical infrastructure is number one because people will like on a large-scale environment until it's broken at the back anymore. So that's what I think the infrastructure economy works and then the environment"

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CHAPTER 03

DISCUSSION WITH RESIDENTS

When asked if they were aware of what the term sustainability meant, all the participants indicated they had heard of it but only a few could offer a definition. The definitions that were identified varied widely. Some felt it was all about growing Guam's economy to take care of more people, others believed it was about limiting growth to preserve the environment, still others believed it was all about leaving a better island for future generations. They all believed that regardless, the concept was important and warranted a plan, a vision that all could agree to and an effort by the government to build such a plan.

"There will be a lot of improvement that will be happening here in Guam, but then like I said, there's a balance. And then number three, we really do have the, the things now to look forward for the future. Something that you know, they will be a lot of them development, though, will help it but you know, I mean, we need the things now because we're looking to the future."

"So, sustainability means that you make decisions that are relevant today that will sustain the same resources and the and they will make the next generation inherit an economy and environment, even a view of themselves that is healthy, whole, well and able to provide for everybody."

"Sustainability is change or a process of change in an environment or among a community of people that is equitable for a diverse setting and that will sustain itself unless the meaning is to grow, but to sustain throughout peer an amount or a period of time. And to continue in the same way and not fall short, to me that's keeping afloat and not falling short, right? That's just like the sustainability that we. So, it's not just meant for one group of people. It's meant to be equitable for all groups of people."

In the end all the groups interviewed believed that to be sustainable Guam as a society must meet the needs of its people today in ways that will ensure that the needs of future generations will also be met. The groups were also universally in agreement that the pursuit of sustainability was essential to survival of Guam as a community and as a society. Pursuing sustainability was an important initiative that they all believed should be pursued. Several of the participants stressed that Guam's environment was under stress and needed more attention and they hoped this plan will help preserve what was left.

"[Sustainability being a priority] I think it should be high, but I don't think it is I don't think it is right now."

"Should be high priority, especially now. It's election year. People can talk and talk and talk but I'm trying to see who's going to do what in the future and help progress with what their platforms are."

"I think the economy is more of a program and if you look at sustainability relationships, other issues like the quality of life or health care is important or an issue lot of which were just talking about were other large concepts that people have concerning So it should be the same kind of attention or different."

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Many also believed that the government had placed too much emphasis on economic growth over environmental preservation in the past, but things seemed to be changing now with greater involvement of young people in an effort combat climate change and preserve Guam's reefs and oceans.

"But we have to get people to know things that you know, I mean, it's not about it's not about saving money and stuff like that we can preserve our environment."

Infrastructure

When respondents were asked what worried them about the future of Guam's economy, the first thing they mentioned was the poor state of the island's infrastructure The number of dilapidated buildings, poorly maintained roads and the high cost of power were the most frequently mentioned items that concerned them. The other frequently mentioned item was the state of the island's schools. The deteriorated state of Simon Sanchez high and the deterioration of Southern High were the two examples most frequently mentioned. The participants remembered when Southern High was built and what a beautiful facility it once was. The state that the school now is something they feel people should be ashamed of. It was used as an example of the poor management of the island's infrastructure by the government.

"I think it's important to have access to clean water and power and that school should be in good clean working condition. I was a public-school student my whole life except for like 2 years. And yeah, the disparity between public and private schools just based on facility is jarring and it's not conducive to a good learning environment. So, I do feel like we need more investment in schools, especially roads."

Participants felt that many of these problems exist because of the quality of the leaders that have been elected. They feel that government is not doing what it needs to take care of and properly manage the assets of the people. They hope things will improve but they do not expect that they will. In general, they felt that the only part of the island that was properly maintained was Tumon Bay. They felt that the presence of the large well-funded tourism industry managed to take care of the roads, the buildings, and the ambience of Tumon Bay, not the government.

"Honestly, I've been to Palau. I've been to Senai and Kashi. And just in our region, we have the nicest infrastructure that everybody around us like 5 far."

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"And just because that where this well built-up place in the Pacific doesn't mean that we are where we should be, things like roads are important."

When asked if the Government of Guam was doing a good job in stewarding the land it controlled most participants disagreed. They felt that simply holding land without putting it to good use for the people was not what Guam needs, given the large number of homeless people and the cost of housing. It was also felt that the government should return lands it is not using or have plans to give the land back to the original landowners. Participants also believed that much more needs to be done to prevent off-roading and uncontrolled burning on government lands to help reduce sediment run-off.

Economy

Nearly all the participants were concerned about the state of the economy and what it portended for their futures. The most frequently mentioned concern was the cost of living fueled by the rising cost of gas, rents, and food. Most of the participants blamed the military for the increase in housing rental prices. Rent subsidies offered by the military for active-duty personnel to live off base are perceived to have increased rental rates considerably. This was exacerbated by the lack of housing construction over the last several years. The cost of housing is over $450,000 for the average home on Guam.

"This is why cost of living is so much, why rental prices are so high, because they want the military to pay the price, the maximum price they can. And then when somebody who is born and raised here or just anyone that even relocates to Guahan wants to rent. It's like oh, but my job only pays me this. My dad can't afford $1200 rent for uh, you know an average looking apartment. Now I have to go and stay in an unsafe environment where there's a lot of crime and figure out how am I gonna make it work so I can make sure I can afford to take care of myself and my family."

Costs were increasing to the point that they felt Guam was getting to be so expensive that several of the participants indicated that either they or a friend or family member were contemplating moving to the U.S. mainland. The other most frequently mentioned concern was the lack of good paying jobs. They felt that most of the jobs that are available do not offer much of a future and pay too little. At the same time most of the participants felt the economy could support the quality of life that they expected. They felt that was because of the job they had but saw many of their friends and relatives struggling. They were also worried that their income would not keep pace with inflation and were even more concerned about whether the economy could provide a quality of life they expect for their children. Most of those interviewed felt that their children would do better if they left for the mainland.

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As sad as that made them feel, they just did not believe the economy was going to be able to provide the kinds of careers their children could receive in the states in locations where they felt wages were much higher and the cost of living significantly lower.

"Education is a huge thing. And my kids are toddlers and I'm not saying anything about the public school system, but I experienced both public and private school and public school system is not where I would like my kids to be in. So, I put them in private school. But it's costly. Now with my current wage as a director at the hospitality industry doesn't support my living and so that's why I joined the Army as additional income. I'm at that threshold where I don't get government assistance with two kids."

"I see the ones that want to make great change or want to be included in conversations, and then I see those that just wants to leave and that's what I worry about is all of our local people are just gonna say this is not working well for me. So, I'm just gonna go somewhere else. And I've had three family members with big families relocate. And that's not a bad thing, but that's not what I want to create here on the island."

When asked if there was anything unique about working on Guam. They mentioned that the professionalism and competency of managers and supervisors is less than what they felt it should be. Training within the companies they worked for or the government agency that employed them was either weak or non-existent. They believed that in the U.S. companies and agencies were much more concerned about training than companies and organizations in Guam. They also mentioned one of the things about the workplace in Guam was that in most places there was a sense of family. They believed that workers were much more likely to look after one another and care about their co-workers than what they had heard of or experienced in the mainland.

"Job training for driving a bus, job training? And the thing is, they should be providing more vocational training..."

"But sad to say even I started there in July but even if I don't have my orientation programs, and you have to learn everything by myself, even with the previous companies that I joined, there's no onboarding program in place. And I also notice that corporate is here and of course, I would expect managers to be at their best level, right? But I see because of ***the lack of training, leadership a lot of the managers I've interacted with not only at this hotel, but in my previous jobs as well, I don't see the professionalism****."*

"It's all centered around family. That's one thing. That's why contests and hospitality is captured for a lot of people."

"At my work, we are like a family. We have a strong bond, and it is the same at home. We are friendly people, we are welcoming, and it shows we are good people. We are all different cultures and we all come together to work as a team."

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Regarding tourism, all the participants believed that it contributed to the economy and was important for Guam to maintain the economy it has enjoyed. Nonetheless, many of those that participated had been directly impacted by the forced shuttering of tourism related businesses during the pandemic and felt that there needed to be another more stable industry that could be relied on. At the same time, they recognized that the recovery of the tourism industry was probably the fastest way for jobs and income to be returned to what they were before.

"Guam's dependence on tourism? Yeah. We think it's important."

"I mean, I liked the tourism. It's great for the island. It totally is. But I'm just saying that, making our island a lot better not depending on the tourism, but still have tourism."

"[Regarding the economy] I see a bigger picture. I see Guam out the way I would look at it in the next 50 years. What's outside of the tourism industry. We could become a financial center for Asian investment. In other words, large banking institutions here which is very similar to what is done with other places. The other thing I also see for Guam is our university. We should have international students here. That's a whole new industry right there that we haven't even explored. We need a convention center. And these large operations if you give them something they would build one. And the thing is, is that we Guam could be a convention center for Asia. We could get people from Japan, Korea, you know this we have something to sell."

When asked if they felt the military was helping the economy, most of the participants said it was, but that it has come at a cost. The most frequently mentioned concern was the amount of land that the military controls in Guam. Almost all the participants thought that land the military is not using should be returned to the original landowners. They were also concerned about the pollution the military creates. Specifically, they were concerned about chemicals and other pollutants that could impact the freshwater aquifers. At the same time, they believed that the military has in the past and would in the future could help fund the government of Guam to do a better job in preserving the environment. Also, the military was recognized as helping to stimulate an increase in wages. It was recognized that wages paid by the military were higher and that it was a significant contributor to higher paying better jobs than either the private sector in Guam or the Government of Guam. The participants all agreed that the military should participate in some way with the creation of the sustainability plan. They were thought to have expertise that would be valuable to the planning effort.

"I mean, it's positive. I mean, look at all the job opportunities that were given to our local construction is booming, because military, you know, is needed is, I think, a local was it a local construction company that was awarded. So, you know, it's positive, it's creating an economy and you know, it's helping us with some circulation."

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"I want it to stay neutral, but I believe it's more positive than anything. I guess because I'm just like, status quo like it is what it is. But then after thinking about it, really. I'm glad that they're here."

"It went when they're not capturing that that bigger picture of it's unsustainable. We can't always have military construction here. This is gonna be like a peak for military construction and bringing jobs and stuff. Then once that's done, like all this talk about all the money the military brings in is going to be a point, right. Once the build up is done. Same with tourism... And so I think what we think about the economic aspect, it directly affects the cultural and that identity part of it."

The residents that participated all believed the government is improving how it is maintaining the environment, but a great deal of damage had been done because of prior neglect. They believe that the government is more concerned today about the environment and has taken significant steps to improve how it is pursuing environmental preservation. They felt that much of that improvement has come from the island's youth. The work done by university through the Center for Island Sustainability to educate the public was recognized as stimulus for a more concerted effort to maintain Guam's environment.

"I want to say that every part of the environment is important"

"Well, we stopped the plastic from wearing out from tailors and departments I think it was a step in the right direction for us."

"after being in different cultural advocacy groups and environmental groups for over 10 years, I feel like we are moving in a positive direction because I'm seeing a lot of attitudes change among generations. I feel like the younger generation especially has a different set of values."

The most important aspects of Guam's environment for the participants were the maintenance of clean air and water. There was recognition that Guam's freshwater reserves existed in water lenses that were created because of percolation of rainwater through the island's limestone plateaus in the northern regions of Guam. They were also aware that these lenses are vulnerable to pollutants that are stored or spilled in the north. This included septic tanks and other sources of bacteria. The participants were concerned about how well the military was protecting the aquafers under that land they control in the north of Guam and what impact chemicals stored by the military might be having on the water supply.

"the ocean and water, potable water. Everybody I know I'm pretty sure everybody and 10 years 15 years ago, you can drink from support."

"Especially looking into the future with the military buildup being such a big issue and we've already cleared 1000 acres over the over the watershed."

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They were also concerned about the health of the reefs and ocean waters and identified off-roading and uncontrolled burning as issues that were creating siltation of the reefs killing corals and polluting the ocean. They felt that more had to be done by the government to enforce existing laws and regulations to prevent off-roading, hunters and to make sure developers follow mandated preservation practices. In addition to coral reef and ocean water protection, participants were concerned about climate change. While some did not feel that climate change was affecting their lives most did. They believed that Guam was getting hotter and drier. They claimed to distinctly remember Guam being cooler in the past. They also felt that it was likely that typhoons would be stronger and more damaging in the future because of climate change.

Sea level rise was felt to be less of a concern, but most of the participants could remember that the shoreline along East Agana was much further out than today. Now the sea is encroaching up beyond the beach onto people's property.

"A lot of these things we do have control over, and we can take steps locally to do. But like the bigger things like addressing climate change and sea level rise, a lot of that is gonna look more like mitigation, adaptation for us more than, you know, fixing the bigger issue that we make up. Such a small portion of what's causing climate change, right. It's miniscule."

Participants felt that recycling was important but not being pursued aggressively enough by the government. They wondered why only plastics, cans and cardboard are the things that are actively recycled. They questioned why glass was not being recycled. Some indicated that Guam should segregate trash as they do in Japan, with plastic, glass, paper and cardboard, food related waste all separated and placed in separate bins. Most felt that because there is a lack of enforcement of recycling that it is contributing to the trash problem. There was a recognition that the land fill will not last forever, and one participant suggested that Guam should explore waste to energy. Overall participants felt that the trash issue was like recycling, the lack of enforcement has convinced people not to care as much as they should for the island's environment which they feel is symptomatic of the island's decline from prior generations where such problems were felt to be much fewer.

"I'd say yeah, the collection of it needs to improve and just even where it's going right and talk sustainability, the circular economy where we get this, what is it pump and dump culture where we take all this stuff from the earth, and we just turn it into things and throw it we use it and then we throw it in and just sits there. So, I think that that's the vision of that requires maybe getting more creative"

"With all these tourists comes a lot of waste, and so I think we should find ways to manage and keep a balance continuing the sustainability."

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At the same time, participants believed that the environment was the basis for tourism and the foundation for the way the CHamoru people have lived for thousands of years. Fishing, crabbing, hunting, and harvesting the bounty of the jungle was how people survived. Its preservation, for most of the participants, is part of what is needed to preserve and revive Guam's culture.

> *"people who have cultural advocacy groups who are using the land, not just making money off the land should have an important seat at the table because those kinds of people are usually the people who have a stronger sense about the balance between economic development and environmental sustainability. So, if we are gonna have a sustainable future, strong indigenous, strong environmental protection, like all all of those viewpoints should be at the table"*

Social & Cultural Aspects

The participants felt that Guam's culture is changing. How children are raised today, how respectful children are to their elders, to their neighbors and how families are breaking down were all things that were presented as evidence of the decline of the CHamoru culture. Parents remember receiving spankings or the belt. Today they said they would be accused of child abuse if that happened. Participants felt that was one reason kids have lost respect for their parents. The family unit, which was once inclusive of aunts, uncles, grandparents, God parents, cousins has now shrunk to a smaller nuclear family. The large gatherings with family and neighbors that used occur almost every weekend now are only held on special occasions. The connectedness that once existed between the family and their village is now much weaker. More importantly, the incidence of divorce and single parent households has increased dramatically. The participants felt this represented a decline in the importance of the church in people's lives.

Yet to those that have returned to Guam or have come from somewhere else, there was universal agreement that Guam is indeed special. For the very same values that were sited in decline, those familiar with life in the states indicated that Guam is far more accepting, welcoming, and warm. They felt family means so much more here than it does stateside. The cohesiveness of the community and the sense of belonging extended even to strangers was described as very rare.

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One of the respondents indicated that there is still a sense of "inafa' maolek" where the community works together to help the individual because it is believed that is what will also, in the end, help the community. That same participant indicated that inafa' maolek would be essential to success of any vision for the sustainability plan. The plan must work to sustain each citizen as it strengthens the family and supports the community through the spirit of inafa' maolek and faith.

"Everybody doing their part to do what's good for them, but also what is good for the community and then we have that mindset of communal care, then less of us will fall through the gaps because we're looking at for ourselves and we're looking out for each other."

When the CHamoru participants discussed the reasons why values of the community were in decline they indicated the decline may stem from the feeling that it is no longer clear what it means to be a CHamoru. Instead of talking with their parents and extended family children were hooked on technology with their "noses buried in screens." Instead of exploring the jungle and their environment they were playing video games. Instead of learning CHamoru and cultural practices they would rather go to the mall. Participants felt this was leading to the demise of identity for the CHamoru people. They stated, "When you don't know who you are you feel hopeless, and aimless."

They also believed that the loss of that identity was sapping young people's sense of self-esteem. Participants felt that once someone's self-esteem is gone, they wish to hide or escape from their reality and hence fall into drug abuse and poverty. Reconfirming and reestablishing a greater role for the CHamoru culture was one-way participants felt was to begin the process of helping young CHamoru's reestablish their identity and establish the confidence and drive needed to thrive.

Many of the participants believed that a contributing factor was the substandard education, most of the participants' felt kids were receiving in the public K-12 schools. These responses were in part stemming from the difficulties and frustrations experienced during the COVID-19 period. However, frequently mentioned was the unsafe condition of many of the schools, and the lack of attention to providing adequate equipment and supplies to help educate children. They complained that the difficulty in finding teachers because how little teachers were paid, was allowing unqualified and incompetent instructors to try and be educators when they were not. This was blamed on poor management or the educational bureaucracy that was unable to fix itself. As for higher education, participants felt it was doing an ever-improving job in educating the island's youth. At the same time, they felt for most it simply meant that they would leave Guam for higher paying jobs elsewhere.

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Participants recognized that there were many talented and qualified local people that graduate from UOG and have been accepted by some of the most exclusive schools in the country. Unfortunately, the participants believe that those that have the ability, the self-esteem and the drive are leaving never to return to Guam. The role models and guides for the younger generation are giving up on Guam for more opportunity in the mainland. However, one of the participants felt that, as she has done, it was possible to forge a great future in Guam. That there were many opportunities here that can be found and forged to provide for a rich and fulfilling life. The others in the group were less confident that could happen for their children and reiterated that in the end it may be best for them to leave and find greener pastures elsewhere.

When participants were asked if they felt safe on Guam almost all said that they did, but they knew of areas in Guam that were not safe. One participant said her family moved from Tamuning to Mangilao because she did not feel safe in Tamuning, but now felt that since she moved, things are better. All the participants harkened back to the days when they did not need to lock the doors to their homes or their cars. Participants all agreed those days have changed. When asked what had changed, many felt that drug addiction and poverty had increased and was one of the causes of the change.

> *"With all the crime that is being committed, what happen to younger generations now respecting other people's property, and people in general, it doesn't matter what age you are, respect starts at home. If the future is the kids now, what is the island going to look like 10 years from now? If there's no respect, no morals, no trust, it's more like I'm going to do what I want, I don't care what the law says, I don't care what my parents say, or how we were brought up. I just think crimes are going to get worst. And sad to say, more and more people will be leaving this island due to all those crimes and everything else."*

Participants were then asked if policing in Guam was not doing what it should to protect the people. The participants did not perceive that there had been any real decline in policing or that the police were doing a substandard job. Instead, the problem was laid at the feet of the community, the lack of respect and self-esteem. When asked if Guam is doing enough to assist the poor, the response was that Guam is doing about all it can. There was a sense that the homeless should bear more of a responsibility for solving their own problems. There was no mention of inadequate subsidies for housing or other services. The general attitude was that the community is doing about as much as could be expected.

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CHAPTER 03

DISCUSSION WITH RESIDENTS

Regarding healthcare in Guam, the first thing that worried participants was its cost as well as the cost of insurance. Several of the participants indicated that they could not afford health insurance and had no idea how they could afford the care needed to recover from a serious affliction or injury.

They also complained that there were too few doctors and that there was no continuity of care. Doctors do not communicate or coordinate well with the clinics or the hospitals. They also felt there was inadequate mental healthcare with too few options for folks that had substance abuse or mental health issues. They felt that for older residents the lack of a competent healthcare system was a major reason why they were leaving the island.

When asked about political status, the participants generally indicated that they have heard about the choices presented by the Commission on Decolonization but did not feel the need for changing Guam's political status. Many did not understand what the choices represented. All were glad to be American citizens and did not feel that political status was an urgent or salient issue for them. Finally, participants were asked if they would be willing to participate in public meetings to discuss and learn about the Guahan 2050 Sustainability Plan. All but one said they would.

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CHAPTER

04

RESIDENTIAL SURVEY



MRD

GUAM · MICRONESIA · MARIANAS

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RESIDENTIAL SURVEY

Research Methods

The survey findings reported here represent the findings from a quantitative assessment of public opinion regarding issues central to the Guahan 2050 Sustainability Plan. The hypotheses that guided the survey were developed The survey was conducted via telephone utilizing a CATI interviewing technique. The fieldwork occurred between July 12 and July 27, 2022. It consisted of 500 randomly selected residents of Guam over the age of 18. The reader can have confidence that results, accurate to within ±4.2%, would occur if the survey were replicated 95 times out of 100.

Over the last several months, qualitative interviews have been conducted with subject matter experts, business leaders, and residents.

Those interviews raised several hypotheses regarding how Guamanians feel about sustainability and the four broad sectors that will be included in the Guahan 2050 Sustainability Plan.

The findings of this survey provides evidence of how the community feels about many of these issues.



Figure 5. Sectors of Sustainability.

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CHAPTER 04

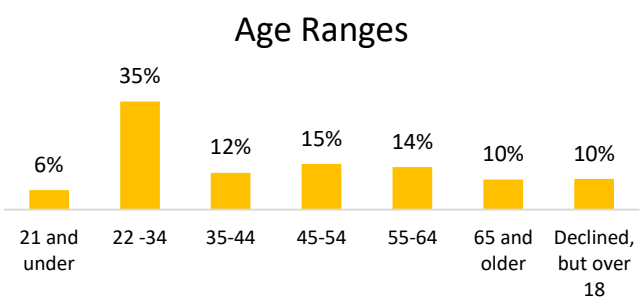
RESIDENTIAL SURVEY

Demographic Profile

The survey captured a demographic profile of residents in Guam that match, within the margin of error, recently collected census information. No weights were applied.

There was an almost even distribution of gender with 51% of respondents being male and 49% being female.

Nearly half (49%) of respondents were over 35 years old. Most (79%) of the respondents resided in the central and northern regions of the island.



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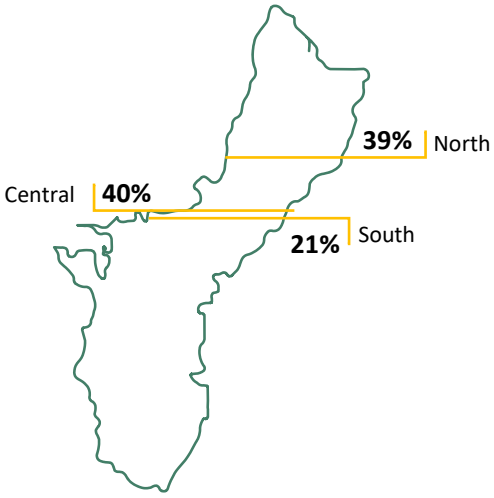

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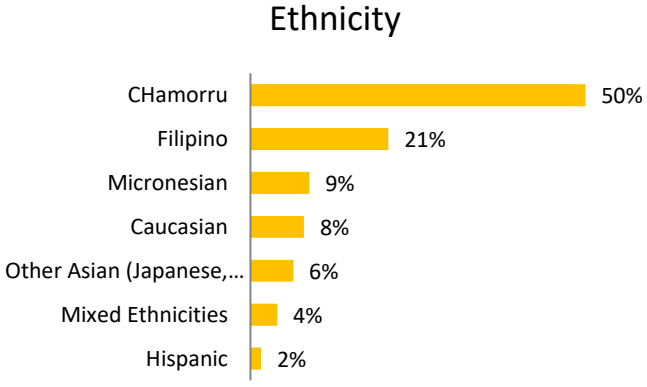
Half (50%) of respondents self-identified as CHamorru, nearly a quarter (21%) identified as Filipino. Forty-five percent (45%) stated they were married and 43% claimed to be single. Fort-five percent (45%) of respondents also claimed there were children under 18 years old living in their household.



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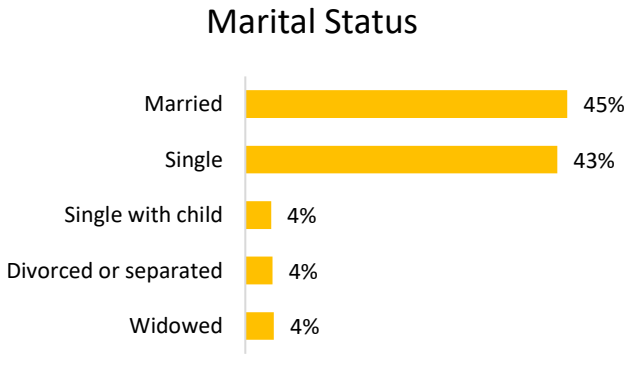

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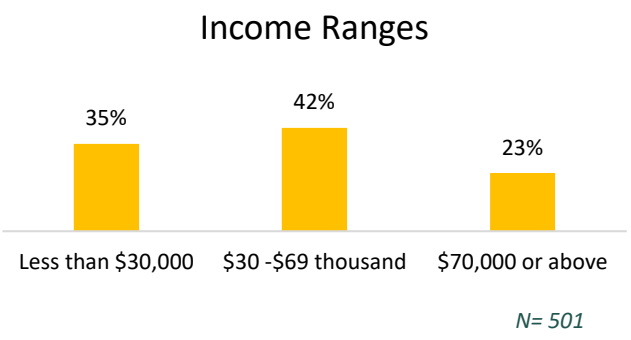
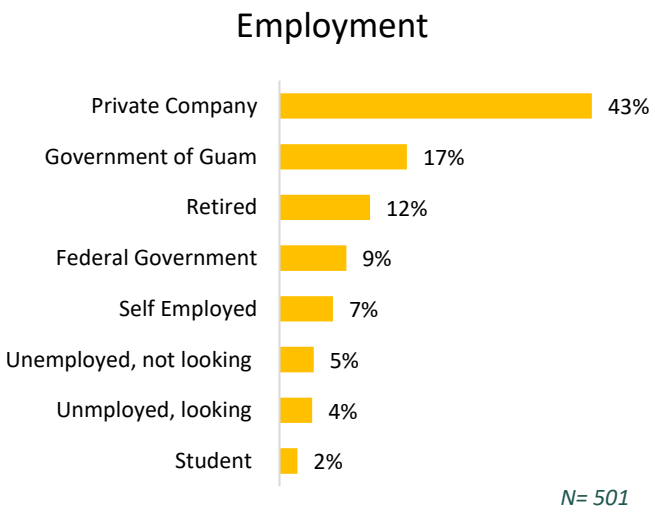
CHAPTER 04

RESIDENTIAL SURVEY

Respondents were asked to identify which income range best defines their income of 2021 based on their tax filing, more than three-quarters (77%) claimed to make less than $70,000 annually. Of those respondents 35% identified as low income earning less than $30,000 for the year.

Almost half of respondents (43%) worked within the private sector, while more than a quarter (26%) worked for the government. Nine-percent (9%) claimed to be unemployed, and of those respondents 5% said they were not looking to be employed.





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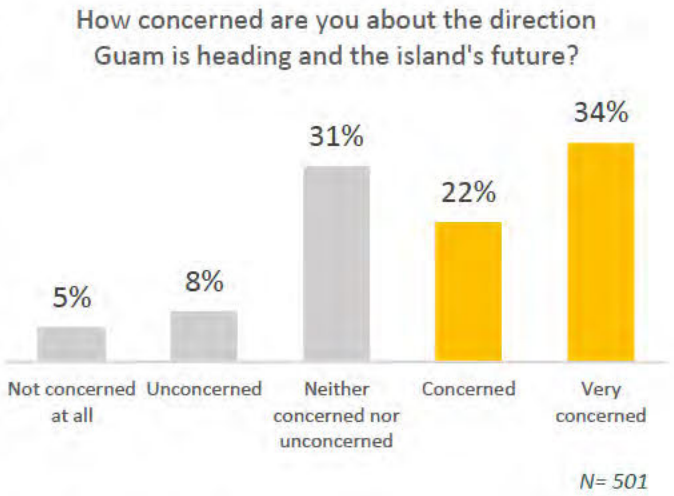
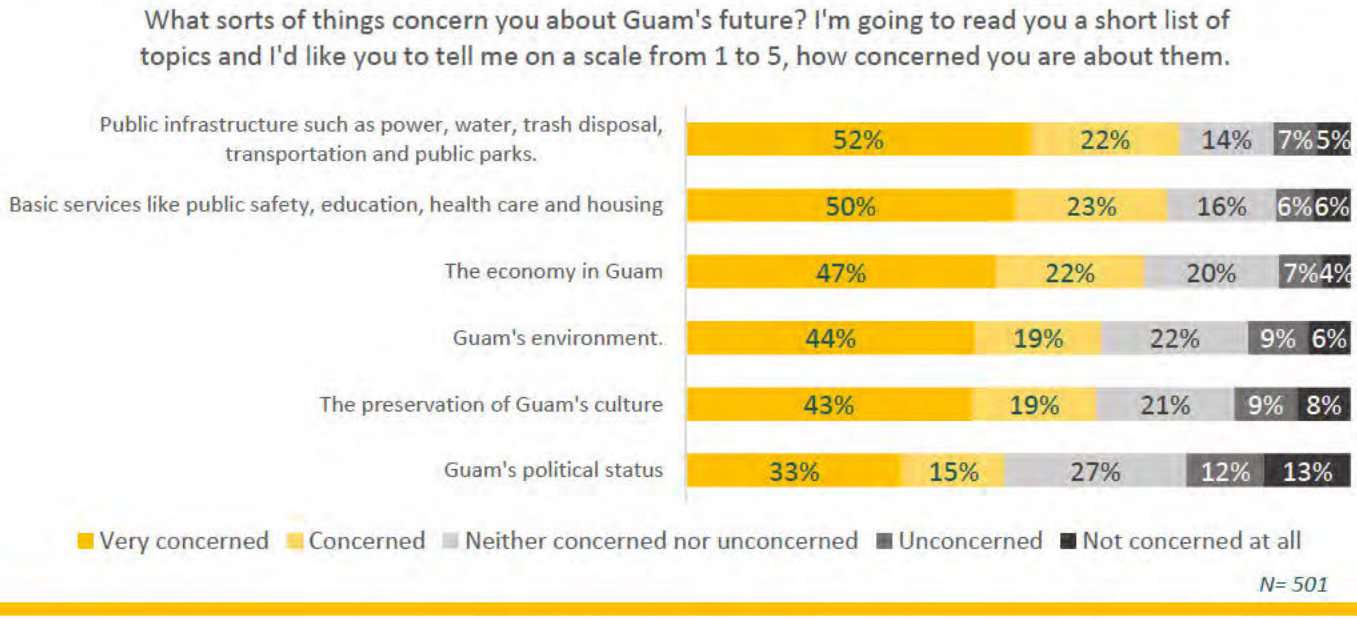
Outlook on Guam's Future

Fifty-six percent (56%) of residents were concerned with the direction Guam is heading. Nearly a third (31%) had no opinion and only 13% of respondents were not concerned about the direction Guam is heading.

While all of the elements mentioned, with the exception of Guam's political status, were identified as being concerning or very concerning, they were not all rated the same.



Of the elements about Guam that most concerned residents, nearly seventy-four (74%) were concerned about infrastructure, followed by seventy-three percent (73%) expressing concern about basic services such as public safety, education and healthcare. Sixty-nine percent (69%) were concerned about the economy, followed by the environment (63%), the preservation of Guam's culture (62%) and political status (48%)



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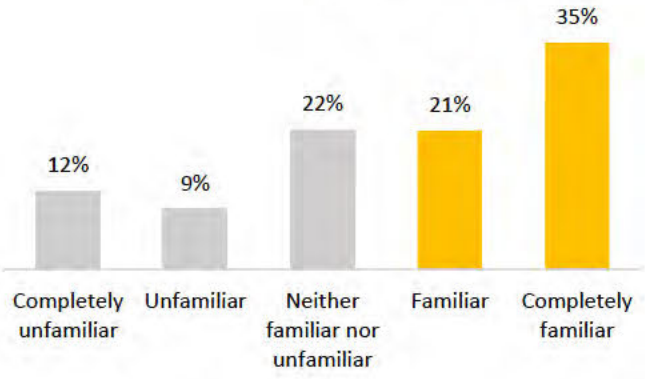
Sustainability

More than half (56%) of respondents claimed to be familiar with the meaning of the term sustainability. More than a quarter (27%) believed that "sustainability means meeting today's needs while meeting with the needs of future generations." This was the most frequently mentioned definition. The other two definitions offered resonated with considerably fewer respondents. None-the-less there is far from a consensus on what sustainability means.

How familiar are you with the term sustainability?



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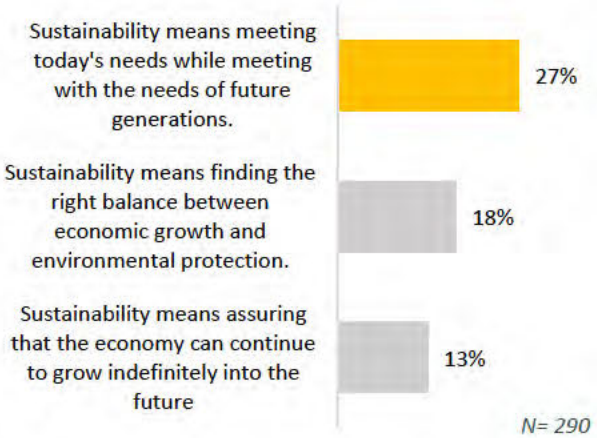
Of the definitions just mentioned, which do you agree with most?



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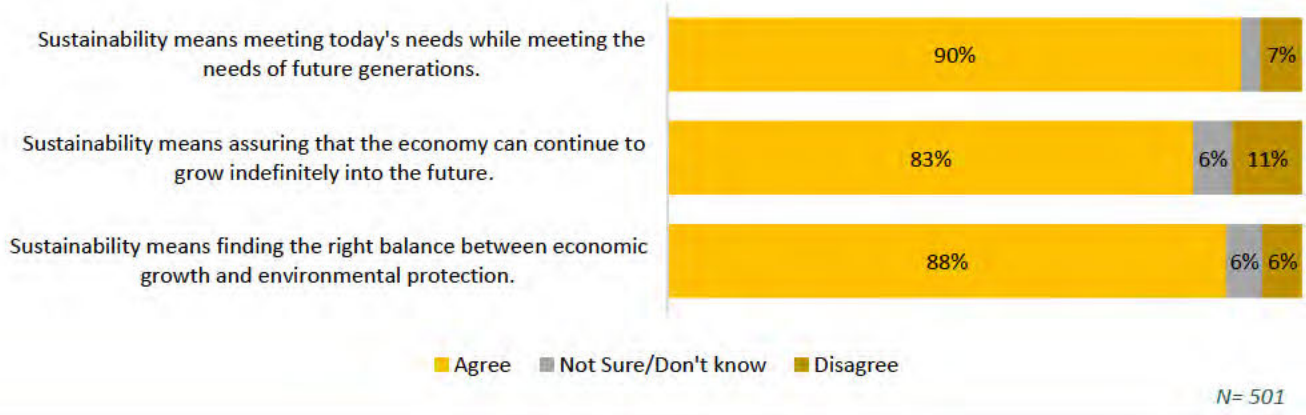
The idea of sustainability means different things to different people. I'm going to read some common definitions of sustainability. For each one, please tell me if you agree or disagree with or are not sure about each definition?



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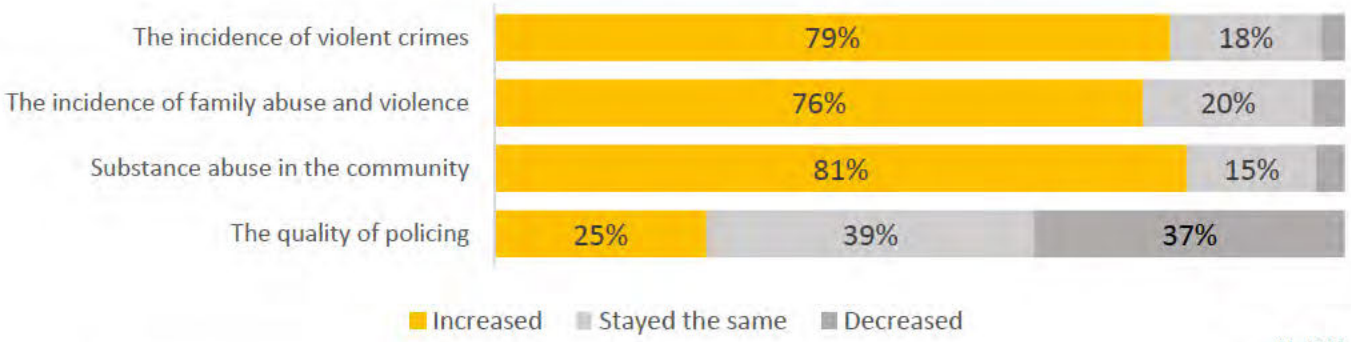
CHAPTER FOUR: RESIDENTIAL SURVEY

Social & Cultural Aspects

Safety

Respondents felt that criminal activity has increased, while at the same time nearly two thirds of those polled (64%) felt the quality of policing has stayed the same if increased over time.

Some people feel Guam is a safe place to live, others feel that the island has become less safe than it should be. Please tell me if you feel the following issues or problems have increased, decreased, or stayed the same over the past five years.



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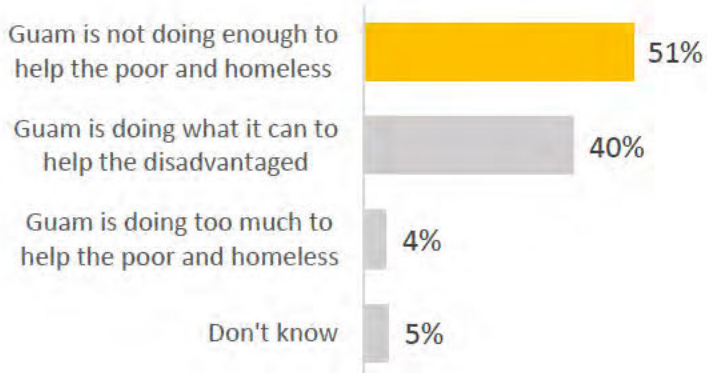
Homelessness

Guam has continued to experience a growing number of homeless individuals and those attempting to survive in poverty, includes veterans.. Slightly more than half (51%) of respondents believe Guam is not doing enough to help the poor and the homeless. At the same time four in ten (40%) that Guam is doing what it can.

While recognized as a problem, it is not viewed as pressing a concern as say crime or education or healthcare.

Do you feel Guam is not doing enough to help the poor and homeless, doing what it can do, or is doing too much to help the disadvantaged?



N= 501

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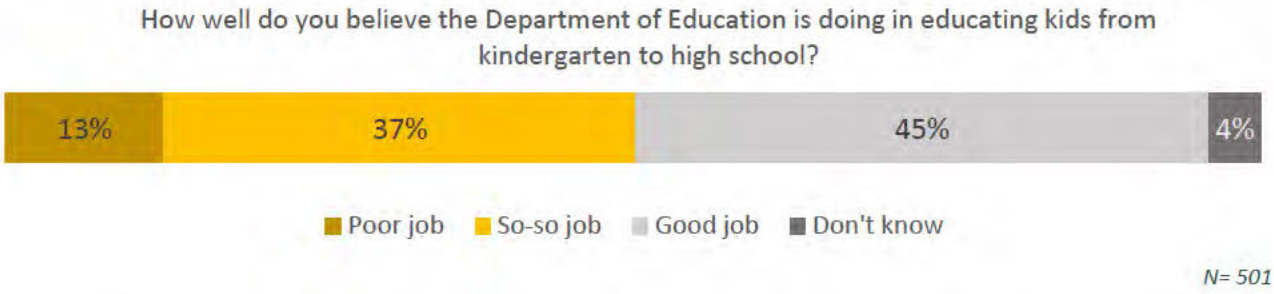
CHAPTER FOUR: RESIDENTIAL SURVEY

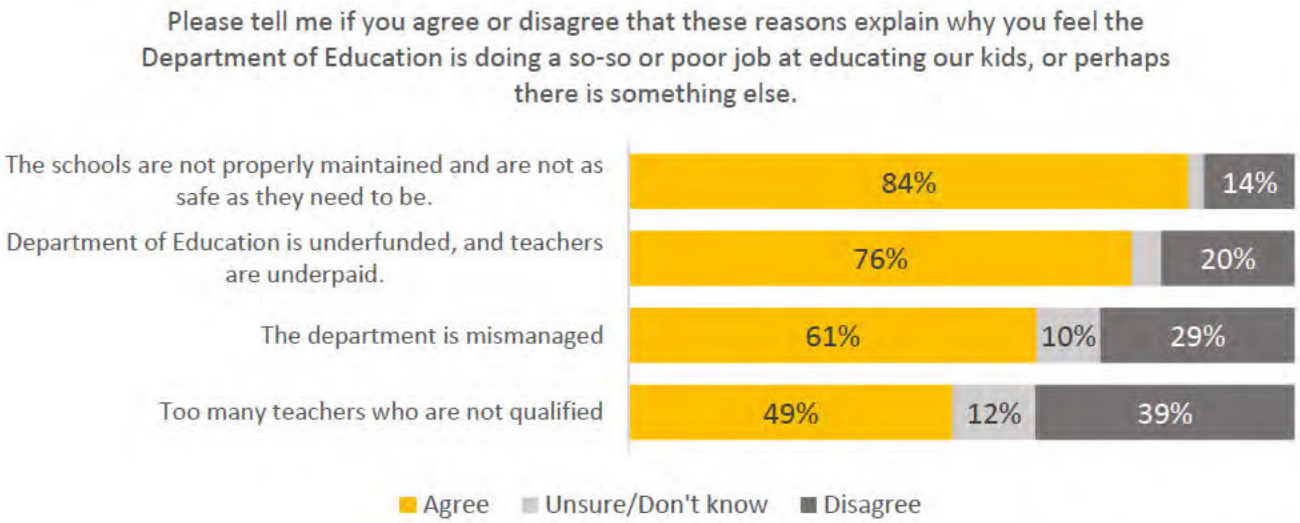
Education

Half of respondents (50%) indicated that the island's Department of Education is doing a so-so or poor job educating grades K through 12.



N= 501

Of those respondents who felt the department was doing a "so-so" (37%) or "poor" (13%) job, their biggest concerns were that schools were not properly maintained (84%), as well as the department is underfunded, and teachers underpaid (76%). Six in ten (61%) stated the department is being mismanaged.



N= 250

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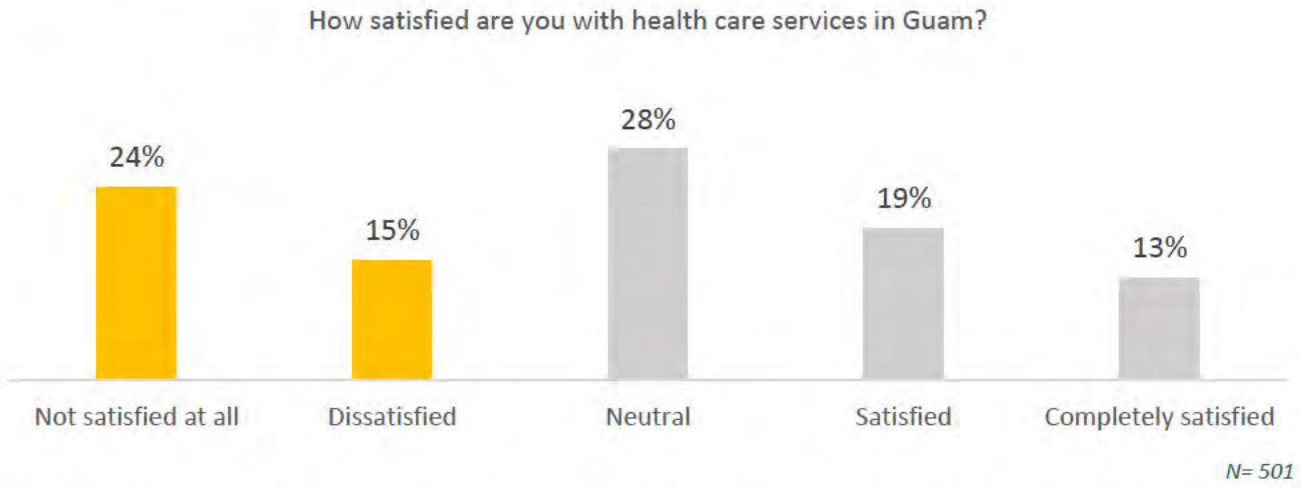
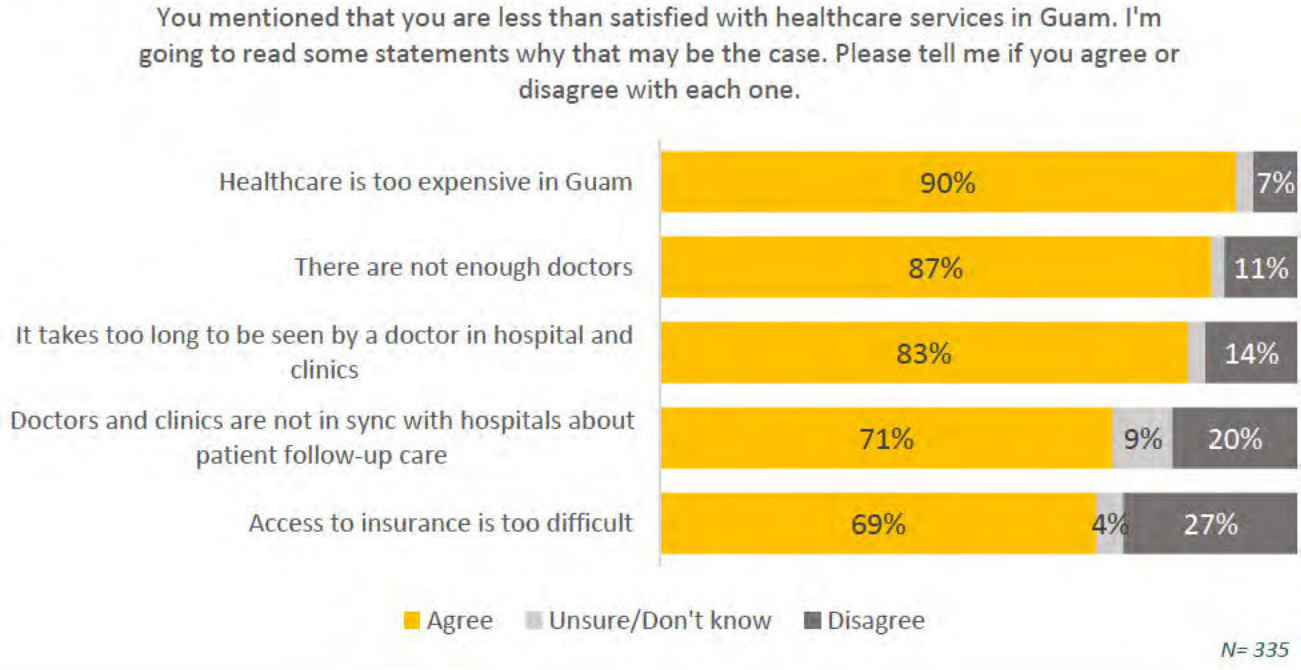
Healthcare Services

Almost forty percent (39%) of respondents indicated that they were dissatisfied or not satisfied at all with health care services offered in Guam.



Of those who were less than satisfied with the health care offered, their top three concerns were the high cost of health care (90%) , the lack of medical doctors (87%), and the wait time of being seen by a doctor at both hospitals and clinics (83%).



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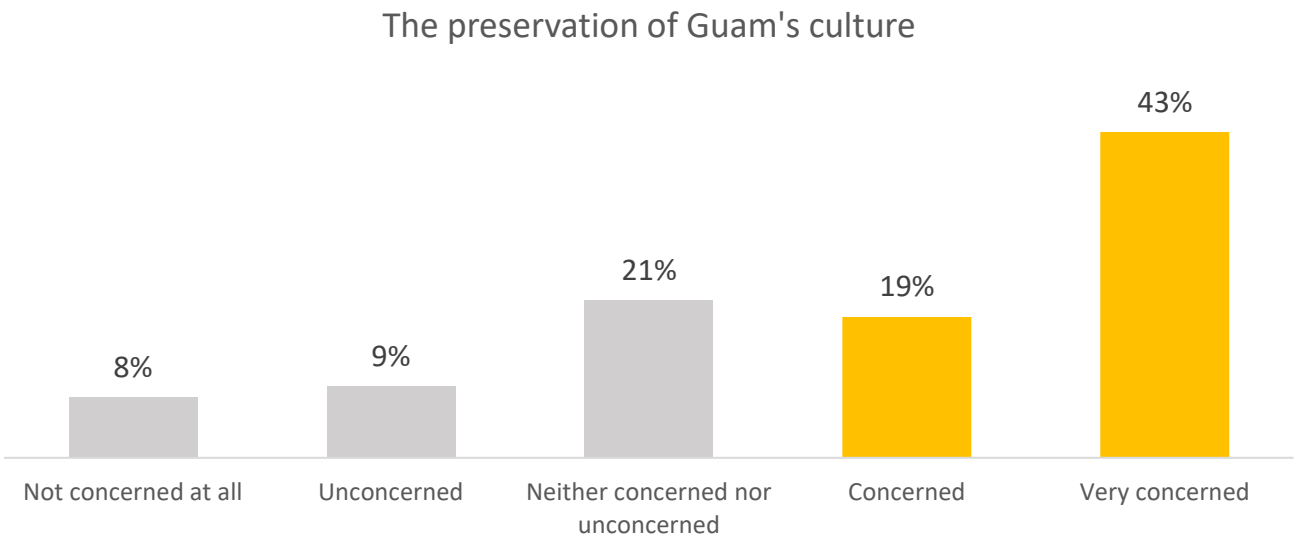
Cultural Preservation

Over sixty percent of those surveyed (62%) indicated they were concerned or very concerned about the preservation of Guam's culture.

While it is clear that a strong majority of residents were concerned about preserving the Guam's culture it seems that older people over the age of 50 were more concerned. While the association of age and concern about preserving culture was relatively weak, it was statistically significant.



N= 499

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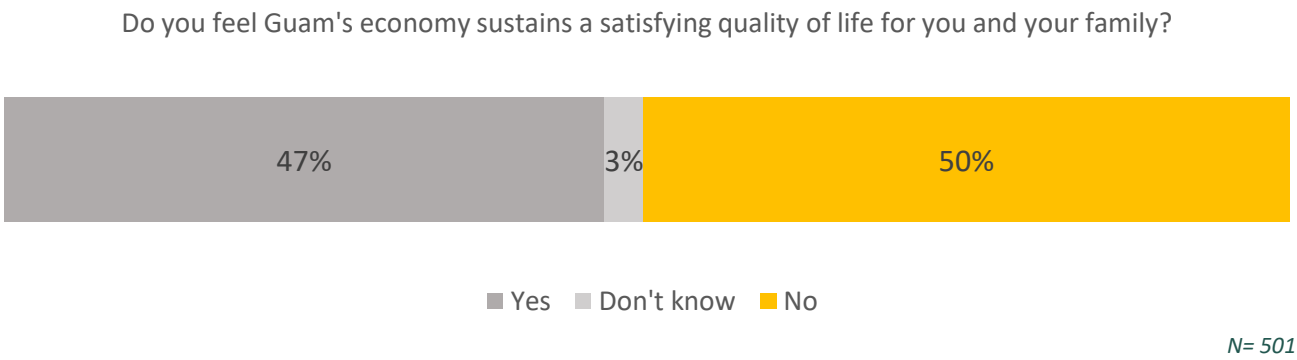
CHAPTER FOUR: RESIDENTIAL SURVEY

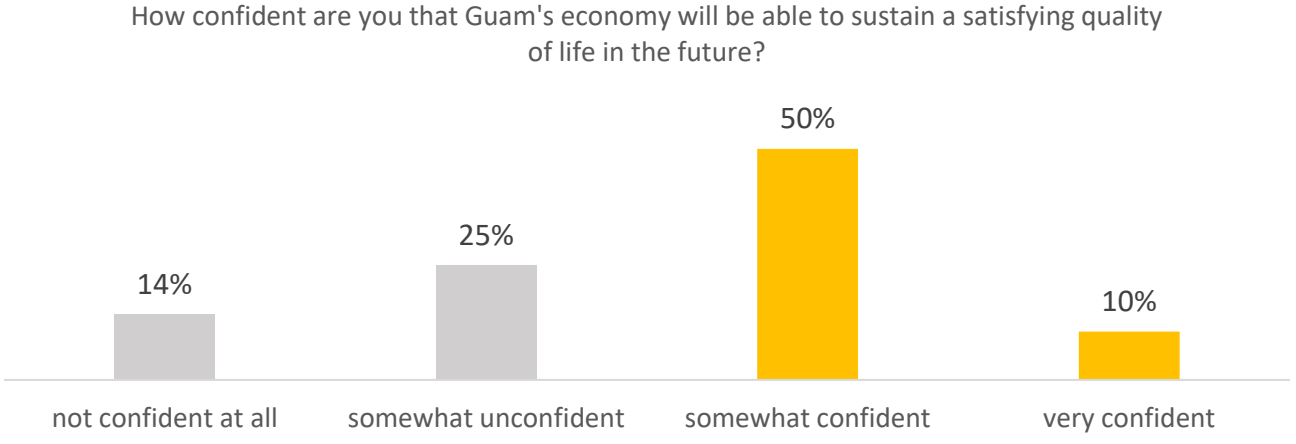
Economy

Half of respondents (50%) felt that Guam's economy did not sustain a satisfying quality of life for themselves or their family.



N= 501

At the same time almost two-thirds (60%) of those surveyed were somewhat confident (50%) or very confident (10%) that Guam's economy will be able to sustain a satisfying quality of life in the future. In all, there remains a significant level of uncertainty about the island's economic future.



N= 501

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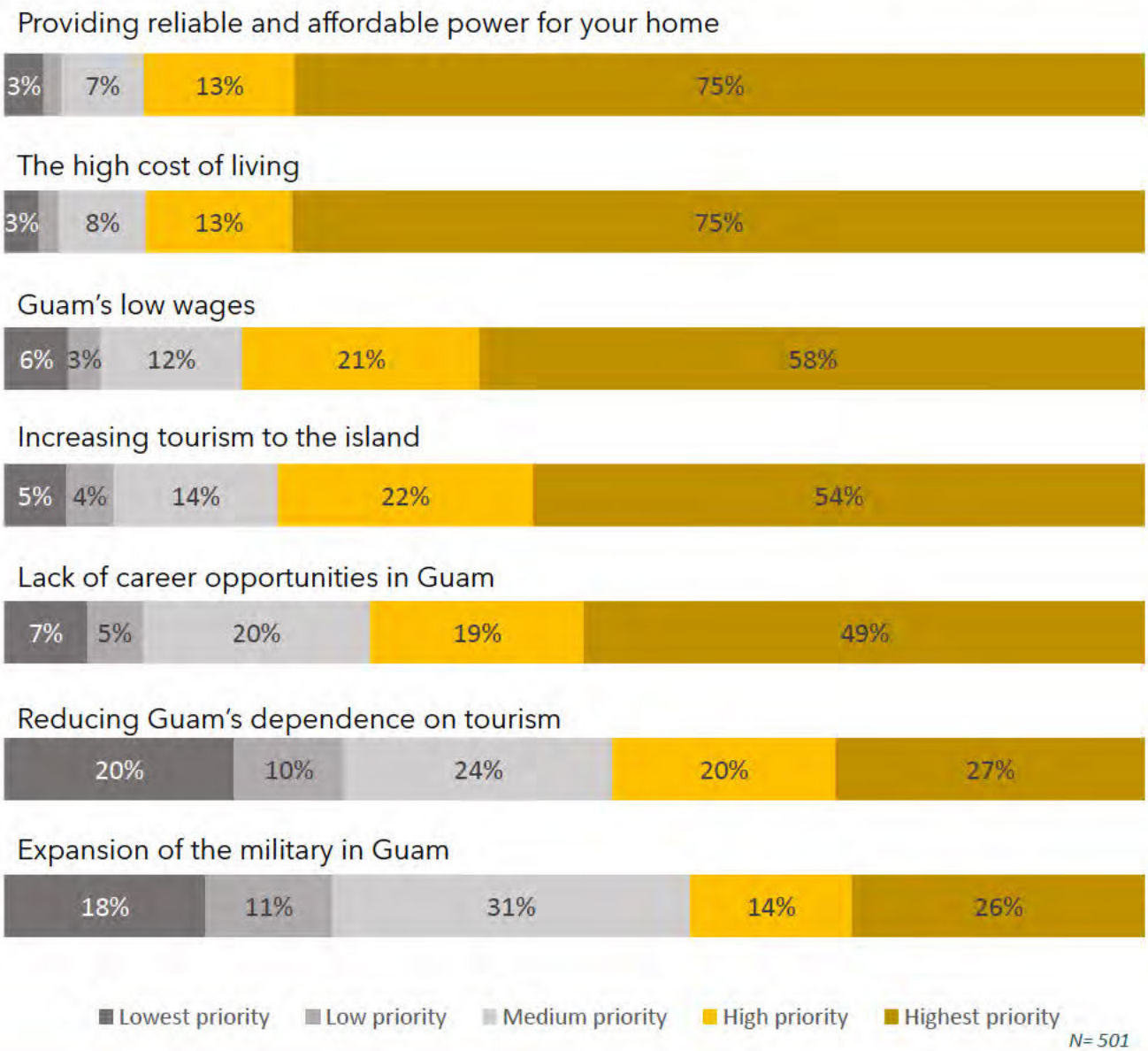
CHAPTER FOUR: RESIDENTIAL SURVEY

Respondents felt that the government should prioritize the provision of reliable and affordable power (75%) and addressing Guam's high cost of living (75%) to improve were identified as the highest priority in improving Guam's economy. Guam's low wages (58%) and increasing tourism (54%) were less likely to be determined as the highest priority. Respondents less likely to identify the military's expansion and the island's economic dependence on tourism as priorities the government should concentrate on.

What priority should the government place on the following things that have been reported about Guam's economy?



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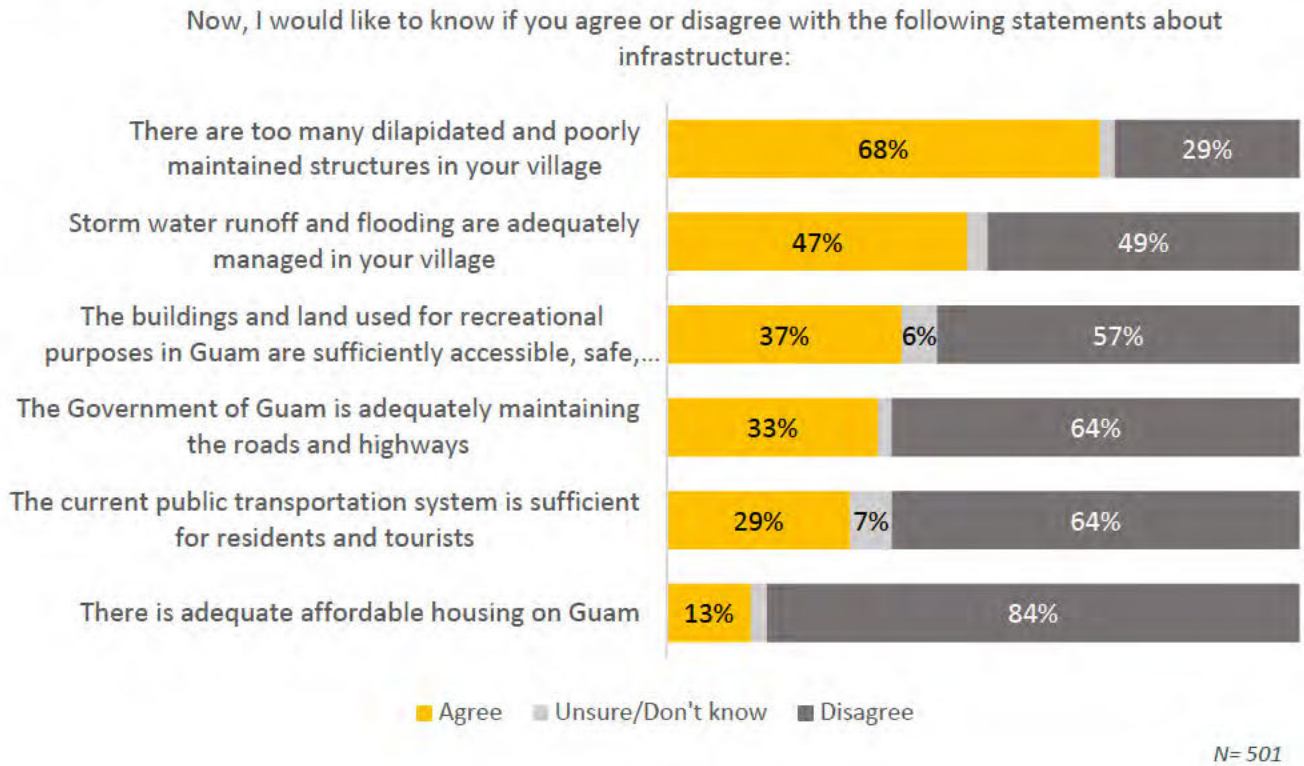
Infrastructure

Eighty-four percent (84%) of respondents felt that there is not adequate affordable housing in Guam and nearly seventy percent (68%) felt that their villages have too many dilapidated and poorly maintained structures. Nearly two-thirds (64%) felt the government was not adequately maintaining the roads and highways. The same proportion did not feel that the public transportation system was adequate. Also, a majority (57%) did not believe that buildings used for recreational purposes were sufficiently safe, accessible and properly maintained.



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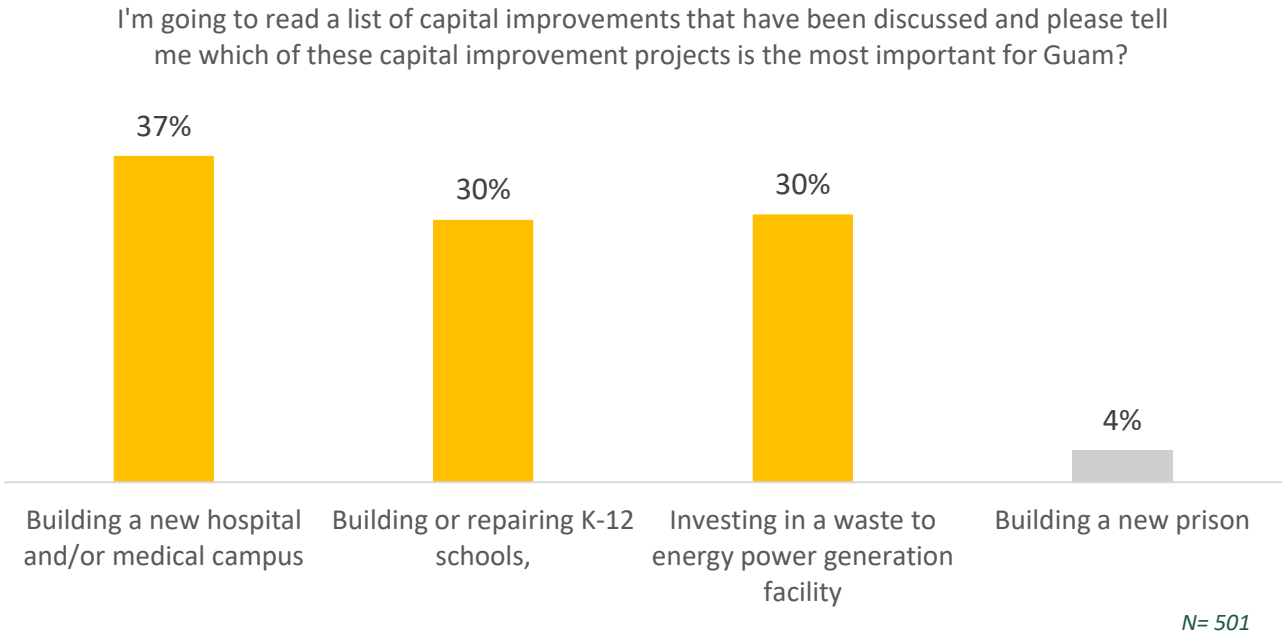
CHAPTER FOUR: RESIDENTIAL SURVEY

Respondents were asked to select which of a number of capital improvement projects was most important to Guam. Slightly more than a third (37%) believed that building a hospital and medical campus was the most important. A slightly lower proportion (30%) felt that building or repairing K-12 schools (30%) was most important. Interestingly, the same proportion felt that investing in a waste to energy power generation facility (30%) was the most important use of capital improvement funds. Each of the capital improvement options were felt to be the most important by roughly a third of those surveyed. None were deemed important by a majority of respondents.



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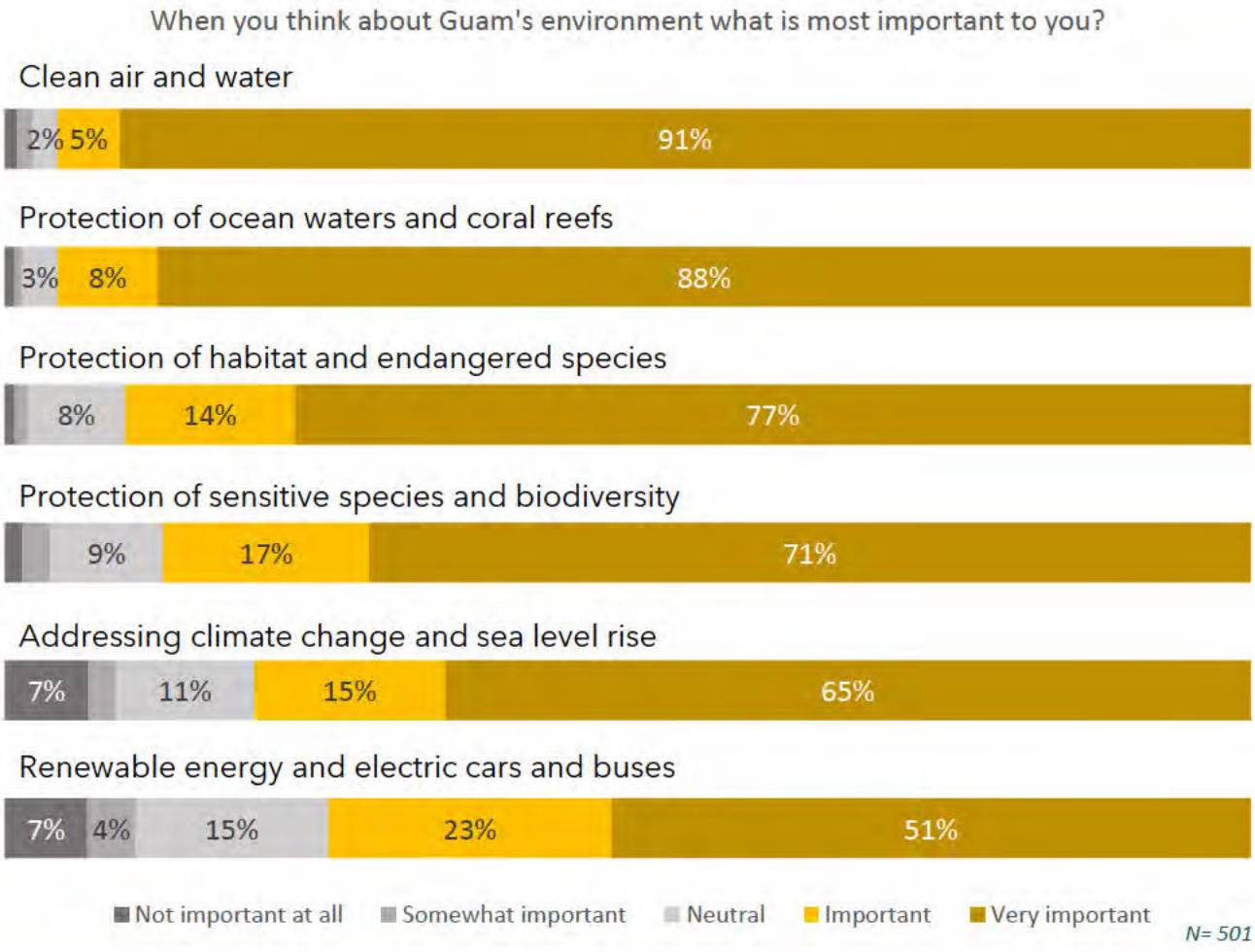
CHAPTER FOUR: RESIDENTIAL SURVEY

Environment

Three-quarters of those sampled indicated that environmental issues were important or very important to them. When asked about specific environmental concerns, clean air and water (96%) was identified as being most important. This was followed by the protection of ocean waters and coral reefs (96%). Some ninety-one percent (91%) identified the protection of habitat and endangered species as important or very important followed by some eighty-eight percent (88%) who identified the protection of sensitive species and biodiversity. Eight in ten (80%) believe that climate change and sea level rise is an important or very important. At the same time three-quarters of those surveyed (74%) feel that renewable energy and the electrification of vehicles are important or very important to them. Clearly environmental issues are salient to Guamanians.



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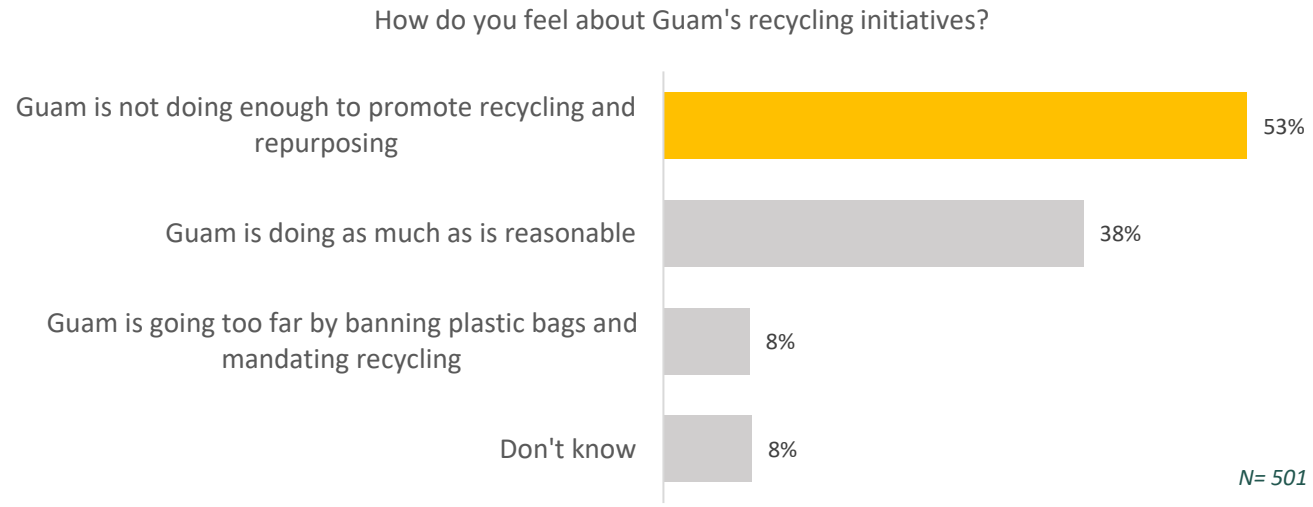
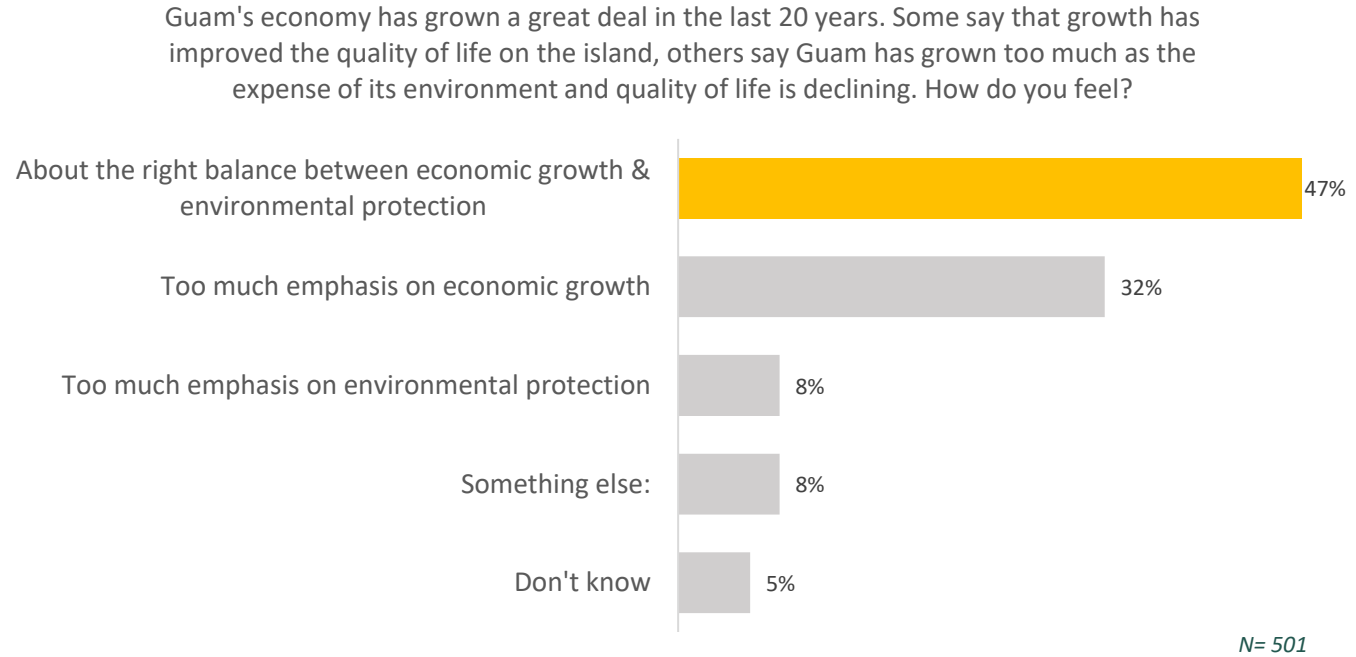
CHAPTER FOUR: RESIDENTIAL SURVEY

More than half (53%) of respondents felt that the island is not doing enough to promote recycling and repurposing. While more than a third (38%) felt Guam is doing a reasonable job with its recycling initiatives.



Nearly half (47%) of respondents felt that Guam's economic growth was adequately balanced with the protection of its environment. However, about a third (32%) felt there was too much emphasis on the island's economic growth.



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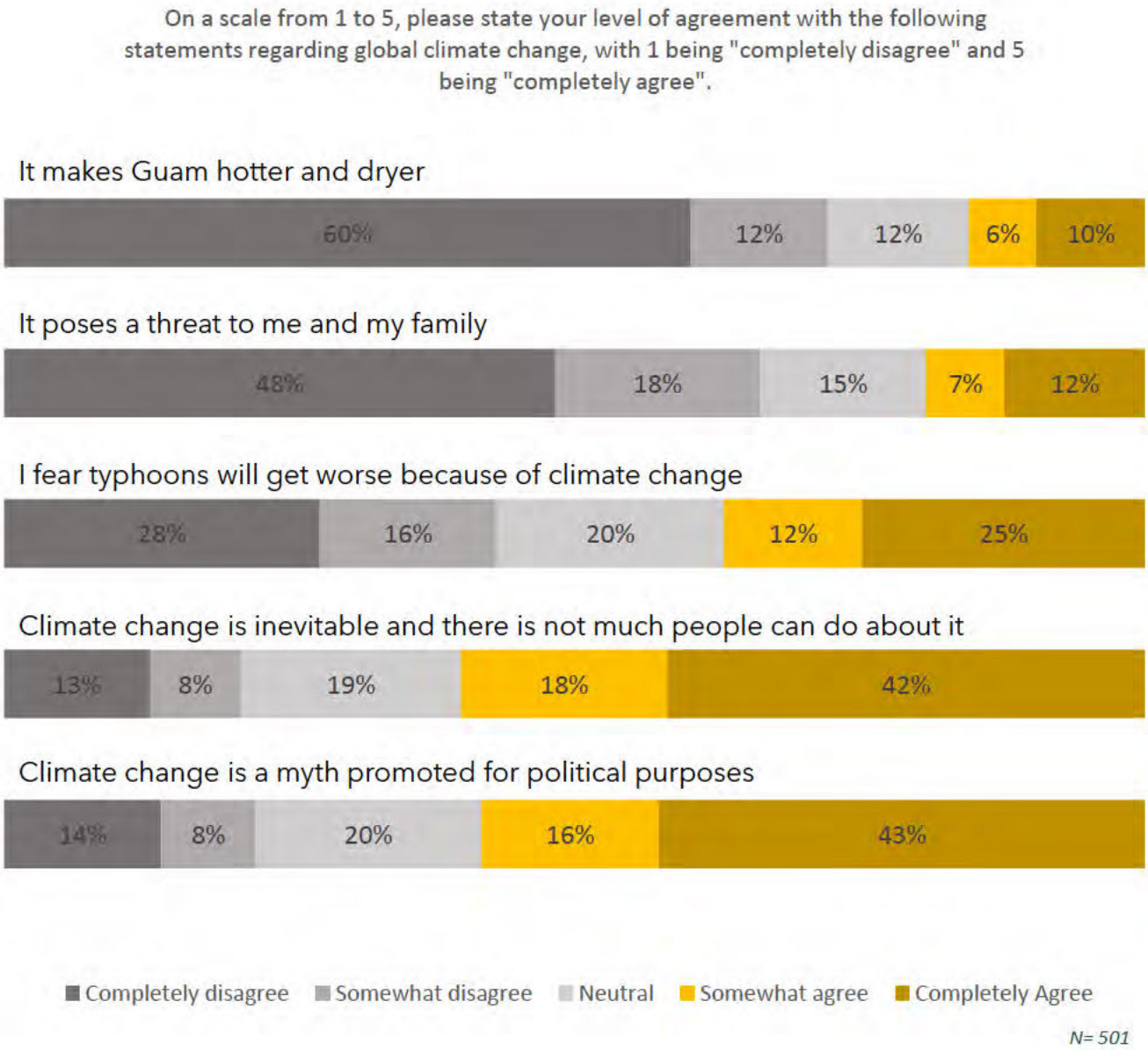
CHAPTER FOUR: RESIDENTIAL SURVEY

Respondents believe that climate change is impacting their lives. Nearly two-thirds (64%) felt it was making the island hotter. Some sixty percent (60%) believed that typhoons would get worse because of climate change and similarly fifty-nine percent (59%) felt that climate change posed a real threat to their families. Only 16% believed that climate change was a myth and only 19% felt climate change was not affecting Guam.



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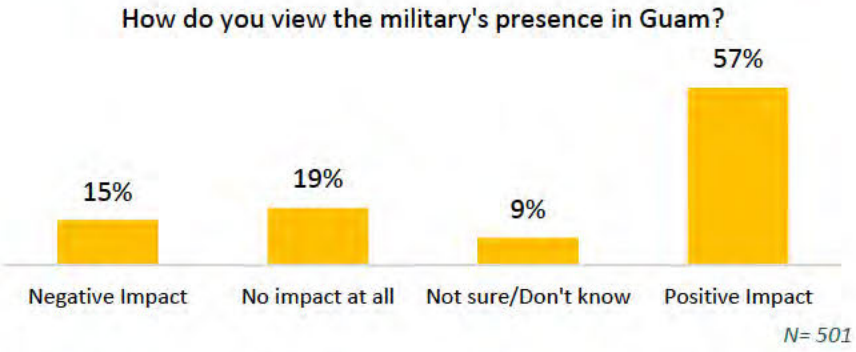
CHAPTER FOUR: RESIDENTIAL SURVEY

Military Impact

More than half (57%) of respondents felt that the military has had a positive impact on Guam, while 15% viewed their presence as a having a negative impact.



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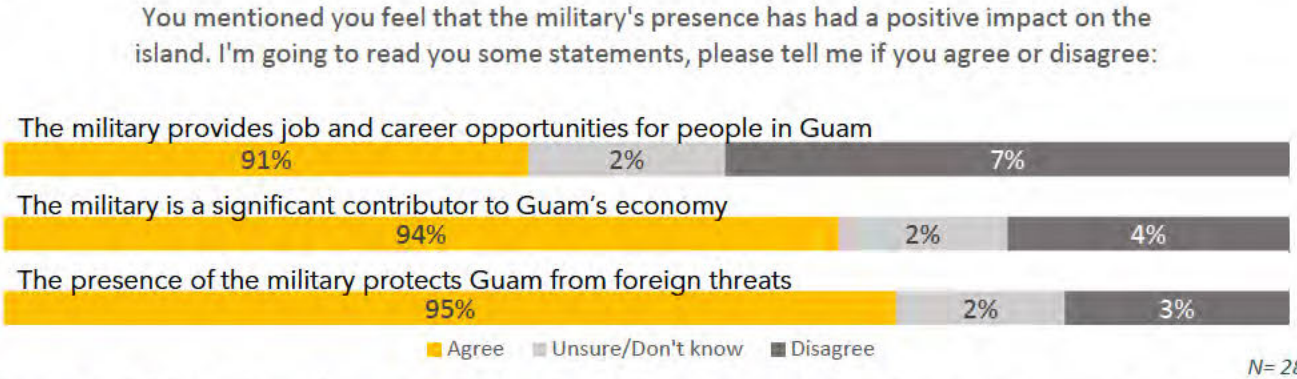
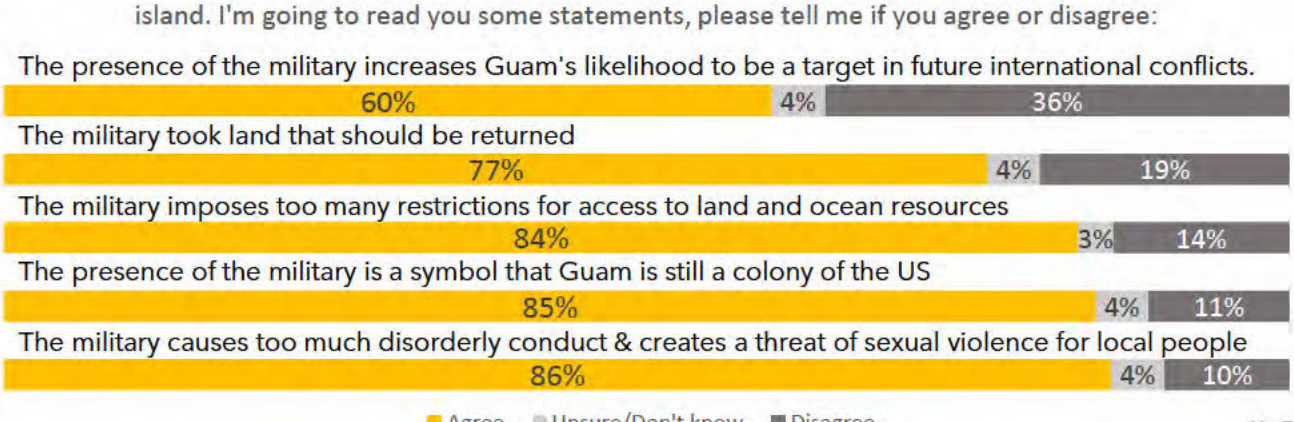
Those who felt the military had a positive impact felt they played a large role in in providing employment opportunities in Guam and is a major contributor to the economy.



N= 286

Among the 15% of residents who view the military as having a negative impact, 86% felt the military's presence was a cause of disorderly conduct and created a threat of sexual violence. Similarly, 85% felt that their presence was a symbol of colonialism and 84% felt the military imposes too many restrictions for access to land and water resources.



N= 73

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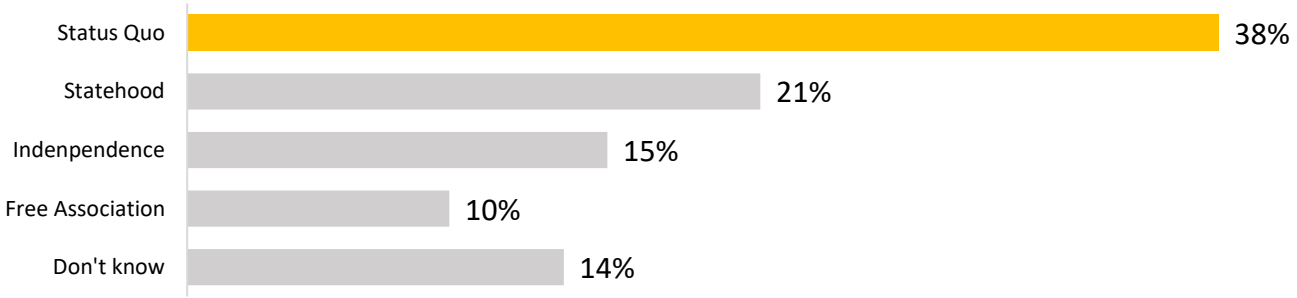
CHAPTER FOUR: RESIDENTIAL SURVEY

Political Status

More than a third (38%) of respondents stated they would select the status-quo if an election were to occur today. While nearly a quarter (21%) would select statehood.

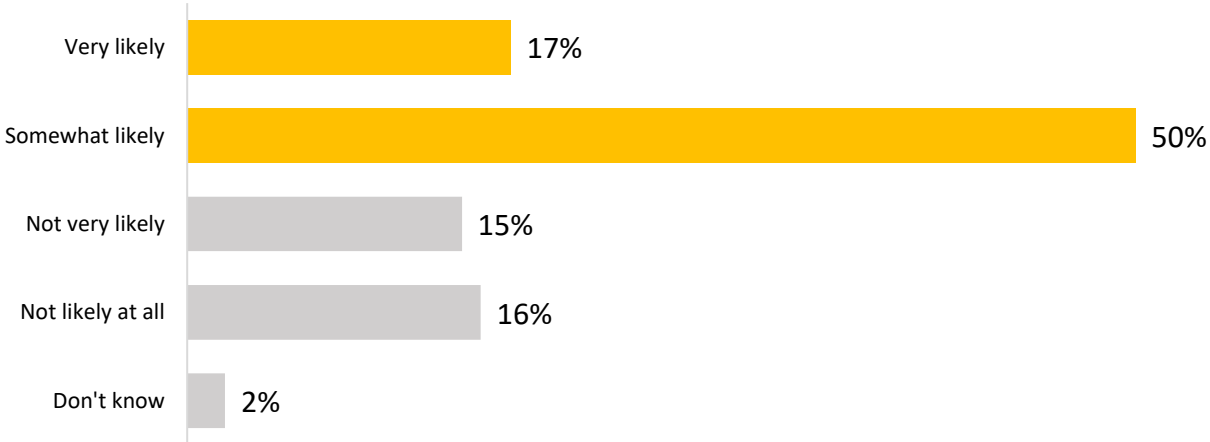
Guam's political status has been mentioned frequently in the news these days. If you were asked to vote today for the political status you prefer, what would it be?



Public Participation

More than two-thirds (67%) of respondents stated they would participate in public meetings regarding the Guahan 2050 Sustainability Plan.

If you were asked to participate in a public meeting to discuss the Guahan 2050 Sustainability Plan, how likely would you be to take the time to participate?



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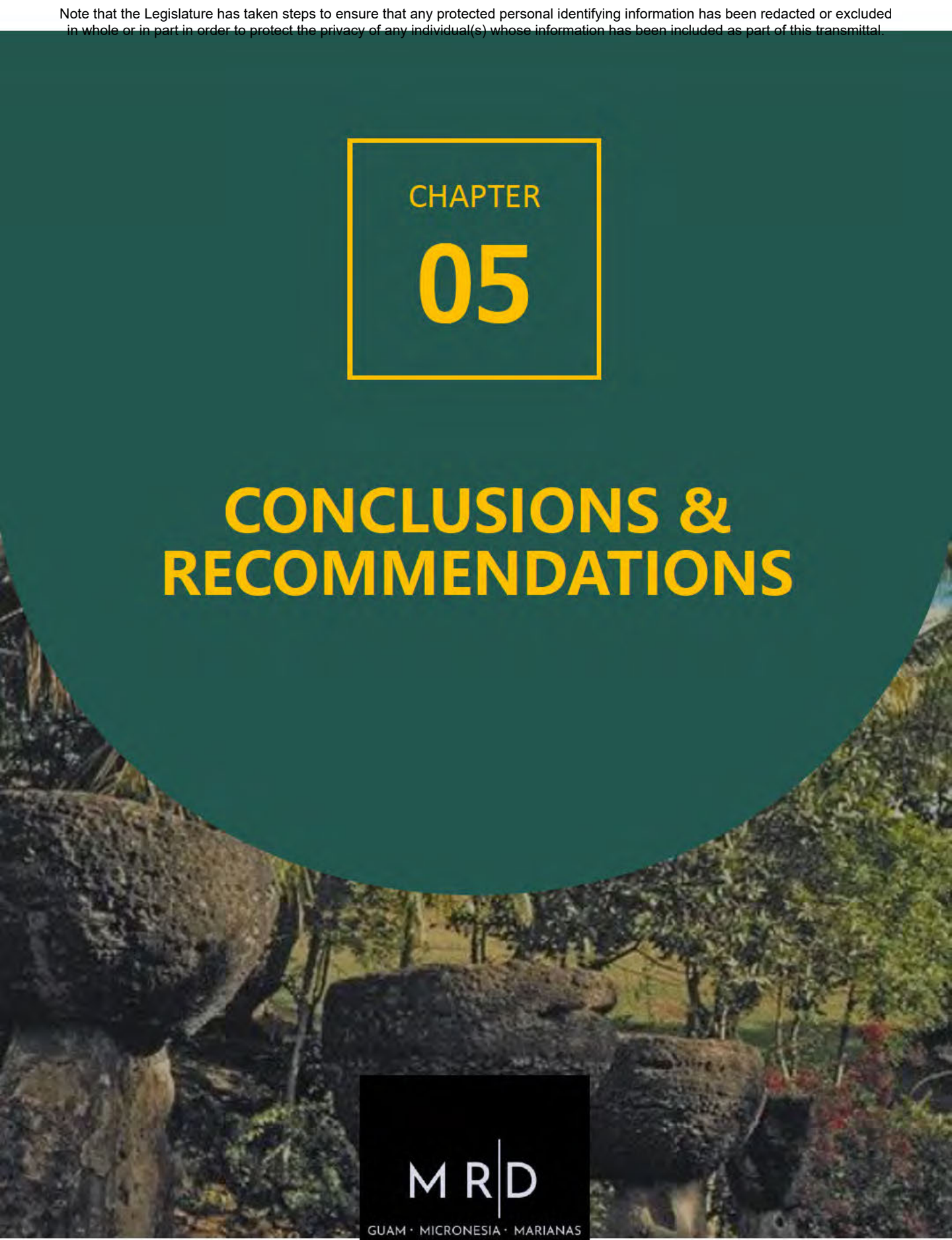
CHAPTER

05

CONCLUSIONS & RECOMMENDATIONS



MRD

GUAM · MICRONESIA · MARIANAS

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CHAPTER 05

CONCLUSIONS & RECOMMENDATIONS

This report has summarized the results of research conducted by MR&D concerning the community readiness of Guam to conduct sustainability planning pursuant to Public Law 35-110. In addition to background research on sustainability planning concepts and practice, MR&D (1) interviewed subject matter experts selected for their ability to speak broadly about the priority sustainability sectors identified in the research framework; (2) conducted a series of small focus groups with both residents of Guam, and participants from a variety of business and other non-governmental organizations; and (3) completed a statistically-significant quantitative survey of 501 residents concerning the different dimensions of potential sustainability planning for Guam. Each of these was discussed in detail in Chapters 2, 3, and 4.

As elaborated below, the research supports eight major conclusions about how BSP should proceed with the sustainability planning mandate of P.L. 35-110. Most important, the research suggests that Guam is ready for the sustainability planning effort to begin, and that it will be an important project for moving Guam forward with attention to all aspects of Guam's natural, built and human environment for the benefit all of Guam's residents. In particular, a sustainability planning effort can support the development of a shared community vision for Guam's future and assist BSP and the Government of Guam in improving its overall governance for sustainability, through increased coordination and integration of Guam's existing government institutions and programs.

Guam's Community Readiness for Sustainability Planning

MR&D's research supports eight major conclusions regarding Guam's community readiness to undertake sustainability planning. These may be considered in three general groups: (1) observations about the overall readiness of Guam to conduct sustainability planning; (2) challenges to be addressed for Guam to undertake a successful sustainability planning effort; and (3) recommendations for focusing the next steps of a pragmatic sustainability planning project.

OVERALL READINESS OF GUAM TO CONDUCT SUSTAINABILITY PLANNING

1. *There is a Clear Need to Undertake Sustainability Planning for Guam*

One factor shaping a community's readiness to undertake sustainability planning is evidence showing a need for such planning.

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MR&D's research, including the interviews with subject matter experts, focus group discussions, and the quantitative survey of Guam's residents, clearly show that there is a need for the sustainability planning as set out in P.L. 35-110. As discussed in Chapter 2, all of the subject matter experts held concerns about various dimensions of the economy, environment, infrastructure and social-cultural aspects of Guam, such as identifying a need to strengthen the island's economy coming out of the pandemic or assuring that Guam has adequate capacity to manage solid waste on an island with finite land area. Similarly, in the focus groups, residents, business and other organizational representatives expressed strong concerns about the direction of Guam. Though not everyone agreed on the same problems, nearly all of them had strong feelings about the need to address different aspects of Guam's economy, environment, infrastructure or social issues. Likewise, the quantitative survey backed up the findings from the SME interviews and focus groups. Thus, as detailed in Chapter 4, strong majorities of those surveyed were concerned or very concerned about Guam's economy, environment, basic services like public safety, education, health care and housing, public infrastructure such as power, water, trash disposal, transportation and public parks, and the preservation of Guam's culture.

The need for sustainability planning is also supported by the interest of research participants to engage in a potential future sustainability meeting. Two-thirds of those that responded to the telephone survey indicated they would be somewhat or very likely to participate in a public meeting about sustainability planning. In the focus groups, participants also were asked at the end of each session whether they would be likely to participate in a future sustainability planning effort. Many indicated that they would. In addition, the progression of the 2-hour discussion in many of the focus groups seemed to indicate a growing understanding and interest among participants in the various issues being presented to them, and a related growing engagement with the sustainability challenges that would be addressed through a planning effort. Some of this engagement with the topic was expressed in a palpable appreciation in the focus groups for Guam's special culture, its openness, and a concern that if sustainability challenges were not addressed that the future of Guam was uncertain. This too suggests that there is latent demand and thus a need for conducting sustainability planning in Guam.

2. *The Integrated Multi-Sector Sustainability Planning Framework set out by PL 35-10 is Important*

Just as the research indicated a wide range of concerns and thus need for sustainability planning in Guam, it also supports the multi-sector framework established by the public law.

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CHAPTER 05

CONCLUSIONS & RECOMMENDATIONS

There is no single or overarching concern among the residents, experts and organizations in Guam. Rather, there is concern within each broad category – Economy, Environment, Culture, Infrastructure – as well as many specific concerns within each category, such as schools, health care, clean water, climate change, diversifying the economy, supporting tourism, and so on. Each of the specific elements required for sustainability planning by P.L. 35-110 that were addressed in the research raised a concern among those that participated in the focus groups and the quantitative survey.

The research also supports a focus on the need for integration across the sectors. In particular, the SMEs expressed a concern about government agencies being too siloed, and thus they identified a need to better integrate agency efforts focused on sustainability. Both focus groups and the survey participants expressed an understanding of the relationship between economic growth and environmental impacts, and also expressed concern about the balance between them, implying an appreciation of the fact that they should be thought about in relation to each other, not as separable issues.

The research also supports a finding that many residents of Guam appreciate the need for thinking not just about current economic, environmental and social conditions, but also the prospects for each of these sectors being resilient for future generations. This is an important concept framed by P.L. 35-110 – the "imperative that [Guam] better meet[s] the needs of the present without compromising the ability of future generations to meet their needs." As discussed in previous chapters, evidence from the discussions with the SMEs and the Focus Groups, as well as the quantitative survey, showed a broad familiarity with the idea of sustainability, and a strong appreciation for the idea that it had something to do with concern for future generations, as articulated by P.L. 35-110. For example, 90% of the survey respondents agreed with the definition that "sustainability means meeting today's needs while meeting the needs of future generations," and nearly half (47%) felt that this was the definition that they most agreed with (compared to the definitions that sustainability meant either finding a "balance between economy and environment" (30%) or "indefinite economic growth" (23%)).

Overall, the research suggests that it will be important to develop both the cross-sector connections, and the analytic projections of economic, environmental and social trends into the future as sustainability planning is conducted. These will need to be addressed in all planning phases, including community visioning, trend analysis and policy development (see below).

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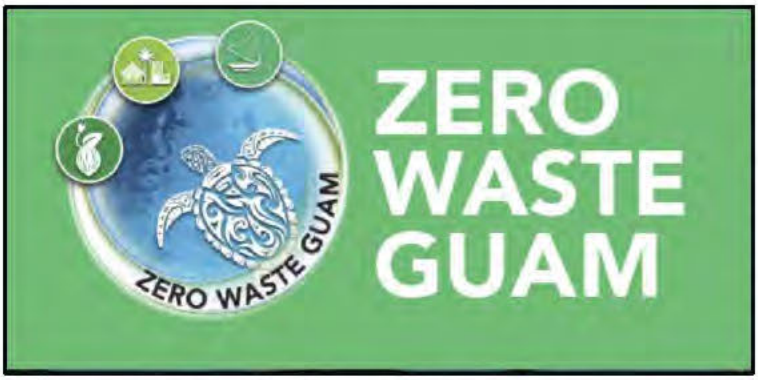
3. There is Significant Governmental and Other Work related to Sustainability Concerns Already Happening in Guam

It is important to recognize that there is significant work directly relevant to sustainability planning already occurring across Guam's governmental landscape. Background research and interviews with the SMEs highlighted much of this work, such as the efforts to convert to a more sustainable, non-fossil fuel energy system, or what was felt to be the generally well-managed water, wastewater, port and airport sectors. The Government of Guam, and BSP in particular, have produced important reports with data and assessment that would inform the evaluation of sustainability and the development of a sustainability plan, for Guam. This includes efforts such as the *2022 Guidebook to Development Requirements on Guam*[1]; the 2021 *Guam Shoreline Atlas*[2]; a 2019 *Sea Level Rise Vulnerability Assessment*[3]; regular statistical reports and many others. In some cases, recent planning has occurred that speaks directly to questions of sustainability, such as the Update to Guam's Zero Waste Master Plan and the Zero Waste Guam program[4]. BSP also organizes various reports and reporting mechanisms on its website, such as the dashboards for economic and demographic data[5].



Other important work is happening that is not necessarily associated with a specific governmental agency program on Guam, such as the work of the Center for Island Sustainability at the University of Guam[6], and the sustainability work of Green Growth Guam[7]. Other larger-scale programs that include Guam are also important, such as the climate change assessment work of the Pacific Islands Regional Climate Assessment[8], which is a consortium of organizations, including the Department of Interiors' Pacific Islands Climate Adaptation Center[9] and NOAA's Pacific Regional Integrated Sciences and Assessments (RISA) program.[10]

1 https://bsp.guam.gov/wp-bsp-content/uploads/2022/05/2022-Guidebook-To-Development-Requirements-on-Guam.pdf.
2 https://bsp.guam.gov/wp-bsp-content/uploads/2022/09/Guam-Shoreline-Atlas_Final.pdf.
3 https://bsp.guam.gov/wp-bsp-content/uploads/2022/09/Kingetal2019_CCVA_v5_DEC_FINAL-Compressed-1.pdf.
4 https://zerowasteguam.eco/.
5 https://bsp.guam.gov/reports/.
6 https://www.uog.edu/center-for-island-sustainability/.
7 https://guamgreengrowth.org/.
8 https://pirca.org/.
9 https://pi-casc.soest.hawaii.edu/.
10 https://www.pacificrisa.org/.

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Together, the on-going work of multiple agencies on and outside of Guam will be important to consider and synthesize as sustainability planning goes forward.

CHALLENGES FOR SUCCESSFUL SUSTAINABILITY PLANNING IN GUAM

As discussed, evidence suggests that Guam not only is ready to undertake sustainability planning, but that such planning is needed to move Guam forward in a rapidly changing economy, environment and society. Nonetheless, the research also reveals that Guam faces certain challenges, discussed in following sections, that should frame the planning effort.

4. *There is a Need to Synthesize Existing Programmatic Data Sets and Address Critical Data Gaps for Completing a Sustainability Plan for Guam*

Guam has many important past and on-going agency efforts that address various aspects of the sustainability challenge, from recent assessment of the development review process to collaborative work with federal agencies assessing environmental change. Notwithstanding, the research shows that there is an overarching need to gather and synthesize trends data across the numerous subsectors of Guam's economic, environmental and social settings.

The SMEs that were interviewed identified many examples of issues affecting sustainability that were either being addressed or that needed to be addressed, and while some identified a specific priority, in general there was no consensus on the ranking of the subject areas (the economy, infrastructure, environment and the social and cultural characteristics of Guam) over another. As Chapter 2 highlights, a successful sustainability plan must create a vision that seeks to balance each these areas and that links them into a coherent and synergistic matrix of policies and regulations to support its implementation. To do this, the existing data-rich environment needs to be integrated, and any critical data gaps relating to identified problems need to be identified and addressed going forward.

A good example of this need is in the area of economic sustainability. As discussed, the SMEs had varying ideas about how to strengthen the economy, particularly the extent to which tourism needed to be maintained as a central component. At the same time, focus groups with a variety of residents, as well as the quantitative survey, revealed a wide range of concern with different aspects of the economy. This diversity of expert and lay opinion will need to be confirmed through economic data and analysis, so that the competing understandings, and development of economic planning objectives and policies, can be assessed in a more integrated way. Evidence can frame hypotheses that may be confirmed by existing data sets, or that may reveal critical data gaps to address the identified concerns.

BSP RFP2021-001
Doc. No. 38GL-26-2651.*

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For example, should the plan address the development of the aquaculture or small-scale agriculture economies? How would development of these economies interact or affect other aspects of the sustainability plan, such as land use or environmental protection?

Similar observations may be made in the area of environment, where there was varied opinions about environmental change and impacts, including climate change. These observations should be explored through assessment of existing data sets. Like questions raised about the economy, efforts to prioritize environmental concerns as they may relate to island sustainability can perhaps be accomplished by compiling and comparing environmental trends data. Data gaps may also be identified to document identified concerns.

The social sector, too, is subject to the same variability. SMEs, residents and survey responses identified multiple social, cultural and public health concerns that will need to be grounded in existing data of new data gathering and assessment to fill identified gaps. As discussed further below, this will be an important task going forward.

5. *There is a Need to Understand How to Effectively Implement an Integrated Sustainability Plan Across Existing Programs and Agencies.*

The research has confirmed that experts and residents have many concerns about current and future environmental, economic, and social conditions that affect sustainability, and that there is a significant amount of relevant existing and on-going work associated with the Government of Guam and other entities that speaks directly to these concerns. Because of this, it will be important that any sustainability planning consider how an integrated, multi-sector plan can be effectively *implemented* over time. This would necessitate an assessment of existing government programs implementation, overlap and coordination between these programs, and consideration of how future implementation might need to change to implement what are likely to be cross-cutting plan objectives with inherent trade-offs.

For example, it may be that certain economic policy objectives would point towards increased development of rural areas, but that environmental policy objectives would point towards increased protection of rural areas, particularly where more sensitive ecological resources are located. Similarly, a need to address affordable housing could lead to increased.

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growth in undeveloped areas, or changes in land use patterns that directly impact transportation patterns and infrastructure demands and capacity.

Growth necessarily affects water supply and wastewater management, as well. The success of a sustainability plan that attempts to integrate what could be competing policy objectives will depend on effective integration of agency implementation and practice that may be currently siloed, as was expressed by some of the SMEs.

Another challenge that emerged from the research was whether a sustainability plan should be created and implemented with a top-down approach, bottom-up, or a mixture of the two modes. On one hand SMEs and residents identified the need for strong guidance and a unified vision of what sustainability means for Guam, suggesting that the Government of Guam, however it may be configured, should be the primary implementing force. On the other hand, research participants also recognized the importance of developing sustainability policy and objectives at the village level, so that sustainability outcomes were founded on the concerns and interests of the grassroots. Clearly both ideas are important, and thus the development of a sustainability plan will need to anticipate and address institutional design and implementation frameworks that will support effective island-wide goals and objectives while meeting the needs and desire for engagement in the 19 villages.

Another implementation topic that emerged in the research was the question of how to sustain the consistent implementation of a sustainability plan itself as governmental actors' ebb and flow, particularly with potential changes in political direction from elected representatives. It will be important to think through not only how to integrate plan implementation across multiple agencies, but also how to integrate implementation over time. For example, it may be that a new independent Commission should be considered, or more likely, that an existing agencies authorities should be amended to facilitate effective plan implementation over time.

P.L. 35-110 amended BSP's authorities to direct that BSP not only prepare the Sustainability Plan, but that it help to harmonize the planning process by "implementing comprehensive planning activities at all levels of government." In addition, the law directs BSP to ensure that "current planning programs and projects are consistent with the Plan." The motivation for these mandates is supported by the research, particularly the opinions of the SMEs and the expressions of multiple concerns from resident participants.

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6. Guam Needs a Shared Vision of Sustainability Rooted in Community Engagement and Guided by the Framework of PL 35-110.

The need for comprehensive and integrated sustainability planning for Guam is apparent in the research results. But the research also highlights the need to focus this planning first and foremost on the development of a shared vision of sustainability for the island that addresses the broad objectives of P.L. 35-11 while also being rooted in community engagement. As discussed in previous chapters, subject matter experts and residents of Guam have a wide range of views about the most important concerns in Guam's future, from economic challenges to environmental impacts to erosion of Guam's unique cultural heritage. At the most general level, each of three distinct notions of sustainability resonated with survey participants, though meeting the needs of today and future generations resonated the most. Among subject matter experts and in the focus group discussions, there was more of distinction between the ideas, with few participants focusing on unlimited economic growth as opposed to concern for the future and for striking the right balance between economic and environmental concerns.

Still, within the broad appreciation of providing for today while meeting future needs, the research does not clearly identify what that would mean for Guam in any particular sector or geographic area of the island. As discussed, opinions about what needs to be addressed ranged across different approaches to the economy (e.g., rebuilding tourism versus reducing dependence on tourism), different environmental priorities (clear air and water, coral reef impacts, climate change), specific concerns about village development patterns and the built environment, and a wide range of social and cultural issues, such as the health care system, drug abuse, homelessness, the education system and so on.

There also appears to be a general appreciation of the need for governmental direction or guidance on achieving sustainability, but also the importance of community "ownership" of the sustainability plan. Island-wide direction from the government was recognized as important for addressing the interconnections between different areas and sectors, perhaps most importantly through the land use planning process. At the same time, people are focused on issues that are tangibly local, such as community design, public safety, environmental conditions, etc. There is also concern for Guam's culture, both specific to the island's *CHamoru* heritage and with respect to the more intangible, sincere and open character of Guamanians. While some aspects of *CHamoru* cultural preservation can and should be managed by Government agencies, other cultural aspects need to be informed by community values and engagement.

BSP RFP2021-001
Doc. No. 38GL-26-2651.*

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In any event, both the nature of some of the planning question inherent in the sustainability inquiry, as well as the cultural aspects of concern, could be beneficially addressed through direct engagement of community members at the village level.

It is worth noting the overlap of concerns about Guam's political status, and views of the U.S. military, with questions about the vision for sustainability in Guam. With both of these topics, there were mixed views, ranging from those interested in pursuing a future Guam that was more independent from the U.S. to those interested in statehood, or at least the status quo. Similarly, views about the military's presence and activities were generally positive, with some concern expressed for the extent of impacts on all aspects of Guam – economic, environmental, social. However, there was a general consensus that the military should be involved in any sustainability planning, given its central role in so many aspects of the island. Likewise, the political status of Guam seems to be an issue that will continue to animate the views of some residents concerning sustainability, particularly in regard to cultural and social issues.

7. *Specific Interactions and Trade-Offs between Sustainability Sectors will need to be Explored through Community Visioning.*

A corollary of the need to develop a sustainability vision, and the wide variety of concerns among Guam's residents, is the need to explore the interactions and trade-offs between sectoral concerns in future sustainability planning. Community visioning will help to ground broad and more general visions for sustainability in actual implications on the ground in specific contexts. For example, residents in one village may have a vision for an improved community design aesthetic through the built environment, but what exactly this means will only take shape through exploration in specific places. Likewise, island-level economic, environmental and social dynamics will interact in different ways in different places. Finding the proper balance between them will depend on forming community understandings and visions for the future in specific contexts.

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NEXT STEPS FOR A PRAGMATIC SUSTAINABILITY PLANNING PROJECT

8. *Guam is Ready to Conduct Integrated Sustainability Planning, including Trends Analysis, Community Engagement, Agency Coordination and Policy Development.*

MR&D's research on Guam's community readiness to undertake sustainability planning supports a conclusion that Guam is ready for the sustainability planning effort to begin, and that it's important to get started. The research also supports various core tasks that BSP should consider as it begins to implement P.L. 35-110. These core tasks generally map to specific phases of a traditional planning process including community visioning, early assessment of environmental, economic and social trends, coordination of government agency activities, policy development, and creation of an implementation plan, including potential financing.

A. Design of the Sustainability Plan Framework.

As shown, the goal of a multi-sector integrated plan is valid. There are multiple ways to outline a framework for such a plan, and this should be an early step in the planning process. It will entail an initial assessment of existing government agencies and programs and how they interact, in the context of development a plan that addressed core economic, environmental and cultural/social concerns. The structure of a typical community general plan may be a good model to follow, such as the existing North and Central Guam Land Use Plan.[11] Building from this plan would also be beneficial for efficiently situating the Sustainability Plan in a known relevant context for Guam.

B. Data Collection, Synthesis and Trends Assessment

Preliminary data collection and synthesis of existing information and reports from each major sustainability sector – environment, economy and society – should begin early, focused by the outline of the sustainability plan and framework. Consideration should be given to the indicators tied to the each of the UN SDGs, particularly those directly relevant to Small Island States. This data collection will involve coordination with existing agency programs and practitioners. It will involve broad trends assessment, but also identification of critical data gaps that might be addressed in further planning processes or through subsequent implementation components of the plan. Where applicable, this information should be integrated through a geographic information system interface.

11 https://bsp.guam.gov/wp-bsp-content/uploads/2016/10/2FINAL_NorthandCentralGuamLandUsePlan093009_-Fr-Terry-P.pdf.

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C. Agency Coordination and Collaboration

BSP should begin early coordination and collaboration with other agencies in the Government of Guam, as well as NGOs of direct relevance to sustainability objectives. This will supplement early design of the sustainability plan framework and initial identification of issues related to information integration and plan implementation, including opportunities for more integrated governance of sustainability concerns. Attention would be focused on how agencies currently work together and how coordination might be enhanced. Mechanisms for coordination and assuring consistency of other governmental programs and actions with the final sustainability plan could be considered in concept.

D. Community Visioning

As discussed, identifying and elaborating a vision for sustainability in Guam will be essential to the development of clear goals, objectives and implementation mechanisms for the plan. This visioning should occur at multiple levels, including engagement at the village level, sub-regional level and island-wide levels. The visioning exercises, whether community meetings or smaller-scale meetings with agencies, experts and stakeholders, should be structured with available trends information and preliminary assessment from the project. This will help focus community input on tangible questions to consider in developing the meaning of sustainability in specific geographic, economic, environmental and social settings.

E. Policy Development

Community visioning and early assessment of sustainability trends will inform the development of recommended goals and objectives for the sustainability plan. These should be aspirational and reflective of community desires, but pragmatic through grounding in existing and projected environmental, economic and social conditions. They should be broad enough to capture the breadth and depth of sustainability concerns in Guam, but specific enough to give policymakers a clear idea of the directions they would be setting for the island through the plan. They should be supported by the data analysis and community engagement conducted through the planning process.

F. Implementation Plan

An implementation plan will be important to set Guam on a pathway for sustained and consistent implementation of the plan overtime. This should include clear mechanisms for implementing the plan's policies and objectives, additional programs where needed to support plan implementation, and a specific discussion of required funding and sources of funding if applicable.

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BSP will need to develop clear lines of agency authority and coordination to avoid future conflict over plan implementation. The details of an implementation plan should be available in sufficient detail at the time of plan adoption, so that the plan has legitimacy with the public and all aspects of the Government of Guam going forward.

G. Presentation of Policymakers

A draft recommended sustainability plan will need to be clearly communicated not only to the various actors of the Government Guam, but also to the public and most importantly, policymakers, including the legislature, responsible for putting the plan in place. P.L. 35-110 envisions presentation of the plan to the Governor and, after approval by the Governor, submission to the legislature for adoption, either through legislative action or inaction.[12] Materials summarizing the plan for public and legislative consideration will be needed to assure maximum understanding of the plan, and clear, transparent guidance to BSP and other agencies implementing the plan in the future.

12 § 1206 of Article 2, Chapter 1, Title 5, Guam Code Annotated as amended by P.L. 35-110 states: "Within ten (10) calendar days of approval by the Governor, the Plan or any of its elements shall be submitted to the Legislature for adoption. The Legislature shall review and approve or disapprove the Plan or any of its elements within one hundred eighty (180) calendar days of its receipt. In the event of failure by the Legislature to act within such one hundred eighty (180) calendar day period, the Plan or any of its elements so submitted shall be deemed approved."

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THANK YOU

The findings reported are provided on a confidential basis to The Bureau of Statistics and Plans (BSP) which is free to use the findings in whatever manner it chooses, including releasing them to their industry stakeholders and partners and/or media.

MRD

GUAM · MICRONESIA · MARIANAS

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Lynker Team Engagement in order to get input, feedback or information relative to the Guam 2050 Sustainability Plan:

Agency	Scheduled meeting time
Office of Infrastructure Policy - Tyrone Taitano	8/14/2023 10:30:00
Department of Labor (Dr. Flores)	8/15/2023 14:00:00
Guam Housing Corporation	8/16/2023 11:00:00
Guam Housing & Urban Renewal Authority	
Department of Agriculture (topic--aquaculture)	8/16/2023 14:00:00
Guam Visitors Bureau	8/17/2023 14:00:00
Guam Economic Development & Commerce Authority	
Department of Public Works	8/29/23 12:00:00
Guam Power Authority	9/8/2023 11:00:00
Guam Waterworks Authority	8/30/2023 11:00:00
Guam Energy Office	8/24/2023 15:30:00
Department of Land Management	9/7/2023 13:00:00
Chamorro Land Trust Commission	9/12/2023 8:00:00
BSP (Coastal Zone Management)	9/19/2023 9:00:00
Guam Ancestral Lands Commission	9/23/2023 23:00:00
Department of Parks & Recreation (for recreation and historic preservation), SHPO Representative (Patrick Lujan)	8/31/23 1030
Guam Solid Waste Authority	8/23/2023 14:00:00
Guam Environmental Protection Agency	9/14/2023 10:30:00
Guam Coral Reef Initiative -Ashton Williams	8/30/2023 14:00:00
Department of Public Health & Social Services	8/24/2023 14:00:00
Department of Mental Health & Substance Abuse [GUAM BEHAVIORAL HEALTH & WELLNESS CENTER]	
Department of Chamorro Affairs	9/15/23 11:00 AM
G3	10/4/2023 11:00:00
Follow up with DLM	10/5/2023 11:00:00
Follow up with GEPA	10/3/2023 11:00:00

Other Engagement:	
Land Use Summit	7/25/23
Planners Symposium	9/21/23

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Conference Approach **Assembly of Planners' 8th Symposium**

Purpose To create conditions and opportunities whereby people fully participate early in the Guahan 2050 Sustainability Planning (G50SP) Process







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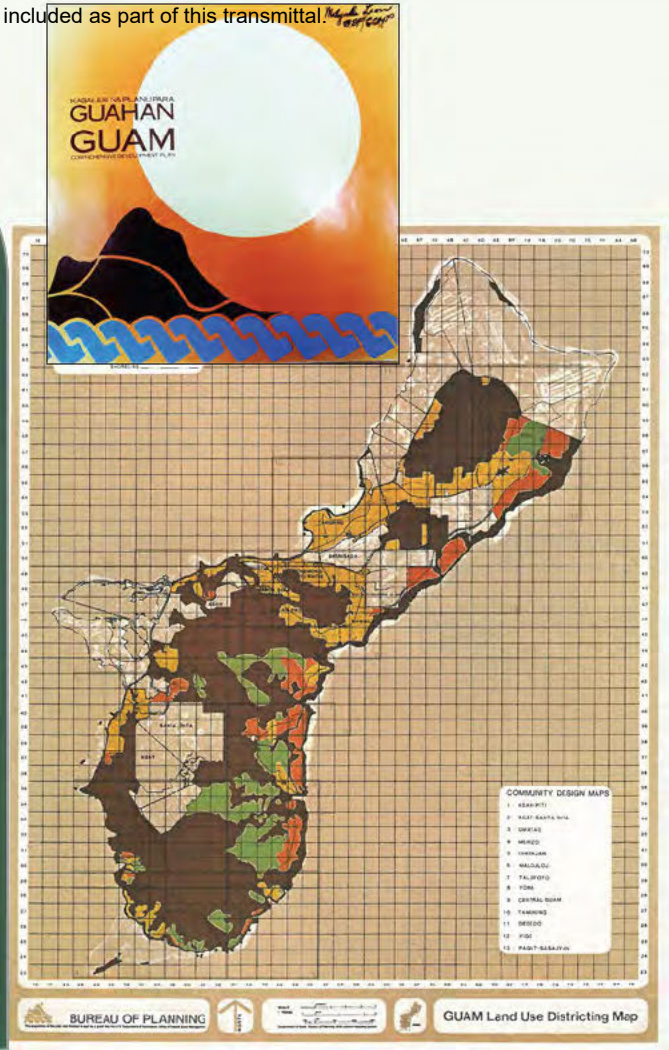
G50SP Planning Mandate

In accordance with Public Law 35-110, the Bureau of Statistics and Plans is preparing a Guåhan 2050 Sustainable Development Plan.

This plan will update Guam's Comprehensive Development Plan (1978).

This endeavor *complements* other ongoing Guam sustainability and resilience initiatives.



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The Guahan 2050 Sustainability Plan Team





THE BUREAU OF STATISTICS AND PLANS
Government of Guam

Lynker

UC SANTA BARBARA
Ocean and Coastal Policy Center
msi

hamer.

GHD

PCRP

MRD
GUAM · MICRONESIA · MARIANAS

NOAA
OFFICE FOR COASTAL MANAGEMENT
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION





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GCMP Funded Foundational Research.

A majority of Guam's residents "... expressed sincere interest and felt the creation of a sustainability plan for Guam was worthwhile and important..." and desire to be engaged in the development of the Guahan 2050 Sustainability Plan, MRD 2022



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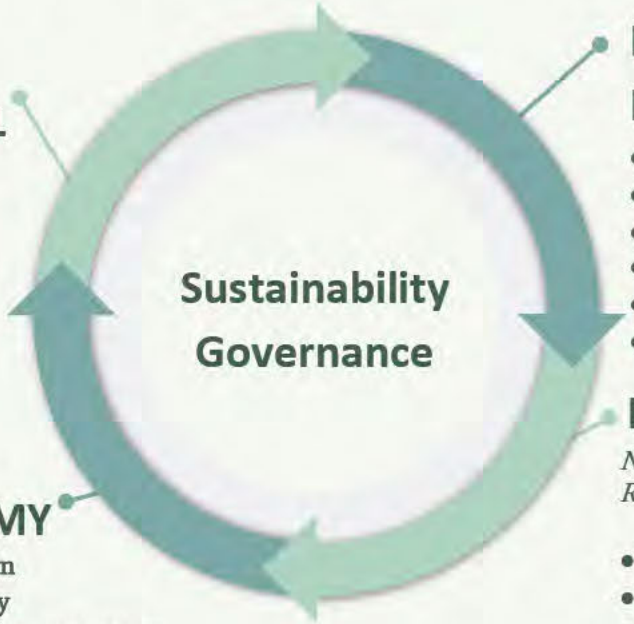
Our Sustainability Framework Core Elements and Sectors



CULTURAL-SOCIAL

- Cultural Heritage
- Public Health
- Education
- Public Safety

LAND USE & INFRASTRUCTURE

- Water Supply
- Wastewater Management
- Solid Waste Management
- Transportation
- Communications
- Power/Energy

ECONOMY

- Tourism
- Military
- Telecommunications
- Construction
- Agriculture
- Ocean/Ports Sector

ENVIRONMENT

Natural Resources	*Environmental Protection*	*Land Use Planning*
• Public Lands	• Air Pollution	• Cultural Land Preservation
• Parks & Rec	• Water Pollution	• Community Planning
• Ocean & Coastal	• Toxics Pollution	• Hazards
• Power/Energy	• Watershed	• Power/Energy

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Land Use and Sustainability Questions for Guam

- How can Guam improve the management of and relationship between land uses on federal military, Government of Guam, Ancestral and private lands?
- How can land use planning support increased economic growth that is diverse and less reliant on factors external to Guam? Should local agriculture be a priority?
- What is the proper balance between urban expansion and protection of natural lands? Should Guam direct new development to existing urbanized areas?

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Land Use and Sustainability Questions for Guam

- What needs to be improved about the transportation in Guam? Is transportation an issue, and in what ways can it be improved? How about the water and wastewater systems? Is Guam addressing the potential impacts of natural hazards?
- What land uses need to be provided for to assure Guam's social, economic and environmental health in 2050? What conflicts need to be avoided?
- How can the public be more engaged with the sustainability of Guam's current and future land use planning and implementation?

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The G50SP hopes to complement the G3 initiative



Updated Comprehensive Development Plan Required by Public Law 35-110



Develop tangible solutions to sustainability challenges and contribute to green economy for Guam.

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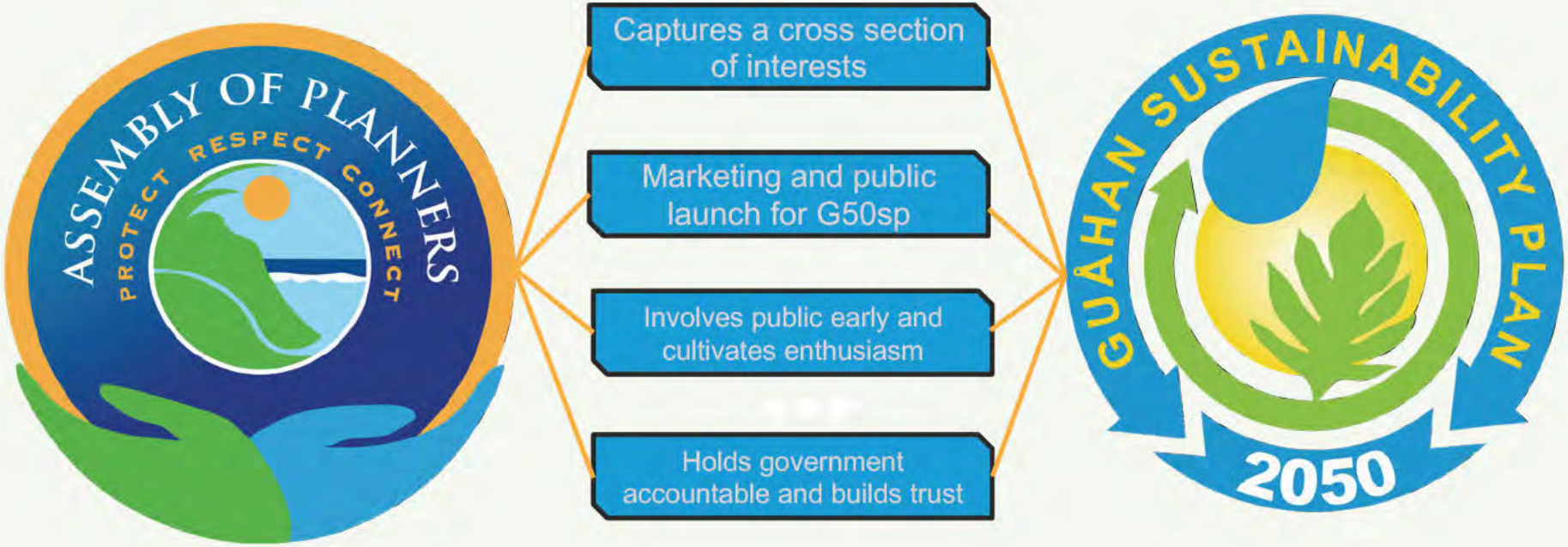

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8th Assembly of Planners (8AOP) Symposium

Executive Summary

Sample Description: On September 21, 2023, the 8th Assembly of Planners Symposium was hosted by the Bureau of Statistics and Plans, in coordination with the Government of Guam agencies. The Guam Coastal Management Program (GCMP) conducted a survey on 10 topics. The number of responses on the topics varied, depending on the topic there were anywhere from 40 to 100 responses. The key findings and recommendations below reflect the collective insights on essential areas for Guam's sustainable growth and development.

Economy
Infrastructure – Power and Water
Infrastructure – Telecomm and Transportation
Land Use
Environment – Marine
Environment – Terrestrial
Public Safety
Education and Community
Culture and traditions
Public Health

Economy

Key Findings: Guam's economic landscape is shaped by its reliance on tourism, military, and service sectors. However, dependence on these limited industries has led to economic vulnerability, particularly visible during global events like pandemics or shifts in military budgets. There is a growing recognition of the need to diversify economic drivers.

Recommendations: Develop policies to attract new industries, such as renewable energy, technology, and eco-tourism, to create a more resilient economic base. Incentivizing local business ownership, small businesses, and sustainable practices across sectors can also provide new employment opportunities and reduce reliance on external markets.

Infrastructure – Power and Water

Key Findings: Current power and water systems face maintenance and reliability challenges. Aging infrastructure, combined with rising energy costs and water scarcity, hinders consistent and efficient service, impacting both residents and businesses.

Recommendations: Prioritize investments in renewable energy sources and upgrade water systems for greater efficiency and resiliency. Developing solar and wind energy projects can reduce dependence on fossil fuels, while improving water conservation practices and modernizing pipeline infrastructure will support long-term sustainability.

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Infrastructure – Telecommunications and Transportation

Key Findings: While telecommunication networks cover most of Guam, access and quality are inconsistent, especially in rural areas. Public transportation options remain limited, affecting accessibility for lower-income residents and increasing traffic congestion.

Recommendations: Enhance broadband infrastructure to ensure high-speed internet access throughout Guam, supporting remote work and education needs. Expand public transportation options and improve road maintenance to facilitate better commuting and reduce traffic issues, while incorporating bike lanes and pedestrian-friendly paths.

Land Use

Key Findings: Land management challenges include limited available land for development, conflicting land-use priorities, and the need for sustainable zoning practices. Rapid urbanization and military expansion have also led to concerns about preserving natural and cultural sites.

Recommendations: Implement updated zoning policies that balance development with environmental and cultural preservation. Engaging stakeholders in land use planning, particularly regarding sustainable urban development and military use, can ensure community needs are met while preserving key natural and historical sites.

Environment – Marine

Key Findings: Guam's marine ecosystems face threats from pollution, overfishing, and coral reef degradation. The preservation of coastal resources is essential for sustaining biodiversity and supporting tourism and local fishing industries.

Recommendations: Increase protection of marine areas, enforce anti-pollution regulations, and invest in coral restoration projects. Community education programs on marine conservation, alongside collaboration with environmental organizations, will promote the preservation of Guam's coastal resources.

Environment – Terrestrial

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Key Findings: Terrestial habitats are under threat from deforestation, urban development, and invasive species. Loss of these ecosystems threatens biodiversity, water quality, and cultural heritage tied to the land.

Recommendations: Strengthen conservation policies to protect Guam's natural habitats, establish programs to combat invasive species, and increase tree planting initiatives. Incorporating traditional land management practices can support ecological balance and resilience.

Public Safety

Key Findings: The demand for public safety services has increased, but resources, personnel, and facilities are limited. Rising concerns include community policing, crime prevention, and effective disaster response.

Recommendations: Increase funding for public safety infrastructure, including police and emergency response training and resources. Implement community policing programs to build trust and cooperation, and enhance disaster preparedness initiatives through regular community drills and updated emergency plans.

Education and Community

Key Findings: Schools are under-resourced, with inadequate facilities, teacher shortages, and a curriculum that does not fully reflect Guam's cultural identity. Educational access and quality are critical for long-term community empowerment and workforce readiness.

Recommendations: Increase funding for school improvements, expand teacher recruitment efforts, and integrate more CHamoru culture and history into the curriculum. Community programs that foster after-school engagement, vocational training, and life skills can further strengthen educational outcomes.

Culture and Traditions

Key Findings: Guam's cultural heritage is at risk due to modernization, external influences, and loss of traditional practices. Preserving CHamoru language, customs, and sites of cultural importance is essential for maintaining a unique identity.

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Recommendations: Fund cultural preservation projects, support CHamoru language programs in schools and public spaces, and engage the community in cultural events. Establishing cultural centers and incorporating CHamoru traditions into tourism can create a sustainable framework for cultural preservation.

Public Health

Key Findings: Healthcare access is constrained by staffing shortages, limited facilities, and high costs. Guam's public health system is particularly challenged by chronic diseases, limited specialty services, and barriers to mental health care.

Recommendations: Expand healthcare infrastructure by building new facilities, recruiting and retaining healthcare professionals, and improving mental health services. Increasing public health education on preventive care, providing access to affordable healthcare options, and investing in telehealth capabilities can improve healthcare accessibility and quality across the island.

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Economic:

How important is tourism to Guam's future?

The responses overwhelmingly indicate that tourism is considered very important or extremely important to Guam's future. Many respondents highlight the economic benefits, including job creation, revenue generation, and overall economic stability. However, some also emphasize the need for diversification and the vulnerabilities associated with relying too heavily on tourism, such as exposure to natural disasters, pandemics, and geopolitical tensions. A few responses suggest a shift towards sustainable tourism practices to balance economic growth with environmental and cultural preservation. Overall, while the critical role of tourism is acknowledged, there is a call for a more balanced and resilient economic strategy for Guam.

What are ways to revitalize Guam's tourism industry?

To revitalize Guam's tourism industry, the responses emphasize several core areas of improvement. A primary focus is on enhancing cultural and historical experiences by showcasing Chamorro traditions and offering more immersive learning opportunities tied to Guam's heritage. Many suggest shifting towards eco-tourism, concentrating on Guam's natural beauty, including coral reef restoration and sustainable tourism practices. Additionally, upgrading infrastructure, such as maintaining roads, improving sidewalks and lighting, and keeping the island clean and safe, is widely advocated to improve the visitor experience.

Other strategies include promoting local businesses and products by bringing tourism to village levels, enabling tourists to experience Guam's local culture directly through food, crafts, and accommodations. The need for more diverse attractions, such as sports tourism, family-friendly theme parks, and cultural events, is also emphasized to appeal to a wider audience, including wealthier tourists. Furthermore, tackling issues like litter, vandalism, and safety concerns is deemed essential to improve Guam's image as a clean and secure destination. Collaborative efforts with nearby destinations like the CNMI to create a more dynamic regional tourism experience and the use of technology and AI for marketing are also recommended. In sum, the responses advocate for a multifaceted approach to make Guam a sustainable, attractive, and culturally rich tourism destination.

Does Guam's economy need more diversity and opportunities for fulfilling employment?

The responses indicate a strong consensus that Guam's economy needs more diversity and opportunities for fulfilling employment. Many suggest reducing reliance on tourism and the U.S. military by expanding into other sectors like agriculture, technology, renewable energy, and education, which could provide a more stable and sustainable economic base. Developing a local workforce to fill roles in established industries, which currently depend heavily on foreign labor due to wage and skill barriers, is another key focus. The promotion of a circular

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economy, particularly through local industries like additive manufacturing, is highlighted as a sustainable approach to economic growth.

Support for small businesses is also emphasized, with suggestions for utilizing Guam's unique culture, food, and natural beauty to attract tourism that benefits local entrepreneurs. Respondents see a need for job training and career development opportunities, allowing locals to grow within industries rather than being limited to entry-level roles. Additionally, there's a call for incentives to encourage talented locals who have moved away to return and contribute to the island's economy. Government support through platforms like unemployment agencies could further aid in organizing and employing locals, ultimately fostering a more diverse and fulfilling economic landscape for Guam.

Is Guam too reliant on off-Island forces?

The majority of respondents believe that Guam is indeed too reliant on off-Island forces, reflecting concerns about over-dependence on federal support and the military buildup. A smaller group disagrees, suggesting that reliance is not problematic or focusing on the benefits. Although some responses suggest that reliance on off-island forces is inevitable, most agree that steps should be taken to promote local industries, and cultivate local opportunities to reduce Guam's economic vulnerability and preserve its cultural identity.

Should Guam look for ways to increase economic opportunities that are not dependent on imports or other external factors?

The responses reflect a strong consensus that Guam should actively seek ways to develop economic opportunities that are not reliant on imports or external factors. Key suggestions include fostering a circular economy that supports self-sufficiency through local farming, manufacturing, and sustainable industries like aquaculture and agriculture. Many believe that developing these local industries could help mitigate the impact of external disruptions and create a more resilient economy.

There is an emphasis on diversifying Guam's economic base by building infrastructure for sectors such as technology, innovation, and local manufacturing, along with expanding small businesses. Some responses point to past successes in copra oil and pineapple production as examples of self-sustaining industries. Despite enthusiasm for self-reliant opportunities, there are concerns about challenges such as limited resources, political barriers, and the impact of the Jones Act on import/export costs. Overall, the responses advocate for exploring these alternatives as essential for long-term stability and economic independence for Guam.

How important is the Military and corresponding federal services to Guam?

The responses indicate a general consensus that the military and federal services are highly important to Guam, especially for the economic support, job creation, and regional security

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they provide. Many respondents view these services as vital to Guam's stability, describing them as essential for sustaining the island's economy and preventing issues like homelessness. However, there are significant concerns about Guam's heavy reliance on the military, which has led to high living costs and limited sustainability.

Some responses suggest that the military presence should be viewed as a resource rather than a dependency, with calls for Guam to reduce its reliance and move towards economic self-sufficiency. Others point to the negative impact of military activity on natural resources and local culture, highlighting a need for Guam to assert greater control over its own future. Although the military is seen as beneficial, there are calls for a balanced approach that allows Guam to develop independently while still benefiting from federal support.

Would you like to share any topics from your group discussion?

The responses from the group discussion suggest several areas of focus for Guam's economic and cultural growth. Key suggestions include improving infrastructure to support economic sustainability, expanding agricultural initiatives using government land for local production, and enhancing green infrastructure, such as bike paths and recreational spaces. There is a call for better exposure of local products, advocating for streamlined small business licensing and the sale of genuinely local products instead of imported items repackaged in Guam.

To enrich tourists' experiences, some propose offering homestay options where visitors can immerse themselves in local culture. Additionally, there is a comment on the limitations of simple yes/no questions in generating constructive feedback. A few participants noted that land is a scarce resource, hinting at the importance of careful planning in land use.

Infrastructure – Power and Water

Should permits be issued to non sewered development over the Northern Guam Aquifer?

The responses to the question of whether permits should be issued for non-sewered developments over the Northern Guam Aquifer reveal a split between proponents and opponents, with strong environmental concerns highlighted across the board. A significant number of responses oppose non-sewered development outright, citing the need to protect the aquifer, which is a critical resource for the community's water supply. Those against the permits emphasize the importance of ensuring that development does not compromise water quality, referencing existing issues with nitrates and contaminants already affecting the aquifer. Some respondents argue that the government should take responsibility by providing sewer infrastructure to alleviate costs for homeowners, particularly for older properties that may struggle with compliance due to high expenses.

On the other hand, some respondents support issuing permits with strict conditions, advocating for innovative and flexible waste disposal systems that do not threaten the

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aquifer's safety. Suggestions include implementing structured variances, capping the number of permits, requiring specific environmental standards, and imposing restrictions to limit the environmental impact. There is also a recognition of the financial strain that sewer connections impose on residents, with several responses suggesting alternative options or assistance for those unable to afford the costs. Overall, while there is a clear consensus on the importance of protecting the aquifer, opinions differ on whether development should be allowed under controlled circumstances or prohibited entirely.

If pollution levels exceed safe levels over the aquifer, what measures can be taken for those homes and businesses that are the cause of the contamination?

The responses indicate various measures to address contamination over the aquifer by holding polluting homes and businesses accountable. Key suggestions include imposing fines and penalties on violators, with some recommending escalating actions such as eviction for non-compliance. Regular inspections and enforcement are emphasized to ensure compliance, alongside requirements for sewer connections and better filtration systems in contaminated areas.

Some responses suggest preventative measures for new developments, including liability insurance to cover future damages and responsible land management practices like planting native trees to protect the aquifer. Education and public outreach are seen as essential to raise awareness on pollution issues and the importance of aquifer protection. Others propose government-supported solutions for community-wide contamination and assistance programs to help homes and businesses transition to less polluting practices. There are also calls for creative approaches, such as deploying hair mats for pollution mitigation and addressing larger issues like island-wide waste management.

How can we address illegal dumping?

The responses suggest a comprehensive approach to addressing illegal dumping in Guam. A primary recommendation is providing free or affordable trash collection services for residents to eliminate cost barriers, alongside making large waste disposal free or integrated into product prices at purchase to deter illegal disposal. Establishing easily accessible dump sites in each village and increasing the number of transfer and recycling stations were frequently mentioned as ways to encourage proper waste management.

Many suggest increasing fines and enforcing penalties for illegal dumping, with some calling for jail time as a deterrent. Public awareness and education campaigns are emphasized, especially targeting schools and community members to instill pride and responsibility for the island's cleanliness. The use of surveillance cameras in common dumping areas and incentive programs for reporting violators were also proposed.

Involving local leaders, such as mayors, in oversight and promoting community clean-ups could foster a collective effort to keep the environment clean. Programs to promote zero-waste products and traditional sustainable practices are suggested to reduce overall waste, while initiatives like curbside pickup and regular hazardous waste collections are seen as essential for long-term waste management solutions.

How can we make recycling easier?

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The responses suggest several strategies to make recycling easier and more accessible in Guam. Education and awareness are frequently emphasized, with ideas like community workshops, school programs, and clear labeling on bins to help residents understand what can be recycled. Many recommend increasing the number of recycling centers and making them more accessible, especially by placing bins in neighborhoods, schools, and public areas.

Incentives are seen as crucial, with suggestions for buy-back programs, deposit systems, and cash rewards for recyclers. Some respondents propose adopting a mandatory recycling policy similar to those in other countries. Other ideas include simplifying sorting rules for recyclables, adding recycling fees at the point of sale for certain products, and developing programs to reuse or repurpose materials locally.

There's also a call for legislation and mandatory participation from both residents and businesses, as well as more frequent pickups of recyclables. Many see a need to foster a cultural shift toward valuing recycling, potentially by showcasing the environmental benefits and encouraging sustainable products like biodegradable materials. Overall, respondents favor a multi-faceted approach combining education, accessibility, incentives, and consistent enforcement to improve Guam's recycling efforts.

What are the barriers to recycling?

The responses identify several significant barriers to recycling in Guam, primarily centered around lack of awareness, accessibility, and infrastructure. Many respondents point out that people don't know what can be recycled, where to recycle, or how to do it properly. There is also a shortage of recycling facilities and bins, with limited collection points and inconvenient hours, making it difficult for people to recycle regularly. Furthermore, inconsistent recycling programs that start and then stop discourage public participation. Public apathy, laziness, and a lack of incentives add to the challenges, as many people do not see the immediate benefits of recycling or are simply not motivated without rewards.

Other barriers include costs associated with recycling, such as fees for waste collection or transportation, and a limited recycling industry on the island. There are also structural issues, like insufficient funding, lack of enforcement, and inadequate support for recycling initiatives. Some respondents express doubt about whether their recycling efforts make a difference, suggesting a lack of faith in the system's effectiveness. Overall, addressing these barriers would require a multifaceted approach, combining education, increased accessibility, financial incentives, and consistent enforcement to make recycling easier, more reliable, and more beneficial for Guam's residents.

Would you like to share any topics from your group discussion?

The responses indicate a few topics from the group discussion, though many participants did not have additional input. Key themes include concerns about Guam's environmental hazards and the importance of protecting natural resources like the northern water lens. There's a call to reduce dependency on external energy sources, highlighting the need for a balanced, realistic approach toward renewable energy solutions.

Some participants also expressed the importance of promoting affordable telecommunications and reducing latency in homes. Overall, these responses reflect a

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cautious but optimistic approach, recognizing that there is no single solution and that multiple strategies may be needed to address these challenges.

Infrastructure – Telecomm and Transportation

Where are the congested roads that act as a barrier to get services, get to work, and get to commerce areas?

The responses indicate several congested roads and intersections in Guam that create barriers to accessing services, work, and commerce. Key problem areas include the Tri-Intersections (such as those at Dededo, Tamuning, Kmart/JFK, Maite, and the ITC in Hagatna), Route 1, Route 16, and Route 8, which are frequently mentioned as congestion hotspots, particularly during rush hours. Other noted areas include Marine Drive, which is heavily impacted by streetlights and traffic from schools, and roads in the Tumon/Tamuning area.

Additionally, areas like Chalan Pago, Mangilao, Barrigada intersections, and East Hagatna to MTM are highlighted for their congestion issues. A few responses suggest infrastructure improvements, such as increasing lane capacity and enhancing road markings and lighting, which could help alleviate traffic during peak times. Overall, the feedback suggests that Guam's congestion is concentrated in central and northern regions, particularly around major intersections and key routes that connect residential and commercial areas.

Is building and maintaining more roads the only option to address Guam's traffic issues or are there alternative transportation solutions?

The responses suggest a variety of alternative transportation solutions for Guam, with a strong emphasis on improving public transportation rather than building more roads. Many propose establishing a reliable bus or shuttle system, with an expanded network of bus stops, larger buses, and incentives to encourage public use. Some ideas include a monorail system, park-and-ride facilities, carpool incentives, and safe bike lanes to reduce road congestion and greenhouse gas emissions. Several respondents suggest implementing electric vehicle (EV) charging stations or an EV-sharing program with drop-off and pick-up stations.

Infrastructure improvements are also highlighted, such as fixing traffic lights, enhancing road signs, and ensuring proper stormwater systems and crosswalks. Others advocate for walkable and bikeable communities and better lighting on major roads to make alternative modes of transport safer. Though there is an acknowledgment of Guam drivers' preference for personal vehicles, the feedback suggests a clear preference for a multi-modal transportation approach with reliable public transit, better cycling infrastructure, and incentives for carpooling as a sustainable solution to Guam's traffic issues.

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What types of transportation systems do we need?

The responses emphasize the need for a reliable and comprehensive public transportation system in Guam, with suggestions for different types of mass transit to reduce dependency on personal vehicles. A monorail system is frequently mentioned, envisioned as a means to connect key areas from north to south for both residents and tourists. Many propose enhanced bus services with frequent pick-ups, expanded routes, and more bus stations throughout the island to increase accessibility. There is also support for electric and alternative fuel vehicles to minimize pollution, with a call to increase resources to support their use.

Additional ideas include bike lanes, sidewalks, and shuttle services for specific areas such as Tamuning, Tumon, and Dededo, along with options like scooter rentals for short trips. Some respondents suggest special lanes and improved services for schools and elderly residents, while others highlight the need for well-maintained roads and better traffic light timing to support any new transit system. Alternative travel options such as ride-sharing services like Uber or Lyft are also mentioned to complement public transit, especially for areas that may not be easily accessible by bus. Overall, the feedback reflects a preference for a diversified, sustainable, and accessible transportation network that supports all segments of the population.

What can be done locally to lower the cost of goods and services?

The responses indicate several strategies to lower the cost of goods and services in Guam, with a primary focus on increasing local production and reducing reliance on imports. Many suggest promoting local farming and manufacturing to produce consumable goods domestically, which could reduce transportation costs and dependency on external suppliers. Several responses advocate for tax incentives for farmers and local businesses to make locally produced goods more affordable. The concept of "farm to table" is also popular, with encouragement for residents to grow their own food to lower overall expenses.

Another prominent theme is the reform or exemption from the Jones Act, which respondents feel increases shipping costs significantly. Additional suggestions include lowering tariffs, fostering green growth programs for food security, and supporting local businesses with reduced permit costs. Some respondents also propose tax incentives for sustainable practices like solar energy and local fuel conservation to help reduce the cost of living. There is a strong emphasis on "buy local" campaigns, fostering competition among businesses, and using tax policies to shift reliance from external goods to local alternatives.

What are the top three infrastructure problems or priorities you see?

The responses identify power, water, and roads as the top three infrastructure priorities in Guam. Frequent mentions of power issues highlight concerns about high costs, reliability problems, and a need for resilient, renewable energy systems. Water infrastructure is also a major concern, with comments about aging pipes, leaks, and inadequate wastewater systems. The need for improved stormwater and drainage systems is underscored, particularly in areas prone to flooding such as Tumon and Pago Bay.

Public transportation and road maintenance emerge as additional priorities, with calls for better bus services, walkable sidewalks, bike lanes, and general road improvements to

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address potholes and congestion. Several responses also emphasize the importance of telecommunications resilience, suggesting underground installations for internet and phone lines to withstand natural disasters. Overall, these responses suggest a need for a robust, multi-faceted approach to infrastructure that includes sustainable power and water systems, reliable transportation options, and comprehensive road maintenance.

Would you like to share any topics from your group discussion?

The few responses mentioned public transportation and for the government to use surplus funds for infrastructure.

Land Use

Please explain what land use conflicts or challenges do you see on Guam?

The primary land use challenges on Guam include zoning and regulatory conflicts, which are the most frequently mentioned issues. Streamlining and updating zoning regulations can mitigate these conflicts, making land use more efficient. Abandoned properties and infrastructure issues also pose significant challenges, requiring attention to improve the landscape and usability of land. Environmental and conservation concerns highlight the need to balance development with the protection of natural resources. High real estate and construction costs create economic barriers, making land ownership and development difficult. Military land use creates additional conflicts that need careful management to ensure optimal use for the community. Finally, clarifying land ownership and improving management practices can reduce disputes, leading to more effective land use.

Where and what are good community designs in your village?

The responses highlight that parks and open spaces, along with community centers and facilities, are seen as key components of good community design in Guam's villages. These spaces offer recreational opportunities and serve as gathering points for various activities, enhancing residents' quality of life. Access to amenities such as grocery stores, schools, and healthcare facilities is also crucial for making daily life convenient and promoting a sense of community. However, many respondents point out a significant lack of community design in their areas, suggesting a need for improved planning and development. Mixed-use developments that combine residential, commercial, and recreational spaces are valued for their balanced approach to community life. Additionally, good infrastructure and connectivity, including jogging paths and underground utilities, are essential for creating accessible and cohesive communities. Military bases are noted for their well-maintained facilities, providing examples of effective community design.

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What ideas and/or projects can engage the senses and connect people to places that can realistically work on Guam?

The responses provide various ideas to enhance community engagement and create sensory connections with Guam's public spaces. There is a strong emphasis on creating green spaces, parks, and recreational areas that encourage walking, biking, jogging, and other outdoor activities. Suggestions include dedicated walking routes, bike paths away from highways, safe pedestrian walkways, and covered bridges to protect walkers. Many responses advocate for planting indigenous and ornamental trees and requiring private developments to incorporate greenery in their designs, which would improve aesthetics, reduce runoff, and create natural attractions.

Additional ideas include establishing cultural and art centers, community parks with educational boards on local culture and environment, and village clean-up initiatives. Some responses propose fruit tree plantations on hills to both prevent erosion and attract tourists during blooming seasons. A focus on accessible, safe parks with sanitary facilities and areas free from unwanted gatherings is also highlighted, along with maintaining facilities and planting to break up concrete spaces with greenery. Other suggestions include virtual teleworking options and ensuring basic service infrastructure in community spaces. These responses indicate a desire for vibrant, accessible, and well-maintained public areas that enhance the natural beauty of Guam while promoting community and cultural engagement.

What are the barriers to affordable homes and safe communities on Guam?

The barriers to affordable housing and safe communities on Guam are multifaceted, with rising costs in housing, construction, and basic living making homeownership increasingly challenging for local residents. The influence of military housing stipends and allowances has driven up real estate prices, effectively pricing locals out of their communities and favoring a market that caters to military and off-island investors rather than local families. High costs for materials, labor shortages, and logistical issues related to shipping, aggravated by the Jones Act, further increase the expenses associated with building homes. These factors, coupled with inflation and high-interest rates, make it difficult for locals to secure affordable housing options that align with their income levels.

Additionally, real estate dynamics on Guam are influenced by private developers and international investors who often prioritize high-income properties for profit, leaving few affordable options for locals. The influx of investors who purchase and flip properties further inflates housing prices, while strict building codes and the requirement for typhoon-resistant homes add to construction expenses. Social issues such as crime, lack of neighborhood watch programs, and insufficient infrastructure, including street lighting and community facilities, also detract from the safety and affordability of Guam’s communities. Addressing these barriers may require policy changes to control property prices, revisiting development priorities, and implementing incentives to promote affordable housing projects tailored to local needs.

Where are the blighted areas in your village, why are they like that, and what needs to be done to make that area better?

The responses highlight various blighted areas across villages in Guam, with abandoned cars, illegal dumping sites, overgrown vegetation, and unmaintained structures as common issues.

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Specific areas such as Tiyan Mawar dump site, Hagatna's tennis court area, Jonestown and Perezville, and Route 1 in Dededo were noted for being unsightly or in disrepair, often due to a lack of maintenance, homelessness, and substance abuse problems. In addition, commercial properties and residential areas in Dededo are reported to lack enforcement standards for regular upkeep, contributing to a deteriorated appearance.

Suggested solutions include increased enforcement on dumping and zoning, fines for private property neglect, and outreach for community involvement in maintenance efforts. Residents emphasize the need for better infrastructure like street lights, sidewalks, and cleaned-up parks, along with community events to boost local pride and responsibility. There is also a call for educational outreach to address behavioral changes in maintaining property appearances and *n*funding for mayors to enforce beautification efforts.

Where are the blighted areas that impact our tourism experience?

The responses indicate that several blighted areas on Guam, particularly in Tumon, Tamuning, and Dededo, negatively impact the tourism experience. Issues include abandoned buildings, homeless encampments, and poorly maintained public spaces like beaches and parks. Specific locations such as Paseo de Susana, Anigua drive, and various beach parks are frequently cited for trash accumulation, vandalism, and lack of proper maintenance. The presence of stray animals and aggressive behavior at beach areas also detracts from the island's appeal to tourists.

To improve the tourism experience, suggestions include condemning or repurposing abandoned buildings, enforcing maintenance of operational buildings, improving roadway and restroom maintenance, and installing lighting in dim areas. Addressing trash and litter through regular clean-ups, extending sewer systems to all homes, and adding proper restroom facilities in public parks are also recommended to create a more welcoming environment for tourists and preserve Guam's natural beauty.

What redevelopment or project ideas can be undertaken to improve healthy watershed functions?

To improve watershed health, respondents highlighted the need for reforestation and tree planting in key areas, which can help reduce runoff and improve water quality. Suggestions also included limiting impermeable surfaces and encouraging permeable infrastructure, such as permeable parking lots that allow water to filter into the groundwater. Community-based efforts, like village tree planting and watershed education programs, were recommended to raise awareness and engage locals in the importance of healthy watersheds.

Additional recommendations involved expanding wastewater systems and redesigning drainage patterns to better manage stormwater and prevent flooding. Respondents also emphasized the importance of restricting damaging activities in sensitive areas, such as off-roading near watersheds, and called for regulations on development near wetlands and water sources. Implementing stormwater management infrastructure like rainwater retention ponds and bio-retention features was suggested to enhance water retention and filtration, supporting overall watershed health.

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What design/development choices need to be made to protect scenic areas of significant value?

To protect Guam's scenic areas, respondents suggested implementing strict design standards that align with the island's cultural and aesthetic values, ensuring that development is Guam-centric and Chamoru in design. There was strong opposition to allowing large, obstructive buildings in these areas, with calls to limit high-rise constructions and enforce view-shed protections. Additionally, low-impact development and green infrastructure like native tree planting were highlighted as essential to preserving natural beauty. Respondents also recommended ensuring adequate trash and recycling facilities in scenic areas and increasing maintenance efforts to keep these areas clean and welcoming.

Safety and security measures were another priority, with suggestions for CCTV cameras, better lighting, and patrols to reduce vandalism and enhance visitor experience. Some respondents proposed restrictions on hotel development near these scenic spots to maintain their natural appeal. Infrastructure improvements, like paved roads and accessible pathways, were also seen as necessary for facilitating safe and enjoyable access to these areas. Finally, respondents called for environmental considerations during development, such as mitigating vegetation removal impacts and incorporating coral reef buffers for coastal areas to reduce erosion and protect marine life.

Do you think adaptable design can support health, economy, and resiliency?

From the responses, there is a strong consensus that adaptable design can indeed support health, economy, and resiliency in Guam. Many respondents affirmatively agree, recognizing that adaptable design—such as pedestrian-friendly infrastructure and community-focused development—could potentially revitalize neighborhoods and improve the overall quality of life. Several responses mention the importance of consulting experts to assess implementation costs and ensure that these designs are both effective and maintainable.

However, a few participants express skepticism, suggesting that political challenges in Guam could hinder the adoption and success of adaptable design. Some are unsure of what adaptable design entails, and others anticipate that implementing such measures may be quite difficult due to logistical or political barriers. Overall, the majority sees the potential benefits, especially in enhancing community resilience and economic vitality, if adaptable design can overcome political and practical obstacles.

Do you think a walkable human-scaled community that is accessible is achievable in Guam?

From the responses, there is general support for the idea that a walkable, human-scaled community in Guam could be achievable, though opinions vary on its feasibility. Many respondents believe that it is possible with the right planning, such as adding sidewalks, maintaining infrastructure, and focusing on specific areas like Agana, Tumon, and Tamuning where services are already concentrated. They emphasize that a well-designed and regularly maintained system would be necessary to ensure accessibility across villages and to foster community connection.

However, some respondents point out potential challenges, including Guam's climate, cultural preferences for driving, and the need for commitment to funding—with a few

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suggesting increased taxes might be necessary to support infrastructure changes. Others propose alternatives like improving public transportation or using electric vehicles as viable ways to reduce reliance on cars without requiring full pedestrian accessibility everywhere. A few individuals suggest that walkable areas could be achieved in smaller “microareas” within larger villages, potentially making the concept more realistic in limited zones.

What “rewilding” development concepts do you think can be applied in Guam?

Based on the responses about potential rewilding development concepts for Guam, there is a mix of ideas and uncertainties. Some respondents suggest using neglected or abandoned commercial areas, such as those in Anigua, for rewilding projects, which could include turning these spaces into green corridors or areas for native plant landscaping. Others emphasize the importance of incorporating native species into the landscape, including living roofs, bio-retention areas, and rain gardens to enhance the natural ecosystem.

However, there are also concerns and reservations. Several responses indicate uncertainty about how feasible or cost-effective these projects might be. Some believe that without proper maintenance, rewilding could lead to overgrowth of invasive species, such as sakati. Additionally, ideas like restoring Talofofo Bay and focusing on public easements near water sources were mentioned as ways to blend ecological considerations into development. Overall, while there is interest in rewilding, there are significant questions about implementation and maintenance that would need to be addressed.

What “missing middle” housing do you think will be good for Guam? Why?

For addressing "missing middle" housing options in Guam, there are several suggestions and considerations. Many respondents highlight duplexes, 4-plexes, and townhouses as viable options, as they provide a balance between affordability and space, making them suitable for the middle-income population. Some also suggest small apartment complexes and multi-family housing as affordable community-centered solutions that could address the housing shortage without overwhelming density. There is an emphasis on keeping local land ownership intact, with some proposing that the CHamoru Land Trust could facilitate middle housing options for locals, helping to preserve land for indigenous and local residents.

Another recurring theme is the importance of clustered housing, live-work-play developments, and co-housing communities. These options are noted for fostering community engagement, shared facilities, and affordability while maintaining individuality in residences. Condominiums and multiuse developments are also suggested for creating spaces that feel like homes rather than temporary apartments, providing better quality housing for those who cannot afford single-family homes. Overall, respondents express concern over the high cost of housing and the need for affordable options that don’t compromise on quality or community.

Describe what an accessible “universal design” community looks like to you?

An accessible "universal design" community, according to respondents, would feature small, walkable neighborhoods connected in a way that emphasizes both independence and accessibility. These areas would have distinct characteristics but function interdependently, offering well-maintained, ecologically conscious spaces. Sidewalks, bike paths, and well-lit, inviting outdoor spaces would be available for families, with recreational areas that are clean,

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safe, and modern. Some envision gated communities or zones with GPD or park patrols to enhance safety and support a peaceful environment.

Accessibility is a core theme, with many emphasizing the need for infrastructure that serves people with disabilities on par with others, ensuring everyone has equal access to spaces. Accessible public transportation, connected villages, and convenient transit options are essential elements. Additionally, universal design principles should apply to large developments that benefit from tax incentives, mandating features that support inclusive accessibility across all residential and public spaces. The inclusion of cultural and historical elements would add a sense of identity and belonging, with walking and biking trails to support both mobility and environmental sustainability.

Would you like to share any topics from your group discussion?

More affordable housing

Environment – Marine

What are the biggest threats to Guam's natural resources underwater?

The biggest threats to Guam's underwater natural resources include climate change, pollution, and various forms of human interference. Runoff from land and irresponsible water activities contribute to contamination, while pollution from developments and commercial activities exacerbate the issue. Overfishing, erosion, and the taking of sea turtles and harassment of dolphin pods by tourist boats are additional concerns. Human activities introduce red soil, chemical waste, and trash, which, along with grass fires and runoff from cemeteries, degrade water quality. Military actions, such as live firing ranges and sonar, add to the environmental stress. Climate change manifests through warming ocean temperatures, ocean acidification, and rising sea levels, leading to coral bleaching and poor watershed health. Invasive species and sedimentation, caused by runoff, further harm the ecosystem. Development and commercial vessel traffic increase the risks of invasive species introduction and additional pollution, while marine activities that encroach upon coral reefs heighten the potential for physical harm.

Where and what are the most important ocean/nearshore areas in your village that should be protected or managed?

The most important ocean and nearshore areas in various villages across Guam that require protection and management include Agana Bay, Marine preserves, and all coastal areas in Guam, as many responses emphasize the need for the protection of all of Guam's coastlines and reefs. Specific locations like Tumon Bay, Pago Bay, Hagatna and Tumon coastlines, Cocos Lagoon Mangroves, Tagachan Beach, Turtle Cove, Ritidian, and areas along the cliffline in Mangilao near Pago Bay are highlighted. Other essential water areas include rivers and estuaries like Fonte River, as well as the watersheds such as the one in Pago Bay. The shoreline sandy beaches, mangrove and reef ecosystems, as well as areas with significant coral systems, are considered vital, with suggestions to explore coral farming for restoration. Additionally, there is concern over erosion into rivers caused by development and off-roading, with a call for government maintenance and cleaning of these natural sites.

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How can environmental permitting and mitigation requirements that work to protect natural resources in or on our waters be improved?

To improve environmental permitting and mitigation requirements that protect natural resources, there is a strong consensus on the need for enhanced enforcement, with calls for increasing penalty fees, enforcement forces, and stricter regulations. Suggestions include implementing a more rigorous review process, monitoring construction sites for erosion control, and ensuring better regulation of tourist boats to avoid disturbing wildlife like dolphins. Many recommend increased fines, caps on fishing permits, and greater funding for the protection of preserves that enhance ecological productivity and connectivity. Education and collaboration are also emphasized, particularly through educating contractors, streamlining permitting processes, and involving multiple agencies for comprehensive inspections. Some responses highlight the need for public education on the importance of these measures, mandatory green space requirements, and greater oversight on military actions in undisturbed areas. Finally, suggestions like enforcing runoff prevention, setting higher regulatory standards, and making it easier to obtain permits in a transparent way could help lessen resource impacts.

What additional government policies and programs should be considered to improve conservation of Guam's natural resources in Guam’s ocean and nearshore areas?

To improve conservation of Guam's ocean and nearshore natural resources, respondents largely agree on the need for strengthened enforcement and implementation of existing policies. Suggestions include increasing conservation officers, enforcing rules rigorously, and raising penalty fees to support conservation efforts. There's also a call for modernization of current policies, stricter regulations on fishing and development, and greater education and outreach, especially around how different aspects of the ecosystem are interconnected. Educational programs targeting young people, incentives for sustainable development, and community-involved restoration projects are seen as essential. Additionally, implementing fines for direct threats, encouraging public reporting of resource damages, and promoting sustainable fishing practices are recommended. Some respondents stress that effective conservation depends not only on the policies themselves but also on the integrity of their implementation.

Are you concerned about climate change impacts, such as sea level rise, increasing heat, changes in precipitation?

Many respondents express significant concern about the impacts of climate change, especially regarding sea level rise, increased heat, and precipitation changes. The sentiment is that these changes are particularly threatening to island nations like Guam, with many noting the potential loss of native wildlife, such as sea turtles, which rely on sandy beaches that may erode with rising sea levels. Increased temperatures are expected to drive up air conditioning use, leading to higher energy consumption and associated costs. Additionally, there is worry that continued climate change may eventually make Guam less habitable, potentially leading to emigration and a decline in tourism. Some respondents advocate for greater education on the subject and for adopting mitigation measures to address these pressing challenges.

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Would you like to share any topics from your group discussion?

Responsible tourism and development.

Environment – Terrestrial

What are the biggest threats to Guam's natural resources on land?

The biggest threats to Guam's natural resources on land include poor land use practices, improper resource management, and insufficient enforcement of existing policies. Issues with the Chamorro Land Trust and GLUC highlight a lack of understanding in protecting Guam's limited resources. Illegal dumping, overdevelopment, and the military buildup also pose significant threats. Additional threats are pollution, erosion, brush fires, invasive species, habitat loss, and human disregard for the environment. Many respondents noted the dangers of unmonitored developments that fail to follow best management practices and the introduction of invasive species through unpermitted imports of plants and soil. Climate change exacerbates these challenges, with increased flooding and overdevelopment harming Guam's ecosystem. Some highlighted the need for better community engagement, education on sustainable practices, and implementing an updated Master Plan. Concerns extend to quarrying, mineral extraction, and military and solar developments impacting limestone forests, sediment control, and contributing to chemical contamination.

Where and what are the most important fragile areas in your village (wetlands, wildlife areas, limestone forests) to conserve or restore?

The most important fragile areas in Guam's villages that need conservation or restoration include wetlands, wildlife areas, limestone forests, and other natural habitats. Key areas mentioned are the wetlands at the bottom of Pago Bay, streams, rivers, coastal beaches, and limestone forests across the island, especially those with rare trees. Specific areas of concern include Dededo's limestone forests, Finegayan, Ague Cove, Fonte Valley, and the wildlife-rich areas in Tumon and Tamuning. Additionally, watersheds, natural springs, and aquifers are vital for preservation. Unregulated backfilling is impacting wetlands, and illegal dumping in regions like the Battulo area near the GCIC golf course is degrading these natural spaces. Residents are encouraged to learn about their village's unique natural resources to foster pride and responsibility in preserving these sensitive environments.

How can environmental permitting and mitigation requirements that work to protect natural resources on land be improved?

To improve environmental permitting and mitigation requirements that protect natural resources on land, consistent and strict enforcement is necessary, even if that means occasionally saying "no" to developers. Mayors should have the authority to fine violators, and clear guidelines and timely feedback in the permitting process would help ensure compliance. Public awareness and communication about the permitting process should be strengthened. Best practices should be followed up on and monitored, with sufficient funding for responsible agencies to ensure compliance. Additional measures include stricter penalties, revising regulatory rules to address modern threats, prohibiting substandard lot sizes without proper sewer access, and enhancing enforcement efforts.

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Developers should bear responsibilities and face consequences for non-compliance, including hefty fines and withholding of project approval. Education and outreach for contractors, developers, and the public can foster understanding of environmental protection goals. Federal land protection and local access for studies should also be prioritized. A multi-agency inspection approach, with streamlined policies and adequate staffing, is suggested for effective oversight. Finally, incentives for nature-based project designs and stricter penalties for violations could further support land conservation efforts.

What additional government policies and programs should be considered to improve the conservation of Guam's natural resources on land?

To improve conservation of Guam's natural resources on land, additional policies and programs should include reviewing development applications with the same rigor as military projects, providing mayors with resources to police activities, and increasing funding for conservation officers, training, and equipment. A focus on enforcing stricter policies to protect Guam's natural resources is essential, as is consolidating existing task forces to manage multiple conservation areas efficiently.

Aggressive programs to control and eradicate invasive species are needed, along with periodic inspections by more officers. Current policies should be revisited to assess whether new ones are required, and clarification is needed on which species are under agency protection. Limiting off-road activities on mountains, identifying national preservation areas, and introducing laws against off-roading can help reduce erosion and protect sensitive ecosystems.

Developers should be required to incorporate natural resource preservation in their projects, especially in areas near natural habitats and historical sites. Outreach and educational programs in schools can raise awareness from a young age. Incentivizing the use of native plants, streamlining enforcement, and creating more parks with local plants and plant identification trails are also recommended. Establishing preserves, implementing a habitat conservation plan, and promoting partnerships for conservation are further steps to protect Guam's natural environment.

What steps can Guam take to protect our water resources adequately?

To protect Guam's water resources adequately, steps include addressing flooding issues, controlling flood runoff, and improving infrastructure and solid waste management to reduce illegal dumping. Monitoring water resources frequently for contamination is essential, as is limiting development in sensitive areas like wetlands and near beaches. Encouraging ocean water desalination as an alternative, promoting recycling, and making resources resilient against natural disasters are also key.

Guam should implement more sewer lines, establish settling ponds, and maintain vegetation to prevent erosion and runoff. Continuous inspections, better enforcement of wastewater systems, and setting strict penalties for violations are necessary for protecting water quality. Education programs for the public on hazardous waste disposal, watersheds, and sewer systems would help raise awareness.

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To reduce pollution, Guam could increase regulations, enforce penalties, and impose stricter fines on companies responsible for environmental harm. Building rainwater collection sources, prohibiting septic tanks in critical areas, and advancing eco-tourism and green technologies would further aid in protecting water resources.

Would you like to share any topics from your group discussion?

The group discussion highlighted the need for sustainable management of Guam's natural resources, emphasizing carrying capacity limits for natural and marine resources amid climate change impacts. Key solutions include promoting green infrastructure in new and redeveloped buildings, addressing housing expansion while protecting resources, and increasing public education on native species, sustainable practices, and ecological design. Specific suggestions included protecting wildlife like bats, implementing feather-friendly windows in tall buildings, and educating tourists on coral preservation. Managing resources sustainably is acknowledged as costly but essential for long-term ecological balance.

Public Safety

What do you see as the most pressing public safety concerns on Guam today, and how do they relate to sustainability?

The discussion reveals that the primary public safety concerns on Guam center around issues of crime, drug abuse, inadequate law enforcement presence, and poor infrastructure, all of which have significant impacts on the island’s sustainability. Drug addiction is highlighted as a root cause of various social issues, including theft, family breakdown, and homelessness, which create a cycle of poverty and insecurity. This cycle, in turn, undermines efforts to foster sustainable communities, as resources that could be directed toward economic and environmental initiatives are diverted to address these social problems. Participants emphasize the need for community programs focused on prevention, rehabilitation, and education to address the root causes of crime and addiction, rather than simply increasing police presence.

In addition to crime and drug abuse, the lack of infrastructure, such as sidewalks, street lighting, and safe roadways, is a significant concern. These issues make it difficult for residents to walk safely, diminishing the quality of life and discouraging sustainable, pedestrian-friendly communities. The presence of feral animals, illegal dumping, and poor maintenance of public spaces further contribute to an unsafe and unsustainable environment. Participants suggest that improving infrastructure, increasing police and community collaboration, and addressing socioeconomic disparities could create a safer, healthier, and more sustainable Guam, where community well-being and resource preservation are prioritized.

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How can the Guåhan 2050 Sustainability Plan address the challenges posed by natural disasters, such as typhoons, earthquakes, and rising sea levels, to ensure the safety and resilience of our communities?

The Guåhan 2050 Sustainability Plan should address natural disaster resilience through comprehensive infrastructure improvements, enhanced community preparedness, and sustainable development practices. Key suggestions include building durable infrastructure, such as roads and shelters, which can withstand extreme weather and rising sea levels, along with upgrading utility systems, including underground power and resilient water management. Improved community outreach, education, and regular training in disaster response are essential to ensure that residents are prepared and informed. Moreover, participants emphasize the importance of localized, detailed plans at the village level, ensuring consistent response irrespective of political shifts.

Investments in nature-based solutions, like coral reef preservation and tree planting, are recommended to enhance natural barriers against storm surges. Regular maintenance and enforcement of building codes and regulations are also vital to maintaining public safety and minimizing infrastructure damage during natural disasters. The plan should incorporate technological advances and establish clear, consistent communication channels, including better media strategies, to provide calm and organized responses during crises. Lastly, collaborating with external agencies such as FEMA, securing funding for critical infrastructure, and involving the community in resilience planning are seen as integral to fostering a safer and more sustainable island.

What would improve public safety in your community?

Improving public safety in Guam involves a combination of increased police presence, infrastructure improvements, and community engagement. Key suggestions include enhancing the visibility and number of police officers, establishing neighborhood watch programs, and adding surveillance cameras and street lighting in villages to deter crime. Participants emphasized the importance of mental health resources and police training on mental health issues to better address community needs.

To address underlying issues, respondents recommended investing in social and community programs to reduce crime drivers like drug abuse and economic hardship. They advocated for the implementation of community-centric initiatives like "Community Assisting Policing Effort" (CAPE) and promoting accountability and awareness among residents through public safety campaigns. Additionally, a stronger focus on family stability and early education was seen as essential for creating a safer community environment.

Would you like to share any topics from your group discussion?

Participants highlighted several key topics for improving public safety and community engagement in Guam. They stressed the importance of inclusivity, suggesting that criminal-prone communities should be included in community-building efforts rather than alienated, with an emphasis on education to foster positive integration. Some respondents mentioned that public safety would benefit from improved infrastructure, such as better bike lanes and mixed transportation accommodations, which would also support recreation and cultural experiences like the reintroduction of bull cart trails.

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A recurring theme was the need for reform in law enforcement and the judicial system. Swift action, due process, and appropriate consequences for repeat offenders were emphasized, along with stronger enforcement of laws and timely responses for those on bail or early release. Additionally, participants expressed a desire for more media accountability to reduce fear-based reporting and a push for a return to public civility in both physical and digital spaces.

There was also concern for the evolving sense of safety within the community, with some noting that Guam once felt safer than it currently does. They suggested more street lighting, an increase in visible police presence, and measures to address contraband and illegal goods entering Guam as ways to foster a stronger sense of security. Participants also connected public safety to family and home environment, viewing these as fundamental to a safer community.

Education and Community

Could school districts' tax-based funding work on Guam why or why not?

The general consensus from the discussion suggests that tax-based funding for school districts on Guam may not be feasible due to disparities in tax revenue generation across different communities. Many believe that relying on property taxes would lead to unequal resources, with wealthier areas benefitting more than low-income communities, potentially widening the education gap. Guam's small size and diverse income levels across districts would likely create funding inequities that do not align with the goal of equitable education for all students.

Some participants suggested that a strategic plan or feasibility study could help explore how a tax-based funding model might work. Others proposed alternative ideas, such as tax incentives for private developers to support education or a unified system that ensures supplemental budgets for lower-income areas. However, concerns about the high cost of living on Guam and the limited potential for property tax increases were common. Overall, while there were a few supportive voices, most contributors expressed doubts or recommended caution in implementing such a system on the island.

Should new schools, or improvement of existing schools, be prioritized?

The consensus from the discussion leans heavily toward prioritizing the improvement of existing schools over building new ones. Many contributors emphasized the need for maintenance and renovation, especially considering that many schools on Guam are decades old and in poor condition. Improved facilities, routine maintenance, and updated resources were seen as essential to providing a safe, effective learning environment for students. Several participants noted that repairing and enhancing current schools would be more cost-effective and beneficial than constructing new ones, especially given Guam’s limited land resources.

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There was also a suggestion for case-by-case assessments to determine whether certain schools should be rebuilt or replaced due to severe deterioration. While some support was expressed for new schools, particularly to address overcrowding or poor conditions, the overwhelming sentiment was that enhancing the existing infrastructure would better serve the educational needs and sustainability goals of the community.

Where should new schools be located?

The responses indicate a strong preference for locating new schools in areas with high population density, specifically in the northern and central parts of Guam, such as Yigo, Dededo, and Mangilao. Many suggest placing schools near existing infrastructure, main roads, and areas with high concentrations of children to ensure accessibility and cost-effectiveness. Additionally, there is a strong emphasis on renovating existing schools before building new ones, especially to prevent overuse of land and resources. Some suggest consolidating schools or creating central campuses with satellite learning centers to address population shifts and optimize resources.

What existing schools should be prioritized for improvement?

The responses emphasize that nearly all schools on Guam need improvements, especially those affected by recent typhoons and those with failing health and safety inspections. Simon Sanchez High School, George Washington High School, and Southern High School are frequently mentioned as priority schools for upgrades due to their poor condition. Many respondents suggest prioritizing repairs based on DPHSS (Department of Public Health and Social Services) inspection results and student health and safety needs. Some responses propose consolidating schools or focusing on elementary schools first, given the vulnerability of younger students. Overall, there's a strong call to assess each school's condition and allocate resources based on specific needs, with many urging that all public schools require attention.

What changes in the education system are needed to better prepare a future local workforce?

The feedback suggests that to prepare Guam's students for the local workforce, the education system needs a comprehensive revamp, particularly with an emphasis on vocational and technical training. Many respondents advocate for the integration of trade courses, hands-on skill development, and career-preparedness programs in high school curricula to equip students with practical knowledge applicable to Guam's job market. Life skills such as financial literacy, taxes, home economics, and management were also highlighted as crucial additions to the curriculum.

Additionally, there's a call for structural improvements within schools, ranging from upgrading facilities and ensuring a uniform curriculum across schools to increasing teacher support and professional development. Better pay for teachers, certification for all teaching staff, and an expansion of support roles like social workers are seen as essential for improving educational outcomes. Finally, there is a strong push to maintain local cultural identity and resilience by incorporating place-based education on Guam's history, culture, and environmental stewardship, as well as by offering Chamorro language courses to instill pride and connection to the island.

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What ideas do you have for how we can improve the teacher shortage?

To address the teacher shortage, participants suggested offering more competitive salaries, benefits, and better working conditions, emphasizing the need for teachers to feel valued and supported. Many recommended providing bonuses, loan forgiveness, and grants, especially for those who commit to teaching on Guam for extended periods. In addition, reducing bureaucratic barriers and enhancing facilities were considered essential for attracting and retaining educators, as better resources and infrastructure can improve both teacher morale and the quality of the learning environment.

Further ideas included streamlining certification processes, involving retired educators, and promoting education careers among local students through incentives and apprenticeship programs. Participants also advocated for programs like teacher internships, support for special education needs, and leadership improvements within schools to foster a more positive and supportive culture for educators. Additionally, some suggested focusing on the quality of professional development, building teacher recruitment pipelines with local universities, and exploring online teaching options to ease the immediate demand.

Would you like to share any topics from your group discussion?

The feedback highlights a few key areas of focus for improving Guam's educational system. Many respondents emphasized the need for improved administrative empowerment to uplift teacher morale, along with increased investments in teachers' pay, resources, and facilities to promote a supportive work environment. There is also a call to align the curriculum with national standards to ensure equitable access to quality education, preparing students for higher education and professional careers. Furthermore, some participants suggested exploring options like charter schools or school consolidation to address resource constraints, while others stressed the importance of providing equitable access to technology across the island, especially Wi-Fi, to support educational advancement.

Culture and traditions

Cultural Preservation: How can we ensure that the Guahan 2050 Sustainability Plan supports the preservation and promotion of Chamorro culture and traditions while embracing diversity?

The feedback reveals a strong emphasis on embedding Chamorro culture into the Guåhan 2050 Sustainability Plan through various means. Respondents suggest that cultural preservation should be legally enforced in urban development and incorporated into education at all levels. They call for community engagement, involving stakeholders, and fostering collaboration with cultural practitioners throughout the planning process. Many emphasize the need to integrate Chamorro language, traditions, and values into everyday life and public spaces, ensuring the culture is visible, respected, and actively promoted. There's also advocacy for establishing interactive cultural sites, enhancing educational programs, and providing financial support for cultural initiatives. Additionally, suggestions include balancing Chamorro cultural values with inclusivity, allowing diversity to complement and

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enrich Guam's identity. Overall, the feedback underscores a holistic approach to cultural preservation, advocating for continuity in traditional practices while adapting inclusively within modern development frameworks.

Where are the most important scenic views to preserve?

The responses emphasize the importance of preserving Guam's natural and culturally significant scenic areas, particularly coastal views, mountain landscapes, and historical sites. Key locations mentioned include Cetti Bay, Dos Amantes Point, Ritidian Wildlife Reserve, Talofofo Bay, Mount Lam Lam, Tumon Bay, and Two Lovers Point. Many respondents stressed that the preservation of these views should prevent intrusive development and protect green spaces, with an emphasis on coastal integrity, coral reefs, and native plant species. There is also a strong call to maintain places of cultural importance, such as Latte stone villages, historical caves like Marbo, and traditional CHamoru sites, which are seen as integral to Guam's identity. Overall, there is a consensus that every scenic site on Guam holds unique value, both for its natural beauty and cultural significance, and should be preserved to maintain the island's character and heritage.

Please share examples that you are aware of in which scenic views or natural areas were impacted by development?

The responses reveal widespread concern about the impact of development on Guam's natural and cultural landscapes. Commonly cited areas include Tumon Bay, Marbo Cave, Two Lovers Point, Ritidian Wildlife Refuge, and various military installations that have affected scenic views, natural habitats, and culturally significant sites. Respondents noted that developments, such as high-rise buildings, hotels, military bases, and infrastructure projects, have led to the destruction of coral reefs, ancient limestone forests, and beaches, obstructing public access and altering the natural landscape. There is also concern over inadequate regulations and enforcement, which have led to environmental degradation and the loss of culturally valuable areas. The feedback highlights a desire for stronger preservation efforts, community involvement, and more stringent regulation to protect Guam's natural and cultural heritage.

What strategies can be incorporated into the plan to revitalize the Chamorro language and promote its use in daily life and education?

The strategies for revitalizing the Chamorro language and integrating it into daily life and education emphasize a multi-faceted approach involving community engagement, policy changes, and educational reforms. Respondents suggest incorporating Chamorro into public signage, official documentation, and place names to increase visibility and normalcy in everyday settings. They advocate for the inclusion of Chamorro language courses from K-12, with more immersive and practical language programs, such as Chamorro language days and community events. Additionally, there is strong support for using digital tools like translation apps and online courses to facilitate learning. Social media, cultural workshops, and incentivizing local businesses to use Chamorro language are recommended to further community-wide engagement. There is also a push for providing educational grants and training more Chamorro language teachers to support these initiatives.

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Can you share any redevelopment ideas that can enhance or create cultural landscapes for public enjoyment.

The redevelopment ideas for enhancing and creating cultural landscapes in Guam focus on integrating Chamorro culture and preserving natural elements within development projects. Many responses emphasize maintaining green spaces, using native plants, and reducing concrete usage to create cooler, sustainable environments. Suggestions include creating venues for cultural events, establishing or restoring cultural parks and community centers, and enhancing the aesthetics of existing landmarks with Chamorro iconography. There's also an emphasis on maintaining cleanliness and developing sustainable tourism spots that respect and reflect local culture, as opposed to large-scale developments. Ideas for fostering public appreciation include cultural education programs, village-specific attractions, and well-maintained recreational areas that reflect the island's historical and cultural identity.

What and where are the visual wonders of Guam?

The visual wonders of Guam primarily include its natural landscapes, cultural landmarks, and scenic viewpoints across the island. Frequently mentioned sites are Two Lovers Point, Talofofo Bay, Cetti Bay, and Mt. Lam Lam. Other notable locations include the coral reefs, limestone forests, cliff lines, southern coastlines, and historical sites like Spanish steps, latte stone parks, and Inarajan pools. The island’s beaches, reefs, and underwater attractions, such as fringing reefs and WWII shipwrecks, also contribute to its visual appeal. Many respondents feel that the beauty is spread throughout Guam, emphasizing the scenic views along coastlines, southern villages, and conservation areas. Additionally, cultural icons like Gadao’s Cave, Umatac church, and the Plaza de España are recognized for their historical and visual significance. Overall, there’s a strong sense of pride in Guam’s natural and cultural aesthetics, with many noting its widespread beauty tempered only by concerns over cleanliness and development.

Would you like to share any topics from your group discussion?

In this group discussion, participants shared varied perspectives on enhancing Guam's cultural landscape and tourism experience. Some responses emphasized the need for cultural preservation efforts, such as promoting sites like Gef Pago at Inarajan, enhancing Sagan Kotturan, and adding safer facilities at beaches. There were calls for improved infrastructure, including urban planning, bike paths, and designated cultural architectural zones in housing plans. Many recognized Guam's people as the "natural charm" of the island, advocating for measures that elevate the island's environment to reflect the warmth and beauty of its residents. Ideas to improve tourism included cultural and preservation career alternatives, training for tour bus drivers, recognizing "Hafa Adai" akin to "Aloha," and offering Chamorro language lessons to tourism workers. A few responses raised concerns over environmental impacts, such as off-roading harming hiking trails. Some participants did not have specific topics to contribute.

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Public Health

What are the strengths and weaknesses of our current healthcare services, and how can they be improved to ensure access and quality care for all residents?

The responses highlight the strengths and weaknesses of Guam's healthcare services, with common themes emphasizing limited accessibility, lack of specialized providers, and the need for improved facilities. Strengths include a community-oriented healthcare approach, empathetic healthcare professionals, and various funding opportunities for public health programs. However, weaknesses dominate the discussion, citing issues like insufficient healthcare providers, outdated facilities, high healthcare costs, and inadequate mental health services. Suggested improvements include increasing staff wages to attract talent, expanding Medicaid, building more fully equipped hospitals, and creating more opportunities for mental health support and preventive care. Many also advocate for community education on health and wellness and recommend the expansion of local training programs to address healthcare staffing shortages.

How can healthcare be improved?

The suggestions for healthcare improvement focus on increasing accessibility, affordability, and the quality of services. Key points include expanding insurance options and making them more inclusive, enhancing local facilities and equipment, and hiring more specialized healthcare professionals. There is a strong call for preventative health measures, such as promoting healthier lifestyles, providing health education, and establishing fitness programs across communities. Another common recommendation is to fund infrastructure upgrades and maintain facilities better, ensuring clean and well-equipped environments.

Improving local healthcare capacity through training programs, higher wages for healthcare workers, and telehealth options is also emphasized. Tax-based funding is suggested to make healthcare more affordable, and the community wants to see more accessible services, particularly for low-income families. There is an overarching emphasis on reducing reliance on overseas healthcare by providing specialized care on the island, increasing community health literacy, and investing in public health initiatives focused on prevention and wellness.

What are the primary barriers to adequate healthcare on Guam?

The primary barriers to adequate healthcare on Guam include high costs, limited access to specialized services, and a shortage of healthcare providers. Many residents face challenges with expensive insurance premiums and out-of-pocket costs, while specialized medical care often requires off-island travel. Additionally, there is a lack of infrastructure and healthcare facilities, with many areas struggling to recruit and retain qualified healthcare professionals due to low wages and the remote location.

Further barriers involve transportation issues, with many residents unable to access healthcare without reliable public transit. Awareness and education on available services are also limited, leaving many residents uninformed about their healthcare options. Other concerns include the influence of insurance companies on treatment decisions, inadequate public assistance for healthcare, and a lack of integration between public and private health sectors.

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What infrastructure projects or upgrades are needed to enhance healthcare facilities and services across the island?

The necessary infrastructure projects to enhance healthcare on Guam focus on building a new, state-of-the-art hospital or significantly upgrading the Guam Memorial Hospital (GMH). Proposed upgrades include better technology, expanded facilities, specialized equipment, and additional medical responders. Other recommendations include decentralizing healthcare with more clinics in each village, specifically addressing mental health resources and facilities for at-risk populations.

Additional infrastructure improvements include better access to water, power, and internet, essential for healthcare facilities and telemedicine. Transportation improvements, such as express lanes for emergency vehicles, are also highlighted to ensure timely access to healthcare in emergencies. Further suggestions include creating wellness spaces like parks and gyms to encourage healthier lifestyles, enhancing disaster preparedness, and investing in staff training and facility maintenance.

How can Guam be more prepared for future potential pandemics/global health concerns?

To better prepare for future pandemics and global health concerns, Guam could strengthen local food production to ensure food security, encourage wellness activities, and improve public health education. Key strategies include developing a consistent pandemic response plan with defined roles, routine rehearsals, and regular updates. Collaborating across agencies and engaging with the community are essential to ensure everyone knows their roles in a health crisis. More outreach programs, vaccination campaigns, and educational efforts are recommended to increase public readiness and awareness.

Infrastructure improvements are also critical. Suggestions include building a biolab for research and testing, establishing isolation and triage facilities, and increasing testing and tracing capacities. Strengthening healthcare infrastructure by updating hospitals, expanding facilities, and training staff is essential for a more responsive healthcare system. Additionally, regular collaboration with federal agencies and monitoring international health developments can help Guam stay proactive and prepared.

Would you like to share any topics from your group discussion?

In the group discussion, several participants emphasized the importance of improving public health infrastructure and communication on Guam, including implementing push notifications for health updates, enhancing local healthcare facilities, and improving timely payments to suppliers. Some discussed the need for transportation assistance to medical appointments, especially to reduce reliance on off-island travel for procedures not available locally. There was also a call to focus on wellness activities and healthy lifestyles to address health issues proactively, involving legislative and executive efforts to improve public health systems. Additionally, collaboration among healthcare agencies (like GMH, DPHSS, and GBHWC) was recommended to enhance telehealth capabilities and community engagement. The importance of social determinants of health and individual responsibility in maintaining public health were also highlighted.

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8TH ASSEMBLY OF PLANNERS SYMPOSIUM

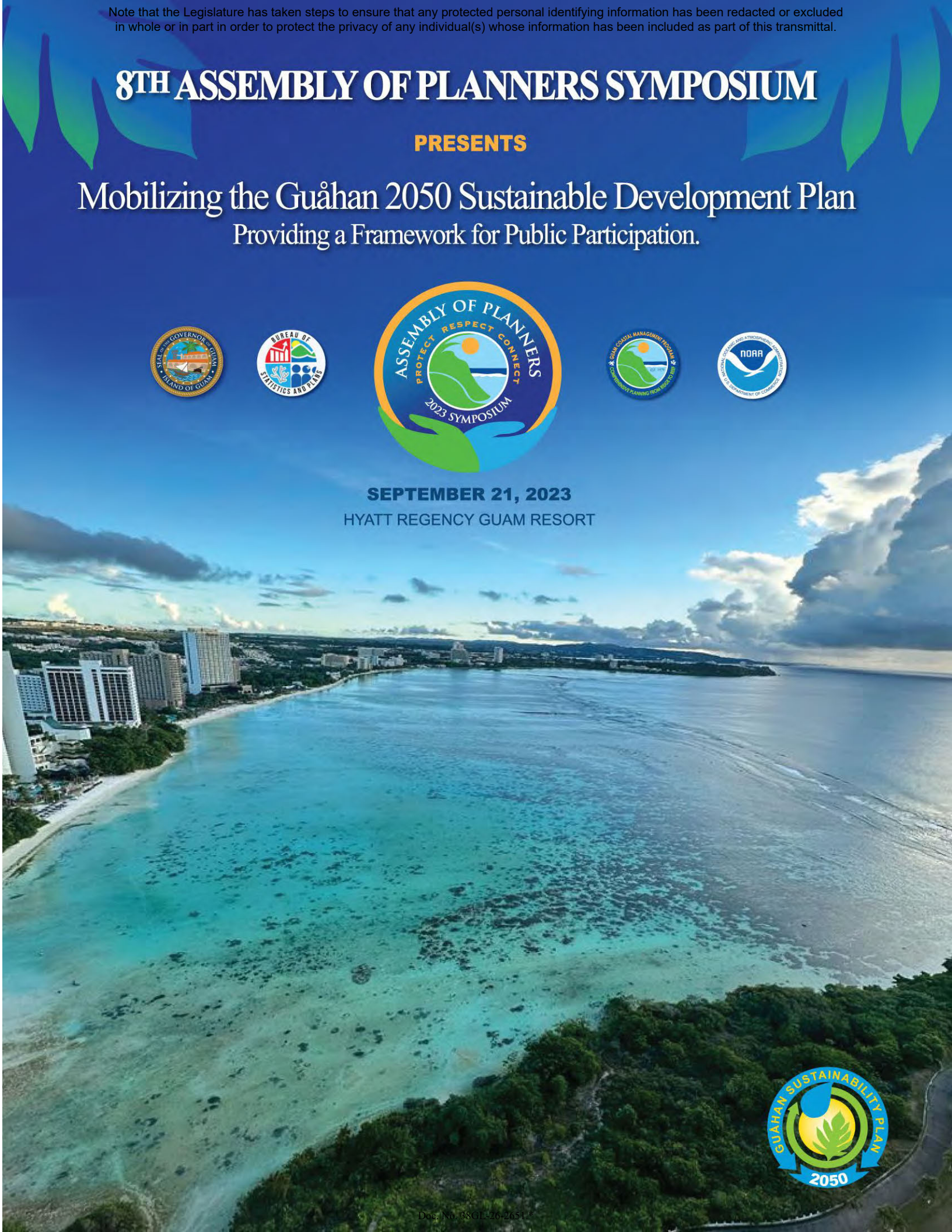
PRESENTS

Mobilizing the Guåhan 2050 Sustainable Development Plan

Providing a Framework for Public Participation.

SEPTEMBER 21, 2023

HYATT REGENCY GUAM RESORT



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A MESSAGE FROM THE GOVERNOR AND LT. GOVERNOR

Håfa Adai,



Welcome to the 8th Assembly of Planners Symposium, a significant gathering dedicated to delving into the Guahan 2050 Sustainability Plan. This symposium represents a pivotal moment for our beloved island of Guam as we unite to shape its sustainable future.

The Guåhan 2050 Sustainability Plan is not merely a blueprint; it's a testament to our shared vision and commitment to fostering a thriving, resilient, and harmonious Guam for generations to come. As planners, policymakers, and advocates for sustainable development, you hold the key to turning this vision into a reality.

This symposium provides us with a unique platform to exchange ideas, share expertise, and explore innovative strategies that will drive the successful implementation of the Guåhan 2050 Sustainability Plan. Together, we can address the complex challenges we face while seizing the incredible opportunities that lie ahead.

Throughout this symposium, you will have the opportunity to engage in thought-provoking discussions, collaborate on innovative solutions, and forge connections that will play an instrumental role in the realization of our sustainability goals. The symposium's agenda is designed to empower you with the knowledge and inspiration needed to contribute actively to our island's development.

As we embark on this transformative journey, let us remember that sustainability is not a destination but a continuous process of adaptation, innovation, and responsibility. Together, we can strike a balance between environmental preservation, economic growth, cultural enrichment, and social equity—a balance that will define Guam's legacy.

We extend our deepest gratitude to all of you for your dedication, expertise, and passion. Your commitment to Guam's well-being is a testament to our shared love for this island and its people.

Thank you for being a part of this remarkable event, and we look forward to engaging in meaningful discussions and collaborations that will shape Guam's destiny for the better.

Lourdes A. Leon Guerrero
Maga'hågan Guåhan
Governor of Guam

Joshua F. Tenorio
Sigundo Maga'låhen Guåhan
Lieutenant Governor of Guam

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Message from the Director



Håfa Adai,

It is my honor to welcome you to the 8th Annual Assembly of Planners Symposium. This year's symposium is centered around the Guåhan 2050 Sustainability Plan, a comprehensive roadmap to plan for our island's future that will embody our collective commitment to creating a sustainable and thriving Guåhan for generations to come.

Our island's unique beauty, rich culture, and vibrant communities are treasures that we hold dear. However, they face numerous challenges, from environmental and cultural concerns to economic disparities. The Guåhan 2050 Sustainability Plan will be our response to these challenges, a testament to our dedication to preserving our heritage and improving our quality of life.

The Guåhan 2050 Sustainability Plan is not just a document; it will be a shared commitment to building a resilient and sustainable island. It will prioritize environmental stewardship, economic development, cultural preservation, and social equity. It will be about harnessing our strengths and addressing our weaknesses to make our island a model of sustainability.

We must recognize that the path to 2050 will not always be smooth. There will be challenges, but we will have the determination and innovation to overcome them. Together, we can ensure that our children and grandchildren will inherit an island that is even more beautiful and prosperous than the one we cherish today.

Thank you for your dedication to our island's future as we shape a sustainable Guåhan for 2050 and beyond.

Lola Leon Guerrero
Bureau of Statistics and Plans Director

Office of the Speaker
THERESE M. TERLAJE
I Mina'trentai Siette na Liheslaturan Guåhan | 37th Guam Legislature
Committee on Health, Land, Justice and Culture



September 21, 2023

Håfa Adai,

Congratulations to the Bureau of Statistics and Plans, Guam Coastal Management Program, on the 8th Annual Assembly of Planners' Symposium.

We look forward to the Guåhan 2050 Sustainability Plan (G50SP), mandated by P.L. 35-110, which seeks to update the Comprehensive Development Plan established in 1978. The goal of the G50SP is to provide short and long-range guidance for the social, economic, infrastructure, supra structure, and physical sustainable development of Guam, and which shall contain a statement of sustainable development objectives, standards and principles with respect to the most responsible use of land and resources within Guam for residential, recreational, agricultural, commercial, industrial, and other uses completely serviced by an access and circulation network and infrastructure consistent with proper protection and accountability to enhance the quality of the environment and preserve Guam's natural beauty and historic heritage.

On behalf of the 37th Guam Legislature, we thank the Bureau of Statistics and Plans for its leadership in engaging the public, providing ideas on sustainability for every village and advancing comprehensive planning to upgrade the quality of life for all the people of Guam.

Un dångkulu na si Yu'os ma'åse' hamyu todus

Therese M. Terlaje
Therese M. Terlaje
Speaker
I Mina'trentai Siette na Liheslaturan Guåhan

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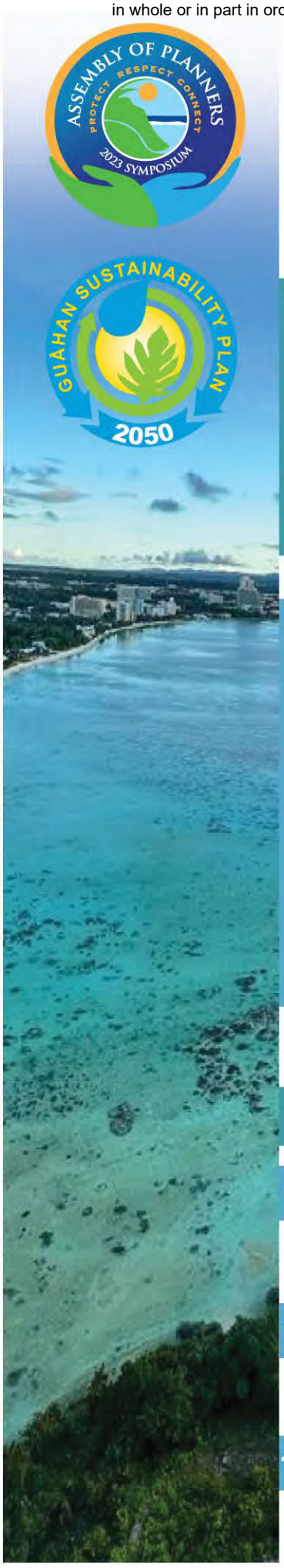

8TH ASSEMBLY OF PLANNERS SYMPOSIUM

SEPTEMBER 21, 2023

HYATT REGENCY GUAM RESORT

7:30 am – 8:30 am	**REGISTRATION**
8:30 am - 8:35 am	**INTRODUCTORY REMARKS** Edwin Reyes, GCMP Administrator
8:35 am - 8:40 am	**WELCOME REMARKS** Lola Leon Guerrero, BSP Director
8:40 am - 8:45 am	**OPENING REMARKS** Governor Lourdes A. Leon Guerrero
8:45 am - 9:00 am	**GUÅHAN 2050 SUSTAINABILITY PLAN OVERVIEW** BSP and Lynker
9:00 am – 10:00 am	**TRACK 1: SOCIETY AND CULTURE**
9:00 am - 9:15 am	**PUBLIC SAFETY** Major Andrew Quitugua, GPD
9:15 am - 9:30 am	**CULTURAL TRADITION** Michael Makio, Chairman, GPT
9:30 am - 9:45 am	**PUBLIC HEALTH** Art San Agustin, Director, DPHSS
9:45 am - 10:00 am	**EDUCATION COMMUNITY** Régine Biscoe Lee, G3 Co-chair Melanie Brennan, Director, DYA
10:00 am - 10:20 am	**CONCURRENT PARTICIPATION** 10 MIN Group Discussion 10 MIN QR Code Survey TEAM 1 PUBLIC SAFETY · TEAM 2 CULTURAL TRADITION · TEAM 3 PUBLIC HEALTH · TEAM 4 EDUCATION COMMUNITY
10:20 am - 10:40 am	**BREAK**
10:40 am - 11:00 am	**CONCURRENT PARTICIPATION** 10 MIN Group Discussion 10 MIN QR Code Survey TEAM 1 EDUCATION COMMUNITY · TEAM 2 PUBLIC SAFETY · TEAM 3 CULTURAL TRADITION · TEAM 4 PUBLIC HEALTH
11:00 am - 11:20 am	**CONCURRENT PARTICIPATION** 10 MIN Group Discussion 10 MIN QR Code Survey TEAM 1 PUBLIC HEALTH · TEAM 2 EDUCATION COMMUNITY · TEAM 3 PUBLIC SAFETY · TEAM 4 CULTURAL TRADITION
11:20 am - 11:40 am	**CONCURRENT PARTICIPATION** 10 MIN Group Discussion 10 MIN QR Code Survey TEAM 1 CULTURAL TRADITION · TEAM 2 PUBLIC HEALTH · TEAM 3 EDUCATION COMMUNITY · TEAM 4 PUBLIC SAFETY

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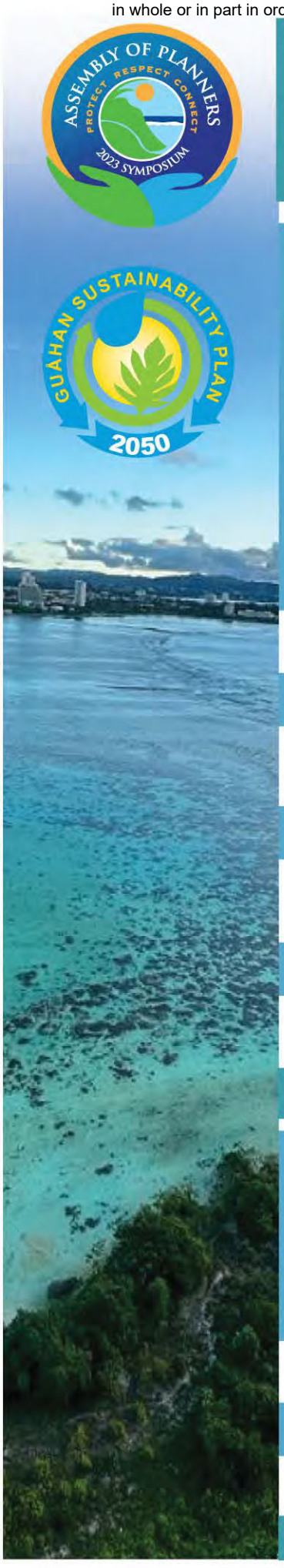

ASSEMBLY OF PLANNERS — PROTECT RESPECT CONNECT — 2023 SYMPOSIUM

GUAHAN SUSTAINABILITY PLAN 2050

11:40 am - 12:00 pm	**REMARKS** Lt. Governor Joshua F. Tenorio
12:00 pm - 12:45 pm	**LUNCH**
12:45 am - 1:00 pm	**KEY NOTE SPEAKER** Kyle Mandapat, Assistant Director of Communications Sea Grant, Center for Island Sustainabilty, Guam Green Growth - University of Guam
1:00 pm - 2:00 pm	**TRACK 2: LAND USE, ECONOMY & INFRASTRUCTURE**
1:00 pm - 1:15 pm	**LAND USE** Inna Wiese, AIA, Marianas President
1:15 pm - 1:30 pm	**INFRASTRUCTURE** Vince Arriola, DPW, Director
1:30 pm - 1:45 pm	**ECONOMY** William (Bill) Nault, JGTA, Board Member
1:45 pm - 2:00 pm	**INFRASTRUCTURE - TRANSPORTATION** Rory Respicio, PAG, General Manager
2:00 pm - 2:20 pm	**CONCURRENT PARTICIPATION** 10 MIN Group Discussion 10 MIN QR Code Survey TEAM 1 LAND USE · TEAM 2 INFRASTRUCTURE WATER/POWER · TEAM 3 ECONOMY · TEAM 4 INFRASTRUCTURE TELECOMMUNICATIONS / TRANSPORTATION
2:20 pm - 2:40 pm	**CONCURRENT PARTICIPATION** 10 MIN Group Discussion 10 MIN QR Code Survey TEAM 1 INFRASTRUCTURE TELECOMMUNICATIONS / TRANSPORTATION · TEAM 2 LAND USE · TEAM 3 INFRASTRUCTURE WATER/POWER · TEAM 4 ECONOMY
2:40 pm - 3:00 pm	**CONCURRENT PARTICIPATION** 10 MIN Group Discussion 10 MIN QR Code Survey TEAM 1 ECONOMY · TEAM 2 INFRASTRUCTURE TELECOMMUNICATIONS / TRANSPORTATION · TEAM 3 LAND USE · TEAM 4 INFRASTRUCTURE WATER/POWER
3:00 pm - 3:20 pm	**CONCURRENT PARTICIPATION** 10 MIN Group Discussion 10 MIN QR Code Survey TEAM 1 INFRASTRUCTURE WATER/POWER · TEAM 2 ECONOMY · TEAM 3 INFRASTRUCTURE TELECOMMUNICATIONS / TRANSPORTATION · TEAM 4 LAND USE
3:20 pm - 3:40 pm	**BREAK**
3:40 pm - 4:10 pm	**TRACK 3: ENVIRONMENT**
3:40 pm - 3:55 pm	**TERRESTRIAL** Else Demeulenaere, UOG HCP Jeffrey Quitugua, DAWR, Techincal Guidance Project Coordinator
3:55 pm - 4:10 pm	**MARINE** Rodney "Brent" Tibbatts, BioWest, DAWR
4:10 pm - 4:30 pm	**CONCURRENT PARTICIPATION** 10 MIN Group Discussion 10 MIN QR Code Survey TEAM 1 TERRESTRIAL · TEAM 2 TERRESTRIAL · TEAM 3 MARINE · TEAM 4 MARINE
4:30 pm - 4:50 pm	**CONCURRENT PARTICIPATION** 10 MIN Group Discussion 10 MIN QR Code Survey TEAM 1 MARINE · TEAM 2 MARINE · TEAM 3 TERRESTRIAL · TEAM 4 TERRESTRIAL
4:50 pm - 5:00 pm	**CLOSING REMARKS**

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8TH ASSEMBLY OF PLANNERS 2023 SYMPOSIUM PROFILES

Lola E. Leon Guerrero



Lola E. Leon Guerrero is the Director of the Bureau of Statistics and Plans, serving 31 years of government service. She graduated from the University of Guam with a Business of Administration Degree in Finance and Economics. Previously, she served as a Planner I with the Guam Health Planning and Development Agency and then as a Planner I at the Socio-Economic Planning Division of BSP. At BSP she further served as Acting Administrator of the Guam Coastal Management Program and later attained Chief Planner of the Bureau. In her capacity as Director, she oversees and manages multiple Federal and local grants, ensuring their continued success and outcomes for BSP and agencies across Guam. She is involved in various complex projects in social, economic, environmental, and criminal justice. Her leadership and planning role spans capital improvement, research studies, land use analyses, infrastructure improvements, federal and environmental requirements, fiscal stabilization, sustainability, government-wide strategic planning, technical assistance, and innumerable grant administrations.

Major Andrew Quitugua



Andrew Quitugua is the Bureau Chief for the Investigations Bureau of the Guam Police Department. He earned a Master of Public Administration degree from the University of Guam in May 2014 and in partial fulfillment, completed a Special Project that focused on the Migrant Population and Substance Abuse on Guam. The Investigations Bureau is responsible and accountable for, and has authority over, the Department's criminal investigation's function. The Bureau reports directly to the Chief of Police in the absence of a current Police Commander. The Investigations Bureau is responsible for the investigation of all major crimes conducted by investigators in the Bureau's various sections: The Criminal Investigations Section, Special Investigations Section, Juvenile Investigations Section, Domestic Abuse Response Team, and the Federal Task Force Section.

Michael Makio



Of Chamorro & Hawaiian decent and raised on Guam, Michael Makio grew up with the culture, tradition and understanding of social economic and educational challenges on island. He has led TRMA+'s Architecture, Planning and Sustainability programs onGuam and the CNMI for over 35 years. Since 1986, he has designed and managed highly regarded educational, healthcare, airport, masterplanning & government facilities on Guam. He synthesizes innovation, sustainability, culture and great design into his work exemplifying his goal to build architecture and community in the islands. He was architect for the Coast 360 Headquarters and Guam Community College Learning Resource Center, which both achieved LEED Gold Certification. An advocate of adaptive re-use and designs for aging, his work is helping breathe new life into the Agana Shopping Center and the GMH Critical Care & Intensive Care units.

Art San Nicolas



Arthur U. San Agustin serves as Director of the Department of Public Health and Social Services (DPHSS) since October 2019. During his more than 32 years of service in the Government of Guam, he was recognized as Manager of the Year in 2001 and Social Worker of the Year in 1990, among several accolades. Prior to taking the helm at DPHSS in the middle of the COVID-19 pandemic, he served as the department's Acting Director in 2011 and as Administrator for the department's Division of Senior Citizens. He graduated with a BS in Social Work from the University of Guam and a Master of Human Resources from the University of Oklahoma, Advanced Programs.

Régine Biscoe Lee



Régine Biscoe Lee is a small business owner, Asian/Pacific Islander community leader and a daughter of Guam. Régine served as senator in the 34th & 35th Guam Legislatures and her legislative work has strengthened Guam's workforce, supported small business, bolstered regional alliances, and protected our environment. She remains dedicated to helping people author their own opportunities, proving that nothing can widen the circle of economic freedom more than a community focused on practical skills, education, and the entrepreneurial wonder of a clean environment. She served as a Congressional Policy Advisor, Legislative Chief of Staff, as well as a consultant to local and federal government agencies, businesses, and nonprofits. Régine lives on Guam and can often be found in the ocean with her husband, two daughters and their rambunctious Labrador.

Melanie Brennan



Melanie W. Brennan has over 3 decades of combined government service; initially working for the Department of Public Health and Social Services as a Child Protective Services Social Worker and then later for the Division of Senior Citizens, in Adult Protective Services working with the elderly and disabled adults. She joined the court system in 1991 as a Probation Officer and progressively moved up the ranks serving as a Probation Officer Supervisor, Deputy Chief Probation Officer and then as the Chief Probation Officer until her retirement from court service in 2019; subsequently she was appointed by Governor Lourdes Leon Guerrero to serve as the Director of the Department of Youth Affairs (DYA) where she remains today advocating for at-risk youth.

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8TH ASSEMBLY OF PLANNERS 2023 SYMPOSIUM PROFILES



Inna Wiese



Inna Wiese is the current President of the local chapter of the American Institute of Architects, AIA Marianas. Inna is an Associate/Senior Project Manager at RIM Architects, Guam where she started her professional career after graduating with a B.S. degree in Architecture from Mapua Institute of Technology in Manila, Philippines. Inna has worked on various private, government and military sustainability projects on the island. She has been living in Guam for a total of 17 years and is an advocate for good design, sustainability, and resiliency of the built environment for the island.

Vince Arriola



Vincent "Vince" Arriola currently the Director of the Department of Public Works, brings decades of experience in the legislative and executive branches of government, as well as the private sector. Arriola was the Deputy Director of the Department of Administration, until 2018, and as Executive Director for the Guam Legislature from 2010 to 2016. Early in his career, Arriola also served as the Director for the Bureau of Planning. From 1997 to 2003, he was the General Manager for the Guam Telephone Authority, which at the time was preparing for privatization.

William Nault



William Nault, born in Okinawa, Japan, moved to Guam in 1974, is President of Nautech Guam Corporation, dba; Nautech Travel Services specializes in Guam's Travel and local land operation and handling of off-island travelers. Combined experience of over 30 years in partnering with local industry partners from hotels, Tour activities, restaurants, and other travel related services to market and promote our island. Local contribution consists of serving 6 years on the Board of Directors for the Guam Environment Protection Agency, and 2 years on Guam Visitor's Bureau, Board of Directors. While growing up, enjoyed playing local sports, baseball, and football and some soccer in adult life. Nautech Guam is currently the General Service Agent and ground handling agent for Rakuten Travel (Online Travel Agency), Rakuten Travel Experiences (an online activity booking), and Japan Sales for The Valley of the Latte (Guam's Cultural Park). Recently became the Distributor for Mueller Sports Medicine products for Guam, CNMI and Micronesia. Nautech Guam Corporation is a proud member of the Japan Guam Travel Association and the Guam Travel & Tourism Association.

Rory Respicio



Former Senator Rory J. Respicio has extensive experience in the legislative and executive branches of government. He served in the 27th through 33rd Guam Legislatures. He held various legislative leadership positions, including Majority Leader and Chairperson of the Committee on Rules, Federal, Foreign and Micronesian Affairs, Human and Natural Resources, Election Reform, and Capital District. His legislation has had a positive impact in many areas, including creating the Recycling Revolving Fund and meaningful budget reforms through the creation of laws promoting greater transparency, accountability, and realistic annual revenue projection. Respicio also authored the Guam First Commission to push forward Guam's federal/territorial initiatives, the military buildup, political status, and fostered a win-win for the people of Guam, Guam's region, and the United States of America. Respicio is currently the General Manager of the Jose D. Leon Guerrero Commercial Port of Guam. He has held this position from January 8, 2019, to the present.

Else Demeulenaere



Else Demeulenaere is the Associate Director for Natural Resources, at the University of Guam's Center for Island Sustainability and Sea Grant. Her team conducts research on forest and watershed restoration, endangered species protection and recovery. Else is committed to promoting sustainable practices and preserving Guam's irreplaceable natural and cultural heritage. Else holds a Master's in Botany (Ecology) from the University of Ghent and a PhD in Biogeography, Ethnobotany, and Policy (Interdisciplinary Studies) from the University of Alaska Fairbanks in a joint program with the University and of Guam. Through her dissertation "Rooted in Environmental Justice: Phytogeography and Ethnoecology of *Serianthes*," she investigated the interdisciplinary connections between Guam's species, ecosystems, sacred spaces, and people to advocate for policies that would benefit their conservation and cultural connections.

Jeffrey Quitugua



I was introduced to Guam's natural resources at a very young. Growing up I listened to many stories and learned the ways of how the family lived off the ocean, rivers, and land. The one phrase that is engraved in my mind, "we only take what we can eat…". A phrase passed on from generations to generation. Conservation has always been a family practice, it led me to volunteer at the Division of Aquatic and Wildlife Resources my senior year in high school to do conservation work. Seeing that the resources were quickly depleting because of habitat degradation, invasive species, and the need to stimulate our island's economy, I wanted to be involved with conservation and preservation efforts. Fast forward today, as a longtime biologist and now as the project lead for the Technical Guidance Section under the Department of Agriculture's Division of Aquatic and Wildlife Resources, it is my personal and professional goal to find the medium where development and conservation co-exist.

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GUAM
INANGOKKON
PRESERVATION
INAPAHI GUAHAN
TRUST





















Grant NA22NOS4190193



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Track 1- Public Safety

On a scale of 1 to 10, how safe is your community?
71 votes
71 participants

What do you see as the most pressing public safety concerns on Guam today, and how do they relate to sustainability?
71 responses
71 participants

How can the Guåhan 2050 Sustainability Plan address the challenges posed by natural disasters, such as typhoons, earthquakes, and rising sea levels, to ensure the safety and resilience of our communities?
72 responses
72 participants

What would improve public safety in your community?
72 responses
72 participants

Would you like to share any topics from your group discussion?
31 responses
31 participants

Track 1- Cultural Tradition

Cultural Preservation: How can we ensure that the Guahan 2050 Sustainability Plan supports the preservation and promotion of Chamorro culture and traditions while embracing diversity?
69 responses
69 participants

Where are the most important scenic views to preserve?
69 responses
69 participants

Please share examples that you are aware of in which scenic views or natural areas were impacted by development?
69 responses
69 participants

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What strategies can be incorporated into the plan to revitalize the Chamorro language and promote its use in daily life and education?
69 responses
69 participants

Can you share any redevelopment ideas that can enhance or create cultural landscapes for public enjoyment.
69 responses
69 participants

What and where are the visual wonders of Guam?
69 responses
69 participants

Would you like to share any topics from your group discussion?
33 responses
33 participants

Track 3- Education Community

Could school districts' tax-based funding work on Guam why or why not?
70 responses
70 participants

Should new schools, or improvement of existing schools, be prioritized?
70 responses
70 participants

Where should new schools be located?
70 responses
70 participants

What existing schools should be prioritized for improvement?
70 responses
70 participants

What changes in the education system are needed to better prepare a future local workforce?
70 responses
70 participants

What ideas do you have for how we can improve the teacher shortage?

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70 responses
70 participants

Would you like to share any topics from your group discussion?
35 responses
35 participants

Track 1- Public Health

What are the strengths and weaknesses of our current healthcare services, and how can they be improved to ensure access and quality care for all residents?
68 responses
68 participants

How can healthcare be improved?
68 responses
68 participants

What are the primary barriers to adequate healthcare on Guam?
68 responses
68 participants

What infrastructure projects or upgrades are needed to enhance healthcare facilities and services across the island?
68 responses
68 participants

How can Guam be more prepared for future potential pandemics/global health concerns?
68 responses
68 participants

Would you like to share any topics from your group discussion?
32 responses
32 participants

Track 2- Economy

How important is tourism to Guam's future?
38 responses
38 participants

What are ways to revitalize Guam's tourism industry?
38 responses

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38 participants

Does Guam's economy need more diversity and opportunities for fulfilling employment?
38 responses
38 participants

Is Guam too reliant on off-Island forces?
38 responses
38 participants

Should Guam look for ways to increase economic opportunities that are not dependent on imports or other external factors?
38 responses
38 participants

How important is the Military and corresponding federal services to Guam?
38 responses
38 participants

Would you like to share any topics from your group discussion?
16 responses
16 participants

Track 2- Infrastructure- Telecommunications and Transportation

Where are the congested roads that act as a barrier to get services, get to work, and get to commerce areas?
36 responses
36 participants

Is building and maintaining more roads the only option to address Guam's traffic issues or are there alternative transportation solutions?
36 responses
36 participants

What types of transportation systems do we need?
36 responses
36 participants

What can be done locally to lower the cost of goods and services?

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36 responses
36 participants

What are the top three infrastructure problems or priorities you see?
36 responses
36 participants

Would you like to share any topics from your group discussion?
10 responses
10 participants

Track 20 Infrastructure- Power/Water

Should permits be issued to non sewered development over the Northern Guam Aquifer?
47 responses
47 participants

If pollution levels exceed safe levels over the aquifer, what measures can be taken for those homes and businesses that are the cause of the contamination?
47 responses
47 participants

How can we address illegal dumping?
47 responses
47 participants

How can we make recycling easier?
47 responses
47 participants

What are the barriers to recycling?
47 responses
47 participants

Would you like to share any topics from your group discussion?
17 responses
17 participants

SS

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APPENDIX 1: Guam 2050 Sustainability Plan

Roundtable 1 Discussion Transcript

December 14, 2023

Everyone, thank you so much for taking time out to attend this agency stakeholder meeting regarding the 2050 sustainability plan. [1.4s] We'll be going in depth a little more in terms of how this what the objectives of this plan is and how this [1.3s] works into your particular agency's functions and what we hope to get out of this.

A little bit of background on this plan. This is ESP's primary goal, which is to create a non-use plan, a comprehensive non-use plan that works across all the different planning initiatives on island, both public and private, in order to collaborate on ways that we can reach this desirable future 2050. And I chose the word desirable because there's actually the notion of sustainability and once you kind of try to unpack sustainability it really becomes diverse. But I think we just think about what we would want to be in 2050 and what the desirable future will be like. I think that would orient us [1.1s] and we can then provide kind of our input on this process. and maybe connect a little bit more in terms of how your agency gets into this planning initiative.

Again, we are the Bureau of Planning [1.2s] under the governor's office, and this is [1.5s] a planning project that's required by statute. So we really appreciate all of you taking time to be with us today. Before I turn the meeting over to [1.9s] our partners, Lynker, i think it's good to do an introduction who's all here in the room uh so again my name is Edwin Reyes administrator for the Guam coast management program bureau statistics and Plans, and i'll start to my left. Hi, good morning, I'm chad ellings Good [2.7s] morning, chad ellings Assistant General Manager of engineering or gwa oh my god morning everyone chris budassi is this federal manager administration and Support. [1.1s] uh [2.0s] good morning elizabeth enos project coordinator for market research and development [1.0s] good morning michelle merfallen uh research assistant at market research and development [2.4s] good morning roseanne jones the university of Guam. I'm a consultant to this project through bsp [3.8s] good morning michelle estimos guam epa [2.8s] Good morning, everyone. Rebecca, a special director, Guam energy office. [2.9s] Good morning. Uh, [1.2s] Steven, from a coastal management program. Uh, Patty, Guam housing corporation, Jerry, deputy director, Guam, department of labor, [1.6s] management analyst 3 at Guam power authority. [1.0s] Good morning. I'm Brian Nicholas, an engineer in the strategic planning section at GPA. Good morning. Matthew DeLeon-Guerrero, consultant on this project, working with Jay at MR&T and his team. [1.4s] Hi, everyone. I'm Jay Merrill, [1.5s] and I'm one of the facilitators today. So I'll be leading us through this discussion. I'm part of the Linker team, and my left is Dr. Charles, Mr. Charles. Good morning. Charles Celestron at UC Santa Barbara, and also part of the Linker team.

[1.4s] Thank you, everyone, for everything here. Jay and Dr. Lester. [2.5s] I think that we hope that this is going to be an informal discussion that's going to yield to [2.3s] clear and concise correction for us. [1.0s] I can't express more our appreciation and enthusiastic welcome [1.2s] to all of you because what we're trying to do today is something that all of us around this table, need to be looking at is helping our community prepare for and understand where one wants to be for the next 10, 20, 30 years. Big task started by the legislature through public law 35-110. They called on BSP to put together what they're calling a Guhan 2050 sustainability plan. which at its core is a land use plan, but as part of it includes lots

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of other activities as Benjamin had mentioned that becomes unpacked when we think about constant sustainability.

[1.3s] At the core of it is the idea that this plan will [1.0s] adopt the values and [1.3s] priorities that are most important to the community as a [1.2s] whole. For that to occur, we've done a fairly extensive list of interviews among all of you and other agencies that we'll be talking to tomorrow. [1.1s] Now is our chance to do a few things that are going to be important to get us on the same page in terms of how this plan is going to be developed and how we think that you can help us make sure that we adequately represent not only the interest of your agencies, what you believe will be in the best interest of the community. [1.4s] Do you guys want to move on to the slides?

[8.9s] Next slide, please. [1.7s] The team that was awarded this project is Linker. [1.1s] Linker is an environmental engineering organization. [1.6s] In partnership with BSP, Linker has engaged several consultants uh charles is with the ocean policy center. online uh viewing in our is Vanessa, uh, from hamer organization along with. Project manager, uh, Sarah polsky We have ghd which is a international engineering firm who is assisting us with the process as well as pcrp who is a, the organization is an environmental planning group out of uh site and my organization, Market Research and Development, which is engaged in both strategic planning, but also in the development of public opinion research and understanding the values, issues that are important to the community. [1.1s] Then on top of that, we are in pursuit of the [1.4s] comprehensive [1.5s] master plan associated with the GCMP office.

We, of course, are working closely with the Department of Interior [1.3s] All of these folks have come together to create a collective expertise necessary to plan. Next slide, please. What are we going to do today? [1.4s] The first thing we want to do is share some of the preliminary findings. All of you have talked to us individually. We wanted to share some of our takeaways from that discussion and get your feedback on whether you believe that those are the most important elements or whether there should be others that need to be included. [1.0s] Then we're going to be identifying what we think are the generally agreed upon issue areas that we've all been involved in terms of identifying from your agency's perspective. We brought those together to share.

[1.0s] Then we're going to be looking at the challenges that we're facing in terms of permitting and the overall planning process that is going to have to be engaged in order to complete and then implement. The 2050 sustainability plan. [2.4s] Finally, what we want to do is do a breakout session where we can discuss identifying specific recommendations. On what can be done to improve land use planning from your perspective on the island permitting and also go over the next steps in the process. We are. Really just concluding now the first stage, first phase of the project. [2.3s] The reason that we think that this project has the opportunity to be accepted in the community is because [1.1s] we went out and asked. 2022, Dr. Charles, Esther, and I were involved in conducting a comprehensive review with the community on a number of various issues through formal [1.4s] qualitative and quantitative research.

We identified What to the community was, were, and are the key issues that they believe need to be addressed in order to increase their belief that Guam is on the right track. [1.0s] Over 60 percent of the folks that we interviewed were concerned in 2022 that Guam was going in the wrong direction, that it needed to have a course correction, and these are the people I'm describing here, made up there and constituted the bulk of the reasons why. they felt that the island was going in the wrong direction. [1.1s] In addition to that, we discovered that there's over 66 percent of the island that believe that the

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concept of a sustainability plan, one that outlines where Guam is going to go, one that can help articulate a vision for the island, is very much needed.

[1.4s] It's true that the community is [1.2s] ready and willing and able to engage and support the comprehensive development planning process. Key will be to make sure that we reflected the values and priorities that are most important to them. [1.4s] The top of the list last year, the provision of clean water, reliable power was the most concern [1.1s] that folks had. But all of them clearly have [1.1s] nearly a two-thirds majority. that view that all of these issues are important. [1.2s] The second issue has to do with basic services, which included in our discussions with public things such as the quality of education, [1.0s] the quality of health care, the quality of [1.0s] public safety, and all of the attendant services that go into that process. [1.3s] Then nearly 70 percent, some 69 percent indicated

[2.0s] that they were concerned about the economy. [1.3s] It's understandable given that during the pandemic that one of the largest industries was virtually shut down. Many people were thrown out of work. A lot of folks are concerned about the fragility of Guam's private sector. So they're concerned whether or not Guam has the ability to sustain careers for children and for their children. And there needs to be some sort of approach to determining how we can create greater stability and sustainability for the economy overall. [1.1s] And 63 are concerned about the environment. They are concerned that the [1.5s] island overall is going to be strongly impacted by climate change. They're concerned about the degradation of critical habitat, and they're also concerned about things such as runoff and the quality and care that has been given to the island's creeks.

[1.0s] Then finally, nearly as important, is a concern that cultural identity of the island is beginning to slip away. The family structure is beginning to break down. What we're facing is a crisis in terms of how the Chamorro culture and the values that it has today can be continued over the long term. [1.7s] Those are the issues that we're trying to contend with in putting together this plan. But this plan is not Linker's plan. [2.5s] This isn't about what necessarily the government alone is doing. It's about something that we can help spark and create a catalyst so that the community as a whole believes that there is a direction that they can support, something that needs to be protected, [1.1s] a set of values and a vision that is going to be sustaining over the long term.

That's what we're trying to do. Honestly, and with open heart, we want to make sure that we have fairly reflected all those in the community that have the responsibility and the right to participate in these decisions. Next slide, please. I'd like to turn it over to Charles to talk a little bit more of the specifics, bringing it down from the 50,000-foot level to what we actually actually have. Charles. Thanks, Jay. Good morning again. [1.2s] Maybe 25,000. [1.6s] So as Edwin mentioned, this project is rooted or founded in the public law. And so your legislature [1.8s] passed a law asking for this sustainability plan for 2050 to be produced. And just a brief point of way of background, I've spent 20 plus years working in land use planning in California.

and thinking about issues of integrating and planning. So that's why I'm here. [1.2s] I'm part of the Linker team, but came to know Jay and Edwin through earlier projects. So this is my third time out on Guam, and I anticipate being here at least another time, if not two more times on this project. And every time [1.0s] I visit, I learn more about the island and the people, and it's just been an amazing experience to see all the activity. [1.6s] Not the end of challenges, but the sincerity and the genuine [1.2s] embrace of wanting to deal with those challenges is really energizing. [3.0s] The legislature passed this law [1.1s] to update comprehensive planning work log. I think it's worth noting that this effort you know in our view

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is complementary to a lot of other work that's going on including the sustainability work that guam green growth is working on out of the university of guam so [1.2s] there's a lot of activity that is happening that needs to be connected and integrated [1.2s] go to the next slide please so the legislature recognizes that this is a

A complicated and complex undertaking and thinking about sustainability for 2050 involves thinking about a lot of different things, but the core of the statute lays out a desire for island sustainability that would balance economic, cultural, environmental concerns into this plan. Those bullets there are a long list, but those are all the things that the legislature called out as needing to be [1.2s] Focused on through the planning process of land use and community design. How is transportation working? What about our public lands? Conservation issues, safety, tourism, [1.2s] capital improvements. So all of these different pieces that go into what makes up a sustainable community have been identified in the public law for this project to grapple with. [2.3s] So. [3.3s] One of the things that we've come to realize and that you probably [1.1s] really appreciate better is [1.1s] even though this project is about coming up with a comprehensive plan, there's a lot of planning work that's already happening and that has happened on Guam for a long time, going back to [1.0s] well before this 1978 plan, which I was able to find in the library at UC Santa Barbara.

But [1.4s] you have a comprehensive plan from early work through the coastal zone management program. You have a north and central land-use plan that was done about 10 years ago, a little over 10 years ago. Revitalization plans, preservation trust strategic plan, transportation management plans, integrated waste and zero waste plans, the water resource master plan, the clean energy master plan. Next slide. The list goes on. Green Growth is working on an action framework We've got stormwater planning, hazard mitigation conservation planning, reef restoration, forest system plan, habitat conservation plan happening. All of these things [1.2s] are active, either having been done or underway. And so we have a lot of great work to build on, but try to pull together in some fashion, as you suggested, Evelyn, to bring it into some integrated whole for the benefit of the island

over the [1.9s] next slide. So one of the things that we've been thinking about is how can we begin to pull these different planning efforts and all of the work that the agencies [1.3s] do [1.0s] into a framework and think about how to [1.1s] integrate that through the comprehensive planning process. And so this chart is a little busy and a little difficult to read some of those, but essentially, presents the land use framework that is in place for the most part, but also serves as a way to think about how to [1.7s] build on the work that's happening and improve and make it stronger for the future. So, [1.6s] as, as was mentioned, the bureau statistics and plans has a planning mandate in the public law and serves as a ongoing coordination and collaboration function of

[1.4s] looking at the planning that's happening and making sure that planning is being realized across agencies and through the planning processes. BSP is in that box at the top and there is this relationship to Guam Green Growth that we're [1.0s] being attentive to, but it's an important thing to keep in mind as the project unfolds. But underneath BSP, we put it in those boxes, all of you. Those are all the agencies that we've been talking to so far in [1.5s] coordination with BSP [1.1s] the core agencies that are dealing with land use issues and planning issues for the island. [1.8s] And all of that work that I just mentioned. [1.5s] That's what we're thinking about trying to integrate and bring together through a more comprehensive planning process. And so underneath those boxes are are the process that you are probably familiar with, which is.

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[2.0s] Under the. guys have a comprehensive development plan, which is what we're working on. We're working across those four categories, society and culture, economy, environment, land use, and infrastructure. [1.4s] That's [1.1s] where the plan would [1.2s] reside once it's developed and embraced by the community. That's what shapes the development review process. Right now, you have a process that focuses on review, major projects through the Land Use Commission and sometimes the Hybrid Land Use Commission [1.8s] building on this application review committee process. Agencies come together and they look at projects and they [1.0s] give their input on those. Then that leads to an authorization of a development under planning rules that are in place currently. DLM obviously plays a big role in that. Then that decision-making, flows through the building permit process and then on to enforcement monitoring and all the things that come with a land use plan implementation process [1.1s] the last thing i would just point out on the slide is over to the left there's a federal consistency review which is another authority that bsp has under the federal coastal zone management act and that's important to understand just because it gives bsp and the government of guam the ability to

review and provide input and coordinate with the federal government on whatever activities might be happening, including military projects [1.4s] and other kinds of federal activities that affect WAM. So it's an opportunity to integrate, obviously, what is a major [1.7s] set of activities affecting WAM into the comprehensive planning process. [1.6s] With that framework in mind, and we'll come back to that so you don't need to memorize this right now. [1.4s] Next slide. [1.3s] These are just a couple of quick examples and you're no doubt familiar with it. This was something that happened recently. The Iger Tower project was approved by the Hybrid Land Use Commission, but this is an example of how when a development is proposed, it comes through the process, the application review process, receives agency position statements, and in this case there were a number of agencies that weighed in on things to be concerned about here, such as [1.2s] water quality and drainage and [1.2s] dealing with site runoff, landscaping, transportation.

[1.1s] All the issues that come with a major development. [1.1s] And then the land use commission hears that, in this case, the hybrid land use Commission, because it's a large project. And then that moves forward through the rest of the process. But the key mechanism is that coming together of the agency position statements through the review process prior to. DLM making a recommendation to the Land Use Commission based on those agency positions. [1.2s] Next slide is just an example of a federal consistency review that happened recently to give you an idea of what that is. This is an Army Corps of Engineers proposed shoreline protection project. [1.4s] I don't know any of the details. I know it happened. [1.1s] So this is an example of where BSP is able to weigh in on issues raised by a proposed shoreline protection project, in this case, [1.2s] posed by the federal government, the Army Corps of Engineers.

So [1.3s] I present that just as an example of the kind of things we're talking about in terms of making sure planning objectives and visions for the future are realized through decisions. [2.0s] Next slide. I think that's back to Jay for the moment. Before moving on to talking about the emergent themes, there was an observation that we had developed associated with the permitting process overall. [1.5s] The first was that there is a systematic [1.1s] and [1.4s] wholly followed process by which development concepts are reviewed. [2.0s] But the disconnect appears in two ways. The first is that because agencies have their own individual mandates, they are going to be making these reviews in pursuit of those specific mandates. [1.2s] Not all of the agencies necessarily share one vision as to what that mandate should be.

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This is frustrating for developers and it's also frustrating For the folks, because it means they run into conflicts in areas that they shouldn't. It's also the case that all of this permitting that is going on. Should be in pursuit of a general policy direction that the government wishes to take. [1.1s] And unfortunately, at the moment, it doesn't appear that there's a lot of understanding as to [1.1s] what that policy action. is or should be [1.1s] instead what occurs is that each agency allows the GLEC some other authority to come in to determine and say whether or not this is a. Appropriate project with regard to the overall direction behind it [1.0s] and do not feel they are empowered to identify whether that's appropriate. Themselves, [1.2s] so what we hope to do in this process is to create.

that overreaching activity that will go into. Periodic review with constantly. Updating what that overall policy direction will be, where we want to go. [1.1s] That's where we hope we can concentrate at least part of the discussion today. So that that framework of how these development review processes. Needs to build on and be accomplished. [1.2s] We know that there are a number of key issues that have come up. [1.2s] Probably the most important one is the fact that there is great concern over continued development over the islands with potable water being the most important element . Then there's also a lot of concern about the maintenance and improving of infrastructure, specifically sewer, water, roads, and power. [1.2s] There's also a real concern with regard to the availability of affordable housing.

Military involvement has been part of the issue. Part of the issue is simply the cost associated with affordable housing. [1.4s] But it's to the point now that we have on Guam 11 percent of migration of people from Guam to the United States. [1.0s] Although we will be receiving perhaps as many as 18,000 military personnel in the next few years. That represents a significant decline in the population overall. Portable housing, clearly, is an issue that changed from agencies as being important. The other one is that there is a real concern about detecting biodiversity and specifically for [1.4s] that kind of habitat in regard to the limestone forest with this product most frequently. Along with that was the overall ridge-to-wreath problem with erosion and degradation of the reef.

[1.2s] Then of course, climate change has now created a great deal of concern specifically with sea-level rise and the need for greater protection for both sea-level rise and typhoons, which are expected to increase. [1.4s] Allying all that is the engine to allow the government to afford it through the generation of taxes and generation of other forms of assets, and so there is a real concern about how we go about diversifying our economy, continuing to sustain sustainable growth, and the idea that sustainable development may not be exactly in the same mode as what we have enjoyed for so long. [1.5s] Then also there is a concern about security and the need to promote small-scale agriculture throughout the changing [1.0s] And then there's also the issue of equitable access to social and community services, particularly in the South for healthcare services and for education.

And then there is the promotion of the Chamorro culture in the hope of preserving the Chamorro language and also the need to manage the ancestral lands that have been provided for stewardship for the government. And then overarching everything is the concern that it's getting warmer and it's getting drier. And with that, it's going to be creating ongoing change. [1.4s] So those are the top issues that seemed to percolate from all of the interviews that we had. I'd like to throw out a question. Does anybody have any questions about what we've been talking about thus far? And did we miss anything? Did we not get what were the key fundamental themes that we need to address? [4.0s] Anybody? [1.9s] Is there a general consensus that we've reached the right set of conclusions?

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[1.4s] It's pretty comprehensive. [1.4s] All right. Let's move on to the next slide. [1.7s] We're now at the point where we wanted to begin a group discussion associated with implementing a comprehensive plan. [1.1s] So what we wanted to do is to pose [1.6s] some questions to the group. Originally we thought there'd be more, so we're going to have two, but I think what we can do to manage this. Okay. And Liz and Michelle will be writing down ideas on the flip charts. So if you guys can bring those around so they can see that. [7.6s] Does anybody have any comments or concerns about [1.2s] what we are discussing so far? Where do you start? Where do we start? [1.3s] Well, the idea was that we would start with the land use plan.

[1.3s] And the process associated with the land use plan will then allow us to [2.3s] have a foundation on all of the other outcomes that are going to be developed. So we're in the process now of going through and reviewing the northern and midsection land use plans that will be developed or under consideration. And we're also going to be examining how we can extend it so that it becomes comprehensive across the island. [1.2s] So, you know, part of the [3.6s] initiative project you know due diligence and evaluating, you know, what plans are in place, what regulations are. So, like, you know, some of the materials would be the [1.5s] septic and full elimination study if you you know the epa regulations regarding sales right so we're not trying to replace anything we're trying to make sure we cover the gaps [1.4s] um but you know, we have a lot of instances where we have these competing interests from economic development to

long-term and long-term environmental effects, maintaining that balance in a practical [2.8s] way, at least on the BSP side. [1.0s] I [2.2s] think your question is- [1.4s] Because of these conflicting or and or [2.7s] economic, environmental, they don't usually go hand in hand. [2.0s] at labor we basically know where our role is at and it's usually always in every, it's at the back end when we're, [1.1s] when we're ready to implement new industries or anything like that and we're good to go. [1.7s] Or, and it's usually employer, [1.2s] economic driven when we deal with training and services and the sort. But for the sake of the group, we're, [1.3s] I mean, I know this is where we start. That's what we're doing. I understand that. But Santa Barbara, been there maybe 40 years ago or 30 years ago.

I don't know if it's the main town, but every store, it all looks the same. And it's beautiful. It was just like, whoa, every store, individual store owner agreed for it. But no, municipal council decided this is how it's going to look. So take that with the... [2.5s] the Hagatnya Restoration, [1.0s] the plan that was [1.0s] adopted. That's beautiful. When can we get that? Then if we can get that, I think they made the Taki Island is supposed to be a port for, [1.1s] and you know, here's EPA going, wait a minute, now we're going to be damaging waters. We're going to be, so what, that's, [1.7s] you know, [1.3s] and then if you do the Hagatnya Restoration, could you do it like, center Barbara, where everything looks [1.1s] so so like well hong kong restoration is that's outside of our jurisdiction.

Right? Right. Right. So, you know, when it comes to, like, uh. Like, you know, historic restoration and like having these things, like, you know. We're more on the land use side, you know, because, you know, you've got the guam preservation trust that hasn't built a function [1.8s] so you know, I [2.0s] don't think we necessarily like, without uh Uh, recommend the investment or the type of investment, but more of the. From the land use side like elliptic guidelines or apartments i mean dr i think that's right. Um, if you go to the back to that slide with the framework and your question, where do you start? I mean, that's that's a really difficult question when you're talking about 20 2050s right now and if sustainability at the outset is defined as everything.

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Trying to figure out how to make everything work together. that's a big deal but [1.0s] we're focusing on this mechanism of the planning process and the plan itself as a way to bring those issues together so for example what you raised about community design [1.0s] in santa barbara over here [1.6s] it's you know in one level it's kind of simple uh decide what you want to a community to look like and it can be very specific we want architectural [1.6s] styles like this and that, and then you write rules in your land use plan that say new development shall do the following, [1.3s] be less than this height and incorporate traditional architectural themes and be these kinds of earth tones and whatever those things are. And in Santa Barbara's case, you're right, they said, we want things to look like this generally.

And so [1.4s] The next step is that you require that when the developer comes in and says, I'm going to build a new commercial building here. Um, what are your concerns and say, well, that's great. We need to do commercial development, but make it look like this. And then they do that and if you follow the rules, that's how you get to that end point. So that it's, you know, starting point from my standpoint, and I think for our team is to look at the plan and what is the plan. [1.5s] Vision what is the. the core objectives underlying the plan. It can go from the biggest levels of where should we do residential development and commercial development and conservation down to what should the design criteria be for development.

That's where I would start, but that doesn't mean it's easy. [1.1s] The [2.0s] conflicts or the challenges are in making the decisions about well, [1.3s] What should we do in this particular place? And that should be a community driven decision in my view. Do we want more housing in this area or do we want to protect forest? [1.5s] Real quick, so just for the purpose of the charts with indicating. Developing a policy and community design standards is something that we should capture. And then also understanding how that correlates across the values designations. [2.0s] Oh, so the policy on community design standards, policy of community design standards. Yeah, you go girl. Get the big one. Get the big one. I was going to say. Does that capture what you were putting up?

Policy on community design standards. [10.6s] and then understanding how that works across the land use designations. Sorry to interrupt, but go ahead. Yeah, I just, for those developments that are coming in, especially model works, any new development, I know Sherry kind of mentioned Houston and California, [1.3s] but it shouldn't come with basic land use planning when you're building any development. It should come with water service, sewer service, [1.2s] roads, paved roads, fire hydrants. All of those should already be a mandatory requirement of any development. As you look into this, I would like that not to just be a 10 housing development, but it should be any development, whether you're turning it into a land use, [2.7s] uh zone change from a residential to, you know, an apartment complex.

You should already have mandatory requirements for basic services, because right now we find that these developments go forward, these plans, these slots are sold, and then the burden is upon the people to provide their own basic services that they can't afford, can't afford to pay for We can't afford to have fire hydrants. In the community right now, you have a block of neighborhoods with no fire hydrants. They're continuously building. No water service, [1.2s] private sewer systems. [1.5s] The problem is multiply. How do we, as you plan going forward, to fix the things of the past, [1.6s] How do you also begin to, as new development come in, assist [1.5s] in fixing the sins of the past so that you build upon it? So that's kind of like a framework.

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I'm just talking about basics. I think they probably understand better than anybody about the. You know what I mean? It's not really like your plan subdivisions that are going to be kind of issues. [1.7s] Subdivision people trying to put it subject system. [1.7s] Session space, so we get it. It's just. [1.1s] How do we practically do that on the base level? Especially when we have so much pushback right now. And from the top thing, all this is impractical. I guess the argument too is, you know, is. Can we require these people to do this? You [1.1s] know, sewage connection is a 1000 feet away, right? So. [1.4s] I think the amount of infrastructure is kind of the sticking point when it comes to some of these developments and requiring them to do it.

I mean, if it's running in front of your house already, then that's fine. But, you know, if it's going to cost them twice the amount to build their half-acre lot of sewers, it's a little bit difficult for these people to require them to have served people. [1.5s] I know Jerry mentioned Santa Barbara, um although i am long i have worked in los angeles 32 years before i came back so um with that being said, the requirements are quite strict. If you're going to do a demand development it's not going to do a land development, you have to build paved roads and you have to provide water service if you don't sell these laws it's required that you have to build water service, sewer service,

and paved roads and fire hydrants. Those are the basic services of any new development coming in. It's a requirement. Not only that, we also have to make sure that public safety is adhered to. So [1.4s] because these developments are coming in, they're going to build and build, and we'll have a lot of money as a way to whether or not they have their businesses, whether or not they have the lots. So those things are just basic essential services that are needed. Otherwise, it's going to be up to the individual landowner. When we come up to get these pleas, Chris receives these letters all the time because they gave their property to their son. They decided to get them out. Now they have to buy new property, but there's no water connection, no sewer connection.

They can't afford to pay for water connection and sewer connection. But how do they buy the lot? so i'm just scratching my head and saying the land developments are being sold, the properties are being sold without anything. Would the recommendation be that that you can't sell something without providing it with the you know the proper connection? right So that would be the policy right now would be the policy recommendation. And it's not just here, but i think it's pretty much a requirement it's at least small little city. In the United States, I'm going to defer that to you. Yeah, we don't, you know, those are something like a gap, right? Because you could actually do a zone change from agriculture to residential without having an existing connection.

For the building, but I mean, you could, you know, that doesn't happen until four days. So, it's the recommendation of pretty close to the plan you cited. It actually will not get approved for any of the buildings, so they can't sell. But your point that we have with these types of departments should apply land use space. Correct. Because in order, so I also used to work for a developer for 10 years, but now it's there. And in order for developers who need the land use plans, they base their entire development on land use plans. They're all about maximizing profit. [1.2s] Prior to even coming to the Department of Land Use, they're already planning what is the best and highest value of that property before they develop it.

I think that's a really important point. One of the things to think about, what is a land use plan? Well, it's a set of rules that is telling the marketplace [1.5s] how to pencil something out. [1.8s] The first thing that developers do is they look at the rules and say, can I work with this? And if so, how and how can I

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maximize my return within this set of rules? So the set of rules is really important as to realizing what you want. Because [1.2s] in my 20 years of experience, what developers really don't like is uncertainty. They just say, tell me what the rules are, and then I will figure out how to do something that works for me around those rules. And so you're right.

[1.0s] It's pretty common in the California coastal zone. We have a rule that in order to be approved for development, you have to show that you have adequate water sewer roads, for example, before you get the authorization. [1.2s] If you don't have those things, then you wouldn't get an authorization and then you couldn't sell something in the marketplace that supposedly had some value for development because it wasn't approved yet. correct and it goes into even more in-depth about transportation. Like if you if the intent is to have walkable streets where you're going to be centered in regards to that, those are all requirements of policy and framework. So the developers know exactly how to plan their development to making sure that the people who are going to be buying when you build it, they will come [1.2s] um it's really kind of.

you're almost setting the you're you're kind of building the community based on the framework that you are developing when you you implement these things, gentrification often occurs too. And we don't have people that just move in like this and commute an hour and a half away because that's not affordable. I mean, your demographic kind of changes with these with these requirements as well. I think that's a practical matter that we have to be mindful of, I guess. To ensure that we, you know. Maintain some sort of balance to where we're not just pushing people out [1.1s] and come to the reality that we're going to have a lower income community that has nowhere to go. That's the point I was going to make. You have to have the balance.

[1.6s] Not every family can afford a $500,000 mortgage. And if they want to build on their land, essentially they won't be able to generate enough income housing. [1.4s] eventually. So how do you strike that balance? Sorry, so the housing side of things. um we've got folks that are pre-qualifying right now on guam for three hundred thousand four hundred thousand dollar mortgages and they're coming back to us and saying they can't find anything. They can't build anything, even if they have property from their families for that. And part of it is the infrastructure, bringing it into to the family land. um so there, you know, I agree with you. There needs to be a balance. It's become [1.4s] really almost to a crisis point [1.2s] for families. We've got folks that, between mom and dad, make over $100,000 and still can't get a mortgage.

They're coming to you at a 9% interest rate, right? Yeah. Well, actually, right now, our board has limited our interest rate to a maximum of 6%, which is less than the market right now because [2.3s] they have that authority and we're still not able to move mortgages for folks because these first-time homeowners have nowhere to go and they're qualifying for four hundred thousand dollars and still can't find something if they find it, it's a fixer-upper so i think uh you know, from the housing side of things, we do need to try to figure out a balance so that um you know we get a lot of developers now. But the developers are looking at high end. They're not looking at affordable housing developments. They're really looking at the higher end market because those are the folks that can afford the mortgages now.

[1.7s] And then obviously the issue with the contractors, with the federal projects, you know, that's the struggle too, is trying to find those folks to come out and take, [1.2s] you know, a single family project, home project. It's difficult. And the contractors that might want to be able to do that are having issues getting bonding. [1.1s] So there's a whole gamut of things that come into play, but I just, I do want to

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say, I agree with you. There needs to be a balance [1.1s] so that we can try to maintain some affordability for folks. I think that's the elephant in the room is the military buildup and the supply and demand of contractors. And there's no end in sight. you know, the missile defense system is just at the very beginning.

And so what does that mean for the contracting uh community here um you try to get them to even give you a quote and they say, well, I only do work for for military right so you know, for us to hope that people would want to hook up to the sewer lines uh that are two or three hundred feet away, good luck. You won't be able to find a contractor to do it for you just because of the way the climate and the market is right now with the contractors. If you find someone, it's going to be an arm and a leg. They're next, Michelle, I promise. [1.1s] I do have a couple of comments. One comment is to safeguard the comprehensive land use by not allowing any spot zoning.

What we see happen is that sometimes when you have these land use conditions, [1.3s] property owners will go to the legislature and bypass that whole process. and ask for a zone change from, I don't know, residential or to light industrial or even industrial because you get more money if you sell commercial property. We have to eliminate that practice. [1.2s] Two, [1.2s] what we see at Guam EPA is that these developers find this loophole in the permitting process and they don't present their [2.2s] development plan, they do it in onesie twosies, but bypasses that whole requirement of having to put in the water infrastructure, the wastewater infrastructure, the sidewalks, fire hydrants, all of that stuff. So we've actually seen that where [1.2s] this developer came in, didn't present his plan, onesie twosies, and before we know it, he's asking for [1.2s] additional infrastructure and it's like,

You've got 12 units, you've got 12, you know, this mini housing development. So we need to close that loophole in the permitting process as well. [1.4s] And then again, just [1.2s] if there's any change to the land use that we're developing, then it has to go through the process. [2.0s] That's a great point. If I could just add to that, you mentioned spot zoning, but I can also maybe the kind of overuse or unintended use of parental subdivisions, what we're seeing in these corporations coming in? Yeah, we already addressed that. We're addressing it at OANU for sure. I mean, even with the septic systems, it's handled at a regulatory level. Right, but I think there also needs to be some sort of criminalization by these realtors.

Because we probably have maybe two dozen. Homeowners who have come to us in tears saying, The realtor sold this to, you know, why didn't they know about it? And the thing is that they're held to a code of ethics. They should have known because that's our, that's our fight right now is with a realtor is saying, no, you need to change the lot size requirement over the ground groundwater protection zone. To more than 1 home for every half acre. So these realtors know it and they should be held accountable. There needs to be some sort of. [1.4s] accountability for these realtors who sell these [1.3s] poor people, not in the financial sense, but they get mortgages, they pay for plans, and then they go through months of this permanent process.

They get to us and we tell them, sorry, your lot is too small. You can't build a home with a septic tank leaching field on it because the existing law says your lot's too small. And so they're coming to us saying, well, can't you give us an exemption? And the truth is, we're not going to break our own laws or we're not willing [2.1s] to [1.6s] make those exemptions and perpetuate the wrongdoing. [1.1s] Like you said, the sins of the past, right? Where [1.1s] there have been homes on smaller lots with septic tanks. So there's always that argument, well, my neighbor is on a lot [1.2s] you know, equivalent to my lot, and

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there's a home on it and i can't explain it. I can't tell you you know i can't tell them why um you know that was allowed, but we're not going to perpetuate the wrongdoing uh moving forward so um i think that these realtors need to be held accountable.

Yeah, and it's tough i mean you guys will find out that from a lobbying perspective. Yeah, you know what i mean i think me and mitch have been on the other side of it. [1.1s] Yeah, so 1 thing that they argued is, okay, [1.2s] let's, let's increase the number of homes per acre. Right? So the existing law is 1 home per half acre. So then they said, okay, well, you know, we have these alternative [1.4s] subject tech systems installed. Can we go to 4 for 4 homes per acre? And then they somehow convince 1 of the senators to do 6 and it's like, you know. [2.0s] This alternative septic tank system brings down the nitrate levels to half, which would allow for four units per acre. But now they want to do six and it's like, well, those systems aren't capable of reducing it [1.3s] using the nitrate, but they still want to increase the population density per [2.1s] that.

So, the loophole that they're used to is parental subdivision, which was, [1.1s] you can actually subdivide property. Less than half paper, if it's a parental subdivision. Or a deceded lot. [1.4s] That's one of the issues we've identified, and I think one of your recommendations could be to try to close that loophole. I think your point, Matt, about gentrification and affordability is a really important one also. Santa Barbara might be beautiful, but it's also one of the least affordable communities in the United States. There is this tension about putting in place rules that require investment and restrict markets versus affordability. I think that's the challenge in creating a land use plan is putting in place a set of rules that also provides for the market to do things that are more affordable and

in appropriate places. I don't think it's in anyone's interest really to make things affordable. That means the water is not going to be drinkable. [1.2s] We have to figure out how to create affordable housing in places that work. [1.1s] I guess it's just basic services. If we just have policies in regards to the minimum basic services, [1.6s] I know we mentioned water and sewer and roads, but I also want to make sure we have drainage, storm waters. I mean, it's very unsafe. I think if we just kind of consider just public safety overall, [1.0s] the silent during the wet season, you drive it, it's very dangerous. Like street lighting when they're doing developments, street lighting, anything that regards to public safety and water, wastewater. [2.0s] Fire hydrants, you shouldn't be living in a cold as that.

If the fire was to occur, kind of like Maui, and we have no fire hydrants in the area, that's something that's an issue. So I think that's something that those are the basic services that any developer, and developers trust me, are the smartest ones. They're very, very smart. They'll find a way to maximize their profit. [1.3s] him and haw scratch their head, but they'll find a way to maximize their profits. And so, so, like, from our perspective, it's. Our biggest challenge really is, I don't think that the government side of things are fully in place for to enforce those things. Because, like, for example. We still don't have an ms4 program in place for our federal schedule right so we could use those as a mechanism to make sure that we don't have.

You know what i mean like points [1.0s] and you know. to make sure that we're not dumping, you know, water onto the roads or using it as floodway or or you know, stormwater management. So, I mean, there's a lot of things on our side that we need to put in place that to consider for, I guess, requiring the developers with the, you know, homeowners to, you know, bear that cost. We need a way to be able to regulate it and actually track it. [1.0s] But we're the biggest ones on stormwater if there was an agency. [2.2s] So, what we're also seeing now, unfortunately, is that there's a lot of rubber stamping [1.7s] by

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engineers, right? So, these engineers are actually not going out to the construction site to make good designs, to make sure that you're not [1.2s] flooding your neighbor, making sure that stormwater is flowing in the direction that it should.

So, oftentimes after these homes, or these properties are built. Then you have flooding issues, right? And then, you know, it comes back to us and we're like, well, doesn't handle flooding, you know, then we kick it to Department of public works and it's like, well, you know, the. Swells and the contour of the parking lot and the way that the building is built. You know, it's already it's already there, you know. and then it would take, like you said, considerable amount of money to fix those problems. Whereas if you had good design from the get-go, [1.7s] we would [1.8s] prevent that. But we've got that issue and that's something that we also need to address is that [1.5s] there's a lot of rubber stamping, allegedly. [6.9s] the problems are in terms of both permanent planning and community engagement.

[1.2s] What I'd like to do now is to go to the next slide and begin the process of identifying, all right, now that we know that we have [1.2s] these issues, [1.8s] what is it that we believe are going to be the most important things to concentrate on and the priorities that we need to have in the sustainability plan? [1.1s] next slide. [1.5s] Make it work. So we've raised this in two two big questions. [1.2s] First is, how can we achieve effective comprehensive uh an integrated framework for effective plan? What are the elements that we think are most important? How can it be achieved? And what if any changes to the current planning efforts [1.1s] so what we'd like to do is just open the floor [1.2s] and what are the

[1.1s] items that come to mind for you guys in terms of how this process could be improved. [4.1s] Maybe for context, if you go to the next slide, I think the framework's there again. We're talking about the overarching planning that's happening, all of those plans that I listed previously. How can we integrate those planning efforts more effectively through a comprehensive development planning process? [1.1s] I guess for me, that comprehensive should kind of start with the survey that you have conducted on Guam's residents' concerns. So I thought I'd talk [1.6s] about basic services, economy, environment, and cultural preservation. So that should really be the center of [1.2s] the framework that we forwarded, correct? [1.4s] And so we talked about the issues on basic services, but we all acknowledge it by nodding our heads, those are essential.

So, and the basic services is also related directly to infrastructure. So if you address the basic services and address the infrastructure. The economy, obviously you want developers to be attracted to come to Guam and develop. But as Chris mentioned, it's the balance, right? It's the balance of making sure that [1.2s] they do make money. At the same time, they do enrich the lives [1.3s] of the people of Guam [1.1s] and [1.2s] maintain the cultural heritage of the Chamorros, right? So, and then in that overall perspective, when we address the environment, we address sustainability in general, right? So, and as you look into [1.4s] planning framework on what are the key elements of sustainability, right? Recycling materials, so maybe a policy on how we recycle materials, maybe a market for recycling materials.

I know, and then I kept mentioning California, but I mean to do that. [1.3s] But they do, [1.4s] there's a large significant market for recycled materials. [1.9s] And as well as, you know, aluminum cans, paper, if you're going to be there. So, and then as well as tax credits, credits for developers saying, hey, you're going to build their infrastructure. We're going to provide you some tax checks. And only the government of Guam can do that, right? So that you can offset working towards the balance so that you can attract these high quality workers. Development that serves the people as well as enhance the market and the economy. So [1.1s] those are kind of my overall thoughts. So, let's break that down into

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the components the way in which we've been thinking about this, because if they're really 2 levels of planning that are going to be the 1st is the.

[1.4s] comprehensive review processes necessary to allow a developer to move forward. The debates are not only mandates, but many of the brought up today. Common sense issues associated with requirements that would ensure that there'd be adequate sewer runoff, water power in each of those locations. [1.6s] The other major issue is, as we were saying before, at the end of the day, those permits, and that process has to lead to an outcome that the community is looking forward to. [1.0s] That outcome needs to be developed in terms of what will it be like if we implement these things properly? What is it that we want to achieve in the community? I'd like to try and begin right now [2.1s] on how should we do that? You mentioned that the survey provides foundation for that.

[1.1s] What that does is identify what concerns them. [1.1s] What is not identified is [1.1s] how that balance concerns needs to be shaped. At the end of the day, what are the outcomes amongst those concerns that are both achievable and at the same time, the higher priority? [1.7s] Where do we think that shows up and how should that work? Jay, maybe if I can offer an activity. And I think that if we're going to be thinking about how comprehensive planning can work in the future, it may be good to kind of get like a baseline of how comprehensive planning is working now. [1.1s] So in thinking about the land use plan that we currently have in the books, if agencies can maybe reflect on that plan and how that's integrated into your decision making process.

So, for example, in our land use plan, we have areas that are indicated as very low density. [1.9s] those areas, you know, could very well be over areas with sewer. And so, you know, that to me doesn't necessarily make sense in terms of identifying an area that [1.3s] with development restrictions, but then you have adequate infrastructure. [1.3s] So maybe that could be a starting point. Yeah, how many people are hearing know about the north and central? I think for his hands [1.1s] There we go. [1.9s] So, we have a new plan of 2009. So, I don't know if that helps you guys understand that, you know. That required an AG decision to basically make it enforceable like 2 or 3 years later. Even to this day, we still have some challenges on that.

So, it's a big part of this is also strengthening the existing plans that we have in place. We're covering those gaps. So we have the zero waste, right? Solid waste management. And so we're not supposed to, we're not going to duplicate these things. We're going to help strengthen and sort it in place. So I think everybody should be aware of those things as well. [1.0s] I think one of the big issues, and you brought it up earlier, is that every agency kind of has competing interests. So, you know, you've got GITA who wants to encourage development. But then you have EPA and water verbs who are saying, wait, hold on, put the brakes on because you want to put a 20 story condominium complex on this and give this person the QC.

But [1.2s] where they're proposing isn't appropriate. But the problem, and Mitch had brought this up, is by that point, they've already purchased the property and the realtor hasn't told them, you know, I know your plan, I know it's not going to fly, but I'm not going to tell you that. So that's where we have, I think, maybe we start there with closing those holes because you can't have development if the developer, like you said, doesn't know what's required. And I think that's the frustration. And from my point, I'm looking at it from a homeowner's point of view. We've had people [1.1s] purchase property or get dated property from their parents and come to us, you know, we get them pre-approved. They have X amount of money.

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[1.3s] If they're lucky, they find a contractor, but then find out I can't build on it because [1.2s] it's over the aquifer [1.1s] and I'm not able to, because there's no sewer, I can't build and I can't afford the $30,000 to get [1.7s] the connection done. So I do think that the place to start is on the actual [1.6s] transfers and. You have to put the whole sub ones because we have this whole company component that's, you know, really kind of serves multiple functions. So, you know, title companies here are the ones that often are the ones that are supposed to disclose all the [1.8s] development i guess uh [1.4s] constraints right so whether there's you know certain development requirements or what's prohibited you know those things are supposed to be part of the, you know when you know before you close it.

[1.3s] The problem is that the man on the street doesn't pay attention. Yeah, but they do that as a service, right? But people actually here have to pay. Have that due diligence done for them. It's not part of our rules. I don't know if that's something to consider because People are paying a 3rd party essentially to make sure that they're not, you know, to. Yeah, exposure. [1.1s] Transparency. I don't know. Maybe we firm that up to require a verbal conversation because I know that a lot of folks, you know, they get the title insurance. Right? And they get the title report. The is done and the folks. the man on the street is just going to kind of trust the title company, you know, and for good or bad, the title company basically just have to a set of papers and says, here's your report and you sign it, but you're the, you know, you're just kind of a lay person doesn't understand it.

And just, you go in thinking, I'm going to get a PTR. That means my property is clear and I can build on it. Right. So you pay a lot of money for it. And so I, I don't know, maybe there needs to be some sort of change to have a verbal disclosure of issues as opposed to just here's the report, you know, and then they sign it. Because I know when I bought my house, I went in and, you know, shame on me, but I went in thinking, okay, everything's fine. I'm just going to sign it. I get to close on my house. Luckily, I had a house already on the lot, but the folks that have the lot, that's just raw land.

Won't know, [1.0s] you know, if they're going in because they're going in thinking I'm signing this because my property is clear. They don't understand that the report they're receiving could have information that prohibits them from. From building on it. [4.6s] I was just going to make an example. So we have this property owner that bought [1.0s] and 2 zoned property. in Mugilo, spent $4 million on it, wants to build a tire recycling facility on it, comes to our agency and we say, you can't build on it because there's no sewer. [2.8s] Any commercial or industrial operation by law is prohibited to install a septic tank leaching field. Above ground holding tank. [3.4s] You know, for that purpose or wastewater. So he says, I spent 4M dollars on this property and it was like, you know, sorry, but.

You know, as much as we need a tire recycling facility, [1.3s] it was. We couldn't say yes, [1.2s] either. He [2.0s] puts in the money to connect to sewer, which is. A mile away 2 miles away. [3.0s] but really that property is rendered useless at this point, at least for that, but it's zoned M2, but with no infrastructure. It's an important point to [1.9s] think about the different pieces of the process. There's the visioning, what do you want the rules to say, and then you follow them. But then there's the marketplace communicating those rules when they're in place, whatever they are. That's the problem. In California, too, we have disclosure law though. It's not necessarily in the land use plan, but a legislative consideration maybe is to [1.0s] focus on what are the disclosure laws for the real estate industry to make clear that there is that responsibility to convey what.

The situation is in that transaction. We have title companies operating too. I've spent a lot of money on title companies when I've taught property, so that's not a problem. per se but what's the problem is

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making sure that. The restrictions are and the lack of. [1.0s] Potential if that's the case are conveyed. [3.3s] So, what is the [1.4s] consensus on. The first step in solving [1.1s] these issues associated with the process itself. If you. [2.4s] Yes, my thoughts are, I think someone had already mentioned that we could have a good set of comprehensive plans for each agencies. So it's really just, as you mentioned, filling in the gaps and how it connects. So if you could look into that and how we fill that gap. [1.5s] And I think you've started already to discuss how you identify that.

One is disclosures. [1.7s] Two is really identifying these basic services overall. So if you identify those basic services, how do you implement that in the plan? So. If you communicate that to the market, these are our land use entitlement um requirements and trusting. [1.3s] Every city in mainland has these land use entitlement requirements, so that helps begins kind of setting the policy and it's not overreaching. It's just basic services um and if one or two, they go into kind of like a work in figuring out a pool. [1.0s] For example, the Guam did a phenomenal job in addressing water and sewer for Adukau. To address, we have some water wells. I think we have seven deep water wells in that area. And in the Adukau project, Guam applied for a grant, got the grant awarded.

We're working on designing and constructing it. so that we could take off the septic sewer system there and provide a public sewer system. And so working together with developers and encouraging them to partner with the GovQAM to look at areas in which to address. And as long as you commit to building these basic services, we'll work to help provide and partner not just with one developer, two, three community groups. I think invited administration right now kind of like a community. In group, uh, grant that only community group grants. So there's so many different ways of working together to get additional funding to address these basic issues and concerns so i i think those are just throwing this off. Yeah, I know. I think one thing that was.

[1.0s] gpa i don't know. You guys have spoken up about my efforts to open up the end of the structure and because say we do want to [1.4s] uh increase the you know, I guess sewage surface coverage, right? Why would you do that with underground power at the same time? You know what i mean? Like, you know, we don't that's one of the things to consolidate the planning activities to make sure that it's going to maximize the [2.4s] At least from an investment standpoint. I guess kind of looking for clarification because. [1.3s] So, we're here talking about planning and. And what needs to be changed and improved, but I mean, I guess the question is, is it broke when you have a northern? Can you give us some, I guess.

[7.2s] Can you summarize the issue, the main issues? I can give you examples with some of them. I mean, you know, when we're talking about, like, say, a well buffer, a well buffer, right? [1.4s] If you look at over there, like, a well buffer with, say, a land use plan, you'll see where there's residential. [1.0s] But you'll see the amount of new development that kind of occurs there. So, you know, having a rule, having a [2.4s] to be able to really require people to not, you know, change something to R2 with four units, you know what I mean? Like, if it isn't a negative 14, I mean, it's already, let's say you're not supposed to do that. Yeah, but there's no penalty, you know what I mean?

I guess that's just the one, and then the amount that, so they tried to do it with the three to fill, which we're having more than a quick balance. But that requires its own change, right? So, if you're. For sure, but if the correct zoning, it's really, you know, on the workaround. Some kind of scaling up smaller. That makes sense. [16.8s] Yeah, essentially, you're not trying to provide [1.5s] information regarding your question. So the question was whether or not the current planning process is broken or the current planning. I think it's not broken. I think the statute is pretty sound. In which that the law is clear that all

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planning public or private must align to the comprehensive development plan and that must be reflected in executive budget act.

So, while that authority is very strong. like they said, there's no rules to enforce that. So while bsv have rule making authority we have yet to write any rules. So that certainly has to be taken into consideration as how does the central planning authority promulgate rule and ensure that we're meeting our mandates um and so that ends, I don't think we can give you examples of how we've enforced planning because i don't think we've done so. But I think what we're trying to do with this initiative is to [1.5s] accomplish our mission [1.1s] through the development of a comprehensive plan that speaks to agency involvement, community [1.5s] desire and trust, and work towards that enforceable implementation of this plan. [2.9s] Again, assigning the [1.9s] who's accountable and responsible to the actual.

Common leading authority. That's kind of our, you know, it's kind of out of sync when it comes to . So, we're trying to accomplish this? Yeah, I know all that. I mean, wouldn't one of the objectives be to have a more intuitive kind of [1.1s] statutory and regulatory framework for resistance in private business to where. You're not doing it at a more macro level? I think that's right. And again, if you go back to that framework slide, we have BSP up there as this overarching statutory authority for doing comprehensive planning. [1.8s] But I think you're right, Matt, too. And I don't know what the answer is, per se, because I'm not familiar with those. Part of the political dynamics is how does that authoritative structure get put in place so that we can implement an enforceable plan?

[2.6s] Reflecting on what's happening and how things work, and there is a lot of great work happening, but thinking about how does this typically work in a county, for example, in California, you have a land use planning agency. That is responsible for the comprehensive plan and then for making sure that it [1.1s] is implemented [1.0s] consistent with the plan all the way through. That doesn't mean that other agencies aren't involved, but there's a consolidation point or an integration point where the land use agency is saying, one of the water quality people say needs to happen in this project. Make sure that there's a condition permit that says do XYZ. Does the water authority say there's adequate water here? Yes or no? If they say yes, then great, we move forward.

If they say no, then maybe it doesn't move forward. [1.2s] There's a single point of making sure that integration is happening of all the different. Planning rules that are out there before the decision decision is made and then that agency makes a decision. That agency also then has authority over making sure that. The plans that are approved happen has approved. So there's a condition compliance and enforcement capacity. [1.3s] All within that. Structure, maybe that's what you're raising. And so, like, you know, a good example would be like, um. Well, they're, you know, carrying over the condition for anything to save the development itself. So we've seen, like, with the primary interest, for example, in. You know, speakers law, right? They're supposed to the conditions are not that that.

When management is not supposed to revoke their condition, you know, basically the use. [3.8s] But I guess that would be a working example of what we're trying to do to make sure that. It carries through and that there's consistency down the road and that. Once they're given, say, a land use, once they make that zone change, that those conditions. Go all the way through pocket density. That's, I guess, the big challenge there. One of the [1.3s] examples of this was raised by conversations we recently had with. [3.4s] and they identified that the planning agency would act as sort of a quarterback [1.1s] for the developer in terms of going to each of the individual agencies to make sure that what is being proposed

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is not only consistent with law, but consistent with the policy of the agencies, saving the developer from going to each of these agencies individually.

And it also then allows a central entity, and we're proposing BSP, [1.4s] To be in the entity that would then oversee. What has been found and assure compliance. [1.0s] With the permit process, but at the same time, since they're responsible for developing. It would be able to identify how it affects and implement. Changes to that conference that would need to occur in order to how they change. [1.5s] So, that's kind of what we're leading and we're interested in seeing if we could. We got close in terms of having this idea come from the group, but we're wondering how that would fly and whether you would agree with it. [1.2s] I think that's a framework that's being used in the mainland, especially in the city of Los Angeles.

So it's not new. I think it actually works. So you see these very cosmopolitan things. We're not cosmopolitan. But if you're just looking at how the policy works, it does work. So I do think The court of action planning, [1.1s] because not only that, as each agency, so that's our own rules. You're able to see any conflicts or. Or gaps, that's a word that I kind of like the board area. So. [2.0s] That's a kind of suggestions that has been worked in the past for other government agencies. And so you can just make it your own and how it, how it can be done here. I don't envy what VSP has to do because they would have to be [1.1s] cognizant of almost every law. [1.1s] With that firing range in Derido, which was closed for close to 20 years, [1.2s] the loophole there was that the new owner was just able to renew the business license and pay the back fees for an expired [1.2s] business license.

[1.2s] not knowing that, you know, in the 20 years since its closure, homes went up in in that area. And so now you have a firing range that is, you know, that through this loophole got permitted and um now you know, residents are saying, I can hear, you know, gunshots and i find bullets in my in my front yard and i hear it whizzing by when i'm having a barbecue. So, you know, you have um you know, the challenge for BSP is that they're going to have to be aware of every law that might be affected or would affect this land use. The patch though for them was a law that requires land management to revoke [1.4s] and Revenue Tax to revoke it if they don't.

The actual activity is not consistent with the conditions. [2.6s] Yeah, but, you know, from a records perspective, we're good. So hopefully, once we automate permitting, and we have a central, I guess, a record system be a lot easier to do these things. You know, you're not [1.4s] emailing people for records or paper files that you have to flip through that. We have 3. So that's actually, yeah. Yeah, so I really appreciate the comments on the. [1.1s] level of kind of expertise in terms of the enforceable mechanisms that will have to that are going to be in place to support the policies. [1.2s] So just kind of by way of general outreach information, we do have a current mechanism right now that's already through federal consistency in which for any federal action, so it could be an actual federal project or it could be an actual federal service or any project funded with federal dollars, that must be consistent with our enforceable policies in which we're able to

sure that that [1.3s] the specifics that govern that action is backed by statute. So that's kind of matrix. Across all our policies that say, you know, does it affect this policy or that policy? You know, from the gamut of land development, conservation. [1.8s] There is that framework for for making the decision in which, but we make a decision for federal consistency. It stands with the federal agency [1.0s] we don't have that same kind of. influence for the rest of land use decisions. So when you compare federal consistency, it's like maybe 75 applicants a year, but actual building permits, they're like in the 500s.

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Yeah. Even on the land use side, we could put these conditions in ARC data, but the GLUC choose not [1.1s] to accept them.

[2.7s] All right. What we discovered is that it seems to be accepted. I'd like to hear from GPA that VSP then would become the overall planning agency [1.0s] and would then be responsible for shepherding through various development aspects that come up, projects, changes, and make sure that it's compliant with all of the existing agency activities, but then would allow a central point of contact to make sure that All of that information is developed in that permanent process. And then remember, and it's codified and goes into a process of learning how planets don't improve. That's a big step before I consensus. And that makes that makes things a lot easier. Does anybody have any concerns about that? And. What would those concerns be? [1.2s] Well, I, when we.

when you mentioned that, I'd like to make sure that as we come up with our own conditions from each agencies that bureau of states and planning can look into if there's a conflict between each agencies, you guys are able to negotiate that better than each individual one person it's just more to reinforce the fact that you do, you know, experience, you know, the rules and regulations on how we operate as individual entities and how we can work together. So that's why i do think it's a Yeah, great idea. [1.3s] Yeah, I think we're going to work through that. You [1.4s] know, when we go through the. [1.4s] Was it the, the administrative [2.2s] following the plan to make sure that, you know. We have some way of having sort of iterative process to.

And handling all sorts of interest. I don't know how much of that we can address at the at this stage because. [1.0s] I guess the objective would be to make sure that this macro level plan was, you know, that those things don't really exist. It's going to be more on the execution that we need to really worry about that. So, essentially, we're adding another layer of bureaucracy, which. [2.4s] i think it's going to streamline it, if anything yeah i mean that's the key. You have to do that. Otherwise, you're just having another layer, which is just going to make it. I mean, just look at how complicated it is just for a subject, right? Like this one, right? How much easier would it be if everything was just tied to the landing site?

but you didn't have, you know, underground storage above, down, you know, scourge of things, and then, you know, your own rules regarding, you know, subject systems, right? [2.0s] consolidate a lot of that central planning level to where it's kind of tied to the land use as opposed to being hidden in certain regulations. [1.8s] So [2.4s] that's the ideal way to go, right? It's under the land use conditions as opposed to a rule that's supposed to address land use requirements. I think ideally if [1.2s] we had like a central, which would be statistics and plans, [1.0s] I as a consumer could come to you and say, I'm looking at purchasing this property. My plan is to build a duplex or a fourplex for my family to live in. Are there any issues with that property?

I think if we could get to that point where there's a central decision maker, but again, you'll need to have those folks that are knowledgeable of everything so that when I come to you, I know that that's what I'm going to have to deal with. Or if I'm a developer that I'm interested in buying a huge plot in Manila and I'm looking at dumping $4 million into it, when I come to you as a central authority, that you're going to tell me everything I need to know to make my final decision. And I think that That would be the ideal situation and just let me know if this makes sense. But 1 of the. [2.4s] Cautions that I have [1.4s] serving as a central bank authority.

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[1.2s] It shouldn't necessarily mean that we're going to be in the business of reviewing development decisions at the private level. [1.2s] And I'm wondering though, if maybe the focus of our client authority should extend into. we're ensuring that the planning standards are working across the agency level and within the agency level to kind of like. You know, a troubleshoot if there's a particular focus area and then have that authority to bring convene and then propose the regulation in partnership with the agency. I'm thinking before the permit, it even gets to the permit between the transfer of the property before that even occurs that I can make. As either a developer or a [1.2s] 1st, time homeowner that I have somewhere to go to where I can get the information I need to make an educated decision and not come in at the back end having spent.

You know, as a, as a homeowner, a 100,000 dollars on a piece of property, and I can't build on it. And that's a great point. So from. However, this will turn out would be an outreach component to ensure that that information is. translated or transmitted, or, uh, you know, that the public is aware of those. Requirements and standards. Yeah. Yes. I do think that each agency should have their own planning standards. Yes. So that, um, it can be collected. Words, I don't think that the u.s statistics of planning should create your own planning centers for each agency, but i do think each agency should have their planning standards similar to the mainland. [1.4s] If they're going to do development, you can easily just look and know their standards because that's what defines the development.

You have to know how much it's going to cost to develop. So that way, the only issue that comes to you guys for quarterbacking is if there are any conflicts or overlaps that may occur from each planning standards of each agency so that you can overall determine the highest and best use So that's really it. It's not adding more. It's more about identifying, resolving any conflict. But I think from our end, if that's something that should be established, each agency should have their own family standards. Yeah, I think, but again, I think a lot of this can be handled at the implementation side of it. Because, [1.0s] you know, like, say if you, you know, the outcome of this is to is proposing new laws, right?

And for the severability in there, you're hoping that stuff will kind of supersede everything else. [1.0s] But we see it on the permitting side. I mean, when it comes to like the end area requirements that triggers things, whether it's , whether it's the, you know, stormwater is a good example, right? So, you know, whether it's, you know, what's the trigger, where do we kind of like create those, the criteria to require [1.3s] Hopefully, all that's going to be handled at the top level. We're not dealing with even conflicting criteria for certain development. That's what we work across. That would be just an instance of what we're trying to accomplish as well. To sum up as we move on to the next set of questions, which have to do specifically with what you're all saying, the public engagement.

I think we're in agreement that BSD should be established as the overall planning agency, [1.1s] not to supplant and not to contradict the planning guidelines of each individual agencies, but it would act as a means of facilitating the process for the developers and the public so that in that process, BSP becomes the receptacle of all of the information associated with any conflicts or concurrence that occurred during the review process itself, which would then be used as a means of informing the development and changes necessary to the overall development plan. The plan, which has been pointed out, should be based in some way on what the public views as the highest and greatest priorities for the item in terms of sustainability and long-term growth. [1.1s] I think that's quite a bit that gets us [1.1s] pretty much through that whole process of the development review and development of the planning framework.

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[1.3s] Something it looked like you wanted to comment on something. No, I'm just. I'm enjoying making notes and public works on board. Yeah, just so this is split it up. Right? So they're tomorrow. So we tried to [1.7s] stick everybody together. It's been enough space in this conference room for everybody. So. I guess the, everybody's collecting, I mean, it would be helpful to have. [1.5s] Mental health [2.2s] and public health tomorrow. I guess he's trying to split it to where you still have some representation and mix within the groups to the best that we can. [1.1s] Trying to have a round table with [1.3s] too many seats at the table is not very practical. That's right. At the end of tomorrow's meeting, they will have been apprised of what we discussed today.

and we'll be able to see how that process sits with them. We don't know how they'll react. At this point, I think this is real progress in terms of identifying an approach to staging. I'd like to propose we take a quick five to 10-minute break, come back, and then we'll talk about, all right, if this is what we're going to do, how do we get engaged in the process of determining . [3.5s] How long was this meeting? Because I had it blocked off for just an hour in the in the invite. Well, I had till 12. it's at 9 to 12. well. Sign [1.6s] them off. No. [16.1s] I'm wondering if it's like. [2.6s]

I think it's important that if, as she mentioned, if someone wants to buy a property before they buy a property, they come into planning and get kind of an idea of set of rules and regulations around that area. I think that's very important to provide to anyone who's interested. It [1.7s] just really addresses all the key concerns [1.1s] that you had in the resident survey. Because if they come in and be [1.2s] able to provide what infrastructure is needed, what basic services are available, what key conditions, those are good planning processes overall, not just to developers, but even to each individual resident. I think that's very, very key. If each department already has their own planning requirements and you just hand it out to them, [1.4s] I think that's key.

before they even begin to consider buying land. Two, I mean, I lived in the village [1.2s] of , when I was 18, came back 32 years later, and I noticed in my village, nothing has really changed. [1.0s] The resident has been strong, right? [2.2s] if there is a way for climate to take a look at having to kind of find some key frameworks for these villages working through the mayors, you know, mayors, five or six, seven mayors um but it sounds only two. So it depends on what villages every villages are different. But if you look into kind of establishing a framework and how the villages are done based on the urban areas in guam um you know, you already know in your village, where your central core of businesses are, and then just develop from there.

Even if you're looking into providing public infrastructure within the village circulation, and then having a central point of that [1.3s] public transportation area so that students can collect that, like the bus stop, like school system, and then transport them back to [1.5s] Central area, you know, we have that a good example is what is currently doing now with the public schools and the private schools. Right? They all. They all gather at the sale and they all get transported to various private schools around the island. So we look into that for, I mean, obviously, neighborhood councils or village councils. [2.0s] kind of centralized areas where key developments in the villages will occur and sets of standards that is a living document or living that can actually continue to be updated based on current circumstances of that village.

I think that's important and key. So if you have that in every single villages throughout the island, maybe able to come back if they have a way to have public transportation. Reliable public transportation,

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because that's very important [1.1s] to come into central and you don't necessarily need to drive all the time or for those who may not be able to afford. I see now the trend is driving without driver's license. I understand. [1.1s] So we can help solve that. Never got caught. I've always driven without a driver's license. [6.3s] I'm assuming the Municipal Body Councils are going to [2.5s] be part of this. Yeah, I mean, they're engaged at the county level. There's no change really. Unless there's an application. [15.9s] and it's very subjective. People conditions that you can apply okay again it's just the council.

I don't know how much cover-up is that they did they ordered the actual village [13.3s] Yeah, I mean, to [1.2s] me, that would be something to look at like the purpose and. Organization of those councils [1.3s] integrated into the village the village level in a better way, because i agree, I don't, I mean, we know when the meetings are, but you're right they're generally about rezoning um so does that. expand into other things. Like, you know, hey, we want to talk this weekend about sidewalks in the village. How do we want to approach that? Where are the places we need them? You know, whatever. That might be one way to try to maybe expand that and bring it into some more organized fashion. I think the MPCs typically, depending on the village, can go into

as detailed as sidewalks and things like that. And others are a little bit more general. [1.0s] But I think in terms of question one, I would say you need to start with the mayors. [1.3s] All of these mayors have submitted grant applications for village improvements, whether it be federally funded or locally funded. So they're very, very familiar with planning and permitting. So I think the start point for the community and the villages is it's going to be the mayors and. [2.0s] You know, going back to when there's a change of administration, there's a change of legislators, you know, sometimes these things can get thrown out. [1.6s] For the most part, the mayors tend to be out of all the elected officials, the steadiest. You know, they've been there for 10, 15, 20 years.

So if you. [2.7s] kind of want to buy in that's going to be able to be sustained beyond different administrations, different legislatures, the mayors are going to be key because they're pretty much the consistent elected officials. I mean, of course you're going to have changes here and there, but generally you'll have the same mayor for 10, 20 years. So I think for number one, in terms of community and village, You've got to start with the mayors. They're going to be your consistent force throughout all of this. So that's a means of getting feedback. Right. [1.1s] What should be their engagement in the planning process? I think ask them, you know, bring them in. You know, we have to think about the timing of it. I mean, I mean, I mean, the planning commission might like to say this is just for voting, but you might not get a.

[2.9s] eligible hearing, like meaning that they submit as a public notice, you know, two notifications. Sometimes there's a year gap and that's already with the gap that you have going through the ARC for standard application. So I think that has to be a little bit practical. [1.3s] Mayor's Council meets monthly. All you have to do is submit A request to be put on the agenda. You know, it's not that simple. Well, I know that, you know, if you look at the. [1.3s] The gap with the time, like the backlog on the side. Yeah, of course. The. [1.0s] See, that shouldn't occur because. You would think that would show you see with people. There was a question about. [5.2s] how to engage the community in this kind of? Yeah, that's that's what i was saying was if you're trying to get feedback from the community.

About just social media itself with survey questions i think you guys are having a timeline planning and permitting is more on the regulatory side, right? Is it the process or developing the process [5.1s] oh i see okay i thought it was in terms of developing what we're talking about today so i mean i think we

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were asking on all levels you know [1.2s] planning and community engagement with planning issues and then also decisions so projects and infrastructure whatever it is and then the second version was even more specific about what we're going to be doing next after the new year which is to actually go out and have some community meetings and are there [1.1s] thoughts or ideas about how we should do that or how we could do it better.

[2.6s] Thank you. You're going to get a lot of different answers, but at least that's feedback. [1.2s] Well, I have a question. Given that the municipal planning councils, [1.0s] some are very active, some are less active. [1.9s] What is the value to your agencies that these planning councils bring? [1.2s] Why do you think they are a good thing and should be? If they do, what could be done to improve their interaction with your agencies in order to make . [1.9s] I think for like Guam EPA, by the time it gets to us, it's already cleared land management and the land use commission or their conditions. [1.0s] We're usually the last signatory. [1.2s] you know in the process but you know one of the things that we've um sort of implemented in this you know build up phase um when we had a um an actual dod employee embedded in our agency to um sort of expedite um you know military projects was she created a checklist she created a checklist and kind of like a flow chart that you know if you're doing this you know yes or no you know what are you doing

yes or no, then you go on, you know, and it's kind of tiered till you finally get to a decision. So, you know, like you hit a stumbling block, like, you know, are you commercial or are you residential? You're commercial. Okay. If you're commercial, are you zoned properly? Yes or no? You know, what's your zoning? And then it just kind of goes into this [1.1s] matrix of, you know, answering the questions already. So, you know, not everybody needs to be informed unless they're building a home or, you know, developing property. Like, you know, the outreach doesn't necessarily need to be, you know, all 180,000 people on Guam, right? It's just specific to those people who are, you know, are being, you know, targeted to development or [1.5s] construction.

But [1.1s] I think, you know, again, I don't envy your work ahead, but maybe we do, [1.1s] you know, we do a checklist and a flow chart so that it makes it easy and the expectations are identified. and clear, so it's like, okay. Oh, I don't know. I didn't know. I needed a storm water you know storm water uh management plan. And in this case, we just like, it say, if you're doing this, then you need this [2.3s] yeah but even on yeah even on a practical level, getting them through oh you're right. you haven't, we, we notified the mayor of the initiative we're having a public meeting on the. [1.4s] we're just a shoreline protection for the same thing we need to show up. I mean, nobody, we had like a couple of business owners that showed up in it.

We advertised, we set up signs we didn't get a lot of involvement for something that it's going to be pet traffic. And you know what i mean? Like the [1.0s] aesthetic of it, you know, might not be too pleasing for some people, but [1.0s] that's it's different. And that's a large project. It's not like, [1.3s] You know, 1 acre development, but that's almost everywhere. You know, people don't show up to public hearings or could affect their, you know, their bottom line. But in this case. [1.2s] My suggestion would be trying to market it differently. They'll call it a public hearing called a workshop. And then you've got to put a sign up. I mean. [6.1s] Literally, sometimes you got to go and get on the ground and go recruit people to recruit more people.

Yeah. I mean, you know, we called the mayor, like, you know what I mean? Like, you know, let them know about it after you wanted an individual briefing. You know, if there was any community leaders

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that you don't take, you know, kind of point it in the direction and we didn't get that much of a response. I mean, as opposed to the marriage to speak up from agent, right? Who's very, very involved in the project and. You know, it's like, you know, interested in the details, so it's not, you know, no, you're right. There are some mayors that will show up to everything, whether it applies to them or not, because they want to go right. If it's something that they can benefit their, their villages and they're either mayors that are harder.

[2.0s] There you go. I think also one of the things to consider in the process and when you're engaging for actual information and experience and then maybe some ideas on how to make those improvements and changes would be going back and reverting to the actual target audience. The people that have been affected by these processes. [1.1s] Every agency can identify those families that would be able Or maybe could hopefully be able to provide that kind of feedback. So, I know that, like, it's cliche to say that, like, town hall meetings are pretty popular. [1.3s] There's pros and cons to town hall meetings, because you do get some of the same people, but just continue to voice. They're not even directly affected in terms of like, they've never been through a permitting process.

They just like their voices to be heard. So that is the risk in having a town hall meeting. But if it was like what Chris had said, if it was a workshop, like a village workshop, but you have a target invitation, so like land management should be able to identify five to 10 families that are either past, [1.7s] you know, past, I don't want to say recipients, but they've gone through these hardships and maybe current families that they're working with. And so these are the, the real people that are going through these hardships that are affected by sins of the past, processes that are broken. They [1.7s] could have real creative ideas on how they wish it was happening, and it could actually bring some logical sense into where we need to be.

In EPA, I'm pretty sure you can identify 10 families uh guam housing you know, labor are all of our agencies can probably identify. Actual targeted invites to get this feedback [1.5s] so it sounds like this process has to be proactive guaranteed yeah yeah it's not in a manner that is relevant to all of the folks that. We're trying to target. So that would mean that we would have to be proactive in explaining what this comprehensive development plan is, and we'd have to be proactive in explaining what changes it may be making at the village level and the island-wide level. So it's a campaign that would have to be launched in order to make it real. Yeah. I don't think you can be able to just say you're invited to this because you're going to have maybe five mayors show up like he was saying.

they're the ones that go to everything and say everything. And they're the village, they're the bears that get stuff done for their village because they show up, right? Um, but for something like this, we need everybody. So I think becky's right. It's probably going to have to be targeted. And, you know, you almost have to make it impossible for them to say, no, I can't show up drink oh there has to be a combination of folks i mean, I have a collective audience targeted like by actual invites yeah um and then you can have open forums too, but i mean, it's a lot of work regardless, but as long as it's intentional rather than just putting out in it, you know, basic information, anybody who cares can come.

You may not get the information that you really are hoping for yeah and uh i think that [1.6s] uh [1.0s] for me i think a big part of meaningful engagement requires a lot of education upfront. Yeah. Because, you know, if they come in without, without the context or understanding, [1.9s] aspects of it, then start to engage them because you spend all your time educating them. You know what I mean? Or trying to dispel myths or, you know, or clear up any inaccuracy of time. But you're also going to have to expect

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pushback because you're going to have landowners that will tell you, like we have in, you know, previous public hearings when we propose, you know, [1.0s] the septic tank [1.0s] We'll say, what do you mean? You're going to, you can't tell me what to do with my property, even though part of the property is completely unusable or there are restrictions or, you know, you [1.0s] just can't build on it or whatever, you know, if there's sinkholes or, you know, near a wetland or, you know, within 200 feet of a wellhead, you know, there are going to be, you know, those individuals that are going to tell you or tell the government

Can't tell me what to do with my property, even though we can say, well, you can't build on it, but you're going to have that pushback. [1.4s] Even internally, like, going back to the subject things, it's like, you know. [1.0s] I have to stress the projection, right? That nitrate projection to. Get their attention, you know what I mean? It's kind of the principle of. You know, you don't want to have contaminated water, but we, but we have legislation, you know what I mean? Like, it's a. It's the argument you need to bring. [2.2s] So, yeah, so now so, yeah, exactly. So the senators that are proposing a change in the law. Are saying, well, you know, this, this law was made arbitrarily, even though that there is scientific study that shows that, you know, [1.2s] population increase in population density is going to increase nitrates and eventually contaminate our only.

[6.5s] is you know really engaging the public [1.3s] so articulating the benefits, you know, the long-term benefits and, and, you know really getting those long-term consequences or potential consequences. Well, considering this groundwater protection zone map was, you know, from the 70s so what they're proposing is, you know, let's do another study and it's like, okay, well, who's going to fund the study to, you know, create this new map. [1.2s] Yeah, so any land use in a village really needs to have buy-in by the village and and and or else happen, you know, we have mandated uh zoning for all the southern villages and how far do we get on that you know so um uh guam preservation trust uh partnered with the aia and did the vitals playing for in rahan and um pneumatic and so basically the model there was through the mayor.

who both were very proactive [1.5s] to get people engaged. And so went down, interviewed all the residents, you know, and sometimes door to door talking to them and getting their buy-in and their understanding what this means to them and what's going to happen, what the implications are and saying, okay, if this is your village, what do you want it to be? And getting a lot of really good feedback. And so in the end, they come up with a plan and then go back to everybody and get everyone to agree and say, yeah, I'm, I'm on board with this. So now, uh, those villages have, uh, [1.0s] uh, an unofficial, uh, [1.0s] development plan, right? Because all the villagers agreed, this is what we want our village to be.

And so now the mayor has a blueprint. So anybody coming in saying, Hey, I want to build a hotel there and they go, well, let's talk about this you know that's that's not without fault because some of these. Mirrors, unfortunately, you know, like, because it's their village, I think that they can do what they want with the village and then. You know, 5 acres is cleared without any erosion control [1.6s] plans in place, you know, and it's like. You know, then we have to be the bad guy, right? That's come in and say, well, you know, here's a, I'm talking about land use. I'm talking about almost, you know, what the property is going to be used for. But that's part of the plan and just.

Yeah, but that's also an enforcement and education and that, right? But it worked really well in terms of getting the residents engaged and get their buy-in. So when the plan is developed, they're all excited

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about it. And that's what their expectation is for that village. And it won't be easy. Timuni, it's huge. Yeah. When you get to the bigger villages, I don't know about that. You may have to be breaking down in the sections of Timuni to do that. [1.5s] And then you're going to have to engage, you know, if you're doing the corridor on Green Drive, you're engaging Docomo and all the major investors in that property to be in that, you know, so you invite them to it. But [1.5s] you can't mandate land use top down because nobody will demand it and it won't happen.

It just doesn't work. Yeah. You know, you talked about notifications for buying property, you know, Uh, maybe the same for subdividing property, you know, uh, boss says i can subdivide five lots here, you know, let's do it you know we talked about that. Oh, okay. But they need to know what you can actually use that property for offerings once you do that yeah [1.7s] that's that's cool uh rent rental zoning yes right yes yes we shall talk about that. Yeah, that'd be a lot man matt yeah there's got to be a lot because, um. We are bigger boys, but by the way, we originally had no plans. We [1.9s] looked at [1.6s] first individual interviews [1.1s] that we conducted amongst many of you. Then pulling these round tables to reach consensus in a general direction.

This week has been successful in doing that. The next step was to meet with every mayor. [2.4s] where the direction of the plan appears to be going. [1.2s] Then after that, we want to hold a series of what we're calling charrettes, but probably will be reworked to be workshops. There'll be a series of three in the more regional scope, but we're going south, one in the central, and one in the north. Then these charrettes, what we want to do is to present [1.1s] what the land use plan is going to look like and what the comprehensive development plan is actually . To do it section by section, bucket of information, bucket of information, still working on structure of it, but then provide an opportunity for feedback from the folks that actually participate.

The object is to utilize the mayors each week and to work together and help set up and come into that . [2.3s] So you're right in terms you have to sell this. If you just say we're having a town hall meeting on comprehensive planning, people's eyes glaze over like, [1.1s] whatever, you know, it has to be real and relevant to them. You know, so like when we did the energy workshops, we had huge attendance because they're all the end of the hook into us how we can save that money. [1.7s] And what they can do to their homes to save money, not so much in blended energy code, but the things that we're talking about in the energy code, they can already get started and do it on their own.

So it's the same thing. That's your hook. How relevant is it to that individual property owner and say, oh, I need to be here because this is going to affect my property value or what I can do on my property. Yeah. [1.3s] I think there's some learnings The implementation of the tropical energy code, [1.8s] you still have people that are still unaware of these things. Yes. I [1.3s] think that should be the gauge, right? It's even awareness. Yeah. [1.9s] We had to put it in our guidebook. We keep it on the permitting level. We have to let them know up front. We're talking like, [1.1s] you know, on the game. I know. And there's no excuse for that. That's embarrassing. Yeah. Yeah, you know, you have it for the developer yeah property owners [1.3s] he may not be yeah i can understand that.

Yeah. but the engineers architects. They should all know that they should all be excused. Yeah, there's no excuse for that excuse yeah um do [1.0s] you have any input from the economic side about. Yeah. [5.0s] You know, I understand the conversation that we're having around villages right now and the identities of the villages are an expression of [1.7s] their interests and the resources that they have. My concern is [1.2s] how do we take those individual perspectives on villages and raise them to a level of

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community, of larger planning? [2.7s] We have a sense of that the south is different from the northern parts of the village. And so there's a difference in the kind of development and economic development that's going to be even possible or desirable given the basic of land.

[1.2s] We also haven't talked about redevelopment. So when I hear you talk about Timuning or Harmon, [1.7s] some of those properties have developed at a time when maybe the laws and regulatory and best practices of [1.3s] compliance with EPA were ever identified. And so while we talk about development, we often think of new development, but we have a lot of dilapidated buildings, underutilized buildings. So how do we get this collective sense of [1.2s] we have this land, we have the villages that have this cultural identity and expression and they've that's been fostered over the over this time. And how do we think about is harman the right place for industrial activity on the island? [1.8s] Just because it's there is it, you know picture planning is that the right location?

Well, maybe it is because it exists. But what do we need to redevelop that and make it compliant with current standards of how we dispose of waste and and recycling [1.3s] Is the South going to be this pristine, safe haven for no hotel development, but it's really the cultural expression for the island? Is Tamunin going to be the [1.2s] shopping hub? [1.7s] Is some of the beachfront areas the entertainment hub? So I think we, I love this idea of development, but from an economic point of view, [1.1s] i think there's also interest in redevelopment and repurposing and bringing up to 21st century standards that visioning of what that would look like, not by this is what we're the box, the framework that we're working in, but this is the the outlook for what we would like to be for future generations.

And so how do we get that? And I think the collective bringing together these views from the villages, um, [1.4s] goes back to your comprehensive integrated um [1.8s] new and advancing development for the island and redevelopment so just making you know i'm loving being the student today it's a great role thank you [1.2s] john you want to say something yeah community engagement so i have two grants uh the e-tip grant with sandia and the uh [1.0s] uh a guam 100 grant [1.0s] with nrel. [1.4s] and part of their scope is community engagement. and so we'll be engaging the community. i mean, our integrated resource planning and a lot of the planning that come out of our area, [1.4s] they're stakeholder based. you need to inform the community. [1.7s] bring in feedback, not necessarily [1.1s] instruction, but feedback.

[2.9s] We have started this year. With an annual [1.6s] support of the [1.6s] center for island sustainability conference. We have 2 days we gave us in 25,000 dollars a year for that. So [1.1s] that's until we reach 50%. [1.3s] And for the 1st, 2 days is a clean energy transition track. [1.0s] And so we bring in. all [2.0s] the people [1.0s] internal and external that have been working on our clean energy transition projects, as well as [1.0s] experts from the national labs to talk about different technologies. [1.7s] We decided this year that we needed to do that because there was a lot of disinformation and misinformation that was being put out in public, like [4.3s] Somebody said that NREL had written a report about grid forming and inverters and then GPA should immediately [1.3s] close [1.5s] and eliminate all of its [1.6s] synchronous generation, fossil fuel generation.

[1.3s] They didn't know that I had talked to the authors of that report and had many discussions with them. And at that time, [1.2s] they felt that the technology wasn't ready for us. [1.6s] Okay, so people need to get the right information and we're using the national labs as an unimpeachable source of that information. Because if I say it or GPA says it, right, [1.1s] politicians and a lot of other people don't typically listen. [1.0s] Okay, so [1.6s] and now in our phase [1.2s] four renewable [1.7s] acquisition bid,

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All the inverters that are being required are grid-forming inverters because the technology over the years has actually caught up so that it actually has benefit for a grid our size. [1.0s] It provides voltage stability for one, allows us to explore microgrids and separation of grids on 100% renewable energy after storms and such, and reduces the need for

for a lot of the synchronous condensers that we've been looking at to provide short-circuit current for our grid. [1.3s] Sorry, did [1.5s] you have something you wanted to say? Yeah, so I'm with Geeta. So I just want to go back to her point on economic development. And I really like what you're saying about redevelopment, which is definitely key. But it looks into industry developments such as aquaculture, additive manufacturing. At one point, we had looked into cruise ship industry, [1.2s] pharmaceutical industry, making sure we do incorporate those things into what we're looking into. also, our economic development strategy is expiring in 2025, so we'll be looking to do another five-year plan. so [1.1s] there's an opportunity to potentially incorporate the process that you guys are doing there into the seds.

[1.5s] And then BSP used to have sense, right? So I think that what we're trying to get here is how do we kind of, [1.2s] I guess, institute that locally. You know what I mean? Because a lot of these policies of equity and inclusion is part of the project process is tied to the DIL IRA, this whole justice for the initiative, right? But how do we make sure that those types of practices are sustained, right? you know, in a longer, you know, I mean, locally, in a longer period of time, I think it's where we're trying to go. [1.8s] Yeah. And also, like, utility in terms of, like, this information, conference and planning being used as a decision tool for other agencies to avoid, you know, things like two-month day outfall.

What was the other one? The Apollo Bay project. Yeah. So, I think that's it. [3.1s] It's possible, and hopefully that could then work into the stats [1.2s] and inform that kind of process. [1.8s] I understand it could be 3. Workshops or to me that it just seems like not enough that you really want to get feedback from people. [2.1s] It's clear that this process has to be proactive. It has to emanate in part from discussions we're having with mayors, but it also has to include regionally relevant [20.8s] development concepts and it needs to make sure that we're presenting something that provides a framework under which economic development can occur properly. We've discussed already today how a lot of this information will be coming from existing plans. What we want to try and present at the charrettes will be the planning elements that are going to be included in the comprehensive development plan.

That may not be obvious or intuitive at the moment. That means that we will be developing this process. One of the questions we've got is, this has been a very instructive and helpful discussion. Another one tomorrow in . We probably would want to work with VSP to circle back with this group and with the other group once we have these planning concepts identified. That's going to occur right after all of the 19 various village meetings. have actually occurred and we've come up with those particular concepts. Our objective here is to make sure that these charrettes, when they occur, are representative, not a linker to the contract, but it's representative of the government law's effort to try and put together comprehensive development process, including all of the agencies, both autonomous and non-autonomous.

[1.2s] One of the questions I've gotten is, for that to fit properly, [1.1s] we don't have right now, When we were contracted, it was sort of a community engagement campaign. We have them surrounding the very shreds. We'll be looking to BSP to figure out a way in which we can provide sufficient information prior to the shreds. One question as we come into this. Shreds can have varied different types. [2.5s] For

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those that have been involved in this process, [1.6s] time gone, understanding local sensitivities. The only advice as to how and what should or should not be included. [1.1s] As part of the agenda of these various charrettes just from a. Presentation standpoint and to make sure that we have appropriate feedback. I'd like to hear if anybody has any comments.

Bring food. Bring food. Okay, he's not wrong. I [4.8s] think if we're talking about regionally. I [1.7s] think it's going to be very important that part of the workshop or the charrette is that we include what's in it for them because it's, you know, it's self serving the, the mayors want to know what's in it for my village. So it, those in. [1.2s] Addition to a general [1.3s] outlook in the presentation, I think it's, it'll be important to include specifics to. Their villages, if that's something that can even correct me if I'm wrong. I think that we're kind of use some sort of multimedia like maps, right? [2.2s] At least together across the more high level points. Yeah, I think you need to have a separate charrette for those that are driving the development.

So, you know, contractors. Realtors [1.0s] alters, you know, those big developers or, you know, people that, you know, are, are going to do housing development or to be targeted. Yeah. Yeah. Yeah. [1.1s] And, you know, and, you know, I think for us to be helpful to have that in public, because, you know, the question for you and I mentioned, like, the more people that are more environmentally focused, we. we kind of lose when those are behind closed doors, right? Like, I mean, if they were to express, make their argument in public, sometimes they might, they might lose their power. You know what I mean? I'm serious. They won't even bring it up. I don't know how bad it is. It's like, you know, you're talking to people that, you know, might suffer consequences in the immediate term, but their grandkids are going to be the... Oh, yeah.

I mean... [1.1s] experience the consequences and, you know, having an open format and saying that you don't care about this, you know what I mean? No, I agree. It should be an open format because then they can be held to, you know, the standards that we hope them to be held to. Yes. I mean, one of the, you know, soap boxes, you know, the realtors have stood on is, you know, we're, you know, allowing for local families to build homes, right? Right, but we can tell you on a statistical standpoint that 80, 90% of people who are submitting applications for for home, new home construction. They're not local, they're actually all foreign. So, you know, I mean, their argument is, you know, we're providing local homes to local families isn't necessarily true.

It's really a foreign developer that's going to sell a local family. 500,000, $600,000 home. That's a big benefit for this that we're bringing. We're not in their world. You know, we're not at the association meeting or the contractor association. That's right. We're inviting them to participate. Yeah. That's kind of being held to their format. That's what we're using. I kind of let them out themselves. Yes, because if they're publicly saying Only 20% of the real estate came to the meeting. [1.7s] You can also, like, don't forget, like you were saying, Matt, earlier, that you can invite as many people as you want, but are they going to show up or not? Maybe part of the invitation, you make sure that you have an option at the bottom that they're going to opt out of the meeting, you know, like they're not going to be attending.

They waive their rights. They waive their rights to input on the conference. [1.9s] They can't come back and say. Also, like, one of the ways to really hold people accountable for showing up is, like, um like publishing even on on the bsp website, who's going to be in attendance? and because I'm going to tell you when people know that, like, they're going to be listed, they kind of, it forces engagement, I guess, or forces attendance um i don't want to use the word force, but realistically, we do have a problem with

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people not showing up, stakeholders just saying they either didn't know about it or whatever. But if you require like um [3.1s] i think you know what i'm getting at, right? It's not necessarily an RSVP, but they can also just say that they're going to opt out of this process and then you wouldn't have to worry about constantly inviting.

It's going to be all part of the record too yeah it's a requirement for us to reach out to them, do the invite. So like even with our other plans that get submitted or even before the governor makes the referral yeah it's all packaged yeah before it goes to legislature so they'll know who we invited. [1.2s] Yeah, let's see the open government. Well, do these have to be. [1.1s] Stream live. [2.7s] And [1.3s] so we intend to do that. Yeah, I think so. So I think it's what constitutes the government meeting and I think this when we convene this effort with the community. Yeah. And we've done that. I mean, yeah. [1.9s] I think even without being required to, yeah, yeah. Publicly broadcast. Yeah. [1.2s] And just to kind of [1.1s] really grateful that this kind of attention is being brought to the, the need to engage the communities.

[1.4s] So, just to kind of point that out that that's actually required in statute that we must engage the community in the planning process. So. [1.2s] But I really like Mitch's idea of bringing in [1.9s] the private sector folks that are involved, like GCA, the realtors, all of that, because it's really going to, I'm just going to say it, a lot of the issues stem from folks that are selling things or pitching ideas without really having the buyers be aware of everything, right? [1.0s] I like that idea of making one of those. Are you trying to solicit feedback from them or just kind of educate them on what you want to learn? Tearing them out as being treated as stakeholders and not just residents, right? Yeah, yeah.

Yeah, they can't say that they are uninformed, you know, or they can't use that as a tool. What we're planning to do, but we do want to get their particular feedback, I might suggest that What we could do is meet with the business organizations as part of our meetings with mayors, and at least meet with the boards of the Contractors Association, the GHRA, the Chamber. [3.7s] And if we're closing loops in laws and regulations that conflict with each other, then you need the buy-in from the senators because they're going to vote on whether or not they pass Those changes to close, close those loopholes, or they continue to exist. [1.0s] Not necessarily to their full body. The board to inform them about it prior to the trends and then invite them and have them.

So, and I would include the Guam society, professional engineers, society, American military engineers. Yeah. [16.4s] And that's all well and good, but what we're finding is [2.1s] the active members in those organizations are really kind of the Boy Scouts already. And it's the ones that don't want to be involved and don't participate and don't listen. They're the ones that are on this crap, you know, and so, yeah. But that's, that's, you have to start there. Yeah, you have to start there and get to where, and I'm thinking going back to the long track full energy code. I'm gonna talk to peels and get them, see if I get them to notice [1.2s] All licensed engineers and architects saying, hey, by the way, since December [1.2s] 28th Last year, this is an effect and you when you sign the plans, you're saying it complies [1.9s] Yeah

Yeah, so [1.8s] they don't, they don't, they don't certify that additional level. It's just implied, right? Yeah. No, you're saying, yeah, it complies with the laws of the left. So, so we'll, I'll talk to appeals. We'll see if we can get something. Because if you got a license, you have to license appeals and they all get licensed every year and renewed. Yeah. And to that point of complying with the extent of the law, this plan has to be approved by the legislature and the governor. You know, fully. Right. Yes. Okay. So what

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we discovered is what we need is a proactive program. Telling the people what we're doing, explaining to them why it's important to them individually, encouraging their participation in the charrettes. It's also important that we start that process with meetings with mayors, that we get their engagement from the village level, understanding that what we also need to be doing, developing a regional approach.

as well as an island-wide approach to things that are going to be important for overall economic growth and development. [1.0s] Then the charrettes themselves lead to the two-way process, both over-reforming the public about what's being planned, and at the same time, garnering engagement. This process is pretty much in play. We do need to figure out how we can do more in terms of overall [2.1s] general communication to the community through those social media and through traditional media, which we can figure out how that can happen. [1.5s] So this has been very helpful. This is a great first start. We look forward to tomorrow's meeting further on, but if you want it, I'll let you know what the next steps in this process will be. So we can go to the next slide.

[3.5s] As we mentioned, we're going to be working with all of the mayors and we're going to be including now, in addition to that, boards of all of the appropriate business organizations that are going to be touched by the overall development plan. Then we're going to be holding the community charrettes in the North, Central, and South [1.1s] to identify where it would be most appropriate for that to occur. [1.1s] Then from all of that, we're going to identify all planning challenges and assessments that are going to be necessary that have resulted from all of the items that we have developed and then we'll draft a plan recommendation consideration. And that will be topped off by an island-wide survey that we're going to be doing to make sure the public's reaction to the overall plan [1.1s] is in keeping with what the intentions were.

And all through this process we're going to be the opportunity for comment and review. And we want to make sure that we keep this group involved as we move forward. [1.3s] So with that, I'd just like to ask for any further comments or questions that people have about what the program is going to involve and what we should [1.0s] concentrate on. Yes, John. You talk about, I've heard, economic development, right? So there are a bunch of stuff that GPA is involved in and we'd like to push out and create synergies. [1.1s] One is, [8.2s] We have the best and largest fiber optic communications infrastructure in the world. [2.3s] Better than all the carriers. [2.4s] This is like 90% of it is buried two feet down [1.3s] in conduit, encased in concrete.

[2.5s] And it after our [1.1s] last fiber swap, we have, uh, the project is in place now to allow us for a lot of the fiber loops that are up north and connect it to all the fiber down south that we have all the way down to inner raha [1.7s] okay so this is a point where [1.1s] if we use it carefully and are creative [1.1s] can help us mitigate the problems that we had after maor [1.2s] okay by sharing some of that infrastructure with carriers and and the government okay but even we're even doing fiber swaps underneath [1.3s] so we have half of our substations already on our own fiber and are well on our way to getting the other half done before next year okay [1.7s] but this fiber is also can be used as an enticement

to bring in data centers, okay? Because we have this huge capacity [1.6s] in terms of free dark pairs. We're barely using it in terms of the pair count, the table count. [3.2s] So if that happens, we like data centers because they use a lot of power all the time, okay? [1.4s] And so that in it would, [1.0s] enable us to reduce the base rates because now you have more kilowatt hours to spread that. We have a

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project that we're kicking off [1.1s] to take a look at natural gas. [1.6s] And although [1.4s] our study is going to be one that only looks at [2.0s] the value of this to GPA, [1.1s] one of the values is the new power plant if we get gas on a 3rd year of their, their, their, their, their online date.

Then our maintenance gets cuts in half, but diesel is much sturdier than [1.1s] than the gas in terms of. [1.4s] Maintaining and operating the unit, [1.1s] but now it becomes a, a resource. The bunker ships, [1.5s] especially since the. [1.4s] right has mandated a 50 percent decrease in greenhouse gas emissions. [2.1s] Within the next 50 years, so they can do that with gas and they can do that with electricity okay so now so now you're seeing that a lot of the things that gpa is doing or has planned for like uh the seawater air conditioning. We have a project that's there. We just need to to get uh [2.0s] all the hotel row people to to participate right yeah once that's done it's it's fairly the the the cost uh uh it's cost effective for them yes but that allows you a pipe that's being paid for by these people [1.3s] and that water can go back because it doesn't really it circulates in a heat exchange loop but it doesn't [1.3s] intermingle with other water

That's nutrient-rich water that can be used for aquaculture. [1.3s] If you go and [2.1s] investigate the NELHA, the National Energy Labs Hawaii, that's what they do with that one megawatt OTEC plant. Not very good for power, but the water source is a source of a large amount of income for the islands, both from growing seawater, cold water, [3.7s] fish, shrimp, abalone, [1.0s] lobster, [1.3s] to bottling that water for sale in the Asian market. [1.0s] Actually, people paid $10 for it. I wouldn't do that, but that's a market. [1.0s] So there are synergies where we can work together to make this thing happen. So [1.2s] all the projects that we're doing may have [1.4s] an opportunity for [1.8s] synergies between ourselves, the Guam Power Authority, and [1.2s] the rest of Guam. [1.1s] Okay. Any other comments?

[4.4s] Okay. Well, thank you so very much. It's been a very instructive three hours. I really, really appreciate all your participation. [1.0s] So we will be in touch through DSP as the project continues. Okay, thank you. Thank you. Thank you guys. Thank you all. Check me out. Wow. Right there. [19.7s]

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large area anyways we source the resumes for the parbo. So I'm Mon 하루 my Morningeps on law on was whose focus around but then also cover many very different aspects of our community on the environment, social and cultural aspects of law, all of the intent of identifying where law should be headed over the next 20 to 30 years.

This is a result of the collaboration. The next slide, please. A number of different groups. And in partnership with your statistics and plans, linker is the engineering firms environmental engineering firm is the prime contractor.

And then as part of the team, you know Dr. Lester here from the Ocean and the Coastal Policy Center on the Green Hatch to Calculus and Barbara, who represented us from Hamer and instead of Washington based environmental company, GHD, who is involved in the engineering aspects of the project and the roadway engineering firm, PCRP, another environmental company on the side of hand, my company, Market Research Development, that is involved in strategic planning and public policy research.

Of course we have the support of the Office of Coastal Management, our team. So we've got a team of folks that are really interested in figuring out what this direction should be. And I know there's a number of things that already.

And there was tremendous work being done by the Center of Vital Sustainability to help track where that vision might go. Our objective is to take that community involvement and craft them into a land use plan, which will then precipitate not only the description of a vision for long, but also codify what would be necessary in law to make sure that that vision can be fulfilled.

And can be contained. So, next slide please. What we're going to be doing today is sharing the themes and the direction of all of the interviews that we conducted. I believe we've interviewed all of you individually.

And so today we're going to talk about what you've collected in the fall with the most important areas of interest the plan needs to concentrate. And then once we've done that, we want to consider the challenges and everything associated with how we bring about the development involved.

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Some of you are not directly involved in the permitting process, but everybody in the agencies are touched in some way, shape or fashion by growth. And I'm back to that as an end to sit around and discuss and understand what those impacts are to be fought for.

In addition, we want to take a look at just the general procedures overall to make sure that it creates the right balance in terms of protection, in terms of safety, public safety, also doing things that are going to help you and continue to grow so that we can help the economy expand.

And then finally, we're going to be soliciting your recommendations identifying what you feel there should be the changes and improvements necessary for language learning. Thank you. This was all resuscitated by researchers by 2022.

Back last year, my firm, Clevery, extensive public opinion research across the island to identify what people felt were the major issues that are concerning them as they look to the future. We also wanted to find out what this activity of the people were in terms of providing the most engaging in and at the same time advocates for a sustainable plan overall.

We were pleased to say that 66% of those in the survey indicated that they felt that the development of a sustainable plan was necessary and important for the future of the island and were interested in participating in the process.

In terms of the issues that were identified, there was also concern. Number one was the protection of clean water and the availability of power. Basic and construction, inclusive of both, are necessary to help in unborn issues of deep water.

Followed again by other basic services from education to health care. And the idea that WAM is not maintaining the level of life, the quality of life that WAM needs to expect. Particularly from institutions that are involved in health care education.

Then there is a great concern about the economy, 69%. We're fearful that having just come out of the pandemic and seeing eyes of the tourism industry that are currently quite fragile. That it may not be able to sustain the kind of growth necessary.

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So our children have careers that have quality of life that they expect. And so it needs to be worked down according to the response to turn to how better diversify the economy and how many. And there's also a great concern about the environment and erosion and habitat.

A concern about erosion is the degradation of coral reefs. And the entire concept of climate change is being essential, particularly with sea water rise, etc. And finally, what's with preservation is being about over 60% of the island is being essential.

Things such as the preservation of the Chimarra language. But more importantly, the preservation of nuclear family is concerns that long span of the structure is breaking down. And that the process of being able to communicate to the communities before and when they go home.

For young people, the extended family system is no longer what it used to be. So, given these elements, we then. took this information as the foundation for forming what the Blanc on 2050 sustainability and natural land use perspective is leading.

And we're interested in finding out from your agencies the other part of the story how that makes the quality of life improving Blanc. Charles, you want to take it to your next slide please. Good morning everyone, I'm Charles Lester at University of California in Santa Barbara.

And it's been my privilege to be involved in this project and it's earlier projects that now have been out for about three times and the more I learn and the more I work with all of you online and in person just two days in a row.

I'm genuinely and committed people are to what's happening on the lawn and the challenges you face especially for the land use and the employment. Let me give you a little bit of background about the technical ladies' gals of the project.

So, as Jay mentioned, this project does come out of your public law. So, the legislature passed a statute a couple of years ago asking for a sustainability plan out to 2050. And the main focus of that is to look at the land use plan and update prior conference planning that's happening on the island.

And as Jay also mentioned, this effort really is complementary of a lot of work that's already going on, especially out of the Center for Idle and Sustainability and Long Green Growth and the focus on quality

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of life and issues under the ULAND's Sustainable Development Code and good questions about how long should go forward in the coming decades.

So, the legislature identified the need for this plan update because they also identified all these very specific components of what might be addressed in the land use plan. And that's what those bullets are, ranging from general land use questions to community design, concerned about how transportation systems are working, what's going on with our public lands and natural resources, safety, hazards management, all the kinds of things that might be addressed in a land use plan and that affect the intersections of all these aspects of the economy, the culture, and environmental conditions on the island.

So, it's a pretty big direction. We allow a comprehensive task for bringing different things together for a plan. Next slide. And so, one of the things that we're focusing on is all this work that has been going on for decades really and is going on now.

So, there is a lot of work that's going on. planning work that happens in Guam. That has happened on back all the way to 1978 under the Coastal Law Management Program in the next week's development plan created the island of the Papua North and Central Land Use Plan that was last saw 10 years ago.

It will continue to go to the federal transportation plans, the preservation trust plan, transportation plan, integrated waste plans, water plans, energy plans. Next slide. Got the work of Austin here and the action framework that's been laid out for sustainability, stormwater management, hazard mitigation, oral recrusteration action plan, and the OASIS plan.

All these planning efforts are happening or have happened and so there are a lot of important resources for us to draw on and try to bring together through an integrated comrades. Next slide please. So this slide is a little difficult at this scale, but we started to lay out a framework to help us think about how can we bring these things together and just to orient you.

The blue boxes there are at the top. Those are all of the youth agencies that we've been talking to through these interviews. So one of the things that we're trying to do is bring together all of the irrespective of interest around questions of sustainability and mind -explanning into a more integrated process.

At the top of this diagram is the Bureau of Statistics and Plans, which does have a planning mandate under your color law and has for a long time now served as coordination and collaboration function all of the planning work that is happening.

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And so what we're imagining is the Bureau of Statistics and Plans is up here coordinating and integrating planning work. Obviously, connectivity relating to bomb green growth and other community efforts that have happened to address sustainability.

In the center of the slide there is just a representation of how planning projects are being constructed to work on bomb and does currently work in many respects, but this is to set up conversations to move on and how it's related today and exploring how it is to work and how could it work.

So technical planning discussions go also out of the community and all of the different social concerns that we may have relate to this planning process. So you've got this need for a conference and development plan there in the middle of the screen and it's representing that you're trying to bring together as the legislature asks society and cultural concerns, economic concerns, environmental concerns, land use and infrastructure.

So how do these things come together? into a land use plan in a way that works for the island. Once you have that plan in place, it slows down through the development review process that you may be familiar with.

Currently, structured around the application review committee where different agencies contribute to reviews of different developments that might be pursued. And then once they're approved or permitted, there's a building permit review process enforcement monitoring all the things that come up with doing the land use planning program.

So that's the structure we're focused on in order to develop a plan. One other point I'll just make while we slide this up. VST and the coastal management program does have a federal consistency review authority which is an authority they get under federal law to review federal activity.

So we are wondering how does this plan in relation to the plan? what's happening to military or armed intervention years, the bomb does have the ability to review and bring their land use planning concerns to those activities through that authority.

Did you have a question? What kind of agriculture? I should be a DOA, so that's us. I'm listening. Completely. Should be a DOA in there. I think that they did their... Actually, that sounds like a friend.

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Yeah. Yeah, those are the... Okay, small but big. That's a DOA that's called... I think it's the big firm. Oh, yeah, sorry, yeah. So that's why they're listening. Yeah. These are... Those are the agencies that we interviewed through the coordination of DSP to be in structure and military assessment.

Yeah, that should be it. So also, I guess you're working for DSP. Yeah, it's a little paid, right? Yeah, we need more form flights to the... I'm sure exactly the kinds of things we want to get into. You know, trying to consolidate things at a land use level is a lot more efficient.

And so, applying things as land use conditions as opposed to, you know, hiding regulations on an agency level and having to be heard that for the same purpose, is not the way to go. I mean, so not only do we...

That's probably the best practice to apply it at this level. When we're trying to cover gaps, it is really at a regulatory level. That's not very effective. Those are some of the kinds of questions we're hoping to hear from everybody today about.

We heard some of that yesterday. We had another meeting like this yesterday, but the other half of you, we didn't have... broken into two even the number of agencies and people. So, questions about how to integrate and pull together a comprehensive language plan that still maintains all the individual authorities and important concerns of the agency.

So that's kind of the challenge. Not that we've got it figured out yet, but that's how we're going to do it. So I guess the next slide I could just finish up this technical overview. So just some examples, right?

I'm nearly a slide didn't quite translate. And the map here. But this is one example of the recent project that was reviewed through the process that exists now. There's an application review process for the cyber towers that are proposed.

You can see the location map on the right. And that's a representation of what this project might look like. The agencies, various agencies, weigh in on their concerns. Those concerns go to the Department of Land Management by its recommendation that goes to the Land Use Commission, or in this case, the Hybrid Land Use Commission because of the magnitude of the project.

And then there's a review and an authorization of development through this process. That's an example of the kind of the processes that we're looking at at the application level. How does a language plan get

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into place and what role does it play in shaping concerns like how do you, you know, protection of forest resources or water quality erosion issues, transportation impacts.

You know, this particular project is 335 residential units. That's going to have a significant impact on that area. And so those are the kinds of concerns that should be considered through the land use planning process.

The next slide is just an example of how BSP and Guam can exercise its authority to reduce better life techniques. And this was a recent review that the Coastal Management Office did for proposed improved shoreline protection project by the Warwick Army Corps of Engineers.

So it's just an example of the kinds of things that may happen under a federal authority, not directly under government of Guam or private development, but federal activity, in this case the Army Corps.

And the government of Guam may have to review that for consistency that they care about. Next slide. So this goes back to Jay for a little bit of discussion about some of the actual planning issues that we're hearing about some of the issues.

Before we get into the specific themes and problems that we've gathered on all of you, there's an observation that we've already deposited, which will help with the conversations today. The concept of the permit review process is fairly well documented.

Remember on that slide, there was a clear approach that needs to go through all of the various stages, as it should have some sort of say so. And all of them are going to look at that process as a means of making sure that the mandates that their agencies are available.

The problem though is that at the end of the day, this permit review process is supposed to yield outcomes that are going to be reflective of what the community uses to contribute to the quality of life and going to make more of their clients.

The problem is that there is not as much clear direction or clear understanding of what that should be. And without that policy guidance, we find that the agencies are forced to do project by project review.

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And although they may not be able to use it in mandate, do not necessarily have any sort of connection to spending as long -term policy outcome as necessary. So one of the things that we want to concentrate on as well as helping to improve the permit process is how do we go about ensuring that that policy guidance is developed in a way that has the adequate participation of the agencies and agencies in terms of case.

So in the wake of all of that, we've got a number of major issues that seem to develop in some sort of level of priority in the end of the year, but one of the most important issues that was mentioned was that there is real concern about development at an end or over the accurate.

There is concern that the agnostic right now is how to be protected and released in a way in which we can make sure our drinking water is being safe. The other issues that were identified including things such as the need to improve urban infrastructure, the lack of sewer capacity, which is preventing people from building homes, the lack of relatives and a little water resources that are necessary for development is a real hindrance in terms of trying to go about developing quality rights for people who feel it's prosodical.

And the other is trying to figure out how we can provide more affordable housing. Cost of housing, skyrocketing, most recent figures put cost average cost of a house on the lawn with over $400 ,000, which is far beyond the range here most people.

There was high housing cost for people in medicine. And so we see as a result there's been an outmigration of young people to the United States in order to have more affordable housing. environment to which they can go their own programs.

But that's a net loss of oxygen. It's a tragedy if you're not able to find a teacher around the children. And there's also the concern that because of the development, partly because of the military, partly because of private development, there's been a degradation of the Cloud University since the first half of that.

The areas that are most concerned are the degradation of the climate still forests. And the use of the forest. And of course, there's watershed management. Erosion controls are very powerful. Not marble cave, formal problems, pyrogyne.

People aren't concerned with the surface of the surface, and the runoff process is not adequately maintained. And then of course, there is natural hazard conditions. People understand or believe that those are better.

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more frequently than ever strongly. So what are we doing with sea level bodies? And what are we doing about hazard mitigation to ensure we are utilizing our natural resources to make sense of the ship, in terms of protecting us from high tax and protecting us from water and purging.

And then also, because of the fact that one leg of our entire economy is not necessarily decimated, and people are very uncertain about what their future is on this slide. Are they able to depend on economy and the day to day?

So dependent on tourism, and these are the way in which we facilitate diversification in a way of sustainable development. It creates careers, not just low -end jobs or entry -level positions, but real careers.

And then also, we need to deal directly with food and security. So we need to develop small -scale agriculture, Boston and both regions, and a lot of development. In terms of helping the process, for the people recognize that, the agencies that we talk to recognize that this is their problem, particularly because of the dietary and the dietary and the disease issues that communities deal with, specifically with diet and eating.

And then there is a need to increase equitable access to social and community services. The general feeling is that people in the South are not receiving same access as people in the North. Are they able to get from the reward from health care services to basic services that are used in the forest?

There is real concern about promoting human culture and the need in ancestral lands. I figure by selling off all of our land, it's approach not long, I can sell it off. And the idea that... preservation of tomorrow's values is critical to the preservation of the kind of human and easily sub -like in which we build into whatever development we're trying to be carrying, a way so that that can be sustained and supported.

And finally, underlying all of this is how we're concerned about climate change. It means to many people that we're going to be hotter, we're going to have more tight homes, we're going to have less water.

So underlying all of these values concerns is a overall body concern, how will the climate change this fall? Did I miss anything? Can anybody identify? I have seen that. Can I just add, so you know against what we did take away from yesterday is that you know a lot of these things are really interesting so with each other sometimes and on each other and also it's the kinds of things you can touch.

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So you know, it's been in the context we talked about like the and actually levels that are seen in law, for instance, some of the policies that they do to small field development. So when we talk about land, we just kind of think about what's the lowest common denominator, the reclos, and, you know, for example, having a separate system on the quarter, if you're a lot, right, within the law.

I mean, so there's a lot of our environmental issues are tied to residential and small -scale development, where a lot of the regulations that kind of protect our environment, which aren't triggered, you know, you need over a year, perhaps, to do some development, and we have a lot of group holds within our regulations that allow these developers to kind of get around these triggers and, you know, the environment.

So being able to analyze things from a macro level level, well, just to make up all the details, at least on our agency, we're trying to take, especially for us that are involved in the permitting in the land use side, you know, it's important to us.

And so all level on the surface, like, you know, regulating lot sizes, and spending land use conditions on them, you might not be able to understand what all the controls there are putting in place for all the benefits, but, you know, that's the route we're gonna go, and we're not gonna notice how we're gonna keep these things individually, but, you know, what's the most that we can do with this authority?

So I don't want to give anybody the expectation that we're gonna solve any of these things. We're just going to, you know, I guess, provide the best opportunity for these things to kind of happen within our course.

That's just gonna add, I think we need to be better as a government at referring to gradient insurance. You know, people throw out the term, catchphrase in a long time, but green infrastructure needs to be embedded into our planning documents.

Everything is listed here, food security, equitable access, preservation of culture, climate change, flooding potential, stormwater retention, filtration. This is because the threat to all of our natural resources and communities is because we haven't owned a good job of protecting green infrastructure.

The trees. I'm not talking about a pond invasion that's not cement, it's grass, but actually protecting trees along the streets. After Typhoon Watermark, people didn't realize, I mean, force you to put out posts of cut this, not this, take this, not this, prune this, not this.

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Because we heard that people were very soft that streets that survived the typhoon would have made a beautiful comeback for being chopped down and sheer fear. not just by residents and the tribal landowners, but agencies.

Or even, you know, agencies. First, Sinemo. And it's not to disparage any team at all. It just means that the awareness level and the education level isn't where it should be, that we should all be promoted protecting the trees in our urban landscape.

And so I think at this level, we have to keep bringing that back up to the top because a lot of our IRO funding, the inflation reduction act funding, is very much about forestry. And it's in the DDW fund.

It's in a lot of funding. It's about protecting the urban landscape and equitable access, serving its advantage for communities. That's the huge chum that's in there. So we just need to make sure that we use the terminology and put it in as that green infrastructure is the exact just part of it.

Yeah. And we need to be a little flexible about that because, you know, we kind of do more if it has your mitigation based off the funds available to us. Yeah. For example, ones that are hard to forward projects, right?

We have an eastbound match that begins seemingly. It requires a 50 -year useful life. And it has to be guaranteed by a very, very house -heavy below the post -off option. So sometimes the intubate solution is just to leave the test with some of the federal sources that are looking towards just to do the work.

We've been pushing back on that. Like on the process you did on the forest, on the forestry side of the house, the disadvantaged communities, what was that, CGS tool that we hadn't used to qualify? Can you push back?

Pacific Islands push back and said, no. This is not a product that does not work for the islands. And you can't cook a couple or spread seeds here. Yeah, we really have overcome that for the environment.

Interior. Ema. And then, you know, we've got guidance that we can basically throw. So we have our own social mobility effects to kind of get around using the designated dentist tracks. Identify the dentist.

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So it's definitely like just to... One of the things I said, it's that green instruction. It's kind of a health test. It's just why I'm faster and we won't have to be charged with the building. Are there any other themes of our items that move that?

One of the areas that we have some concern, although it's been quite good role, necessarily, to directly address the land use plan, but certainly the concern in the community is the quality of health care that's available on the island.

And I was wondering if there are any particular issues that should be mentioned or should be identified with regard to health services? Can I note an invention that concerns with something? And then there are plans to be more services down there.

It's about, I mean, aggressive management. And we wanted to be the chief services event that noted public health as well. It is a concern that our central public health and the MULA office has been down as long as it has.

And we're looking into what it would be to escape to assess the building and see what we need to do because we have a large population of people who are somewhat farmed out at different systems. It almost ties into a level of maybe the people that have access to health care.

So as we move forward, there's a lot of urgency. I'm just taking incredible points with us here. It's almost like we need to raise our arms and really just say we have to jump in and have to move forward with those issues.

And I didn't get down to add as many of the time that I was amazed in the last two years, just not much we've lost around minutes and the other each as well. One of them was the towering on the left one, the speed -move rate.

I guess in my mind I'm thinking you're right, we can't solve everything. But I'm kind of interested in the fact that since 1978, plans have been in the making from the paper to the presentation. So I just felt impactful as they did in the last two years.

So I agree, you can test them and capture a lot of disparities. We can capture a lot of environmental concerns somewhere in your, this is going to get componented, sort of says where you were, what you had with the growing as far as some of the mass in any of these scenarios.

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Yeah, I'd say that would be part of the plan. Development is to say, you know, here's what's happening with, of course, resources personnel. We're largely relying on all the work that is going on, looking at these particular questions, and then saying, okay, where's it going, and what do we need to do about it?

I mean, we confuse it with, kind of, that many of you are part of that, use consideration for, you know, use that as a box tree, things like that, or a radical tree. But I mean, I just kind of like the summer, you know, movement.

But in projects like that, these trees, these little seeded things that we planted in here, I'm a big, I'm a big old guy, but I can do that. The point is, I think it's sort of a notion of community used on well, so there's a level of product and will.

And that, back in 1978, and I can go down south, I think, look at the erosion areas, and I can sort of see what's going on since the days we planted that. And it has, we thought about them, you know, only with exceeding results, I don't know about it, I don't know what works.

I think that's what's going to be the biggest response. I mean, I might not have actually correct, but that's one of the reasons why the relationship in the world is so important. And their work is to translate these concepts into the new, a lot of elements, things that people can see, we get engaged.

So the partnership of this plan with what is going on in terms of community activities is important. I also wanted to ask you, if you were to look at one thing or two things, or three things that this plan needs to address or mention or identify having to do with healthcare, understanding that it's fundamentally a language issue, can you comment on that?

That might guide us in terms of what, I mean, concerns with the dark -out period. Yeah, I can't wait to be a little bit more excited on the problems with the health disparities, the science, the health numbers, the various things.

So I'm more concerned about, I think, the things that are complicated or probably related to the COVID -19 pandemic. I mean, we have three times the rate that they have in the US. And so where are they going?

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Why are people accessing community care? What do we need to shoot out to our outer islands? At what point in their pregnancy are we arriving on the lawn? And granted, that may not be about land and sewer, but all of them impact each other.

Everything is tied in together. Completations come up here, and there's still an element of contribution to waste on a ride. There's still a contribution of things in discharge where it's not going necessarily through a process that we can keep from that normal solution stuff like that.

And so, the numbers of the issues seem to see what's coming from the time. But it's not going to impact. I know when we did a recent beach cleanup, I was amazed at how much product, candies, and styrofoam and so forth that's out there.

And it's, it has a tension to get into the water. If I were to look at some areas of concern, I guess I'm going to be looking at the disparities of most different ethnic groups that are inside it. and what they have access to.

And that ties into the house, that ties into the doctor, that ties into nutrition. I know we're implementing things like public assistance and the form of snack and welfare to families now who have in this process of on probation or in classes or role actively.

And so it's kind of like that for being in, so going back to the system, this is going to be given a fair chance and have like, have every assistance for the families and separate the military and programs, as well as insurance and things like that.

So that's sort of the outside, but it really is about this very thing. I really got to work addressing people who are families who serve their time with gone from probation to wearing a class, and doing drug testing regularly, and now they're looking out that opportunity to have school or to help your future.

We talked about impacts around health hysterics. We talked about diabetes, high -precision, high -risk pressures. We talked about the deep problems of death or on autoimmune diseases. There are high incidences of cancer out there.

And to me, again, all of that ties into, if you don't have good health, if you don't have good access to sleep and if you're afraid of the store medications, then your health is completely at the brink of death.

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And it is all ties into the people from the kindness who may never leave. And granted, I have that choice of, we walk this home, but for others who are very making it from our neighboring islands, come here and for a better future and what we do today will change them.

And what does that impact to us? And how can we better prepare those that are coming in for what to expect, what they need? And you've got wiring response, what's medical science and stuff like that.

So it's not a challenge to do that for ourselves. But, Frank, it all ties into health. it ties into sewage, it ties into the ethanol, it acts as a balance. If there's a chance of completion, I think we'll find out.

Yeah, I think we spoke about genocidification yesterday. You know, I mean, with being on the island, you don't have that luxury of pushing people out by trying to improve some of the brain resources, you know, so if you're worried about these people or people being concentrated and trying to just, I guess, separate from everybody else.

But you're not looking at places like this where the oil doesn't go down and you're looking at some. Now, I'm really looking at the oil and the gas system, except for whatever they were cleaning out, you know, we're talking about environments.

Yeah, but you know, they have sewer running up in those straight, I think the new system. It looks available to people, it's a quality. Thank you. Yeah, so it's like, you know, you have to look at every positive thing really.

And then, students and majors, you look at soil samples and things like that, and just take them. There's a lot of studies around this COVID and our uses and stuff like that. It's how, how, how to do you get it in technical contractual.

Yeah, so, so basically like this, from a land use perspective, you know, we're, we want to prevent that from ever happening. It's like, these people will never get occupancy because they can never, you know, lease the land out under those conditions.

Right. So, so it's kind of preventing it from the root as opposed to trying to address it or, you know, respond to it when there comes an issue. So we're not going to be able to address workforce issues and all these other things.

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I think it's more about mitigating that. I also wanted to ask Melvin, though, key to the success of the plan is going to be its ability to create an understanding of the community for why this plan is relevant, why it needs to stay.

A large part of that would be correctly identified the values that it needs to be represented. And I was wondering if you could talk a little bit about the types of values that needs to be in this sort of an additional success.

Yeah, I, this is not really anything that's needed. We've been in communication a lot with the G3 group in terms of trying to influence or some more cultural values in a dignified way. And I was just like, I'm like a kind of base way.

And this is kind of the criticism around some of these types of movements and and other specific communities is, you know, to use the example, but like, just the generic growing around the whole, right?

The whole has like a very complex principle. It's not just like love and, you know, hello to the church. Right? You know, it's easy to kind of loose the appropriate that the language and the way that it's used, but more significant, more significant is the appropriation of, and misinterpretation of what it really means to the native people, right?

And the impact that it has on their society. And so similarly, right? Are I guess a common part would be in the aphthalmolic, which we see kind of growing around pretty useful and all that. You know, in the aphthalmolic, it's always kind of generic.

We used to be like, oh, you know, just make something good. And as long as it's good, that's good enough. But in the aphthalmolic, it's also a system of reciprocity, right? And so, This idea like the way that our people understand the complexity of the naphthalmic is, you know, it cannot be generically applied into something like a land use one.

But then it's also very complex, right? Because we're talking about, you know, core cultural values that are not always, don't always go hand in hand or not always compatible with, you know, federal mandates and federal regulations.

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And, you know, what makes us, what gives us access to different funding or different types of support infrastructure? But I mean, you know, it's, I think it's really more about understanding like where, tomorrow's systems, if you wanna look for a system of sustainability, I'm wondering if I have to live very far, right?

Some more will survive in these islands for 4 ,000 years. And so, you know, we have, we already have cultural systems in place. And even the way that we did where we live, you know, we looked at like ancient Latte settlements, you know, it was a very deliberate way of where people dwell and where they harvested their food, you know?

So, I mean, I don't know if it's, if I can break it all down like, do you want like the validity of this and stuff then? Well, that would be wonderful, but no. We need to figure out how best to make sure that the values that you're talking about are fairly reflected.

And we need to make sure that we've done what we can to do that, sort of rely on you and your organizations to help us. You know, I see that. Thank you. The other thing that I think you asked is, Ashley, I'm sorry.

Thank you. No, that's fine. I just wanted to go back to healthcare really quick. A criminal government census one in five people is not self -care serious. And here in that gap, where you don't qualify for Medicaid, but even if it's job, it doesn't offer health care.

care. The American PDT doesn't apply here. No market planning. There's no way to get individual healthcare if you're not looking to offer it in development. And I think that's what they contribute to people losing.

You know, if I'm a non -person, maybe I'm a small health physician, but I cannot get health insurance here, or am I going to do blood facilities every time we develop this? People are going to the mainland just to have access to healthcare.

Yeah, a lot has changed, though, since then, because, you know, like, medicine is open, though, to not have migraines in them. We have our own established level -causing level, or the warm -power level, which is much higher than they have those standards.

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So, you know, when we think of group, we're talking about over 15 ,000 people, you know, we're really convenient to not pay anymore. So, we have a lot more coverage, less for DAPS and higher threshold.

They kind of addressed it. So that number reached a different ship from that one in five, like last two years. But I still like, if we're talking about like recommendations for loans, like there's no real risk we couldn't have our own version of the ACA that's smaller or mandating healthcare companies to offer easy to nutrients.

Yeah, I mean, you know, we talk about industry, tourism, for example, right, it's the largest development company, you know, revenue stream for us, right. So, but they're probably the biggest employers that they're working for.

You know, they're getting around all those things. They don't have a full time. You know, where, you know, the requirements for all their coverage to trigger. So, you know, that's a labor thing that, you know, we're trying to do.

I think that when I try to create, you know, if people access the ability to get to work, right. And not have to look, we're all four people. You know, I mean, he didn't agree. So those are things that we can do to this time.

And we try to support the other plan, you know, whether it's healthcare, healthcare. So we're trying to, you know, close the loop or cover gaps that exist in those things as opposed to trying to be really accomplished or tackle the issues individually or as a whole.

Well, this, I mean, I get to this on the end of the book, it also includes recommendations for, it includes to address other people in the system. Yeah. Yeah, so policy care. But you know, the plan will still require the combination of rules, right, to make them an effect that you can regulate then, enforce them.

So there's a whole other step that we'd have to take and, you know, let's do it. How do you know that we have a more contractualized plan? And how many of you understand what's enforceable and what's not?

So we have a lot of controls in there that are even enforceable because we get the new policy. I'm trying to strengthen those things, which I am. I'm just being sure that the scale is, you know, that you wouldn't

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have this whole, like, in the zest of issue in the north that involved this whole, you know, low -impact development goal, you know, to really love this concentration of housing, small development, so it's been regulated as creating long -distance environment on the future.

So, you know, trying to do the top -down and then, you know, it's actually right. One of the issues is this whole process is more balanced. Balancing the needs of the community and against the needs of future generations.

Balance between requirements that developers might have and requirements that we're concerned about in our cultural history. I'm really interested in finding out that balance between the two. Is there an idea of where on that teeter tower the folk should sit?

Is there any way of looking at how we would identify, how you would characterize that counts? What would be the thing that's most important? So for example, shubo and cultural preservation and the need for development.

Has anybody discussed, is there any idea about where does that balance, where should it be to fairly represent the needs of the people in law? It's interesting because the needs of people of the ten -point law is very individualized.

Everybody at so many different levels and to have sort of this comprehensive vision is sort of like sort of like the magic, the untrue of all communities we like to find. But it really is about, because it might be that we have such a limited commodity of natural resources, land and so forth out here.

And that's what I'm saying is important. The reasoning is about the balance. We're going to be developing a lot more on agriculture. And it would be, I know this is 80% of what I'm talking about. Right, yeah.

Yeah, that's the reason. And most people who live here, I don't have a very specific concern for the bones and the cardiology cases or a complex cancer treatment, so whatever the case. But anyway, yeah, I don't think there's one formula.

I think when the good surpasses the damage to the items and what we're doing as a people natural resources are indeed that's my opinion about it. It may have been that 50 ,000 one, but it's when we actually pass so fast, right?

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That's the microphone. So the whole development process was created all around these values that we're just talking about before. And so that balance is inscribed by when the government or the agencies working together collective understanding of where that should be.

And I was just wondering if you could just step up. Is there any discussion about what the balance of that should be? Well, we were coordinating the shift of our office. Actually, they made one separate system.

So we're addressing that now, but we moving forward, there is plans in the case for October to hold public men and womenię tecworkers to have that. process at the best, that's one of the best ways we can move forward.

To limit the confusion of the days and the cost to developers that are creating the system, excuse me, for 600 years. So if they're not here, we're definitely going to do that now. So that's the plan we have here.

Is the general agreement that the balance is correct at the moment, or is it out of balance? Too much emphasis on the other. I think a good example for you, you brought up the line source for the connection of it.

There's a big push to use, probably the biggest area available by line source forest to basically support. Everything is the only aggregate that meets the military status. So for the short term need and the long term impacts, I mean, think about how it's going to affect costs later on down the road.

Because essentially we have a habitat conservation plan that's trying to be rolled out. And you're going to further reduce the population of the dangerous species in an international habitat. You have to figure out a way to offset that.

So if somebody's going to be a fort down the road, you know what I mean? In addition to just leaving no obstacle, the environment was very limited. That has a very specific system, instead of a dangerous species that are covered up with dangerous species out.

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So it's tough right now because for a short term, I think the issue is that the natural stewardship over short term is not the only option. So that contributes to the... So we just realized that if we just want to do what we want, we have to worry about the holidays.

So there's a big financial factor, a very big process down the road because we're tied to a metric right now. This is the plan that's going to do a lot of projects. So it's really good. that the place can actually not have the best things and studies and also that.

Yeah, so affordable housing, they're trying to get around this whole, you know, blood, kidney, and such, it's just to act quality and experience for the public. Now, it's tough. I guess that's why we're, you know, for us, you know, statistically, you want to be able to have some sort of kind of a, you know, level where you can make concessions to, towards that, like where it's like, you know, go all in or, you know, all or nothing, kind of approach.

There's no reason to get everything that they want out of this, you know, just to get it to take, really, really, really good. I think that's a really important point, you know, in my 25 years of doing land use planning in California, it's about trade -offs, it's about balance, and it's about trying to get it.

not be cited along an age interested in the community through short -term thinking. Because in my experience, if it's always short -term thinking, there's no force at the end of that process, right? You have to imagine a future balance for your kids and their kids that has both limestone forced and even out -of -development.

How would you get there through a planning process and so one of the things we're looking at is how to bring the decision process together in a more integrated way so that we don't lose sight of long -term interests of the community in our short -term decision making.

That's the ability to get to that point. I explain right now to the federal developers or construction companies that need that, and well, that cost -couple that's required by the government. But in the long -term, it's going to start to affect every individual person wanting to build a home because that's where the impact's going to be hard.

So if you want to go in a home, none of the government agencies are going to be able to prove that because of this plan. Right now, the contractors and developers are the ones of concern on this. Yeah, it needs a place.

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They need a place to put the indigenous species there and make sure that they thrive in their therefore future. But that balance needs to be found because when they start to see the people working through houses, if the men's law, they won't get their purpose.

Well, that's a concern. Kevin, are you crying? I'd like to ask Austin, you had any thoughts on how it would approach or is it approaching these regulations? Well, the way that our long -term work process works is that we can basically all sectors of society together integrated into different groups and those groups come up to a different set of biologists and then it's in that our action for more document and retracted during our monthly study meetings and we had just earlier This week on Monday, we had a bi -annual meeting with the governor of the TEMI .Liberative chat progress and all of those things.

So I'm just Taking here how we can as this plan comes out and it's finalized how we can integrate it into that process and perhaps continue Artifying which is the 2030 right now to that Align working on the sustainable development goals agenda how we get to the 2050 which can come at the right time if you just see the report Yeah, and I think that you know I'm on the you know, the team team helped a lot with kind of pushing the issue because, you know, you guys have a lot of, you know, you have like, home day and people, you know, like, you know, work, you know, clean drinking.

Like, you know, there's kind of a role that, you know, the pet section. So, you know, like, we get railroaded, you know, during community meetings or contractor social meetings or, or even the association of realtors, you know, it's, you know, we need an EPA and management.

Just, you know, it's like, oh, we were getting more sensitive, trying to get this into place, even though we have, you know, the science is there that we have for the environment and Oxford Rift. So I think that, you know, one thing that you can offer is basically, you know, help us have a voice.

You know, you already have to have priorities, but kind of being on top of the science, you know, it's nice to have these things in the expert, but like, if you can't regulate them, you know what I mean?

If you can't enforce them, it's a whole different issue and it just kind of remains a little bit different. These challenges, please, please, In class and frustration and that's, I think, with the, you just mentioned about with the contract association, which is very old.

Well, actually, I mean, they have nothing to say about the government because of this. People are actually involved, but it's not. It's just following all the analytics. Yes, you, you know, something you want to say.

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I was going to just ask overall, have we prioritized like the way exactly we are valuing and when I look at from from the management perspective of resources, I always think of it's water, food, space and jobs and that applies to like wild life especially all of all of these things are part of these things.

And so as Tom decided that jobs are going to be more important than jobs. to be able to water food space and safe. And so when we prioritize water, food, space, and jobs, then the follow -up of all of that and the details come, right?

If we talk about rural housing or bomb housing, there are definitely studies out there that are shown as low income residents, residences, and families in low income areas do poorly in school. And then we go over to say urban forestry, low income households and your families within low income households have less trees around the community.

That one I almost throw back because it's like that survey is being done and Gura, the federal government wants to protect infrastructure, therefore trees aren't planted in the loose spaces. That's an issue.

Yeah. That's an issue. But if we plant trees, we put gardens in there, we're securing food, we're securing potential water quality, and then the lives of their... What is it the mental health benefits?

Something that's out there, programs above ground. Yeah. And so it's funny what she said, that I actually wrote a panel to do, which is, you know, how the black can't be have more trees on our own. We want them to have more trees.

I mean, we thought we had. Different in different areas sometimes just about the economy. Don't get the five economies of efforts. And I don't have to do that. That's it. That's it. It doesn't. You're listening to say housing.

Oh, that's also space. Yeah. Sorry. In wildlife, combo space, that's the name space. And then she would be like the job. I always thought that we actually got to like, you know, to start things and all these places.

And I used to do a lot of trees near the structures because of the roots have to be contained. They can actually break the foundation. So it's the same. Right. Right. Right. Right. Right. Right. Right.

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Right. Right. how do you actually itemize that house when the good things turn up? No, I don't think so. If you think about it in our land or the land, what kind of businesses that have parts of the NorthEast community right now or no.

Go inside of new chili were meeting chores, you know, but it seems for recreation, often though, the community has to have a place to, you know, exercise outside and be outside. So like you can accomplish many things or just designate an area for a specific purpose.

Right on the site where people live, the idea that you can create a place degrees based on the intent to be there in order to offset what leads up right in the water or in the pool. It goes there. When you have percolation that's in the capacity in the road that you put in for respiratory, it's some recombination of the drug factor, finally to each other, how these innovations in this technology could work.

It works right in the long area, but we have work with, you know, the degree on the roads and development. There's got to be the pursuit that has to be there. We can't stop just because it's having an element that many hands up for that, how to do this for any other.

And there's many, and there's still a number of previous faces in the past, and the early 70s, and some of these developments happening, they were planned phase in. And so let me know, I'm a girl power woman, and it's pitched for years.

We have abandoned parks. And so we're working to try and clean those parks. Our Irem honey will help us with that. But it needs to be part of the planning and protecting spaces. Yeah, you have an designated place.

So like, you know, if this plan wasn't in place, you'd have an easier time with forestry master plan and our STP. Because, you know, what we were feeling, these are combined efforts, which are actually leaving the same property.

But as we have things like the lines, of course, can take it away at the proper. We lose that whole thing for both industry and for the STP. I have to mention like the, when we talk about carbon. I just said two weeks of federal forestry, you know, carbon, carbon, blue and green and honey coal.

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Yeah. Wow. So, another. Yeah. So, sorry, you know, the other thing is, you know, urban sprawl is going to contribute to a lot of negative impacts in the science too. Right. We recognize, especially with Chico and Dendedo, those are already urbanized populations.

I mean, the density is much higher than anywhere else in the islands. I mean, I'll send enough, you know, but you know, it's like, you know, pre -pull, you know, and then higher than what you have in most of the states in terms of population at the time.

We have at least a couple of months on USDA. You guys get it, you do, but they're urbanized area for the sun, so it's quite population. Chico, Dendedo, Aguilera. So, they just give you the designation to be good access funding.

Yes, but they didn't give it a decent amount of money. We actually went in and said, although the numbers are high, the distances between these populations are not as dense as an area that, we were locked out of USDA funding for Altsup for example because of the census.

And it wasn't until the concern that was made to our feedback that USDA was able to come back in and disclose that we didn't get it. It was actually a good thing. I don't know if that is, I think I should always focus.

So they need to be, yeah, I guess, independent on who's metric they were using, just the population, they can go with them. It's actually for an area that they're not, so that's why you know, the state was able to do that.

Yeah, but on the other side of the flip side, like, you know, especially the hand average, it's those sort of things, let's say, you know, getting to school, right? Yeah, people in a stone boat, right, that kind of live in the backwoods, I mean, there's still far distances, and you have to encounter those concentrations of people, so do they have access to education, to education there?

Particularly, it doesn't need for a land, you know, based off of distribution of development, right? Yeah, we make sure that these high -register badges are going for an aspect of that. And so we, for a long time, the market is starting to have education, and the impacts to the community is...

situation, the additional quality of the requested requirement to be analyzed, how can we not figure out the 150, 60, 10, or 10 where is the, where is the, where is the salt? Yeah, and you know, you want to

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prevent, you know, this, you know, the volume of base that you are, based off where you live, and you can judge on that.

So, yeah, I mean, you guys can double -spread and see what's going on, right? Just if you're interested, it's not just that it is. You have to address that on a, on an, on an, on an, as well to make sure that we don't have like some sort of micro gentrification.

Yeah, but it's going to be, that's, that's, that's a, I'm not sure, when we have to, we guys, we can, and why we can, I mean, one of the things that just struck me was how, how the, was around the income wasn't an issue.

You were, you were likely because your family was there, and you had families that do it pretty well, and now you're a student at school, and with that struggle, but it wasn't a match. It was, we had to put another, I don't know, honest, we had to, you know, it was, it was, it wasn't about whether I was, where you were going to be, or where you were going to move to, so that is where the, this was where you were, and you, since you, you know, you helped out the neighbor, may have cured you out, and you, you were easy to see, you had your windows open, literally things like, uh, public technology are conditioning, and no one could be more my name, because I didn't disappear from anyone's, and therefore it mattered when I went outside and found something odd, that we lost.

It was just, it's little, little changes in our environment, that we have an influence on the way things change, and we'll, and more people. associated with where you live, you know, you get a coastal area

Yeah, so you want to prevent that because that's a total risk of an issue. So that's something like something that we can address through this, right? You know, what's the direct impact of mental health, the health itself, to people's, you know, I guess, you know, attitudes towards social mobility.

You know, they're stuck here, this is who I am, you know. So, because we don't have that luxury of pushing out poor people in the narrow areas and they're outside out of mind, you know. So when we do these regulations, you know, when we're trying to protect and have resources, I think that we're also trying to be mindful of, you know, the strong of the basic health back and forth in the morning.

Okay, so we had a lot of discussion around these soft issues, and I think that was a huge associated with my thing. And I'm getting the impression that... survey results that we showed you resonated as being more true than that.

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That the items identified by the agencies are more accurate than not. And there are additional issues that no doubt will come up through this process as a pull. So now the task for us is to figure out how we can improve the way in which this entire development process incorporated all of these soft concepts can be improved.

So the next part of this discussion is going to be a workshop associated with reviewing the ongoing planning process. We've been at this a little over an hour or so. Let's take a 10 -minute break and then come on back next time.

I'm more specifically about how the development process should be. Can you get your workshop done? It's not police. It's a box. Okay, so it's really interesting, and it is important to have these discussions to talk about the implications of all these various themes and issues of interplay, intricacies over the time.

So, in the end of the day, it has to be boiled down into some sort of plan, an actual plan that not only reflects the interests of all of our government agencies, but also the interests of other stakeholders and people as well.

So to do that, what we want to do is have separate perspectives. First one, out of the next slide, is going to be what goes into implementing the comprehensive plan. How can we achieve it, and what changes need to occur in order to make sure that we end up with a plan that we believe is right and good for the people.

So, one way to discuss it, I thought, would be to give an idea of what the group yesterday thought. It was a different, few more folks directly involved in urban processes there. There were also representatives from the utilities, and also the Association of American History Parties.

So, they described and agreed that there were really, as we had mentioned before, two components to this process. First is the actual process that a developer or someone that's interested in making an impact must go through to ensure that the development is successful.

that reflects the regulations and values of community. The other part, which really should be described that is the development of the policy direction and the values of the vision that we were talking about.

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The group yesterday indicated they thought that the development of the policy direction should really be a direct reflection of the attitudes of the people. OK? They thought that the survey results that we presented represented a good place to start.

There were some issues with that, in the sense that surveys are only a snapshot of time. And what we're looking to do is develop a document that's going to evolve and it's going to change and reflect conditions that are going to evolve over time.

So in addition to simply the attitudes with regard to questions about static conditions at point in time, it needs to reflect also the values that community views are most important. So there's that balance between what the community views is the most important and the value of the issues which are pressing and adapting to time leading to the process.

And then they believe that the review process itself pretty much was okay. It was adequately meeting the needs of each of the agency mandates. It was proceeding along federal guidelines that had been developed and it fairly reflected what each of the permitting agencies felt were important to their agency.

But it was also recognized that it's disjoint because one agency's mandates and many instances can come up with another agency's mandate. The priorities of one group that is involved in this process may not be the priorities of others.

And while they all sit on that community, the process is becoming a consensus. It's time -consuming and frustrated and can end up with actions that are inconsistent. A project that is being enacted at one point in time, soon thereafter might not be as being enacted.

So there was a discussion about how can that process be proved. First one is that they believe that it was important to have an overall plan of agency. A real plan in part that was in charge of both the policy development and ensuring that it had to be reflected.

The wishes of the people, kind of the wishes of the government. And then at the same time provide a plan of agency. by which this process that from the end of the shepherding has like quarterbacking these particular events through the various oops, I don't know, people need to jump through and over in order to get the plan out.

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These people are identified as the agency most appropriate to do that. So the question right now is, what do you think about that? Is that a correct way of looking at how we can help improve and implement something like comprehensive development plan?

Yes. So I forgot, honestly, that we've had these interviews. But I came out of the zero resistance at the school transfer. And I remember saying that the duty of BSP is that it is this networking that you are, that, you know, it's a plan to arm, that raise together all of the the candidates and concerns of agencies and partners.

And I still stand with that. Concern is when leadership shifts, just to make sure that when missions or, what do you say? When we were writing the letter that said, hey, conditions. Positions to? Yeah.

When we were writing those positions, David and the guidance for particular projects that when that is submitted, it says it does not become at the discretion of the director or the guidance. They're not using it.

That's the one major concern, right? It was just. We've got to. That's changed, though, because of the speakers' law. That was the basic use of the main management tax panel for carrying through the main conditions.

It's been in the place of, so what are the results? That one was one of the firing range was shut down and was an issue of business life. We've been up to that while they were supposed to uphold those things as a position of duty and their duty and its instruction.

And be able to operate that, perform an activity in the initiative to have a certain handling situation. So there's been a lot of improvement. No more drops. That will take this position. Yeah. It's like as long as it's approved by the language.

It's different. The language commission could reject or not accept positions the agency is asking. You know, that are contrary to the agency's input from our party on a position to take it. So as long as they have to do the jail use and accept the doctor, then it's enforceable to a certain extent.

Keeping that balance is not one voice. Yeah. So that's why they thought it was just on the training on that. But it's really more solid. that we all have in place to have an enforcement commission. That was my question.

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So one of the special measures that we're going to set is that we can also be as free and oversee the whole programming process. So an example that I said is in the U .S., I think it was Zola, which he was working in California, and the number of signings for the county of Sydney, that would be responsible for making sure that the government's side of its position is in the current permanent process would be represented.

And it didn't require the developer or the homeowner to go to every single parent agency and attend their particular sign -up. So it would be there. With PSP, it would be there. The challenge would be infrastructure in place to do that.

Like, DBW right now has the one side, so you can order all the agencies, so someone from the agencies, they can kind of actually start the process, or do it all at once. So I mean they have that infrastructure very soon, so it'll be something similar to that, but they just can't do it right there.

So I guess for now we can do that with that management or the SP, so we'll see that, that's whatever. Yeah, it's just more on the planning level. Yeah, it's just a picture on the land use. So that's, you know, we don't get this many land use.

You have like 1 ,300 permits that are done in probably three years, you know, you have practically one of those for every single time, but being able to control it when it pops down with agencies is just like, you know, just to be able to run some like shipholds and things like that.

So, you know, like shipholds, that's an important part of it, that's the key off the ground, that's exactly what we're doing, we're part of the process, and then this basically gets a goal in every process, but it's necessary, I understand that actually being able to achieve two years, I'm not a part of the plan and the technical culture.

Documentation, any other facts, I'll in the future, document and hope you get to the need of positive or not. So I'm all okay with that, I'm so happy to get that in the next. It's good to get that, but the more you need to, our names are going through this.

What I've seen over the years is, developers where P .D. comes in and says, here's our plan, and then when it's time for action and they start doing things, they go way outside the bound, of what they proposed.

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They clear deeper, they clear further, they go deeper into the tunnel that they're supposed to. They've got to have them reporting things when they do find out what they do identify or some sort of...

So the problem there is we have a developer here who's got multiple sites that are developing. So if they find something or only is here at this place where they can pick it up and bury it somewhere or stuff like that.

So there's no enough enforcement out there where they're going to get up on your state site. There's IOS, the Bargain Science Act, which has this and that there. There's all this stuff that you'll do.

Over here, I'll let you know what I've heard quickly. I've seen work being done on weekends. Maybe the mindset is there's not a lot of government officials working on weekends. So the work is on the clear.

We're going to do this. We're going to put the foundation in. We're going to do all this stuff and then vote. So then it's on top. We're not intending to replace anybody with a board member or a team member or a group who plays agriculture from clearing grade impermanence.

It's really the condition in which development comes. I mean, we're far different than our department in terms of the permanent regulation. We have to do other challenges and we know that kind of challenges, but we're missing that now.

The issue is that we have to try to create an SOP now on developing our standards in the office of what is provisional. You can't use like renovation of a small house with a roof roof up and you need to burn it to good.

You can't put them in the same category as that. You know, 10 unit art and building or a full -time job. That's what's happening now. So once we iron out all of that, then we can streamline a lot of the easier ones that's free existing people that's formed this line for decades.

We're disturbing. We're disturbing. So, you know, that should not affect some of the concerns there. And that's what's getting on the projects that people are doing now. It's going to be a lot of work.

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And I think that once the idea that DPW is the permanent is where you go. It's the one stop for me. If the idea is to revisit what you do, the issue of the client. I mean, he has this kind of idea that that was the right agency for them on.

Not on the client, but on an agency then. Why is it? Maybe there's an element there. There's no longer that kind of thing. They should be there. Maybe there is no work towards the land side and the permanent side.

And then there's an element that contributes to the project, you know, to the. the authorization for the American support. DPW's mandates are so broad indeed, and that's not a good thing when they don't have enough people to do it

But if they have, if it was a nation of redistributing the existing, redistributing the existing resources to better responses of the needed, then there should be no moving grant. It should not always be because it always was.

The challenge is not enough. It's not enough. I mean, normally it's bad for us. But maybe after challenges, it's okay. We're trying to automate it now. Roy was working with the agricultural and this project, but yeah, we're trying to streamline that.

And I think that, you know, at least from our agency's perspective, we would have been, as in, finding those on this path, we didn't know exactly how that efficiency could be established. Because, yeah, you...

for you to be able to actually use this to have all this information at hand, if it's readily available, for you to write, write and check, because you only use this information that you have available to you.

Here's one. What agency keeps all of the buildings and buildings and everything that's ever been constructed? The department and the show team. The board and the party. Yeah, so what happens is, they just kind of take all of that.

So, but they don't even, that's a big component. I mean, it's not necessarily part of the project, but I don't think anybody can do that. That's the responsibility of the board. They don't have a use.

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They're currently tasked with, I think the answer is, because of the work that's being done. Yeah, they do, but the thing is that access to it, you don't have to go down there, it's just planned, and you're going to have a digital, land to photograph that, of land survey, that becomes part of our GIS layer, and then all the conditions there, solar development constraints, you know, productivity.

Absolutely one thing that's not part of our future. But you see, there's been a lot of risk, there's been a hindrance to some part of our paths, not being able to act, not us being able to access it.

But to the go -to thing, that we're going to ask the board and not being able to access the current measures. Example what she's saying. But the precious things, you know, these are just the things that anything that's going to be, you know, because better access to space.

But frankly, I'm fine, mom, we're not going to sign it, but I think it's not practical for operational perspective. So, yeah. And if he's not trying to expand their authority, for, you know, in me, you know, in me, I think it's just having existing centralized and authority, or in me, doing positions in state institutions, just to improve me.

Finally, authority and list. Yeah, so I think, I mean, you guys are referring to, you are in a regulatory context, as opposed to like a program that's more important. So, for example, this is the first piece of the first one, okay, how do we proceed in this notion?

That's what we would want. Yeah, if you people to reference the conditions that are on the landing site, right, you can end up being able to check them off. Because those things would carry on through to the actual development, etc.

You would necessarily have heard that. So, some building code, these are conditions for the, you know, where a lot of these conditions are spatially oriented. So, you know, where you're at, the development things are like the natural hazards are when those people are protected.

That's the way it's going to come. A lot of the issues that came up yesterday are just infrastructure, for example, maybe making sure that infrastructure is in place before the opportunity to have some get -up, and that's just simple land use policy that could never be applied.

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So they're not unreasonable because you don't want to cancel out an entire area from being developed because it's required them to hook up to sewerage. Hi, sorry, Steve, right there. You're on mute. Thank you.

The quarter fibre planks. And as many people as I see on the ground eyes of this little raider sure seems to figure out what is the best political asset in the law. Because it is this way that we may think that I am at the end of my service.

I don't think about it, because it is not what the basic questions are for the law center behind it. It's the law that can make people feel that we're not reaching the target in the same way we saw in the last year.

And we'll make that decision that's easy for any of the folks that see much less the entire time. So I don't have the answer to the paper, other than to say that I thought the idea of the permitting side or the permitting side, you know, that I need the bad answers to bring all the pieces together to work in the law center so that we don't have this payment to this agency's first time after filing and there are more questions to put in the card.

So it's really an example of how the rest of the people are thinking in this case. Which is going to be the case. Otherwise, it has to be easier. You don't want to, and you want to make that answer. Because I've been in my little corner of the world, and that's the, you know, I don't need to, I'm generally around the side, that's water, no matter what, because that's the promised money, and I don't need to worry about something outside.

I don't want to live in that space either. So I really don't know where the numbers to end, but that idea that you can start it, and you can look into the picture in the long deal that needs to be in place, and not just the edit parts, and the water or the status, and the public person.

And it's not going to be the same. Yeah, and you know, so we just kind of have, we have a foundation in place that we've kind of wanted to just want to get a smaller scale. So they say for a PRC, we do kind of go with that.

of mine, but it's good to be limited to what the authority that they have in relation to an explicit regulation or law doesn't play. There's no, you know, analytical aspect of it when it comes to their contribution towards their position.

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So it's really about this is what they can't attain a huge piece of law or, you know, a global need the best scenario in terms of achieving this is the biggest. So Dave, what do you guys think? I'm just, you know, I'm checking with this is the the key that try to raise spirit to see if it does work for a possible position.

You're going to deal with private and self -builders some of the most effective renovation in the house. Is that process of getting the proteins and plans and the higher quality specialist to get to the program process?

I think too much for them. That's just a, I'm afraid of a, this must sell real, or somebody who wants to build a castle of that, have a core of a couple hundred thousand human to the house, versus some of that technicality.

The best. I mean, there's no concern if we, that's a, no, that's what it's just really, I don't want you to see or perceive it, but if you give it to your power, it's a, you know, just like, you know, self -builders from just already have a grown up, is that the trash situation, because they had to pay to just build a trash all over the town.

So, so, so I think this can become a solution to many things that can be, and then, there's a little bit of a sense of, this can be a solution to many things where, if there is a, not necessarily a higher story, some of us are in different situations where it's, we're getting pushed from one angle to get this done, get this done through all that stuff.

We can refer back to the comprehensive plan and say, hey, look, I need to back up on this one here, based on my decisions, or based on my findings, I can't proceed to do this, but I'm getting pushed from the front, the builders, I'm getting to check this.

They're going to be referenced to precedence, you've never got to listen to that. At some point, we can, as leaders in our sections, can also use this for our guidance and say, hey, look, this does not align with the comprehensive plan of 2050, based on the guidelines that this put in place.

I'm sorry, this is, I have to go white route in this instance. Yeah, well, that's kind of the function of, if you're ready, when you're not going to, it's not going to be any direct, it's kind of guided by this, you know, this comprehensive plan, this is kind of, the deep analysis of the current state and our goals for the long term, so, somebody might want to question on this one here, you know, plans have been developed in the past.

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that this is going to be the plan to the 25th because that can be the legislature, like the new administration that come in and tie gears into the plan and it changes. And they all think we're strapping that.

That's, you know, it's not their brain childhood. That's not your legacy. Yeah, I think they could actually amend the plan as well. So it's a layup. And you know, there's all the blotting and other assumptions.

We have to promulgate peace in our rules. But depending on how it falls to the recommendations that we've followed by the population, all of those, both from our agencies, levels, but also in terms of the separate regulations for agency that have a role in that.

That must be our own contribution, just with that, as well as in fact, I think then we can use it, recommend it here. Right. Christine was talking about, you know, who, the balance is going to be based off of.

I'm sorry, I didn't mention what you're saying. You're trying to get another proposal that's moving on. What is included or has a consideration on huge sheds? Yeah, I don't want to live on an island of Billboard.

I mean, I can't get over the fact that I'm sorry. But it's huge sheds. You see what you're talking about? Like, digital quality is related. It is. Protecting the sites where this goes back to cultural abuse as well.

I grew up fishing up north and it would drive by, drive by in town and be able to look and see all of that stretch. And now there's this like great monstrosity blocking where we would traditionally be able to see large, you know, large, big cities.

And so that constructed a very much cultural, you know, a sensitive spot for us. For, for, I don't want to say it. So it's not really these practices. Well, it's not really that. It's not really that.

So the concept of owning states above land. Meaning here, everyone building on the left side was great review of two month day and then speech and whatever. Very dense. I remember it was hard moving, not trying to reflect on this movie, but the sensitive overall airspace above the building or where it was in front of them.

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I went, is that even possible? Because you wanted to protect this. When you hear I am, I drop a million dollars on the great review of the house. And two years later, somebody comes in and builds a three story house in front of me and saying, Oh, I found my private property in my house.

This went to crap. I don't, I no longer have that view. That also follow the view shed. So it's very, the high American exist. So we think about those things like, you know, there's door double, one's, in the process of, kind of like a social condo, there's so, you only need to have consideration for you to have your, press to, you know, I guess, the most, you know, I mean, like, yeah, so when you, you know, how do you, that's the best thing.

It's, it goes back to like, passing bills like this one, okay, the one with the billboard one, that goes back to, greater reduction of rain infrastructure, is that, is this bill, and then in the bigger picture, bigger, greater scene of things, going to benefit long, it won't, it passes.

Because now we'll be losing streets, trees that were planted for storm water and to purge Protection another element that people are getting they're not just big trees on the storyline They served a very important and vital role protected the community and structures on there by that that sheet and I actually get historical reference So these are just other pieces that we don't talk about and I don't want people to think it's just understood We should unpack about that part of it is Process to follow through that's very interesting And then you like what I say We legislation could be put in this regulation should could be set The other though is these changes occur largely because the community accepts the violations exist because Projects the other part of that is helping to educate the community about why this plan and This process is important and the only way which So that all that's what we put you up That process is in that way to the other elements Completely discussed and that is we have a process now to go through the technical requirements of a project And even in that process it gets frustrated by not knowing generally If that policy And if it's going to have permanency we'll talk about I'm going to talk a little bit about what you guys think it means.

How it needs to be done. Because he would walk it back in here. Because she should be in the same way. Just before you said, Juan, is that actual management is seeing how they're doing this structure, but maybe like starting with major based solutions for development and for operating, you'll see for that.

We don't do it. We put them one of those things in our conditions now, right? So from like, especially on sites for more of an entity, like main garden, it's a permeable agent. You know, it's a, but you know, like, we just kind of need to put these things into context and whether appropriate or not.

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It's as active as a solution because when you're dealing with a family of items, and it's like we have to get beyond the small pile of transition. You know, the history, like, your team has been great about introducing, right?

And that's the one that introduced me is to ADS. Like this should be something to see, something we have everywhere. It's just putting it in the agencies that are requiring us to require a case and requiring it in the master plan will help take it from, oh, I was trying to be this month because I volunteered.

So, I mean, it's kind of like what's the priority here at the table. It's like a major road. So, I think that the. Be able to spatially oriented where these conditions with a with a killer over. First, having these conditions that are just kind of 12 wide and really the.

C. Yeah, that's right. I was going to say, you know, it's the way the processes work in sequencing things to do a better job on that too. So, for example, you can have a policy to say it's an error. And then you can actually do, you know, maximize use of natural stormwater drainage on site.

the conditions and the permit can be prior to issuance of a building permit. Require a landscaping plan that actually shows how that's going to happen. You can condition it. And then you have to get the plan in before they actually start building.

Instead of the other way around where you said, well, make sure you do this and then this may or may not happen. It depends on the situation. If you don't have an enforcement capacity, then you may not know what happens.

It depends on the mechanism. If you're developing, for example, that next school that you might test for post -conditioning. Yeah. I don't think I'm a person. That would be something to do with this.

So it's a case by case. Yes. But your policy would be avoid development in weapons. Set back at least 50 feet. And then the condition. I just want to know if you hear about how these people are doing.

You can do some timing. You can make the math pretty. You've got to wait so much. Yeah, and we have to recognize where our, yeah, our jurisdictions are tuned. It's like, you know, if you talk about things that are within our sea shore under, right, you know, below the high water markets, it's farm -enforced engineers, right?

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So, of course, the most appropriate is to put these things in a house, in a network, it's planned and help against the bolster, I guess, or it's a huge, it's a big, it's an audience play. Yeah, go ahead, my father.

So, I mean, you're required to give a coordinated, coordinated, coordinated, in -application, but a lot of that comes with, before you even apply, there has to be coordination, we are for, there has to be, all of these things that present to the name of the situation, and it's gone through their reviews.

So, when the name of the situation gets in, we just put in this extra measure, it's running out with each of the new committees, so all the community agencies are prepared, opportunity to make the situation a little bit more complicated, to put in any other conditions that may help start a real water, water, or addressing any of the concerns that you have about that type of situation.

So, it's not just a personal review, we need to make sure that there are all of them, but the minimum requirements, but yeah, really, it's a very beginning, having more of a start -up in the application process.

You can't get to the language conditions, so there are these three things that normally come into the permitting process, where you're actually trying to regulate the permit, and then you get frustration, and then you get all of this interference from outside, or from the top down about, hey, how can there be a problem on this room, and we are not responsible, they don't have this, this, and this, which they should have been doing.

Thank you. But so we're not told that everyone said to do the proper plan. But it's a good thing. So we looked at different homes like requiring additional things prior to the application coming through.

And in this process, you know, to get to the legs, she would have made the decision on it. And that when you, because if you do those things prior to getting to the next mission, your project is already addressing all the things that would normally come during the process.

And that's not a good thing. You just talked about this yesterday. One of the ways that we've got a plan, a land use plan, is to set up the total amount of conditions that are developed on T2. So, the authority will have to be ruled in place.

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So, if I could design and rule and meet those concerns. early in the process. What did the other game say? Jim kind of comes through and is in the forward. He was no person in the time of the year to be a senator in the Senate.

He was in sub -unit. He ran the mental security. So the rule is five or less opposite. First of all, five or less last. And he's all next to the federal administration. So if five or less last doesn't require a basic industry that would come with a sub -unit machine, and there's no legal one, the one way that we're controlling a different process through dissentivision law process.

And so he put these little dots to the other things. Further to the other things, mainly with wider law and industry view. And the name comes with, if you put in those five dots and you put in the infrastructure for the rest of the class, then you have to put in the infrastructure.

You have to put in the truck. But if you put in the five dots and you don't put in the infrastructure, if you want to do it further because of the rest of that and last, it's actually required to be required to construct the last five dots.

So there's been some ways around it. And there's still a time that is they do five state blocks. And then they do four schools, some editions of the five dots, and then they're done. So it's still in that framework.

So for every version of the five dots, those are daily bad factors in this development process. But they see that as still a viable plan for the result. It still works. They build that into their ultimate business plan.

And we see it. Sometimes the surveyors accidentally send us the full scheme of what they intend to do. It's an accident. We certainly don't want to do that. So how do you fix that? No, but it's kind of the purpose of this thing.

Right? I mean, we're trying to close some tools to make sure that you have these scenarios that have bigger implications like lack of stormwater management. You know, you have sprawl view developments that don't have the proper infrastructure.

Those leads to a lot of problems that they're trying to fix. So it's around trying to be reactive here. We're trying to avoid trying to deal with your go -boss that you're dealing with. So you're trying to close those tools, but how do you go about doing that?

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So to deal with our own internal policies again, of some you should not come through and see it, you recognize it. Even if it really isn't their intent, we're going to put that little note on the map that says further sufficient may require a break.

Because if you come in, but again, the front -end subdivision keeps in, which is kind of less restrictive. the minimum lot size that's allowable there. And again, when we first planned into it, they did it from a company to an individual that is probably a managing partner of that business.

They're a future thing that's, they did to their child, the only restriction is that there's a five or eight in each because they can't do anything, they can't need these, but by their grant for five years.

But after the five years, that's how long it takes to build the structure and get in the right family. And then just... Okay, so we, again, just like yesterday, there appears to be enough information within the permitting agencies today to identify where these particular rules are.

And none of the nothing that we've heard regarding the rules shows that it's not fixed in that way as in which we need legislation or through agreement on part of the regulations. You can close that.

I want to get back to the form where you need to move on to the next topic. I've been speaking to that as already mentioned once. And that is, how do we remain consistent in ensuring that this plan will still be in existence by every inch and inch now?

And we're really interested in hearing, is there any way or what are the new ideas in terms of how we can permanentize the values and vision that the plan is planning and helping and providing? New employee, higher exposure.

Honestly, they've shown up at meetings over the years, right? How many people do you even know? We asked how many people know there was an origin sound to the plans. And I think that's a good point. definitely don't put enough stuff into the new hire process and training.

I have staff that we've worked with for ten years that have ever been a degree hired, right? It was a long five years and that's a small one, but that's an easy one that we can address. But if everybody gets distracted and busy and then you forget, and the degree will just share the file.

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And the previous change is one of the reasons we put components such as this time to boss and the elevator to the right. Yeah, and a lot of these things, like you know, so we have follows thing by again, how many people will still stay in the fly certain laws.

But and then you have the ones that are iterative, right? If you're talking about it. These are positioned to infrastructure. So they've got ownership on the government side for making investments. So there's now, there's multiple parts to this and I guess how they're implemented are not going to be all the same.

It's really going to be based off the context of it and how widely. You know, by working to look at the markers, like, you know, hoping about five years from now, certain infrastructure needs to be in place to get a better look at that time to respond.

Right. And yeah, so we have time and space like for a switch effect, right? So when they did the subject and that's what we mentioned about the rule. And the recommendation from that was to have a food connection or build, you know, features within 200 feet of a sewage line that could help you.

So it's going to be, the absence going to be a tactical from a timing perspective. That could be like, you know, these things are affected upon and that are affected. And especially, you know, the reason it is, you do it that way and you're going to be able to hold the plan or never write it really and just be aligned along with the sort of disaster.

So it looks as if maybe there could be reasonably from your folks perspective, legislation introduced to put something such as a policy framework, policy guidelines and have that kind of icing the wall.

Tying the hands in some sense of administrators that are coming in and governors that come in. Legislations. And I can say it's really good to hear you. This is not about that well put together well thought out.

It was to show that there are components of it on the things needed to correct the function from the areas I think. Yeah, so people like some agencies strategic plans or other things like language plans, master plans especially from a socialized planning authority, there's a lot more implications for them.

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It's not just a guide to document my model. It's a, we have to submit to the governor, they throw recommendations, she has to prove it, get a sense of the legislation, they have to adopt them and then that's what it's going to be kind of rules to do.

And anything that requires the confirmation rules and regulations, they have to follow up on the dash. So it's not like a, you know, it's just like a guidebook, right? It's really for a guide. It's policy.

ε I mean if they just make, You know, the same people that we're expecting to adopt this policy, we need not be an institution for part of it. We need to help part of the executive branch put this together.

We go to the legislature, but maybe it's the faster adopted this master plan, has a lot of that conflicts with it. The authority that is one. They're doing all this work towards habitat conservation plan, and the most critical resource that we have on Guam can be just overruled with a lot being passed.

The parental subdivision is something that I learned myself. We did so much research on history of the parental subdivision. You had only the property for 10 years, and then the law changed. So if you own a piece of property, you had to own it for 10 years before you could do a parental subdivision and get it to your child or your pet child.

Then the law changed, and they would get down to 5 years. Then they would get to 2 years. Then they made it 0 years. You could buy a property today, and you'll have to raise a city too. So it's the legislature that's somewhat created that particular issue.

And so these policies, these annual legal weekend on our end, like I said, we get created. We write these little notes. So when they sign them out, and they agree to the conditions on the map, they're on the list.

But the next person that buys that property that wants to her no car, some of you, they're the ones that have to go through the language condition process to do it. They're all frustrated about that.

So we're doing our part as best as we can to close those gaps. But we always know that if we ask for different teams, we refer back to at least 1 or 2 years. At least 1 or 2 years. So now there's a little bit more of a delay, and that time allows the government to do more work to get it in more infrastructure.

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No, but did you know something about this? Yeah, I just wanted to, I agree that a policy level address is critical in order to, you know, ensure the longevity of the planet is. But, you know, there's kind of speaking to the concrete and the ground floor and what I was talking about with the SHIPO and developers, you know, SHIPO always kind of creates this major roadblock for development of the station.

And you're a vital public sector. But, you know, like Warren said, it's absolutely unnecessary, you know, the entire island of Guam is historically relevant. You can find artifacts everywhere you go there.

You know, you find the bones that you develop. So, you know, given the way that we operate the government of Guam operates, it's, you know, like a ward of the federal government in a sense is an unequivocally territory.

We utilize things like our president, like the Section 106. as just a way to have tea. Environment order normally completely disinitial in terms of our cultural preservation. 106 is recognized even by the feds and we go to town to it.

It sucks because it also creates other challenges for us. But I also think that the upgrading and kind of revision and address of our current environmental standards is critical because that's also another place that, we if our environmental standards supersede those of the federal government, they have to recognize our standards.

And so the land, I really feel like a, you know, land use sustainability, it has to kind of be a part of effort to address the environmental standards and then turn around and make the land use plan tied to these high level standards that are us.

I think that's the challenge with government. We look and feel like a real government. We act like a real government. But at the end of the day, we're territorial government, this is a reality. We don't have the same kind of empowerment that a state may have.

We're even a free and associated nation in there dealing with the federal government. It's just that everybody in this room knows the deal. You've gotta jump through so many moves so that you can be eligible for ex federal government funding source.

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You know, maybe, and then, you know, that kind of just puts us at the mercy of all that. I mean, we haven't even talked about the sad reality of the military occupies one third of the island. It's not just any third of the island.

It's like the most critical third of the island. And it's not just that land and how we live, you know, kind of living around that presence. But also what happened, you know, it's not just inside the fence, right?

Like the few of mine that was leaking for how many months and we didn't even know about it. Because our, that's the... the people's land, you know, and it was only exist because of the President of the US military, you know, and that situation only exists because we're a non -self -government territory, you know, so I mean, I really appreciate that, you know, we, I like this because this is like what long historically is done, right, long as we're going to govern ourselves, period, like we're going to do the thing whether you're going to recognize us or not, and I like that, you know, we, you know, we're doing what we are more of the obligated to, but it also has to recognize, you know, the sad reality of our situation, and I look at this as like, this is our, our preparatory exercise for the inevitable, you know, boosts up the government of the eye.

But, you know, you talk about 106, right, and, you know, but again, this is what we're going to be operating in the military restriction, right? So you think of the regulatory aspects of it on policy level, and we also have, well, we have designated land, and especially oriented, that's going to serve the purpose for a specific function that we let the stores sustain.

Whether it's conservation, historic preservation, community centers, health care. So you have to think about how all these things are divided to treat land use as another layer to save zoning, because it's going to be not only about the zoning conditions, but the land use is based outwards, located, and those conditions are going to be respected both in actual environment and in the most social conditions or for those areas.

So it's a big thing that we're trying to do, but we're not going to fix the military issues and just have to probably just kind of, you know, I bet that on the Gulf of Longside, we're not the best steward over land either.

You'll be honest with me, and the stewardship is probably not even part of most people's vocabulary here, especially with the land agencies, like GALC. You know, the ones that are trying to make it, or the facilities here, make it important.

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But so, you know, Kansas is trying to protect these areas from these kinds of referring, you know? So I guess like putting your respective state into, you know, I guess the context of what this whole authority has had, but land use can be very powerful.

Not really, something that's being done in the game. So what we're going to do is just make sure that this is enforceable and got down. And it does have to be reviewed, closely monitored. So, you know, while they're doing the placement, which is reasonable, there's, you know, there's going to be, you know, some real, you know, classical function that can come out of its rocket implement because it's not, you know, realistic in terms of being able to implement, you know, so just waste our time with a good idea.

The flips required, like the prior order of prioritizing the natural resources is that term that fits the whole thing. I think it was, I don't know, it sounds like through all of the discussions, the master planning, it keeps coming back to the development, development, development, which we know it has to, that's what it's for, like where will we build and what will we keep green.

But we have to decide, I think it's, and in Ireland, or as government, are we prioritizing water, food? Are we prioritizing that? And if we are, that should be what we keep safe. And then everything else.

the bills in the gaps because then when we protect water and food we protect cultural resources. We protect fisheries. I mean we protect everything else. We easily refer to it. You look at the universe, it's in the air, the ocean.

Every time I dive into the universe, it makes sense. We're protecting our land, our air, our culture, our culture, our language. That's an easy way to tie it in and set it for the next 23 years. Yeah, we're not going to recommend something that's detrimental, you know, or that's worth two, or you know, you better just one.

But we still see it, right? There have been statements that the previous leadership of different agencies were, I've produced a right of that letter, but if you want that, you're going to have to write that letter.

And it's been okay, I never lost my job. I did my job. I just denied writing something that did not fall perfectly within our, you know, and so it was okay. Yeah, but I don't think your experience is about you trying to settle a bit, right?

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So, because you know, we're at a good start somewhere. I mean we're going to have to cut this. And I think the one that has resources is big. Yeah, that's the big hit. That's what people don't want to do.

Oh, this is going to help. I just have a couple questions about like that outcome. What is the timing, what do you talk about having a quarter of that who's, you know, going to be championing this plan?

Is that going to be like a position at the SP, like a sustainability consistency? Do you think there will be some regulations? Or is it going to be like every agency is sort of like on their own? Well, that's not...

Yeah, and then... The George permit, you know, special positions, like this thing that's... We kind of do it already. The university is kind of expanding on it. that we're seeing, we've formulated a position saying on the federal consistency level, when there's federal action, we'll be able to, I think it's really kind of standing on.

But, you know, we're not just gonna be the, one's fully accounted for, we're just really the, you know, the central, so it's gonna go on and stay. Well, you know, we'll be responsible to make sure that everybody's involved in it, and has their say.

And, you know, that's what I'm saying. Is that gonna be like some of the BSP sort of, not being used in the US? I'm sorry, anybody here? Yes, we do it already. So like, ARC, Hypertrediction, or territorial C - share commission exists.

We're doing it now. Maybe it needs to be something that, that your federal inspectorate in doing the plan, is going to be, maybe it needs to be, Thank you. Please, please, please, something that is not invisible.

It's not just part of what we do, but it's like a champion. Yes, it's that face forward of a 2050 plan that never was asked, if you wanted to see it in the structure. It's look at the ASD, they've got human, they've got human vision, and that's their piece, always still look at it that way.

I think that we're trying to manage some very rich land, it's not that they're hard land. So, although we have to eat, you can see that there's an energy. So, if you're going to provide a good think recognition on how water sheds are managed, specific areas, and those conditions, you should have water quality where the ecosystem is more vulnerable, or needs to be protected, much MPA.

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The other thing is like, we were talking about the legislation, how they can, and they said many times, how about imposing books with anything in this plan? Is there any plan to deal with that? I don't mean practically no, but we're, I mean, but it's a mission to stop us from moving this thing.

Great, I'm not saying it should, I'm saying, what are we doing to address it? We get created and put in it, that's what we do. Well, actually, that brings up a nice segue to our kind of segue with you folks have been spokane with us for this period of time.

Like trying to finish this before 12, we have one other set of questions that directly affects you. So you go to the next slide. The next slide after that. The next slide after that. Okay, so the answer to the question is, what is it going to, how do we keep the legislature accountable?

to the process. All it means that their constituents are imaginative and how do their constituents learn about it while there needs to be a way to engage the community. So we are interested in this planning process that we're going through.

Your recommendations and your thoughts on what are the best ways for us to improve community engagement in planning and the current process from your perspective. What can we do to impress the community importance of what this plan is, why it needs to be here too, and how it can best resonate with what they should do to be here on the board.

What are some of your ideas now that can happen? Well, I think at least one of the agencies here at Advertise Center has a lot. So whatever there's a project going on, it should be planned for whatever needs it.

Perhaps the corporate or the local that represents that is part of the different plans. So wherever we're going to do the street patting, if there's an age to go or if there's a local that says, hey, this isn't a direct line with the plan 150, we're doing the street patting, we're doing maybe MDA goes to the desert, how they do the easter egg clients with the co -counters or whatever it is, cleaning up the shorelines or under the water, we're doing the co -courts or whatever.

Anytime there's an event, do some time about gardening, what does that start looking at? QR codes are different types of things. So people can refer back to the plan. We've got to get the community to buy into it.

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When we talk about villages, I think one of our biggest bi -leaders is the mayor himself, who just pulled those in trees all over the country. And on that one, the wild wash is all the way down into the ocean.

And it's easy to say, oh, I'm a mile away from the beach. You can get the top of the mountain down there, and that's eventually going to get all the way down to the sea shore. So, I mean, it's a small way.

Any type of little advertisement, any type of interview to promote that it's part of the sustainability plan. I think we can go and there's a lot of course. So it's just like a marketing strategy. Even in just the existing planning.

So, you know, whether there's any application, whether things are going after the latest commission, right, there's sort of more we can do outside of those applications being reviewed by the PC, which is a little better.

So, you know, is the creating engagement enough regarding, you know, recovery decisions and changes in the communities that impact. You know, we're educating them on how to reach out to them and how can we do that better.

That's what we're trying to get to. One of the things I know for our initiative we have to read is that 2009 was like for example, well that's not it. A household survey was done that communicated this which is no one follows.

And it was a household survey that like prior to the community came out and the main prior to the community was to the various issues where they desired to be addressed in their community. I believe it was it was flooding roadways, youth activities and firefighters.

And so over time we've been trying to community roadways improve, improve the basic trees that were planted, some flooding reduced at some sites. So there needs to be a renewal of this, a visit back to reassess it.

And so the opportunities will be in the community for any kind of action planning, strategic planning or funding that we bring these elements of the comprehensive plan to forward. Because many times we need to.

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Every time you do something like this Even historically the old plans it narrates it still addressed, you know, flooding issues fire issues music and this plan and There's always ways to be tied back it's orange within a feel like they're part of it.

Yeah, I don't want to make it succeed Yeah Somebody who was that number of the youth comes to be looking for At the age of 15 it was like with this ingrained And if you're talking about something that you see around for five to ten fifteen years You better be turning to the youth and you better raise up personal experience And let them know the value of it and it will be with us to their lives and that's where I So what we do is we have a summer program that takes place every single month Incorporate something that the students are required to do while they're at their agencies so they come up with many contributions to the plan or Take part of the plan and being part of the action So we have planted the trees within our agency is is going to help with having some conservation Reforestation burden so I can build it in the schools Where they can start planting within the schools and I like the idea of planting trees in schools because the Major is not gonna have access to go straight on in and say I don't like that tree and it cut it down It just feels like it and so now kids the jail can be one graduating this year We're gonna find 20 trees at GW and in 10 years we're gonna come back and look at our trees We're gonna have a brass plow, you know a face of it.

This is our tree where we're gonna put our time capsule So we know I remember more art in high school time capsules. Nobody could remember But now we have a tree as a marker, you know, it's there, you know something like that You know 51 locations 33 schools and including school boarder, maybe that's a great reforestation project right there.

So we're hearing a marketing plan for the plan itself, also for the values, etc. as well as educating the community with regard to the specifics for the terminating process, incorporating the values of the plan and what it's intended to do in the education system so that it's for you.

Any other tips? I kind of have a reverse approach to it. I'd say in our venues division process we have five public meetings. All of these five public meetings, we can't go up and push them. We have a huge one of these meetings.

But I say we turn it around and we present it to these organized groups and we show how in the plan, how it's going to help. I mean, we can see. It limits me the correlation between an accounting association and this plan.

We can be proud of this amount. We can get a better work done. I'm not going to go into long -term issues. Even the speed of these small and open issues, even the small level organizations, and the

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reshatch, but if you can find the time into this plan and what they do and their goals, they're going to buy it.

They're going to do it in every field that they choose. Not just in their strategy. The sweet thing about this plan is that the contract is the real service and everybody is developed. But they're already not buying into the future.

Yeah, but you know, but... I think it's important to engage in community because, you know, they're the ones really doing that. Pressure, the contents, the work is made. I love that. So we've taken on the added scope of the contact of the various business organizations and presenting what we're trying to do.

And that's going to get us through our contract. But we're also hearing that there needs to be a going dialogue with these organizations as the plan unfolds, as it's being implemented, and certainly by the time the legislation is going to be presented.

You're talking about civic organization, right? Yeah, so the Rolary Clubs as well. The Rolary Clubs, the Blindness Clubs, all the other communities. You know, we've started a microgrant program in forestry through our bill entirely.

And so it's... We didn't think, starting this, that there would be NGOs coming out in force for this money. Because we didn't think there was many NGOs ready or established. We were wrong in forestry.

We put the opportunity out there. And so there are people that want to take charge and want to leave. So definitely finding more access. like to our programs that we already provide, like they are the mischewers.

They're helping us do the job. So there you have it, they'll be filled with pressure on everybody else. 5690, get this up if I hear you guys are disappearing. And I'm gonna head back to the more boring side of the street from that is, how do we, how do we keep up full of political pressure?

And they're the fact that it is for completely things that are either contradictory, something somebody does on their table, just did or is just a gentleman. Can you see the position or, can you see the person in the previous administration that would similarly, their job seems to center around monitoring what proposed legislation was going to have a good relationship?

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And they can take that and forward it to the agencies that will potentially impact it by it. If that, It didn't come back. We have some of that at the governor's office. Yeah, we get everybody. The money comes in development and land use.

We're getting some of the more price of it every day. Yeah, I mean, it's like, I would love the team to turn for a little bit longer. Justi and D .S. all there. I know I hate to say that there, but they are extremely, you know, all the policies that in fact are returning to the public health site.

And as a result, we spend a long time monitoring what comes out of there because not through any intention to be there, you know, but they do tend to do times the postings that are going to be managed and the impact in what we put in place.

So we have a very, we keep very strong position about the policy and comment with the legislature. And they can't do much because it's a return, but to take that same approach and monitor what's coming out and just get the word to the right agency and require the agency to make a comment that you're going to make sure that the governor's office gets back and gets out to the legislature.

So they're not unaware of what's coming now. Great figure agency gets what they need. Sometimes it's a matter of... I think sometimes it's a matter of directors now bringing it to their professional staff that are qualified to actually respond to their approach.

Now, I think that's the bigger issue. But... We have that. I'm very fond of the... It's a trend for everything that's, you know, that's my 10 cents. I agree. I think a dedicated person whose whole job is like, I don't want to say bill -based, but like, essentially that, like, you can track what the legislature's doing, making sure the legislature is aware of, you know, the impact that a bill that they have is going to have on the sustainability plan or other stuff.

Like, is anyone going to the centers individually? Yeah, so it's usually, I mean, they have obligations to notify them once when it's their designated station, active or fans or ministers or, yeah, but, you know, getting, getting special staff that are involved or have the confidence to show us sometimes a challenge.

So you might be, you know, it might impact you, but it's not going to impact you. and the first thing is all of that analysis about the impacts of certain education. But not always involved with the process.

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I don't know that it's always the directors. We take it, we take it on ourselves to kind of troll the will sites, let's say you put it in some kind of work. One thing to do out of everything else and it doesn't know how they get that.

Just think about that, somebody else on that behind me looking over my shoulders while I miss something. It's great on the partners. We still get our partner, EPA and the other is the vacation of the calls.

The key, Chris, we need you guys to come to this. And sure. Yeah, we have our field keeps it through. You know, we might believe Roy and like our infosicent's affirmative. So usually when there's policy that's involved, regulatory side of the word as a group, you know, aware of it.

So we talk a lot of collectively. But that's really on the regulatory agency. I understand that housing, health, program oriented type of agency is impacted by it. I can't really speak for you guys. You're not part of this application.

I mean, the mic, but the process. So I think that's part of the providing that you should have a team for part of the process. So really, we can't know what I'm thinking. Just this year, this is, you know, couple of us asked the first meeting, is this just getting started?

My application is getting started. Even as we go through the process, probably have more of your quarterly meeting, same group, so that may take this pop up on my end. What's the status of that? So even though we set the policy in place, how to represent it, at least from each of our agencies that are knowledgeable.

Obviously, it would be great to have the same people that started to be here, they all started here to continue to be in attendance. Like the sustainability of working. Correct. We're going to be in place of this interview, especially the build -up we extended.

So, for example, positive address is temporary workforce housing. So, that might be good. You could do any of the temporary solutions. What is temporary? For as long as they need it, you know, for the build - up, right?

Because you don't want to find those cells or find low -income, you know, affordable homes or affordable markets. You know, instead of the loss of these things. You're looking at sustainability

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working through, very low -working through, just being the thing where it's about the long -edge, grab the, grab those, those health sites, partners and put them, put them be sitting at the same.

I think that the center for island sustainability has created a great tentative for how specifically villages and community groups can get involved. I think that model is something that should be very close to something.

My only comment though is that they need to keep in the work as long as you have convenience more regularly. Yeah, we have to coordinate and excel so we can get involved. Because the spacing, sometimes you don't have the time for that to have been involved in it, but the coordination is sort of spaced out.

I'm not saying it'd be more effective if it was convenient on the past and even if it's not always. So campers are just creating a lot of work. We're just changing the team, changing the team groups, getting them to move.

Yeah, so of course it's based on participation and priority. So if this is being a priority with every government agency, then of course this is something that makes me up whole. I would hate to see us doing steering committee for wandering roads and then having to do another steering committee meeting or monthly meeting for a sustainability plan.

So I would love to just have it coincided with each other. If we can just make it a priority with every government agency, if you are unable to attend, maybe have somebody who is able to attend a particular agency just so we can have that sort of consistency.

But as I mentioned, I would love for it to just coincide with each other. I would hate for it to be so extra. Yeah, but you know, rather than provide an update to you, that's like really addressing the media issues like hand -milling.

Our town is included in sustainability. So our degradation is pouring out of the climate. The last of our lands are so poor. That's the other thing that you maybe can lean on so you have a collective voice.

But when it comes to prioritizing for all of the other agencies, then we can definitely focus on that. So, if we prioritize stewardship, then of course it's something that we would focus on more. So, it's a collective effort.

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Before we close with next steps, I want to give some advice on part of our outreach with my organization, including this round of roundtable discussions from government agencies. We're going to be going out and talk to the mayors.

And then, based on all of that information, we're going to bring together some concepts that would make up the framework of the plan in enough detail so that it would give a complete picture of what the plan would look like to the sense and sense of what the community itself would be able to absorb.

Now we're going to present them. In three, what we're calling surets, which probably we will change to a more familiar word like worth shot or whatever. And due to budget constraints, we can only afford to have 300.

So we decided that it would be best to have a regional. So we had a suret for the issues and interests of the villages in the south. We have one central part of the island, one up north. Each one tailored specifically to issues that are important to that.

Work is about how can we can make these most effective. And we appreciate any sort of input that you might have to help us ensure that they are impactful, that they convey sufficient information and act as a means of enveloping and recruiting and engaging the communities so that the plan will be well received.

Are there any sort of ticks or are there any kind of direction that you think we can provide us to make sure that it would be more effective? I laugh because we all have a disinformation. Yeah. We'll be right back when I'm done.

So if you think about the context of doing the right thing and doing things right, people. Yeah, you know, it's like that is a thing that you're going to get all the right. Yeah. For our staff, I mean most of our work has been in the down south.

So for down the south, for a while there, we went to the order to work for businesses. Definitely the merit first, right? You're talking about merit first. The merit is your past to the rest of the village.

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People will question why you're here. They talk about merit. But it's very targeted by individual members. So if you go into each one, when we talk to the broad group, you're basically presenting to the members that come to that day.

And then you may get one or two that will reach out to you. And I know like, for example, if you have a business, you might be asked, I'll say, you know, this is very important. Mayor the mayor charged off both mayors are actually it's penalty that you'll have space.

I don't know who will come But it's it's messaging with other there for the mayors and hopefully they can get more gaps in their community counters and you participate, but We had more effective meetings when we go to you with it, which is I see I We all want we all know is when we ever afford created financing plans is it funding?

I know something but when it's not quite your plan we really try to Community and actually at home of the small services Especially around behaviors and stuff so Mayor's great. I think Shment Santaということ publications King pliers They can't be about everything under sl 진 on Apparently, you find the families have lots to do on Saturday.

It's difficult to get people on a phone. You need to keep your discussion in your names, like you get outstretched in your names. There's like, two or three that come and then your staff is going to leave the audience.

But when you engage in a very meaningful conversation, space to space, they get excited. Because they don't even know why they're in there, but they're just listening. Once you get involved and invested, they go home and they share that information with others.

And that's how you get the community invested. And what's important about that is what the community does is that senators listen. No, they're not listening because it's based on the real world people.

And that drives that distinction. We tend to get a response to our demands, also specifically in the monies, because we also throw up a lot of beautiful visuals. The visual works like maybe not too many things.

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And all the key words that will resonate with the person. So if you're talking about now South, I think we can get some great general buzz for Zunair that will attract them. Well, there can be a lot more people that don't have language.

So we're not going to be talking. I'm sure we're talking to discussion too, because, working out, we're going to be talking about both, you know, developing over the awkward, we're going to do a lot more.

That's relevant. I think this will work. Is it similar to other products? I don't know. What do you think? I think they're going to come. You think they're going to come? I think you're going to get developer.

Yeah, we're going to get an eye. We're going to start talking. All we're going to do is how does this affect me and my family? That's all they care about. They don't care about the plans specifically that we're working on.

They don't know what's going to happen if I go to my house there and it's going to start to flood or it's going to, of course, it's not going to, you know, it's going to start to save it all. That once you bring it down to your pocketbooks, we're going to have to fix it.

Of course, Zunair is going to have to go to the farm there. We're going to stand in there. Yeah, they are. We're going to start, I believe. But the first point there is, you know, we all know how to do things these days.

And I don't know anybody who just doesn't know here to watch or a village chat. And I've written things to the mayor and how they meant to get it out of her home. Yeah, it's very simple. So you get to talking in the community support and then you start.

So the southern land use just being being without a south right, it'd be more than impactful ones to be. Who's going to be your future neighbor? You should look up the big missiles defense. Actually, I'm coming to talk.

Hold on. You know, it's a little off the way. You know, when people talk about, oh, we're going to build a, you know, an incentive or build a decent or even people pay on us, they don't want that. You know, so it will be very important in the south that you develop that.

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But you can do it at the same time, you know, if you watch. And, you know, it makes it very good to say, you know, we're going to go around the island. Where do you go? You know what I'm saying? Because it's an active community.

You know, you're interested in this. This has been very interesting. Can you bring up the last slide? Okay, so just to let you know what we're doing next. We're going to be meeting with each pair and stakeholders and e -missions.

And we're going to be holding these shreds, which will be designing the preliminary plan that we're going to be looking to develop. And then when we, assimilating all of the suggestions and assessments that occur from that.

And then, plan them and draft it into a semi -final form. And then, we're going to do an island -wide survey over issues that came up about the three -division rats and the three -division stagels. Just to confirm that the ideas that we presented are going to be out of the possibility of resigning.

So, that's what's going to be stored. We're going to be working throughout this coming year to finish up the program. And we want to say that we really enjoyed our match. We have to come back to you with ideas that will be reaching out to you and doing for follow -up questions.

Then, if you have any questions or comments before we close. Thank you so much.

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Mayor McDonald
Interview Summary
February 21, 2024

Mayor's Role

The mayor, who has served for 36 years, outlined his role as one dedicated to keeping abreast of developments in Agana Heights and preserving existing system(s) and infrastructure. Expressing a commitment to maintaining the status quo, the mayor emphasized the need to address ongoing issues within the community. These challenges include problems with water lines, sidewalks, permitting processes, private properties, easements, and sewer systems. The mayor conveyed a desire to see Agana Heights operate more efficiently, citing a need for cooperation from the government and legislature to tackle long-standing issues, such as inaccurate maps and difficulties with building permits. Their goals encompass resolving existing problems and fostering positive changes in the development and functionality of Agana Heights, with the aim of achieving these improvements before the end of his term.

Sustainability and Village Development

The mayor did not explicitly define sustainability but emphasized the significance of conducting activities "the right way" by following existing laws and plans. The mayor alluded to the Guahan 2050 Sustainability Plan, suggesting an awareness of broader sustainability initiatives. Achieving sustainability in the village was described in terms of adherence to laws and plans, possibly learning from past experiences, and promoting responsible practices.

Concerning development and preservation policies, the mayor advocated for a balanced approach, highlighting the challenges faced when previous development plans were not implemented due to financial constraints. The mayor expressed a preference for responsible and lawful practices and suggested using the military as a model for development, emphasizing the importance of doing things "the right way." This approach aims to strike a balance between development and preservation, leveraging the military's systems and practices as a guide for responsible and sustainable growth in Agana Heights.

Land Use and Environmental Management

The mayor mentioned that there were no major issues concerning zoning or conditional use variances. Subdivisions were located a couple of miles away from the village. However, the significant issue of easements, particularly in relation to roads and water lines, was highlighted. This was identified as a major challenge in the village, emphasizing the need to address easement-related problems to facilitate better infrastructure and development. The conversation framed this issue in the context of public works, mentioning buses being parked in the middle of the street near the Naval Hospital. This suggested the need for additional coordination and action to ensure smooth traffic flow and accessibility in the village.

The mayor highlighted environmental concerns in relation to invasive species, citing the presence of the rhinoceros beetle, vines, and fire ants as problematic. Notably, the decline in certain species like shrimp and coconuts was linked to these invasive species, with adverse effects extending to farming activities, especially in the village's remote areas. The mayor expressed a keen interest in promoting farming and outlined specific initiatives like vertical farming and aquaponics to improve agricultural practices. However, the conversation underscored the challenges posed by the lack of effective solutions to tackle invasive species, leading to constraints on farming endeavors. The mayor emphasized the urgency of

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addressing this environmental issue to safeguard valuable resources and encourage sustainable practices within the village.

Infrastructure and Renewable Energy

The conversation with the mayor revealed a series of pressing infrastructure issues in the village. Easements emerged as a significant concern, particularly regarding roads and water lines, posing a substantial obstacle to overall development due to improper mapping for water connections. Challenges with the sewer system were discussed, with 25 homes having a sewer system but facing issues connecting due to property complications as well as costs. Sidewalks were identified as a crucial problem, impacting public works, traffic flow, and safety for residents. Although not detailed, permitting issues were acknowledged, conveying the need for coordinated efforts to enhance the village's development and functionality.

In terms of renewable energy, the mayor expressed interest in promoting solar initiatives to address the high cost of electricity on the island. However, there was skepticism about past proposals from private solar companies. When the community solar program proposed by the Guam Power Authority (GPA) was mentioned, involving the use of rooftops of government buildings and schools for solar installations the mayor stated that neither he nor his office were approached to discuss the initiative.

Community Well-Being and Public Spaces

The mayor expressed satisfaction with the existing recreational spaces in the community, specifically highlighting the presence of sports facilities such as a baseball field and basketball court. There is a positive sentiment regarding the state of these facilities, with indications that the current situation is considered an improvement compared to the past. Additionally, the major acknowledged efforts to bring in sports competitions and teams from other countries, contributing to the community's engagement and reputation for sports-related activities. While the mayor stated there was no central location of particular importance in the village, bingo was recognized as an essential activity for the village residents. The discussions did not explicitly mention an immediate need for improvements or expansions of public spaces, reflecting an overall sense of satisfaction with the recreational spaces available in the community.

Economic Sustainability

The conversation in Agana Heights revolves around economic sustainability, with a notable contentment attributed to the current situation, largely influenced by the presence of military activities.
According to the mayor, there is a prevailing sentiment that additional economic development may not be imperative, and there is no perceived urgency for further private sector involvement. However, the mayor pointed out existing transportation challenges which introduced an area needing improvement. The mayor sees the establishment of an efficient bus system not only as a solution to transportation issues but also as a strategic avenue for economic development. Improved public transit will not only address commuting problems within Agana Heights but also stimulate economic growth by facilitating easier access to key locations throughout the island.

Regarding income satisfaction, the mayor indicated a moderate level of contentment, suggesting that individuals might rate their satisfaction at around 2 or 3 on a scale of 1 to 5. This implies low degree of satisfaction with the current income levels in supporting the preferred lifestyle. Regardless, the prevailing

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sentiment of the mayor leans towards maintaining the status quo with an openness to addressing specific challenges, such as transportation, as potential avenues for economic development.

Cultural Preservation and Education

The mayor expressed concern about the diminishing influence of traditional CHamoru family values, attributing it to changes in parenting practices, such as a decrease in physical discipline. He noted a perceived breakdown in respect and highlighted the importance of instilling discipline in children to preserve cultural values. Despite acknowledging a shift in CHamoru values, the mayor expressed a strong desire to uphold and pass down cultural practices. He stressed the importance of living according to traditional values and called for individuals and families to actively engage in preserving and practicing CHamoru values, emphasizing their significance for future generations. Regarding reflecting culturally appropriate aesthetics in community buildings, the mayor indicated a preference for maintaining the existing character and aesthetic.

Public Safety and Environmental Hazards

The mayor highlighted that police and fire protection services in the village were considered good. Typhoon shelters were deemed adequate, and efforts had been made to address and resolve flooding issues in specific areas. However, a notable challenge mentioned was the issue of homelessness. The current approach to handling homelessness involves sending individuals, numbering around 10 people, to other locations. This is acknowledged as a temporary solution, indicating a potential need for more comprehensive and sustainable strategies to address homelessness in the long term.

Collaboration and Community Engagement

Regarding the village spirit, the mayor mentioned that there are many people in Agana Heights who have lived there most of their lives and are proud to be part of the village. There is a sense of village pride, and the community has activities like baseball and basketball teams that contribute to this. Concerning charrette attendance, the mayor mentioned that not many people from Agana Heights might show up to such events.

Suggestions and Observations

The mayor did not provide specific suggestions for the Guahan 2050 Sustainability Plan during the interview. However, they mentioned general sentiments about the way things are and the need for more efficient processes. The focus was on making things easier to navigate and ensuring the plan's development aligns with the community's needs.

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Mayor Salas (Assan-Ma'ina) Interview Summary
March 5, 2024

Mayor's Role

The mayor of AsanMa'ina is dedicated to improving the community's well-being by addressing challenges like typhoon damage and COVID-19. Collaborating with various agencies, initiatives include infrastructure repairs and food deliveries during crises. Social chats and recreational activities foster community engagement, while plans to enhance sports facilities and playgrounds are underway, alongside renovations to essential facilities. Leveraging funding, projects such as playground construction and streetlight restoration are progressing. Efforts also focus on shoreline erosion mitigation and honoring veterans. Looking ahead, the mayor envisions prioritizing education, housing, and community development for a brighter future.

Sustainability and Village Development

Sustainability and village development encompass a multifaceted approach that integrates cultural preservation, environmental protection, and addressing economic disparities. It involves safeguarding both cultural heritage and natural resources, such as the ocean area where erosion threatens land and habitats. Charito Park's post-typhoon maintenance included efforts to ensure proper fund utilization, which led to the discovery of a turtle nesting ground, highlighting the importance of environmental conservation. Economic disparities are evident, as seen in the challenges faced in building infrastructure like playgrounds due to property ownership and government funding limitations. Investments in areas like "Carakack," despite low population density, are crucial for community resilience, including road repairs and infrastructure projects like schools, which not only enhance education but also foster additional recreational opportunities. Through a holistic approach that balances environmental, cultural, and economic considerations, sustainable village development can be achieved, ensuring a thriving and resilient community for generations to come.

Land Use and Environmental Management

The mayor holds a strong stance on land use and environmental management, aiming to balance development aspirations with preservation imperatives. Acknowledging the significance of parks, the mayor emphasizes the need for educational facilities, prioritizing their establishment regardless of grade level. However, land use issues, including unused parcels belonging to various entities like Gura, private owners, and the national park, present challenges. Attempts at rezoning, such as for a three-story building in Adelup and a warehouse, encounter obstacles due to wetland designations by government and national park authorities.

That aside, environmental concerns, such as shoreline erosion, seawater incursion, and illegal trash dumping, demand urgent attention. Efforts to address these issues include delineating water breakage boundaries, enhancing law enforcement to curb illegal dumping, and expanding resources for stray dog control. Additionally, measures to protect vulnerable ecosystems involve planting trees along beach areas, advocating for park ranger patrols, and promoting recycling initiatives. Through a comprehensive approach, the mayor strives to navigate complex land use dynamics while safeguarding the environment for present and future generations.

Infrastructure and Renewable Energy

The mayor addresses critical infrastructure challenges facing the village, particularly concerning power, sewer, water, and roads. Power outages, exacerbated by load shedding after typhoons, highlight the need for comprehensive solutions such as the Okkodo project to reinforce power lines. Despite having underground power lines in Asan, recovery efforts are slower compared to Ma'ina, where aerial posts are utilized. Sewer issues, including backups during floods and blocked stormwater drains, require proactive maintenance to mitigate risks. Similarly, water supply disruptions in Ma'ina, exacerbated by generator malfunctions post-typhoons, necessitate reliable infrastructure and contingency plans. Road damages, often caused by incomplete repairs after waterworks interventions, underscore the importance of coordinated maintenance efforts. In addressing renewable energy, the mayor acknowledges the potential of solar energy but notes limited community engagement and awareness. Despite

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the feasibility of solar solutions, challenges such as pricing and insufficient outreach hinder widespread adoption. Efforts to promote renewable energy adoption would benefit from increased collaboration with relevant agencies and enhanced community outreach initiatives.

Community Well-being and Public Spaces

From the mayor's perspective, community well-being and the enhancement of public spaces are paramount priorities. While acknowledging the sufficiency of existing public and recreational areas, efforts are underway to further enrich these spaces, notably through the construction of a new playground. Ensuring the safety and adherence to protocols during this process is a priority, with funds secured and awaiting finalization pending governmental assessments. Challenges in Ma'ina, where government land is scarce for playground construction, underscore the need for innovative solutions. Additionally, the mayor recognizes the significance of other public spaces, such as potential school sites and the dumping station, which serve vital roles in maintaining community infrastructure and resilience, particularly in times of natural disasters like typhoons.

Economic Sustainability

The village's economic sustainability hinges on a multifaceted approach aimed at fostering community engagement and supporting local businesses. Efforts to promote education through various activities, including summer school and after-school programs, serve to empower residents and enhance skill development. Despite the predominance of mom-and-pop stores, the village is not conducive to large-scale commercial developments such as shopping malls, emphasizing the importance of nurturing small businesses. While public transportation options may be limited, it is not considered a significant obstacle to economic viability. The village's economic assets, though not explicitly identified, lie in its vibrant community spirit and the resilience of its local enterprises, which collectively contribute to its economic sustainability and vitality.

Cultural Preservation and Education

Cultural preservation and education are intertwined priorities within the village, with concerted efforts aimed at honoring traditions and nurturing learning opportunities. While cultural preservation faces no immediate issues, programs catering to the needs of the elderly population, such as those for the manumko (elderly), are in place. However, the absence of a dedicated senior center underscores challenges in providing adequate facilities for the elderly within the village, leading many to seek services in neighboring communities. Addressing the educational landscape, there is a recognized need for a school to support the educational development of residents, highlighting the importance of investing in educational infrastructure to safeguard cultural heritage and empower future generations.

Public Safety and Environmental Hazards

Ensuring public safety and mitigating environmental hazards are essential priorities within the village. While police presence is recognized as insufficient, with officers typically coming from the south, there is a pressing need for a local police station to enhance response times and address issues like speeding and hit-and-run accidents. Fire protection services, although sufficient, highlight specific areas of concern such as Dead Man's Curve, where road improvements are imperative to prevent accidents. Additionally, the reconstruction of Ma'ina Bridge is identified as crucial for enhancing safety. Environmental hazards, including seawater erosion and flooding during typhoons, necessitate proactive measures such as improving storm drainage systems and rerouting to prevent blockages. Despite limited homelessness, efforts to support vulnerable individuals include finding alternative accommodations and referrals to appropriate agencies, emphasizing the village's commitment to public safety and community well-being.

Collaboration and Community Engagement

Collaboration and community engagement are integral aspects of village life, reflecting a shared sense of identity and pride. Efforts to enhance village spirit and preserve historical landmarks, such as Camel Rock and the Asan Bay

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Overlook, highlight the importance of cultural heritage. The Fonte Bridge serves as a symbol of community resilience, with initiatives aimed at preserving its memorial and ensuring access to water reservoirs for residents. Village pride is evident in the supportive and positive response from residents towards the mayor's initiatives. While community participation in charrettes may vary, residents typically prioritize safety and relevant issues, underscoring their commitment to collective well-being. To foster greater engagement, initiatives are often hosted at central locations like Asan-Ma'ina or other community centers, acknowledging the challenges of mobilizing residents due to the village's size and diversity. Emphasizing the importance of inclusivity, breaking down engagements by village helps facilitate meaningful collaboration and reinforces a sense of unity among residents.

Suggestions and Observations

The mayor's suggestions for the sustainability plan and general observations highlight a focus on policy and legislative changes, particularly regarding public safety and village boundaries. While the mayor notes a lack of specific policy changes desired, safety emerges as a primary concern. Prioritizing public safety encompasses aspects such as fire protection, police presence, and addressing issues like illegal dumping and stray dogs. Additionally, the mayor emphasizes the importance of clear village boundaries to ensure accurate registration for voting, identification, and resource allocation purposes. These suggestions reflect the mayor's commitment to enhancing community well-being and governance structures, indicating the imperative of proactive measures for sustainable village development.

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Mayor Blas
Barrigada
Interview Summary

Background and Objectives

- **Development of GSP2050:** The interview aimed to incorporate the mayor's insights on addressing current challenges and planning for future sustainability.
- **Focus on Sustainable Practices:** Emphasized understanding the specific sustainable practices currently adopted or needed within the village.
- **Community Input for GSP2050:** The interview was part of a broader initiative to involve community leaders in shaping a sustainable future for Guam through strategic planning and local input.

Mayor's Role

- **Long-term Goals:** The mayor focused on long-term improvements in community infrastructure and reducing environmental impact through careful planning and development.
- **Current Initiatives:** Mentioned initiatives to tackle illegal dumping and enhance public safety through better lighting and road infrastructure.
- **Future Aspirations:** The mayor hopes to see continued growth and improvement in community services and infrastructure by the end of their term.

Sustainability and Village Development

- **Development vs. Preservation:** The mayor discussed the challenge of balancing development with environmental and cultural preservation, especially concerning land use and its impact on flooding and community access.
- **Local Policies:** The importance of local policies that align with sustainable practices while supporting economic and cultural vitality was emphasized.
- **Community-Based Approaches:** Strategies for incorporating community feedback into development plans to ensure they meet local needs while adhering to sustainable principles.

Land Use and Environmental Management

- **Environmental Management Problems:** The mayor detailed ongoing environmental management issues like flooding, which are exacerbated by inadequate zoning and land use planning.
- **Impact of Unplanned Development:** Highlighted the negative impacts of unplanned development on village infrastructure, particularly water management and access roads.
- **Regulatory Adjustments:** Discussed the need for stricter regulations on zoning and development to prevent future environmental and infrastructure problems.

Infrastructure and Renewable Energy

- **Necessity of Infrastructure Investment:** Stressed the urgent need for investment in infrastructure, particularly for water, sewer systems, and roads to support the community adequately.

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- **Solar Energy Initiatives:** Explored the viability and potential benefits of solar energy projects to reduce the village's carbon footprint and energy costs.
- **Infrastructure Adaptation for Sustainability:** Discussed how adapting existing infrastructure could facilitate the transition to renewable energy sources and improve resilience.

Community Well-Being and Public Spaces

- **Expansion of Recreational Facilities:** Need for more localized recreational facilities to enhance accessibility and community well-being.
- **Importance of Public Spaces:** The mayor recognized the central role of public spaces in fostering community engagement and improving the quality of life.
- **Development of New Recreational Areas:** Proposed the development of new recreational areas tailored to the needs of various community segments, including youth and seniors.

Economic Sustainability

- **Local Economic Needs:** Discussed specific economic development projects that would benefit the village, such as local retail and service businesses.
- **Transportation Improvements:** Highlighted the need for improved transportation options to support economic development and enhance community mobility.
- **Quality of Life and Economic Opportunities:** Addressed concerns about the current economic opportunities available to residents and their impact on quality of life.

Cultural Preservation and Education

- **Challenges in Cultural Preservation:** Addressed the difficulties in maintaining and integrating cultural values in the face of modern development pressures.
- **Pride in Cultural Identity:** Emphasized the importance of fostering a strong cultural identity and pride among residents as a fundamental part of the village's character.
- **Educational Initiatives:** Discussed the role of education in preserving cultural heritage and enhancing community resilience.

Public Safety and Environmental Hazards

- **Enhancing Safety Services:** The need for better police and fire protection services was discussed to improve community safety.
- **Environmental Risk Mitigation:** Addressed the need for adequate typhoon shelters and measures to mitigate flooding and seawater intrusion.
- **Dealing with Homelessness:** The mayor discussed strategies for addressing homelessness within the village, emphasizing the need for comprehensive social support services.

Collaboration and Community Engagement

- **Enhancing Civic Engagement:** Discussed ways to boost civic engagement through community meetings and public participation in planning processes.
- **Fostering Village Spirit:** Emphasized the importance of fostering a strong village spirit to encourage pride and active participation in community initiatives.

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- **Incorporating Public Feedback:** The importance of integrating public feedback into the planning and execution of community projects to ensure they meet the actual needs of residents.

General Observations and Suggestions for Future Planning

- **Comprehensive Community Feedback:** Stressed the need for comprehensive community feedback in the development of the sustainability plan to ensure it addresses the specific needs and preferences of the village.
- **Strategic Recommendations for GSP2050:** Provided strategic recommendations for the sustainability plan, focusing on infrastructural improvements, environmental management, and cultural preservation.
- **Long-term Vision for Sustainability:** Discussed the long-term vision for the village's sustainability, emphasizing the need for integrated approaches that consider economic, cultural, and environmental factors.

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Chalan Pago Mayors Interview Summary

Mayor's Role

The mayor described their role as ensuring infrastructure improvements and advocating for projects that benefit the community. They emphasized the importance of improving roads, building a gym, upgrading the mayor's office, and overseeing the closure of the landfill. Regarding goals, the mayor mentioned leveraging funds for infrastructure projects, such as the gym and roads, and ensuring that public works projects were done correctly. They also sought to address concerns about the closure of the landfill and its impact on the community.

Before the end of their term, the mayor hoped to complete the construction of the gym, finalize infrastructure projects, and ensure the proper closure of the landfill. Additionally, they aimed to leave a legacy of improved facilities and infrastructure for the community.

Overall, the purpose of the mayor appeared to be focused on community development, infrastructure improvement, and advocating for the needs of the village residents. Their concerns include ensuring the proper closure of the landfill, addressing infrastructure challenges such as road maintenance, and leveraging funds for community projects. They are working towards long-term sustainability and improvement of the village's physical facilities and societal well-being.

Sustainability and Village Development

The mayor defines sustainability in a multifaceted manner, emphasizing self-reliance, environmental protection, and community resilience. To achieve sustainability within their village, the mayor believes in fostering self-reliance among the residents, promoting local production and exchange of goods and services, and reducing dependency on imported goods. Additionally, the mayor stresses the importance of protecting the environment to support local agriculture, water resources, and overall ecosystem health.

In terms of development and preservation policies, the mayor advocates for balanced development that considers both economic growth and environmental preservation. They express concerns about unbalanced development, such as the juxtaposition of commercial and industrial zones with residential areas, which can adversely affect residents' quality of life and strain infrastructure resources. The mayor also highlights the need for community engagement in planning processes to ensure that development plans align with the needs and desires of the local population. Additionally, the mayor discusses specific examples of development projects, such as a proposed hotel in Pago Bay, and emphasizes the importance of considering infrastructure capacity and environmental impact before approving such projects.

Land Use and Environment Management

The mayor articulated concerns about zoning practices, conditional use variances, subdivisions, and environmental management. They highlighted the importance of balanced development, criticizing unbalanced zoning that juxtaposes commercial or industrial zones with residential areas without considering residents' well-being. The mayor emphasized the need for careful consideration before granting conditional use variances to avoid infrastructure strain and environmental degradation. They also raised issues regarding land use planning, such as the lack of community engagement and concerns about infrastructure capacity to support development projects.

In discussing land use, the mayor stressed the importance of balancing economic growth with environmental preservation. They pointed out the need for community engagement in planning processes to ensure alignment with local needs. Criticisms were directed at past decisions that prioritized development without adequate consideration of long-term environmental and infrastructural impacts. The mayor highlighted concerns about environmental degradation, infrastructure strain, and the need for sustainable land use practices to foster resilient and livable communities. Environmental management issues, such as illegal dumping and abandoned vehicles, were identified as significant challenges. The mayor suggested solutions like implementing stricter regulations and enhancing

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enforcement measures to address these issues effectively. Additionally, they emphasized the importance of protecting environmental resources, particularly the aquifer, against pollution and overdevelopment to ensure sustainable community growth.

Infrastructure and Renewable Energy
The mayor expressed concerns about infrastructure capacity, particularly regarding sewer pump stations' ability to support additional development projects. They mentioned instances where proposed projects, such as hotels, were approved despite doubts about the existing infrastructure's ability to handle increased demands. Additionally, the mayor highlighted the need for infrastructure improvements, such as widening roads, to accommodate heightened traffic resulting from development.

Community Well-being and Public Spaces
The mayor emphasized the importance of community spaces that directly serve residents, such as the multi-purpose center and the surrounding area. They highlighted ongoing and planned improvements, including building a walking path around the baseball field and potentially adding more sidewalks in the village. Regarding open space and parks, the mayor acknowledges the importance of these recreational areas for the community's well-being. While the current availability of parks and open space may not be sufficient for future growth, the mayor mentions plans for converting a former landfill site into a municipal park, which would provide additional recreational space for residents.

Economic Sustainability
In terms of economic development, the mayor expressed a desire for balanced growth, with an emphasis on residential amenities like retail stores, restaurants, and clinics. They also stressed the need for careful land use planning to minimize the impact of industrial areas on residential communities. Transportation infrastructure was identified as a significant challenge, with insufficient bus stops and routes, highlighting the need for better public transportation solutions. Additionally, the mayor acknowledged the existence of a low to moderate-income population in the village and discussed efforts to improve living standards and community satisfaction.

Cultural Preservation and Education
The conversation with the mayor delved into the challenges of preserving Chamorro cultural values in the village, particularly through language retention. The mayor expressed personal struggles in passing down the Chamorro language to their children and granddaughter, highlighting the role of language in cultural identity. They emphasized the importance of language as a cornerstone of culture and expressed concerns about the potential extinction of the Chamorro language. The mayor discussed efforts to preserve Chamorro language and culture through community initiatives, such as language classes and cultural workshops. Additionally, they reflected on the broader societal impacts of language loss, including the breakdown of familial and social networks. The mayor underscored the significance of language in maintaining cultural values and identity, acknowledging the complexities of cultural preservation in a diverse community.

Public Safety and Environmental Hazards
In terms of safety, the conversation touched upon the issue of feral pigs, which were described as causing damage to properties, yards, and community gardens. While some perceive them as a significant problem due to their destructive behavior, others may not consider them as problematic. Additionally, the discussion mentioned concerns about the capacity of the sewer system to handle increased development density and potential pollution from inadequate waste management practices, such as recycling. These safety and environmental concerns reflect broader challenges faced by the village in managing its resources and infrastructure to support its growing population.

The discussion also highlighted concerns about the adequacy of police protection on the island, with the mayor expressing the view that Guam as a whole does not have enough police officers. Additionally, the conversation

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touched upon the underutilization of police facilities, such as the Cobans, which were built but are not being fully utilized by the Guam Police Department. While fire protection services were generally satisfactory, there were still some issues raised about the need for improvement in certain areas. Finally, the conversation addressed the suitability of typhoon shelters, with plans for a new multi-purpose recreation and emergency center that could potentially serve as an alternative shelter outside of the Department of Education system. Overall, the dialogue highlighted various challenges and areas for improvement in terms of public safety and emergency preparedness.

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Mayor Savares'
Interview Summary
February 19, 2024

Mayor's Role

The mayor discussed various issues such as homelessness, community pride, safety concerns, and upcoming activities for community development. The role of the mayor as expressed in the interview involves addressing and managing these issues on a day-today basis as well as chairing the Hybrid Land Use Commission hearings. The mayor also mentioned the importance of enhancing community engagement and emphasized the need for collaboration among different entities to further develop the community.

Sustainability and Village Development

The mayor expressed that sustainability involves the ability to take care of themselves and maintain their community with the resources available in the village. The mayor's goal for sustainability involves creating a community that is self-reliant providing all the basic services and needs within the village. Rooted in her upbringing and the CHamoru culture, the mayor emphasized the tradition of living off the land and sea, recounting weekends spent fishing and farming. This connection to local resources is seen as a fundamental aspect of sustainability, with an emphasis on addressing food security from within the village and utilizing what the environment provides.

In integrating sustainability into the village, the mayor highlighted activities such as "raised gardens" to supplement the diets of families in Dededo as well as restaurants and markets in the markets. The mayor and her vice-mayor described the village as a diverse web of cultures, economic interests, and socio-economic statuses. The mayor was proud of the communal approach to sustainability demonstrated by residents, such as sharing fruits from their yard with neighbors and the Senior Center, fostering a sense of community and emphasizing the importance of resource-sharing within the village. The mayor was in favor of large scale development in the village so long as it adopted a "mixed" approach blending lower and upper income housing and providing for the commercial needs of the entire village while improving the quality of life for all that live in Dededo. (Note: the visual or esthetic impact of high-rise development in the area overlooking Tumon was not brought up. I'm not sure such things are understood to be important to her in her role as chair of the HLUC (hybrid land use commission). It was clear that her planning perspective was strictly that of her village. The impact of such large scale development on the island as a whole was not something that she mentioned)

Land Use and Environmental Management

The mayor discussed the importance of careful planning and consideration when it comes to rezoning and changes in land use. She expressed concern about potential negative impacts on existing homes and infrastructure, emphasizing the need to respect the residents who have been in their homes for many years. The mayor favored the use of Planned Use Development (PUD) designations as a development approach that mandates various land uses, including affordable housing, commercial spaces, playgrounds, and recreational

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facilities.

Furthermore, the mayor emphasized the desire for a balanced mix of land uses, including family-friendly businesses near residential areas. She mentioned the importance of visibility and accessibility for amenities like playgrounds, advocating for a planning approach that incorporates green spaces and recreational facilities within residential zones. Overall, the mayor emphasized a community-centric and thoughtful approach to land use planning, aiming for sustainable and inclusive development.

Infrastructure and Renewable Energy

The mayor discussed infrastructure, expressing concerns about the condition of older roads and houses in the village. She highlighted the need to upgrade infrastructure, including sidewalks, to ensure the safety of pedestrians and cyclists. Additionally, she stressed the importance of addressing existing challenges in infrastructure (i.e., stormwater runoff, waterlines, and roads) before moving forward with further development. The mayor expressed that mandated ponding basins were a good thing, but they need to be maintained and she was aware of ponding basins that have not been maintained for decades causing environmental hazards while not offering stormwater flooding protection. She also highlighted that many of the water lines had been installed under unpaved roads and over time as the roads wore away water lines have become exposed and are constantly being damaged. The mayor also indicated that the water infrastructure in Dededo was very old and the old, galvanized water lines were undersized and were failing. Overall power was not viewed as a major issue.

Regarding renewable energy, the mayor expressed that solar energy as a viable and cost-effective alternative to traditional energy sources. She mentioned her desire to have solar panels installed at their village facilities including the senior center, gym, and mayor's office, and believes there is a positive outlook on expanding the use of solar panels in the area. She indicated that she believed the village would be receptive to the community solar plans of the Guam Energy Office but they have not been active in pursuing a project in Dededo.

Community Well-being and Public Spaces

The discussion reflects concerns about community well-being and the need for more public spaces or open areas in the village. The mayor discussed the current inadequacy of park spaces in Dededo. She believes that the number and availability of park space is insufficient for the population currently in the village which she expects to grow. New developments expected due to tourism-related investment and the increase in military presence makes it even more important to provide increased recreational areas. The mayor emphasizes the importance of having various amenities, such as parks, recreational facilities, and landscaped areas, to enhance the quality of life in the village. She also mentioned churches as a key focal point for the village and that the use of the churches as the central point around which public facilities should be built would be one way to help maintain the sense of what the village can and should be to residents from her perspective.

The mayor believes that the village needs to be more self-reliant and can be through a holistic approach to community well-being, suggesting that residents seek convenience and accessibility to essential services within the village itself. Overall, she emphasized the need for better

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planning for public spaces and amenities to promote community well-being and satisfaction.

Economic Sustainability

The discussion on economic sustainability and development opportunities revolved around various key characteristics of the village. The mayor emphasized the potential for economic growth through the development of the coastal area, including the establishment of resorts and the infrastructure improvements such development will create such as improved, water, wastewater, and storm runoff installations as well as road repairs/resurfacing, and the creation of jobs within these sectors. She also believed that in the interior areas of the village agricultural development was viable and should be encouraged, with a focus on multi-crop cultivation. She believes that all of the economic opportunities that exist in the most populated village on Guam can be better used to generate employment opportunities for the residents within the village.

The conversation recognized the significance of reliable infrastructure, discussing the need for schools, medical facilities, and dependable transportation to enhance the overall quality of life. Renewable energy, particularly solar power, was identified as both an economic factor and a sustainable energy solution. However, challenges in economic sustainability were acknowledged, such as the high cost of living, particularly utility expenses, and concerns about the wages of entry-level workers. Affordable housing emerged as a crucial factor, with discussions on the impact of subsidies on housing costs. Overall, the dialogue highlighted the importance of a diversified and robust local economy, balancing economic development opportunities with addressing challenges to ensure long-term sustainability.

Cultural Preservation and Education

The mayor expressed a strong commitment to cultural preservation and recognized the importance of instilling cultural values, especially among the younger generation. The multi-ethnic community, including CHamorus and Filipinos, faced challenges in preserving their respective cultural identities. It was emphasized that the diversity of the community required efforts to maintain and transmit cultural values. Concerns were raised about the limited exposure to cultural education in public schools, with short class durations deemed insufficient for preserving the rich cultural heritage. Despite being a cosmopolitan village, there was a shared sentiment that preserving and promoting CHamoru cultural values was crucial.

The mayor also discussed personal initiatives to engage in cultural education programs, highlighting the significance of online language programs to learn and preserve the CHamoru language. The conversation acknowledged the need for active measures to prevent cultural erosion and the importance of celebrating cultural heritage. Reference was made to upcoming events, such as Cultural Heritage Month, to foster a sense of community and strengthen cultural bonds. Overall, the mayor recognized the unique cultural identity of Dededo and emphasized the ongoing efforts required to ensure the preservation and transmission of cultural values to future generations.

Public Safety and Environmental Hazards

The interview with the mayor provided insights into critical aspects of public safety and

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environmental challenges in Dededo. A notable concern was the perceived insufficiency of police services, particularly in the understaffed Dededo police precinct. The need for an additional police station in Yigo was emphasized to improve coverage across expansive areas. Fire safety provisions were deemed to be adequate. Disaster preparedness was discussed, highlighting the significance of typhoon shelters and Tier 2 shelters. The availability of typhoon protection was deemed sufficient. The conversation also addressed the issue of homelessness, with the mayor expressing familiarity with individuals experiencing homelessness and efforts to connect them with housing opportunities, despite resistance to following rules. Homelessness was identified as a serious problem, ranking among the top five community issues, posing safety risks to businesses and residents, especially when individuals camp in tall grass or jungle areas near residential zones and along routes where children commute to bus stops.

Environmental challenges, particularly illegal dumping, emerged as a significant issue. The prevalence of illegal dumping in isolated areas raised concerns about environmental degradation. Efforts to combat this issue were highlighted, including community campaigns, door-to-door outreach, and collaboration with relevant agencies. Additional environmental challenges mentioned briefly included flooding concerns if the ponding basins maintenance continues to be neglected, the impact of runoff on the aquifer, preservation efforts for the indigenous snail population, and challenges related to pipeline maintenance and the presence of junk cars. The pipe line easements attract illegal dumping in their current configuration. These discussions underscore the intricate relationship between public safety, environmental well-being, and the need for proactive measures to address challenges in Dededo. The mayor believes if "free" trash collection were provided that the illegal dumping issue would be greatly reduced. She believes that illegal dumping results from lower income households not being able to afford trash collection. The vice-mayor expressed that reopening the northern waste transfer station would also reduce illegal dumping.

Collaboration and Community Engagement

The discussion about the village spirit revealed a strong sense of pride and community identity in Dededo. The mayor mentioned various instances, such as veterans' events, baseball activities, and the involvement of the community in supporting local teams. The mayor expressed confidence in the village's pride and identity, suggesting that these elements contribute to a cohesive community spirit. Additionally, when discussing community engagement through charrettes, the mayor acknowledged that while attendance may not be exceptionally strong, people would likely participate, especially if there is food provided.

Suggestions and Observations

The mayor emphasized the need for collaboration and community engagement in addressing various issues. She stressed the importance of bringing together government entities, businesses, nonprofit organizations, and residents to work collectively on matters of expansion and development. The mayor highlighted that safety should not be compromised in the pursuit of growth. She advocated for a comprehensive approach involving all stakeholders to ensure that the community's interests are well-represented and protected. Additionally, the mayor mentioned

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the significance of engaging business partners, nonprofit organizations, and government entities in working together to address current and future challenges, highlighting the belief that successful solutions require the participation of all sectors, rather than relying solely on government or business efforts.

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Mayor Susuico and Vice Mayor Interview Summary
March 8, 2024

Mayor's Role

The Hagat Mayor has played a key role in community enhancement, achieving goals such as delivering more parks, improving road safety, and addressing erosion concerns with the army corps of engineers. Current initiatives involve relocating power poles and exploring underground power lines, as well as installing playgrounds and promoting CHamoru culture through a learning center and computer lab. The Mayor is actively addressing issues like vandalism and inadequate infrastructure at Veterans Park.

Looking ahead, the Mayor envisions significant improvements, from enhanced facilities for events like the Mango Festival to transforming neglected spaces like the tennis court into recreational areas, such as a skatepark. The broader goal is to make Hagat the capital of the south, attracting commercial ventures and opportunities, minimizing the need for southerners to travel north for daily tasks. This vision prioritizes preserving CHamoru and southern Guam culture in the evolving landscape of 2050.

Land Use and Environmental Management

Hagat's vision for sustainability and village development revolves around cultivating self-reliance through efficient resource use. This includes repurposing agricultural land trust for farming, supporting local businesses, and exploring opportunities like aquaculture and fishermen co-ops. The mayor emphasizes island importing/exporting for economic vitality.

Concerning village development, the focus is on building a better Hagat that serves both the village and the entire southern district. This involves reviving community events, enhancing historical sites, and creating a culturally rich environment. The mayor advocates for development meeting people's needs without large commercial projects. Preserving Guam's natural beauty is crucial, and the mayor opposes developments that compromise the island's cultural identity. The mayor also emphasizes maintaining Route 2's charm and balancing progress with cultural preservation, as he believes enjoying the view as it is better than if there were similar commercial developments like Tumon. The mayor's hopes include resisting commercialization like Tumon, maintaining the village's identity as the gateway to the south. The goal is to perpetuate culture, preserve the spirit of ina'fa'maolek, and attract tourists by promoting southern Guam's authentic experiences, distinct from Tumon's commercialized atmosphere.

Infrastructure and Renewable Energy

Regarding infrastructure, higher roads have disrupted older flood drainage systems, and issues with power poles along the shoreline persist, mirroring the island's challenges with GPA's load shedding. To improve resilience, the mayor proposes moving power lines underground, especially to expedite post-storm power restoration. While water supply is generally stable, residents in agricultural areas, like Santa Ana, face challenges without direct access to the water source. Sewer problems during heavy rain, particularly in less developed areas, require regular drainage area cleaning. Road infrastructure improvements are underway, with a quarter of the village already repaired, and the next phase expected within a month. However, secondary gravel roads need replacement, and the aging asphalt on Route 2 poses safety concerns during rain.

Concerning renewable energy, there has been no discussion between the Guam Energy Office and the mayor's office regarding the community rooftop solar program. The mayor insists that any program should primarily benefit homeowners. While there's no strong opposition, he believes concerns will arise if expected savings from solar adoption aren't realized, emphasizing the importance of cost-effectiveness in promoting solar energy.

Community Well-being and Public Spaces

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Community well-being and public spaces are central to the village's plans. The construction plan for children's parks is pending installation by the contractor, with a desire for a baseball field. There is a long-standing plan to build a sports complex in the village similar to the northern sports complex, but potential issues, possibly funding-related, remain unidentified. A veteran and Fenna park, equipped with amenities like a basketball court and senior center, is accessible to the public, but improvements are sought, particularly in creating better sidewalks. There is a proposal to cover the basketball courts, widely used by school kids, outside leagues, and the community in order for the location to become a tier 2 typhoon shelter. Work is underway to enhance the mayor's office, but reservations may be required for certain facilities.

Economic Sustainability

Economic sustainability takes center stage in the village's plans, with a primary focus on generating job opportunities for local youth. The mayor envisions a unique economic development approach that aligns with the village's cultural identity, exploring possibilities like aquaculture and establishing a cooperative. The aim is to balance economic growth while preserving the natural space integral to the village's identity. While the village is equipped with most essential amenities, such as a laboratory and pharmacy, the need for emergency service facilities is recognized. Regarding the economic viability of public transportation, the main challenge, according to the mayor, is an inconsistent bus schedule. Additionally, while a significant number of residents rely on the bus system, there is a lingering stigma associated with its use, contributing to lower-than-expected ticket sales. Despite the presence of a middle class, a substantial portion of residents still requires assistance, underscoring economic disparities within the community.

Cultural Preservation and Education

Cultural preservation and education are paramount in the village, evident through events like the Mango Festival—a platform to showcase CHamoru culture to a broader audience. However, there are challenges in preserving culture due to the growing degradation, with people engrossed in daily life, causing traditions to fade. Despite this, the native language persists, albeit diminishing. The municipality actively combats cultural decline through programs and activities promoting dance, song, and other traditional practices, aiming for monthly events to perpetuate the culture. The mayor views these gatherings not just as social events but as vital tools to preserve CHamoru culture, reconnecting people with their roots. Despite the village's diverse community, lacking a specific identity, efforts to maintain and celebrate cultural richness remain a top priority.

Public Safety and Environmental Hazards

Public safety and environmental hazards are significant considerations for the village. While a police station is present, concerns arise due to insufficient personnel, often leaving only a handful of officers to manage multiple issues across the district. Similarly, the fire station provides adequate protection services, contingent on emergency vehicles' operational status to ensure prompt responses to emergencies. Efforts to enhance resident safety include patrols and community group chats, reducing the village's reputation as a trouble hotspot. However, the absence of a typhoon shelter poses a challenge, prompting the mayor to advocate for the conversion of a gym into a tier 2 shelter. In the absence of such facilities, residents needing shelter during typhoons are transported to neighboring villages like Santa Rita. Additionally, flood prevention and shoreline protection initiatives aim to fortify shorelines against erosion. While homelessness exists in the village, efforts by the mayor's office to connect individuals with appropriate resources mitigate its impact, though it is not a predominant issue.

Collaboration and Community Engagement

Collaboration and community engagement are integral to fostering village pride in Hagat. Residents take immense pride in their village, with the mayor's office actively working to improve it to further encourage residents to perpetuate their village pride. Many proudly identify as residents of Hagat, highlighting the village's safety, warmth, and cultural events like the Mango Festival.

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Regarding charrettes, the mayor believes a handful of residents would participate if the meeting takes place in the village. Although town hall meetings could promote charrettes, residents are hesitant to participate if they must travel to other locations like Inalahan, preferring to prioritize family time or conserve their resources (i.e., gas).

Suggestions and Observations

The mayor emphasizes the critical role of funding proposed plans, recognizing its pivotal importance in implementing initiatives. Without sufficient funding, plans remain idle, rendering them ineffective. Despite the challenges posed by limited government funding, the mayor's team struggles to sustain programs without adequate financial resources. Thus, securing funding is paramount to actualizing proposed plans and ensuring the continuity of essential programs.

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Mayor Cruz Interview Summary
March 13, 2024

Mayor's Role

After serving for 20 years, the mayor of Hagatna is retiring this year. Throughout his tenure, his focus has been on revitalizing the community, including cleaning up areas and relocating his office. Despite efforts to create a recreational space, it was shut down due to limited use. He initiated projects like sidewalk construction and sought to establish an after-school program for village youth. His accomplishments include improving cleanliness, assisting local businesses, and enhancing village infrastructure. As he prepares to leave office, his legacy of transformation and dedication to Hagatna will endure.

Sustainability and Village Development

The mayor's perspective on sustainability and village development is deeply rooted in collaboration and forward-thinking planning. He sees sustainability as a collective effort, emphasizing the importance of leaders working together to meet present needs without compromising the future. While acknowledging the critical role of tourism in Guam's economy, he also recognizes the need for sustainable strategies to attract tourists while preserving the island's resources. Despite setbacks like the stalled Hagatna Restoration Plan, which aimed to dock tourist ships in the marina, he remains committed to long-term solutions. In terms of village development, he envisions Spanish-influenced designs for new buildings and supports initiatives like the Hagatna Restoration Plan. While acknowledging financial constraints, he maintains a vision for a thriving Hagatna by 2050, with modernized infrastructure, increased commercial activity, and a restored sense of community pride. He advocates for the return of government offices to Hagatna and believes residents would support increased commercial development if it enhances the village's beauty and prosperity, even if it entails additional taxes. Overall, his perspective underscores the importance of sustainability, collaboration, and foresight in shaping the future of Hagatna.

Land Use and Environmental Management

The mayor's perspective on land use and environmental management highlights a generally positive situation regarding resident complaints and zoning issues. However, occasional concerns arise, such as the sewage odor from the pump station in CHamoru village and instances of illegal dumping. Despite these challenges being rated as relatively low in severity, the mayor actively involves residents in addressing them, preferring dialogue over citations. Effective measures are in place for stray dog control, including trap setting and involving animal control upon complaints. While invasive species, notably rhino beetles, have impacted the area around the mayor's office, no significant environmental resources have been identified. Recycling efforts, though modest, involve collecting cans and redirecting them to schools within the village. In essence, the mayor's approach underscores community engagement and proactive strategies to tackle environmental challenges while maintaining a balanced land use framework.

Infrastructure and Renewable Energy

The mayor's perspective on infrastructure reveals a mix of achievements and hurdles. Although roads received proper repaving initially, ongoing water leaks persist when repairs by the Guam Waterworks Authority (GWA) aren't followed by adequate road repavement. Stormwater runoff, notably in West O'Brian, leads to flooding due to insufficient drainage systems, exacerbated by the construction of commercial buildings. Efforts to resolve these issues face obstacles, such as public works' reluctance to repave roads. Power disruptions, mainly due to load shedding, are the primary concerns regarding energy infrastructure. Regarding renewable energy, while the mayor is unaware of the community solar program, he notes limited residential use of solar panels, with businesses being the main adopters, along with the usage of solar lights in residential areas. Despite these challenges, the mayor remains committed to addressing infrastructure issues and promoting renewable energy to ensure the village's sustainability and resilience.

Community Well-being and Public Spaces

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The mayor's perspective on well-being and public spaces in the village of Hagatna underscores the significance of open areas in revitalizing the community. The Hagatna Restoration Plan, particularly the Plaza de España where the museum is located, plays a crucial role in drawing people back to the village and reinstating the village's historical significance. The plan aims to recreate the vibrant atmosphere of the past, enabling older legislative staff to work in the village once again. While Paseo serves as an existing open space, plans to expand recreational areas near the Julale Center never materialized. Despite aspirations to construct sports facilities, such as gyms, the lack of available government property in the village poses a challenge. Although the mayor initially considered building facilities near his office, obstacles like telephone poles made it unfeasible. He acknowledges the inadequacy of available land for large-scale sports fields like soccer or baseball fields, prompting a reevaluation of potential locations for community enhancements. Despite challenges, the mayor remains committed to improving public spaces in Hagatna to enhance the well-being and quality of life for its residents.

Economic Sustainability

The mayor's perspective on economic sustainability in the village of Hagatna emphasizes the importance of attracting both tourists and locals to stimulate evening activity. He sees the village's status as the capital as a natural draw for tourists, envisioning a bustling evening scene with more restaurants and nightclubs. However, economic viability for residents poses challenges, with homelessness being a pressing issue rated at the highest severity level. Homeless individuals are scattered throughout the village, with reports of theft, fights, and squatting in abandoned buildings or parks. The mayor provides assistance in the form of MREs, but acknowledges the responsibility of the homeless coalition in addressing the issue. Efforts are underway to remodel a three-story building to accommodate the homeless, although the mayor's proposed solution involves repatriating individuals to their places of origin, particularly Micronesians. Despite these challenges, the mayor believes the economic assets of the village, including commercial buildings and office rental units, serve as crucial revenue generators, contributing to the village's economic sustainability and ongoing development efforts.

Cultural Preservation and Education

From the mayor's perspective, cultural preservation and education are pressing concerns in Hagatna. He observes a significant erosion of CHamoru values and cultural identity over time, attributing this to societal changes driven by factors like drugs and alcohol. The decline is evident in the diminishing use and teaching of the CHamoru language, with children increasingly responding in English even when spoken to in CHamoru. This language barrier exacerbates the loss of cultural heritage, rated as a major issue by the mayor. Furthermore, the village's cultural identity faces challenges due to its mixed resident demographics and waning influence of religious groups like the Catholic Church. While initiatives such as the Hagatna Restoration Plan aim to revive the village's historical charm, the mayor recognizes the need for sustained efforts to preserve and promote traditional culture amidst modern developments. Additionally, concerns about village aesthetics, including limited parking and road layout challenges, highlight the need for practical infrastructure improvements to complement cultural preservation endeavors. Despite these challenges, recent enhancements like increased street lighting during FestPac demonstrate progress in addressing some of the village's infrastructure needs, albeit with ongoing governance by the Department of Parks and Recreation (DPR) over facilities like the Paseo Stadium.

Public Safety and Environmental Hazards

According to the mayor, public safety in Hagatna faces notable challenges, particularly in terms of police visibility and accessibility. The relocation of police and fire protection services to Sinajana under the Department of Corrections has led to a decrease in police visibility, exacerbating issues related to homelessness. However, fire protection remains adequate despite the station's relocation. Concerns also arise regarding the lack of a typhoon shelter within the village, forcing residents to seek shelter in neighboring areas during storms, although staging after typhoons is generally manageable. Regarding environmental hazards, while past typhoons caused ocean flooding in the 90s, current construction practices mitigate such risks as buildings are constructed upward. Overall, the mayor

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highlights the need for improved police presence and a dedicated typhoon shelter within the village, despite relatively manageable environmental hazards.

Collaboration and Community Engagement

In Hagatna, a noticeable lack of village pride prevails, with primarily businesses exhibiting any sense of attachment or loyalty. While some individuals may express pride due to the village's status as the capital, overall sentiment appears tepid. This sentiment is reflected in charrettes, where community participation is likely to be minimal, as residents may not feel sufficiently engaged or invested in shaping the village's future.

Suggestions and Observation

The mayor holds a flexible perspective regarding the elements he wishes to see in the plan for the village's development. Rather than specifying particular aspects, his main interest lies in witnessing the final outcome of the plan. His approach suggests a willingness to embrace and support whatever proposals and initiatives are ultimately included, prioritizing the overall success and effectiveness of the plan in enhancing the village's well-being and prosperity.

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Humatak Mayor Interview Summary
April 12, 2024

Mayor's Role

The mayor, initially drawn to a career in law enforcement, ultimately ran for office with the support of his family and past mayoral figures. His motivation stems from a desire to address pressing concerns within the village, ranging from sewer and environmental challenges to the deterioration of infrastructure following natural disasters. Observing neighboring villages receiving support while his own languished, he aims to secure grants for vital projects and repair pavilions damaged by typhoons. His priorities include tackling flooding, sewer, and storm-related erosion of the cemetery, as well as enhancing recreational spaces. He views his most significant achievement as directly aiding the community and making strides in mitigating flooding and sewer issues.

Sustainability and Village Development

The mayor's vision for sustainability centers on developing the village in alignment with the needs of its residents, emphasizing preservation of its natural state over large-scale development. He defines sustainability as meeting present needs without compromising the ability of future generations to do the same. Rejecting the idea of hotels or extensive development, he seeks to address current issues without altering the village's character. While aiming to attract tourists and improve amenities for residents, he opposes high-rise developments, preferring small-scale businesses and residential expansion to naturally spur commercial growth. Looking ahead to 2050, he envisions population growth without significant developmental expansion, believing the village's current charm is sufficient to attract visitors and meet community needs.

Land Use and Environment Management

The mayor acknowledges discrepancies in land allocation within the Chamoru Land Trust, with some outside individuals receiving land while village residents await allocation. Despite this, he asserts there are no inherent land use issues. Environmental concerns include erosion along the river and coastline, exacerbated by seawater incursion and feral pig activity. The mayor attributes flood control challenges to erosion rather than inadequate storm drainage, advocating for river dredging and tree planting as solutions. Instances of illegal dumping, primarily by non-residents, have occurred, though recycling efforts exist, albeit with a need for improved public education on proper waste management. The mayor emphasizes the importance of home-based education as a foundation for addressing these environmental issues.

Infrastructure and Renewable Energy

The mayor identifies inadequate power supply as a key infrastructure concern, while noting sufficient water supply with occasional interruptions during storms due to sediment contamination. Sewer distribution remains insufficient, and road maintenance is hampered by delays in repairs following water line fixes. While some residents utilize solar energy systems, the mayor is unaware of a community rooftop solar program and questions village residents' potential acceptance of such an initiative.

Community Well-being and Public Spaces

The mayor highlights ongoing projects awaiting funding, including the construction of a gym, senior center, and community center, as well as repairs to pavilions. The central area, adjacent to the mayor's office, features amenities like a basketball court, church, and beach, though concerns persist regarding the electrical infrastructure. While a proposed jet ski rental venture did not materialize, the mayor envisions additional amenities such as public health facilities, government offices, stores, and fast-food franchises to enhance community well-being, though acknowledges limitations due to population size. Despite this, the public transit system is deemed sufficient to meet current needs.

Economic Sustainability

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The mayor's perspective on economic sustainability revolves around leveraging available resources and infrastructure to foster community well-being and development. While acknowledging ongoing projects and infrastructure challenges, such as insufficient power supply and the need for improved public spaces, the mayor remains focused on securing funding to complete vital initiatives like building gyms, senior centers, and fixing pavilions. Additionally, he sees potential for economic growth through strategic development, such as attracting tourist-related ventures while preserving the village's natural beauty and charm. However, he recognizes the importance of balancing economic growth with maintaining the village's character and addressing residents' needs, advocating for small-scale, community-oriented businesses over large-scale developments.

Cultural Preservation and Education

The mayor prioritizes cultural preservation by advocating for the retention of Chamoru traditions and values. Recognizing the community's desire to maintain cultural authenticity, he acknowledges challenges such as the dwindling number of elders, crucial for passing down traditional knowledge. He emphasizes the importance of preserving the Chamoru language, viewing it as integral to safeguarding cultural values. Despite Chamoru language instruction in schools, he notes the challenge of limited usage outside of the classroom. Additionally, he expresses a desire to establish a museum to preserve local art and intends to build a traditional hut as a homage to the village's historical architecture. While acknowledging the difficulty of maintaining a unified village character, the mayor remains committed to fostering cultural heritage and education initiatives.

Public Safety and Environmental Hazards

The mayor emphasizes public safety concerns, acknowledging sufficient police presence but highlighting methamphetamine usage as a major issue. While fire protection is deemed adequate, challenges arise when equipment breaks down, necessitating the relocation of resources from neighboring villages. Lack of on-site EMT services and ambulance availability have led to tragic outcomes for some residents. The mayor calls for improved equipment maintenance and vehicle retention within the village to address these shortcomings. Additionally, typhoon shelters are lacking, though efforts are underway to repurpose a FEMA-funded gym for this purpose. Despite the absence of a homeless population, the mayor emphasizes the strong sense of community spirit within the village, although he notes a lack of vocalized pride among residents.

Collaboration and Community Engagement

The mayor suggests that charrattes, a traditional Chamoru gathering, would not attract many participants from the village. He proposes that the event should either take place in Malesso or Inalahan, considering these locations more suitable for drawing larger numbers of village residents.

Suggestions and Observations

Improving lighting in park areas such as Fort Trinidad and Sella Bay is a priority due to safety concerns. Additionally, illegal dumping by residents from neighboring villages poses an environmental hazard and requires attention to mitigate.

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Mayor Chargulauf (Inalahan) Interview Summary
February 28, 2024

Mayor's Role

The mayor articulates a comprehensive approach to their role, accomplishments, and goals for the community. Their role is defined by a deep commitment to understanding and meeting the diverse needs of the community, evident by their active engagement with residents to foster improvements in the village. Notable accomplishments include the establishment of a war survivors' monument, a veterans' memorial wall, and the installation of community welcome signs. Economic initiatives, such as implementing a digital information board and upgrading internet services for online learning during the COVID-19 pandemic, reflect the mayor's dedication to enhancing the community's overall well-being. Additional accomplishments involve improving sports facilities and programs, creating sports teams, and providing year-round opportunities for children. Looking forward, the mayor outlines ambitious goals, including furthering economic development by constructing a community kitchen to support local entrepreneurs, promoting cultural practices, and generating employment. Historical preservation is a key focus, with plans to rehabilitate historical homes and boost tourism through cultural experiences. Sustainability initiatives, like community gardening and clam planting, are aimed at fostering self-sufficiency to withstand challenges such as pandemics or economic downturns. The mayor envisions ongoing transformations, addressing homelessness, and fostering personal and economic growth to elevate community pride and well-being.

Sustainability and Village Development

The mayor defines sustainability as the village's ability to withstand natural disasters, pandemics like COVID-19, typhoons, and economic downturns. Aquaculture, agriculture, and farming play a crucial role in advancing sustainability, with a focus on sustainable clam planting. Environmentally friendly and economically viable practices in agriculture and farming are essential for overall community sustainability. The mayor advocates for sustainable developments, including eco-friendly initiatives, renewable energy projects, and green infrastructure. Policies supporting responsible land use, biodiversity conservation, and climate change mitigation are deemed vital for achieving long-term environmental sustainability in the village.

Land Use and Environmental Management

The mayor of Inalahan addressed various key aspects of community development and environmental management in the provided text. Concerns about zoning were evident, as the mayor expressed a collective discouragement of developers from certain areas due to high development costs, emphasizing a cautious approach to community planning. While there was no explicit mention of conditional use variances, the discourse suggested a careful consideration of development regulations. Subdivisions were discussed in the context of restrictions on water pipe sizes, indicating the presence of specific regulations governing infrastructure development within these areas. Although there was no explicit statement solely focused on land use, various points indirectly touched upon this aspect, with an emphasis on discouraging development in specific areas. The mayor highlighted challenges including resistance to high-rise buildings, concerns about cultural and natural integrity, and infrastructure limitations. Delays in addressing issues were acknowledged, attributed to government bureaucracy.

Environmental management emerged as a significant theme, with the mayor acknowledging challenges such as siltation, runoff, seawater incursion, and sea level rise, affecting fishing and coral health. Notably, when hunters burn in the mountain areas to get better sight to hunt deer, the runoff was said to go into the Inalahan and Acfalle Bays. Regarding invasive species, the community has undertaken initiatives like addressing the rhino beetle issue and implementing a giant clam project, demonstrating a commitment to environmental sustainability and potential economic benefits.

Infrastructure and Renewable Energy

The mayor's address highlighted key infrastructure and environmental concerns, including the absence of sewer infrastructure in Malojloj and issues related to stormwater runoff. The escalating costs and lack of developer interest

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in extending infrastructure south pose significant barriers to development. The community faces various challenges, such as financial constraints and inadequate facilities, hindering developmental goals. Slow-paced infrastructure development, particularly in power and water lines, contributes to issues like low water pressure and connectivity problems for new households. Financial barriers for Guam Waterworks Authority upgrades create accessibility challenges, while a lack of information on a solar plant proposal adds uncertainty. Transportation challenges, driven by a public transit stigma, further impede development efforts. Overall, the community grapples with multifaceted infrastructure obstacles, impacting its pursuit of sustainable development.

At the end of the interview, the mayor also mentioned the need to expand and/or resurface village roads. He mentioned that when tourist activities are abundant, tour buses cause traffic congestion.

Community Well-being and Public Spaces

In addressing community well-being and the enhancement of public spaces, various initiatives and challenges have been discussed. Infrastructure hurdles, notably issues with water and power supply during storms, have been acknowledged, prompting efforts to implement solar power solutions, particularly for economically disadvantaged families. Repurposing existing structures into community centers is underway, aiming to provide recreational amenities and educational support, such as computer centers. Emphasis has been placed on beautification projects to instill community pride and confidence, while economic development initiatives are being pursued with a focus on preserving cultural identity. Transportation challenges, including the stigma associated with public transit usage, are recognized, and attempts are being made to shift perceptions. Cultural preservation efforts extend to passing down traditional knowledge and maintaining a Historic District Plan. Public spaces, crucial for community well-being, are being optimized for Wi-Fi accessibility and covered sports courts, recognizing their importance in supporting diverse activities. Festivals, such as the annual cultural celebration, play a pivotal role in showcasing and celebrating the rich heritage of the community. Overall, the multifaceted approach involves infrastructure enhancements, economic development, cultural preservation, and the creation of inviting public spaces.

Economic Sustainability

In the discussions related to the village, tourism and economic sustainability have been identified as key focal points. Efforts to boost tourism involve leveraging the community's cultural heritage and historical significance. The promotion of cultural festivals, such as the annual cultural celebration, has been highlighted as a means to attract visitors and showcase the unique traditions of the village. Economic sustainability is being pursued through initiatives like the development of eco-friendly tourism infrastructure and support for local artisans, fostering a balance between economic growth and environmental conservation. Additionally, there are endeavors to preserve cultural identity while promoting economic development, with a focus on integrating traditional practices into modern economic frameworks. The adaptive reuse of existing structures, like converting them into community centers, not only addresses infrastructure needs but also contributes to economic sustainability by creating spaces for education and recreation. The mayor also mentioned wanting to build a community kitchen and boardwalk between Brear Rock and Inalahan Pools to further stimulate the economy and attract tourists down south.

Cultural Preservation and Education

Cultural preservation and education are emphasized as crucial aspects of the village's development. There is a concerted effort to safeguard and promote the rich cultural heritage of the community. Initiatives include the establishment of cultural centers and museums aimed at preserving artifacts, historical documents, and traditional practices. The annual cultural celebration is a testament to the commitment to showcasing and passing down the village's unique traditions to future generations.

In terms of education, there is a recognition of the importance of integrating traditional knowledge into the modern curriculum. Educational programs are designed to incorporate local history, cultural practices, and environmental

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awareness. This approach not only preserves the community's identity but also empowers the younger generation with a strong sense of cultural pride and awareness.

Furthermore, the adaptive reuse of existing structures, such as transforming them into community centers, serves a dual purpose by providing spaces for both education and recreation. The village is actively seeking a balance between modern education methods and the preservation of traditional wisdom, ensuring that future generations are equipped with a holistic understanding of their cultural roots.

Public Safety and Environmental Hazards

During the interview, the mayor emphasized the urgent need for enhanced public safety services in Inalahan, focusing on concerns regarding police presence and fire protection. Specifically, the mayor pointed out the absence of a dedicated police station on the eastern side of the island, encompassing areas like Malesso, Talofofo, Inalahan, etc. This gap in local law enforcement infrastructure results in prolonged emergency response times, posing potential risks to the community's safety. Stressing the paramount importance of promptly establishing a police station, the mayor aims to improve response times and secure residents' safety.

In addition to police services, the mayor addressed challenges in fire protection and healthcare. Currently relying on neighboring areas for fire protection contributes to delays during critical situations. The mayor advocated for dedicated fire stations and improved facilities to mitigate risks associated with slow responses to fires and other emergencies. Expressing concerns about limited typhoon shelters in Inalahan, the mayor highlighted ongoing efforts to secure funding for additional shelters strategically located across the village. This comprehensive approach aims to bolster resilience and provide residents with secure spaces during severe weather events. The mayor also emphasized community education on evacuation procedures and safety protocols while exploring solutions such as covering a basketball court to serve as temporary housing in case of typhoon-related damage to homes.

Collaboration and Community Engagement

In the discussion on village pride and spirit, the mayor shed light on the distinctive aspects of Inalahan's community engagement and shared values. Central to this is a deep commitment to cultural preservation, with elders actively promoting the use of the native language and the preservation of traditional practices. Family values are paramount, evident in the strong bonds fostered through gatherings such as barbecues and weddings. Religious activities, like rosary sharing, further contribute to the community's cohesive identity, often conducted in the native language for added cultural significance. The residents of Inalahan also take immense pride in their culinary traditions, seizing opportunities to showcase their cooking skills and traditional foods. Despite this sense of unity, challenges were acknowledged, including the impact of tourism-related activities on the village, such as traffic congestion caused by tour buses. Additionally, concerns were raised regarding the landfill's potential effects on the local water source and disruptions caused by trash trucks. In terms of community engagement, the mayor expressed a willingness to participate in external meetings or events, provided they are held within the village or include neighboring communities like Talofofo and Agat, conveying the importance of addressing transportation challenges to facilitate broader community involvement.

Suggestions and Observations

The mayor, emphasizing the need for inclusivity, recommended involving a diverse range of community members, including elders, youth, and those with specific expertise, to ensure a holistic perspective. They stressed the importance of conducting outreach efforts within the village to increase participation from key members within the community. Additionally, there was a suggestion to explore potential partnerships with government agencies and non-profit organizations to leverage resources and expertise for sustainable initiatives. The interviewee also encouraged considering the unique cultural and historical aspects of Inalahan in the planning process, aligning sustainability efforts with the community's values and traditions.

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Mayor Chargualaf (Malesso) Interview Summary
March 1, 2024

Mayor's Role

The mayor emphasized a dedicated commitment to the well-being of the village and its residents. The mayor's primary goal is to take care of the village people by ensuring their needs are met and their concerns addressed. Expressing a sense of responsibility, the mayor aims to act as a spokesperson for the villagers, representing their interests and advocating for positive change. Additionally, a key focus is placed on maintaining and upkeeping the village, suggesting a dedication to infrastructure, community development, and the overall enhancement of the living environment. Through these objectives, the mayor appears driven by a desire to foster a thriving and harmonious community, actively working towards the betterment of the village. A recent successful initiative done by the mayor is expanding a village cemetery and other initiatives being pursued include preserving ocean resources.

Sustainability and Village Development

The mayor believes in promoting sustainability in the village, envisioning a future characterized by a coexistence between progress and environmental conservation. For him, sustainability entails not only preserving the existing community fabric but also actively cultivating resources for future generations. A critical aspect of his vision is a deliberate avoidance of large-scale commercial development, as he firmly believes such endeavors are better suited for northern villages. Instead, he emphasizes improved cultural preservation, prioritizing the nurturing of the village's unique heritage and traditions over rampant urbanization. Furthermore, the mayor emphasized the importance of enhancing infrastructure, particularly focusing on sewage and stormwater drainage systems.

Land Use and Environmental Management

The conversation on land use in the village encompassed various critical points. Issues surrounding land access and development were highlighted, particularly focusing on challenges faced by landlocked properties and the necessity to ensure adequate access. Property line disputes were acknowledged, with an emphasis on respecting others' property rights during development. The limitations on vertical development, especially for residential structures, were noted, and commercial zones were identified as areas where taller structures could potentially be built. When envisioning the village's future in 2050, there was a collective desire for preservation, emphasizing the importance of maintaining the community's unique character and expressing concerns about potential overdevelopment.

The mayor, focusing on environmental management, addressed concerns about sewage, runoff, and trash impacting the village's connection to the ocean. Notably, issues like sea level rise, shoreline erosion, siltation, darkening sand, and threats to marine life were discussed. The mayor emphasized the recurring nature of environmental degradation, proposing solutions like stricter laws, differentiated penalties for littering and illegal dumping, and leveraging law enforcement's discretionary power. Practical initiatives, including mountain trenches for runoff filtration and promoting Youth Conservation Corps initiatives, were suggested. The mayor also proposed measures like recycling bins and cost-sharing for recycling drop-offs to encourage sustainable practices, demonstrating a comprehensive commitment to addressing environmental challenges.

Infrastructure and Renewable Energy

In the discourse on infrastructure, key points centered on sewer systems, portable water, stormwater management, and power systems. Concerns about sewer system adequacy, maintenance, and design for future growth were raised. Portable water discussions emphasized the importance of resource preservation, timely public announcements during shortages, and improvements to water tanks and pressure systems. Stormwater management challenges were scrutinized, with proposed solutions ranging from property acquisition for redirection to addressing drainage issues. Power systems, though improved, were briefly touched upon, with solar energy emerging as a viable but somewhat costly alternative. Frustration over cyclical issues conveyed a call for proactive solutions, emphasizing better responses from authorities and increased public engagement.

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Community Well-being and Public Spaces
The mayor emphasized the sufficiency of current public spaces in the village, including the baseball field, park, playground, and Malesso' pier, underscoring the abundance of open areas. Discussions about securing land for future development revealed four parcels earmarked for municipal use. However, large-scale development for recreational spaces is restricted due to Malesso' being predominantly private property.

The mayor also addressed the closure of a locally owned grocery store, resulting in the current presence of foreign-owned stores in the community. Additional challenges were highlighted, such as the limitation on large-scale commercial development, as the community prioritizes cultural preservation over commercial expansion.

Economic Sustainability
In the context of tourism, the mayor articulated the appeal of Malesso's oceanic beauty, emphasizing its potential to draw visitors to the village. He expressed a keen desire to welcome more tourists and promote cultural tourism, highlighting the unique identity and traditions of Malesso as a valuable asset for providing enriching experiences to visitors. To improve economic stimulation, the mayor envisioned engaging boat operators to facilitate trips to Ko'ko's Island, similar to operations in the past, and stated that residents currently set up pop-up shops at the pier that cater to tourists.

However, it is noteworthy that, despite the emphasis on tourism, there is neither an explicitly outlined plan for economic development nor an intention to increase commercial development in the village to enhance the economy. The prevailing sentiment was to leverage Malesso's natural and cultural assets to attract visitors, with a focus on tourism-related initiatives as a potential driver.

Cultural Preservation and Education
The discussion highlighted the importance of cultural preservation and education. The mayor expressed a shared concern for maintaining and reviving their native language and discussed the historical suppression of the CHamoru language in schools but acknowledged recent efforts to reintroduce and promote it through cultural studies. The conversation delved into the unique cultural identity of Malesso', shaped by its historical roots and a blend of local influences. There was a recognition of the distinct accents and speech patterns that identify individuals from different areas within the region. Additionally, the mayor conveyed the significance of historical buildings and the efforts, or lack thereof, to preserve them. They touched upon the challenges of balancing restoration with personal preferences, reflecting a desire for negotiated approaches to preservation.

Public Safety and Environmental Hazards
The mayor expressed critical issues with the adequacy and efficiency of public safety services in Malesso. The police and fire departments were deemed insufficient, with a planned expansion never realized, leading to inefficiencies in service delivery. The reliance on services from the northern villages has often created delays, prompting the need for a local ambulance, police, and/or fire station to expedite transportation during emergencies. Concerns were raised about the closure of typhoon shelters, advocating for the consistent availability of shelters in strategic locations.

Regarding environmental hazards, sea level rise was identified as a significant problem as it causes erosion near roads and residential areas. Insufficient stormwater drainage systems also pose a major threat during typhoon season or period of heavy rain, as many areas in the village are prone to flooding. Because of this, the mayor believes a standard typhoon shelter location for village residents needs to be set.

Collaboration and Community Engagement
The mayor discussed a noticeable shift in the village spirit and pride over time. They recalled a time when the community was closely connected and took pride in their identity, highlighting a strong sense of camaraderie and

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competitive spirit. However, there was a consensus that these positive aspects have diminished over the years. The discussion touched on contemporary challenges, such as changes in familial values, increased materialism, and a perception of decreased community closeness. Despite these concerns, the mayor mentioned that elements of the positive spirit, like cordiality and friendliness, still persist.

Suggestions and Observations

The mayor emphasized the importance of avoiding mere "band-aid" solutions to the village's problems. They expressed skepticism about temporary fixes and stressed the need for comprehensive, long-term strategies to address the recurring issues, particularly those related to flooding and environmental hazards. The mayor urged a shift from reactive measures to proactive management activities that could effectively rectify the underlying problems, providing a sustainable solution to the challenges faced by the community.

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Mayor Ungacta and Vice Mayor Delgado Interview Summary
March 6, 2024

Mayor's Role

The mayor's vision for the village centers on modernization, encapsulated by a commitment to education, culture, and sports. Achieving stability and fostering educational capital have been key accomplishments over his terms, complemented by ongoing projects such as the construction of a gym and baseball facilities. The mayor's motto, highlighting education, culture, and sports, reflects the core values driving initiatives of Mangilao. Notable among these initiatives is the improvement of the local market, transforming it into a hub for artisans, thereby boosting the economy and preserving cultural heritage. Successful programs related to Mes CHamoru and efforts to secure grants for community-enhancing projects showcase the mayor's dedication to stability and progress.

Looking towards the future, the mayor aspires to promote growth and opportunities for the community, leveraging facilities and services. Community engagement remains a focal point, with safety measures like neighborhood watch and night patrol emphasized. The mayor recognizes the increased involvement of the community and credits the quick turnaround of improvements to additional funding made available from COVID-19 and Typhoon Mawar relief funds, emphasizing a commitment to sustainable, long-term solutions over short-term fixes. In summary, the mayor's role and vision encompasses a holistic approach to community development, combining cultural preservation, educational support, and sports initiatives to create a thriving and engaged village.

Sustainability and Village Development

Regarding sustainability and village development, the mayors emphasized the delicate balance required to foster growth while safeguarding the cultural integrity of Mangilao. They articulated a shared vision for sustainable development that prioritizes preserving the unique character and heritage of the village. Due to the importance of cultural identity, the mayors encouraged developers and businesses to actively engage with local traditions, integrate cultural symbols into designs, and contribute to initiatives nurturing a sense of community pride.

Moreover, the mayors delved into their approach to sustainability, defining it in terms of responsible resource management to meet daily needs. Their commitment extends beyond immediate gains, emphasizing long-term planning and investments that not only enhance the community's economic well-being but also contribute positively to its overall welfare over time. Through community involvement, judicious resource allocation, and collaboration with stakeholders, they strive to realize a development paradigm harmonizing economic growth with cultural preservation and sustainable practices.

Given the agricultural history of Mangilao, a recent initiative involved partnering with the University of Guam to repurpose excess materials from a renovated basketball court for a large-scale donne' (hot pepper) farm. They support agriculture, collaborating with forestry to address erosion and engaging in educational workshops on sustainable practices despite challenges like limited water and power. They continue to seek a balance between upward growth and cultural preservation, navigating challenges such as sporadic land development movements to uphold community diversity.

Land Use and Environmental Management

The mayors highlighted several crucial land use issues related to zoning laws, conditional use disputes, and access easements. The primary concern centered around land ownership problems, with instances of encroachments leading to disputes. The issues were more prevalent in residential areas, where confusion over home addresses and land ownership created challenges, particularly with utility billings and mail delivery. The conversation delved into the impact of family subdivisions, where individuals bought large portions of land, leading to infrastructural challenges. Housing availability seemed sufficient, but concerns were raised about affordability, especially in multi-family situations.

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Regarding the discussion on environmental management issues that were addressed include illegal dumping, the importance of maintaining co-owned facilities, flooding during heavy rain, and concerns about endangered and invasive species. Notably, feral pigs entering residential areas due to habitat loss from development were highlighted. Illegal dumping emerged as a significant challenge, primarily driven by individuals opting for free disposal over paid alternatives. Proposed solutions included raising awareness, government-installed cameras, and the introduction of a new law for mandatory curbside pickup. The protection of environmental resources involved initiatives like native tree planting and successful recycling efforts, with funding challenges requiring improved accessibility for mayors to enhance community impact, especially through channeling recyclable resources.

Infrastructure and Renewable Energy

The community's infrastructure concerns centered on critical elements such as water access, power availability, and internet connectivity. In undeveloped areas, the absence of water lines emerged as a hindrance to both farming and residential expansion, leading some residents to secure mayoral permission for access to public water sources vital for their livelihoods. Simultaneously, challenges related to internet connectivity, especially in low-lying regions, and limited power accessibility were discussed. The mayors emphasized the necessity for improved waste management, strengthened law enforcement, and enhanced infrastructure to bolster sustainable development and address environmental and housing issues. Additionally, the sewer system's challenges in land lease properties and shared waterlands raised concerns, accentuating the broader issues of water and power access in the Pagat area. The conversation also touched upon road concerns, collaboration challenges between private developers and public works, and stormwater drainage problems, proposing solutions like constructing large ponding basins. That said, prioritizing water and road infrastructure emerged as urgent needs. Briefly addressing transportation gaps, the mayors suggested adding bus stops along Route 15, having public transportation operational on Sundays, and improving the Mangilao bus stop locations to be more than just an uncovered bench.

Renewable energy discussions, particularly community solar initiatives, have yet to be marketed to the mayor's office. Despite a significant number of homeowners utilizing solar energy in Mangilao, the primary challenge lies in resident affordability, with additional costs serving as a deterrent to wider adoption.

Community Well-being and Public Spaces

The community's well-being in Mangilao is intricately tied to the availability of open spaces, a resource currently lacking due to limited land inventory. Despite being the fourth highest in poverty levels, the mayor expressed that residents could always benefit from more accessible public and recreational spaces. The maintenance and oversight of existing spaces, like Pagat, Latte Heights Park, and Eagles Field, are handled by the mayor's team, emphasizing the importance of these areas.

Addressing the village's needs requires a focus on designated locations that encourage community engagement. Challenges in securing additional spaces stem from private land ownership and government-controlled lands. While the mayor's team actively seeks available lots and attempts to diversify the village's offerings based on residents' interests, there is a lack of identified plots for potential development. The central hub around the mayor's office, which includes the Santa Teresita Church, Thursday night market area, and the senior center, serve as a focal point for community activity. Expanding this area is viewed as crucial for community well-being. The mayor's team envisions upward development and stresses the need for an expanded community center and mayor's office to meet the growing demands of the community.

Economic Sustainability

The discussion delved into Mangilao's economic landscape, emphasizing a strong commitment to community development. Key focal points included supporting local businesses through initiatives like the Thursday night market and addressing transportation challenges for improved job accessibility. The conversation conveyed the village's strategic approach, seeking a balance between economic sustainability and the preservation of cultural

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values. Despite challenges arising from its central island location, there was a consensus on the importance of thoughtful development to safeguard Mangilao's unique cultural identity.

Identified growth sectors encompassed agriculture, sports industry, service industry, and education, with a particular emphasis on sustainable farming practices. Challenges related to water access and infrastructure were acknowledged. Cultural preservation remained paramount, with a dedicated commitment to integrating aesthetics into development and safeguarding significant locations. The discussion welcomed positive economic ventures, such as the University of Guam's expansion, as long as they aligned with the village's core values (i.e., education, culture, and sports). Flexibility in the land use plan was deemed crucial, allowing for exceptions that support essential services, ultimately aiming for sustainable growth that delicately balances economic development with cultural preservation for the benefit of Mangilao's residents and identity.

Cultural Preservation and Education

Preserving the unique cultural identity of Mangilao emerged as a central focus during discussions, as participants voiced concerns about accessing natural products for cultural arts programs amid environmental challenges such as Rhino beetles affecting local resources. The impact of these challenges on the community's ability to maintain traditional practices and engage in cultural activities was a key point of consideration. To address these issues, the mayor's office actively promotes cultural education, particularly through initiatives like the Thursday night market, which provides both a platform for local artists and artisans and an avenue for educating residents about their cultural heritage.

Moreover, the mayor plays a pivotal role in actively organizing cultural activities that showcase CHamoru dance, song, food, and more. These events serve as vibrant celebrations of Mangilao's rich heritage, offering residents a firsthand experience of their traditional arts and customs. This proactive engagement not only enhances cultural understanding but also fosters a sense of community pride and connection. Rooted in fishing, hunting, and agriculture, the village's cultural essence is encapsulated in symbolic elements like the official village bird and flower. Ongoing endeavors to enhance cultural education involve planting these flowers in parks and communal areas, creating visible reminders of Mangilao's rich heritage. The architectural aesthetic, characterized by Spanish design with distinctive arches, not only adds to the village's visual appeal but also serves as a welcoming symbol. These arches play a crucial role in preserving Mangilao's cultural heritage, illustrating the community's commitment to maintaining its unique identity for present and future generations, fostering a sense of pride and connection among residents.

Public Safety and Environmental Hazards

Regarding public safety and environmental hazards, Mangilao is actively collaborating with the University of Guam (UOG) to establish walking and jogging paths, as well as bike trails, promoting both health and safety within the community. Addressing road safety is a priority, with a desire to develop pedestrian overpasses to prevent accidents and enhance overall road safety. While the police response is swift, there's a recognized need for additional police protection, and the community expresses interest in having a dedicated fire department within the village, potentially along Route 15.

Efforts are underway to ensure typhoon shelters meet the needs of the community, with a call for larger or additional facilities to accommodate the population, including residents in land trust areas. Despite concerns about shore erosion, the village is actively engaged in mitigation strategies, such as tree planting, to combat the issue. Notably, there's no apparent impact of seawater intrusion or sea level rise in Mangilao. On the matter of homelessness, while some areas witness transient settlements, it is not considered a major issue for the village. Overall, the mayor's commitment to public safety and environmental well-being is evident through his proactive measures and collaborative initiatives.

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Collaboration and Community Engagement

Fostering a strong sense of village pride, Mangilao actively spreads the spirit of Ina'fa'maolek, aiming to incorporate cultural elements like donne pepper into new developments, such as the construction of establishments like McDonald's. The community's aesthetic is evolving with an increase in murals, although geographical challenges exist due to limited access to some areas in the village. Despite these hurdles, the accessible areas are diligently maintained. The village's positive community spirit is evident in various aspects, from active participation in village group chats to a shared belief in continuous growth and improvement. During festivals, residents take pride in showcasing the vibrant character of their village. Embodying a youthful spirit, Mangilao's pride is strengthened by the youth who actively engage in community initiatives, programs, and activities.

Key venues in the village are UOG, GCC auditorium, FD Phoenix Center, and the community center or market. If charrettes were conducted in the village, interest and community participation would be there. Potential challenges include capacity and roadside noise affecting the market area.

Suggestions and Observations

The 2050 vision for Mangilao outlines a dynamic community with diverse activities and potential expansions of UOG and GCC. The construction of a hospital aims to contribute to the village's growth, with a focus on doubling the size of village activity and creating a comprehensive, one-stop village. Increased commercial development aligns with the vision for a thriving community. Despite this growth, the mayor's office maintains a commitment to cultural preservation and education. Realistic improvement plans include a master plan for infrastructure upgrades in water, power, internet, and roads to enhance safety and well-being. Innovative solutions, while not unusual elsewhere, are proposed for Guam. The Mayor's office, acting as a DODEA stop, underscores the importance of enhanced safety measures such as improved crosswalks and pedestrian overpasses, particularly with numerous school children navigating the streets.

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MTM Interview Summary

March 13, 2024

Mayor Paco

Tenure and Motivation for Running: Mayor Paco is serving his second term, going into his eighth year, and has plans to run again. His journey into politics was motivated by his experience as a federal firefighter, where he observed the challenges posed by overgrown vegetation on the size of roadways. This observation led to his first initiative to create more activities for the youth, including the development of playgrounds, baseball fields, a quarter-mile walkaround, and a facelift for the basketball court, envisioning a hub of activity in one central area. The major hurdle he faced was the lack of government-owned property available for such developments, a common envy among mayors with more expansive municipal lands.

Vision for Accomplishments: As he looks toward the end of his tenure, Mayor Paco hopes to be remembered for initiating neighborhood watches, making road improvements, and enhancing safety measures. He is proud of the sports and playground facilities that have been developed for the youth, alongside afterschool programs and student pickups for these programs. Although many of his projects focus on youth, he also emphasizes the need for a senior citizen center to better serve the manamko (elderly), highlighting a commitment to both the youngest and oldest members of the community.

Social Needs and Infrastructure: The mayor identifies social needs as a priority, with a particular emphasis on creating infrastructure to support water and power services, addressing sewage problems, and increasing the availability of low-income housing. The challenge of balancing infrastructure development with the preservation of the environment is exacerbated by the fact that much of the land is classified as wetlands, making development costly and complex due to federal regulations.

Sustainability and Development: Mayor Paco's definition of sustainability focuses on the long-term viability of infrastructure, roads, power, and water services. However, he is cautious about development, recognizing that while it can bring benefits, it also introduces challenges, such as increased crime rates and the displacement of original families by new residents from diverse backgrounds. He stresses the importance of newcomers contributing positively to the community.

Changes and Challenges in the Village: Over time, Mongmong-Toto-Maite (MTM) has seen a rise in crime rates, attributing these changes to development and the influx of different nationalities through rental properties. The mayor believes that a balance between environmental preservation and community development is possible but admits that industrial development is not suitable for MTM. He envisions the area primarily for office buildings, restaurants, and grocery stores that offer reasonable prices, promoting a suburban rather than industrial or commercial vibe.

Future Visions and Environmental Concerns: Looking ahead to 2050, Mayor Paco imagines an island with overpass roads and better shopping infrastructure but worries about the potential increase in crime rates and the loss of private yards due to more compact living spaces. Environmental challenges, particularly illegal dumping and contamination from PCBs, are also significant concerns. He calls for harsher penalties for illegal dumping and abandoned vehicles

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and emphasizes the need for better recycling education and infrastructure to support a growing population.

Community and Cultural Preservation: Despite facing modern challenges, Mayor Paco values the preservation of Chamorro cultural values and language, viewing education and family involvement as key to maintaining the community's cultural identity. He expresses a desire for more community involvement in local functions and for improvements to public transportation and housing affordability, aiming to enhance the quality of life for all residents of Mongmong-Toto-Maite.

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Mayor Alig Interview Summary
March 12, 2024

Mayor's Role

The mayor, now in his second term after six years in office, aimed to foster a more vibrant and engaged community during his tenure. He sought to enhance family involvement, increase recreational opportunities, and promote a sense of community spirit within the small village. Believing that community engagement is crucial for addressing social issues like crime and mental health, he prioritized initiatives to strengthen familial bonds and foster a sense of belonging among residents. Before the pandemic, the mayor implemented various activities such as family gatherings, senior citizen events, after-school and summer programs, and sponsored sports activities including baseball, basketball, softball, paddling, and dance. He emphasized utilizing funds for community support rather than on superficial beautification projects. The success of his initiatives was measured by the high turnout and ongoing interest from residents. Looking ahead, he aims to continue older initiatives while also fostering a culture of engagement and inclusivity within the village, where families interact, children play freely, and all residents feel connected as part of a unified community. He believes that by creating such a vibrant community, socioeconomic disparities can be reduced, leading to a decline in crime and social problems.

Sustainability and Village Development

Sustainability and village development are paramount concerns for the mayor, who recognizes the importance of preserving the environment, particularly the coral reef, for future generations. He supports initiatives like marine preserves and efficient recycling programs to maintain a healthy environment. The mayor aims to model sustainability goals rather than just discuss them, advocating for educational facilities to teach residents about marine life and environmental protection. Development in the village is carefully managed, with a focus on preserving wetlands and avoiding large-scale projects near sensitive areas like mangroves. The mayor envisions repurposing former Navy property for recreational use, generating revenue for the village while preserving natural habitats. He hopes to continue collaborating with educational institutions like the University of Guam to study marine life and promote environmental education.

Looking ahead to 2050, the mayor envisions a multigenerational community with improved healthcare facilities and support services for the elderly. He emphasizes the importance of planning for the aging population and providing assistance and companionship for those in need. Through actions such as shopping assistance during emergencies and home protection measures, the mayor demonstrates his commitment to caring for the elderly and preparing for the future needs of the community.

Land Use and Environmental Management

The mayor faces minimal land use issues in the village, with only one request for a zone change and two public hearings. However, environmental concerns persist, including runoff and sedimentation problems, fires, and the presence of feral pigs, which the mayor hopes to address through a partnership with the USDA. Despite efforts to remove around 200 pigs in the past, their rapid reproduction remains a challenge. Flooding during heavy rain, erosion, and stormwater runoff also pose significant environmental threats. While illegal dumping is not prevalent due to strict enforcement by the mayor's office, stormwater runoff issues persist, requiring the mayor's assistance in devising effective solutions. Lack of ponding basins and drains exacerbates the problem, with the rivers frequently clogged. Environmental protection efforts are needed to safeguard the ocean, coral reefs, and mangroves, while increased recycling initiatives are essential. Although the mayor promotes sustainable practices at village events, broader adoption in households remains a challenge.

Infrastructure and Renewable Energy

Infrastructure issues, particularly concerning water and power, present challenges within the village. Disparities in water pressure and frequent leaks indicate a need for comprehensive replacement of aging water lines, with certain areas, such as those on Nimitz Hill, experiencing inadequate water distribution due to outdated infrastructure. While

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most power lines are underground, areas with underground lines sometimes face delays in power restoration compared to those with overhead lines. Sewer issues are minimal, but road maintenance is lacking, especially on Route 6 and secondary roads. The mayor advocates for improved maintenance plans, particularly for shared roads used heavily by both the locals and the military. Telecommunications infrastructure is subpar across the island. In terms of renewable energy, discussions have taken place regarding rooftop solar projects, although no concrete action has been taken yet. The mayor expresses willingness to explore renewable energy options, believing the community would support such initiatives, but lacks detailed knowledge of available programs. Despite these challenges, the mayor remains open to collaboration and proactive in seeking solutions to improve infrastructure and promote renewable energy within the village.

Community Well-being and Public Spaces

Community well-being and the preservation of public spaces are central to the mayor's vision for the village. Currently, there is a playground adjacent to the CHamoru land trust property, but the mayor aims to expand recreational opportunities by acquiring land from the trust to establish a soccer field and additional recreational spaces. Notably, the latte site and Atantano holds significant cultural importance to the community, particularly concerning the island's pre-war and post-war periods. The mayor advocates for preserving these sites or transforming them into a cultural education center, prioritizing the preservation of cultural heritage, medicinal plants, as well as the historical relevance of these locations. When discussing the central location of importance in the village, the mayor stated that 10 years ago it was the church, however nowadays he is not able to pinpoint a central location. He expressed that the park he plans to develop could become the new central location of importance, as he believes it has the potential to be a hub for community gatherings and cultural activities, ensuring the preservation and enhancement of public spaces for the well-being of all residents.

Economic Sustainability

The mayor identifies economic sustainability as a pressing concern within the village, characterized by employment and homelessness challenges. To address these issues, he emphasizes the importance of job creation for individuals who traditionally face barriers to employment due to training and transportation limitations. Recognizing the need for financial literacy education, especially among the younger generation, the mayor supports initiatives aimed at providing training and resources to improve financial management skills. Efforts are underway to promote education and training opportunities, with GCC scheduled to visit the village to advertise their programs. As for transportation, this remains a significant obstacle, with the public transit system being unreliable and inconsistent, leading to difficulties for residents in accessing employment opportunities. The mayor's office occasionally assists residents with transportation costs to ensure they can reach their jobs.

Regarding the village's most important economic asset, the mayor identified the coral reef. This recognition underscores the importance of environmental preservation and sustainable resource management in supporting economic sustainability efforts.

Cultural Preservation and Education

Preserving CHamoru values and culture presents challenges within the village, despite an ongoing interest in its preservation. The mayor observes a disconnect between belief in CHamoru values, culture, and heritage and their actual practice, likening it to a willingness in spirit but lacking in action. Language preservation stands out as a primary concern, with the development of a "new" CHamoru culture complicating efforts. The mayor stresses the importance of returning to the fundamentals to prevent the dilution of CHamoru identity. Additionally, there is a lack of a distinct cultural identity in the village, with no particular aesthetic or architectural theme. However, the mayor advocates for incorporating marine life into the village identity, recognizing its cultural and environmental significance. While certain cultural symbols like the white plumeria and the Atantano shrine hold significance, overall village aesthetics are not clearly defined, although the mayor acknowledges their importance in enhancing the community's ambiance.

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Public Safety and Environmental Hazards

Public safety and environmental hazards are significant considerations within the village. While police and fire protection are deemed sufficient due to the presence of port police, the inadequacy of typhoon shelters poses a concern. The nearest shelter in Barrigada and the staging area situated behind the basketball court is inadequate, offering little protection from severe weather. Despite efforts to mitigate environmental hazards like seaside erosion, further protection is needed, particularly on private properties. The issue of homelessness is addressed, although the potential for its increase necessitates proactive planning and intervention.

Collaboration and Community Engagement:

Community engagement in Piti is characterized by a strong sense of pride and camaraderie. The village spirit fosters a culture of togetherness and familial bonds, with a rich history of community cohesion. Despite the influx of new homeowners, the mayor has succeeded in creating a close-knit community where everyone feels connected and valued. Residents actively share knowledge and expertise, fostering a supportive environment. Participation in village events, including the annual Pride of Piti brunch, reflects the community's commitment to celebrating its achievements and contributions. The event's relocation to Santos Park ensures inclusivity, with a nominal entry fee ensuring accessibility for all. The hashtag #PitiPride symbolizes the collective pride and unity within the village, underscoring the significance of community engagement in preserving its identity and heritage.

Suggestions and Observations:

Collaboration and community engagement remain essential in crafting a sustainable plan for the village. Recognizing the importance of reaching all demographics, the plan must address the needs of both the aging community, who are primarily active on platforms like Facebook, and the younger generation, who frequent platforms such as Instagram, TikTok, and Twitter. Moreover, communication channels like WhatsApp, calls, and emails are widely used among residents. While advertising the plan and seeking legislative support are crucial steps, it's imperative to allocate funds wisely, considering the changing landscape of media consumption. Traditional media may not be as effective, with online platforms offering more targeted and cost-effective avenues for engagement. Therefore, focusing resources on digital platforms and strategic advertising methods will ensure broader reach and meaningful participation from all residents in shaping the village's sustainability plan.

Regarding Charrette participation, the mayor believes multiple charretes within the village would be needed to maximize resident participation.

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Santa Rita Mayor Interview Summary
April 5, 2024

Mayor's Role

Over the course of his 16-year tenure, the mayor has spearheaded numerous initiatives aimed at enhancing the infrastructure and quality of life within the community. Among his primary goals was the resolution of erosion problems plaguing the area, a persistent concern that he sought to address through various means. Road improvements have been a focal point of his administration, with significant investments made to enhance transportation networks throughout the city. Additionally, substantial efforts have been directed towards improving the water sources and replacing aging water lines to ensure access to clean and reliable water for residents. Furthermore, the mayor has overseen the refurbishment of recreational facilities, including basketball courts and baseball fields, to promote community engagement and physical activity. Street light improvements have also been undertaken to enhance safety and visibility across the city. Despite these achievements, challenges persist, particularly concerning land ownership and private property issues that hinder efforts to fully resolve erosion problems. As the mayor concludes his tenure, his legacy is marked by a commitment to progress and a dedication to addressing the needs of the community, even in the face of complex challenges.

Sustainability and Village Development

The mayor's perspective on sustainability is grounded in pragmatism, defining it simply as any action that helps solve the village's problems. He acknowledges the need for assistance from external sources to address the village's challenges effectively. Embracing a research-based definition of sustainability—meeting present needs without compromising the future—the mayor emphasizes a delicate balance between development and preserving the environment and culture. His focus lies primarily on resolving existing issues like erosion to prevent future problems. However, differing perspectives within the village pose challenges; while the mayor advocates for commercial development to address infrastructure and safety concerns, villagers prefer to maintain their current lifestyle, wary of overdevelopment. They are open to smaller-scale commercial ventures that create local job opportunities but oppose large-scale projects like hotels and high-rise buildings. Similarly, while they support modest residential development, they reject affordable housing out of concern for community aesthetics. Looking ahead to 2050, the mayor envisions significant infrastructure improvements and a larger, middle to upscale community, with efforts focused on revitalizing neglected areas like the Namu River to Namu Falls. His vision includes stricter enforcement of laws, enhanced civic cleanliness, and a proactive approach to mitigating environmental threats, ensuring a sustainable and thriving future for the village.

Land Use and Environment Management

The mayor's perspective on land use and environmental management reflects a nuanced understanding of the village's challenges and aspirations. With limited arable land in the village, exacerbated by issues such as Rhino beetles and red dirt, farming faces significant obstacles. Despite a preference for agriculture among villagers, the mayor foresees a shift towards modernization by 2050, diminishing the prominence of farming and fishing. While parental subdivisions and easements have not posed immediate issues, environmental concerns loom large. Illegal dumping, driven by financial constraints, plagues the village, exacerbating issues like erosion and wildlife disturbances. The mayor advocates for solutions such as impound lots and stricter enforcement of laws, though challenges persist in citation enforcement. Additionally, addressing erosion along the river is paramount, not only for flood prevention but also for protecting environmental resources like the Namo River and trees. Tackling feral animal populations and promoting responsible pet ownership are ongoing endeavors, hindered by legal constraints on culling methods. Despite these challenges, the mayor remains committed to environmental stewardship, advocating for improved recycling infrastructure and community engagement to foster a cleaner, more sustainable village.

Infrastructure and Renewable Energy

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The mayor's perspective on infrastructure and renewable energy underscores both the challenges faced and potential solutions sought for village development. Power distribution isn't a concern, but maintaining the village's power generator and reducing outage durations are priorities. While water system issues have been addressed by GWA, the lack of a comprehensive sewer system remains a significant challenge, with expansion costs cited as a barrier. Road maintenance is costly but crucial, particularly given the prevalence of deteriorating roads, which rank second only to erosion in terms of infrastructure concerns. Erosion, exacerbated by poor engineering near the Namo River, highlights the need for better storm drainage and ponding basins. On the renewable energy front, the mayor is unaware of government initiatives but acknowledges villagers' openness to programs that offer sustainable energy solutions without imposing significant financial burdens. As the village navigates these challenges, the mayor remains committed to exploring innovative approaches to enhance infrastructure and embrace renewable energy sources for long-term sustainability.

Community Well-being and Public Spaces

The mayor's perspective on community well-being and public spaces reflects a desire to enhance recreational opportunities despite significant challenges. While recognizing the need for amenities like gyms and public spaces, the scarcity of suitable land and financial constraints present formidable obstacles. The village's high-income status limits access to grant funding, further complicating efforts to develop public spaces. Existing land, though available, is often steep or allocated for other purposes, necessitating costly development. The mayor's attempts to create parks have been thwarted, with designated land redirected for alternative programs. Despite these setbacks, the mayor remains committed to improving current facilities and advocating for communal spaces, including the utilization of existing infrastructure like the baseball and football fields. However, the absence of a central focal point in the village underscores the urgent need for accessible public spaces to promote community well-being and cohesion.

Economic Sustainability

The mayor's perspective on economic sustainability highlights the potential for job creation and community prosperity in the village. Despite its high-income status, there remains a significant portion of residents facing economic challenges, with job opportunities being a crucial need. The mayor envisions economic development initiatives such as a mini mall to generate employment opportunities locally. While public transportation is underutilized, it remains adequate for current needs. However, income disparity is a pressing issue, with a sizable portion of residents struggling with low wages and limited job prospects, leading to increased crime rates and outmigration. The potential refurbishment of the Namo Falls and river could serve as a vital economic asset, though their private ownership presents obstacles to leveraging their full potential for community benefit. Addressing these economic challenges is essential for fostering a more equitable and sustainable future for the village.

Cultural Preservation and Education

The mayor's perspective on cultural preservation and education underscores the importance of maintaining CHamoru heritage and community pride despite numerous challenges. The dwindling opportunities for traditional activities like farming and the absence of village fiestas pose significant obstacles to preserving CHamoru values. However, initiatives such as events and tours of Sumai, coupled with recognition of long-standing residents, demonstrate a commitment to preserving cultural identity and fostering community cohesion. Efforts to restore historic buildings and traditional architectural elements like latte stones and CHamoru huts reflect a broader goal of reviving the village's cultural aesthetic. Despite modernization and changes in land ownership, the mayor remains dedicated to honoring and preserving the rich cultural heritage of Santa Rita-Sumai for future generations.

Public Safety and Environmental Hazards

The mayor's perspective on public safety and environmental hazards underscores the need for enhanced emergency services and proactive measures to mitigate risks. While police and fire protection services are located in Agat, their presence in Santa Rita is deemed insufficient, prompting calls for a dedicated station or coban within the village to improve response times. Although drug issues persist, they are not as prevalent as in neighboring areas. Typhoon

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shelters are deemed adequate, and homelessness is not a significant concern. However, environmental hazards such as erosion and flooding during heavy rainfall pose ongoing challenges, necessitating continued efforts to address these issues effectively.

Collaboration and Community Engagement

The mayor acknowledges the deep sense of pride within the village community, evident in achievements like the Liberation float building seven-year winning streak. Despite recognizing the community's willingness to lend support when needed, there's skepticism about broader engagement, with doubts about turnout for events like charrettes. Social media is seen as the most effective platform for communication, yet there's a prevailing belief that even those with grievances may not attend. Concerns are often voiced by those directly impacted by proposed developments, reflecting a perceived limitation in broader community involvement.

Suggestions and Observations

The mayor's suggestions and observations for the 2050 sustainability plan center around the need for additional sports facilities within the village. Recognizing the importance of recreational opportunities for community well-being, the mayor emphasizes the necessity of expanding sports infrastructure to accommodate the growing population and promote healthy lifestyles. This recommendation aligns with the broader goal of enhancing the village's sustainability by fostering a vibrant and active community for generations to come.

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Sinajana Mayor Interview Summary

March 20, 2024

Mayor Hoffman

Introduction and Background: Mayor Robert Hoffman has served the Sinajana community since 2005, striving to enhance the standard of life in the village. Under his leadership, significant improvements have been made to the local infrastructure, including the repair of sidewalks, the rebuilding of playgrounds, and the addition of streetlights, aiming to create a more engaged and socially vibrant community. His efforts have also extended to building a precinct, enhancing feelings of safety among residents, and fostering a strong sense of pride and belonging within the community.

Development Vision: Mayor Hoffman's vision for Sinajana involves not just physical enhancements to the village but also a deep commitment to community engagement and social interaction. He emphasizes the importance of creating spaces that promote walkability and connectivity, leading residents to parks, offices, and recreational areas. This vision is grounded in a holistic approach to development, where investments in facilities and programs are seen as pivotal in fostering a positive communal atmosphere, supporting the mental and physical well-being of residents across all age groups.

Infrastructure and Community Needs: On the infrastructure front, Mayor Hoffman has pursued initiatives aimed at modernizing Sinajana without relying heavily on government funds. Instead, partnerships with various agencies and strategic use of federal grants have facilitated the development of key projects like the Sinajana Green Market and a new fire station. These projects are part of a broader effort to cater to the evolving needs of the community, from enhancing economic opportunities through the market to ensuring safety with updated emergency response facilities.

Homelessness in Sinajana: Addressing homelessness remains a poignant challenge for Sinajana, reflective of broader societal issues. Mayor Hoffman has implemented an innovative approach by providing a "homeless verification" process, enabling residents without permanent addresses to access essential services and support from local charities and organizations. This initiative underscores a compassionate response to homelessness, facilitating access to assistance while maintaining the dignity of those affected. Additionally, the community's engagement in spaying and neutering pets highlights a comprehensive approach to addressing not just human needs but also animal welfare, indicating a multifaceted strategy towards improving quality of life within Sinajana.

Cultural Preservation and Economic Development: Sustainability and development in Sinajana are framed by Mayor Hoffman's forward-thinking stance, which is open to change and improvement. While he values the preservation of cultural and environmental aspects, he also sees the necessity for development that meets the current and future needs of the community.

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Affordable housing emerges as a critical need, with the Mayor actively seeking partnerships to develop housing that is accessible to younger generations and others who wish to remain in or return to the village.

Mayor Hoffman's approach to development is inclusive, aiming to integrate commercial spaces and parks into the urban fabric of Sinajana. He advocates for developments that enhance the community's quality of life, such as the proposed commercial center that would include essential services like laundromats and restaurants. His vision extends to the cultivation of community gardens and green spaces, despite the challenges posed by limited land availability.

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Introduction and Background: The Mayor of Talofofo has been in office for 24 years, focusing on developing the village's infrastructure and recreational facilities. His long tenure is marked by efforts to improve the living conditions for his constituents while ensuring that development does not compromise the village's natural beauty and environmental health. His vision encompasses a broad range of initiatives aimed at enhancing the community's quality of life, from updating the infrastructure to expanding public spaces for recreation and leisure.

Development Vision: The development vision for Talofofo is centered around creating a balanced community that provides necessary amenities and services locally, reducing the need for residents to seek employment and resources elsewhere. The mayor envisions Talofofo as a model village by 2050, incorporating residential areas, commercial developments, and tourist attractions that collectively support a sustainable and self-sufficient community. This vision includes not just physical infrastructure but also a commitment to preserving the village's cultural identity and natural environment.

Infrastructure and Community Needs: In terms of infrastructure, the mayor has identified several key areas for improvement, including the expansion of the sewer system, upgrading water pipes to address corrosion and leaks, and enhancing stormwater management to prevent flooding during heavy storms. Road repair and the paving of additional streets have been ongoing projects, with significant progress made in recent years. The infrastructure upgrades are seen as essential for supporting the village's development goals and ensuring the well-being of its residents.

Cultural Preservation and Environmental Protection: Cultural preservation remains a priority for the mayor, who stresses the importance of Chamorro language and traditions in maintaining the village's unique identity. Initiatives aimed at integrating Chamorro culture into education and community activities are designed to foster a sense of pride and continuity among residents. Alongside cultural preservation, environmental protection is a key concern, with the mayor advocating for measures to safeguard Talofofo's natural habitats, particularly against the threats posed by invasive species and development pressures. These efforts are critical for maintaining the biodiversity and ecological balance of the area.

Economic Development and Employment: Economic development in Talofofo is geared towards sectors like aquaculture and agriculture, identified as potential drivers of employment and food security. Despite challenges related to land access and market competition, the mayor is optimistic about these sectors' growth prospects. Addressing youth underemployment through community work programs is another focus, aiming to engage younger residents in productive activities that benefit the village. These economic strategies are designed to build a robust local economy that supports Talofofo's residents and aligns with the broader vision for the village's future.

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Summary
Interview of Tamuning Mayor Rivera
March 22, 2024

1. **Mayor's Role and Initiatives**:
    - The mayor has an extensive background in community service, including time as vice mayor and mayor, totaling over 20 years of service. Initially motivated to improve communication within the community, the mayor focused on sharing critical information about available resources and programs. The mayor's ongoing efforts include coordinating with government agencies to improve infrastructure and community services.
2. **Sustainability and Village Development**:
    - The mayor discusses sustainability in the context of managing and balancing community development with long-term resource availability. Emphasis is placed on significant infrastructure projects, including road maintenance and water system upgrades, to ensure these developments are sustainable and meet the community's needs without compromising future generations' ability to meet theirs.
3. **Land Use and Environmental Management**:
    - Challenges mentioned include zoning issues, illegal dumping, and the need for better environmental management practices. The mayor addresses specific projects aimed at improving land use policies and ensuring that zoning regulations reflect ecological considerations and community needs.
4. **Infrastructure and Renewable Energy**:
    - The mayor highlights the critical need for investments in infrastructure such as roads, stormwater systems, and water supply systems to accommodate current and future demands. Discussions about renewable energy are not detailed, but the need for infrastructure upgrades suggests potential areas where sustainable energy solutions could be integrated.
5. **Community Well-being and Public Spaces**:
    - Concerns about the adequacy of recreational facilities and public spaces are discussed. The mayor points to specific plans for improving these spaces to enhance community well-being and ensure they meet the needs of all residents, emphasizing the importance of accessible and enjoyable environments.
6. **Economic Sustainability**:
    - Economic challenges focus on the need for commercial developments that can create jobs and enhance the local economy. The mayor discusses specific initiatives aimed at attracting businesses that contribute economically and socially to the community.
7. **Cultural Preservation and Education**:
    - The preservation of local culture amid development pressures is a concern. The mayor discusses the integration of cultural values into

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community activities and the challenge of maintaining these values in a diverse community. Efforts to promote cultural understanding and appreciation through educational programs are highlighted.

8. **Public Safety and Environmental Hazards**:
    - Public safety concerns include managing environmental hazards such as flooding and addressing community safety through enhanced police services. The mayor describes efforts to mitigate these hazards, emphasizing the proactive role of the mayor's office in these areas.
9. **Collaboration and Community Engagement**:
    - The mayor underscores the importance of civic engagement and public participation in planning and governance. This includes hosting town meetings and public hearings to ensure that community voices are heard and integrated into the decision-making process.
10. **Conclusion and Additional Observations**:
    - In conclusion, the mayor reflects on the need for ongoing support from government bodies and the community to address challenges effectively. There is a commitment to leveraging this support to continue improving infrastructure, community well-being, and ensuring sustainable development practices.

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Mayor Anthony Sanchez
Yigo
March 22, 2024

1. **Mayor's Role and Initiatives**:
    - The mayor talks about initiatives focused on improving recreational facilities, fixing up roads, and enhancing water and sewer infrastructure. They mention ongoing projects like the Gill Breeze project that received funding for necessary infrastructure improvements. The aim is to complete these projects within their term to better serve the village's needs.
2. **Sustainability and Village Development**:
    - Sustainability is discussed in terms of balancing the immediate needs of the community with long-term resource sustainability. The mayor emphasizes community engagement through surveys and public meetings to ensure developments align with the needs and expectations of the villagers.
3. **Land Use and Environmental Management**:
    - The mayor addresses several environmental challenges such as illegal dumping and issues related to zoning, access, and land use variances. Concerns about flooding and stormwater management are noted, highlighting the need for better planning and infrastructure to manage these issues effectively.
4. **Infrastructure and Renewable Energy**:
    - Specific infrastructure issues like low water pressure, the need for sewer system expansion, and road repair are detailed. The transcript mentions the lack of adequate infrastructure to support current and future population growth and the need for substantial investment to address these deficiencies.
5. **Community Well-being and Public Spaces**:
    - The mayor recognizes a lack of sufficient recreational spaces and the need for improvements to existing public facilities. Projects to renovate and expand recreational facilities are seen as vital for improving community well-being and providing inclusive environments for all residents.
6. **Economic Sustainability**:
    - Economic challenges are discussed with an emphasis on the need for more commercial developments and high-income job opportunities. The mayor talks about potential new businesses and developments that could provide economic boosts and improve the standard of living for residents.
7. **Cultural Preservation and Education**:
    - The mayor reflects on the challenges of preserving cultural values amid changing economic conditions, noting how traditional family and communal ties are being affected by modern economic pressures.
8. **Public Safety and Environmental Hazards**:

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- Key public safety concerns mentioned include managing environmental hazards like flooding. The mayor outlines the need for improved stormwater drainage systems to prevent such issues and ensure the safety and well-being of the villagers.

9. **Collaboration and Community Engagement**:
    - The importance of involving the community in the development process is stressed. The mayor highlights how engaging residents in planning and decision-making processes can help foster a strong community spirit and pride in their village.
10. **Conclusion and Additional Observations**:
    - Insights into the village's immediate needs and long-term challenges are provided. The mayor emphasizes the importance of these insights in shaping the Guahan 2050 Sustainability Plan and calls for more comprehensive community engagement in future planning efforts.

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Mayor Quenga (Yona) Interview Summary
April 4, 2024

Mayor's Role

Over the past four years, the mayor's tenure has been marked by a dedicated focus on community service and progress. As the mayor seeks reelection, the spotlight falls on accomplishments and future aspirations. Prioritizing the well-being of the youth, initiatives have been launched to provide them with constructive activities and opportunities. Renovation projects, including the baseball field and gym, alongside infrastructure improvements like road upgrades and flood prevention measures, underscore the commitment to enhancing the village's infrastructure and safety. Noteworthy achievements also include the revitalization of public spaces like Tagachang beach and the promotion of cultural heritage through various initiatives. The overarching goal remains to foster unity and pride within the community, ensuring that all residents can enjoy a vibrant and fulfilling village life.

Sustainability and Village Development

The mayor of the village is deeply committed to sustainability and balanced development, striving to maintain safety while addressing pressing issues such as roadway improvements, law enforcement, and shoreline protection. Embracing a research-based definition of sustainability, the mayor recognizes the importance of preserving cultural heritage while promoting development. Although most villagers prefer minimal commercial development, the mayor acknowledges its potential benefits, particularly in creating job opportunities, though traffic remains a concern. While supportive of some commercial ventures, such as windward hills grocery stores, the mayor opposes hotel development. However, there's personal optimism regarding the revenue and tourism benefits a hotel could bring. Plans for managing the Managengon memorial and hosting motocross events aim to deter illegal activities on private property while enhancing public spaces. Looking ahead to the 2050 vision, the mayor envisions minimal commercial expansion, a modernized village with upgraded infrastructure, and sustainable growth. The mayor aims to strike a balance between development, environmental preservation, and cultural integrity, promoting initiatives like affordable housing and improved agriculture to enhance self-sustainability and lower living costs for residents.

Land Use and Environmental Management

The mayor's approach to land use and environmental management is multifaceted, aiming to address erosion along flood zones and potential impacts from sea level rise, particularly toward the south. Plans to develop affordable housing, including multifamily structures, are in motion, though challenges like costly farming inputs and land use disputes persist. Landlocked plots from parental subdivisions pose issues, compounded by shoreline vandalism and illegal dumping, a widespread problem across the village. Efforts to combat environmental issues include free trash pickup, volunteer cleanups, and increased surveillance. Environmental assets like artifacts, fruit bats, and preserved areas are recognized and protected, while recycling initiatives are being promoted, though greater community education is seen as essential for success. Despite ongoing challenges like feral animal control and ocean pollution, collaborative efforts with agencies like the EPA and Department of Agriculture aim to mitigate environmental degradation and preserve the village's natural resources.

Infrastructure and Renewable Energy

Infrastructure and renewable energy are key priorities for the mayor, who acknowledges improvements in power distribution but remains concerned about the high costs and occasional brownouts. Water availability generally meets demand, with few complaints aside from isolated cases of old lines resurfacing and pressure issues. However, the mayor recognizes the need to replace aging water lines in certain areas and emphasizes the importance of preserving wetlands, particularly in Windward Hills. Sewage presents challenges, with many homes relying on outdated septic systems, leading to frequent backups and high costs. Stormwater drainage issues arise from development, causing blockages and flooding during heavy rains, necessitating improved engineering and maintenance. Road repair and construction remain ongoing concerns, with efforts to address them undertaken by the mayor's team due to limitations from the Department of Public Works. In exploring renewable energy options like

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rooftop solar programs, the mayor sees potential for cost savings, although balancing community expectations remains a consideration.

Community Well-being and Public Spaces

Community well-being and public spaces are central to the mayor's vision for the village, with ongoing efforts to enhance recreational areas and promote cultural heritage. Despite challenges, such as vandalism at Tagachang beach and limited resources, the mayor's team is committed to revitalizing parks, playgrounds, and baseball fields, fostering opportunities for both leisure and sports. Collaboration with entities like the Guam Redevelopment Agency (GURA) aims to repurpose government sites for community use, including the development of memorials and public easements. Recognizing the importance of senior and community centers for events and gatherings, the mayor advocates for expanded facilities to accommodate diverse needs. However, the mayor believes there's room for improvement, envisioning multipurpose spaces like a baseball stadium to further enrich community life. Plans for central village areas, including the space near the church and mayor's office, highlight the potential for comprehensive renovations to cater to various activities and interests, although funding remains a significant hurdle. Despite these challenges, the mayor remains steadfast in prioritizing community well-being and accessible public spaces for all residents.

Economic Sustainability

From the mayor's perspective, economic sustainability hinges on enhancing commercial development, particularly in areas like Windward Hills, to spur job creation. However, the absence of standout opportunities necessitates exploration of alternative avenues, such as creating summer job programs for youth. Addressing infrastructure gaps, like insufficient bus stops and poorly located shelters, is crucial for improving public transportation accessibility. Despite existing public transit use, issues like inadequate stop locations hinder its effectiveness, highlighting the need for route optimization and infrastructure upgrades. While poverty rates in the village are low, supporting lower-income families and fostering economic resilience remains a priority. The potential development of assets like the Pago Bay hotel presents opportunities for economic growth, alongside existing establishments like Leo Palace, indicating the importance of maximizing economic assets to ensure long-term prosperity for the community.

Cultural Preservation and Education

Preserving cultural heritage and fostering education are paramount for the mayor, who recognizes the challenges posed by the erosion of CHamoru language and familial values. Westernization has led to a decline in traditional practices, impacting familial bonds and respect for elders, essential components of the ina'fa'maolek spirit. The mayor understands the intrinsic connection between language and community values, emphasizing the importance of preserving CHamoru identity through language preservation. Efforts to enhance cultural identity within the village include reclaiming symbols like the carabao and latte stone, emblematic of Yona's heritage, with plans for improved display and incorporation into future development. Strong village pride, epitomized by slogans like "Yona Rules," highlights the community's commitment to preserving its cultural identity amidst evolving societal norms.

Public Safety and Environmental Hazards

Public safety and environmental hazards are pressing concerns for the mayor, who advocates for improved police protection and enhanced surveillance through CCTV cameras. Challenges persist in fire protection and emergency medical services, with shortages in manpower and vehicle maintenance affecting response capabilities. Instances of vandalism and break-ins underscore the need for bolstered security measures to ensure the safety of villagers. While overall safety perceptions remain positive, ongoing efforts are underway to address vulnerabilities and strengthen community resilience. Typhoon shelters require upgrades and increased availability, with existing facilities often insufficient during natural disasters. Erosion along riverbanks poses additional environmental risks, necessitating mitigation efforts to safeguard infrastructure and public safety. While homelessness is relatively low, substance abuse issues among the homeless population warrant compassionate intervention and support from local authorities.

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Overall, the mayor remains committed to addressing public safety concerns and environmental hazards to promote the well-being of the village community.

Collaboration and Community Engagement

Collaboration and community engagement are foundational pillars of the mayor's approach, bolstered by a strong sense of village pride encapsulated in slogans like "Yona Rules." What was once territorial rivalry has transformed into a positive collective identity, fostering unity and cooperation within the community. Events like charrettes serve as vital platforms for villagers to voice their opinions and contribute to decision-making processes. However, maximizing attendance and participation requires thoughtful planning, with considerations for timing, duration, and incentives such as food and giveaways. While weekdays pose logistical challenges, optimizing the format and duration of such gatherings is crucial for sustaining community engagement and fostering collaborative efforts for the betterment of Yona.

Suggestions and Observations

The mayor highlights several key suggestions and observations for the creation of a sustainability plan. Addressing the high cost of living is paramount, with a focus on making essentials more affordable for residents. Tackling issues like illegal dumping and enhancing public safety are crucial for improving overall quality of life. Furthermore, the mayor emphasizes the need to enhance education and healthcare services, advocating for the construction of a hospital and improvements to existing clinics. Enhancing cultural and educational resources, such as museums and libraries, is also prioritized, with considerations for potentially relocating the Yona library to a more accessible area or under the jurisdiction of the mayor's municipality. These measures aim to create a more sustainable and thriving community for all residents.

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Done	Village	Mayor	Date	Time	Location	Notes	Recording	Transcript	Summary
x	Dededo	Savares	February 19	2:00 PM	Dededo Mayor's Office, 335 Iglesias Circle	Notes	Recording	Transcript	Summary
x	Agaña Heights	McDonald	February 21	10:00 AM	Agaña Heights Mayor's Office, 184 Chalan Macajna	Notes	Recording	Transcript	Summary
x	Inalåhan	Anthony Chargu	February 28	2:00 PM	Inalåhan Mayor's Office, 719-C San Jose Avenue	Notes	Recording	Transcript	Summary
x	Malesso'	Ernest Chargual	March 1	2:00 PM	Malesso' Mayor's Office, 440 Joseph A. Cruz Street	Notes	Recording	Transcript	Summary
x	Asan-Maina	Salas	March 5	10:00 AM	Asan-Maina Mayor's Office, 141 Nino Perdido Drive, Asan	Notes	Recording	Transcript	Summary
x	Mangilao	Ungacta	March 6	9:00 AM	Mangilao Mayor's Office, 105 Commissioner Way, Route 10	Notes	Recording	Transcript	Summary
x	Hågat	Suisico	March 8	9:00 AM	Hågat Mayor's Office, 393 Route 2	Notes	Recording	Transcript	Summary
x	Piti	Alig	March 12	9:00 AM	Piti Mayor's Office, 260 Assumption Drive	Notes	Recording	Transcript	Summary
x	Hagåtña	Cruz	March 13	9:00 AM	Hagåtña Mayor's Office, 236 East O'Brien Drive	Notes	Recording	Transcript	Summary
x	Mongmong-To'to	Paco	March 13	2:00 PM	Mongmong-Toto-Maite Mayor's Office, Bldg. 226 Aragon Stre	Notes	Recording	Transcript	Summary
x	Talo'fo'fo	Taitague	March 20	9:00 AM	Talo'fo'fo' Mayor's Office, 184 North San Miguel Street	Notes	Recording	Transcript	Summary
x	Sinahånña / Sina	Hoffman	March 20	2:00 PM	Sinajaña Mayor's Office, 117A Chalan Guma Yu'os	Notes	Recording	Transcript	Summary
x	Yigo	Sanchez	March 22	2:00 PM	Yigo Mayor's Office, Bldg. 274 Gayinero Drive	Notes	Recording	Transcript	Summary
x	Barrigada	Blas	March 26	10:30 AM	Barrigada Mayor's Office, 124 Luayao Lane	Notes	Recording	Transcript	Summary
x	Chålan Pågu-Ot	Gogue	March 27	9:00 AM	Chalan Pago-Ordot Mayor's Office, 160 Chalan Huego, Chala	Notes	Recording	Transcript	Summary
x	Tamuning-Tumor	Rivera	March 28	10:00 AM	Tamuning-Tumon-Harmon Mayor's Office, 120 Tun Jesus Cris	Notes	Recording	Transcript	Summary
x	Yo'ña	Quenga	April 4	10:00 AM	Yoña Mayor's Office, 265 Sister Eucharita Drive	Notes	Recording	Transcript	Summary
x	Santa Rita-Suma	Alvarez	April 5	10:00 AM	Santa Rita Mayor's Office, 183 A.B. Won Pat Lane	Notes	Recording	Transcript	Summary
x	Humåtak	Quinata	April 12	9:30 AM	Humåtac Mayor's Office, 159 San Dionisio Street	Notes	Recording	Transcript	Summary

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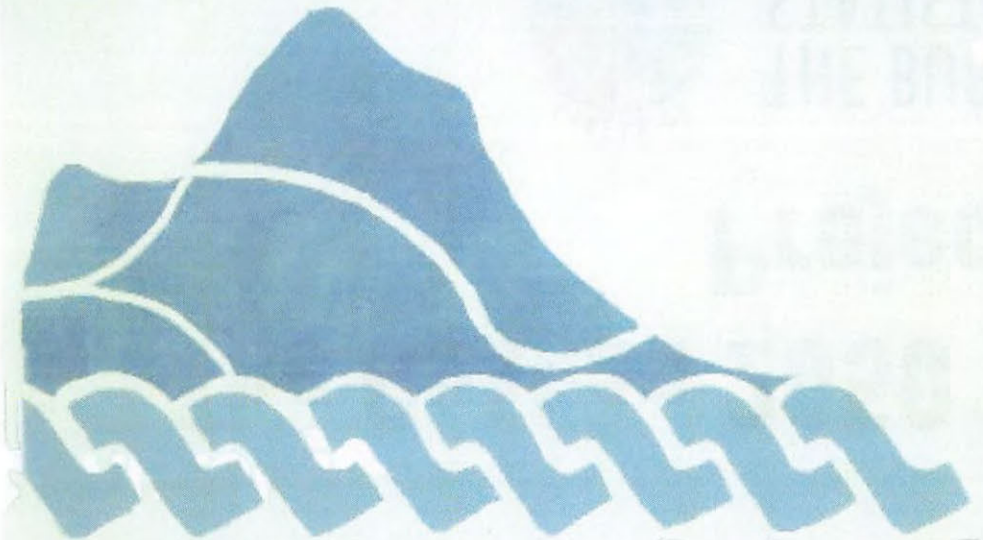
Guåhan 2050 Sustainability Plan

Community Engagement



June 18th, 19th, and 20th, 2024

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The Guåhan 2050 Sustainability Plan Project Team

THE BUREAU OF STATISTICS AND PLANS
Government of Guam

Lynker

UC SANTA BARBARA Ocean and Coastal Policy Center msi

hamer.

GHD

PCRP

MRD
GUAM · MICRONESIA · MARIANAS

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GCMP Funded Foundational Research

A majority of Guam's residents expressed:

- "Sincere interest and felt the creation of a sustainability plan for Guam was worthwhile and important..." and
- A desire to be engaged in the development of the Guahan 2050 Sustainability Plan (MRD 2022)

residents show concern for key areas

74%	73%	69%	63%	62%
INFRASTRUCTURE	BASIC SERVICES	ECONOMY	ENVIRONMENT	CULTURAL PRESERVATION

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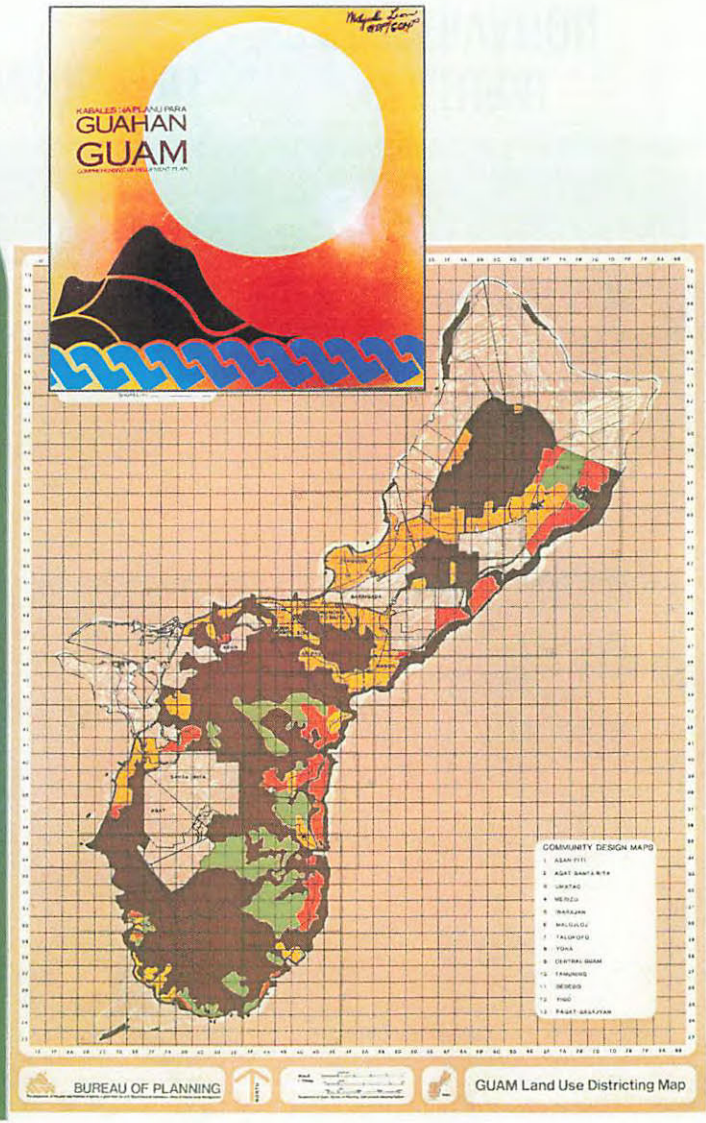
G50SP Planning Mandate

Public Law 35-110: Instructed BSP to prepare a Guåhan 2050 Sustainable Development Plan.

This plan will update Guam's Comprehensive Development Plan (1978).

This endeavor *complements* other ongoing Guam sustainability and resilience initiatives.



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The Planning Process and Next Steps (2024-25)

- ✓ Preliminary Scoping and Research ✅
- ✓ Agency Interviews, Roundtables and Process Mapping ✅
- Conducting Community Outreach
  - ✓ Mayor's Offices ✅
    - **Community Engagement** (across Island) – June, 2024
- Planning challenges assessments – June-Dec, 2024
- Draft Plan Recommendations for legislative consideration – Jan-April, 2025

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Guåhan 2050 Sustainability Plan:



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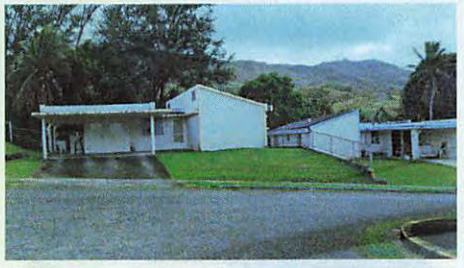
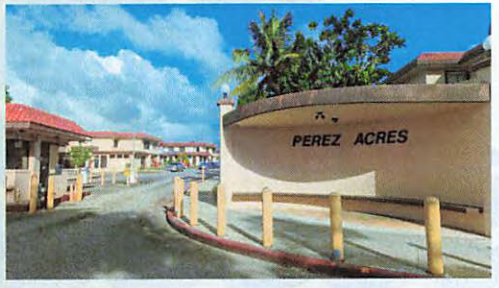
Guåhan 2050 Sustainability Plan:









What is your vision for sustainable community growth on Guam?

- Where should **housing** be located?
  - What about higher density multi-family or more **affordable** housing?
- Where do **public services** such as water supply, sewer, and roads, need improvement?
- What locations should be avoided due to **hazards**, such as flooding, erosion, and wildfire?

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Guåhan 2050 Sustainability Plan:









What is your vision for a prosperous economy on Guam?

- What kinds of **economic development** or activity is needed?
- Where should new **commercial** or mixed-use development be located?
- What locations are important for maintaining or supporting new **Agriculture**?

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Guåhan 2050 Sustainability Plan:

What is your vision for stewardship of Guam's cultural heritage?

- Where/what are the most important **cultural and historical places** and lands to protect?
- Where are important **social gathering** places in your village?
- Are there specific **aesthetic or building designs** that should be used in your village?
- Where and what kind of new **public facilities** are needed? Police, Fire Protection? Schools, health care?





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Guåhan 2050 Sustainability Plan:

What is your vision for a thriving environment on Guam?

- What and where are **environmental issues** most concerning?
- Where are **natural lands**, coastal and marine areas, and sensitive **habitats** and species that should be protected for future generations?
- Where are important public **parks**, recreation areas, shoreline **access**, open spaces, and public **views**?



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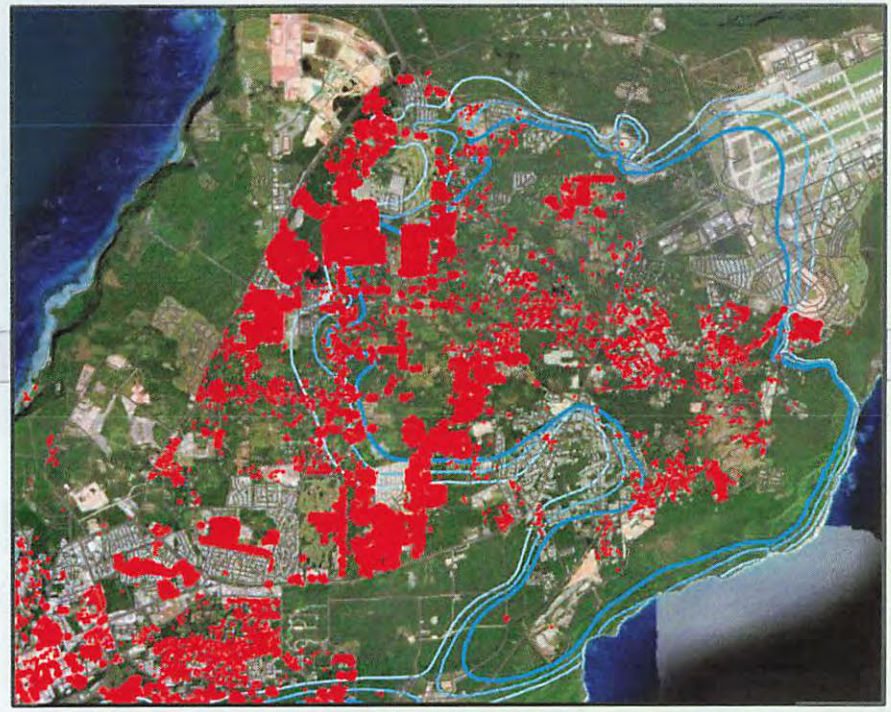
Guåhan 2050 Sustainability Plan – Trade-offs

If all of Guam's flat land over the aquifer is developed for housing, without planning for services, the health of Guam's water supply may be lost.

Thriving Environment



Sustainable Community

Unsewered Buildings Over the

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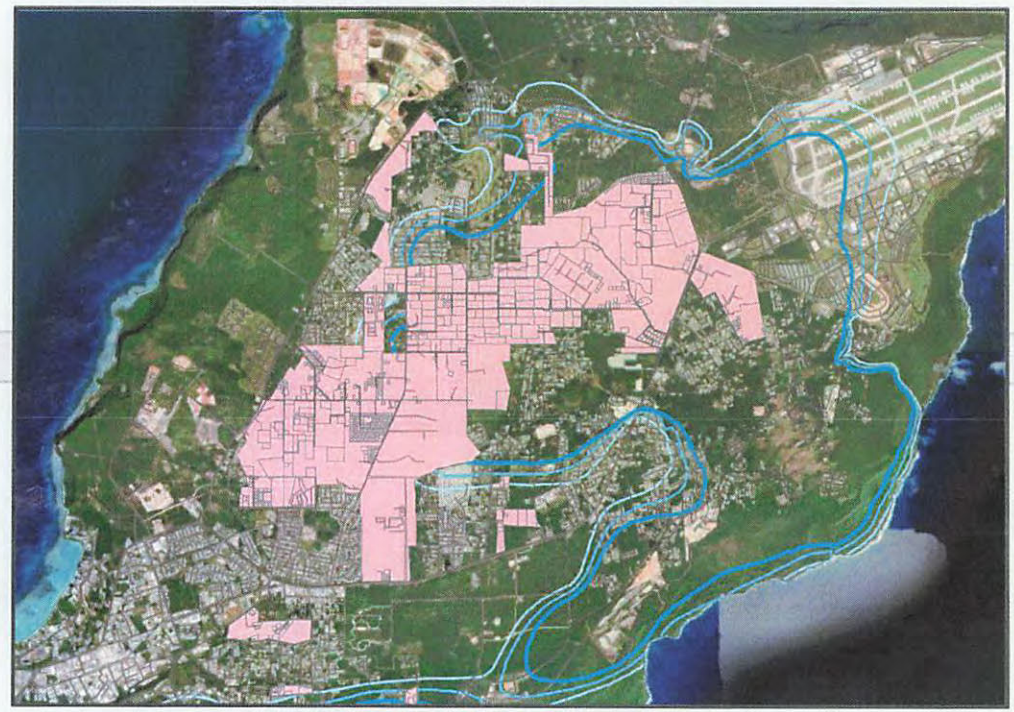
Guåhan 2050 Sustainability Plan – Trade-offs

Significant CHamoru Land Trust Lands also overlap with developable areas over the aquifer.

Vibrant Culture



Sustainable Community

CHamoru Land Trust Lands

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Guåhan 2050 Sustainability Plan – Trade-offs

Economic growth may result in loss of habitat if not well planned.



Thriving Environment

Limestone Forest is a unique and rare habitat.



Prosperous Economy

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Engagement Format

- There are four workstations. Each station addresses one of the four components:
  - Thriving Environment
  - Sustainable Community
  - Prosperous Economy
  - Vibrant Culture

- You will have the opportunity to visit each of the four workstations. If you would like to go to some but not all the workstations, you're welcome to!



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Engagement Format

At each workstation, there will be **Facilitator Support** .

Each station has a dedicated facilitator to:

- Guide you through the activities
- Answer your questions
- Take notes on your input
- Ensure a productive and inclusive discussion

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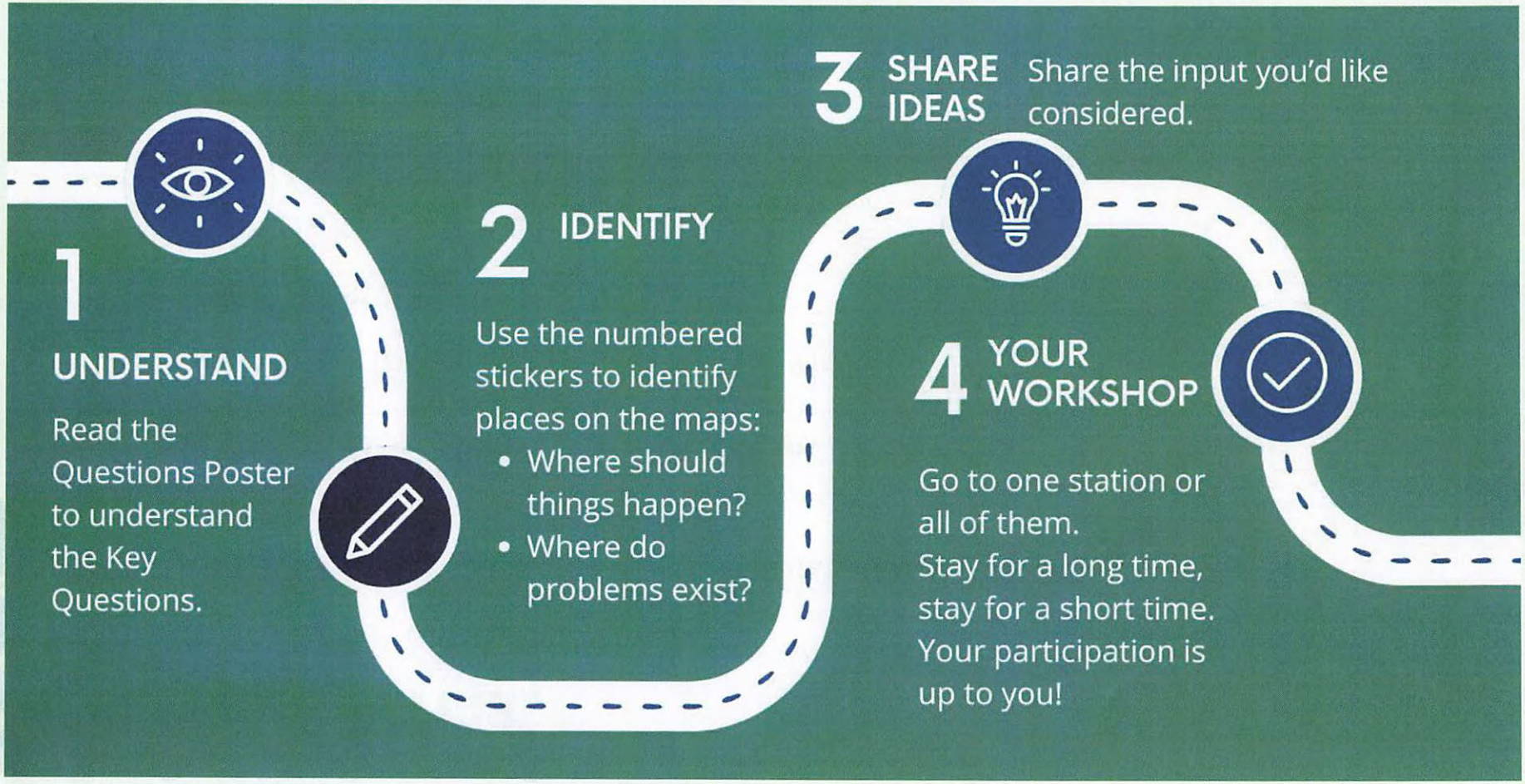
Engagement Format

- Questions Poster
- Maps
- Butcher Paper



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Engagement Format

Maps: Use the numbered stickers on the maps to indicate:

- Where should things happen?
- Where do problems exist?
- You can put stickers on the big map or village-scale maps

The facilitator will take notes to correspond to each numbered sticker.

Butcher Paper: Write down non-geographic issues and input you'd like considered.

QR Code Survey: Each station will provide an opportunity to take a short survey to provide additional input

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Workshop Format

Your Participation is Key!

- Engage with each station: Share your valuable insights and ideas.
- Ask questions: Facilitators are here to help.

Your input will help shape the future of your community. Thank you for your participation!

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Thank You

Thank you for your attention!

If you have any questions, please feel free to contact us at

GSP2050@bsp.guam.gov



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Sign In Sheet

Community Engagement - UOG SBPA Room 129 **DATE: 6/19/24 Wed**

#	Print Name	Address	Phone #	E-Mail
1	MARLYN OBEKIANO	BARRIGADA	[redacted]	
2	LOG E. LEON GUERRERO	MTM		
3	Joseph Lb	MTM		
4	Vince Fabian	Mangilao		
5	Lawrence Alcairo	Yigo		
6	Yvonne Matanane	Chalan Pago		
7	Debby Ellea	Tamuning		
8	MYRACLE MUGOL	AGAT		
9	Kyle Riordan	Maite,		
10	Cyrus Trinidad	Mangilao		
11	Ariana Villaverde	CPO		
12	Candate Tate	Yigo		
13	ESTHER TAITAGUE	Yona		
14	Naomi Atoigue	Sinajana		
15	Joanne Labbe	Mang		
16	CHARFAUROS, JEREMIE	HAGAT		
17	Da Wason	Reston, VA		
18	Jay Gutierrez	Mangilao		
19	RAY Duenas	Mcute		
20	Rayanne James	Dededo		
21	Sarah Zackhras	Mongmong		
22	STEPHEN EVANS	JOJO		
23	Jamal Tagey	YIGO		
24	Maria Rosselle Ocampo	Dededo		
25	Mayo Yoshii	Mangilao		
26	Rose Echavez	Yona		
27	Monica Guerrero	TAMUNING		
28	Rob Aig	YIGA		
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Sign In Sheet

Community Engagement - Inalahan Community Center **DATE:** **6/18/24 Tue**

#	Print Name	Address	Phone #	E-Mail
1	JASON PAULINO	INALAHAN	[redacted]	
2	JOE ROBERTO	IPAN, TALOFOFO		
3	Yvonne Manglona-Juarez	Talofofo		
4	ESTHER CAMACHO	DEDEDO		
5	Benny P. Sn.	Inalahan		
6	Pete Barcinas	Malesso		
7	GWENIZAH BARCINAS	MALESSO		
8	Benny Charguala f	Inalahan		
9	Stephanie Charguala f	Inalahan		
10	LEWIS ARLINGTON	TANINIJ		
11	Alfred Garrido	Inarajan		
12	Ed Taimanglo	Malojloj		
13	Anthony S. Tedtaotao	Malojloj		
14	JOHNNY THITACHE	"		
15	Tewid Meresbang	Yigo		
16	Anthony Taijeron	S/Rita		
17	Kenneth Chaguaf	Inalahan		
18	Marilyn Salas	HUMATAK		
19	Hill Junior Leon Guerrero	Santa Rita		
20	Victor Duenas	Inalahan		
21	T. Pangilio	Inalajan		
22	Conchita on Taitano	Yigo		
23	Greg Actelle	Inalahan		
24	ANDREW M. MANGLONA	INA.		
25	Carly Champaco-Munoz	Merizo		
26	Santino Munoz	Merizo		
27	Jean K.M. Lee	Inalahan		
28	Millie Bagnisa	Merizo		
29	MAYOR ERNEST CHARGUALAF	MALESSO		
30	Josephine S.N. Williams	INA.		
31				
32	Christian Benitez	Yigo		
33	[illegible]	[illegible]		
34	Joshua Catchay	Santa Rita		
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Sign In Sheet

Community Engagement - Dededo Senior Citizens Center **DATE:** **6/20/24 Thu**

#	Print Name	Address	Phone #	E-Mail
1	Joseph C. San Nicolas	Dededo	[redacted]	
2	Audrey Taylor	Agana Heights		
3	Minerva Hermosilla	Dededo		
4	JUNEVA DAVID	YIGO		
5	Nehemiah Villanueva	Dededo		
6	Beatrice Ham	Yigo		
7	Kara Schwarz	Agana		
8	Gus Morales	Tamuning		
9	Rose Morales	Tamuning		
10	Roseann Jones			
11	Mike Gawel	Dededo		
12	David Damian	Yigo		
13	James Pangelinan	Yigo		
14	Pedro Blas	Yigo		
15	Kat Perez	Yona		
16	JENELYN ABINALES	YIGO		
17	MARICEA TORLELINO	YIGO		
18	Camille Quichocho	Dededo		
19	Jonathan Savares	Dededo		
20	Kathleen Savares	Dededo		
21	Benavente, Barbara S.N.	Dededo		
22	Benavente, Peter C.	Dededo		
23	Benavente, Felix C	Barrigada		
24	" Lourdes	"		
25	TIM SERVINO JR	DEDEDO		
26	Sonia Siliang	Dededo		
27	Hazel Estrellado	Dededo		
28	John B	Dededo		
29	Melissa Savares	Dededo		
30	Trenton Macadagum	Tamuning		
31	Christian Benitez	Yigo		
32	Jun Bravo	YIGO		
33	Vireena Blas	Yigo		
34	Heather Perez	DEDEDO		
35	Ambrosio Constantino	Mangilao		
36	[illegible]	DEDEDO		
37	Jorie Cruz	Mangilao		
38	Violeta David	Dededo		

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Sign In Sheet

Community Engagement - Dededo Senior Citizens Center **DATE: 6/20/24 Thu**

#	Print Name	Address	Phone #	E-Mail
1	DELIA PRUDENTE	DEDEDO	[redacted]	
2	Francisca Leo	DEDED		
3	SUSAN LA ROSA	DEDEDO		
4	Maribel Sranchi	Dededo		
5	Nilda Marzan	Dededo		
6	Rhoda Sudaya	Dededo		
7	Eva De Guzman	Dededo		
8	Erlinda Veranco			
9	Lilibeth Veranco	Dededo		
10	Rosalinda Antonio	Dededo		
11	Herminia Redston	YIGO		
12	Eric Rosario	Dededo		
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Station 1: THRIVING ENVIRONMENT

Mapping Exercise:

We would like to know your feelings regarding 3 questions about a "Thriving Environment" Please place a numbered sticker on the map of your village, on the table, where you feel items referred to in the questions are best located. You can also place a sticker anywhere on the Guam map if you like. Then let the assistant at the station know the number of the sticker you affixed, and the question it was answering and let us know what specifically the sticker refers to.

Facilitator:

1. **Environmental Problems.** What and where are the environmental issues or problems most concerning to you? For example, are there locations where pollution or erosion is a concern? Illegal dumping? Development impacts to the forest? Shoreline erosion and sea level rise? Invasive species?
2. **Protecting Natural Areas**. What natural lands, coastal and marine areas, and sensitive habitats and species are important to protect for future generations? For example, limestone forest, coral reefs, wetland areas, beaches, etc.
3. **Parks and Recreation**. What and where are the public parks and recreation areas, shoreline access, open spaces, and public views that are important to you?

You can take a short survey below. If you have any questions, feel free to ask a facilitator or assistant.

Vision/Aspiration Survey: What is your vision for a thriving environment on Guam? What actions should Guam take to protect its natural environment?

Google Form QR Code:

Questions in Online Survey:

1. What village do you live in?
2. What village do you work in?

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3. On a scale of 1-5, with 1 being not important and 5 being extremely important, how important is it to protect Guam's natural environment for future generations?

   1 2 3 4 5

4. How important is it to protect these particular natural resources on Guam, with 1 being not important and 5 being extremely important?

-Native Limestone Forest	1	2	3	4	5
-Other Natural Forest Lands	1	2	3	4	5
-Undeveloped Grasslands	1	2	3	4	5
-Wetlands and Streams	1	2	3	4	5
-Coral Reef Areas	1	2	3	4	5
-Marine and Coastal Waters	1	2	3	4	5
-Sandy Beaches	1	2	3	4	5
-Threatened and Endangered Species	1	2	3	4	5

5. Considering the balance between development and protection of the environment, which of the following best describes your view of the right balance between them?

   -Undeveloped natural lands should be used for development as needed for new housing and economic growth.

   -Undeveloped natural lands should be used for development only if no other vacant lands in existing urban areas are available for development.

   -New development and housing should be built in existing developed areas at higher densities, in order to protect remaining undeveloped natural lands.

   -All remaining natural areas should be protected from development no matter what.

   -Developed areas and undeveloped natural areas are both important, and at least 30% of the island should remain as undeveloped natural land.

   -Developed areas and undeveloped natural areas are both important, and at least 50% of the island should remain as undeveloped natural land.

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6. How concerned about climate change are you with 1 being not concerned at all and 5 being extremely concerned?

   1 2 3 4 5

7. How concerned are you about each of the following, with 1 being not concerned at all and 5 being extremely concerned?:

Sea level rise and shoreline erosion	1	2	3	4	5
Extreme storms/tsunami and flooding	1	2	3	4	5
Increasing temperatures	1	2	3	4	5
Wildfire	1	2	3	4	5
Contamination or depletion of the northern lens drinking water aquifer	1	2	3	4	5
Loss of native habitats and species	1	2	3	4	5
Loss or decline of the coral reef and the marine environment	1	2	3	4	5
Loss of fishery resources	1	2	3	4	5
Invasive species such as the Brown Tree Snake	1	2	3	4	5
Stray dogs	1	2	3	4	5
Illegal Dumping and Waste Management	1	2	3	4	5
Burning of Fossil Fuels for Power (CO_2 emissions)	1	2	3	4	5
Shoreline erosion	1	2	3	4	5
Development in critical areas (wetlands, streams, floodplains, shorelines)	1	2	3	4	5
Air, noise and/or odor issues	1	2	3	4	5

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8. How satisfied are you with the current efforts to protect natural lands in Guam?

   1 2 3 4 5

9. What more could be done to protect Guam's natural environment?

---

10. What challenges have you faced when seeking permits and approvals for projects or developments, and what suggestions do you have for improving the process?

---

11. How satisfied are you with the availability and accessibility of the following types of recreational facilities? (1 is highly unsatisfied, 5 is highly satisfied)

Playgrounds	1	2	3	4	5
Sports fields and gymnasiums	1	2	3	4	5
Picnic areas	1	2	3	4	5
Public parks	1	2	3	4	5
Hiking trails	1	2	3	4	5
Shoreline access points	1	2	3	4	5
Lookout points	1	2	3	4	5

12. Open-ended response: Which villages or areas need more public parks?

13. Open-ended response: Which villages or areas need more recreation facilities? What kind?

14. Open-ended response: Which villages or areas need more open space areas?

15. What do you believe is the most pressing environmental issue Guam will face by 2050?

Station 2: PROSPEROUS ECONOMY

Mapping Exercise:

Note that the Legislature has taken steps to ensure that any protected personal identifying information has been redacted or excluded in whole or in part in order to protect the privacy of any individual(s) whose information has been included as part of this transmittal.

We would like to know your feelings regarding 4 questions about a "Prosperous Economy" Please place a numbered sticker on the map of your village, on the table, where you feel items referred to in the questions are best located. You can also place a sticker anywhere on the Guam map if you like. Then let the assistant at the station know the number of the sticker you affixed, and the question it was answering and let us know what specifically the sticker refers to.

Questions:

1. **Redevelopment:** What areas of your village do you consider to be under-utilized, or in need of renovation? What type of development would you like to see there?
2. **New Development:** Where do you think new business development should be located in your village, and what type of businesses would you like to see?
3. **No Development:** What areas in your village should not be developed for commercial purposes? Why?
4. **Agriculture:** Where would you like to see more agricultural development?

You can take a short survey below. If you have any questions, feel free to ask a facilitator or assistant.

Vision/Aspiration Survey: What is your vision for a prosperous economy in Guam?

Google Form QR Code:



Questions in Online Survey:

1. What village do you live in?
2. What village do you work in?
3. How satisfied are you with the state economy of Guam today? [likert scale: very unsatisfied to very satisfied]
4. Do you think there should be more, about the same, or less business activity within your village?
5. How confident do you feel that your children will have a better standard of living than you enjoy? [likert: very unconfident to very confident]
6. What concerns you most about the development of Guam's economy?[open ended]
7. What service or retail/entertainment businesses are lacking in your village? [multiple choice, multiple selection]

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8. Should new buildings be limited in height in your village? [yes, no] If so, how many stories are too many? [multiple choice, 2-3,4-6,7-9,10-15,16-40]
9. What types of local businesses would you like to see supported in your village?
    - Would you support or oppose:
        1. New industrial developments in your village?
        2. New hotels in your village?
        3. New commercial farming operations in your village?
        4. New multi-family housing complexes in your village?
10. What types of small businesses do you think would be successful in your village? Where would they be successful?
11. What are the community's priorities for redevelopment projects? Can you identify in your village the area that has the most need for refurbishing or redeveloping?
12. Do you feel your Mayor and municipal planning council adequately represents your interests in advising on development projects? What would you like to see changed?
13. Do you believe businesses in your village are doing enough to protect the environment and preserve the CHamoru culture?

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Station 3: SUSTAINABLE COMMUNITIES

Mapping Exercise:

We would like to know your feelings regarding 3 questions about "Sustainable Communities" Please place a numbered sticker on the map of your village, on the table, where you feel items referred to in the questions are best located. You can also place a sticker anywhere on the Guam map if you like. Then let the assistant at the station know the number of the sticker you affixed, and the question it was answering and let us know what specifically the sticker refers to.

1. **Housing:** Where should new residential development be generally located? What areas are appropriate for higher density or more affordable residential development (multi-family)?

2. **Infrastructure:** Where do public services such as water supply, sewer, roads, and drainage facilities need installation or improvement? Are there places where development should be avoided due to safety hazards, such as flooding, erosion, landslides, and wildfire?

3. **Redevelopment:** Are there neglected or deserted properties that should be redeveloped and/or repurposed?

You can take a short survey below. If you have any questions, feel free to ask a facilitator or assistant.

Vision/Aspiration Survey: What is your vision for sustainable community growth in Guam?

Google Form QR Code:

Questions in Online Survey:

1. What village do you live in?
2. What village do you work in?
3. On a scale of 1-5, with 1 being strongly disagree and 5 being strongly agree, how satisfied are you that people of Guam have basic human needs for clean air and water and nutritious, uncontaminated food?

   1 2 3 4 5

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4. How satisfied are you with the availability of the following types of infrastructure to support sustainable growth? (1 is highly unsatisfied, 5 is highly satisfied)

water	1	2	3	4	5
sanitary sewer	1	2	3	4	5
storm drainage	1	2	3	4	5
roadways	1	2	3	4	5
electricity	1	2	3	4	5
internet	1	2	3	4	5

5. What are the most important infrastructure investments or other actions needed to support sustainable growth?
6. What is your vision for sustainable community growth on Guam?
7. Do you feel there is enough affordable housing in your village, 1 being strongly disagree and 5 being strongly agree?

   1 2 3 4 5

8. How can affordable housing for everyone be provided?

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Station 4: VIBRANT CULTURE

Mapping Exercise:

We would like to know your feelings regarding 3 questions about a "Vibrant Culture" Please place a numbered sticker on the map of your village, on the table, where you feel items referred to in the questions are best located. You can also place a sticker anywhere on the Guam map if you like. Then let the assistant at the station know the number of the sticker you affixed, and the question it was answering and let us know what specifically the sticker refers to.

1. **Community Centers:** Where are the important social gathering places/functions in your village? Where and what kind of new public facilities are needed? Police and Fire Protection? Schools or health care facilities? Other public amenities or services?
2. **Historical Locations:** What and where are the most important cultural and historical places/areas to protect in Guam or in your village? Where are the most important CHamoru Land Trust and ancestral lands and how should they be used?
3. **Community Aesthetics:** Are there specific aesthetic designs (examples: arches, crests, flowers, latte stones) and/or development patterns (example: single or two story restrictions) relevant to your village and where?

You can take a short survey below. If you have any questions, feel free to ask a facilitator or assistant.

Vision/Aspiration Survey: How should Guam best preserve its unique cultural heritage?

Google Form QR Code:

Questions in Online Survey:

1. What village do you live in?
2. What village do you work in?
3. Open-ended: Where are the important social gathering places/functions in your village?

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4. How satisfied are you with the availability and accessibility of the following types of public facilities? (1 is highly unsatisfied, 5 is highly satisfied)

Community centers	1	2	3	4	5
Libraries	1	2	3	4	5
Parks	1	2	3	4	5
Sports facilities	1	2	3	4	5
Medical/Health care facilities	1	2	3	4	5
Police services	1	2	3	4	5
Fire services	1	2	3	4	5
Schools	1	2	3	4	5

5. On a scale of 1-5, with 1 being not important and 5 being extremely important to you, how important is it to protect Guam's cultural heritage and historic sites for future generations?

1 2 3 4 5

6. Open-ended: What are the most important cultural and historical places/areas to protect in Guam or in your village?

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7. Scale (1-5): How satisfied are you with the current efforts to preserve Guam's cultural identity?

1 2 3 4 5

8. What more could be done to preserve Guam's cultural identity?

9. How do you think ancestral lands should be used to benefit the community?

10. Multiple Response: Which aesthetic designs are most relevant to your village? (Select all that apply)

1. Arches
2. Crests
3. Flowers
4. Latte stones
5. Murals
6. Other (please specify):

11. Which of the following best describes your view of the right balance in development patterns?

- All buildings should be single-story to preserve the traditional village look and feel.
- Two-story buildings should be allowed to maximize space without significantly changing the village's character.
- Mixed height buildings should be encouraged to provide a variety of housing options and support economic growth, while minimizing urban sprawl.
- Development should prioritize single-story buildings in residential areas and allow higher buildings in commercial zones.
- Development should be flexible, with building heights determined by the specific needs and characteristics of each area.

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12. Multiple Response: What public amenities do you think would enhance the aesthetics and livability of your village? (Select all that apply)

- o Public gardens
- o Street art
- o Community plazas
- o Decorative lighting
- o Benches and seating areas
- o Other (please specify):

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Community Engagement Survey Analysis

Purpose

Our team conducted a voluntary survey of community workshop participants to gather community input on issues, topics, and concerns for the Guåhan 2050 Sustainability Plan. We developed the survey questions in part by analyzing input from previous interviews and group discussions with business stakeholders, village mayors, and nonprofit organizations. The survey was divided into four main themes/sections: Prosperous Economy, Sustainable Communities, Vibrant Culture, and Thriving Environment as Guam's economy, community, culture, and environment are the main components of the plan.

Administered via Google Forms, residents could either scan a QR code with their mobile devices or use iPads provided at the regional community engagements. Our team will use this data to craft a larger empirical survey regarding the Guahan 2050 Sustainability Plan.

By the end of the three regional community engagements, held in the southern, central, and northern regions of the island, a total of 87 surveys were completed: 15 on Prosperous Economy, 22 on Sustainable Communities, 22 on Vibrant Culture, and 28 on Thriving Environment. Respondents came from various villages across Guam, including Talo'fo'fo, Merizo, Tamuning, Chålan Pågo-Ordot, Yo'ña, Santa Rita, Yigo, Mangilao, Dededo, and Agana Heights, reflecting the diverse nature of these community engagement events. Additionally, respondents worked in various locations across Guam, such as Tamuning-Tumon-Harmon, Mangilao, and Hagåtña.

Prosperous Economy Theme

Overview

This survey theme gauged residents' perspectives regarding economic development, community needs, and local business support. Other questions posed to respondents related to satisfaction with the state of Guam's economy, desired business activities within their villages, and public transportation needs. The survey responses came from individuals residing in various villages across Guam, including Talo'fo'fo, Tamuning, Chålan Pågo-Ordot, Yo'ña, Yigo, Mangilao, Dededo, Agana Heights, and others.

Key Findings

Satisfaction with the State of the Economy

1. About 60% of respondents indicated that they were neither dissatisfied nor satisfied with the state of Guam's economy, while a third indicated they were either dissatisfied or very dissatisfied with the state of the economy. Satisfaction was measured on a ratings scale of 1- 5 from highly unsatisfied to highly satisfied.

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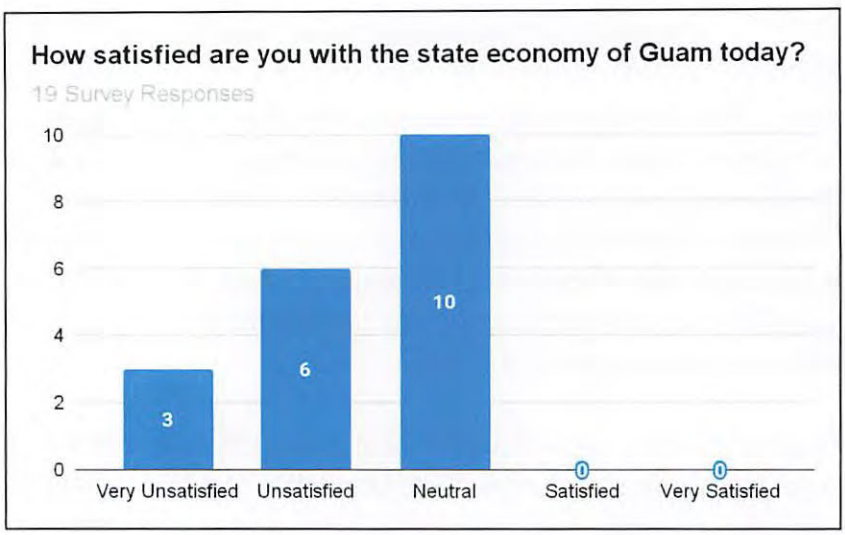
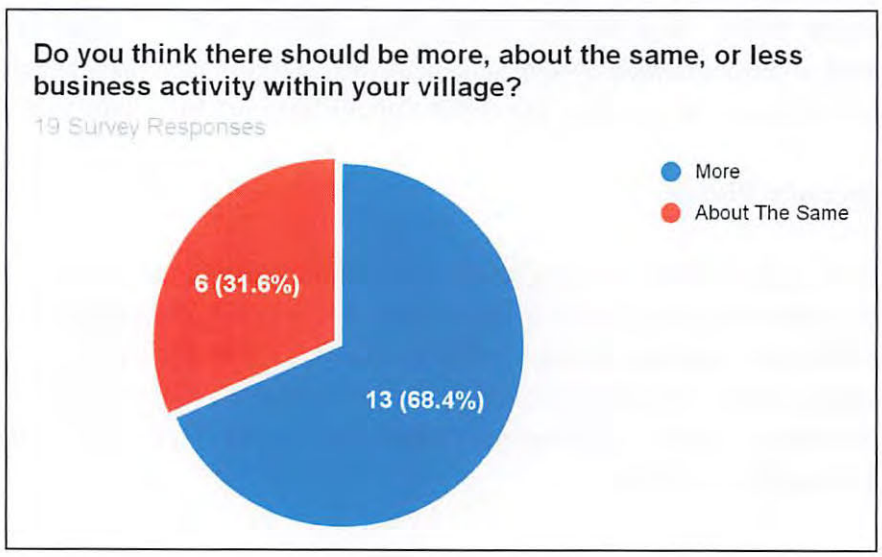


Business Activity Preferences

2. Most respondents thought there should be more business activity within their villages, highlighting a desire for economic growth and development.



Confidence in Children's Future Standard of Living

3. Confidence levels varied, with most respondents having low to moderate confidence that their children will have a better standard of living than they currently enjoy. Lower ratings reflect concerns about the availability of future economic opportunities for younger generations.

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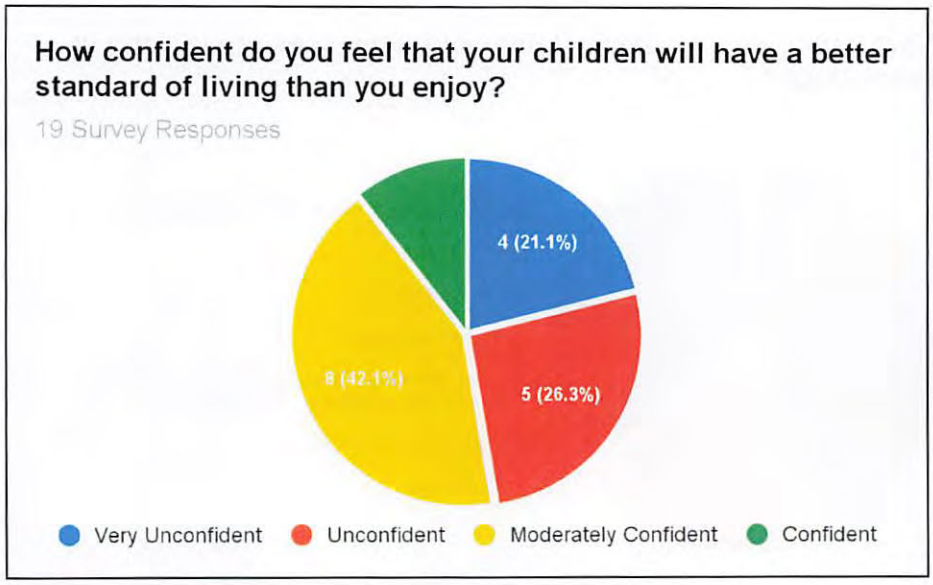

Economic Concerns

4. In no order, common concerns included:
    - Dependence on imported goods.
    - High taxes.
    - Inflation.
    - Environmental impacts.
    - The quality of government bureaucracy.
    - Increasing competition in the housing market against foreign developers.
    - Household income vs. cost of living.

Business and Service Gaps

5. A recurring theme was the lack of medical services, local restaurants, and retails options. Residents also indicated a need for more entertainment options like movie theaters and recreational facilities.

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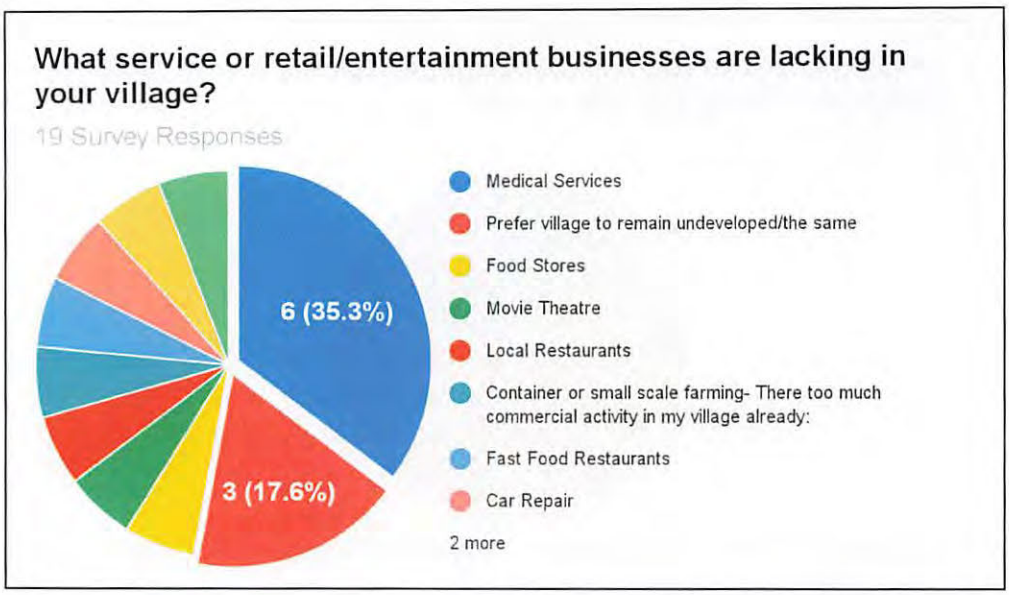

6. Regarding public transportation services, many respondents highlighted the need for better frequency of bus services, improved routes to meet villagers' needs, and more bus stops. Some also suggested implementing a metro system and reducing car-centric infrastructure.

Views on New Development

7. There was strong support for local farmers, small businesses, eco-tourism, arts and crafts, and local product stores. Residents believed that these types of businesses could thrive at village events, pop-ups, and designated market nights. Respondents also emphasized the importance of sustainable development and preserving the CHamoru culture. Suggestions included the development of small businesses such as laundry services, food stores, and more.
8. Opinions on building height limitations varied. Residents from southern villages like Inalåhan and Talo'fo'fo preferred stricter limits (2-3 stories), while those from central and northern villages like Dededo and Agana Heights were more open to taller buildings (4-15 stories).

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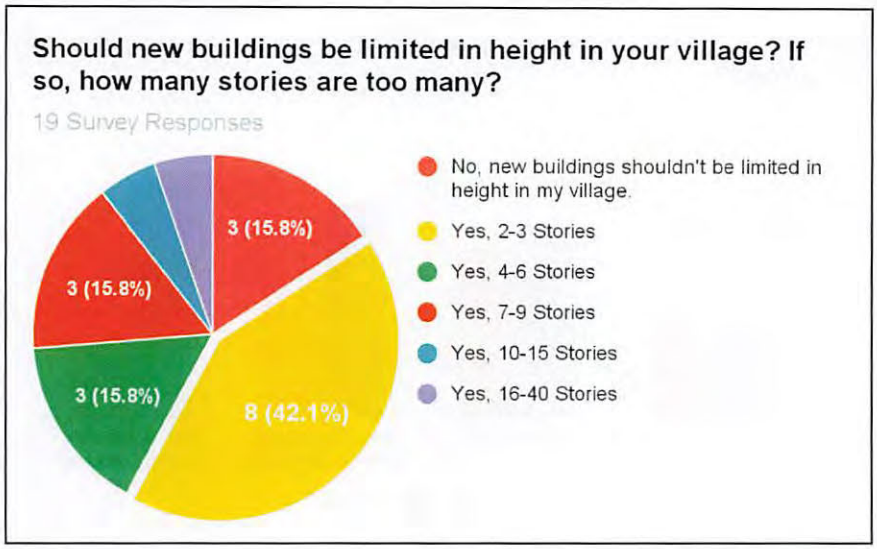

9. Opinions on new industrial development, hotels, commercial operations, etc. were mixed. Many residents opposed new industrial development and hotels. However, residents expressed some support for new commercial farming operations and multi-family housing complexes.

Village	New Industrial Developments	New Hotels	New Commercial Farming Operations	New Multi-Family Housing Complexes
Agana Heights (2)	Oppose (1)	Support (1)	Support (1), Oppose (1)	Support (All)
Chålan Pågo-Ordot (1)	Support (All)	Support (All)	Support (All)	Support (All)
Dededo (2)	Support (All)	Oppose (All)	Support (1), Oppose (1)	Support (All)
Hågat (1)	Oppose (All)	Support (All)	Support (All)	Support (All)
Inalahan (1)	Oppose (All)	Oppose (All)	Oppose (All)	Oppose (All)
Malesso' (2)	Oppose (1)	Oppose (1)	Oppose (1)	Oppose (1)
Mangilao (2)	Support (1), Oppose (1)	Support (1), Oppose (1)	Support (All)	Support (All)
Sinahånña (2)			Support (All)	Support (All)
Talofofo (2)	Oppose (All)	Oppose (All)	Oppose (All)	Support (1), Oppose (1)
Tamuning (1)	Oppose (All)	Support (All)	Support (All)	Support (All)
Yigo (2)	Oppose (1)	Support (1)	Support (1)	Oppose (1)
Yo'ña (1)	Oppose (All)	Oppose (All)	Support (All)	Support (All)

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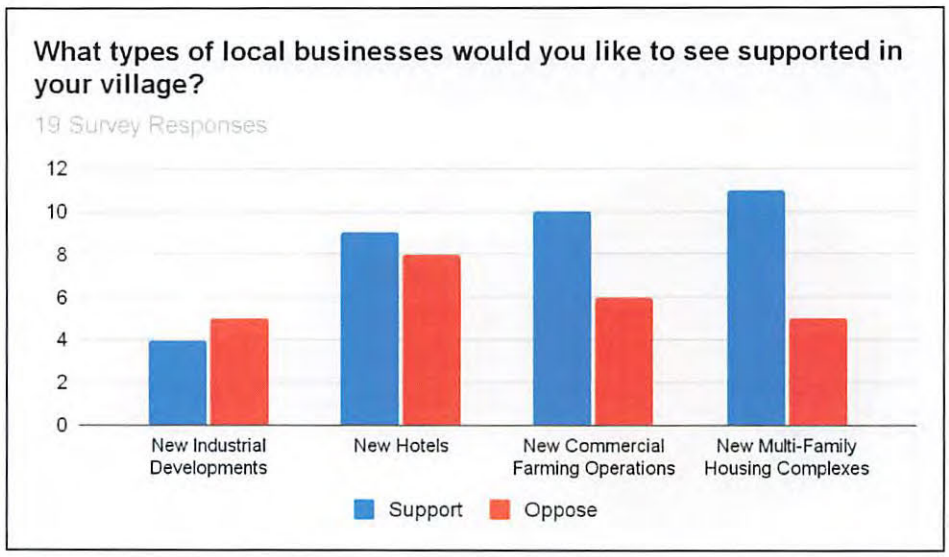
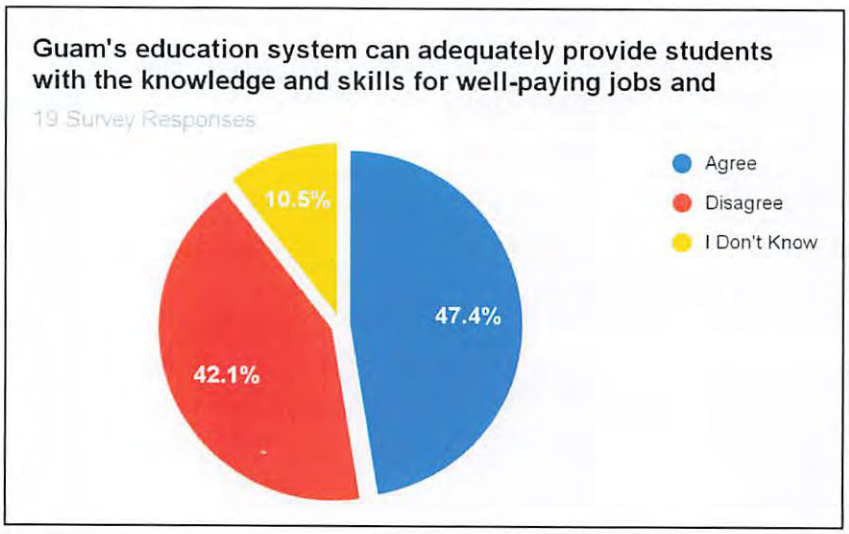


10. Regarding redevelopment priorities, the community believes upgrading parks and beach access, creating community centers for resources and educational purposes, and refurbishing derelict buildings should be prioritized. Generally, residents agreed that Guam's natural resources could be sustainably utilized for economic development.

Education and Economic Prosperity

11. While many agreed that Guam's education system can provide students with the skills for well-paying jobs, there were mixed feelings about the current overall adequacy of the system.



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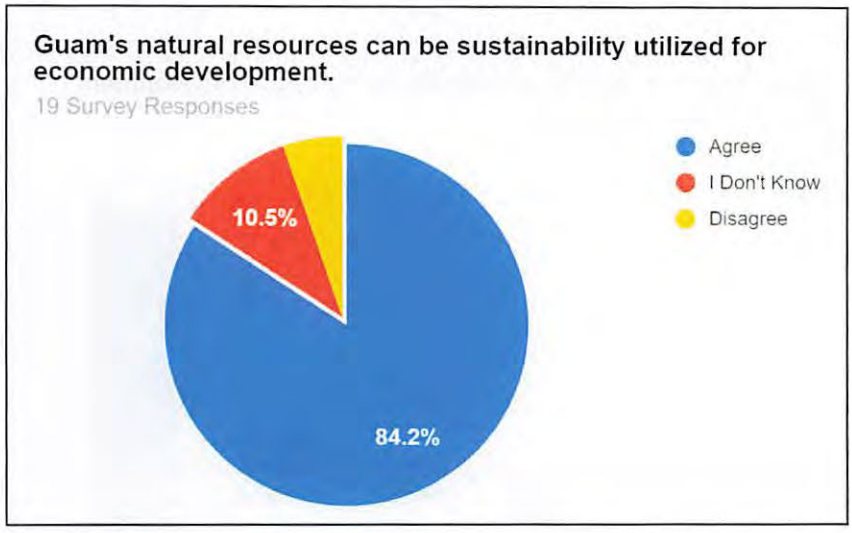
Environmental and Culture Preservation

12. Respondents were concerned about environmental degradation and the need to protect CHamoru culture. There was a call for businesses to do more in these areas.



Conclusion

The Prosperous Economy survey reveals the participants of the community engagements sessions were less than satisfied with the state of Guam's economy. While there is a general desire for increased business activity and local business support, there are significant concerns about environmental sustainability, cultural preservation, future standards of living, and the adequacy of public services. Residents expressed clear preferences for the types of businesses and developments they want to see in their villages, along with suggestions for improving public transportation and education. The findings highlight the need for balanced, community-focused development strategies that address both economic growth and the quality of life for residents.

Thriving Environment Theme

Overview

The Thriving Environment survey focused on the importance of protecting natural resources, concerns about environmental issues, and satisfaction with current efforts to protect Guam's environment. The survey responses came from individuals residing in various villages such as Humatak, Tamuning, Merizo, Hågat, Barrigåda, Chålan Pågo-Ordot, Santa Rita, Yigo, Mangilao, Dededo, Agana Heights, and others. Respondents worked in various locations including Tamuning-Tumon-Harmon, Mangilao, and Hagåtña.

Key Findings

Importance of Protecting Natural Resources

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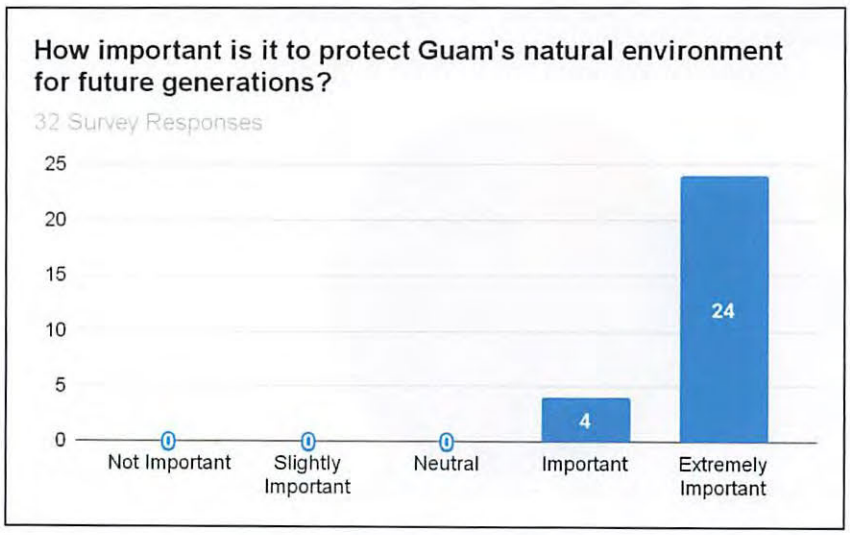
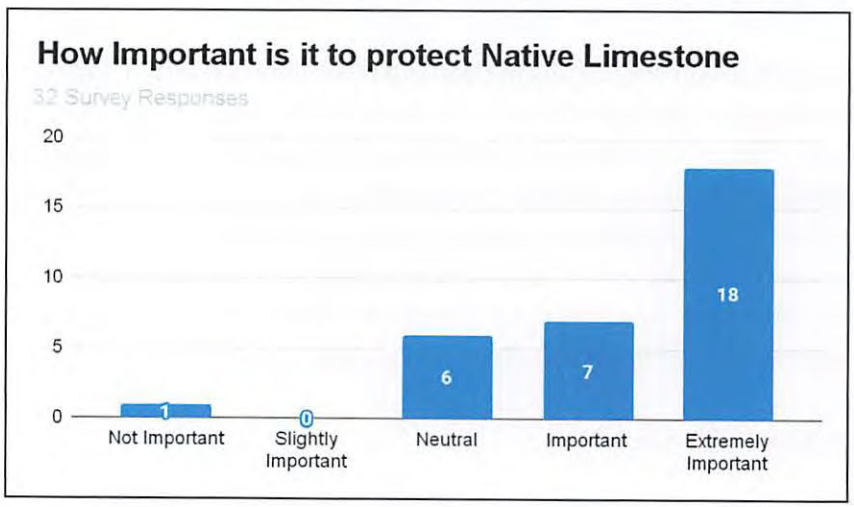
13. Among all survey respondents, there was general agreement that protecting natural resources for future generations was important. Regarding specifical resources, native limestone forests, wetlands, streams, coral reefs, marine and coastal waters, and endangered species were frequently rated as "Extremely Important" to protect.





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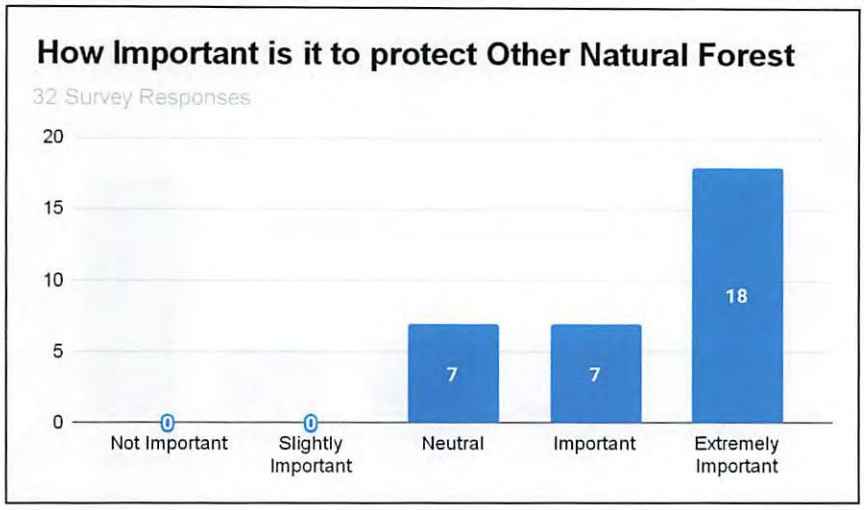

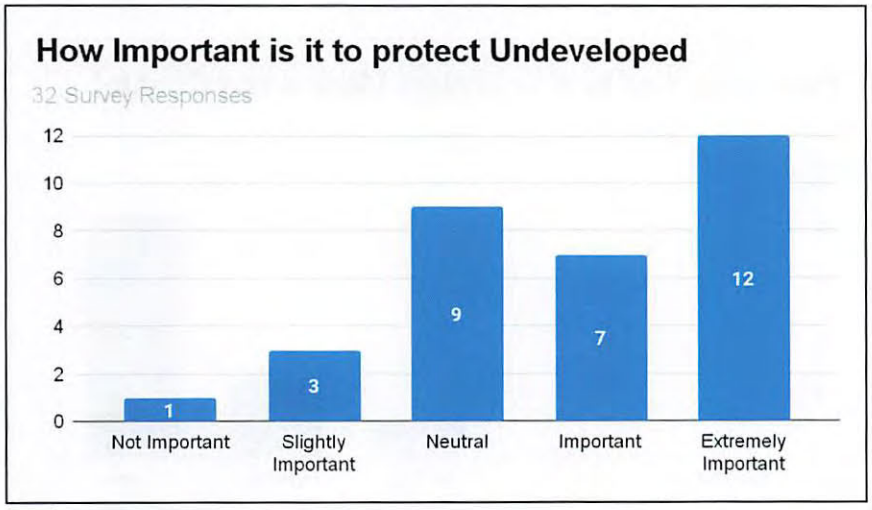

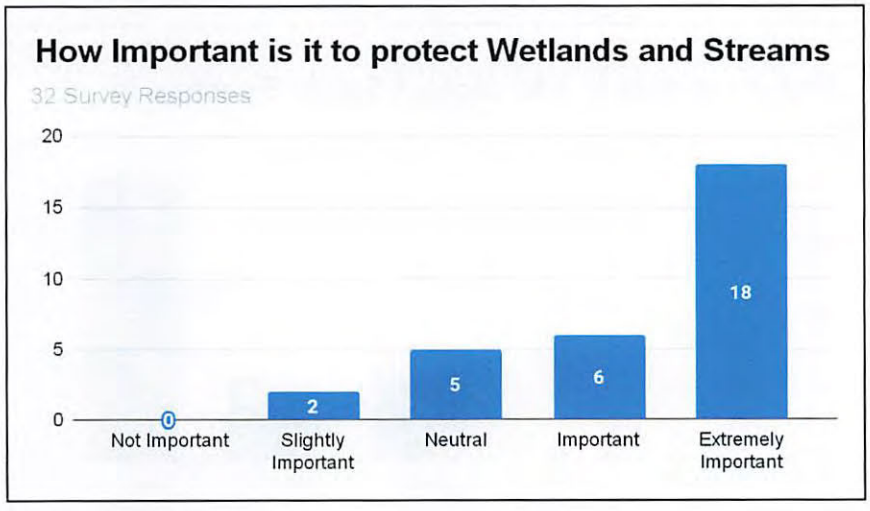

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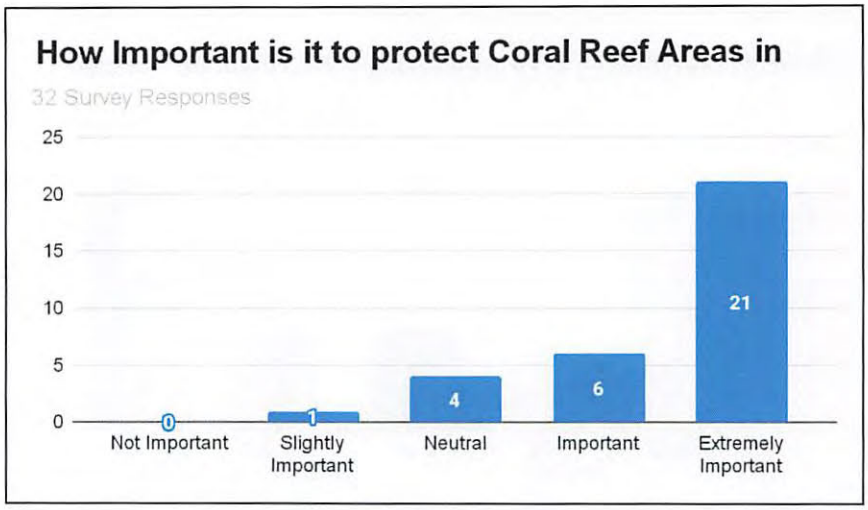

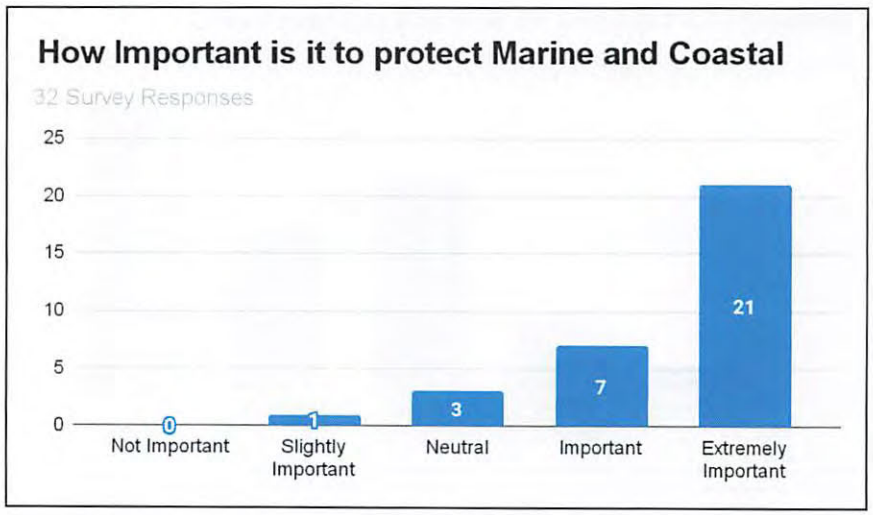

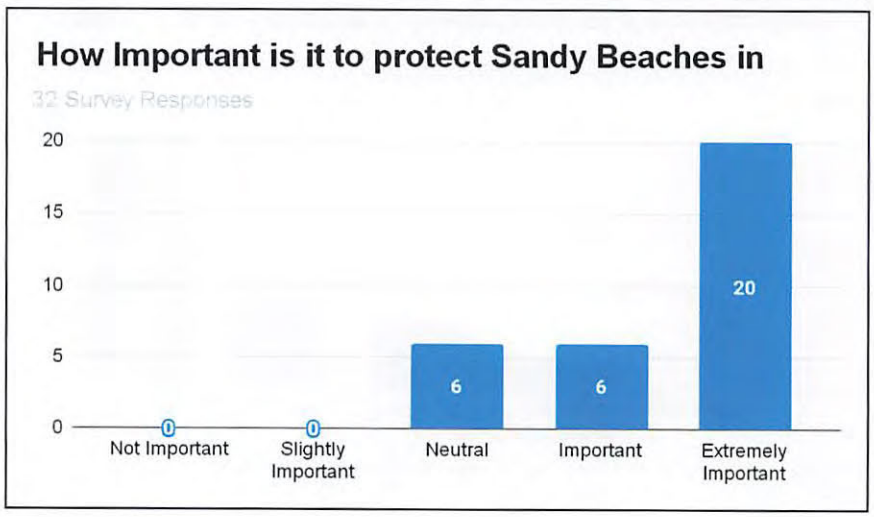

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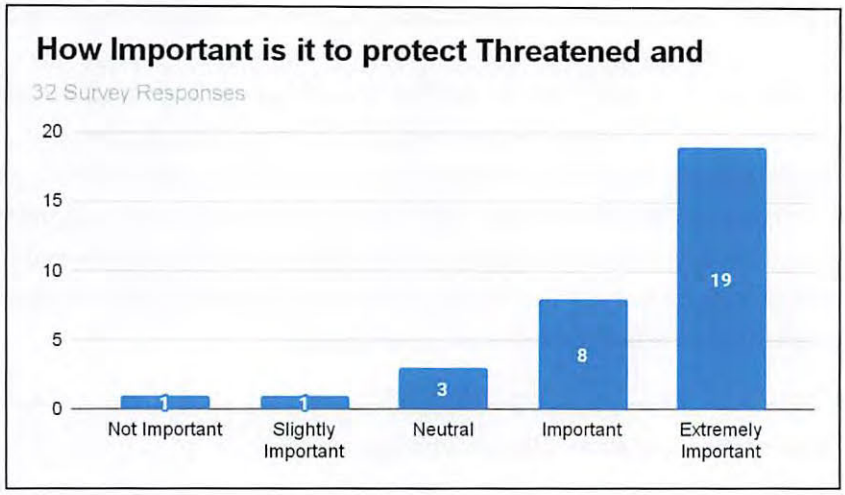
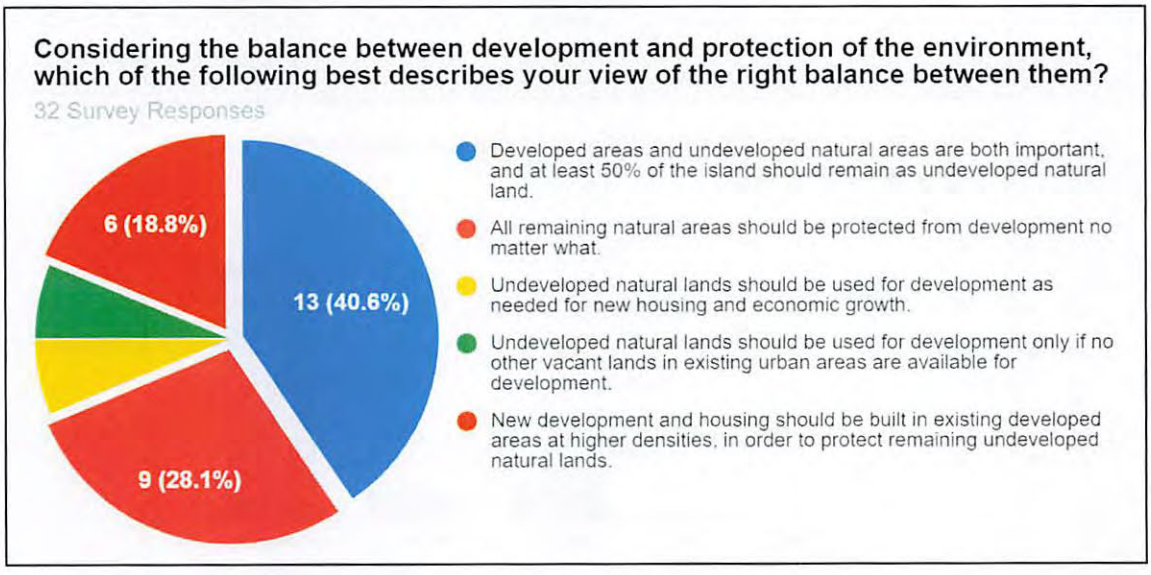


Views on Development vs. Natural Preservation

14. Many respondents emphasized the need for balance between developed areas and natural lands and preferred that at least 50% of the island remains undeveloped. Some respondents stressed that all remaining natural areas should be protected from development, while a minority believed undeveloped lands could be used for new housing and economic growth.



Concerns About Environmental Issues

15. Respondents were very concerned about climate change impacts such as sea level rise, shoreline erosion, extreme storms, wildfire, and rising temperatures. Specific concerns included the contamination or depletion of the Northern Lens drinking water aquifer, loss

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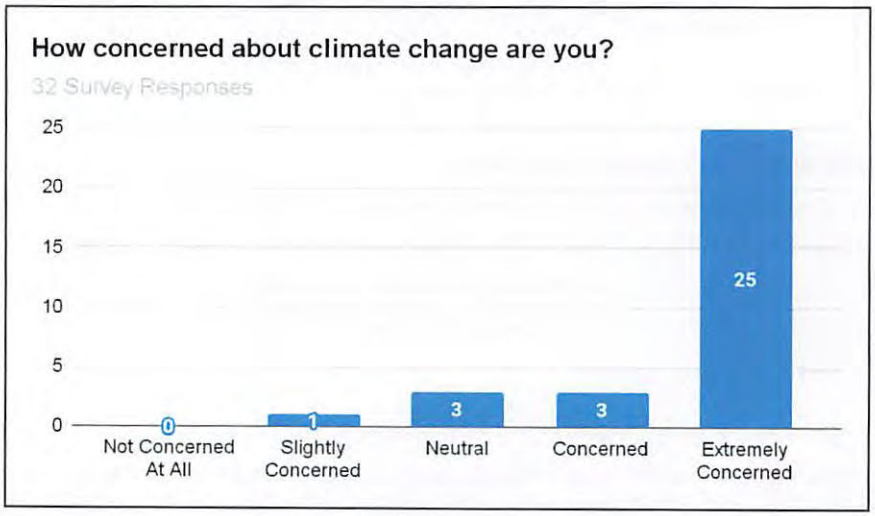
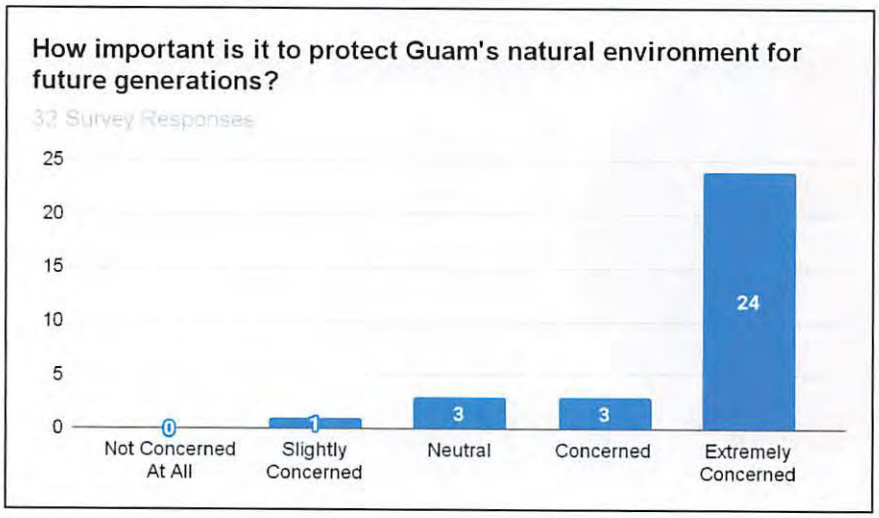
of native habitats and species, coral reef decline, loss of fishery resources, and illegal dumping waste management.

16. In terms of the most pressing environmental issues that need to be addressed by or prior to 2050, respondents mentioned issues related to climate change, pollution, overdevelopment, and resource management. For example, sea level rise, extreme weather, temperature increases, poor water quality, environmental contamination and degradation, overdevelopment negatively impacting natural resources and habitats, import management, consumption levels, sustainable practices and resource management were all identified as issues that should be addressed.





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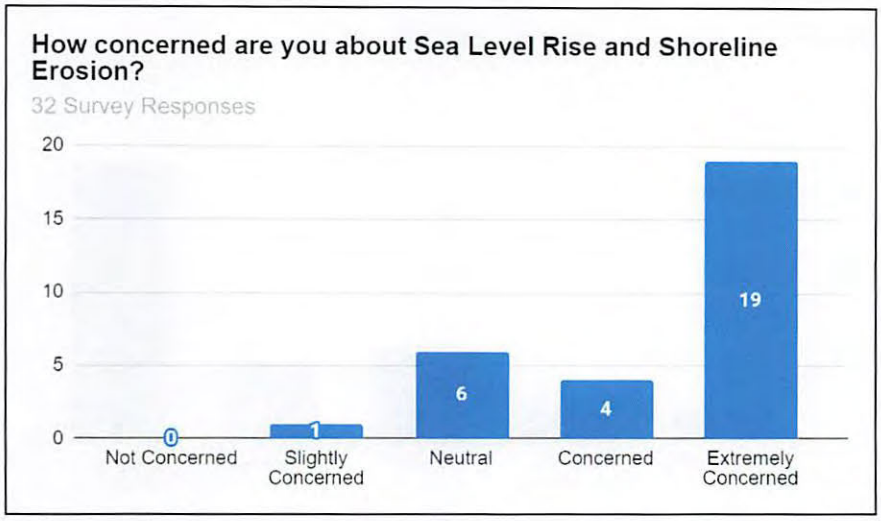

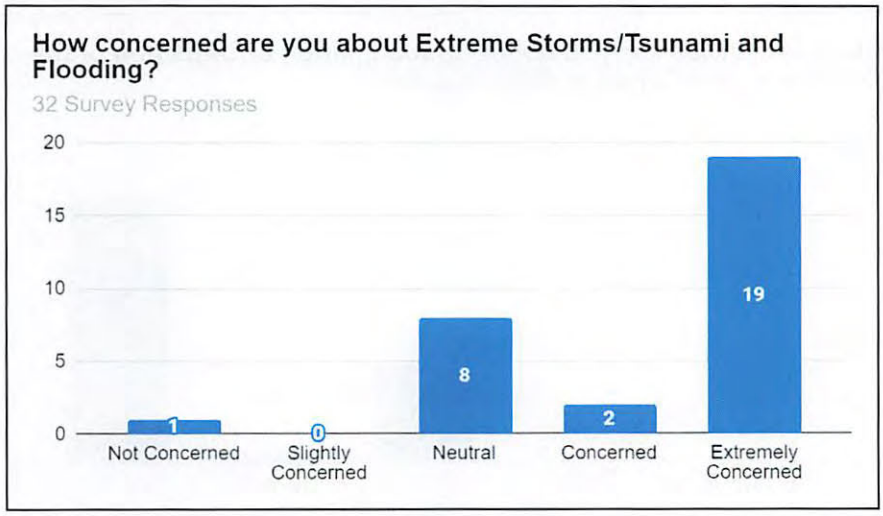

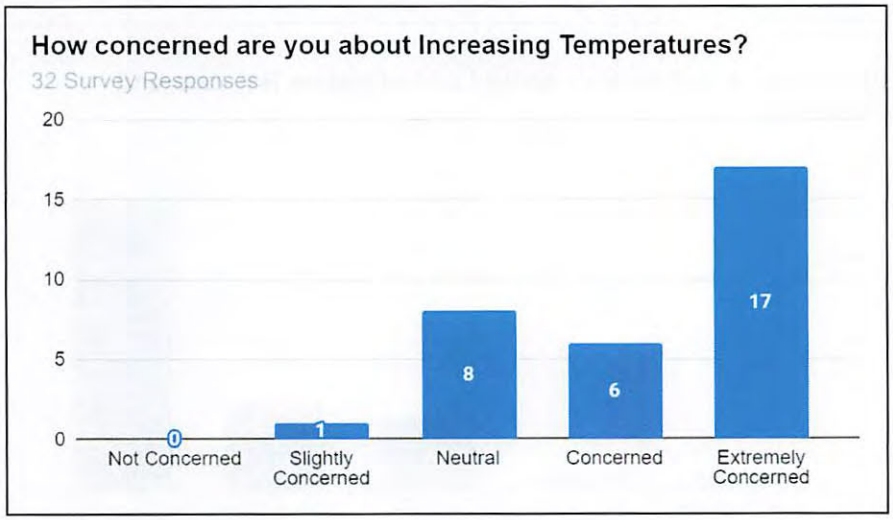

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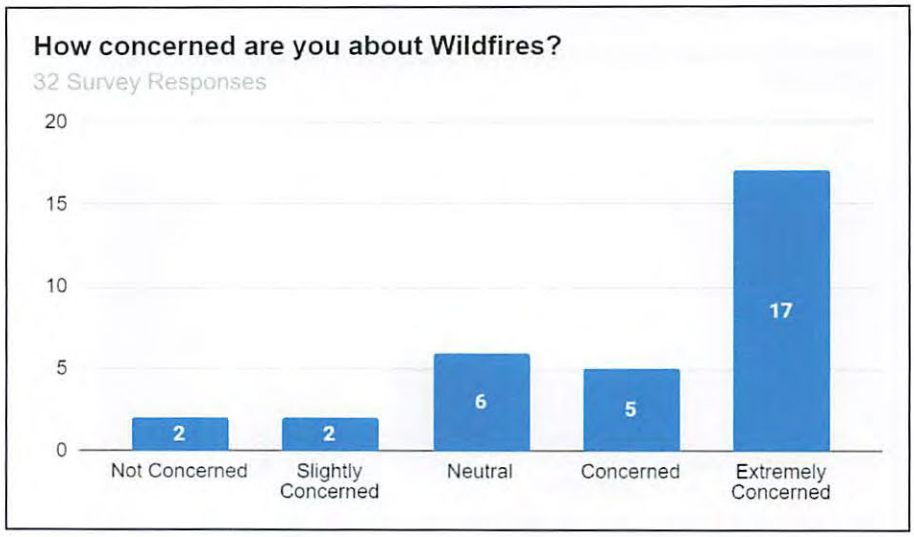

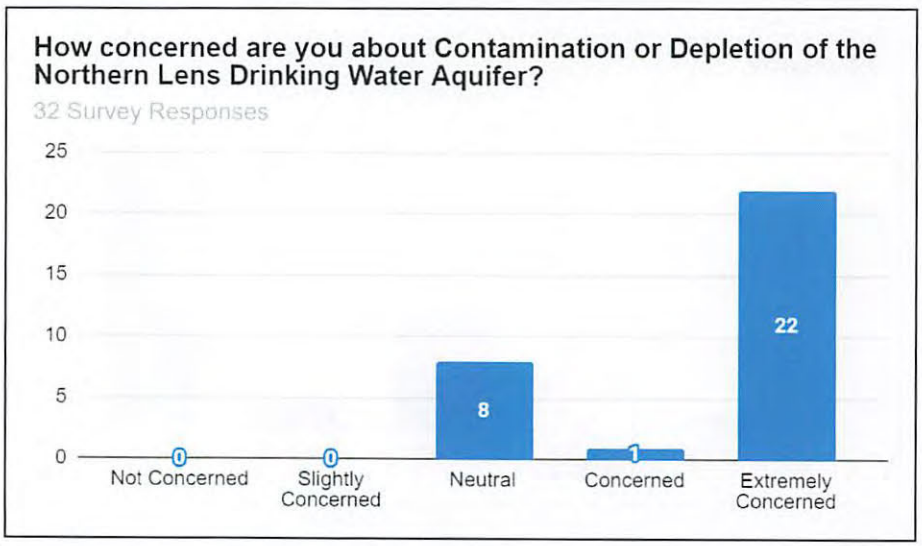

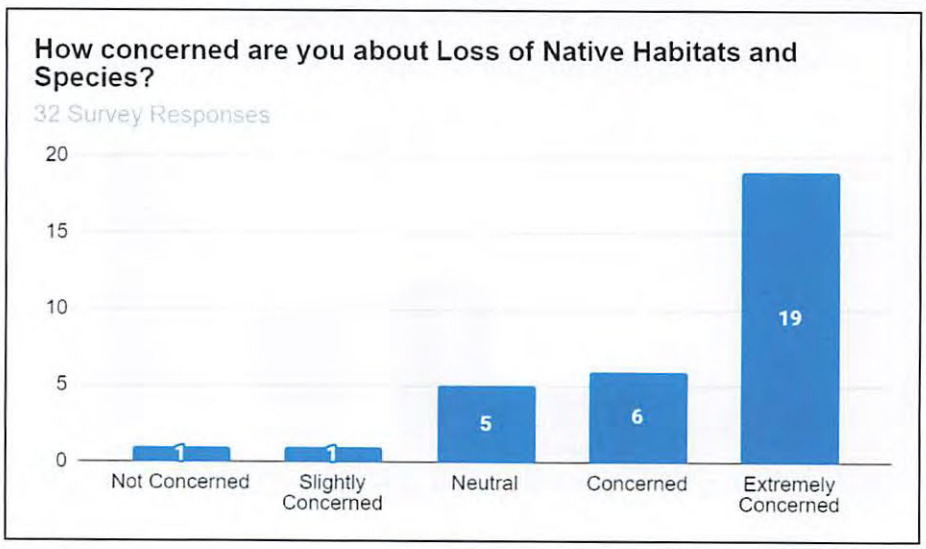

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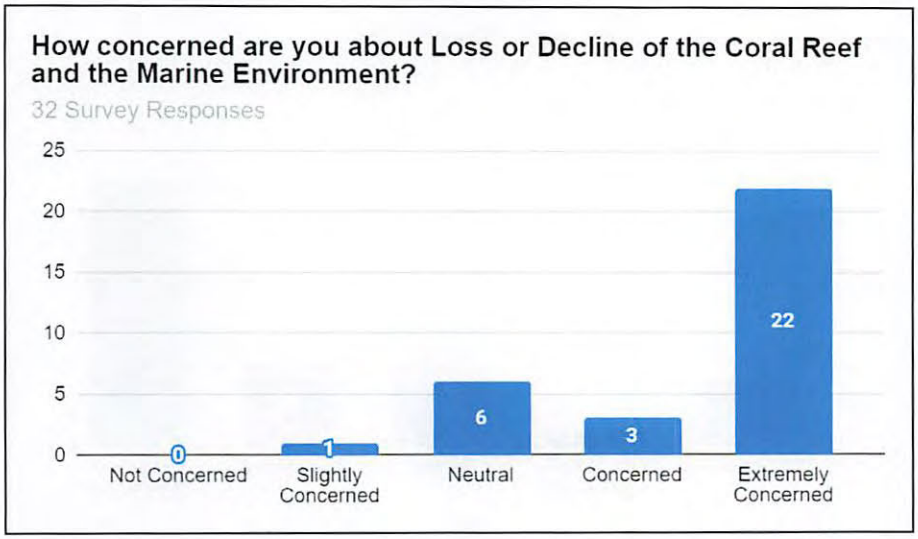

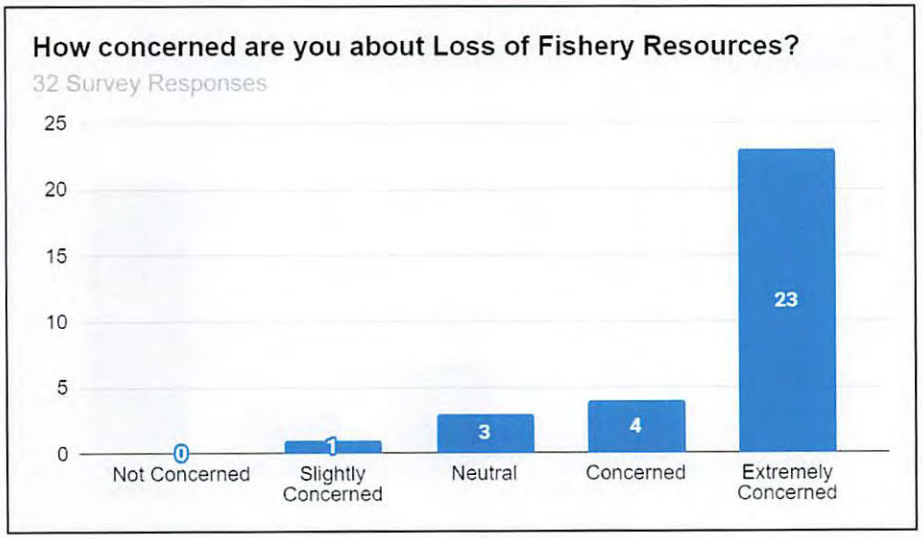

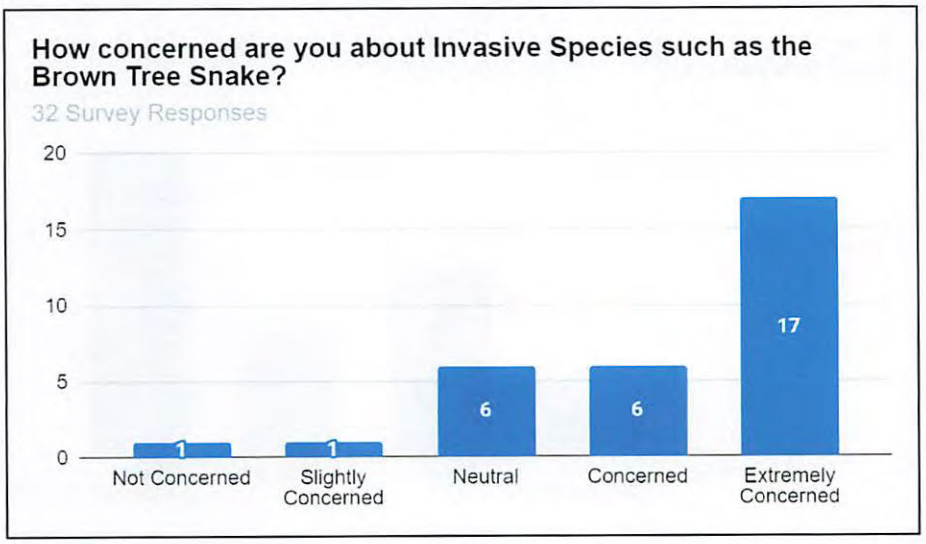

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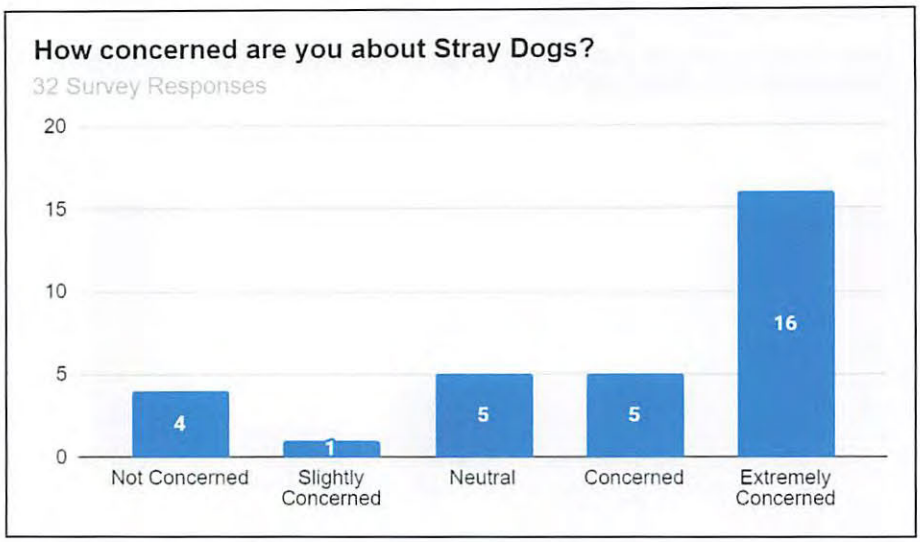

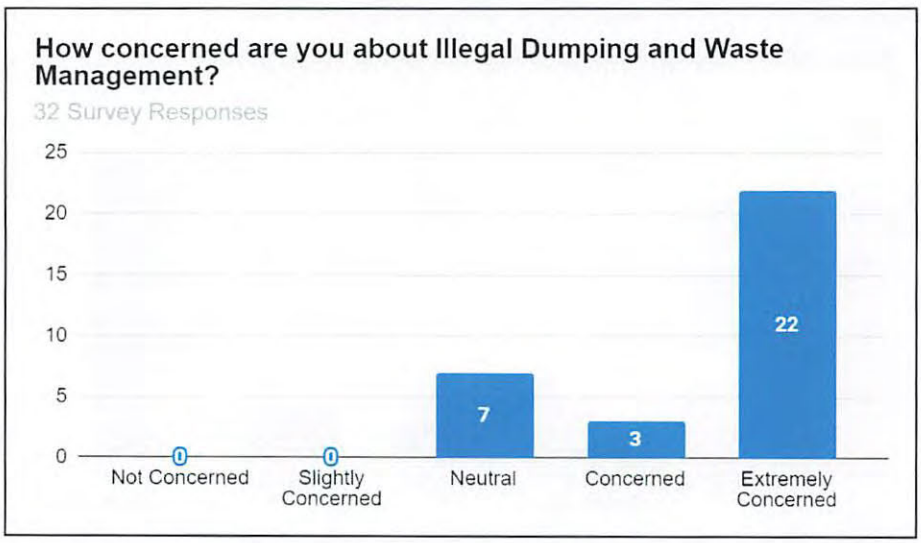

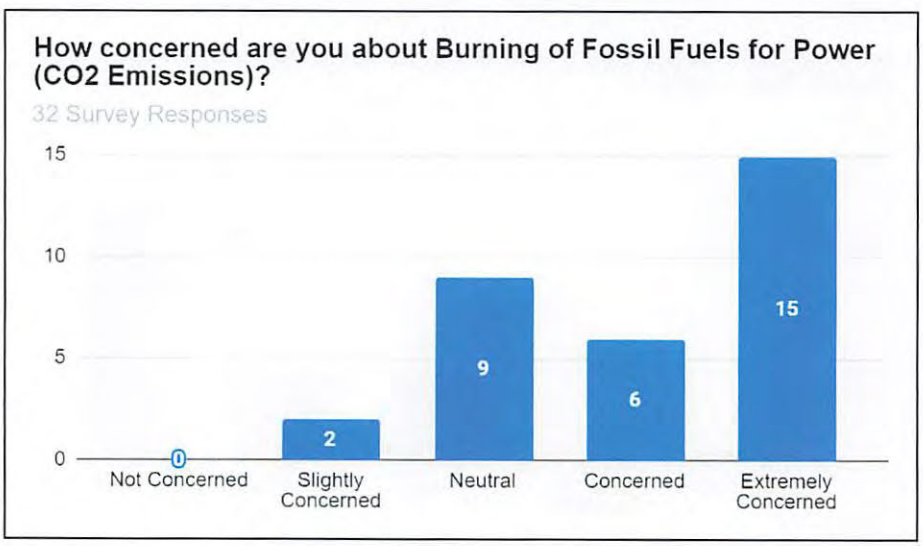

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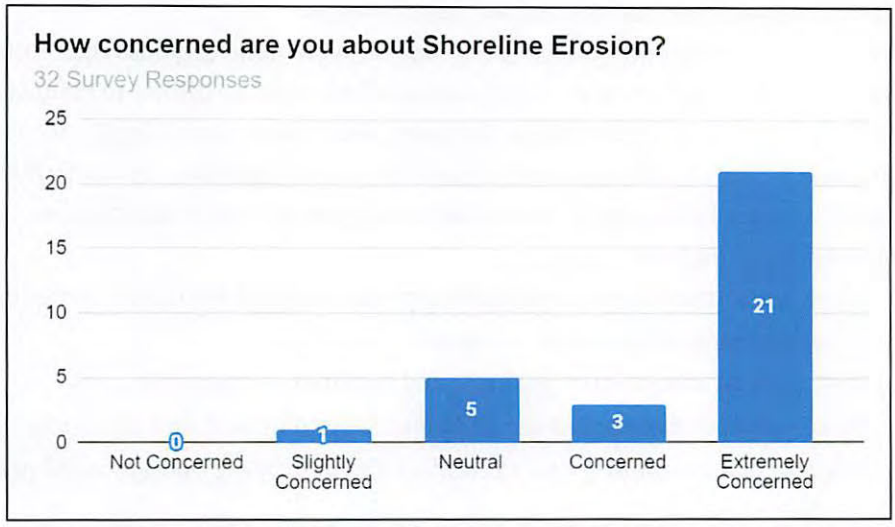

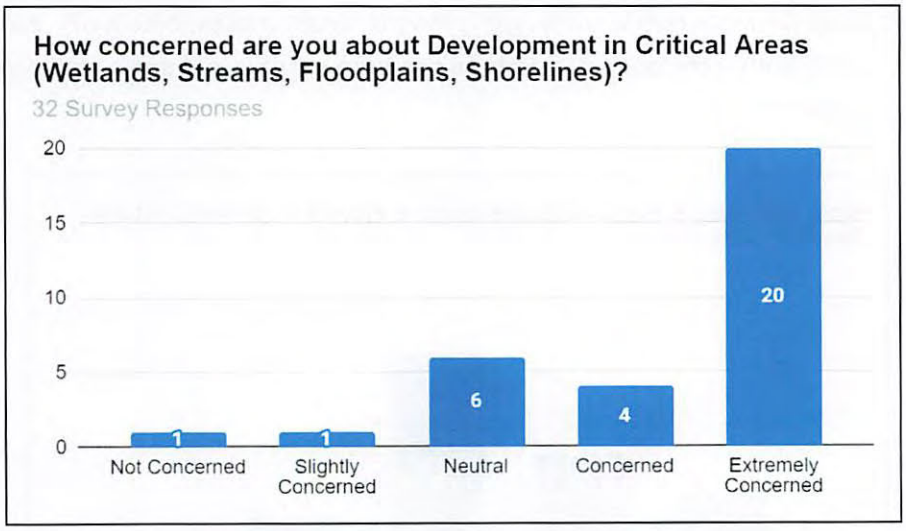

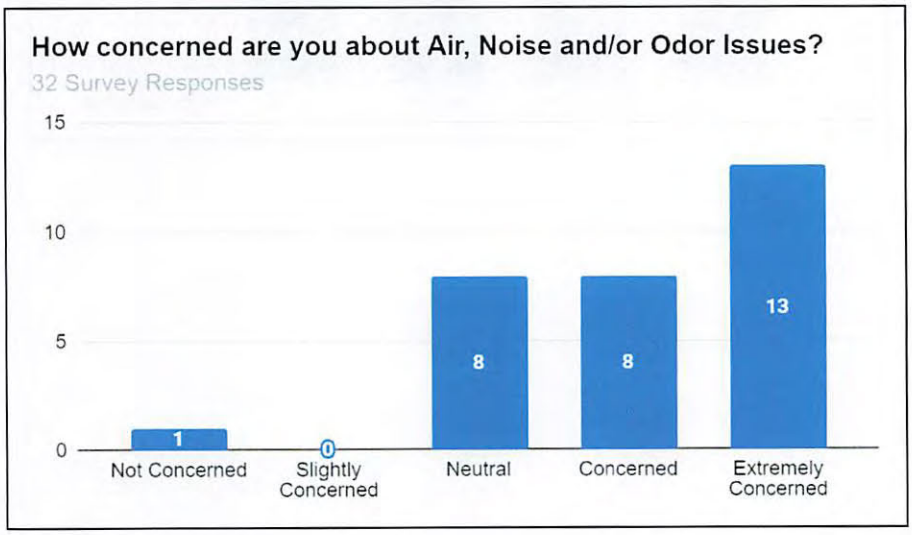

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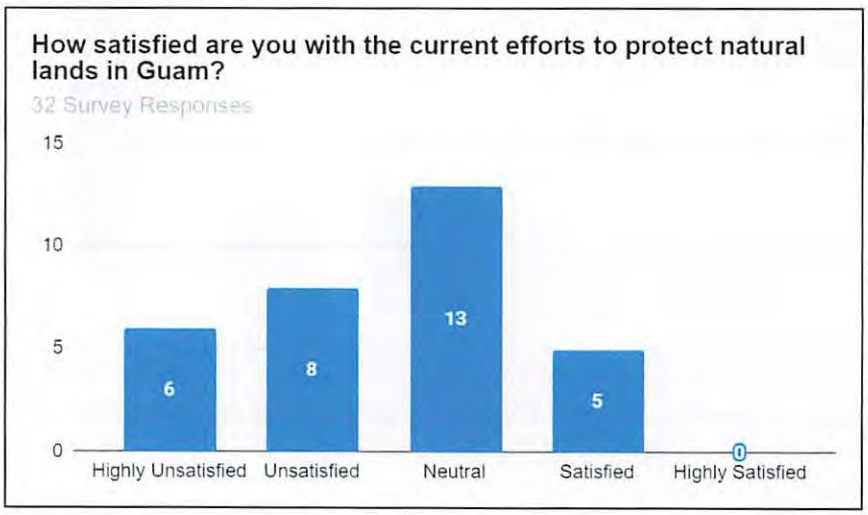
Satisfaction Levels and Recommendations for Improvement

- Regarding current protection efforts, respondents were generally less than satisfied. To illustrate, some respondents were highly unsatisfied with the efforts to protect natural lands. When asked about recreational facilities, there were varied levels of satisfaction when it came to the availability and accessibility of playgrounds, sports fields, picnic areas, public parks, hiking trails, shoreline access points, and lookout points.
- Recommendations include:
    - More legislation and enforcement to protect natural resources, including planned development and conservation areas.
    - Increased education, partnerships, and continuous research.
    - More outreach events and use of technology to inform and engage the public.
    - Suggestions to simplify and streamline the permitting and approval processes for developments.
    - Need for more public parks, playgrounds, green spaces, bike trails, and community centers, particularly in southern villages and areas with high populations.



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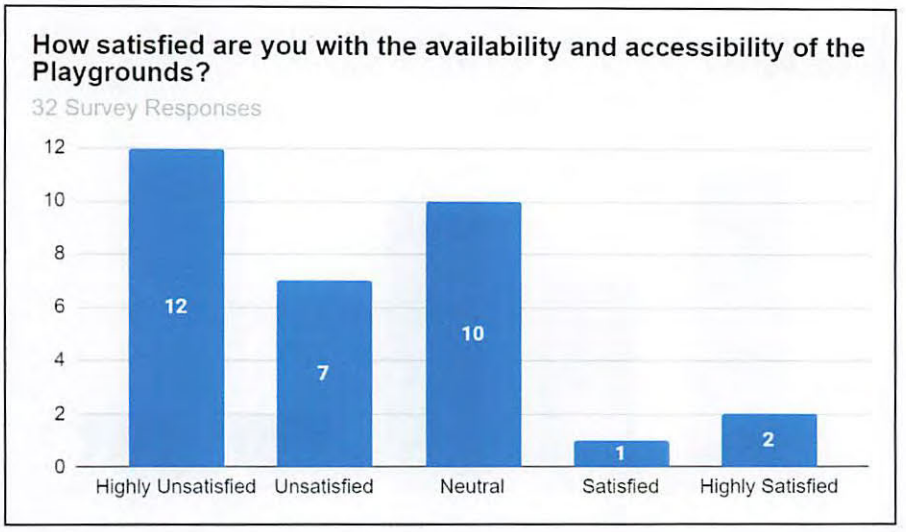

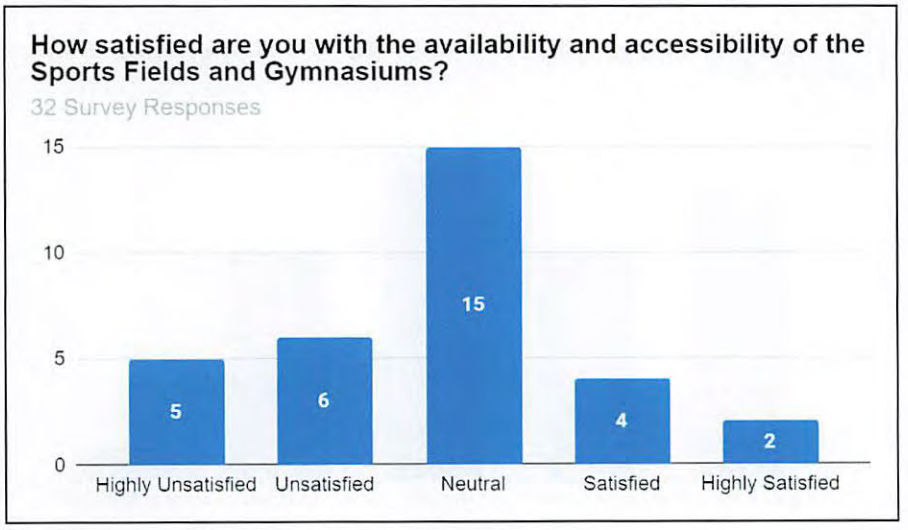

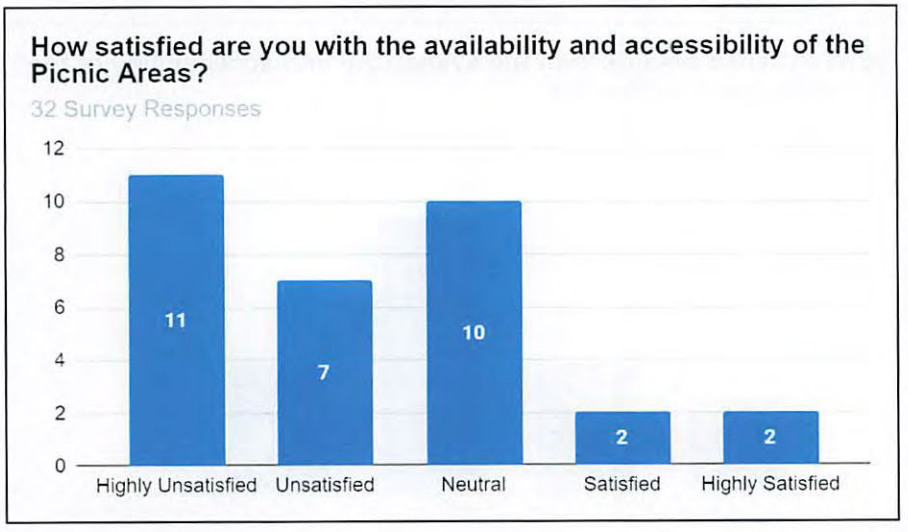

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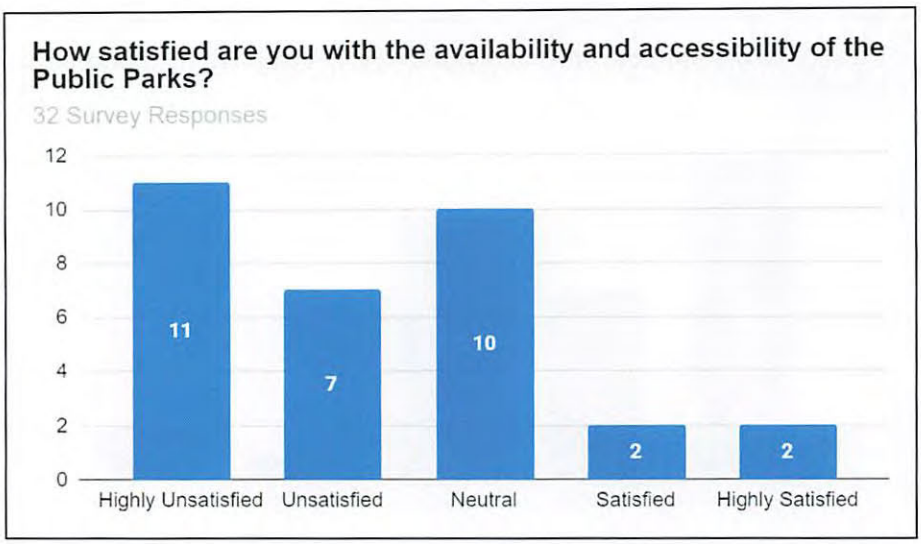

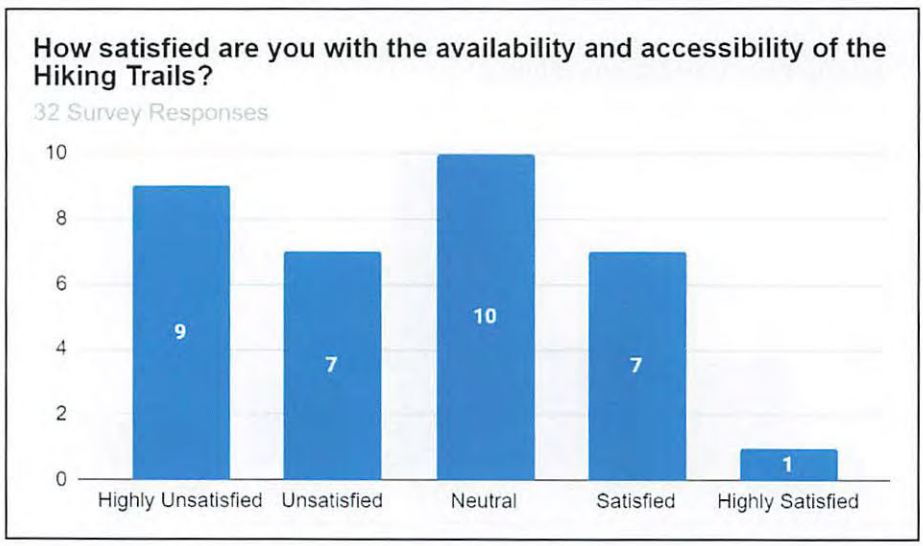

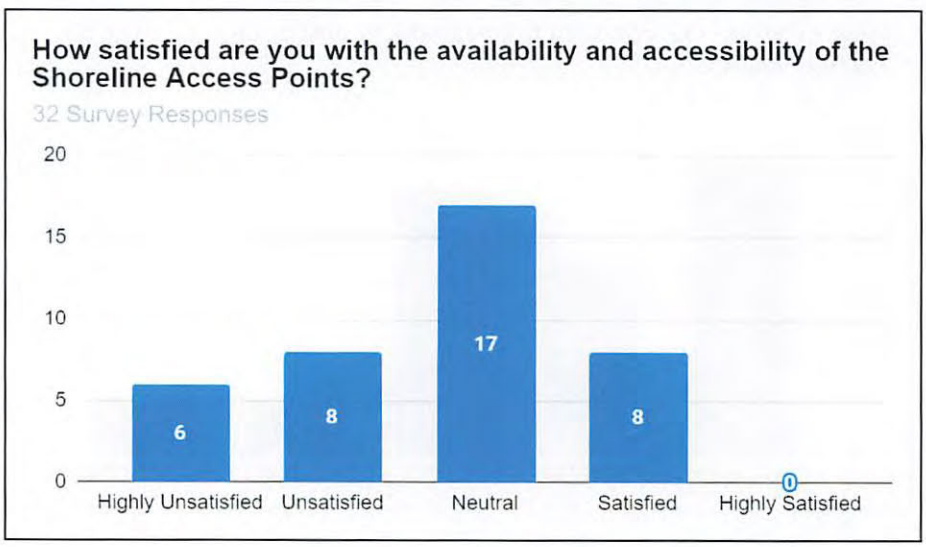

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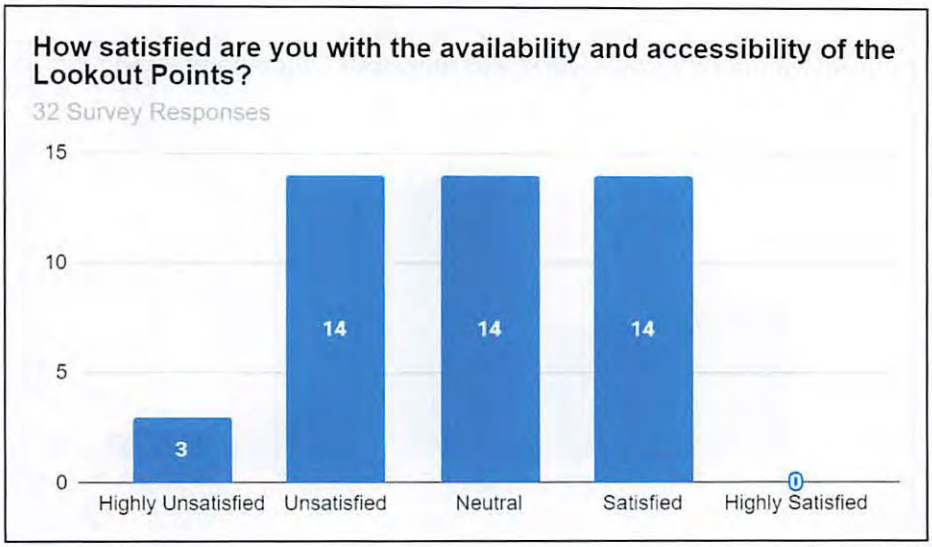

Conclusion

The survey highlights the community's commitment to environmental protection and the need for balanced development strategies, robust legislation, and improved public education and engagement. Key findings include strong support for environmental protection, significant concerns about climate change, and mixed satisfaction with current recreational facilities and conservation efforts.

Sustainable Communities Theme

Overview

The survey covered various aspects such as basic human needs, infrastructure satisfaction, important infrastructure investments, visions for sustainable growth, and affordable housing. The survey responses came from individuals residing in various villages across Guam, including Ipan, Tamuning, Merizo, Hågat, Barrigåda, Chålan Pågo-Ordot, Yo'ña, Yigo, Mangilao, Dededo, Agana Heights, and others.

Key Findings

Satisfaction with Basic Human Needs

- Most participants were less than satisfied with the provision of clean air and water, and nutritious food in Guam.

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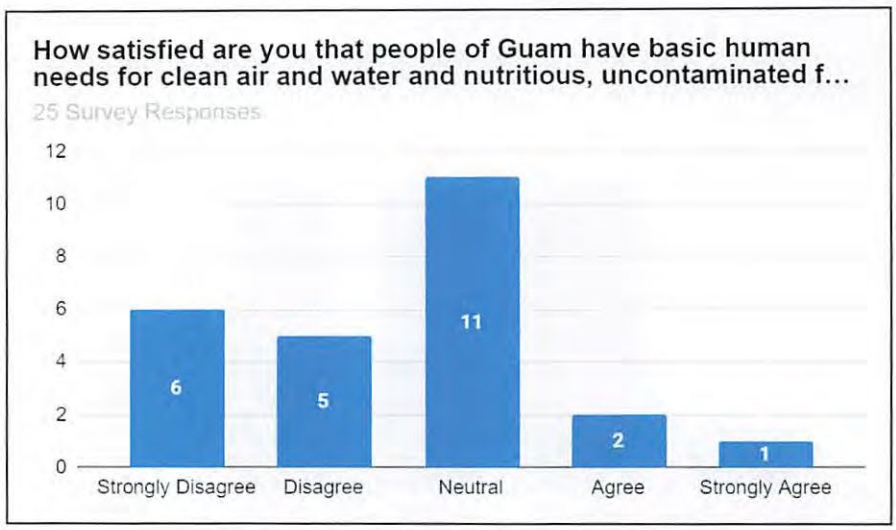

Satisfaction with Infrastructure

- **Water Infrastructure:** Generally, respondents were neutral or unsatisfied, with few expressing satisfaction.
- **Sanitary Sewer:** Most responses indicated dissatisfaction, highlighting a need for improvement. An issue brought up regarding the sanitary sewer system was that it leaks and overflows causing major pollution problems for the aquifer.
- **Storm Drainage:** Responses were predominantly in the "Highly Unsatisfied" to "Neutral" range.
- **Roadways:** Many respondents were dissatisfied with the road infrastructure, indicating a need for better maintenance and development. A need for more cross-connection to main arterial roadways to allow movement of traffic was also conveyed.
- **Electricity:** Satisfaction levels were mixed, with some respondents satisfied while others were highly unsatisfied.
- **Internet:** Responses varied, but a significant number indicated dissatisfaction with internet availability.

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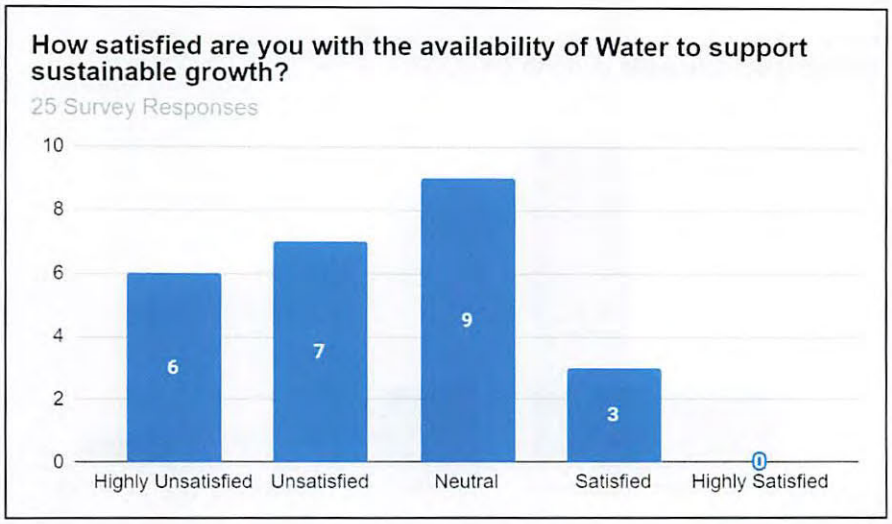

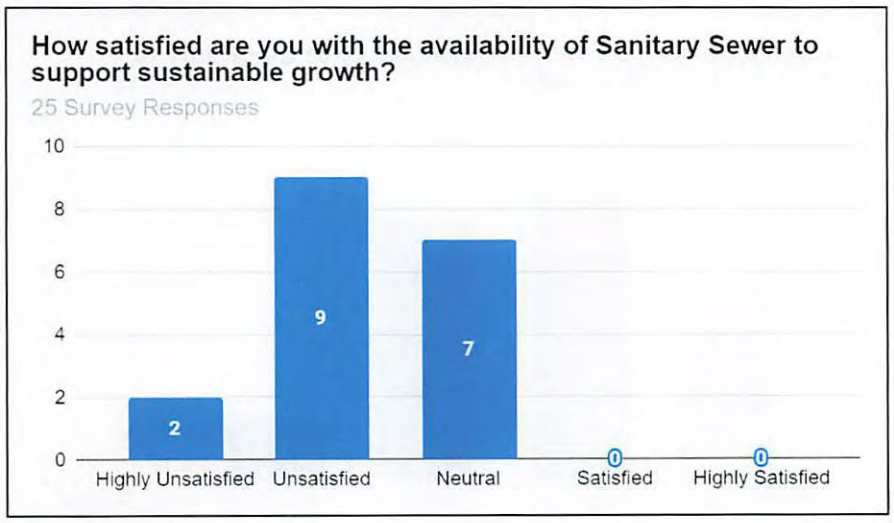

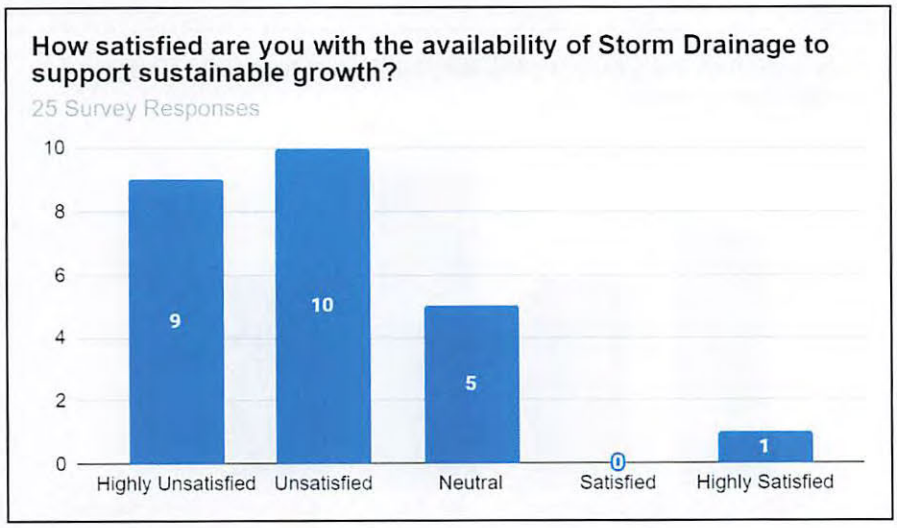

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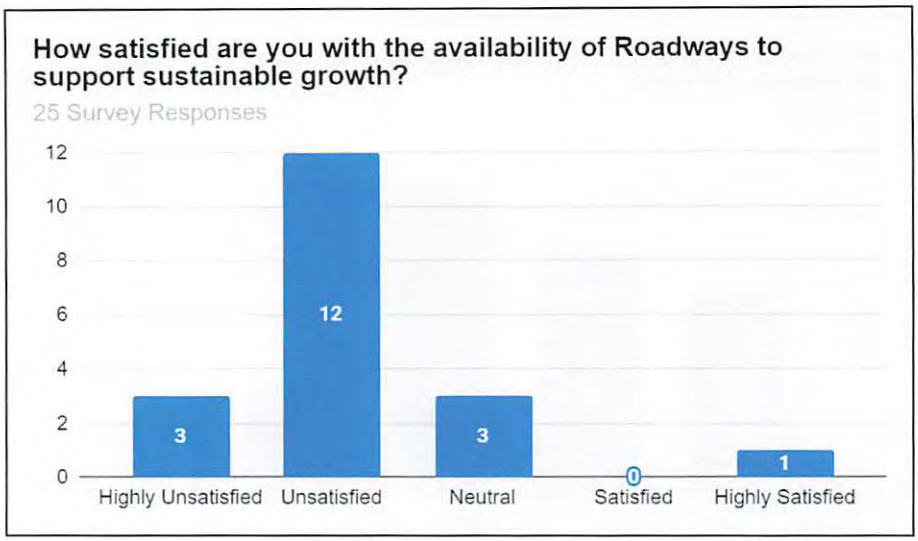

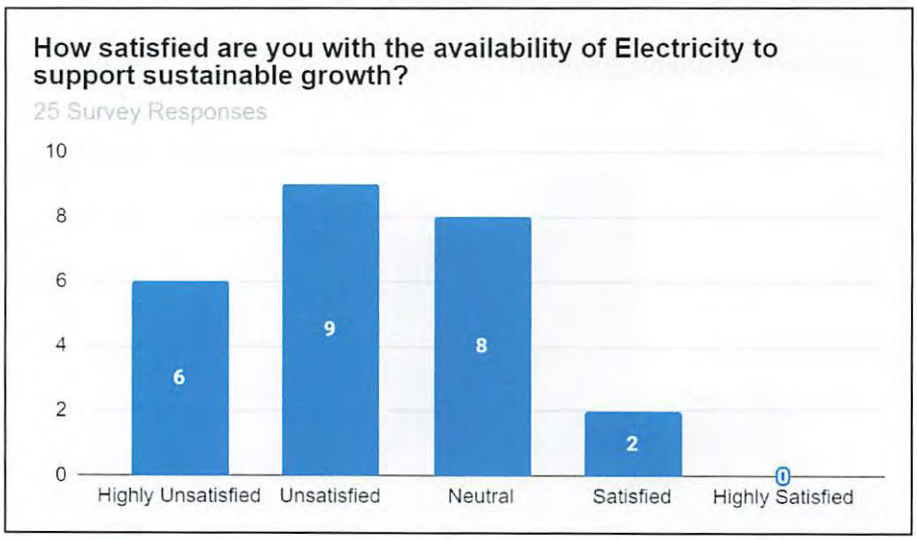

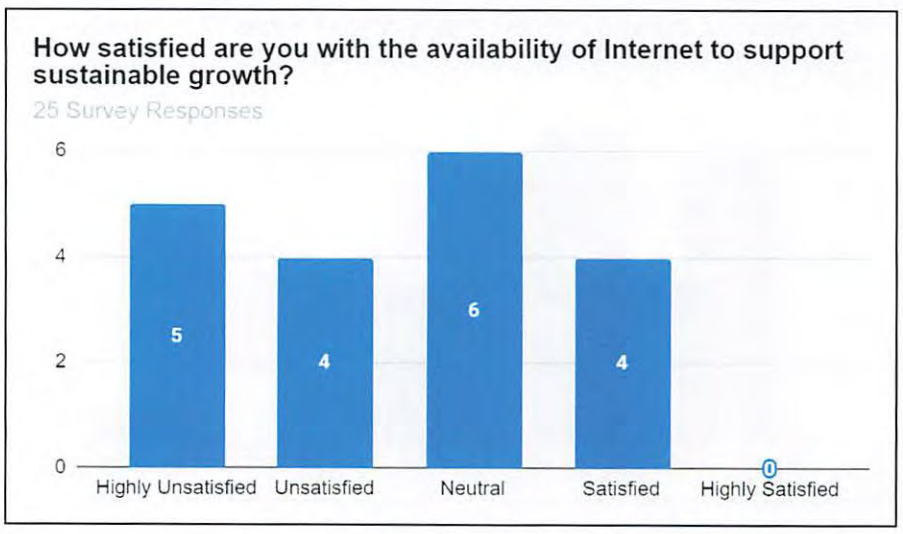

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Infrastructure Investments

- Commonly mentioned infrastructure investments included:
  - Renewable energy.
  - Flood control and irrigation.
  - Sewer and water lines.
  - Public roads and transportation.
  - Green infrastructure and reuse of abandoned buildings.
  - Better maintenance and development of roads.

Visions for Sustainable Community Growth

- Respondents envisioned a sustainable Guam where basic needs such as clean water, food, shelter, electricity, and transportation are met for all residents. Some emphasized less reliance on imported goods and tourism, promoting local agriculture, and renewable energy. Others focused on community gardens, public transportation, high-density housing, and more local produce.
- Respondents also noted that farmers have trouble with feral pigs, other invasive species, and illegal dumping.

Affordable Housing

- **Satisfaction:** Most respondents were very dissatisfied with the availability of affordable housing in their villages. They expressed a desire for higher density more affordable housing units so long as issues that impact the neighborhood like congested parking on streets, congested roads, noise, theft, were addressed.
- **Suggestions for Improvement:**
  - Government assistance and subsidies.
  - Public-private partnerships and grants.
  - Use of durable and inexpensive building materials.
  - Inclusion of lower-income community members in development plans.
  - Restrictions on military and foreign investor impacts on local housing markets.
  - Policy reforms and legislation to provide more housing options and government aid.
  - Increase residential development in the southern part of Guam to distribute population, protect the aquifer, and distribute funding of infrastructure.
  - No hotel development in Agana is preferred.
  - Regaining land from the military so families can build affordable housing.

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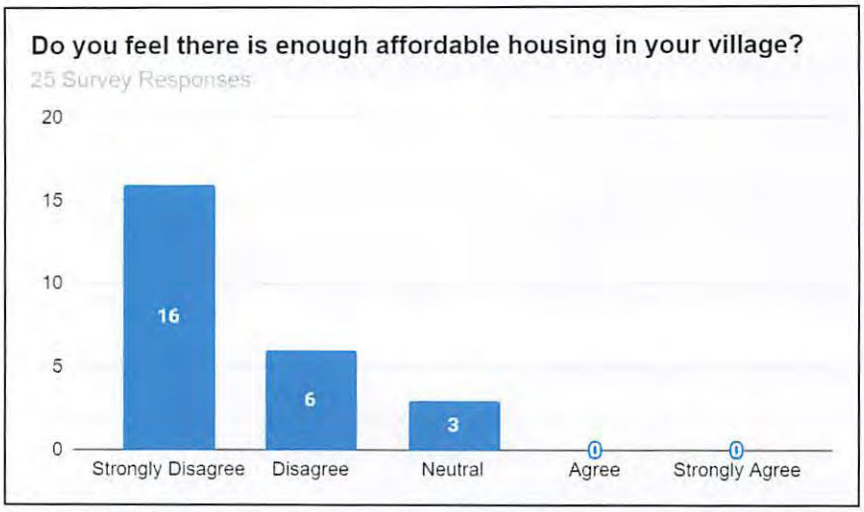

Conclusion

The survey highlights that the participants were largely less than satisfied with the current state of infrastructure and basic human needs in Guam. There is a clear call for improved infrastructure, particularly in water, sewer, and roadways. Respondents also envision a more self-sustaining community with better access to affordable housing, renewable energy, and local produce. Addressing these issues through strategic investments, policy reforms, and community-focused initiatives can support the sustainable growth of Guam's communities.

Vibrant Culture Theme

Overview

The Vibrant Culture Survey conducted at the events aimed to gather residents' perspectives on various aspects of community life, public facilities, cultural heritage preservation, and development patterns. The survey collected responses from individuals residing in different villages across the island, providing insights into their satisfaction with public amenities, cultural preservation efforts, and preferences for future development.

Key Findings

Public Facilities Satisfaction

- Residents were asked to rate their satisfaction with the availability and accessibility of various public facilities on a scale from 1 (Highly Unsatisfied) to 5 (Highly Satisfied). The overall satisfaction levels varied significantly across different types of facilities:
    - **Community Centers:** Satisfaction levels ranged from 1 to 5, with some residents expressing high satisfaction (5) and others expressing low satisfaction (1).
    - **Libraries:** Like community centers, satisfaction levels varied, with a notable number of residents being highly unsatisfied (1).
    - **Parks:** Responses were mixed, with some residents rating their satisfaction as high (4-5) and others as low (1).

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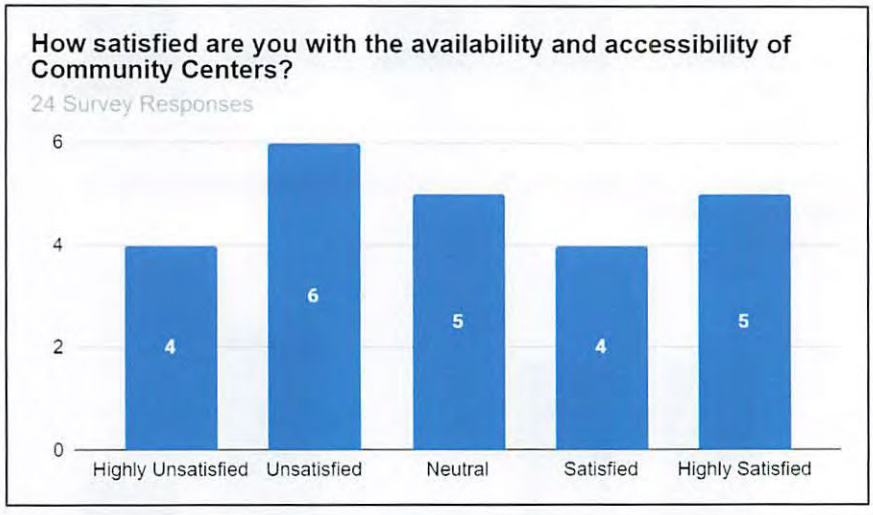
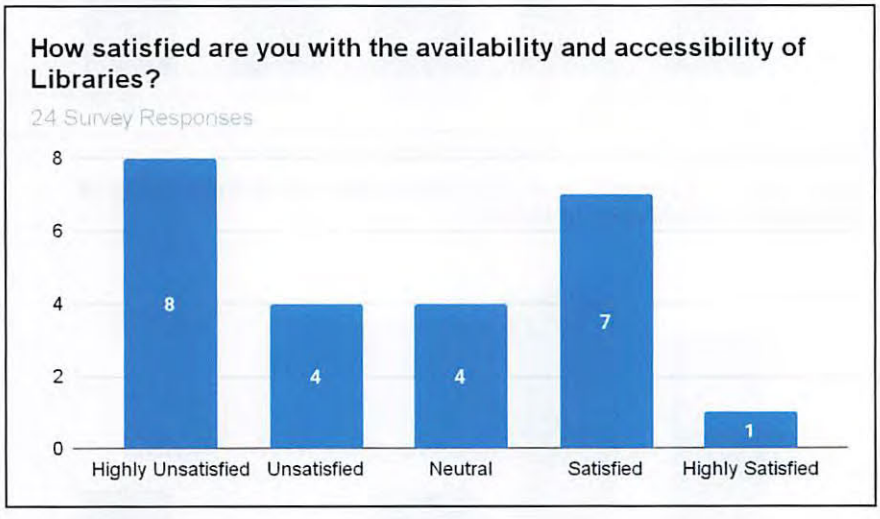
- **Sports Facilities:** A considerable number of respondents were highly unsatisfied (1), though there were also some who rated their satisfaction higher (4-5).
- Medical/Health Care Facilities: Satisfaction levels were predominantly low (1-2), indicating a need for improvement in accessibility and availability.
- **Police Services:** Responses ranged from 2 to 5, showing a moderate level of satisfaction overall.
- **Fire Services:** Satisfaction was generally higher (3-5), with few residents expressing dissatisfaction.
- **Schools:** Most residents rated their satisfaction as high (4-5).





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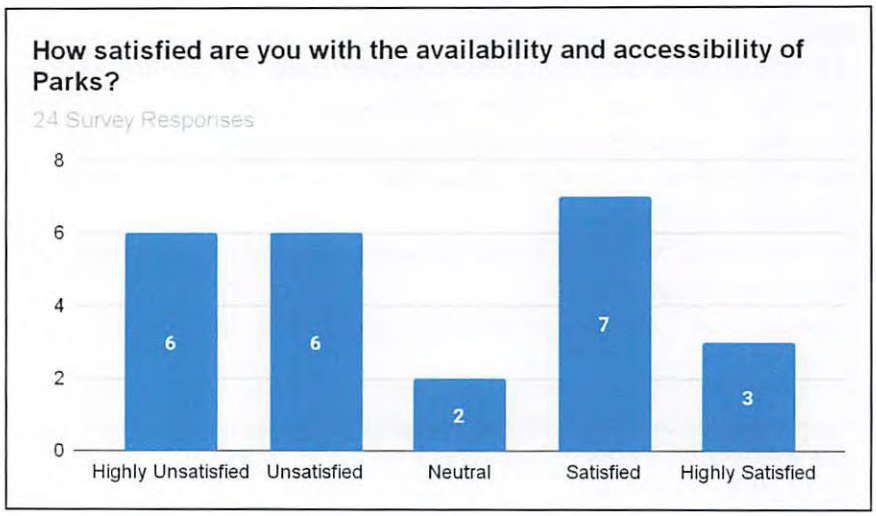

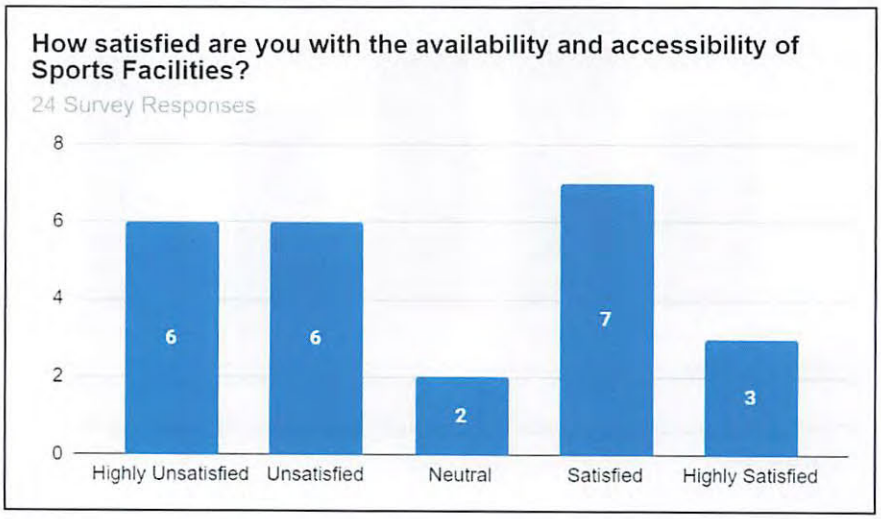

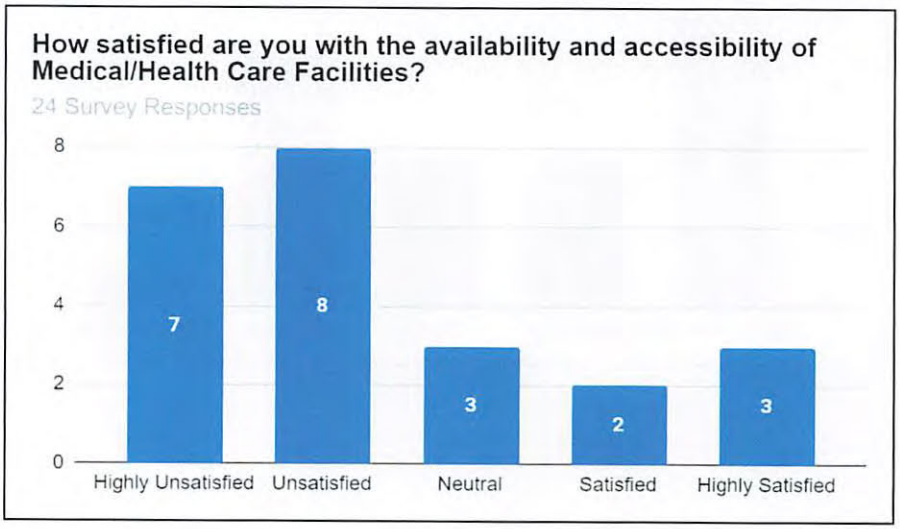

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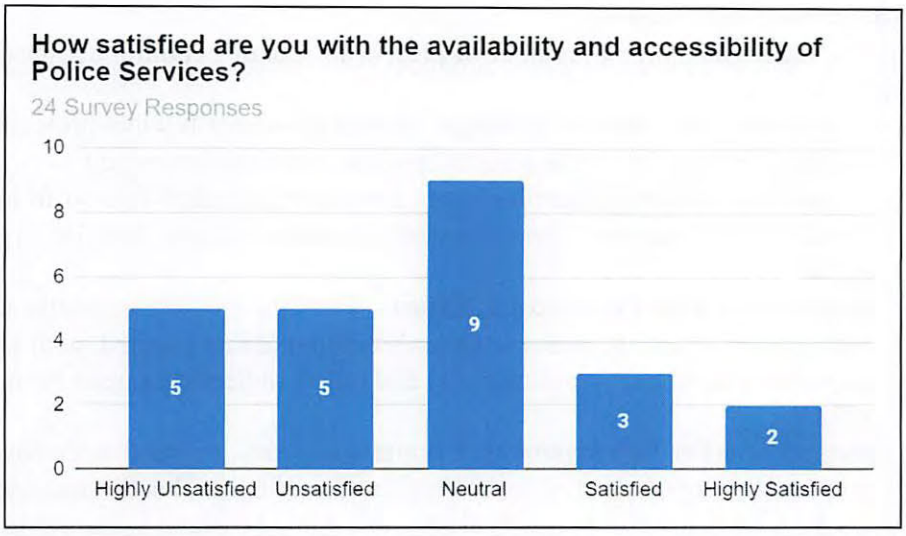

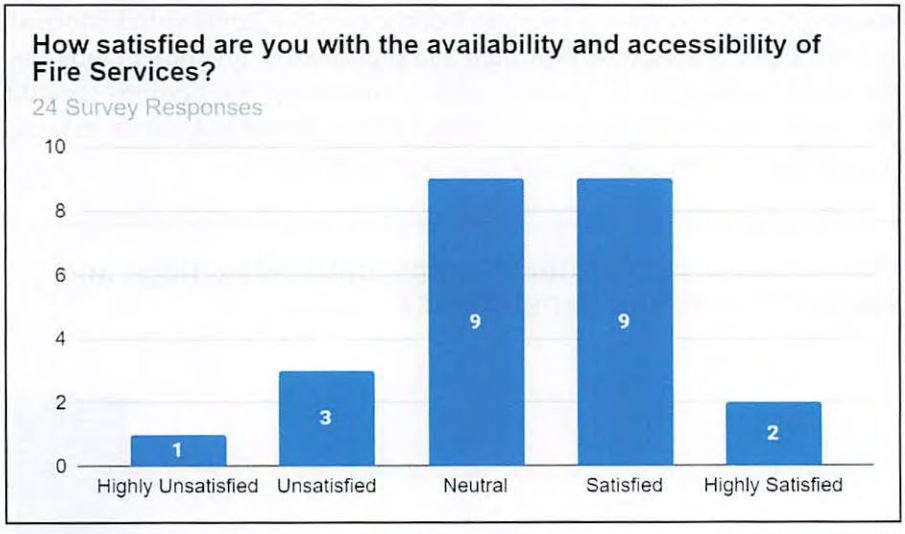

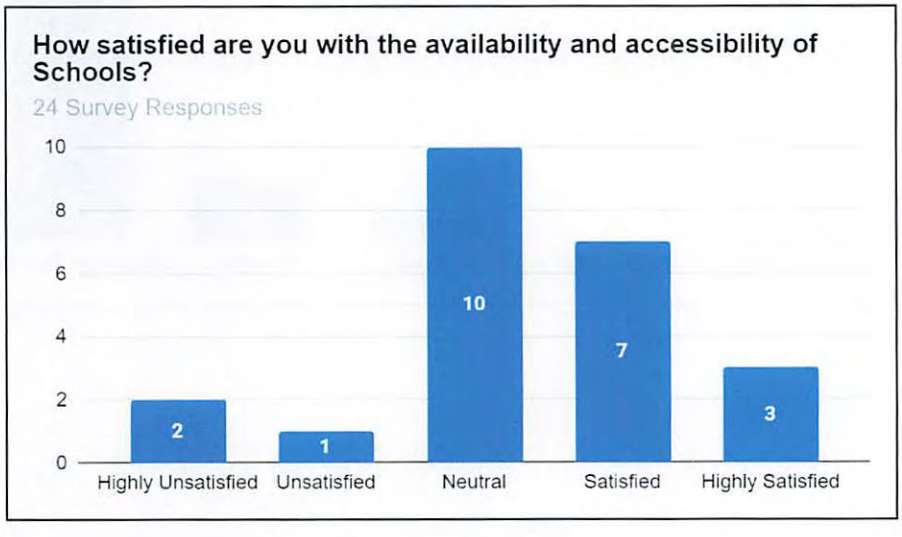

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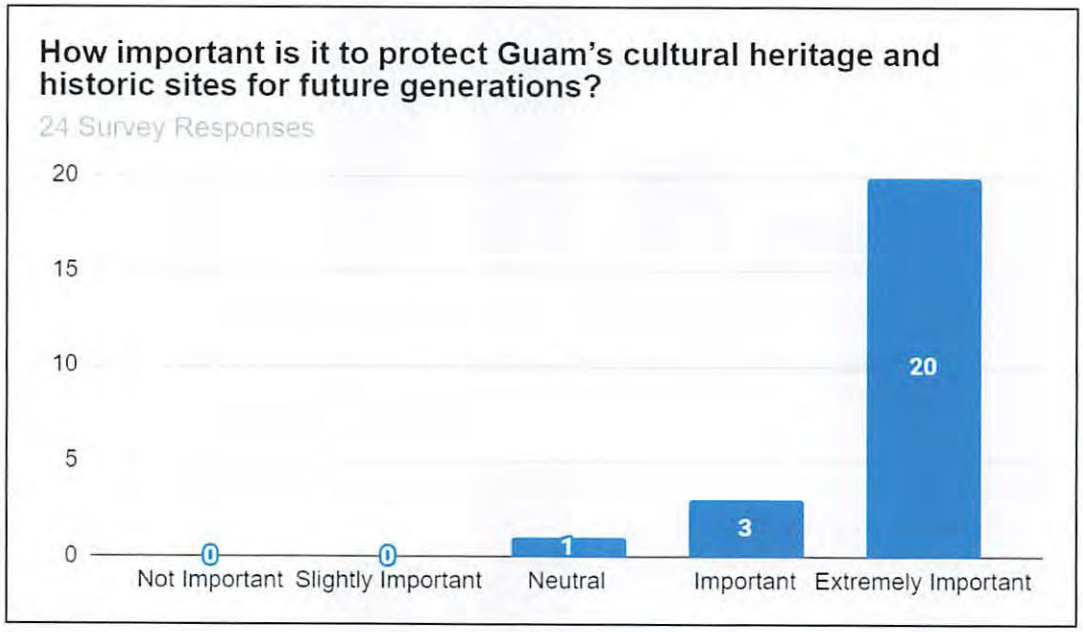
Cultural Heritage and Preservation

- The survey highlighted the importance of preserving Guam's cultural heritage and historic sites:
  - **Importance of Cultural Heritage:** Most respondents felt that protecting Guam's cultural heritage for future generations was extremely important.
  - **Important Cultural Sites:** Key sites mentioned included Talo'fo'fo Falls, Latte Stone sites, Agana area, war memorials, southern villages, Ritidian Preserve, and more.
  - **Satisfaction with Preservation Efforts:** Participants were generally satisfied with current efforts to preserve Guam's cultural identity varied, with some expressing moderate satisfaction (3) and others indicating a need for increased efforts.
  - **Suggestions for Improvement:** Recommendations included more education and community engagement, increased promotion of cultural activities, and better funding for research on historical sites to improve cultural preservation.
- Additionally, the survey results indicate a consensus that lands with historical and cultural significance should be protected and preserved, while other lands can be thoughtfully developed for the benefit of the community. Suggestions regarding use of ancestral lands specifically included creating parks, memorials, museums, educational spaces, and facilities for cultural and recreational activities.



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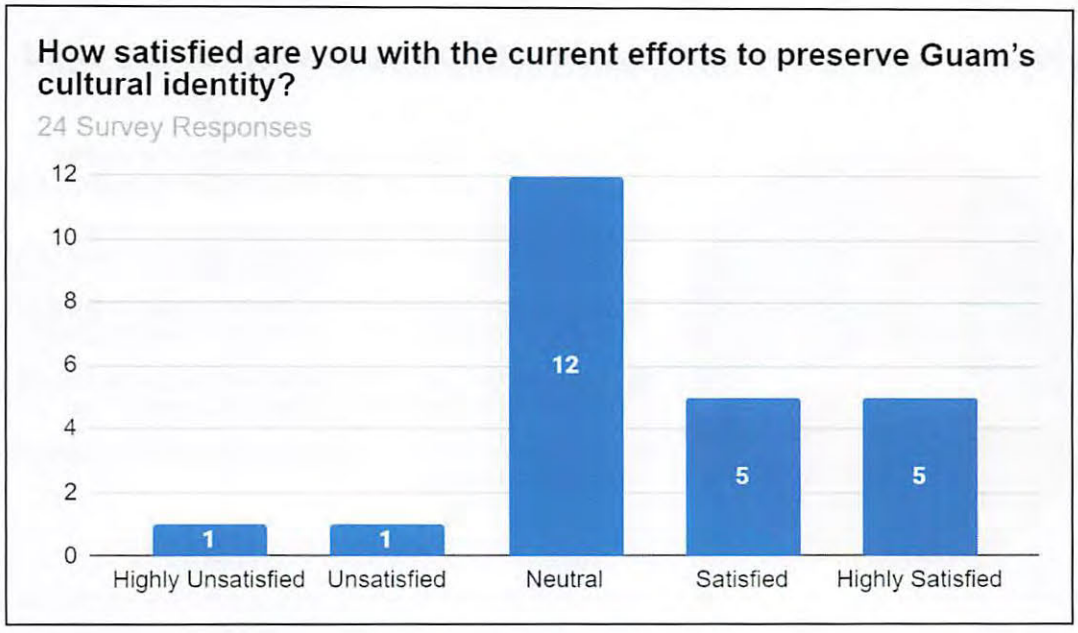
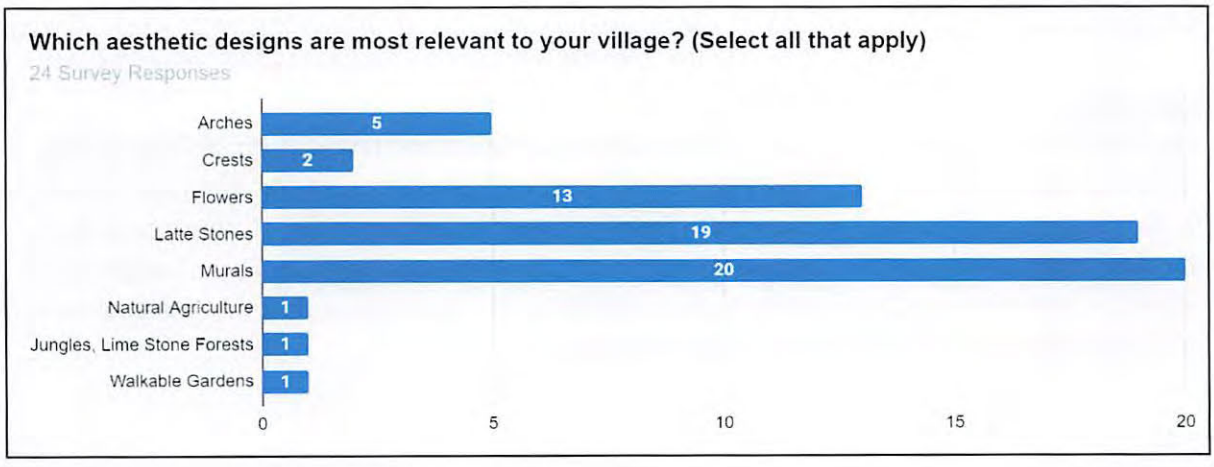


Community Aesthetics and Development

- Regarding views on aesthetic designs, development patterns, and public amenities that could enhance the livability of their villages, aesthetic elements that respondents found popular included flowers, latte stones, murals, and natural agriculture. As for development patterns, opinions varied, with some advocating for mixed-height buildings to support economic growth while minimizing urban sprawl, and others preferring single-story buildings to preserve the traditional village look and feel. That said, most residents conveyed a strong desire for improved recreational amenities available to the public. For example, public gardens, community plazas/centers, parks, seating areas, bike lanes, and more.



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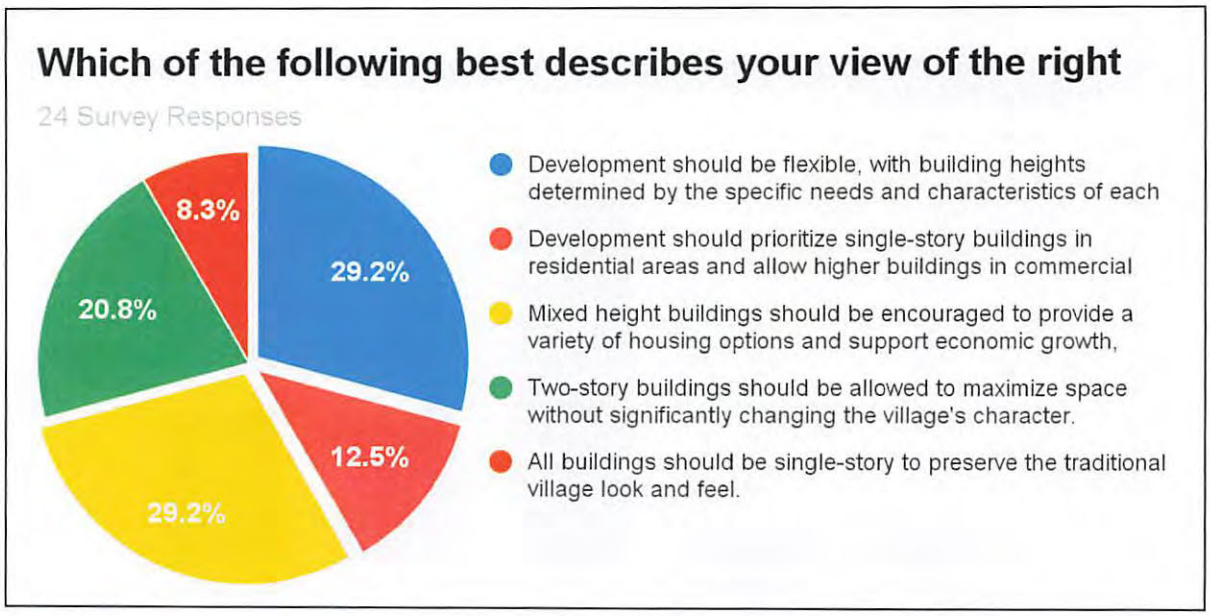

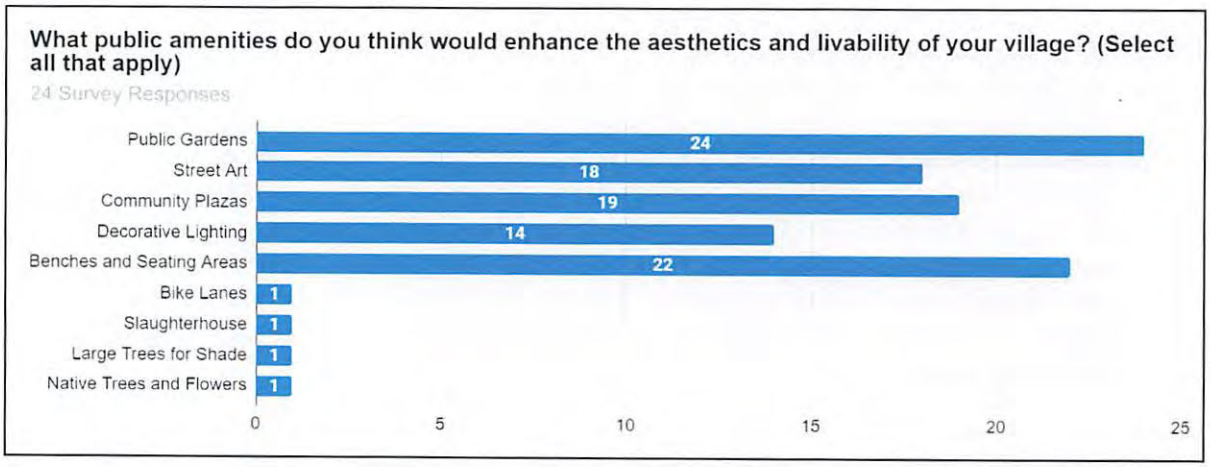

Conclusion

The Vibrant Culture Survey in Guam reveals diverse opinions and levels of satisfaction among residents regarding public facilities, cultural preservation, and community development. While there is a strong emphasis on preserving cultural heritage and improving public amenities, there are also varying views on the best approaches to development and land use. These insights can inform policymakers and community leaders in making decisions that reflect the residents' needs and aspirations for a vibrant and culturally rich Guam.

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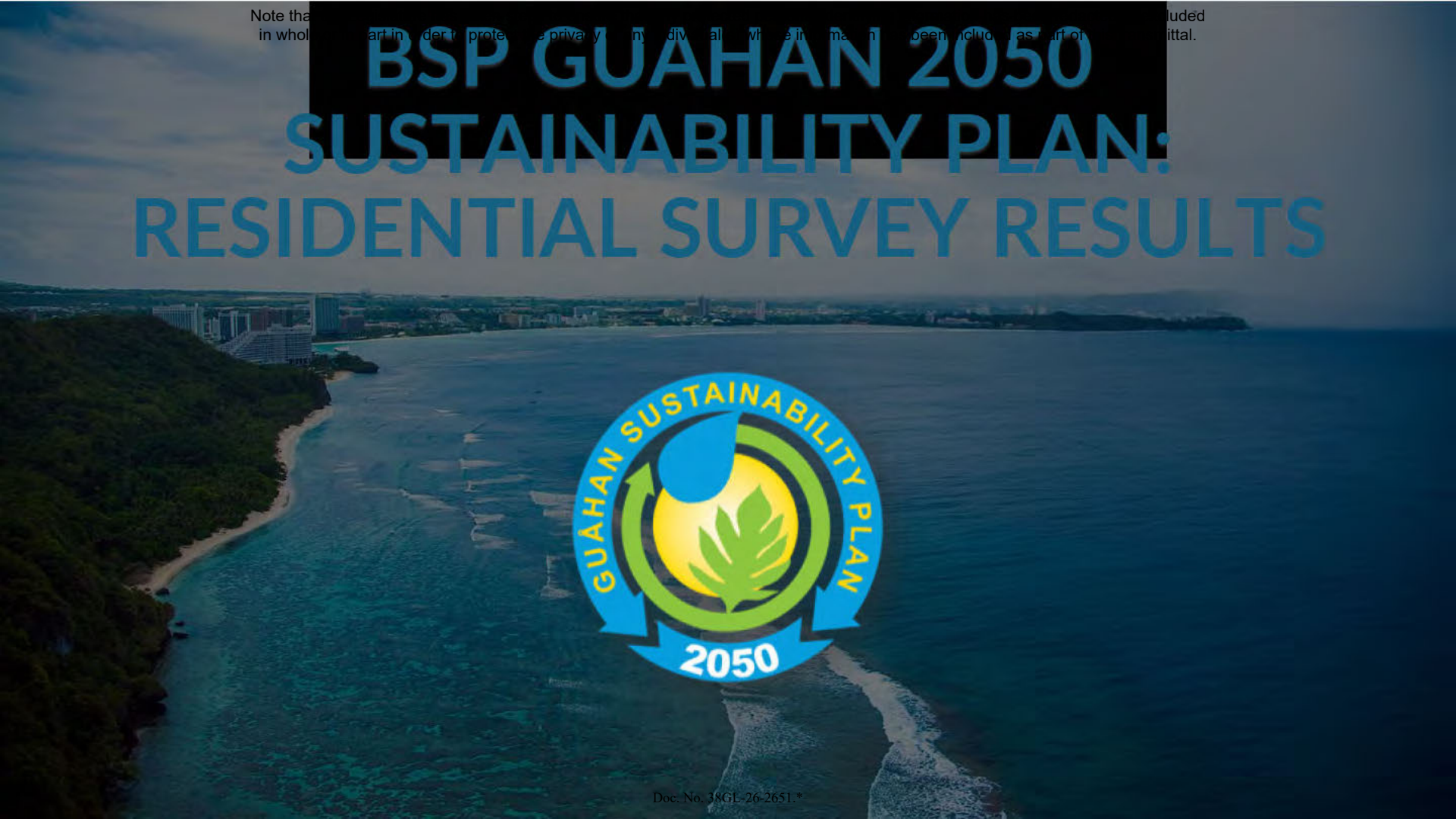
in whol[redacted]art in [redacted]der t[redacted]prote[redacted]e privacy [redacted]ny [redacted]div[redacted]al [redacted]wh[redacted]e in[redacted]ma[redacted]n [redacted]been [redacted]clud[redacted] as [redacted]art of [redacted]ittal.

BSP GUAHAN 2050 SUSTAINABILITY PLAN: RESIDENTIAL SURVEY RESULTS



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BSP QUANTITATIVE ANALYSIS

Purpose:

- Identify resident's attitudes regarding key topics including Guam's environment, culture, economy, and village sustainability. Specifically, how best to balance economic growth with environmental protection, conserve the island's natural resources and culture, and plan for a more prosperous and resilient future. The survey was the final component of a community wide engagement program to support the development of the Guahan 2050 Sustainability plan.

Information Objectives:

- Measure community residents' perspectives on Guam's economy, environment, culture, and village sustainability. The measures were used to guide land use policy recommendations and to establish a vision for development and sustainability.

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METHODS

- **Computer Aided Telephone Interview Phone Survey**
  - Mobile and fixed line telephone numbers were used to randomly collect 702 interviews among adults on Guam over the age of 18 from December 4, 2024 to January 28, 2025.

- **Statistical Representativeness**
  - The sample collected is representative of the demography of Guam as represented in the 2020 U.S. Census of Guam. However, it was necessary to weight the ages of respondents to reflect census data. The results have an accuracy of ±4.35% and can be replicated 95 times out of 100.

- **Conducted by MR&D's calling house in the CNMI**
  - Numbers taken from published and random digit dialed phone numbers

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01 DEMOGRAPHICS

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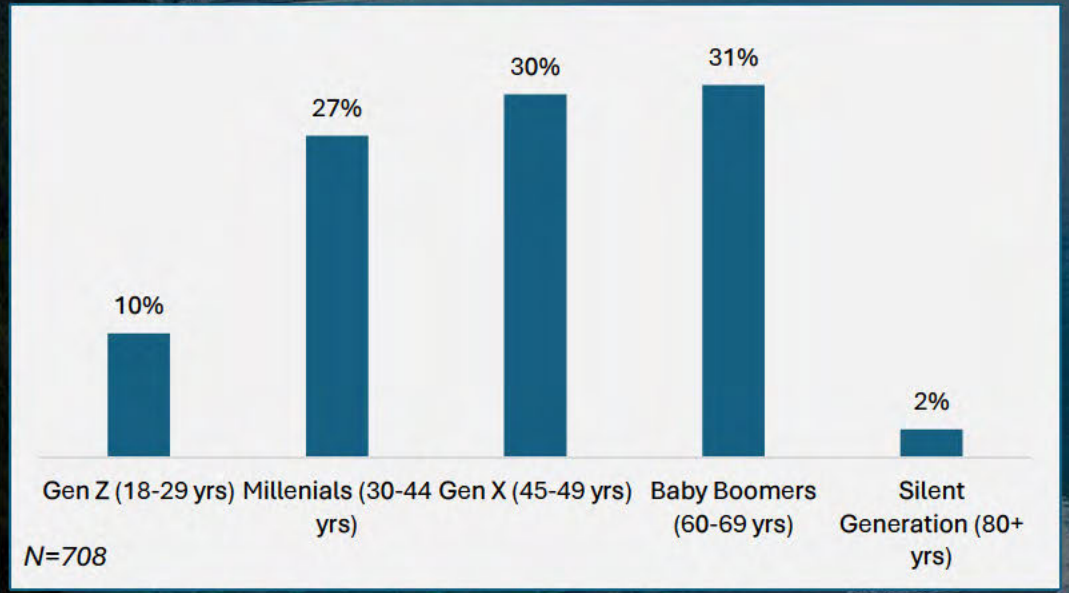
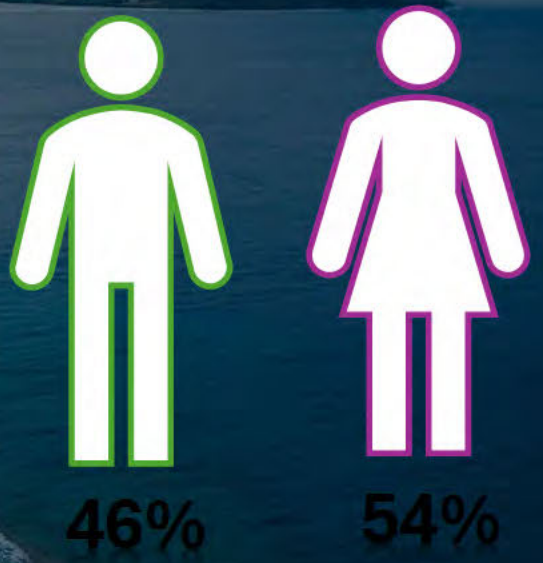
RESPONDENT PROFILE



WEIGHTED AGE



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GENDER

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ETHNICITY



MARITAL STATUS



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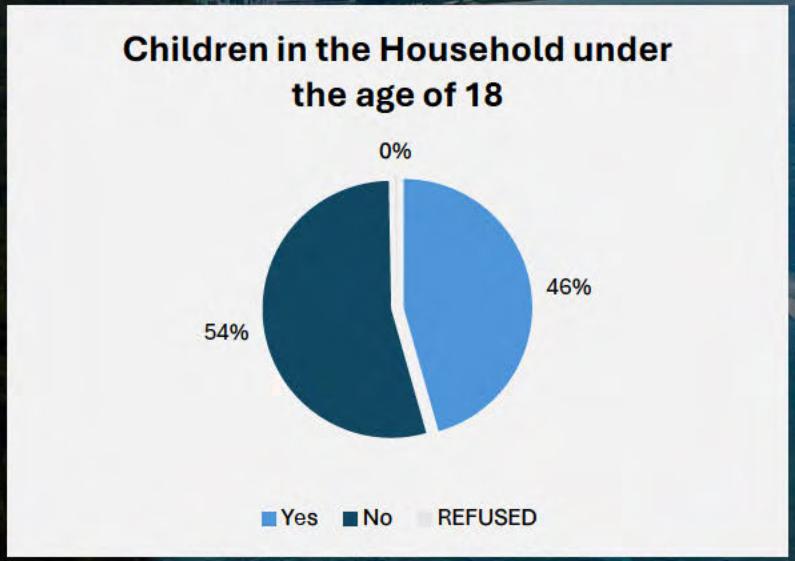
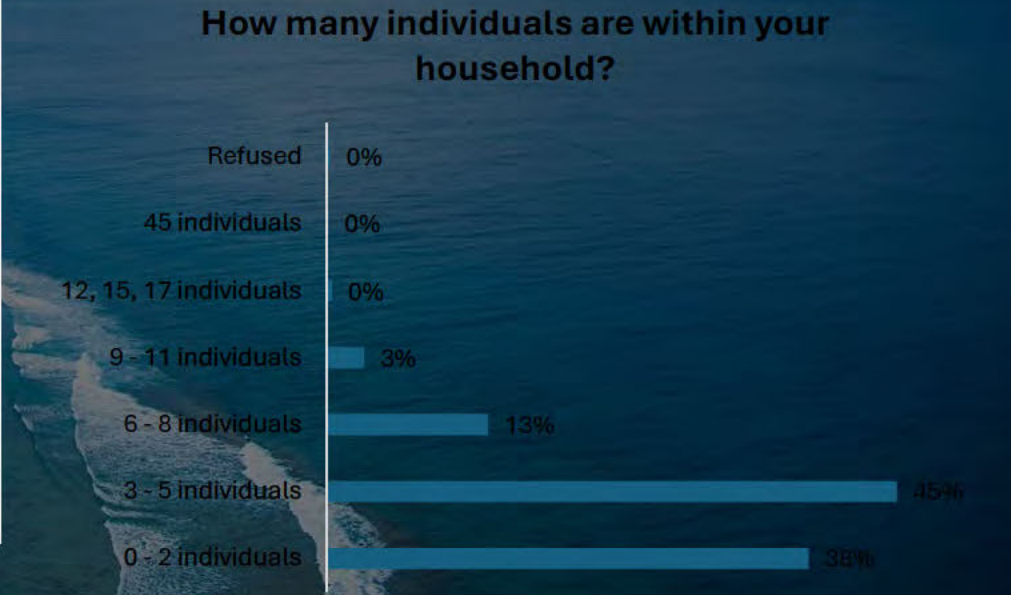
HOUSEHOLD





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EMPLOYMENT & INCOME

Personal Income



Employers and Employment Statuses



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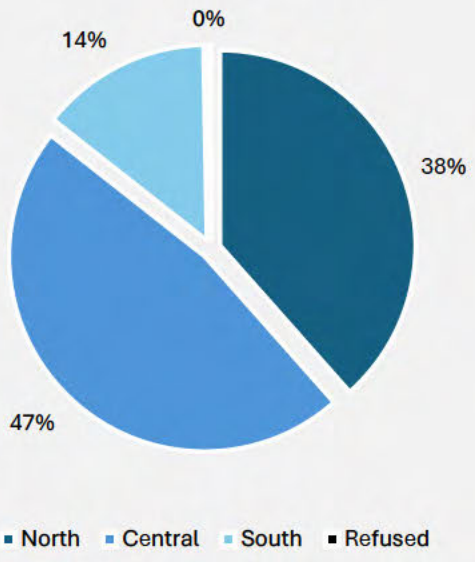
RESIDENCY

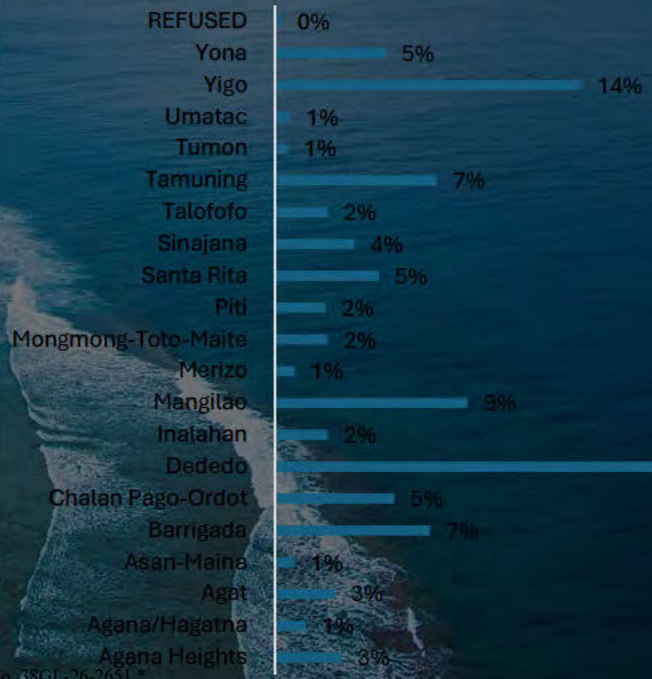
Region of Residence



Note: Regional divisions are based on the Guahan 2050 Sustainability Plan report.

N=702

Village of Residence



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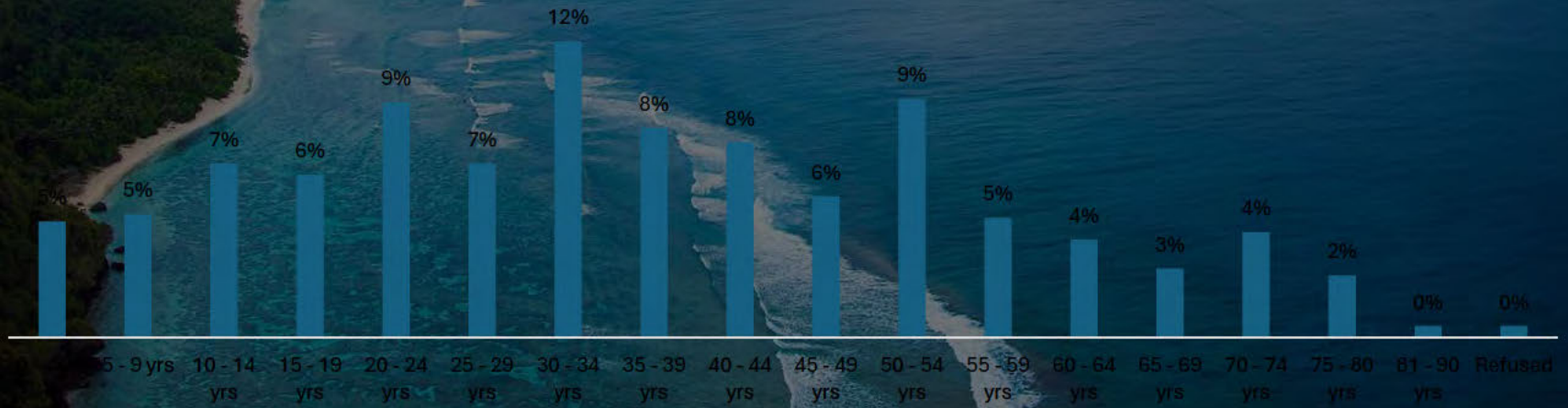
RESIDENCY

Amount of Years Residents Resided in Guam



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ECONOMIC DIRECTION

- A small segment of the respondents (22%) had a positive economic outlook.
- A significant portion (29%) remained neutral or uncertain about the economy.
- Nearly half the respondents (48%) were dissatisfied with Guam's economic direction.



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FUTURE GROWTH & DEV.

- Majority of the respondents (79%) preferred development tailored to the character of their village, which could convey concerns about over-development or loss of local identity.
- There was limited desire (10%) for No Change.
- Nine-percent (9%) of respondents favored replicating the northern and central models of development in Guam.
- Uncertainty regarding Guam's future economic growth and development was low (2%).



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ECONOMIC PROSPERITY

- Among the options, community and social infrastructure development was a priority for most respondents (39%).
- 11% of respondents believed farming and sustainability initiatives would improve their villages economy.
- 13% were content with the status quo.
- There was moderate support (11% respectively) for residential and commercial development, with some respondents specifically mentioning the need for affordable housing.
- Write-in responses indicated:
  - Infrastructure and economic concerns (i.e., fixing roads, improving safety, and reducing crime.)
  - Affordable housing and better business opportunities.



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ECONOMIC AGRICULTURAL ACTIVITIES

- A large majority of the respondents (85%) across all incomes supported having more agricultural initiatives and activities in their village.
- There was strong support for agricultural initiatives across all age groups.
  - Gen Z (91%), Millennial (90%), and Gen X (89%) respondents showed the highest rates of agreement.
  - The highest rates of disagreement were from Silent Generation (17%) and Baby Boomer (10%) respondents.



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OUTMIGRATION FROM GUAM

- 8% of respondents were planning to permanently leave Guam over the next 12 months, and an additional 4% are not are considering leaving but are not sure.
- The three most frequently mentioned reasons why respondents are planning or considering emigration were: Job Opportunities/Higher Income (23%); Cost of Living (22%), and Access to Goods and Services (14%).
  - 56% of Gen Z respondents and slightly less than a third (29%) of Gen X were planning to leave because of the cost of living and job opportunities and better incomes elsewhere.
  - Older individuals (35+ yrs) were more likely (7.5%) to select "Join Family" as a primary reason they are considering leaving





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TOURISM RELATED OPINIONS

- Perceptions on whether there was already too much tourism-related development were divided.
  - Although only a weak-to-moderate statistical association, results indicated retirees (30%) and federal employees (32%) were more likely to agree, while Gov. Guam, private sector, and self-employed individuals are more likely to disagree.
- Most respondents (66%) disagreed that the hotel and tourism industry were fine the way it is.
- Almost all respondents (92%) believed/preferred improving existing hotels than building new ones.
  - Seventy-five percent (75%) of respondents disagreed to building new hotels and retail buildings.
- Seventy-seven percent (77%) of respondents' supported building more tourist attractions and optional tours for tourists.
  - Highest incidence of agreement was seen among the 40-59 yr age group.
  - Younger groups (20-29 yrs) were more likely to disagree.

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TOURISM RELATED OPINIONS

Residents Agreed or Disagreed with the following statements



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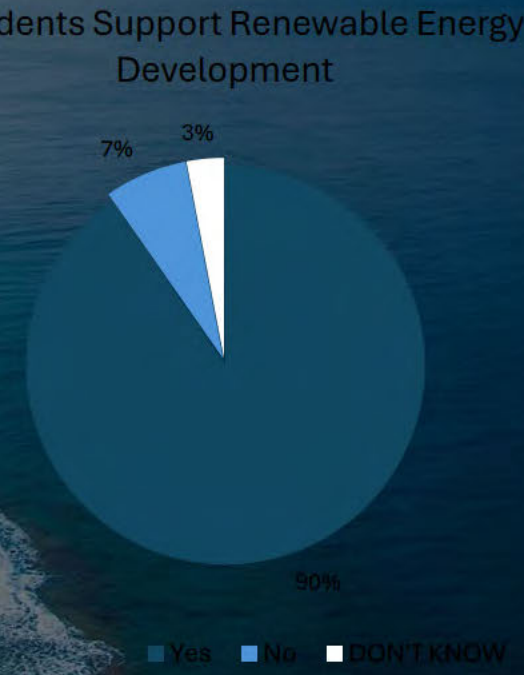
RENEWABLE ENERGY DEV.

- 90% of respondents supported renewable energy development in their village.



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KEY OBSERVATIONS

Satisfaction with Guam's Economy

- Economic planning should prioritize balanced, village-specific growth rather than a one-size-fits-all approach.
- Development efforts should respect village identity and cultural integrity while promoting economic opportunities.
- There is low resistance to change, but residents preferred thoughtful, localized expansion rather than widespread urbanization.

Views of Future Economic Growth and Development in Guam

- The high level of dissatisfaction with the direction of the economy is associated with concerns about the cost of living, the lack of job opportunities, and poor business conditions, specifically in the tourism sector.
- Improvement of these conditions will be necessary to restore public confidence that the economy is headed in the right direction.
- The low percentage of respondents satisfied with the status quo signals a desire for change.

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KEY OBSERVATIONS

Improving Economic Prosperity in Villages

- Respondents preferred investments in community and social infrastructure as they are seen as key to economic prosperity. Agricultural development and activities in the villages were also popular.
- Respondents believed community farming are desirable and should be incorporated in village land use planning.

Emigration

- Slightly more than one in ten (12%) of respondents indicated that they are planning or considering relocating. What is most important about the probable out migration was that most were GEN Z and GEN X residents. The youngest cohorts of the workforce are considering to leave because of the lack job opportunities and cost of living.

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KEY OBSERVATIONS

Tourism and Development in Guam

- Respondents preferred upgrading existing hotels rather than building new ones. At the same time, building new attractions and experiences, was supported.
- Overall, residents may be concerned about the continued urbanization of the island, preferring that what is remembered as the character of Guam be preserved. Growth within tourism in ways that exhibit the ambiance and culture of Guam were preferred over intense capital investment in hotels and shopping centers.

Renewable Energy Development in Guam

- Respondents were overwhelmingly in favor of renewable energy. Their interest was likely because of cost savings but also it is in line with their expressed desires for the preservation of conservation areas and the importance of climate change.

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KEY OBSERVATIONS

Tourism and Development in Guam

- Investment should focus on upgrading existing hotels rather than new construction, aligning with public preference.
- Tourism diversification, such as attractions and experiences, is strongly supported, indicating opportunities for eco-tourism, cultural tourism, and adventure tourism.
- Concerns about overdevelopment may need to be addressed, balancing economic benefits with community concerns about infrastructure and environmental impact. Skepticism about additional hotels and retail suggests a need for strategic planning, ensuring tourism growth aligns with local needs and sustainability.

Renewable Energy Development in Guam

- Strong public support presents an opportunity for policymakers to accelerate renewable energy initiatives without major pushback. Investments in solar, wind, and other renewable energy sources are likely to be well-received, potentially reducing dependence on imported fossil fuels. Public outreach and education can focus on addressing any lingering concerns, particularly among the undecided (3%) and opposed (7%).
- Alignment with global sustainability trends and potential economic benefits, such as job creation in the renewable energy sector, can be leveraged to gain further support.

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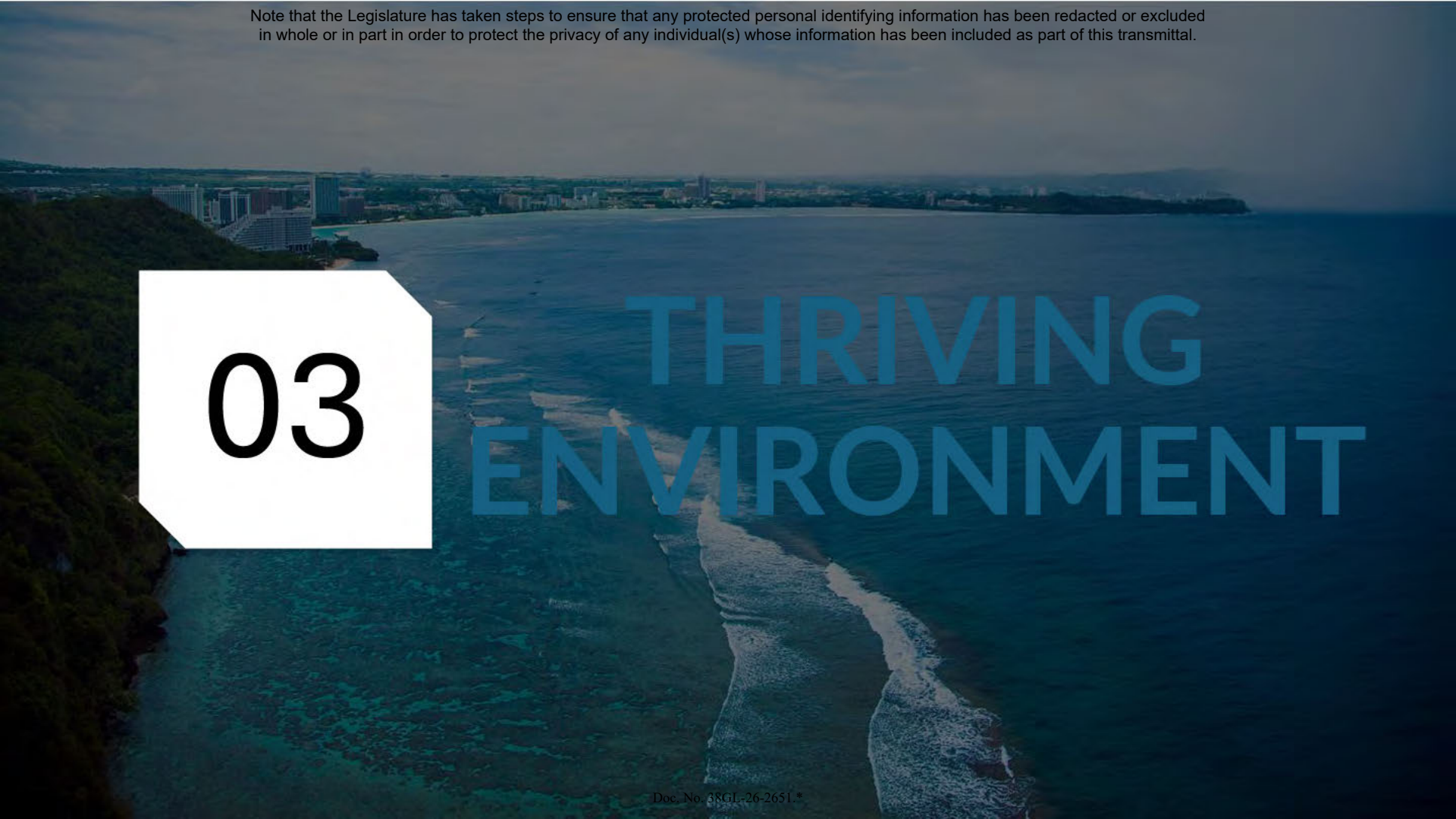

03

THRIVING ENVIRONMENT

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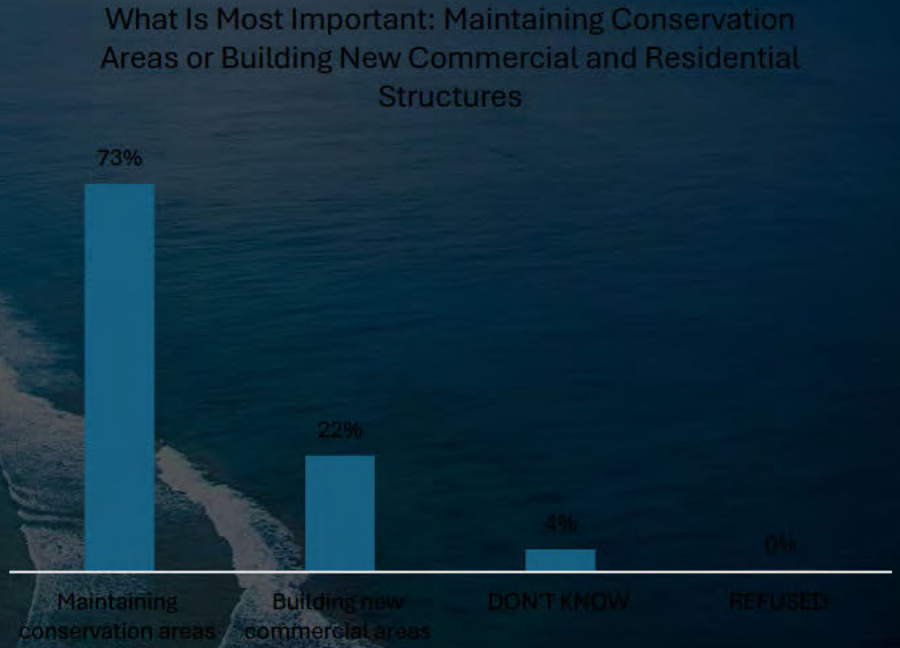
CONSERVATION VS. DEVELOPMENT

73% of respondents considered preserving conservation areas to be a priority over building new commercial and residential structures.



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SCENIC BEAUTY VS. HOUSING



- A significant majority (78%) prioritized protecting Guam's scenic beauty over housing related development.
- Females (81%) were more likely than males (74%) to prefer environmental conservation.
- Twenty-percent (20%) of males were more likely to support commercial and housing development compared to sixteen-percent (16%) of females.

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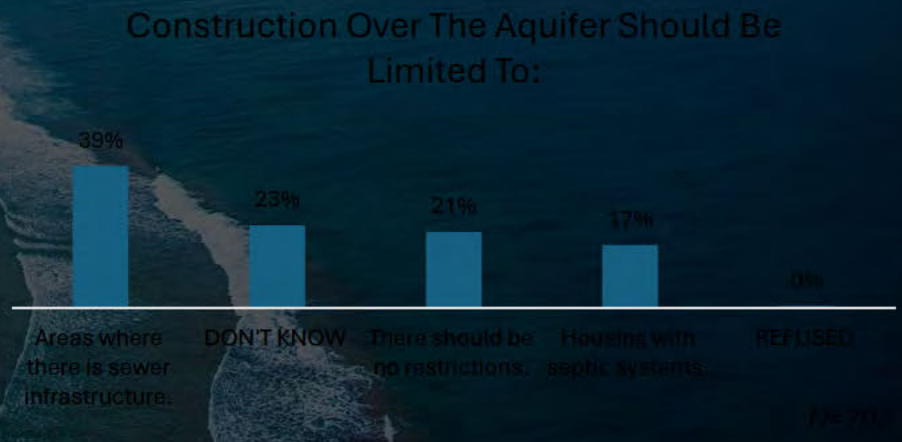
DEVELOPMENT OVER THE AQUIFER

- Seventy-two percent (72%) of respondents believed the development over the aquifer should be limited.
- A significant proportion of respondents believed some form of construction restriction over the aquifer (56%).
  - Twenty-three percent (23%) indicated uncertainty.
  - Twenty-one percent (21%) of respondents did not think restrictions were necessary.





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CONSERVATION VS. AGRICULTURE

- Protection/conservation of natural resources was a priority for majority of the respondents (57%).
- A notable portion of respondents (34%) indicated that they thought conservation areas should be used for agriculture.



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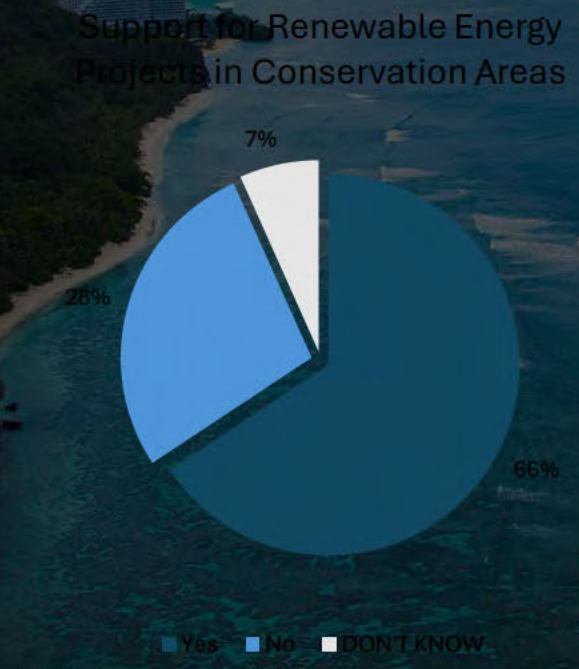
RENEWABLE ENERGY SUPPORT



Sixty-six percent (66%) of respondents believed there should be renewable energy projects (e.g., solar and wind farms) constructed in conservation areas.

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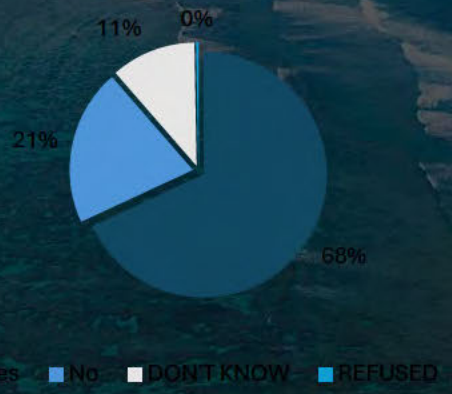
SEA LEVEL RISE & COASTAL DEV.

Sea level rise in Guam is becoming an issue in coastal areas of the island. Residents decide if they feel that further development in coastal areas should be restricted



N=703

- The majority (68%) believed development in coastal areas should be restricted due to sea level rise.

Statistical analysis show:

- Gender had some influence on opinions.
  - Females (56.6%) were more likely to support restrictions.
  - Males (56.9%) were more likely to disagree.
- Region of Residence had a modest association:
  - Central residents (48%) were most likely to support restrictions.
  - Northern residents (42%) were most likely to disagree with restricting development.

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KEY OBSERVATIONS

Protection of Natural Resources

- Respondent favored environmental conservation over development including housing development. There is support for allowing agriculture within conservation areas. Regardless, the preservation of conservation areas was a priority for those surveyed.

Protecting Scenic Beauty vs. Development

- Respondents strongly favored conservation of Guam's scenic beauty over development, be it for housing or commercial purposes.

Development Over the Aquifer

- Nearly three quarters of respondents felt there should be restrictions of development over the northern aquafer. Respondents were less sure about what sort of restrictions should exist. While a plurality (39%) believed that development over the aquifer should be restricted to areas with sewer, some 44% felt there should be no restrictions (21%) or were not sure there should be any restrictions (23%). Only 17% support the current regulation of allowing septic systems over the aquifer.

The Environment

- About two thirds of respondents supported the location of renewable energy projects in conservation areas. An equal proportion expressed concern over sea level rise and felt important that coastal area development should be restricted.

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04

VIBRANT CULTURE & SOCIETY

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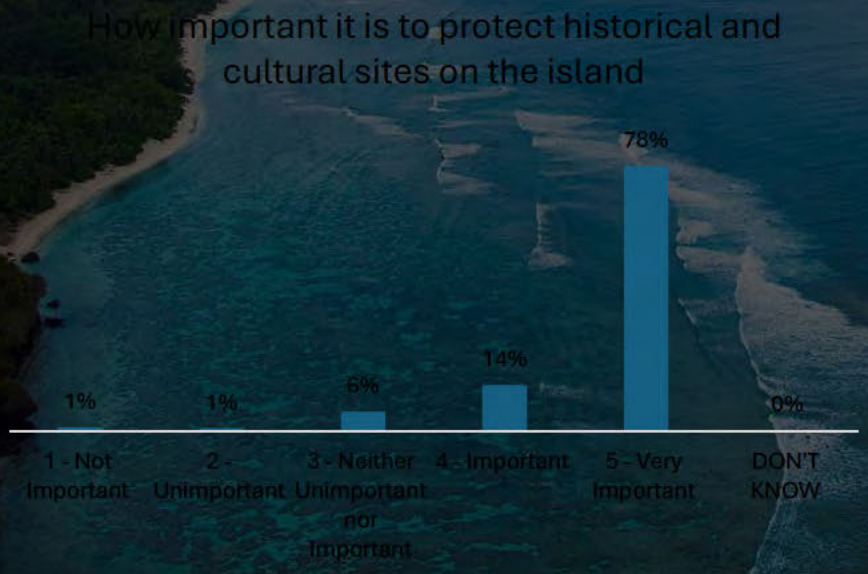
HISTORICAL & CULTURAL SITE PROTECTION



- Majority of respondents (78%) thought historical and cultural site protection is very important.

A weak yet statistically significant relationship between income level and historical and cultural site protection existed.

- 47% of higher-income respondents ($70k+) completely disagreed that protection is important.
- 37% of middle-income respondents ($30k-$69k) supported protection.
- 24% of lower-income respondents (<$30k) had mixed views but were less likely to completely disagree with protecting sites.

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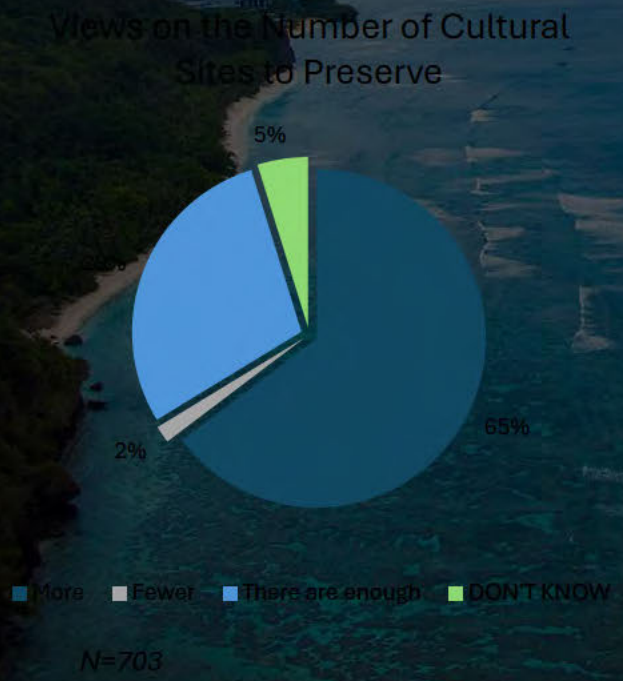
CULTURAL SITES



- 65% of respondents thought more cultural sites should be preserved.
- 29% believed there are enough that are already preserved.
- A minority (2%) believed fewer sites should be preserved.

Statistically, income range showed a weak but significant relationship.

- Across all income ranges, majority of respondents believed more cultural sites should be preserved:
  - 73% of those earning less $30,000
  - 65% of those earning $30,000-$69,000
  - 64% of those earning $70,000 or above

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KEY OBSERVATIONS

Protecting Historical and Cultural Sites

- Protecting historical and cultural sites is important to the community - 92% believe it to be important and only 2% do not.

Cultural Sites Preservation

- A clear majority (65%) favors expanding the number of cultural sites,. Less than a third (29%) disagree.

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05

VILLAGE SUSTAINABILITY

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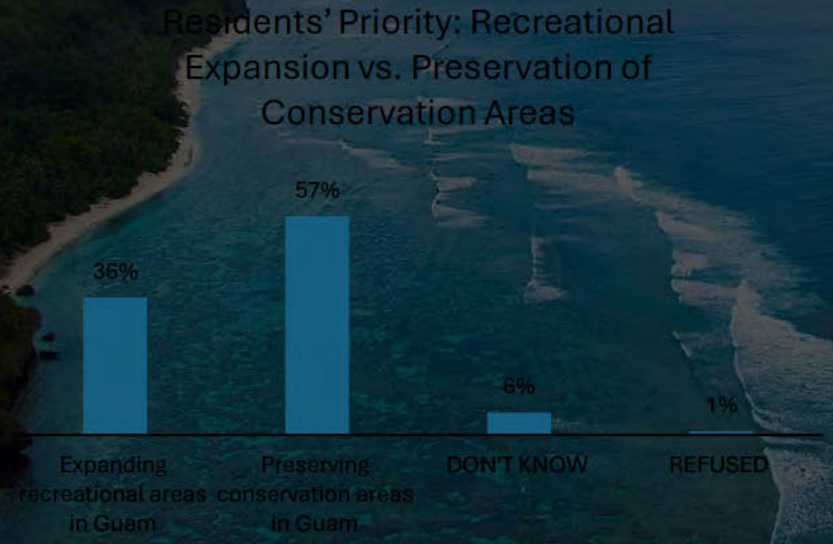
RECREATIONAL EXPANSION VS. PRESERVATION



More than half (57%) of respondents would rather preserve conservations in Guam than expand recreational areas.

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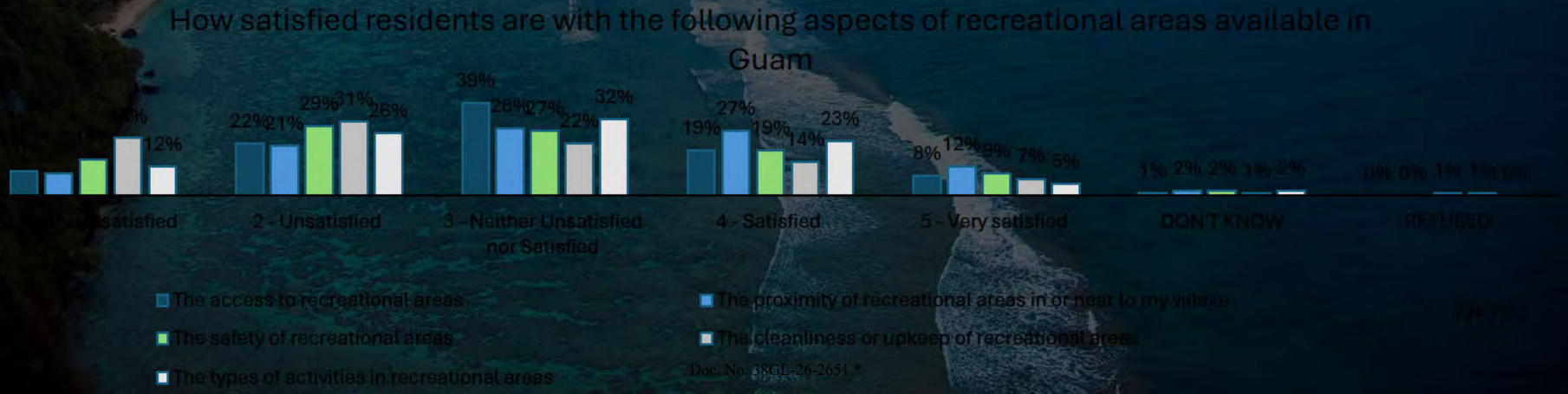
RECREATIONAL AREAS

Access and Proximity:
- Generally seen positively (39%)
- A significant portion of respondents were dissatisfied (30%).

Safety and Cleanliness:
- Majority of respondents were dissatisfied with both safety (44%) and cleanliness (55%).

Activities:
- A moderate number (38%) of respondents indicated dissatisfaction with types of recreational activities available.



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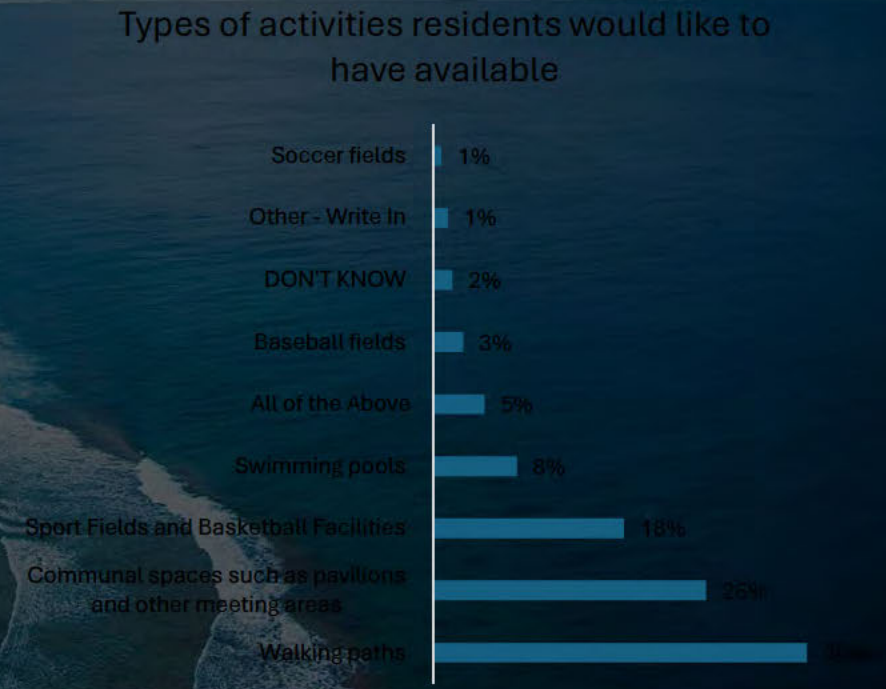
RECREATIONAL ACTIVITIES

A plurality of respondents (36%) would like to see more walking paths in recreational areas.

26% would like more pavilions and communal meeting areas for social gatherings.

22% wanted more sports facilities and fields.



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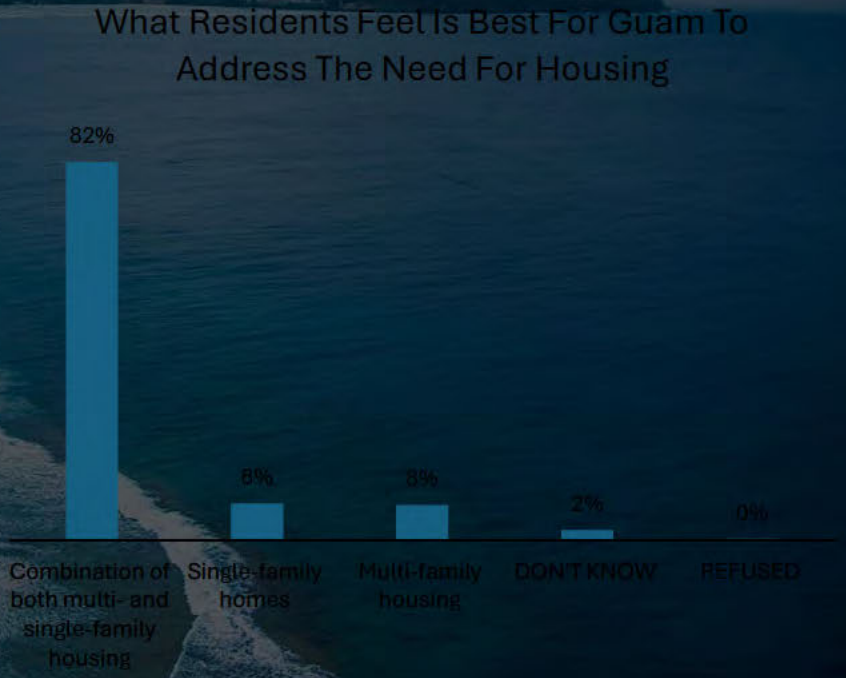
HOUSING NEEDS

- Majority of respondents (82%) believed a combination of both multi-family and single-family housing is the best approach to address Guam's housing needs.
- Only 8% preferred single-family homes, and another 8% support multi-family housing exclusively.



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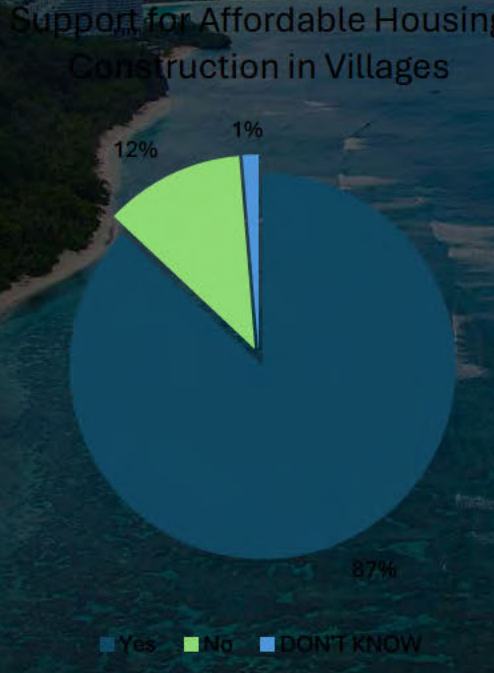
AFFORDABLE HOUSING



- A strong majority (87%) of respondents supported the construction of affordable housing in their village, while 12% oppose it.
  - Micronesians were the most interested in affordable housing by 14% over Caucasians and 10% over Filipinos and Chamorros

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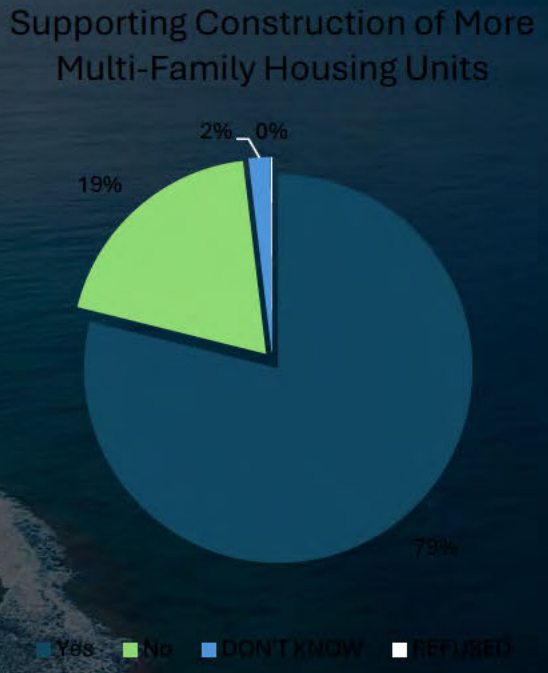
MULTI-FAMILY HOUSING

- The majority (79%) of respondents supported the construction of more multi-family housing units in their village, while 19% oppose it.
  - Support is high across all income levels, but highest support (84.9%) is among those earning less than $30,000.
  - Opposition to multi-family housing increased with income.



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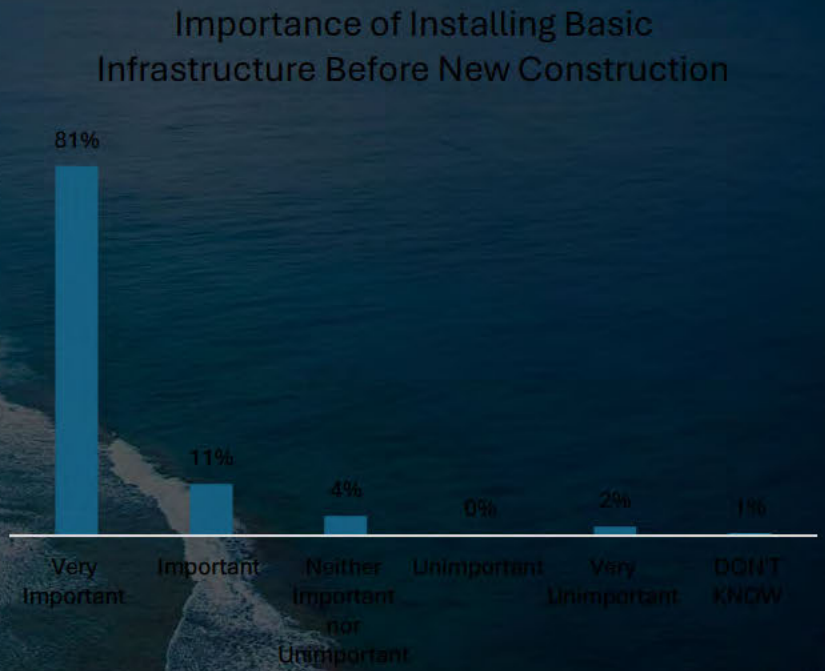
INFRASTRUCTURE

Nearly all (92%) of the respondents believed it is important to have basic infrastructure (water, power, sewer, and roads) installed before completing new residential and commercial construction, with 81% saying it was *very important* and 11% saying it is *important*.



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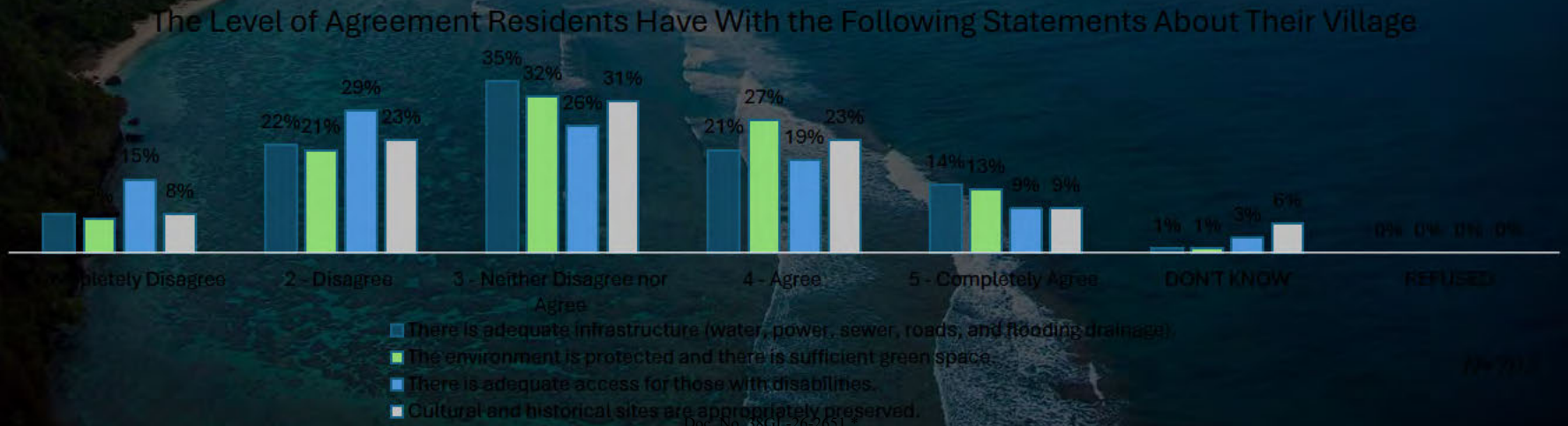
VILLAGE PERCEPTIONS

- **Infrastructure Adequacy:** 35% of respondents were neutral about the adequacy of infrastructure (water, power, sewer, roads, and drainage), while 30% disagreed, and 35% agreed.
- **Environmental Protection & Green Space:** 40% agreed that the environment was protected and there was sufficient green space, while 28% disagreed, and 32% were neutral.
- **Disability Access:** 44% disagree that there was adequate access for those with disabilities, while only 28% agreed, and 26% were neutral.
- **Cultural & Historical Site Preservation:** Views were split, with 32% agreeing that sites were appropriately preserved, 31% neutral, and 31% disagreeing.



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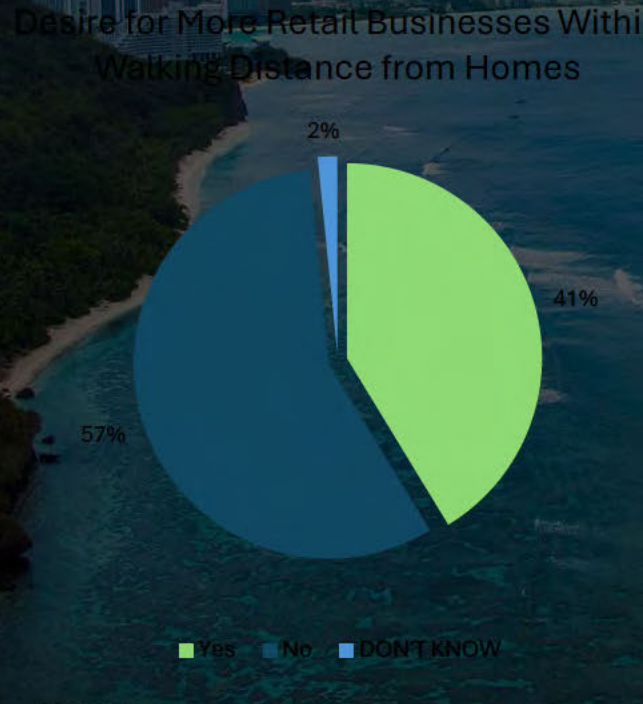
RETAIL BUSINESSES



More than half (57%) of respondents did not want more retail businesses within walking distance from their home, while 41% supported the idea.

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KEY OBSERVATIONS

Priorities for Guam

- Preserving conservation areas was the clear priority for the majority, emphasizing the importance of maintaining natural landscapes and biodiversity.
- While recreational areas are also valued, the fact that a significantly larger portion favors conservation suggests a general preference for environmental protection over development.

Satisfaction with Recreational Areas

- Access to and safety in recreational areas are areas of concern for many respondents, with significant dissatisfaction reported for both.
- The cleanliness and upkeep of recreational areas shows the highest levels of dissatisfaction. There was significant dissatisfaction regarding the activities offered.
- Respondents indicated a need to improve safety, maintenance, and access to recreational areas to improve public satisfaction.

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KEY OBSERVATIONS

Desired Activities in Recreational Areas

- Walking paths and communal spaces were the top priorities for recreational area activities. There was also support for sports-related facilities like basketball courts, but swimming pools and specific fields (baseball, soccer) were desired.
- Respondents preferred diverse recreational options with a focus on walking, community gatherings, and physical activity spaces.

Housing Preferences for Guam

- Diverse housing options (combining both multi-family and single-family) were the preferred approach to addressing Guam's housing needs.

Support for Affordable Housing in Guam

- There was near universal support (87%) for the development of affordable housing.
- There is also broad support (79%) for multi-family housing.

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Importance of Basic Infrastructure

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Infrastructure, Environment, and Accessibility

- Respondents were divided on opinions of whether the existing infrastructure was adequate for their village, or if the environment was sufficiently protected, or if there was sufficient green space provided.
- Respondents were also split on whether there is adequate access to facilities for the disabled and if there are sufficient numbers of historical and cultural sites.

Retail Businesses Within Walking Distance

- A majority of respondents (57%) did not express a desire to have more businesses within walking distance of their home or village, while 41% indicated that they did.

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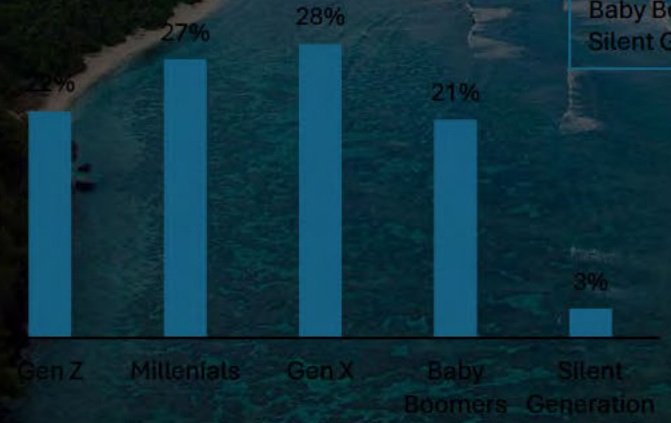
AGE COMPARISON

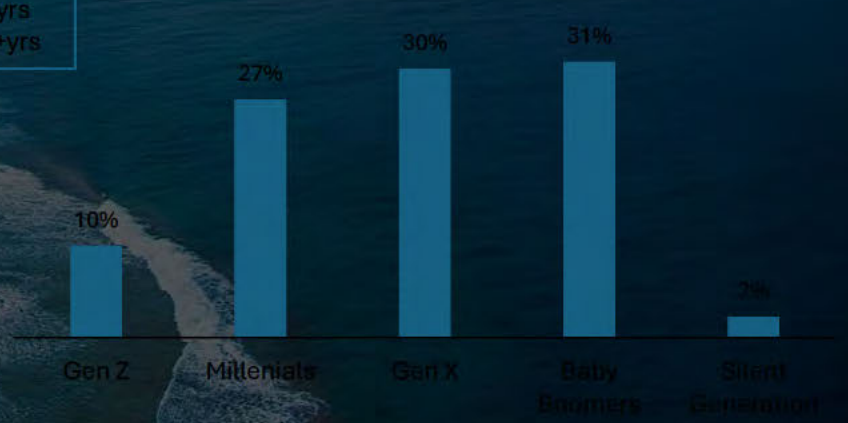
The survey showed a noticeable overrepresentation of Baby Boomers and underrepresentation of Gen Z compared to the Guam Census 2020. Weights corresponding the census data were used to compensate for this differential representation.

Gen Z: 18-29yrs
Millennials: 30-44yrs
Gen X: 45-49yrs
Baby Boomers: 60-69yrs
Silent Generation: 80+yrs

Census



Survey (Weighted)



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GENDER COMPARISON

The survey showed a shift in gender representation, with females being overrepresented by 5 percentage points and males being underrepresented by 5 percentage points compared to the census data.



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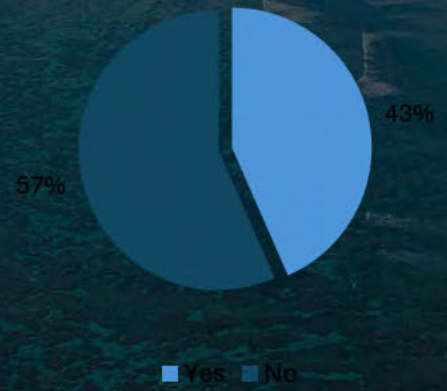
CHILDREN UNDER 18 COMPARISON

The survey data aligned closely with the census, showing only minor differences. The survey had a slightly higher proportion of households reporting children under 18 and a correspondingly smaller proportion without children under 18.

Census



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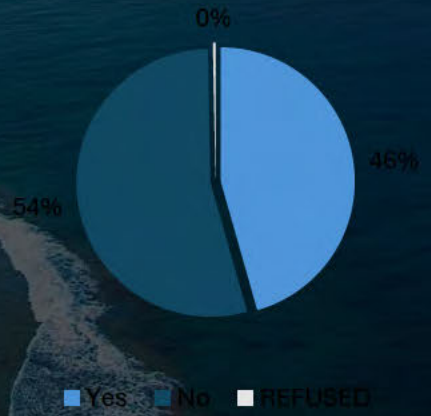
Survey



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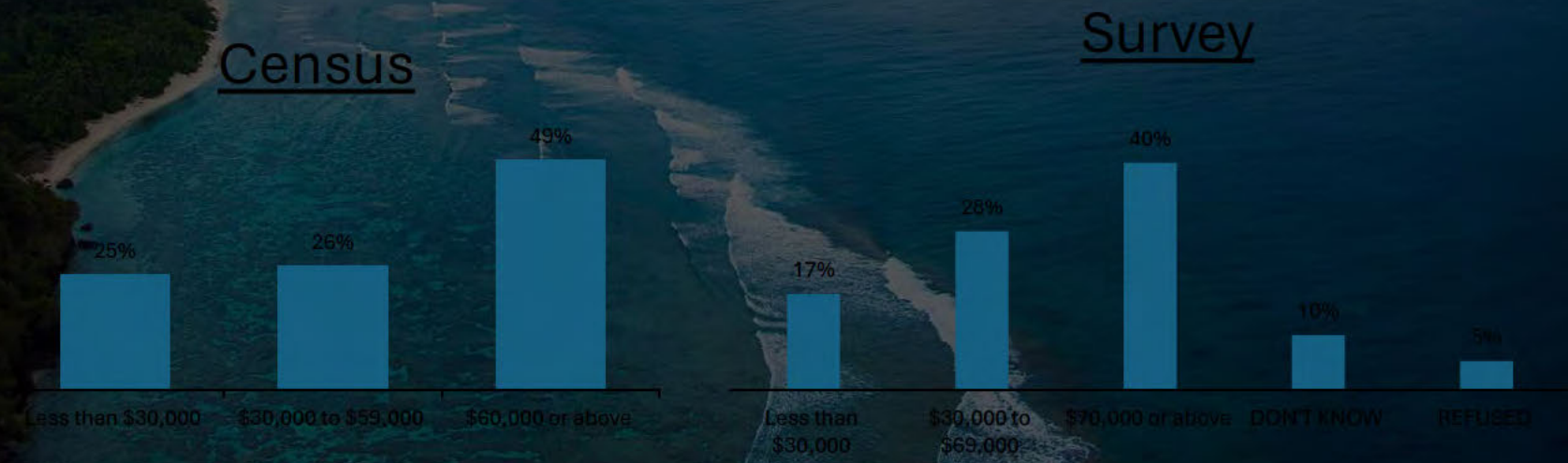
INCOME COMPARISON

Low-Income Range: Survey data showed a significantly higher percentage (17%) of respondents reported income under $30,000 compared to the census (7%).

Middle-Income Range: The survey defined this range as $30,000 to $69,000, while the census defined it as $30,000 to $59,000. Survey data reported (28%), while the census reported only (7%) in this range.

High-Income Range: Survey respondents reported $70,000 or more make up (40%), much higher than the (13%) in the census ($60,000 or above).



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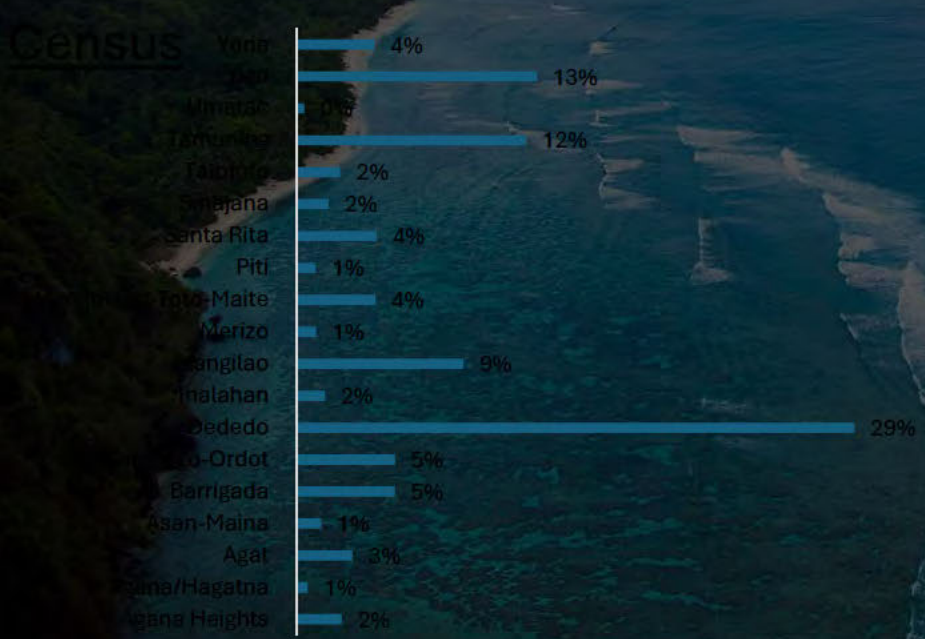
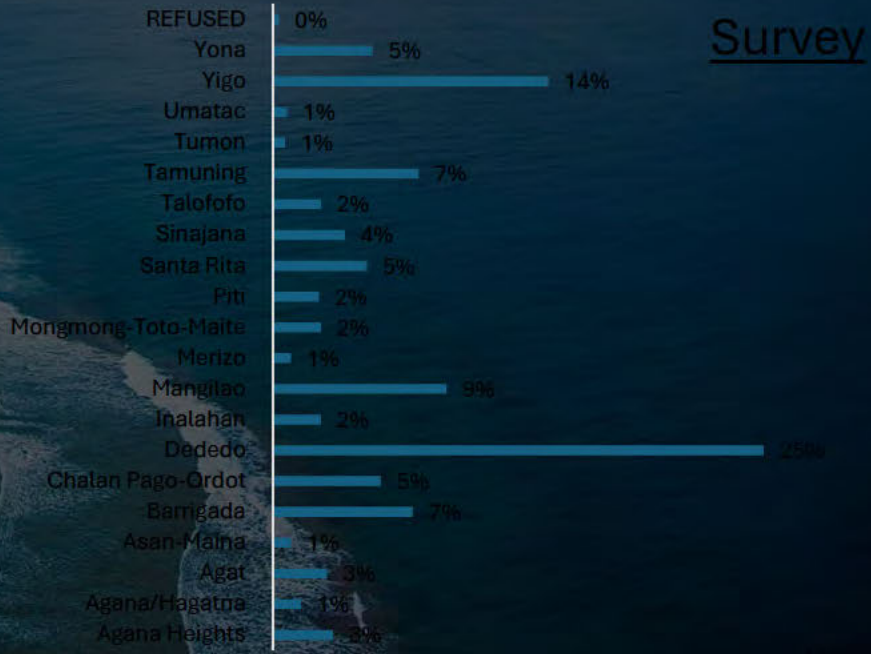
RESIDENCY COMPARISON

High Representation: Dededo was the largest proportion in both datasets but showed a 4% lower representation in the survey. Yigo had similar high representation, with a 1% higher representation in the survey.

Differences: Notable decreases in the survey for Tamuning (-5%) and Mongmong-Toto-Maite (-2%). Slight increases for Barrigada (+2%), Sinajana (+2%), and Santa Rita (+1%).

Unique Categories: Tumon appeared in the survey but not in the census data.





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ETHNICITY COMPARISON

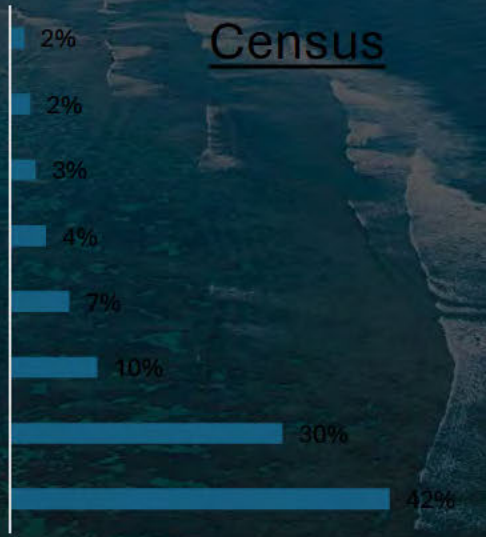
Chamorro/Native Hawaiian & Pacific Islander: The Census reported (42%) as Native Hawaiian and Other Pacific Islanders, while the survey specifically identified Chamorro as (49%).

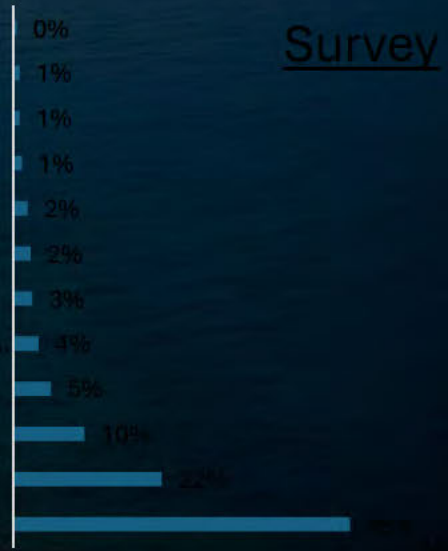
Filipino & Asian Population: The Census reported (30%) as Asian (Filipino and Korean), while the survey identified Filipino at (22%).

White/Caucasian: Both datasets reported a similar percentage of White respondents (Census: 7%, Survey: 10%).

Micronesian & Pacific Islanders: The survey reported Micronesian at (5%) and Pacific Islander at (3%), while the Census grouped these under Other Native Hawaiian & Pacific Islanders (2%).

Multiracial Population: The Census stated (10%) identify as Two or More Races, while the survey broke this down into Chamorro Mixed (2%), Filipino Mixed (2%), and Asian Mixed (1%).





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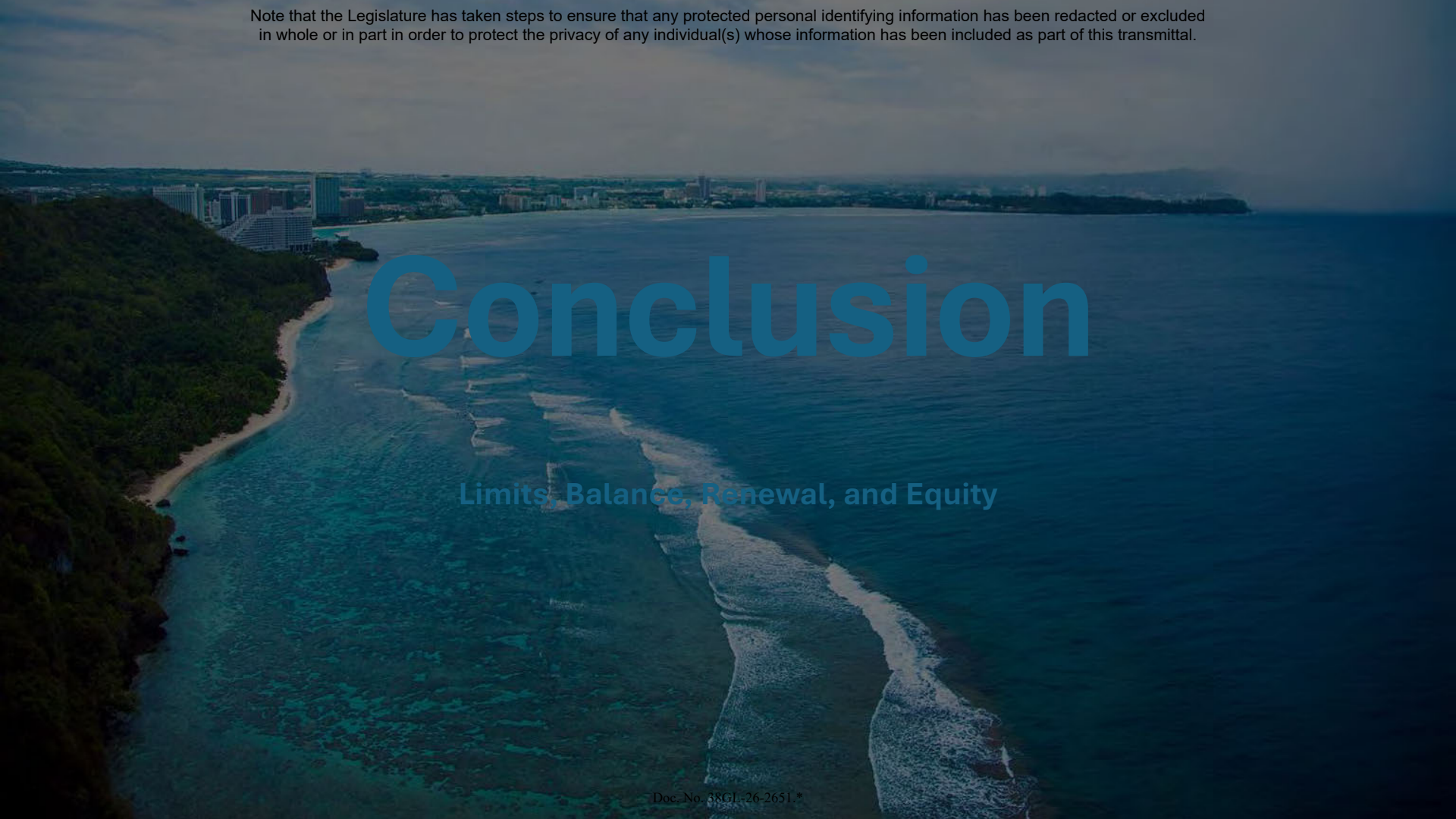

Conclusion

Limits, Balance, Renewal, and Equity

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LIMITS

Development Over Sensitive Areas
- The majority supported restrictions on development over the aquifer (72%) and coastal areas (68%) due to environmental concerns like water safety and sea level rise.

Tourism Growth
- 75% opposed new hotels and retail buildings, preferring improvements to existing tourism infrastructure (92%)

Conservation Priority
- 73% prioritized conservation over new commercial and residential structures, with a similar sentiment (57%) for protecting conservation areas over expanding recreational spaces.

Scenic Beauty
- 78% prioritized protecting Guam's natural beauty over housing development.

Historical and Cultural Preservation
- Across all income levels, 78% strongly supported protecting historic and cultural sites, though statistically ~47% of wealthier respondents ($70k+) are less likely to support it.

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BALANCE

Economic Growth vs. Environment
- While nearly half (48%) were dissatisfied with Guam's economic direction, most (79%) prefer development tailored to their village's character, indicating a desire for growth without overdevelopment.

Agriculture vs. Conservation
- 63% prioritized conservation, while 34% believed conservation areas should be used for agriculture, showing a divide in land use perspectives.

Tourism vs. Community Needs
- While most opposed new hotels, 77% favored adding more attractions and optional tours, indicating support for a tourism model that enhances visitor experience rather than increasing commercial development.

Housing Types
- 82% supported a mix of single- and multi-family homes, suggesting an effort to balance affordability with community preferences.

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RENEWAL

Renewable Energy
- 90% supported renewable energy projects in their village, with 66% approving placement of such projects in conservation areas.

Infrastructure First
- 92% believed basic infrastructure (i.e., water, power, sewer, and roads) must be in place before further development and/or construction in any given area.

Community Improvements
- Respondents prioritized infrastructure and social development (39%), including housing (87%) and better business opportunities.

Agricultural Growth
- The strong support (85%) expressed for agricultural initiatives may suggest the need for food security, but it also may have represented a nostalgia for Guam's past rural agricultural nature.

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EQUITY

Housing Affordability
- 87% supported affordable housing.

Multi-Family Housing
- 79% supported multi-family housing development, with lower-income respondents (<$30k) showing the highest support (84.9%).

Outmigration & Cost of Living
- The vast majority (88%) did not plan to leave Guam in the next 12 months. However, among those considering outmigration, younger generations—particularly Gen Z (56%)—statistically cited cost of living as their primary reason.
- While job opportunities and higher income were also major factors.

Access to Recreational Areas
- Many were dissatisfied with safety (44%) and cleanliness (55%), indicating dissatisfaction with the quality of public spaces.

Disability Access
- 80% felt Guam lacks adequate disability accessibility, highlighting an area for improvement in community equity.

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THANK YOU

The findings reported are provided on a confidential basis to BSP, which is free to use the findings in whatever manner it chooses, including releasing them to their industry stakeholders and partners and/or media.

For more information please contact:

Jay Merrill, President
Market Research & Development, Inc.
671.687.4066
jmerrill@mrdmicronesia.com

MRD
GUAM · MICRONESIA · MARIANAS

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Fwd: Memorandum: Review of the Draft Guahan 2050 Sustainability Plan

Lola Leon Guerrero, BSP <lolalg@bsp.guam.gov> Wed, Sep 3, 2025 at 2:10 PM
To: "cabinet@guam.gov" <cabinet@guam.gov>
Cc: Jon Calvo <jon.calvo@guam.gov>, Clynton Ridgell <clynton.ridgell@guam.gov>, Eliza Dames <eliza.dames@guam.gov>, Shamra Chargualaf <shamra.chargualaf@guam.gov>, Josephine Poping Cepeda <josephine.cepeda@guam.gov>, Dorothy Blas <dorothy.blas@guam.gov>, "Kathleen C. Cepeda" <kathleen.cepeda@guam.gov>
Bcc: april.trinidad@bsp.guam.gov

Håfa Adai Cabinets Members,

To add to Ms. Cepeda email, attached is the draft plan and comment form for your convenience. Kindly have your organization review the draft plan and email your entities completed comment form to gsp2050@bsp.guam.gov

The-Guåhan-2050-Sustainability-Plan.pdf

by Friday, September 26, 2025.

Your organization time and assistance is greatly appreciated.

Si Yu'os Ma'ase!

On Thu, Aug 28, 2025 at 4:58 PM Kathleen C. Cepeda <kathleen.cepeda@guam.gov> wrote:

> Hafa Adai,
>
> Please find attached memorandum from Governor Leon Guerrero dated August 26, 2025, regarding review of the draft Guahan 2050 Sustainability Plan.
>
> Please review the draft plan and submit your comments to the Bureau of Statistics and Plans by Friday, September 26, 2025. The draft plan can be downloaded at the following link https://bsp.guam.gov/wp-bsp-content/uploads/2025/08/The-Guåhan-2050-Sustainability-Plan.pdf
>
> Please use the comment form that can be downloaded at https://bsp.guam.gov/wp-bsp-content/uploads/2025/08/GSP2050_Agency_Comment_Form.docx Once complete please send your filled comment form to gsp2050@bsp.guam.gov.
>
> If you have any questions, please contact BSP Director, Lola Leon Guerrero via email at lolalg@bsp.guam.gov.
>
> *Senseramente,*
>
> **Kathleen C. Cepeda**
> ***Executive Assistant to the Chief of Staff***
> Office of the Governor of Guam
> Ricardo J. Bordallo Governor's Complex
> Hagåtña, Guam 96910
> 671-473-1112 | governor.guam.gov

--
[Quoted text hidden]

2 attachments

Doc. No. 38GL-26-2651.*

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The-Guåhan-2050-Sustainability-Plan.pdf
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LOURDES A. LEON GUERRERO
GOVERNOR

JOSHUA F. TENORIO
LT. GOVERNOR

UFISINAN I MAGA'HÅGAN GUÅHAN
OFFICE OF THE GOVERNOR OF GUAM

August 26, 2025

MEMORANDUM

TO: All Department and Agency Heads

FROM: Lourdes A. Leon Guerrero, Governor of Guam

SUBJECT: Review of the Draft Guahan 2050 Sustainability Plan

The Bureau of Statistics and Plans (BSP) is presenting the Draft Guahan 2050 Sustainability Plan for your review and comment. Mandated by Public Law 35-110, the plan serves as a strategic roadmap of Guam's sustainable future, emphasizing the balance between responsible development and the preservation of our island's natural and cultural resources over the next 25 Years.

Structured around five core themes—Sustainable Communities, Prosperous Economy, Thriving Environment, Vibrant Culture, and Village Sustainability—the plan aligns closely with the United Nations Sustainable Development Goals (SDGs) and the Guam Green Growth (G3) initiative.

The plan was developed through extensive stakeholder engagement, including regional village meetings and an island-wide survey, to ensure it reflects the shared vision and values of our community. It addresses key priorities such as safe and affordable housing, environmental stewardship, cultural resilience, and economic diversification.

As we move forward, interagency collaboration is essential. Your review of the proposed strategies and policy recommendations—and identification of any gaps, opportunities, or enhancements—will be critical to the plan's success. Your input will help ensure the Guahan 2050 Sustainability Plan reflects a unified government vision, aligns with existing mandates, and sets achievable goals that support responsible land use and development for current and future Generations.

Please review the draft plan and submit your comments to the Bureau of Statistics and Plans by Friday, September 26, 2025. The draft plan can be downloaded at the following link https://bsp.guam.gov/wp-bsp-content/uploads/2025/08/The-Gua%CC%8Ahan-2050-Sustainability-Plan.pdf.

Please use the comment form that can be downloaded at https://bsp.guam.gov/wp-bsp-content/uploads/2025/08/GSP2050_Agency_Comment_Form.docx Once completed please send your filled comment form to gsp2050@bsp.guam.gov.

Thank you for your continued commitment and support in shaping a sustainable future for the people of Guam.

Should you have any questions, please contact the BSP Director, Lola Leon Guerrero, by email at lolalg@bsp.guam.gov.

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Review of the Draft Guahan 2050 Sustainability Plan - Comments due by Friday, September 26, 2025

Lola Leon Guerrero, BSP <lolalg@bsp.guam.gov> Tue, Sep 2, 2025 at 11:25 AM
To: Irvin Slike <irvin.slike@gswa.guam.gov>, "Miguel Bordallo (GWA)" <mcbordallo@guamwaterworks.org>, John M Benavente <jbenavente@gpagwa.com>, Mary Okada <mary.okada@guamcc.edu>, "Dr. Anita Enriquez" <abe@triton.uog.edu>, Southern Guam SWCD <southernguamswcd@gmail.com>, NORTHERN GUAM SWCD <ngswcd.northernguam@gmail.com>, Austin Shelton <shelton@triton.uog.edu>, "John J Cruz, Jr." <jcruz@gpagwa.com>, lizg@guamwaterworks.org, "bertha.guerrero@guamcc.edu" <bertha.guerrero@guamcc.edu>, Selma HG Blas <sblas@gpagwa.com>, Christine Mabayag <ckamm@triton.uog.edu>, Esther Muna <esther.muna@guamcc.edu>
Cc: Matthew Santos <matthew.santos@bsp.guam.gov>, April Trinidad <april.trinidad@bsp.guam.gov>, Monica Guerrero <monica.guerrero@bsp.guam.gov>, Administration <admin@bsp.guam.gov>

Håfa Adai! The Bureau of Statistics and Plans (BSP) is presenting the Draft Guahan 2050 Sustainability Plan for your review and comment. Mandated by Public Law 35-110, the plan serves as a strategic roadmap of Guam's sustainable future, emphasizing the balance between responsible development and the preservation of our island's natural and cultural resources over the next 25 Years. It is structured around five core themes—Sustainable Communities, Prosperous Economy, Thriving Environment, Vibrant Culture, and Village Sustainability—the plan aligns closely with the United Nations Sustainable Development Goals (SDGs) and the Guam Green Growth (G3) initiative.

The plan was developed through extensive stakeholder engagement, including regional village meetings and an island-wide survey, to ensure it reflects the shared vision and values of our community. It addresses key priorities such as safe and affordable housing, environmental stewardship, cultural resilience, and economic diversification.

I kindly ask that your organization review the draft plan and submit your comments to the Bureau of Statistics and Plans by ***Friday, September 26, 2025***, *by email at* ***gsp2050@bsp.guam.gov***.

You can also view the plan here and download the comment form at this link. For your convenience attached is the draft plan and comment form.

Kindly acknowledge receipt of this email.

Thank you for your continued support.

--
Si Yu'os Ma'åse',

Lola Leon Guerrero
Director - Bureau of Statistics & Plans
PO Box 2950
Hagåtña, Guam 96910
Office: 671.472.4201/2/3
Direct: 671.475.9661
Fax: 671.477-1812
lolalg@bsp.guam.gov
www.BSP.Guam.Gov

Please consider the environment before printing this email.

3 attachments

The-Guåhan-2050-Sustainability-Plan.pdf
20821K

GSP2050_Agency_Comment_Form.docx
25K

Doc. No. 38GL-26-2651.*

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draft Plan Review_organizations.pdf
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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name of Commentor: Lester L. Carlson, Jr.	Division: All
Position: Director	Date of Completion: 9-23-2025
Agency/Organization: Bureau of Budget and Management Research (BBMR)	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	8-15	8.3.2	----	----	Recommend inclusion of the recently-passed "One Big Beautiful Bill Act" (OBBBA) as a financing option and a brief discussion of its potential impact in the overall Plan
2	8-16 – 8-17	8.3.2	----	8-2	Recommend removing reference to ARPA in the "Funding Source Key" as it is not listed as a potential funding source in Table 8-2
3	8-18	8.3.3	American Resue Plan Act (ARPA)	----	As is noted in the draft GSP2050 Plan, all remaining Territorial ARPA funds must have been obligated by December 31, 2024 and expended no later than December 31, 2026. With that said, reference to this source should only be to capital and infrastructure projects, etc., that were completed with these grant funds and not as a potential source in this Sustainability Plan.
4	8-19	8.3.3	----	----	Department of Defense (DOD) Contributions under "Relevance to G50SP" there is reference that "the plan notes federal military expansion . . ." but it's unclear what "plan" is being cited; need to revisit language here
5	8-19	8.3.3	DOI OIA CIP & Technical Grants	----	Relative to DOI CIP grants, Guam continues to receive between $5M - $7M and anticipates receiving this same level of funding for the foreseeable future so long as the Government of Guam complies with reporting requirements, positive audit results, etc.
6	8-20	8.3.3	----	----	Under Public-Private Partnership (PPP) and Concessions, the last sentence states that GEDA "can utilize" Private Activity Bonds. Consider changing the word "utilize" to "facilitate" as GEDA would not be the beneficiary of said Bonds.
7	8-22	8.3.3	DOI Energizing Insular Communities (EIC) grants	----	As noted in the draft Plan, this grant source may not be available in the upcoming years. Based on BBMR's review, while DOI awarded $5.47M in FY2024, no grants have been issued by DOI for FY2025 as all discretionary funding assistance grants are currently under review.
8	8-24	8.3.3	Utility Surcharges and Energy Efficiency Funds	----	In so far as funds from this source are from a "reorientation" of existing LEAC fuel surcharges to a "Green Energy Fund," that would be a possible source of energy initiatives cited in the Plan. The Bureau would caution against any increases in charges for such initiatives as rate payers, particularly at GPA, are sensitive to any increase in monthly billings (not related to increases in consumption). This is evident with the

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					implementation of the GPA Energy Credit Program which GovGuam subsidized with well over $120M in prior fiscal years.
9	8-25	8.3.3	Solar for All Program	----	The Solar for All federal grant program was officially terminated in August 2025 under the One Big Beautiful Budget Act (OBBA), which also impacted the Greenhouse Gas Reduction Fund programs. According to GEPA, Guam was awarded approximately $62.4M, but has since been rescinded. While this poses challenges, Guam can potentially invest in Green Bonds or possibly look into public private partnerships to support its renewable energy initiatives.
10	8-29	8.3.3	----	----	"Tourism Recovery Funds (ARPA, etc.) and HUD Community Development" – Same recommendation stated for other sections of the draft Plan relative to citation of ARPA fund sources.
11	8.33	8.3.3	American Rescue Plan Housing Programs	----	See Comment #3
12	8-35	----	----	----	FEMA HMGP & BRIC Programs – Appears to need updated language as there is reference that OCD and the Recovery Office "will be formulating a list of HMGP projects post-Mawar" and "Guam has applied for BRIC technical assistance and potential projects . . ."
13	8-35	8.3.3	FEMA Hazard Mitigation Grant Program (HMGP)	----	The Hazard Mitigation Grant Program (HMGP) has not been impacted by the One Big Beautiful Budget Act (OBBBA), which means its relevance to the G50SP can still continue its planning efforts. Given Guam's infrastructure challenges, it's essential to recognize to make investments now to avoid significantly higher costs in the future.
14	8-39	8.3.3	EPA Climate Pollution Reduction Grants (CPRG)	----	The EPA Climate Pollution Reduction Grant (CPRG) has not been terminated under the OBBBA. Guam has received a planning grant through this program to support it Priority Climate Action Plan and Comprehensive Climate Action Plan. However, since Guam has received this Grant and the funds are assumed to be obligated, planning efforts should continue to be effective.
15	8-41	----	----	----	Mapping Funding to G50SP Priority Actions – No. 1 (Identify Eligible Programs) – Sentence No. 2 is key as "a new review will be needed as the federal funding landscape has changed dramatically since the drafting of this plan" including with the change of Administration at the federal level.
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Guåhan 2050 Sustainability Plan Agency Comment Form

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
18					**GENERAL COMMENTS**
19					The plan is very comprehensive and well-prepared, though there should be room for updates to the plan as there are many uncertainties with the new Trump Administration making funding cuts to various federal programs that can be relied on as potential funding sources.
20					There must be a continued allowance for updated assessments and stakeholder feedback to ensure projects are still aligned with the main goals and objectives of the Guåhan 2050 Sustainability Plan and the evolving needs of the island community over time.
21					There should be improvement in the methodologies on internal controls for financial management with the receipt and allocation of financial resources among the involved government departments/agencies to properly track disbursements and ensure compliance to mitigate any mismanagement and loss of funding, which have already been experienced.
22					There may be possibilities for additional funding opportunities with current and/or new federal programs from funding that may have been shifted from funding cuts from other programs.
23					Internal Mechanisms for Fund Management • Dedicated Fund Management Office: Establish a central office or task force responsible for overseeing the financial management of the funds. This team would be responsible for tracking disbursement, ensuring compliance, and reporting back to stakeholders. • Transparent Reporting System: Set up a transparent system for tracking how funds are spent, ensuring that all stakeholders can monitor the allocation of resources and outcomes in real-time. • Evaluation Framework: Develop a framework for continuous evaluation and feedback. This ensures that the program is adapting to changing circumstances and remains aligned with the island's goals for sustainability, resilience, and equity.
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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name of Commentor: Jayne Flores	Division: --
Position: Director	Date of Completion: 09/26/25
Agency/Organization: Bureau of Women's Affairs	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	346	6.3.2	8		Add "that allows for growth and development" after "assigned a property designation" and remove "accordingly. Make this sentence stronger with regard to moving the hospital to a more secure location that allows for growth and expansion of health and ancillary commercial services.
2	347	6.3.4			Add something about assessing the income level requirement for free child care so that more families can avail of it.
3	262	VC-28			Disadvantaged communities: Add "... responses such as services for crime victims." to this section. It needs to more specifically address crimes such as assault, domestic violence and sexual assault.
4	345				One of the most pressing issues Guam has right now is the need to build a new hospital. I searched the term "new hospital" and it was mentioned on pages 25, 346, and 453. A superscript (28) on page 453 links to the Governor's Office website page about how "Our People Deserve a Medical Complex." (which they do). However, more information needs to be included WITHIN this Guahan 2050 Sustainability Plan about the need for a new hospital. It should be a priority in the plan. It does not deserve only a few mentions. I think there should be an entire section about how our island needs a new hospital within section 6.3.2, "Expanding Access to Health Services."
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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name of Commentor: Commission on Decolonization and Department of CHamoru Affairs	Division: Commission on Decolonization & Department of CHamoru Affairs
Position: N/A	Date of Completion: October 6, 2025
Agency/Organization: Office of the Governor and Department of CHamoru Affairs	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	3	6	22		The Commission on Decolonization suggests adding one to two sentences at the end of this paragraph in Section 6.1, to connect the overview of land and Guam's history of colonization to the assertion that land taking and use by colonial powers in Guam has negatively impacted the indigenous people. Please consider the following excerpt from *Giha Mo'na: A Self-Determination Study for Guåhan* on land use in Guam, "the desire for land is often the root of colonialism and dispossessing indigenous peoples of their land has been a ubiquitous occurrence through the history of colonialism and imperialism. Dispossessing people of their land is never just taking "real estate" away. For indigenous peoples, land is a set of relationships. Mohawk scholar Taiaiake Alfred writes, "Land, culture, and government are inseparable in traditional philosophies; each depends on the other, and this means that the denial of one aspect precludes recovery as a whole." (Sec. 2, pgs. 330 - 331). It is important to recognize how colonization has negatively impacted the ability to protect land and thus preserve and promote CHamoru identity and values tied to land use.
2	3	6	24-32		In this final paragraph of section 6.1, the Commission on Decolonization suggests placing greater emphasis on how political status continues to be an obstacle to "preserve historic sites, promote traditional practices, and support indigenous land claims." Ultimately, Guam's current status as an unincorporated territory of the United States places the people and government in an inequitable position where they do not have full control over how land is used within the island. To provide more context of how political status continues to impact land use in Guam, the Commission suggests consideration of information outlined in *Giha Mo'na: A Self-Determination Study for Guåhan*. As explained, "Historically, there were three processes that were used for the return of Guam property. One was the transfer of excess property through a process overseen by

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
					the General Services Administration, named the Federal Property and Administrative Services Act. The second process has been through a special Congressional disposal process. The third process is the base closure process, overseen by the Base Relocation and Closure Commission" (Sec. 2, pg. 346). Please note that in all three processes, the return of land to the people of Guam is at the discretion of the U.S. federal government. As our island's administering Power, the federal government has sovereignty over Guam's land. Today and in the future, this may add another layer of complexity to implementing a plan for sustainable land use as federal interests take precedence over local interests and there are few pathways to meaningfully engage the federal government. Ultimately, the people of Guam lack equitable decision-making power over land use due to our political status. As exemplified in the information from *Giha Mo'na* on the return of land, our relationship with the federal government is one of consultation and not consent. Decision making power over the use and return of land rests with the federal government and not the people of Guam. • Notably, in the second pathway outlined (Congressional route), the Territorial Clause (Article IV, Sec. 3, Clause 2 of the U.S. Constitution) is cited. This clause grants Congress "Power to dispose of and make all needful Rules and Regulations respecting the Territory…". This is one example of a mandate that may provide the federal government with justification to take actions in regards to land use which may not align with Guam's interests or plans to foster a more sustainable future.
3	10	6	8-11		In the sentence "One of the DCA's key responsibilities is overseeing cultural institutions such as the Guam Museum, the CHamoru Language Commission, and the Council on the Arts and Humanities," please remove the Kumision and CAHA. Please note that DCA does not have oversight over those entities. DCA oversees the Chamorro Village (P.L. 28-68, 5 GCA Ch. 87 Sec. 87103 (a)(viii) and the Guam Museum (5 GCA, Ch. 83 & 87; 21 GCA, Ch. 76, Sec. 76114). More information on DCA's mandate can be found at: https://dca.guam.gov/mandates-and-missions/

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
4	13-14	6			In Sec. 6.2.3, which proposes the integration of DCA in "Guam's comprehensive land use framework," the Department of CHamoru Affairs would like greater detail on its role as a partner. For example, when discussing "Community-Led, Culturally-Informed Development Frameworks," what type of assistance or input will DCA specifically provide in this collaboration?

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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name of Commentor: Reuel Drilon	Division:
Position: Acting Deputy Director	Date of Completion: September 25, 2025
Agency/Organization: Dept of Integrated Services for Individuals with Disabilities (DISID)	

Comment #	Page #	Sec/Par.	Line	Fig/Table #	Comment/Recommended Changes
1	6-24	6.3.3 para. 1	1		Suggest line to read: *Equity, inclusion, and community engagement are the heart of a sustainable and vibra culture.*
2	6-24	6.3.3 para. 3	1		Suggest line to read: *For individuals with disabilities, inclusive design principles must be applied to zoning codes, public infrastructure, and parks planning to ensure accessibility and promote independence.*
3	3-89	3.4.5 para. 1	2		After "supportive housing", include verbiage for clarification such as "(e.g. assisted living, group homes)
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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name of Commentor:	Division: Land Planning
Position:	Date of Completion:
Agency/Organization: Department of Land Management	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	75	2	6	Table 3.3	Temporary Workforce Housing is not conditionally permitted in an R-2 zone
2	75	3	8	Table 3.3	Temporary Workforce Housing is not conditionally permitted R2/C zone
3	76	2	2	Table 3.3	Temporary Workforce Housing is not a permitted use in a PUD zone
4					General Comment: SC-1 and SC-3 are partially enforceable under existing zoning/subdivision law.
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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name of Commentor: Olivia Banez, Ashton Williams, Cara Lin, and Chelsa Muna	Division:
Position:	Date of Completion: October 06, 2025
Agency/Organization: Guam Department of Agriculture	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	5-70	5.5.1/Paragraph 1	1-2		The way the sentence is phrased makes it sound like all the reef types mentioned are only found surrounding the Cocos lagoon. To avoid this confusion, I would probably just omit 'that surround Cocos lagoon in southern Guam.' from the sentence.
2	5-70	5.5.1/Par 2	4-5		The stat, "one-fifth of the island's coral reefs have already been lost and over one quarter of surviving reefs are in danger of imminent decline' is a bit of a misquote – these stats (from Wilkinson 2006 and Riegl et al. 2009) are stats refering to corals worldwide, not Guam specifically.
3	5-70	5.5.1/2	5		When it says 'The study found that local population growth…' I think it may be good to clarify which study you are talking about. If you are referring to the Guam Coral Reef Resilience Strategy, that actually was not a study but was a management plan so it may be better to refer to it as a planning document or something like that.
4	5-71	5.5.1/1	6-7		Edit sentence to say something like 'Coral bleaching can cause widespread coral mortality, degrading the health of the reef ecosystem and all the marine species it supports.'
5	5-71	5.5.1/2	1-3		I might rephrase this sentence a bit to reflect some recent updates to the Guam Coral Reef Initiative! Here is a potential rephrase, "…developed collaboratively by the Guam Coral Reef Initiative (GCRI), a program of the Guam Department of Agriculture Division of Aquatic and Wildlife Resources, in partnership with local and federal agencies, research institutions, non-profit organizations, and the private sector."
6	5-73-74			5-3	I believe there are more than 14 species listed on the U.S. ESA that can be found in Guam. This site cites 15 species officially listed on the U.S. ESA plus 5 species proposed for listing https://www.fisheries.noaa.gov/pacific-

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
					islands/endangered-species-conservation/marine-protected-species-mariana-islands
7	5-74			5-4	Critical habitat for Acropora globiceps has officially been designated as of July 2025, so you can edit the NOAA-NMFS status from 'proposed' to 'designated'
8	5-71				Add the following paragraph: The GRRS identified coral reef restoration as a key component of marine management, and the Guam Coral Reef Restoration Action Plan, created in 2020-2021 and published in 2024, identifies reef restoration interventions and appropriate restoration sites. Since 2015, the University of Guam Marine Laboratory has operated a coral nursery in the Piti Bomb Holes Marine Preserve to propagate and genetically bank the eight extant species of staghorn *Acropora* corals found on Guam. In 2017, a second coral nursery for staghorn corals was added in the Cocos Lagoon. In 2024, the Guam Coral Reef Initiative (formerly a program of the Bureau of Statistics and Plans, now a section of the Guam Department of Agriculture's Division of Aquatic and Wildlife Resources) launched a third coral nursery, also in the Piti Bomb Holes Marine Preserve, to augment existing nursery capacity by adding a wider variety of coral species, growth forms, and reproductive strategies for use in reef restoration projects. In 2025, GCRI launched a second coral nursery in Apra Harbor to expand the variety of coral species being propagated for restoration. Efforts to expand nursery capacity are funded through 2028 and will result in the culture of at least 18 coral species with a variety of water quality and depth preferences, growth forms, and reproductive strategies to facilitate reef restoration projects around Guam.
9	5-27 (264)		5		Eelgrass is mentioned but that common name often refers to a species of seagrass not found in Guam (Zostera marina), might be better to change eelgrass to just seagrass generally.
10	5-77 (314)		1		Suggest changing Inarajan to Inalåhan here and throughout the document, and perhaps check in with mayors office on which spelling or version of the village name they would like to use in the plan, or follow the official names provided by the language commission.

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
11	1-28 (43)				Could include the recently completed Manell-Geus Watershed Management Plan in the list of recent planning efforts. The plan includes very specific actionable interventions intended to reduce runoff and improve water quality.
12	5-15 (252)				Regarding the paragraph discussing the Manell-Geus Habitat Focus Area, I believe this project led by local organizations and NOAA has been completed and no longer active, so maybe it would be appropriate to change the tense to past tense. My understanding is that GCRI is currently working on prioritization of Piti and developing a watershed management plan for that area. Maybe a part of this plan can also include hiring new staff that will get funding and implement watershed management plans that have already been created for various villages.
13	4-8 (213)				In recommendations for tourism recovery, include working with tourism related business to reduce tourism related impacts to marine life and coral reefs.
10	Chapter 5				• Coral reef protection is discussed, but the plan does not clearly assign long-term monitoring responsibilities or funding sources for coral resilience initiatives. • **Recommendation:** Explicitly reference the **Guam Coral Reef Resilience Strategy (GRRS)** and designate DOAG as a partner agency in coral monitoring, reef-to-ridge watershed protection, and enforcement of land-based pollution controls
11	Ch. 5.3 Watershed Protection				• While aquifer and watershed protections are mentioned, there is limited discussion on **invasive species threats** (e.g., brown tree snake, rhino beetle) and their impact on watersheds and agriculture.

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
					• **Recommendation:** Add language directing DOAG and the **Guam Invasive Species Council** to integrate watershed management with invasive species biosecurity measures
12	Ch. 5.4 Sensitive Habitats & Species				• The plan identifies ESA-listed flora and fauna but does not clearly outline **habitat restoration funding mechanisms** or enforcement triggers. • **Recommendation:** Include a commitment to expand **Habitat Management Units (HMUs)** in coordination with DOAG's Forestry & Wildlife Division, with performance benchmarks for forest restoration and endangered species recovery
13	Ch. 3.6 Rural & Agricultural Lands				• Agriculture is recognized, but food security is treated more as land-use zoning than as a strategic resilience issue. There is little detail on scaling **local agriculture production** to reduce import dependence. • **Recommendation:** Expand the section to include measurable **food sovereignty goals**, such as percentage reduction in imported food by 2050, and call for appropriations to support DOAG's leadership in developing sustainable agriculture programs, soil health management, and agroforestry initiatives

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
14	Ch. 5.3 & 5.4 (Forests & Terrestrial Habitats)				• The limestone forest is noted as critical, but the plan underemphasizes the connection between **forest loss, wildfire, and watershed degradation**. • **Recommendation:** Direct stronger investment in **forest restoration, firebreak construction, and watershed reforestation programs** under DOAG, linking these to aquifer recharge and erosion control
15	Ch. 5.5 Coastal & Marine Habitats				• Fisheries management is broadly referenced, but the plan does not incorporate DOAG's fisheries data or the **Western Pacific Fisheries Council (WESPAC)** partnership. • **Recommendation:** Add explicit coordination with DOAG's Division of Aquatic & Wildlife Resources (DAWR) on fisheries co-management, the development of Guam's first Fisheries Management plan that will incorporate sustainable harvest limits, and community-based marine protected area enforcement
16	Ch. 8 Implementation Framework				• DOAG's role is underrepresented in the implementation matrix compared to other agencies (BSP, GEPA, DPW). • **Recommendation:** Insert DOAG as a **lead or co-lead agency** for forestry, invasive species control, agricultural sustainability, and fisheries management actions in the 5-year priority schedule

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*	
17	Ch. 5.3 Biosecurity				The plan underemphasizes quarantine protocols and port inspections for cargo, plants, and animals as part of Guam's food security and natural resources protection strategy. Recommendation: Explicitly include DOAG Biosecurity Section in port-of-entry biosecurity measures, highlighting its role in invasive species prevention and food security assurance	.
18	Ch. 5.3 & 5.4 Forestry				Wildfire prevention and response are not adequately addressed as a major threat to forests and watersheds. Recommendation: Add DOAG Forestry as a lead agency for wildfire management, firebreak construction, and post-fire reforestation as part of watershed protection.	
19	Ch. 5.5 Fisheries				The plan references marine resources but lacks clarity on fisheries enforcement and data collection mechanisms. Recommendation: Elevate DOAG DAWR's enforcement role under local fisheries laws and explicitly mention fisheries data collection efforts (creel surveys, spawning aggregation monitoring).	
20	Ch. 3.6 Agriculture				Agroforestry is only indirectly mentioned, missing its role in food security, soil health, and biodiversity. Recommendation: Include agroforestry expansion as a distinct action item under agriculture to promote food security, soil restoration, and habitat creation.	

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
21	Ch. 5.4 Sensitive Habitats				Endangered species recovery plans are noted but lack integration with federal and local implementation benchmarks. Recommendation: Direct DOAG Wildlife Section to align local recovery efforts with federal recovery plans and set measurable benchmarks for endangered species recovery.

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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name of Commentor: Jeffrey Quitugua	Division:
Position: Acting Assistant Chief of DAWR	Date of Completion:
Agency/Organization: Guam Department of Agriculture	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	1-15	1.2.2			Solar farms are not "sustainable" the way they are developed today. Sustainable renewable energy is constructing solar covered roofs on parking lots at the schools, shopping malls, pedestrian paths, government building parking spaces; not clearing a chunk of forested land to develop a "solar farm".
2	1-16	1.2.3			In addition to "maximum use of green infrastructure", the plan must address unnecessary native vegetation clearing in development projects or establishing conservation corridors at the boundaries of the development site.
3	1-17	1.2.3			The plan promotes renewable energy, specifically the use of solar panels. Is there an EPA certified site to recycle solar panels when their useful life expires? Dumping these panels in the landfill is not environmentally safe.
4	1-17	1.2.3			Land use policies must be updated and enforceable. Plan needs to be the foundation and mechanism to help support funding to enforce land use policies to protect watershed.
5	3-1	3.1			General Land Use objectives should include establishing Conservation Easements across the island to maintain continuity of forested areas
6	3-2	3.1			Public Services Land use objective should be using existing parking structures, government buildings to incorporate solar panels to meet renewable energy needs for the island. STOP converting habitat for solar farms, that is not sustainable practices and irresponsible development
7	3-3	3.1			Add obj. for Rural and Agriculture: Identify key agricultural lands to allow for traditional and commercial farming. This will help the support needed for agricultural activities
8	4-30	4.6.4			Sustainable energy facilities will need to be well defined. Solar farms are not sustainable and a poor example to be used for the plan. Solar covered parking spaces in public facilities is a more practical use relative to sustainable use.
9	4-31	4.6.4			Infrastructure and Maintenance must be incorporating responsible sustainable development and practices
10	4-31	4.6.4			"tourism-related development" must define to avoid irresponsible development elsewhere. The term refers to Eco-tourism opportunities across the island.
11	3-129	3.7.4.5			Policy to limit vegetation clearing between the HMWM and mandatory setbacks to prevent coastal erosion, and promote sea turtle nesting sites. In addition, landowners mandated to mitigate impacts to coastal,

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
					shoreline impacts. Mandate to effectively address stormwater (water catchments, basins, green roofs, rain gardens, etc.)
12	3-121	3.7.3			Must visit development practices on island, contractors tend to backfill project sites creating low surrounding areas that result to flooding hotspots.
13	2-13	2.3.1			Coordinate proactively with DOD and major developers to mitigate impacts. Need to identify the impacts, to include food security - agricultural resource loss; native species- habitat loss; land-use (recreational activities)- land/sea deterioration and overuse
14	3-24	3.3.1			Protecting NGLA- restricting unnecessary land clearing, maintaining/planting native trees, managing metallic/industrial debris, amongst other concerns should be included to protect NGLA
15	3-50	3.3.5.6			Transportation Policy Options- remove GTA and add telecom companies.
16	3-61	3.3.8.1			Clean and Renewable Power- for the purpose of GSP2050, need to establish and allow for responsible renewable power by utilizing existing structures and refrain from clearing landscapes for solar farm.
17	3-100	3.5.3.1			UOG hosted townhall meetings for OTEC and WEC to power a proposed Guam Aquaculture Innovation Center – site location is going to be very important to avoid displacing traditional fishing access, that is already impacted by military testing and training exercises.
18	3-101	3.5.3.2			Public Access – need to include safe fishing platforms, especially bridges in southeast Guam. Policy for coastal development, public access is available. Fishing access in DOD lands. Historically, Fena Lake was accessible by civilians to fish.
19	3-102	3.5.3.2			Infrastructure Development- boat ramp is needed in eastern coast (Pago Bay or Talofofo Bay). Combining aquaculture facility, boat ramp access (esp. for first responders) and marine environmental education will be ideal.
20	3-107	3.6.1			Significant issues- Agricultural resources loss (native fruit trees, soil) due to development; irresponsible development.
21	3-102	3.5.3.2			Funding Opportunities- Currently fishers are displaced or have limited access to fishing grounds when DOD activities are active (MITT), funding to offset impacts to fishing grounds and access must be considered for FAD systems, SWMs, boat ramp in east Guam.
22	3-106	3.5.4			Policy to implement green space concept (conservation easements) protected in perpetuity to avoid fragmentation.
23	3- 143	3.7.7			Coral reef restoration- include protection of additional coral nurseries and coral outplanting/restoration sites
24	3-145	3.7.7			Seismic Standards- setbacks (buffers) to avoid development near sinkholes.

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25	4-10	4.2.3			Defense-driven infrastructure projects require significant land and resources. Of most concern is the limited aggregate material available. Military and other major development occurring on Guam must import aggregate to support their development projects.
26	5-8	5.2.6			Solar and Wind Energy Expansion- Need to promote installation of solar energy use in existing structures (buildings, parking lots, sidewalks, etc.). Need to define specific Wind Energy instrument. Traditional wind turbines require significant space. Consideration of new innovative wind turbine models that require less space.
27	5-8	5.2.6			Established Conservation Areas needs to be protected to offset impacts as result of development. Renewable energy project must be constructed and/or restricted to existing infrastructures.
28	5- 30	5.3.4.3			Wetland policy must be updated to address wetland loss due to development.
29		5.4.1			Policy that mandates all development on island must include green infrastructure by planting natives or preserving existing native vegetation on the property.
30	5-44	5.4.1			Chamorro and scientific name for native cycad is fadang, Cycas micronesica.
31	5-53	Table 5-1			Mariana eight spot butterfly, green sea turtle duplicate entry.
32	8-13	Table 8-1			- DOAG should be included in all topic and policy related to DOAG's authorities (Agriculture, Thriving Environement, Sustainable land use development, etc.)
33	8-16	Table 8-2			DOAG should be included in "Promote Green Infrastructure", "Identify Redevelopment Zones", "Village-Scale Plans", "Watershed Protection Measures", "EcoTourism",
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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name of Commentor: Christine Camacho Fejeran	Division: Forestry & Soil Resources
Position: Forestry Division Chief	Date of Completion: 10/6/2025
Agency/Organization: Guam Department of Agriculture	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	194	3-135	8		Guam's land use and environmental policies "take" several strategies for wildfire risk mitigation. What is meant by 'take' and reference to what? Perhaps rewording.
2			10		
3	191	3-132 (3.7.6)			Wildfire Section
4	192	3-133	1		Delete the word "nearly". Revision to read, "...all wildfires are caused by human actions - ..."
5	192	3-133	14		Change reference cited from (KUAM.com, 2025) to Guam FY2025 State Fact Sheet Program Highlights and reference the following, "For example, in 2024, Guam experienced a substantial increase in wildfire activity, with 267 fires burning a total of 8,440 acres equivalent to 6.22% of the islands total land area" (Guam FY2025 State Factsheet). In comparison, in 2023 there were 102 wildfires that burned 861 acres, 1.05% total percentage of land are burned (Guam Forestry Division Wildland Fire Data). The spike in wildland fires and total area burned can be attributed to increased vegetative fuel loads from Typhoon Mawar and exacerbated by severe drought conditions and human activities such as debris burning and arson fires (Guam FY2025 State Factsheet).
6	192	3-133	17		Delete the following sentence, "While typically not on the scale of massive mainland forest fires," Guam's wildfire numbers as of 2024 show that Guam has 600-times the greater percentage of total land area burned than many states across the Continental USA and minimizes our very real threat with regard to wildland fire. Let's not downplay a problem that compared to a National scale is huge.
7	196	3-137	8		Preface or tag to the following line, "...strategic controlled burns under safe conditions..." – per DOAG Forestry procedures, guidelines and conditions of agriculture/prescribed fire.
8	196	3-137	21		Add Guam Firewise Program among the following, "By addressing wildfire through preventive education, smart land management (fuel breaks and fire-resistant design), and rapid post-fire response, Guam is working to reduce the incidence and impact of fires." – Our Guam Firewise Program will be launching November 2025. "The Firewise USA program is administered by NFPA® and is co-sponsored by the USDA Forest Service and the

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					National Association of State Foresters. While the NFPA administers this program, individuals and communities participate on a voluntary basis" (Firewise.org).
9	204	3-145	28		Want to ensure that we make note that firebreaks and fuelbreaks are used interchangeably on Guam in Forestry management. The Forestry Division, we utilize more fuel breaks than 'firebreaks'. Firebreaks typically involved removal of all vegetation and exposure of bare mineral soil and includes, roadways, rivers, harded paths bisecting the landscape and can mean potentially additional hardened landscapes, erosion and non-porous surfaces...On the other hand, fuel breaks do not remove vegetation down to bare mineral soil and provide the same/similar mitigation efforts with a softer footprint. In the end, it doesn't matter how well you maintain a break, if the wind just blows embers right over your break and into the community. Fuel/fire breaks only buy firefighters time to get to the site. But they are VERY essential in fire mitigation efforts and on really good, low wind days, both have been known to stop and or help a fire self-extinguish. It's just an important note to make so we have room to select the most appropriate approach in strategic management and not default to a 'firebreak' versus a 'fuelbreak'.
10	204	3-145	31		This section should reference the historical and current wildland fire mapping for Guam. Mapping that has been supported by USDA-Forest Service Cooperative Fire funding from 2015-2025/present (PFX, 2025). Link as a reference: https://pacificfireexchange.org/pacific-islands-area-wildfire-burn-area-map/. The Guam wildland fire map data and layers have been shared by Guam DOAG-Forestry Division and incorporated into the GovGuam ArcGIS Portal by Deputy Santos, BSP, for planners and managers to use the layers as references for planning.
11	204	3-145 Wildfire			Should include the development of Community Wildfire Protection Plans (CWPP) which are collaborative strategies developed by communities to address and mitigate the risks associated with wildfires. These plans are created with input from local stakeholders, including residents, fire management agencies, and government officials. The primary goals of a CWPP include: Assessing Wildfire Risks: Identifying areas at risk of wildfires and evaluating the potential impact on community infrastructure and safety. Mitigation Strategies: Developing recommendations to reduce the likelihood of wildfires damaging homes and properties, such as creating defensible spaces and managing vegetation. Community Involvement: Engaging community members in the planning process to ensure that local needs and priorities are considered.

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
					Administrative Note: CWPPs are important documents that complement Hazard Mitigation Plans and can be appendices in Hazard Mitigation Plans and can be referenced for federal funding opportunities and tend to provide scoring value for competitive grant awards. CWPP's were worked on for Piti and Asan-Maina through USDA Forest Service Coop. Fire Protection funding; and through USDA-FS State and Private Forestry grant funds - Joint Chiefs Landscape Partnership Grant for the village of Inalåhan too.
12	206	4-1 Intro			Explore small timber market potential for Guam – acacia trees that have been planted as nurse trees for reforestation (grass to forest stand, fuel conversion) projects. Acacia trees may provide for a small-scale timber industry for Guam, locally-sourced wood for pallets, packaging wood, furniture, small-scale timber harvest. As the conversion of acacia forests for native and agroforests continues to grow, forest canopy will be thinned and where/how will the wood product removed from the forests be utilized? Avoiding waste and utilizing the wood harvested would be absolutely the best way forward. Create the local market.
13	294	5-57 Thriving environment	6		Wherever the acronym "DoAG" occurs, to please revise to be written, "DOAG" – all caps.
14	420	7-56 (7.2.16 Malesso')			Should reference if logging natural resource concerns and investments, the Quinene (21-acres) and As Gadao (100-acres) Reforestation Projects in Malesso' all within the Manell-Geus Watersheds.
15	426	7-62 (7.2.17 Santa Rita-Sumai)			Cotal "Kottot" Conservation Area (~502 acres) should be listed as a resource area of concern. Shared borders with Talofofo and Yona. The area has had about 50 years of forestry work.
16	383	7.2.4.2 land Use Issues and Challenges	Section		Wildland fire is a major issue for the upper parts of the watershed in Assan-Ma'ina. Specifically Turner Road. Wildland fires are ignited on the Ordot Dump side of this watershed, with the grasslands along the pipeline and burn up toward Turner Road creating a fire so erratic and large that a full conflagration of wildland firefighters from GFD, Forestry, DoD are needed to respond. The narrow road access along Turner Road to the Channel 10 area provides limited mobility and no additional water hydrants are located along the route. Additionally, it must be noted that a major erosion issue needs to be addressed at the bottom of this watershed along the shoreline of the Piti Bomb Holes Marine Preserve located next to Santos Park in Piti.
17	261	5-24	31	n/a	Revision to bullet point item to say: "Multi-agency efforts required for comprehensive watershed restoration, sustainable land use strategies, and achieving public buy-in." (underlined is the proposed

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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
					revision; the intention is to emphasize the importance of gaining public understanding/support in order to build long term sustainability of efforts) – Comment Submitted by Shaylin Salas, Urban and Community Forestry Program Coordinator, Guam DOAG/Smart Trees Pacific
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19	258	5-21	1		Sedimentation is biggest threat to coral reefs around Guam yet there is no mention that sedimentation is a result of Fire, just land clearing - Comment Submitted by Ruddy Estoy, Forester II, Guam DOAG
20	261	5-24			"Challenges in Sustainable Planning" sums up the problem that Guam Forestry is dealing with. "Path Forward" should include a - - Comment Submitted by Ruddy Estoy, Forester II, Guam DOAG
21	192	3-133			Does the plan seek to improve policy to penalize those that start fires or other environmental violation - Comment Submitted by Ruddy Estoy, Forester II, Guam DOAG
22	252	5-15			Tree plantings in watersheds where erosion occurs often should be done to improve water quality - Comment Submitted by Ruddy Estoy, Forester II, Guam DOAG
23	460	8-25			The "Agricultural and Conservation Land Protection" section should also list Guam Forestry's Forest Stewardship Program - - Comment Submitted by Ruddy Estoy, Forester II, Guam DOAG
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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name of Commentor: Amber Powers	Division: Director's Office
Position: Special Projects Coordinator	Date of Completion: October 6, 2025
Agency/Organization: Guam Department of Agriculture	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	1-15	1,1	4-5		Please ensure that agricultural lands are not re-zoned for sustainable energy facilities for the sake of profit. It is critical to protect remaining agricultural land and pristine limestone forests, to the greatest extent possible, for food security and water quality. Solar farms and wind farms can be constructed on commercial/industrial or land where the footprint has already been made by buildings or facilities that have outlived their useful life. While this approach may result in reduced profitability for investors, it contributes significantly to the conservation of the island's limited resources.
2	1-23	Par. 3			This is great! It is so important.
3	3-7	3.2.3			Is there a possibility of promulgating a law that limits the future sales or transfer of land to residents of Guam (perhaps include those with Chamorro descent and set an arbitrary date of established residency: ie since 01/01/2005). Residents could lease private lands for up to 50 years, but only to businesses or individuals that are comprised of 50% or more residents. CNMI has a system akin to this in place. It could relieve some outside pressures on local residents by keeping the real estate market prices under control and providing economic opportunities without forcing them to sell what they inherited. It also prevents an inflated ability of "non-residents" that can buy houses merely because of the OSHA that further inflates the cost of housing.
4	3-59				In Phase III, add in community composting sites (perhaps at mayor's offices or a local farm) for those who live in dwellings without a yard to compost, but want to divert food waste from the landfill.
5	3-63	Bullet 4			"Prioritize rooftop solar and solar over developed areas such as parking lots and commercial buildings, consistent with SC-28 and SC-29, to reduce land use conflicts and support distributed energy resilience." -Thank you! This is extremely important as I see the massive use (misuse) of agricultural lands as solar and wind farms in the United States.
6	3-63	Par 2	3		This should also include a disposal site/method to address the solar panels that have outlived their useful lifespan of around 20 years. The silicone is harmful to the environment and companies/homeowners that will profit from their use, should also foot the bill for responsible disposal.
7	3-110	Par 1	14,15		Why set the minimum lot size at 10 acres and not 5? A 5 acre lot is large enough for a farmer to make a living wage in the subtropics due to the availability to grow fruits and crops year round. How many Agricultural lots were identified with 10 acres or more?

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Fwd: Fw: URGENT: Review of the Draft Guahan 2050 Sustainability Plan

Lola Leon Guerrero, BSP <lolalg@bsp.guam.gov> Tue, Oct 7, 2025 at 9:42 PM
To: 2050 Guahan Sustainability Plan <gsp2050@bsp.guam.gov>

Forwarded is additional comments from DOAG not in the requested matrix comments form.

Si Yu'os Ma'åse',

Lola Leon Guerrero
Director - Bureau of Statistics & Plans
PO Box 2950
Hagåtña, Guam 96910
Office: 671.472.4201/2/3
Direct: 671.475.9661
Fax: 671.477-1812
lolalg@bsp.guam.gov
www.BSP.Guam.Gov

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---------- Forwarded message ---------
From: **Chelsa Muna** <Chelsa.Muna@doag.guam.gov>
Date: Tue, Oct 7, 2025 at 6:47 PM
Subject: Fw: URGENT: Review of the Draft Guahan 2050 Sustainability Plan
To: Lola Leon Guerrero, BSP <lolalg@bsp.guam.gov>

I apologize, I just found this comment in my email. It is regarding ocean use.

Senseramente,

Chelsa D. Muña
Director
Guam Department of Agriculture
163 Dairy Road
Mangilao, GU 96913
(671) 300-7965
doag.guam.gov

From: Michael P. Duenas <Michael.Duenas@doag.guam.gov>
Sent: Monday, October 6, 2025 2:18 PM
To: Jeffrey S. Quitugua <Jeffrey.Quitugua@doag.guam.gov>
Cc: Jay T. Gutierrez <Jay.Gutierrez@doag.guam.gov>
Subject: Re: URGENT: Review of the Draft Guahan 2050 Sustainability Plan

Håfa Adai Jeff,

I'm not entirely sure where my comments might best fit within the plan, perhaps as a new section under Chapter 4, or possibly in Chapter 6 under *Culture*, highlighting Guam's deep connection to the ocean.

At present, the plan appears to have limited coverage on **current ocean uses**. I recommend including a section that reflects the full range of Guam's ocean-based activities, from subsistence and recreational fishing to diving, snorkeling, surfing, kiteboarding, parasailing, dolphin watching, and jet skiing. These activities represent an essential part of our island lifestyle and contribute significantly to our tourism and cultural identity. Not to mention the Military contribution to these activites that will increase.

Additionally, there is an opportunity to address **marine-related economic diversification**. Guam could benefit from fostering sustainable commercial fishing ventures and strengthening support for our small-boat fisheries. This could include improving infrastructure such as expanding marina facilities, enhancing the existing marina footprint, and developing additional boat launching areas or small marinas around the island.

These initiatives would not only promote economic resilience but also reinforce our cultural heritage as a people inherently tied to the ocean.

Apologies again for not being sure where these comments might best be inserted.

Regards,

Doc. No. 38GL-26-2651.*

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Michael P. Dueñas
Program Coordinator IV (Fisheries Supervisor)
Government of Guam, Department of Agriculture
Division of Aquatic & Wildlife Resources (DAWR)
+1 (671) 735-0286
michael.duenas@doag.guam.gov
163 Dairy Road, Mangilao, Guam 96913
www.doag.guam.gov/dawr
@doag.dawr

From: Chelsa Muna <Chelsa.Muna@doag.guam.gov>
Sent: Monday, September 29, 2025 3:32 PM
To: Christine Fejeran <Christine.Fejeran@doag.guam.gov>; Jay T. Gutierrez <Jay.Gutierrez@doag.guam.gov>; Christopher A. Rosario <Christopher.Rosario@doag.guam.gov>; Jeffrey S. Quitugua <Jeffrey.Quitugua@doag.guam.gov>; Richard Ragadio; Roy Gamboa <Roy.Gamboa@doag.guam.gov>; Frank C. Roberto <Frank.Roberto@doag.guam.gov>
Cc: Doag_all <DOAG_ALL@doag.guam.gov>
Subject: URGENT: Review of the Draft Guahan 2050 Sustainability Plan

Hafa Adai all,

Please review portions relevant to your work and provide comments to me ASAP. BSP has extended the deadline and indicated that it is very important for DOAG to provide comments.

Senseramente,

Chelsa D. Muña
Director
Guam Department of Agriculture
163 Dairy Road
Mangilao, GU 96913
(671) 300-7965
doag.guam.gov

From: Lola Leon Guerrero, BSP <lolalg@bsp.guam.gov>
Sent: Monday, September 29, 2025 12:39 PM
To: Chelsa Muna <Chelsa.Muna@doag.guam.gov>
Cc: 2050 Guahan Sustainability Plan <gsp2050@bsp.guam.gov>; Matthew Santos <matthew.santos@bsp.guam.gov>
Subject: Fwd: Memorandum: Review of the Draft Guahan 2050 Sustainability Plan

Hafa Adai Chelsa,

I am kindly requesting your agency's review of the Draft Guahan 2050 Sustainability Plan We have extended the review period by one week, with the new deadline set for Monday, October 6.

The Department of Agriculture's input is critical to ensuring that Guam's future land use and development policies protect agricultural lands, support a robust local food system, and properly manage and safeguard forest resources, watersheds, and soil

---------- Forwarded message ---------
From: **Kathleen C. Cepeda** <kathleen.cepeda@guam.gov>
Date Thu, Aug 28, 2025 at 4 58 PM
Subject: Memorandum: Review of the Draft Guahan 2050 Sustainability Plan
To: Kathleen C. Cepeda <Kathleen.cepeda@guam.gov>
Cc: Jon Calvo <jon.calvo@guam.gov>, Clynton Ridgell <clynton.ridgell@guam.gov>, Eliza Dames <eliza.dames@guam.gov>, Shamra Chargualaf shamra chargualaf@guam gov , Josephine Poping Cepeda josephine cepeda@guam gov , Dorothy Blas dorothy blas@guam gov , lollg@bsp guam gov

Hafa Adai,

Please find attached memorandum from Governor Leon Guerrero dated August 26, 2025, regarding review of the draft Guahan 2050 Sustainability Plan.

Please review the draft plan and submit your comments to the Bureau of Statistics and Plans by Friday, September 26, 2025. The draft plan can be downloaded at the following link https://bsp.guam.gov/wp-bsp-content/uploads/2025/08/The-Guåhan-2050-Sustainability-Plan.pdf

Please use the comment form that can be downloaded at https://bsp.guam.gov/wp-bsp-content/uploads/2025/08/GSP2050_Agency_Comment_Form.docx Once complete please send your filled comment form to gsp2050@bsp.guam.gov.

If you have any questions, please contact BSP Director, Lola Leon Guerrero via email at lolalg@bsp.guam.gov.

Senseramente,

Kathleen C. Cepeda
Executive Assistant to the Chief of Staff
Office of the Governor of Guam
Ricardo J. Bordallo Governor's Complex

Doc. No. 38GL-26-2651.*

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Hagåtña,
Guam 96910
671-473-1112
|
governor.guam.gov

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Si Yu'os Ma'åse',

Lola Leon Guerrero
Director -
Bureau of Statistics & Plans
PO Box 2950
Hagåtña, Guam 96910
Office: 671.472.4201/2/3
Direct: 671.475.9661
Fax: 671.477-1812
lolalg@bsp.guam.gov
www.BSP.Guam.Gov

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To view this discussion visit https //groups google com/a/bsp guam gov/d/msgid/gsp2050/CA%2Bc2rwUh38SNKNvsxOaP97n8LLxkr0 abZeifH6%3Dy9wKDweG9w%40mail gmail.com.
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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name of Commentor: Alex Silverio	Division: DPH/BNCD
Position: Health Services Administrator	Date of Completion:09.18.2025
Agency/Organization: DPHSS	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	6-23	6.3.1	7		The NCD Strategic Plan is being updated for 2025 – 2030 - pending final review of the Nutrition Action Team's Salt and Sugar Reduction subcommittee objectives. At this time the main goals of the plan remain the same. PHIG has agreed to publish the plan once all required edits are confirmed; publishing is slated to be in December 2025.
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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name of Commentor: Shermalin Pineda	Division: DPH/BPCS
Position: CEO, CHC	Date of Completion: 09.19.2025
Agency/Organization: DPHSS	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	345	6.3.1			The Guam Community Health Center (CHC) supports the alignment of land use and health planning. The NCD burden on Guam underscores the need to design communities that encourage movement, healthy eating, and safety. Policies such as walkable infrastructure, access to gardens, and healthy food environments are consistent with CHC's mission to reduce chronic disease and promote wellness. These strategies are essential to improving patient outcomes, reducing preventable hospitalizations, and creating healthier spaces for families. CHC is actively partnering with community programs to map one-mile walking routes around each clinic site, providing safe spaces for both patients and staff to stay active. We are also collaborating with agriculture-based programs and agencies, leveraging available land to grow vegetables and medicinal plants. These efforts give our patients and staff practical ways to support their own health, while connecting wellness to the spaces where they live and work.
2	345	6.3.2			The CHC strongly supports prioritizing equitable access to health care in land use planning. Geographic isolation and limited infrastructure create real barriers for our patients. Policies that expand culturally competent clinics, emergency services, and mental health facilities align with our mission to reach underserved populations. Cross-sector collaboration and thoughtful placement of health facilities are critical steps toward building healthier, more resilient communities. In 2025, CHC launched a Behavioral Health Team comprised of a social worker, nurse practitioner, and clinical psychologist. Our services include depression screening, tobacco cessation counseling, and other interventions. We are still growing this program while working to ensure full integration between behavioral health and primary care. Looking ahead, CHC is also exploring the mobile clinic as a third site to extend access into areas where services are limited.
3	346	6.3.3			Health equity cannot be achieved by health care alone. Land use decisions that provide safe housing, inclusive public spaces, and access to supportive services directly complement the care we deliver every day. Embedding these priorities into planning ensures that the most vulnerable populations we serve—whether foster children, individuals with disabilities, or families facing hardship—are not left behind.
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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name of Commentor: Tom Nadeau	Division: Environmental Health
Position: Chief EPHO	Date of Completion: 09.24.25
Agency/Organization:DPHSS	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	3-88				Although Temporary worker housing may be largely restricted to M-1 zones, many workers are housed in residential zones in apartments and condominium, which lessens the availability of rentals to residents and increases regulatory burden. The Plan should include actions that better control the type and location in the housing of temporary workers, such as amending the definition of temporary workforce housing in Title 10, Chapter 26A.
2	3-65				Leverage "Internet for All – Guam" plan by mandating all government of Guam entities that provide counter services to the public to transition into an online service. This will increase efficiency, lessen the need for office space and human resources, and reduce traffic.
3	Sections relating to land use, climate change, flooding, and natural disasters				Guam is free of endemic mosquito-borne diseases such as dengue fever and malaria; however, the island is constantly being threatened from the importation and establishment of efficient mosquito vectors from neighboring Pacific and Asian countries. Land use is linked to mosquito control since it may create or eliminate habitats for mosquitoes. Modifications of the land through urbanization, deforestation, and agricultural practices must be considered in preventing mosquito breeding sites. Climate change will alter mosquito biology and increase their habitat; thus, promoting their proliferation and increasing the frequency and range of mosquito-borne diseases, which will impact Guam.
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Guåhan 2050 Sustainability Plan Agency Comment Form

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Name of Commentor: Francine Salas	Division: Public Welfare
Position: Services Administrator	Date of Completion:09.24.25
Agency/Organization: DPHSS	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	6-23	6.3.1			Sugar sweetened tax is no longer proposed legislation. Health priorities for activity can be done in conjunction with SNAP education for healthy eating, implementing a ban on sugar sweetened drinks and candy using EBT dollars, and Medicaid in EPDST at the clinic level. Prevention is key. Both SNAP and Medicaid welfare programs can encourage healthy events and participation.
2	6-24	6.3.2			Expanding Access to Health Services. With about 1/3 of the population on Medicaid, and not enough providers accepting Medicaid, a push for the build of more clinics who must accept Medicaid patients, in exchange for tax credits or a qualifying certificate is a potential solution.
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2050 Sustainability Plan - Matrix with Pre-Filled Comments

Main Section	Subtopic	Comments/Actions
Road Capacity, Safety, and Investment Priorities	Road Capacity	Prioritize traffic management and multimodal corridors over road widening.
Road Capacity, Safety, and Investment Priorities	Safety	Urgently invest in pedestrian and cyclist safety, especially near schools and bus stops.
Road Capacity, Safety, and Investment Priorities	Investment Priorities	Adopt a 'maintenance first' strategy and design roads for climate resilience.
Road Capacity, Safety, and Investment Priorities	Measuring Success	Shift success metrics from travel time to safety, accessibility, and equity.
Threatened & Endangered Species (terrestrial)	Protection of Native Forest Habitat	Protect limestone forests and restore degraded areas to support species recovery.
Threatened & Endangered Species (terrestrial)	Control of Invasive Species	Expand snake control and invasive species management programs.
Threatened & Endangered Species (terrestrial)	Recovery & Monitoring of Endangered Species	Support monitoring, breeding, and reintroduction programs (e.g., Ko’ko’).
Threatened & Endangered Species (terrestrial)	Community & Cultural Involvement	Integrate Chamoru cultural values and promote community conservation projects.

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Threatened & Endangered Species (terrestrial)	Development & Environmental Review	Require EIAs with strong mitigation strategies for all new projects.
Threatened & Endangered Species (terrestrial)	Climate Change & Species Resilience	Adopt climate-adaptive conservation, including high-elevation refuges.
Guam's Shorelines & Floodplains	Shoreline Protection & Coastal Resilience	Favor nature-based shoreline protections over seawalls.
Guam's Shorelines & Floodplains	Floodplain Management	Update flood maps with climate data and require resilient construction standards.
Guam's Shorelines & Floodplains	Development & Zoning Policies	Encourage coastal setbacks and climate-smart zoning policies.
Guam's Shorelines & Floodplains	Habitat & Ecosystem Services	Protect reefs, mangroves, and seagrass beds as natural flood defenses.
Guam's Shorelines & Floodplains	Community Safety & Equity	Prioritize flood mitigation in vulnerable southern villages.
Guam's Shorelines & Floodplains	Climate Change Integration	Integrate sea-level rise projections into all shoreline planning.
Shoreline Hazards, Sea Level Rise, and Coastal Resilience	Nature-Based Shoreline Protection	Use reef restoration, mangroves, and dunes as natural buffers.
Shoreline Hazards, Sea Level Rise, and Coastal Resilience	Climate Adaptation & Sea-Level Rise Planning	Map high-risk areas and consider managed retreat strategies.

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Shoreline Hazards, Sea Level Rise, and Coastal Resilience	Coastal Infrastructure & Community Protection	Require resilient building codes and equitable shoreline investments.
Shoreline Hazards, Sea Level Rise, and Coastal Resilience	Ecosystem & Cultural Preservation	Preserve reefs and integrate Chamoru knowledge in planning.
Shoreline Hazards, Sea Level Rise, and Coastal Resilience	Community Engagement & Preparedness	Ensure risk communication is bilingual and accessible to all.
Shoreline Hazards and Development Safety	Stronger Coastal Development Standards	Require setbacks and elevated construction in hazard zones.
Shoreline Hazards and Development Safety	Environmental Impact Assessments (EIA)	Mandate rigorous EIAs with mitigation/offset requirements.
Shoreline Hazards and Development Safety	Prioritizing Public Safety	Public safety must outweigh short-term economic development gains.
Shoreline Hazards and Development Safety	Protecting Natural Buffers	Avoid damage to reefs and mangroves, and promote nature-based protection.
Shoreline Hazards and Development Safety	Managed Retreat & Long-Term Planning	Plan relocation for low-lying areas like Hagåtña, Merizo, and Tumon.
Flooding	Updated Flood Risk Assessments	Update flood maps using typhoon and rainfall projections.
Flooding	Infrastructure & Drainage Improvements	Upgrade drainage and use green infrastructure solutions.

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Flooding	Land Use & Building Standards	Restrict floodplain development and require elevated construction.
Flooding	Community Preparedness & Equity	Support preparedness and recovery in vulnerable flood-prone areas.
Flooding	Climate Change & Resilience	Plan for long-term managed retreat in high-risk flood zones.
Stormwater Issues in Guam	Outdated Drainage Infrastructure	Modernize stormwater systems to reduce flooding.
Stormwater Issues in Guam	Green Infrastructure Solutions	Promote bioswales, permeable pavements, and wetlands.
Stormwater Issues in Guam	Flooding & Public Safety	Prioritize drainage upgrades in high-risk communities.
Stormwater Issues in Guam	Pollution & Water Quality	Strengthen stormwater pollution controls and enforcement.
Stormwater Issues in Guam	Development & Zoning	Require on-site stormwater management for new developments.
Stormwater Issues in Guam	Climate Change Adaptation	Design drainage systems with extra capacity for future rainfall.

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DIPATTAMENTON CHE'CHO' PUPBLEKO

Road Capacity, Safety, and Investment Priorities

"I urge the Plan to focus on maintaining and modernizing Guam's existing roads, improving safety for all users, and diversifying transportation investments beyond car capacity expansion. Our limited land and growing population demand smarter, more resilient, and more equitable investment strategies."

1. Road Capacity

- Guam's limited land area means proposed road widening is not sustainable. At this point, only Rt. 15 & 17 can accumulate additional lanes.
- Instead of focusing on more lanes, Guam should prioritize better traffic management: synchronized signals, intersection redesign, dedicated turn lanes, and intelligent traffic systems.
- Encourage investment in public transit improvements, shuttle systems, and park-and-ride facilities to reduce reliance on single-occupancy vehicles.
- Promote multimodal corridors that safely accommodate cars, buses, bicycles, and pedestrians.

2. Safety

- Guam's high rate of pedestrian fatalities highlights the urgent need for pedestrian and cyclist safety upgrades: continuous sidewalks, protected bike lanes, marked crosswalks, pedestrian signals, and street lighting.
- Focus safety investments on school zones, bus stops, and village centers where people walk daily.
- Enforce speed management through traffic calming (roundabouts, medians, raised crosswalks).
- Require safety audits of all major road projects before and after construction to ensure they reduce crashes and injuries.

3. Investment Priorities

- Maintenance First: Prioritize repaving, pothole repairs, and signage improvements before large new road expansions. Deferred maintenance is costing the island more in the long run.
- Climate Resilience: New and existing roads must be designed to withstand flooding, coastal erosion, and typhoon impacts, especially in low-lying areas like Hagatna, Tumon, and coastal highways.

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- Equity: Investments should serve underserved villages, not just high-traffic corridors. Safer access to clinics, schools, and community centers is just as important as Tumon or Route 1 improvements.
- Transparency: Funding decisions should be guided by clear criteria: safety benefits, economic value, environmental impact, and equity.
- Balanced Approach: A fair share of funding should go to transit systems, bike/pedestrian facilities, and "Complete Streets" projects — not only road widening.

4. Measuring Success

- Track reductions in fatalities and serious crashes, not just travel time savings.
- Measure accessibility: how many residents can safely reach a bus stop, clinic, or school within 10–15 minutes by walking or biking?
- Regularly report on maintenance backlog, road condition, and safety improvements to ensure accountability.

Threatened & Endangered Species (terrestrial)

"I strongly urge that Guam's 2050 Sustainability Plan emphasize protecting threatened and endangered terrestrial species by prioritizing invasive species control, restoring native habitats, ensuring strong environmental review for new projects, and involving the community in conservation. Protecting Guam's unique biodiversity is an environmental issue and a cultural and heritage responsibility."

1. Protection of Native Forest Habitat

- Guam's native limestone forests are critical habitats for threatened and endangered species such as the Mariana fruit bat (Fanihi), Mariana crow (Åga), and tree snails.
- The Plan should prioritize habitat protection and restoration, including the prevention of further clearing for development and the reforestation of degraded areas.
- Stronger controls should be put in place to prevent invasive species from further damaging native habitats.
- At the same time, it appears to be a substantial comeback of certain species, for example, the snails.

2. Control of Invasive Species

- The brown tree snake remains one of the greatest threats to Guam's terrestrial species, having decimated bird populations. The Plan should explicitly support snake control

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programs and expand efforts to keep snake populations from spreading to neighboring islands.

- Other invasive species (feral pigs, deer, Philippine deer, invasive plants like Leucaena and Chromolaena) also degrade native forests. Investment in invasive species management and eradication programs is critical.

3. Recovery & Monitoring of Endangered Species

- The Plan should provide resources for population monitoring of endangered species to track recovery progress.
- Support captive breeding, habitat restoration, and reintroduction programs (for example, for birds like the Guam rail (Ko'ko'), which has been successfully reintroduced in the wild).
- Encourage partnerships with U.S. Fish & Wildlife Service, Department of Agriculture Forestry & Wildlife, and conservation NGOs.

4. Community & Cultural Involvement

- Conservation should integrate Chamoru cultural perspectives, recognizing that species like the Fanihi and Åga are not only ecologically important but also part of Guam's heritage.
- Education programs in schools and communities should highlight the importance of protecting native species.
- Promote citizen science and community-based conservation projects to strengthen public stewardship.

5. Development & Environmental Review

- All proposed development projects (roads, housing, tourism, military expansion) should require strong environmental impact assessments (EIA) to identify potential impacts on threatened and endangered species.
- Where impacts cannot be avoided, require mitigation strategies such as habitat offsets, conservation easements, or funding for restoration.

6. Climate Change & Species Resilience

- Climate change (typhoons, droughts, sea level rise) poses additional risks to already stressed species.
- The Plan should include climate-adaptive conservation strategies, such as preserving higher-elevation forests as climate refuges.

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Guam's Shorelines & Floodplains

"I strongly recommend that the 2050 Sustainability Plan emphasize shoreline resilience and responsible floodplain management through nature-based solutions, updated flood maps, climate-adaptive zoning, and protection of Guam's coastal ecosystems. These measures will protect our communities, infrastructure, and cultural heritage from worsening climate risks."

1. Shoreline Protection & Coastal Resilience

- Guam's shorelines are under pressure from erosion, storm surge, and sea-level rise. The Plan should emphasize nature-based solutions (e.g., mangrove restoration, coral reef protection, dune stabilization) as first lines of defense instead of relying solely on hard structures like seawalls.
- Critical coastal roads (e.g., Marine Corps Drive, Hagåtña, Tumon) should be continuously evaluated for seawall reinforcement and erosion mitigation.

2. Floodplain Management

- Floodplain mapping must be updated regularly with climate data to reflect increasing storm intensity and rainfall.
- The Plan should strengthen requirements for flood-resilient construction: elevated floor levels, flood-proof utilities, and land-use restrictions in high-risk areas.
- Encourage the use of green infrastructure (rain gardens, bioswales, permeable pavements) to reduce runoff and mitigate flooding in urban areas like Dededo, Tamuning, and Hagåtña.

3. Development & Zoning Policies

- New development should be carefully reviewed through environmental impact assessments (EIA) to minimize shoreline destruction and floodplain encroachment.
- Incentives should encourage setbacks from coastlines, avoiding future relocation costs and property damage.
- Floodplain regulations should balance economic growth with long-term resilience, protecting both private property and public infrastructure.

4. Habitat & Ecosystem Services

- Healthy coral reefs, seagrass beds, and mangroves naturally reduce wave energy and flooding. Protecting these ecosystems must be a central priority.

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- Reforestation of upland watersheds will reduce sedimentation into rivers and coastal waters, improving both flood control and reef health.

5. Community Safety & Equity

- Flood risk communication should be clear and accessible, with maps and preparedness resources shared in English and Chamoru for all villages.
- Flood mitigation investments must prioritize vulnerable communities in low-lying coastal areas like Merizo, Inalåhan, and Hagåtña.

6. Climate Change Integration

- Sea-level rise projections through 2050 and 2100 must be integrated into all shoreline and floodplain planning.

Shoreline Hazards, Sea Level Rise, and Coastal Resilience

"I urge the 2050 Sustainability Plan to prioritize coastal resilience through nature-based solutions, updated climate projections, and policies that protect both communities and ecosystems. Guam's shorelines are our first line of defense and hold cultural and economic value that must be preserved for future generations."

1. Nature-Based Shoreline Protection

- Guam's coasts face accelerating erosion, storm surge, and sea-level rise. The Plan should emphasize nature-based solutions such as coral reef restoration, mangrove planting, dune stabilization, and wetland protection, which naturally buffer wave energy.
- Hard infrastructure such as seawalls and bulkheads should be considered alongside other proven shoreline protection methods.

2. Climate Adaptation & Sea-Level Rise Planning

- The Plan must incorporate sea-level rise projections for 2050 and 2100 into land use, zoning, and infrastructure decisions.
- Identify and map high-risk coastal zones where critical infrastructure, housing, and cultural sites may need protection or relocation.
- Consider a managed retreat strategy for areas where protection is not sustainable, ensuring that communities have support for transition.

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3. Coastal Infrastructure & Community Protection

- Require climate-resilient building codes for new development in coastal areas, including elevated floor levels, storm-resistant designs, and setbacks from eroding shorelines.
- Ensure that shoreline hazard mitigation investments also serve vulnerable villages in southern and low-lying areas, not just major tourism or economic centers.

4. Ecosystem & Cultural Preservation

- Protecting Guam's coral reefs, seagrass beds, and mangroves is essential for both coastal defense and cultural heritage. These ecosystems also support fisheries and food security.
- Incorporate traditional Chamoru knowledge of coastal management into resilience planning. Cultural sites at risk from sea-level rise should be identified and preserved when possible.

5. Community Engagement & Preparedness

- Ensure that shoreline hazard and sea-level rise maps are made accessible to the public, with clear communication of risks in both English and Chamoru.
- Develop village-level coastal resilience plans, including evacuation routes, community shelters, and education programs.
- Support community-based monitoring of shoreline erosion and flooding impacts.

Shoreline Hazards and Development Safety

"I strongly recommend that the 2050 Sustainability Plan strengthen shoreline development safety standards by requiring setbacks, climate-adaptive building codes, rigorous environmental reviews, and protection of natural buffers. Development decisions today must prioritize the long-term safety of Guam's people, ecosystems, and cultural heritage in the face of growing shoreline hazards."

1. Stronger Coastal Development Standards

- New development near shorelines should follow setback requirements that account for erosion, storm surge, and projected sea-level rise.
- Require elevated construction and floodproofing in hazard-prone coastal areas. Building codes must reflect updated flood and storm data, not outdated baselines.
- Development in high-risk shoreline zones should be limited or redirected to safer inland areas where possible.

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2. Environmental Impact Assessments (EIA)

- All coastal development projects (resorts, housing, roads, and military infrastructure) should undergo rigorous EIA review to assess potential impacts on erosion, flooding, ecosystems, and public safety.
- Projects with unavoidable risks must be required to provide mitigation or offsets, such as funding coastal protection or restoring degraded shorelines.

3. Prioritizing Public Safety

- Safety of residents should outweigh economic short-term gain from risky coastal projects. Tourism and commercial development must not increase exposure to shoreline hazards without robust safety protections.
- Require evacuation plans, emergency access routes, and disaster-resilient utilities in all coastal development approvals.

4. Protecting Natural Buffers

- Guam's coral reefs, mangroves, and seagrass beds are natural defenses that reduce wave energy and storm impacts. Development should not destroy or weaken these protective ecosystems.
- Incentivize nature-based shoreline protection (mangrove restoration, dune stabilization, reef rehabilitation) instead of relying solely on seawalls or hard barriers.

5. Managed Retreat & Long-Term Planning

- In some shoreline zones, especially low-lying areas in Hagåtña, Merizo, Inalåhan, and Tumon, protection may not be sustainable. The Plan should include strategies for managed retreat and relocation assistance when hazards make areas unsafe for continued development.

Flooding

"I urge the 2050 Sustainability Plan to treat flooding as both a current and growing climate threat. By investing in upgraded drainage, promoting green infrastructure, enforcing stronger land-use policies, and preparing communities, Guam can reduce the devastating social and economic impacts of flooding while building long-term resilience."

1. Updated Flood Risk Assessments

- Guam's flood maps are outdated and do not fully account for climate change. The Plan should require regular updates to floodplain maps using new rainfall, typhoon, and sea-level rise projections.

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- Flood risk modeling should be localized to account for Guam's steep terrain, small watersheds, and rapid runoff during heavy rains.

2. Infrastructure & Drainage Improvements

- Many villages experience frequent street flooding due to undersized or poorly maintained drainage systems. Investment should prioritize stormwater infrastructure upgrades — culverts, drains, retention basins, and pump stations.
- Encourage green stormwater solutions such as permeable pavements, bioswales, rain gardens, and restored wetlands to naturally absorb water.

3. Land Use & Building Standards

- The Plan should promote stronger construction requirements in flood-prone areas, including elevating homes and flood-proofing utilities.
- Development in known floodplains should be restricted, with incentives for building outside of high-risk areas.
- Consider implementing setback requirements from rivers and wetlands to protect both property and ecosystem functions.

4. Community Preparedness & Equity

- Flood-prone communities — including Dededo, Hagåtña, and southern coastal villages — need targeted support for preparedness, evacuation planning, and recovery.
- Flood hazard communications should be multilingual (English and Chamoru) and accessible to vulnerable populations, including renters who may not be covered by flood insurance.
- Expand community-based flood monitoring programs where residents can report flooding in real time.

5. Climate Change & Resilience

- Typhoons and extreme rainfall events are projected to worsen by 2050. The Plan should integrate climate-adaptive flood management, including long-term strategies for managed retreat in areas where protection is not sustainable.
- Protect and restore upland forests and watersheds, which help regulate water flow and reduce downstream flooding.

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Stormwater Issues in Guam

1. Outdated Drainage Infrastructure

- Much of Guam's drainage system is undersized, poorly maintained, or outdated, leading to frequent flooding in urban centers like Hagåtña, Dededo, Tamuning, and along Marine Corps Drive.
- The Plan should prioritize investment in modern stormwater infrastructure such as upgraded culverts, storm drains, retention basins, and pump stations to handle heavier rainfall events.

2. Green Infrastructure Solutions

- Encourage nature-based stormwater management: permeable pavements, bioswales, rain gardens, infiltration trenches, and restored wetlands that slow runoff and allow water to absorb naturally.
- Reforest upland watersheds to reduce erosion and sedimentation that clog storm drains and damage reefs.

3. Flooding & Public Safety

- Stormwater backups create hazardous road conditions, damage homes, and increase public health risks from standing water and contamination.
- Prioritize drainage upgrades in flood-prone communities and ensure that hazard communication is multilingual (English and Chamoru).

4. Pollution & Water Quality

- Stormwater carries oils, trash, and sediment into rivers and reefs, harming marine ecosystems. The Plan should establish stronger stormwater pollution controls at construction sites, parking lots, and industrial facilities.
- Require regular inspection and enforcement of stormwater permits to prevent runoff violations.
- Ease the restriction for cleaning, maintenance, and general upkeep of our stormwater drains and rivers.

5. Development & Zoning

- New developments should require the inclusion of on-site stormwater management systems (retention ponds, permeable surfaces, detention basins) rather than channeling all runoff into public systems.

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- Limit paving and encourage compact, low-impact development patterns to reduce impervious surfaces that worsen runoff.

6. Climate Change Adaptation

- With climate change, typhoons and extreme rainfall will intensify. The Plan must integrate future rainfall projections into drainage design standards.
- Build stormwater systems with extra capacity and redundancy to handle these extreme events.

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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name of Commentor:	Melanie W Brennan	Division:	
Position:	Director	Date of Completion:	9/26/25
Agency/Organization:	Department of Youth Affairs		

Comment #	Page #	Sec/Par.	Line	Fig/Table #	Comment/Recommended Changes
1	454	3rd par.			DOI CIP "new youth facility" is for Dya's admin. Bldg. not the youth correctional facility.
2					
3	456-459	Renewable Energy		+	Through Guam Energy Office's Energy Efficiency Conservation Block Grant (EECBG)
4					
5					Solar panels were installed at the Lagu and Haya Youth Resource Centers in
6					
7					Aug. + Sept 2025.
8					Benefits include: renewable energy,
9					reduced greenhouse gas emissions, low
10					carbon footprint, energy cost saving,
11					sustainable development, improved air
12					quality + long term savings.
13					
14	347	Childcare + Community Infrastructure			
15					
16	High Quality			+	The Department of Youth Affairs' youth centers provides
17	Childcare				free after school programs + intercession
18					campsite Hagat, Mangilao + Dededo
19					
20					
21	254	Groundwater Protection			— need to update due to deldin discovery — include plan to resolve/mitigate

add

add

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Comment #	Page #	Sec/Par.	Line	Fig/Table #	Comment/Recommended Changes
22					
23					DYA promotes + participates in the Coastal cleanup yearly
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Guåhan 2050 Sustainability Plan Agency Comment Form

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Name of Commentor: Corrine Brendicho + Robinette Balajadia	Division: Youth Development
Position:	Date of Completion: 9/26/25
Agency/Organization: Department of Youth Affairs	

Comment #	Page #	Sec/Par.	Line	Fig/Table #	Comment/Recommended Changes
1	409	Haya Youth Center			Haya Youth Center: One of three youth resource centers managed by DYA and built since February 2008. Offers an array of programs and services that promote positive youth development and is a safe haven for community children and youth. The center primarily services the Southern Villages.
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8	372	Lagu Youth Center			Lagu Youth Center: One of three youth resource centers managed by DYA and built in October 2008. Offers an array of programs and services that promote positive youth development and is a safe haven for community children/youth. The center primarily services the Northern villages
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15	397	Kattan Youth Center			Kattan Youth Center: One of three youth resource centers managed by DYA and built in March 2015. Offers an array of programs and services that promote positive youth development and is a safe haven for community children/youth. The center primarily services the Central villages;
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Workforce Development and Cultural Preservation

The Governor's Summer Youth Employment Program (GSYEP) in partnership with the Office of the Governor and the Guam Department of Youth Affairs (DYA) is a paid summer employment initiative designed to provide youth with opportunities to gain real-world work experience, learn practical job skills, and serve their community. Participants are assigned to various government agencies and childcare facilities across Guam, allowing them to explore careers, develop responsibility, and contribute meaningfully during the summer months.

In addition, a third component has been added to the program which focuses on cultural and leadership education, which is offered to young males aged 15 to 17. The six-week immersion program provided them the opportunity to gain firsthand experience in the art of carving, slinging, chant and dance, navigation and seafaring, farming, hut building, and CHamoru history and language. This journey will sharpen their cultural identity, grow their confidence and guide these young leaders into the future with a better appreciation for our Cultural Heritage.

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Guåhan 2050 Sustainability Plan Agency Comment Form

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Name of Commentor: Melanie Brennan	Division:
Position: Director	Date of Completion: September 26, 2025
Agency/Organization: Department of Youth Affairs	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	347		Childcare and	Community Infrastructure	High quality and affordable child care + The Department of Youth Affairs operates 3 Youth Centers which provide after school programs and intercession camps in Hagat, Mangilao and Dededo free of charge.
2	454	3rd Par			DOI CIP "new youth facility" is actually for DYA's Administrative Building not the Youth Correctional Facility
3	459		Renewable	Energy	Through the Guam Energy Office's Energy Efficiency Conservation Block Grant (EECBG) Solar panels were installed at the Lagu and Haya Youth Centers in August and September of 2025. Benefits include renewable energy, reduced greenhouse gas emissions, low carbon footprint, long term energy cost savings, sustainable development and improved air quality.
4					.
5					+DYA promotes youth engagement/volunteerism by participation in island beautification projects, coastal clean up, tree planting projects and recycling efforts.
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9	254		Ground water	Protection	Update due to dieldrin discovery and plan to resolve/mitigate and ensure it does not happen again
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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
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Guåhan 2050 Sustainability Plan Agency Comment Form

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Name of Commentor:	Division: Summer Youth Employment Program
Position:	Date of Completion: September 26, 2025
Agency/Organization: Department of Youth Affairs	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1					(In 2021) DYA's **Summer Youth Employment Program** was resurrected after over 15 years in hiatus; each year the Program has expanded either in capacity or with enhanced features in response to participant/parent exit surveys and community needs. In 2024, a **Child Care Workforce Development** component was added to help grow interest in the child care industry for youth participants. This feature was a collaboration between DYA and DPHSS, Division of Children's Wellness. This feature is sustained by Child Care Development Funds. Additionally, in the 2025 program, a cultural component was added in collaboration with the Guam Museum/**Uritao Leadership Academy**. The Academy featured an intentional and intensive cultural curriculum
2					of which Summer Youth Participants, age 15-17 years were recruited and efforts were focused on a six-week program that offered extensive cultural training. The curriculum included firsthand experience in the art of carving, slinging, chant and dance, navigation and seafaring, farming, fishing, hut building and Chamoru history and language lessons.
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Guåhan 2050 Sustainability Plan Agency Comment Form

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name of Commentor: Corrine T. Buendicho & Robinette S. Balajadia	Division: Youth Development
Position: YD Administrator & Social Service Supervisor I	Date of Completion: September 26, 2025
Agency/Organization: Department of Youth Affairs (DYA)	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	409	**Hagat**			**Haya Youth Center**: One of three youth resource centers managed and operated by DYA and built in February 2008. Offers an array of programs and services that promote positive youth development and is a "safe haven" for community children/ youth. The center primarily services the Southern Villages.
2	372	**Dededo**			**Lagu Youth Center**: One of three youth resource centers managed and operated by DYA and built in October 2008. Offers an array of programs and services that promote positive youth development and is a "safe haven" for community children/ youth. The center primarily services the Northern Villages.
3	397	**Mangilao**			**Kattan Youth Center:** One of three youth resource centers managed and operated by DYA and built in March 2015. Offers and array of programs and services that promote positive youth development and is a "safe haven" for community children/ youth. The center primarily services the Central Villages.
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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name of Commentor: Christina "Tina" Garcia	Division:
Position: CEO / Administrator	Date of Completion: 9/26/25
Agency/Organization: Guam Economic Development Authority	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	8-12				*Add a plan to review existing undeveloped Ancestral Land Properties and other government land with a goal to identify additional commercial properties for new industrial parks specific to **High Tech and Manufacturing***
2	8-6				*Ensure the inclusion of higher education institutions, Guam Contractors Association and all business organizations. It would be recommended to include some level of high school student participation to ensure we get the perspective of our future generations.*
3	8-19				*It will be very important to ensure our development and growth compliments and aligns with the military build-up efforts. Need to address labor and supply issues.*
4	8-25				*The Solar for All Program was cancelled under the new Administration. GEDA was a partner with the Guam Energy Office in this program.*
5	8-25				*Agricultural development via smart farming is highly sought after with GEDA's economic plan. We would also like to update policies to include as an industry opportunity.*
6	8-37				*We would like to add the development of a new Maritime Industry as well as Additive Manufacturing as other potential industries for development*
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Guåhan 2050 Sustainability Plan Agency Comment Form

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Name of Commentor: Morgan Leon Guerrero (on behalf of Rebecca Respicio, Director)	Division:
Position: Program Manager	Date of Completion: 9/26/2025
Agency/Organization: Guam Energy Office	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	41	1	5		"These initiatives – at least xx in the last ten years – reflect..." Rec: indicate what "xx" means
2	119	3.3.8	8-9		"...averaging nearly $0.35/kWh" Rec: rates have changed significantly since 2022, reference GPA data.
3	120	3.3.8.1	4-8		"to develop "Guam100," Rec: NREL has changed the name of this group since the new administration. Priorities may have also slightly shifted to fit the current federal administration's view.
4	120	3.3.8.1	14		"GPA is also planning a Virtual Power Plant (VPP) program" Rec: reference law mandating this (PL 36-137).
5	121	3.3.8.3	10-11		" Low-income households can also benefit from federal Weatherization Assistance Programs" is not said correctly, see below comment.
6					Rec: the Guam Energy Office offers income qualifying programs, Weatherization Assistance Program and Low Income Household Energy Assistance Program, aimed to assist low-income households with affordability.
7	122	3.3.8.4	bullet 1		Amend to include the Energy Action Plan that was written in 2013 as this is referenced a lot and is also currently being updated. It should be listed and regularly updated.
8	122	3.3.8.4	bullet 2		"Guam100's" Rec: Change name to Guam Energy Strategies (same for #3)
9	245	5.2.6	4		"(see Figure xx)" Rec: indicate the figure you are referencing
10	243	5.2.6		5-1	Rec: figure 5-1 and figure 5-2 have different styles. Recommend choosing one (5-2 is easier to read/understand).
11	460		solar for all		Remove. The trump administration terminated this grant.
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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name of Commentor: Derien Mitchell	Division: Air and Land Division
Position: Environmental Health Specialist III	Date of Completion: 9/29/2025
Agency/Organization: Guam Environmental Protection Agency	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	3-94	Chapter 3.5 – Commercial, Industrial, and Priority Development	Lines 1–10 (within Chapter 3.5)	N/A	Recommend adding a reference to brownfield redevelopment as a sustainability strategy. Guam EPA's Green Parcels Program (funded through EPA 128a) manages environmental site assessments and cleanup of underutilized properties. Including brownfields in the Plan would ensure sustainable land reuse, reduce sprawl, and support affordable housing and economic revitalization.
2	4-22	Chapter 4.5 – Redevelopment and Revitalization	Lines 1–6, 9–14, 21–26 (within Chapter 4.5)	N/A	Suggest connecting redevelopment policies with Guam's existing brownfields/Green Parcels framework. The program provides federal resources and technical capacity that can accelerate blight removal, adaptive reuse, and safe redevelopment of contaminated or abandoned sites.
3	3-117	Chapter 3.7 – Natural Hazards	Lines 1–4 (within Chapter 3.7	Figure 3-32 (Typhoon tracks near Guam, 1948–present)	Recommend acknowledging hazardous materials incidents as part of Guam's natural and technological hazard landscape. The Hazardous Materials Emergency Preparedness (HMEP) Program, managed through Guam EPA, supports training, tabletop exercises, and interagency response planning. Integrating HMEP into hazard mitigation strategies would strengthen Guam's resilience.
4	8-10	Chapter 8.3 – Implementation Action Strategy (Table 8-1:	Lines 1–16 (introductory narrative), plus Table 8-	Table 8-1	• **Comment/Recommended Changes:** Recommend adding explicit cross-references to federally supported programs already active in Guam, including PHMSA's **Hazardous Materials Emergency Preparedness (HMEP)** grant and EPA's

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
		Sustainability Plan Action Matrix)	1 (specific rows cited)		**Brownfields/Green Parcels Program (128a funding)**. The introductory narrative (Lines 1–16) establishes that the Action Matrix is intended to coordinate efforts across sectors, making it the appropriate place to reference these programs. Suggested placements include: • **Governance – Legal Framework / Plan Consistency rows:** reference Guam EPA (through its Hazardous Materials Emergency Preparedness Program) to ensure contaminated and potentially contaminated properties are addressed in consistency reviews. • **Prosperous Economy – Commercial Redevelopment and Mixed Use row:** reference Guam EPA (through its Hazardous Materials Emergency Preparedness Program) to support redevelopment of contaminated sites. • **Thriving Environment – Natural Hazards row:** reference Guam EPA (through its Hazardous Materials Emergency Preparedness Program) to address hazardous materials incidents and cleanup of contaminated sites in hazard zones. • **Village Sustainability – Resilient Infrastructure row:** reference Guam EPA (through its Hazardous Materials Emergency Preparedness Program) to strengthen preparedness for chemical emergencies at the village scale.

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
5	5-3	Chapter 5.2 – Climate Resilience and Land Use Planning	Lines 1–21 (within Chapter 5.2)	N/A	Suggest noting that hazardous materials facilities and storage areas require special considerations and land use policies to protect the environment and communities. Integration of Guam EPA (through its Hazardous Materials Emergency Preparedness Program)-supported planning with the G50SP would strengthen climate resilience and reduce risks of chemical releases during storms or disasters.
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GUAM HOUSING CORPORATION
P.O. Box 3457, Hagåtña, Guam 96932

TRANSMITTAL

Date:	10/03/2025

To: BUREAU OF STATISTICS AND PLANS
gsp20250@bsp.guam.gov

Item No.	Description of Documents
1	GUAHAN 2050 SUSTAINABILITY PLAN AGENCY COMMENT FORM

Remarks:
Should you have further question you may call Edith C. Pangelinan or Patricia Kier (671) 647-4143

These are transmitted as checked below (check all that apply):

☐ Urgent ☐ For Your Files ☐ Please Comment ☐ Please Reply
☐ For Your Use ☐ As Requested ☐ For Your Approval
☐ Other:

Acknowledge Received **Sent Via Email**

Print _____ Sign _____ Date _____

590 S. Marine Corps Drive, Ste. 514 ITC Building, Tamuning, Guam 96913
Telephone Number (671) 647-4143/46 • Fax Number (671) 649-4144

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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name of Commentor: Edith C. Pangelinan	Division: Executive
Position: President	Date of Completion: Oct 3, 2025
Agency/Organization: Guam Housing Corporation	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1					Recommend replacing "Affordable" to "Attainable" as evidenced by the attached "Affordability Analysis using the Median Income of $80,100 for Guam. The applicant prequalifies for $275,800 for a 30 year term at the current prevailing rate of 5.625% and $294,700 for a term of 38 years at the same prevailing rate. As such, a median income family will be required to come up with $100,000+ down payment. While $400,000 is considered "affordable" by HUD's standards, in reality it is not realistically "attainable" for applicants in the median income range. The lack of Inventory of Existing and Homes to be Constructed in this range are what is needed to be addressed. The word "affordable" appears on pages 3-81, 3-82, 3-83, 3-84, 3-85, 3-86, 3-91 and 3-93.
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Doc. No. 38GL-26-2651.*

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Your actual rate, payment, and costs could be higher.
Get an official Loan Estimate before choosing the loan.

GUAM HOUSING CORPORATION
Loan Producer System
Loan Affordability Analysis

10/03/2025
11:03:53

Prepared for:

Borrower Income:	$6,675.00	Total Gross Monthly Income:		$6,675.00
Co-Borrower Income:	$0.00	Desired Housing Expenses to Income Ratio:	X	29.00000%
Total Gross Monthly Income:	$6,675.00	**Maximum Housing Amount (a):**		$1,935.75
Borrower Debts:	$0.00	Total Gross Monthly Income:		$6,675.00
Co-Borrower Debts:	$0.00	Desired Total Expenses to Income Ratio:	X	41.00000%
Total Monthly Debts:	$0.00	Maximum Total Expenses:		$2,736.75
		Total Monthly Debts:	-	$0.00
		Amount Available for Housing (b):		$2,736.75
Estimated Hazard Insurance:	$302.69	Maximum Housing Pmt (lesser of a or b):		$1,935.75
Estimated Mortgage Insurance:	$0.00	Total Est T&I Amount:	-	$347.69
Estimated Taxes:	$45.00	**Maximum P&I Payment:**		$1,588.06
Estimated Other:	$0.00			
Total Est Monthly T & I Amount:	$347.69			
		Desired Loan Term in Months:		360
		Desired Interest Rate:		5.62500%
		Maximum Mortgage Qualified for:		**$275,869.42**

For information purposes only.
This is neither a contract nor a commitment to lend. Rates are subject to change without notice.

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Get an official Loan Estimate before choosing the loan.

GUAM HOUSING CORPORATION
Loan Producer System
Loan Affordability Analysis

10/02/2025
15:33:11

Prepared for:

Borrower Income:	$6,675.00	Total Gross Monthly Income:			$6,675.00
Co-Borrower Income:	$0.00	Desired Housing Expenses to Income Ratio:		X	29.00000%
Total Gross Monthly Income:	$6,675.00	**Maximum Housing Amount (a):**			$1,935.75
Borrower Debts:	$0.00	Total Gross Monthly Income:			$6,675.00
Co-Borrower Debts:	$0.00	Desired Total Expenses to Income Ratio:		X	41.00000%
Total Monthly Debts:	$0.00	Maximum Total Expenses:			$2,736.75
		Total Monthly Debts:	-		$0.00
		Amount Available for Housing (b):			$2,736.75
Estimated Hazard Insurance:	$323.43	Maximum Housing Pmt (lesser of a or b):			$1,935.75
Estimated Mortgage Insurance:	$0.00	Total Est T&I Amount:	-		$368.43
Estimated Taxes:	$45.00	**Maximum P&I Payment:**			$1,567.32
Estimated Other:	$0.00				
Total Est Monthly T & I Amount:	$368.43				
		Desired Loan Term in Months:			456
		Desired Interest Rate:			5.62500%
		Maximum Mortgage Qualified for:			**$294,726.42**

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FY 2025 Income Limits Documentation System

FY 2025 Income Limits Summary

FY 2025 Income Limit Area	Median Family Income (Click for More Detail)	FY 2025 Income Limit Category	Persons in Family							
			1	2	3	4	5	6	7	8
Guam	$80,100	Very Low (50%) Income Limits ($) (Click for More Detail)	33,950	38,800	43,650	**48,450**	52,350	56,250	60,100	64,000
		Extremely Low Income Limits ($)* (Click for More Detail)	20,350	23,250	26,150	**29,050**	31,400	33,700	36,050	38,350
		Low (80%) Income Limits ($) (Click for More Detail)	54,250	62,000	69,750	**77,500**	83,700	89,900	96,100	102,300

* Generally, extremely low-income families are defined to be very low-income families whose incomes are the greater of the Poverty Guidelines as published and periodically updated by the Department of Health and Human Services or the 30 percent income limits calculated by HUD. However, Puerto Rico and other territories are specifically excluded from this adjustment. Instead, in Puerto Rico the Extremely Low Income Limit is set at the Very Low Income Limit.

For last year's Median Family Income and Income Limits, please see here:

FY2024 Median Family Income and Income Limits for Guam

Select a different county or county equivalent in Guam:

Guam

Select county or county equivalent

Select any FY2025 HUD Metropolitan FMR Area's Income Limits:

Abilene, TX MSA

Select HMFA Income Limits Area

Or press below to start over and select a different state:

Select a new state

Prepared by the Program Parameters and Research Division, HUD.

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Name of Commentor:	Division:
Position:	Date of Completion:
Agency/Organization:	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	1-7	"Renewable energy is seen as the most immediate and viable solution to reduce electricity costs."			Renewable energy and energy efficiency are very viable and proven strategies for reducing electricity costs. GPA performed a demonstration project at UOG whereby GPA reduced electricity consumption between 50% to 75% when copared with identically constructed similar use buildings through energy efficiency alone. GPA recently submitted an analysis of its Energy Sense Rebate Program wherein the time frame of the analysis, GPA's Energy Sense Program resulted in $26 MM in direct customer energy savings, reduced system peak demand by 10.2 MW, and $27 MM in capacity deferment savings. The American Council for an Energy-Efficient Economy (ACEEE) has reported that about 50% of the United States Greenhouse Emissions reduction goals could be met by energy efficiency at a lower cost than other strategies. https://www.aceee.org/research-report/u1907
2					**General Comment** The document makes reference to energy conservation. This is a misunderstanding of the technical use of the term. Energy conservation is not Energy Efficiency. Conservation is the reduction of energy use through a change in behavior to reduce energy use like turning off your air conditioning. Energy efficiency is reducing energy use through improved technology like high SEER air conditioning. GPA's DSM program is about achieving the same customer standard of living at a lower cost. Conservation is accepting a lower quality of life to reduce energy consumption like during GPA capacity shortages.

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3	3-49	3.3.5.5. EV Infrastructure and Sustainability			***Comment not meant for publishing in document but is a special note for internal review.*** FlowEV by Triple J Technologies, LLC and its affiliate Triple J Enterprises, Inc. will provide and install one (1) 180 kW DC Fast Charger and three (3) Level 2 AC Chargers at the Guam Premier Outlets (GPO), as the designated pilot site under GPA's Electric Vehicle Managed Charging Services (EVMCS) project. GPA is already leading this effort.
4	3-50		3		*After GTA, include:* or other Telco/Fiber/Data provider Representative. GTA is not Guam Telephone Authority.
5	3-60	3.3.8. Power			***Comment not meant for publishing in document but is a special note for internal review.*** As of 2025, approximately 85% of electricity generation came from fossil fuels, with the remaining 15% supplied by renewable sources.
6	3-61	3.3.8.2. Reliability			1. The correct year is 2022 for the Integrated Resource Plan aka the GPA Clean Energy Master Plan (CEMP). 2. Rephrase last sentence. GPA's current reliability strategy includes the deployment of Battery Energy Storage Systems (BESS) capable of energy shifting and additional grid services such as fast frequency response, frequency regulation, voltage support, spinning reserve (rapid reserve),and others. Only three BESS installations in the world support fast frequency response: Kauai Island Utilities Cooperative (Kapaia, Lawai), Hawaiian Electric Company (Kapolei Energy Storage), and Guam Power Authority (Hagatna BESS).
7	3-61	3.3.8.1			3. There is no mention of GPA going LNG for the new power plant.
8	3-78	SC-34 Renewable Energy			May want to include Department of Energy (DOE) with National Renewable Energy Laboratory (NREL). GPA plans to use renewable fuels as part of its push for 100% renewable energy. The statement should conform to include GPA's strategy. Movement to 100% renewable energy must be bounded by energy reliability, resiliency and affordability realities.

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					Energy reliability is further heightened by DOD's mission and transportation 8electrification.
9	3-78	SC-35, SC-36			Rooftop Solar is a more expensive strategy for increasing renewable energy penetration. GPA is already developing projects involving large roof top facilities.
10	4-13	4.2.5. Agriculture and Emerging Sectors			***Comment not meant for publishing in document but is a special note for internal review.*** For *Aquaculture presents another opportunity*. - GPA has researched the feasibility of sea water air conditioning (SWAC) in its 2005 SWAC Feasibility Study. SWAC requires an area near the shore with high density, high power users for air conditioning such as Tumon Bay's Hotel Row. This could cut energy costs for nearby large businesses while also lowering emissions. As an aquacultural opportunity, the implementation of SWAC may also support and diversify the economy through the purposing and use of nutrient rich deep seawater for fisheries and other similar endeavors. https://nelha.hawaii.gov/ https://nelha.hawaii.gov/resources/library/ https://nelha.hawaii.gov/our-clients/ https://nelha.hawaii.gov/park-assets/ GPA proposed using SWAC to facilitate aquaculture and other commercial uses for deep sea water in its public engagement for the 2005 SWAC Feasibility Study.
11	4-13	Last paragraph			Small farms are not likely to create large economic growth in this sector. Have you considered large agribusiness incentives? What is the potential economic benefit of additive manufacturing to place it so high on this list? Especially since there is an egregious omission of datacenters. Encouraging hyperscale datacenters (~40 MW) is one of GPA's strategic objectives. Currently, there are 5 MW (maximum load design) datacenters online. Within a year, GPA expects 20 MW of datacenters to achieve commercial operation. With an additional 15 MW in early planning stages. Last month, a Taiwan delegation met with GPA on the potential for a 40 MW datacenter project.

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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
					Currently, the civilian datacenters are located in electric infrastructure constrained areas in central and northern Guam. In conversations with Tyrone Taitano and at GPA's P.O.W.E.R symposium, GPA has posited that the area around the projected KEPCO Yona Solar (KYS) facility with its 115 V transmission infrastructure creates an ideal location for interconnection of large datacenters and additional utility-scale terrestrial renewable energy plants. The KYS substation is across the GPA WTG on route 17. It would also bring a employment opportunities for Southern Guam. Having large datacenters at this proposed area has operational benefits for GPA, as well. The KYS facility can serve the area as a microgrid. GPA and its fiber Swap partners have a significant fiber optic capability along route 17. Datacenters have the potential for displacing DOD as GPA's largest customer.
12	4-14	Strategic Site Selection			***Comment not meant for publishing in document but is a special note for internal review.*** Tanguisson Power Plant may be the site of the future LNG fuel receiving, storage, and regasification facility for GPA and possibly Navy/AF. What impacts will this cause to the GAIC site? Need to ensure the ability to share space or operate in close proximity to each other. The Tanguisson Power Plant is Navy Property slated for transfer to GPA. GPA has plans and commitments for several infrastructure projects.
13	4-14	4th Bullet			This talks about Aquaculture Innovation contingent on the decommissioning of the Tanguisson Power Plant. Will funding be available for the decommissioning of this plant? The Tanguisson Power Plant is Navy Property slated for transfer to

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Guåhan 2050 Sustainability Plan Agency Comment Form

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
					GPA. GPA has plans and commitments for infrastructure projects on this property.
14	4-31	Rejuvenation of Existing Properties			Capping the Ordot Landfill and full Landfill cells at Layon allows these properties to be used for utility scale solar PV facilities.
15	5-8	Building a Resilient Energy System			GPA produces 85% of its electricity from oil. IT produces 15% of its electricity from renewable sources. Additionally, this report does not realize the importance of energy efficiency in managing electric power demand and lowering energy costs. It should.
16	5-8	Solar and Wind Energy Expansion			Only considers Solar and Wind Energy Technologies to the exclusion of other renewable energy technologies including OTEC, SWAC, renewable fuels, marine kinetic energy systems, and geothermal. GPA's strategy includes studying and developing other renewable technologies including renewable fuels. GPA's existing power plants can be repowered to use renewable fuels. As these resources move towards price parity with ultralow sulfur diesel, GPA would be able to transition its generation fleet to meet 100% renewable energy production without a heavy investment. In particular, unlike wind and solar PV technologies, using renewable fuels would provide firm power renewable energy. Since 2016, GPA's 275 KW wind turbine generator (WTG) coexists within a forest preserve owned and managed by the Department of Agriculture.
17	5-14	TE-22	1		*After solar, wind, include":* or waste-to-energy methods of generating energy. Have you considered marine kinetic, off-shore WTG, OTEC and SWAC in this?
18	5-14	TE-23	1		GPA requirements will have to be met. GPA is installing BESS for renewable integration. Bid requirements for these BESS systems are sized for GPA utility scale installations, Net metering customers do not pay for these resources. These installations should not export power into the grid unless authorized by GPA

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Guåhan 2050 Sustainability Plan Agency Comment Form

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
					under a flexible loads agreement. Additionally depending on the amount of customer load served, schedule M rates will apply.
19	5-14	TE-24			GPA has already begun the process of creating microgrids. In its Phase IV Renewable Energy Acquisition Bid, GPA required the installation of Grid Forming Inverters (GFM) with BESS. This allows for transmission and distribution level microgrids. GPA is developing a project for at UPI Elementary to establish a microgrid and backfeed source for the feeder as well as power to support its use as a typhoon shelter. GPA's Bid for Standalone BESS for Grid Services will provide significant renewable integration benefits including near elimination of underfrequency load shedding outages. Replacing conventional generation with inverter based resources (IBR) such as solar PV and wind turbines makes the power grid very unstable. Without proper and adequate mitigation, GPA's power system will be very vulnerable to voltage collapse blackouts.
20	7-9	VS-36	1		Upgrade infrastructure through programs such as GHURA redevelopment for underground or hybrid electrical distribution system
21	7-15	VS-83	1		Upgrade infrastructure through programs such as GHURA redevelopment for underground or hybrid electrical distribution system
22	7-18	VS-12	1		Upgrade infrastructure through programs such as GHURA redevelopment for underground or hybrid electrical distribution system
23	7-23	VS-25	1		Upgrade infrastructure through programs such as GHURA redevelopment for underground or hybrid electrical distribution system

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
24	7-26	VS-29	1		Upgrade infrastructure through programs such as GHURA redevelopment for underground or hybrid electrical distribution system
25	7-31	VS-45	1		That include upgrading infrastructure for underground electrical distribution system
26	7-34	VS-58	3		Upgrade infrastructure through programs such as GHURA redevelopment for underground or hybrid electrical distribution system
27	7-36	VS-65	1		Upgrade infrastructure through programs such as GHURA redevelopment for underground or hybrid electrical distribution system
28	7-38	VS-68	5		Upgrade infrastructure through programs such as GHURA redevelopment for underground or hybrid electrical distribution system
29	7-40	2nd Para			A new power plant in Hagatna to improve power in Sinajana???
30	7-46	VS-41	3		Upgrade infrastructure through programs such as GHURA redevelopment for underground or hybrid electrical distribution system
31	7-48	VS-79	4		Upgrade infrastructure through programs such as GHURA redevelopment for underground or hybrid electrical distribution system
32	7-49	7.2.14.2 Issues and Challenges			Should clarify the inadequate power supply in the 2nd sentence. Most GWA wells and powered infrastructure are also powered by onsite backup generators, many maintained by GPA.
33	7-49		4th paragraph		***Comment not meant for publishing in document but is a special note for internal review.*** GPA is currently working with NREL to develop a demonstration scenario for long duration energy storage (LDES). Umatac, the village location and its substation, are the basis of the one of the scenarios which will display micro-grid opportunities for communities often isolated from power service post-storm and during transmission line faults. GPA is in communications with United States manufacturers of iron-air BESS technology. This technology has the capability for five days storage capacity. Useful for storing a five-day reservoir of renewable energy during the rainy season where solar PV and wind energy production is greatly diminished.

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
34	7-56	VS-51	4		Upgrade infrastructure through programs such as GHURA redevelopment for underground or hybrid electrical distribution system
35	7-61	VS-59	2		Upgrade infrastructure through programs such as GHURA redevelopment for underground or hybrid electrical distribution system
36	7-64	VS-71	5		Upgrade infrastructure through programs such as GHURA redevelopment for underground or hybrid electrical distribution system
37	7-67	VS-73	5		Upgrade infrastructure through programs such as GHURA redevelopment for underground or hybrid electrical distribution system
38	8-17				Information for federal funding under BIL may be outdated.
39	8-18	8.3.3/2nd Bullet			Why does it specify two substations for Mangilao?
40	8-21	Renewable Energy and Energy Resilience			***Comment not meant for publishing in document but is a special note for internal review.*** Should verify if grant is completed. Referencing in 2023 DOE funding for GPA to underground critical power lines serving GWA facilities.
41	8-21				***Comment not meant for publishing in document but is a special note for internal review.*** Should verify if the description is correct. DOE funded microgrid development? Or is funding?
42	8-21	3rd Para			Should be only water services and distribution lines not transmission. Even the footnote 34 is wrong.
43	8-22	Inflation Reduction Act			What impacts from the OBBB Act affect the IRA and Tax Credits and this discussion. To date, the current Phase IV bidders are racing to meet timelines to remain eligible for the credits. This section may need updating.
44	8-23	Similarly, private companies …			Private companies are not allowed to wheel power through GPA's transmission and distribution system. A PPA contracted by GovGuam must be for onsite purposes.

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Comments from GSWA

Irvin Slike <irvin.slike@gswa.guam.gov> Wed, Sep 24, 2025 at 4:51 AM
To: gsp2050@bsp.guam.gov

Thank You for this Opportunity to Comment

On page 1-10 of the introduction, it was stated that 30% of people surveyed in 2022 supported WTE as a solid waste and presumably an option for energy production.

The public has not been informed as to the financial implications of construction and operation of such a facility Currently GSWA has an up to date rate model study that could be fed the estimated construction and operational costs of a facility and produce an estimated fee structure to support this desired solution.

Moreover GSWA should lead a comprehensive community participatory creation of a ten year Solid Waste Management Plan. The project would entail securing a consultant to lead in the factual discussions of various scenarios which quantify financial, environmental, legal and social implications of these options. The final Chapter of the plan would detail the timeline and cost of the agreed upon plan chosen by majority of public input.

The short term goal of GSWA is to initiate a comprehensive study on a redesign of Layon landfill to allow for smaller cell construction that maintains adequate separation from seasonally high ground water. The other key component is the establishment of the time Layon will be available to provide disposal capacity. This timeline will be used in Guam's overall Solid Waste Management Plan.

Irvin Slike
General Manager
GSWA

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For more options, visit https://groups.google.com/a/bsp.guam.gov/d/optout.

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Guåhan 2050 Sustainability Plan Agency Comment Form

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Name of Commentor: Christian F. Valencia	**Division:** Research
Position: Director of Tourism Research	**Date of Completion:** 09/26/2025
Agency/Organization: Guam Visitors Bureau	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	4-4	4.2.2./Para. 3	1		Amend to read: "Tamuning, with 1,616 establishments generating over $5.16 billion in revenue in 2022, stands as the primary economic hub of Guam." Figures are from the 2022 Economic Census, conducted by the U.S. Census Bureau, and should be cited when used throughout the Plan.
2	4-7	Footnote #14			Consider: This old colonial roadway that once connected Hagåtña to the seaport in Humåtak includes the Spanish-era bridge known as the Tollai Talaifak or Taleyac Tollai Åcho' stone bridge.
3	4-7	Para. 2			Add: "These programs, along with sister-school partnerships and sister-city agreements, have the benefit of priming the next generation of travelers from key tourism markets to Guam."
4	4-8	4.2.2.2./Para. 4	2		Verify the 913-room figure for Honhui Hotel. A recent proposal from Honhui Tumon Bay Hotel representatives lists the development of a full 824 guest rooms.
5	4-15 to 4-17	4.3			Village economic activity and establishment figures are from the 2022 Economic Census, conducted by the U.S. Census Bureau, and should be cited when used throughout the Plan.

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6	4-21	Para. 2			Amend to read: "**Tourism:** Previously contributing $1.85 billion annually, the industry saw a drastic decline due to pandemic-related travel restrictions. Recovery efforts target South Korean and Japanese markets, the Philippines, and emerging new markets, such as Taiwan, and Malaysia, with government-backed investments in tourism infrastructure."
7	4-22	Para. 3			The Plan should clarify/explore government authority and processes regarding abandoned or derelict properties. Specifically, what legal mechanisms are in place to address properties with tax delinquencies, unsafe structures, or public health hazards? Additionally, under what circumstances can eminent domain be applied to facilitate the rehabilitation or repurposing of such sites for community and economic benefit, including potential tourism-related uses?
8	4-22	Para. 5			Consider exploring the implementation and adoption of the International Property Maintenance Code and a property owners association, both for H-zones. The IMPC is referred to as both the International Property Management Code and the International Property Maintenance Code. The actual reference code is the 2021 International Property Maintenance Code, as adopted by the International Code Council, "the largest international association of building safety professionals." There is currently legislation that seeks to adopt the IPMC for H-zones (Bill No. 160-38).
9	5-71	Para. 1/2			Consider the incorporation of parametric insurance for Tumon Bay to protect the reef through immediate payouts when "trigger events" such as tropical storms, etc. damage the reef and FEMA assistance isn't immediately available due to the time it often takes for federal disaster declarations. Parametric policy payouts can front the cost of seeding sun-bleached and typhoon-damaged reefs with coral polyps for quicker recovery. The Tumon Bay Insurance Task Force, in accordance with Public Law 35-107, submitted to

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
					the Guam Legislature a feasibility study relative to obtaining parametric insurance for the reef and beach of Tumon Bay in June 2021.
10	7-7	Para. 2	3		Remove apostrophe in "(Guam Visitor's Bureau)"
11	7-28	Bullet 3			The Lujan House is now home to the Guam Preservation Trust, which completed rehabilitation of the home in 2010.
12	7-28	Bullets 4 & 7			With the Guam Legislature's support and in compliance with preservation and historic site laws and regulations, consider exploring the revitalization of the old Guam Museum on the far backside of the Plaza de Espåña by turning it into an active gift and souvenir shop that sells culturally relevant Guam souvenirs, especially those that commemorate the Plaza, and dedicate net profits to the upkeep of the Plaza de Espåña.
13	7-43	VS-76			The G50SP should include an assessment of hotel resources across property types, ranging from small motels and independent hotels to larger luxury resort properties often owned by multinational groups. As part of this process, consider engaging directly with hotel owners to identify the types of assistance they need to reinvest in their properties and maintain compliance with zoning laws and other standards. Additionally, the G50SP could explore leveraging available tools such as Guam Economic Development Authority (GEDA) programs, grants, or targeted tax incentives to support qualifying property owners in reinvestment and upkeep efforts.
14	7-44	VS-77			Clarify the meaning of the word "circulation" in this section.
15	7-44	Southern Villages			*Note: In order to make the most efficient use of available resources, Guam's southern villages might benefit from updating and harmonizing existing coastal management and economic development plans into a cohesive, interlocking whole. Such a multi-village master plan would cover the needs and aspirations of all communities in the south from the "near south" village of Yoña to Sånta Rita-Sumai bordering Naval Base Guam.*

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
					Through careful, thoroughgoing integration and an enhanced resourcefulness that springs from power in numbers and the spirit of cooperation, villages may discover new ways of winning together. This approach avoids competing for capital while ensuring that no individual plan runs the inherent risk of falling into irreconcilable conflict with another.
16	7-52	Bullet 7			For cultural preservation and productive tourism reasons, Historic Inalåhan Village presents the strongest case for restoration of a prewar settlement. Its original plat contains the highest number of highly distinguishable prewar foundations, ruins, and even functional buildings of any other settlement on Guam. The challenge to redeveloping this neighborhood in a sustainable, preservational way is untangling the bureaucratic overlap and the stalemating contradictions caused by municipal, local, and federal laws that may be at odds with one another. Costly compliance with a web of laws, rules, and regulations have reportedly hampered attempts to preserve historically relevant properties and have apparently made refurbishment too cost-prohibitive and inconvenient for local landowners to pursue. Probate land disputes complicate matters further. The Gef På'go Cultural Village is defunct, and its idyllic seaside site is in a state of disrepair. The description of this former operation as a going concern is no longer applicable. A popular tourist attraction, the Salaglula Pools site, AKA Inalåhan Pools, was completely renovated several years ago. In addition to being a favorite coastal swimming hole filled with ocean waters, it also serves as a marine life sanctuary for corals and giant clams.
17	7-56 to 7-58	7.2.16			Spell Malesso' with the glottal mark after the last letter (o) in all cases. It is missing from the spelling in some instances.
18	7-65	7.2.18.1			Place a comma and a space after Notre Dame High School.

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19	8-13	Row 1			GVB is listed as lead agency for action on Tourism and Cultural Enterprise and is pleased to support this effort, provided there is support from the Guam Legislature and/or potential grant funding.
20	8-28	Para. 2			Aside from the recommended $10 “green fee” on tourists, conservation financing could also benefit from the development of an expertly managed Guam Territorial Wealth Fund in which a certain amount of tax revenue is set aside every month for reinvestment into capital markets and grows exponentially. If principal is never touched and only ever added to, the interest and return on capital could benefit a number of economic development programs such as conservation financing.
21	8-29	Para. 2			Tourism Recovery Funds (ARPA, etc.) not available.
22	8-32	Para. 1			Considering adding a paragraph on: **Carbon Offsets.** The Guam Visitors Bureau is currently collaborating with sustainability partners to design and implement a carbon offset program in partnership with local non-governmental organizations. This initiative measures the CO_2 generated by events held on-island and provides incentives to corporate clients to subsidize the cost of offsets. The resulting funds are reinvested directly into local reforestation and conservation projects, aligning with the Plan’s sustainability goals while supporting both environmental stewardship and the visitor industry.
23	8-32	Para. 1			Relative to the assessment of financing and funding for Economic Redevelopment and Tourism: ***GVB submitted the following official comment to the GHURA-administered Community Development Block Grant - Disaster Recovery (CDBG-DR) program on April 15, 2025.***

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					COMMENTING ENTITY: Guam Visitors Bureau PROJECT NAME: Tumon-Tamuning Tourist District Safety and Security Mitigation Project to Develop Local Livelihood Support through the Visitor Industry PROJECT GOALS: To enhance the safety and security of tourists, visitor industry employees, and local residents living in or visiting the district, GVB aims to ensure the following: (1) Enhanced Communications: Install robust Wi-Fi for free public access to wireless broadband services throughout the district. (2) Improved Crime Prevention &Response: Install CCTV throughout the district. (3) Enforcement of Building Codes and Standards: Harmonize all district buildings into compliance with required codes and standards. (4) Improved Flood Control: Redevelop the district's stormwater runoff system to keep roadways free and clear of standing water during and after downpours and prevent Erosion. **GOAL #1: Install capacity for public access to reliable Wi-Fi throughout the district.** - Enhance Guam's destination appeal (free Wi-Fi access everywhere in the Tumon-Tamuning Tourist District). - More tourists = more spending = more revenue to support critical public services - 70-75 visitors to Guam needed to support one (1) job in the tourism industry. - 20,000 tourism jobs existed pre-COVID. - Return to pre-COVID tourist arrivals: were 120K+ arrivals/month; currently at 50%. - Tech-savvy travelers use handheld devices for GPS, retail purchases, communications, and self-booking hotel rooms, restaurant visits, tours, and travel experiences.

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
					- Install necessary electrical power capacity as required for various components in a redundant WiFi system that can support free public access to broadband services as well as the implementation of CCTV security surveillance. - Install communications capacity for local residents and tourism-sector employees. - Install broadband capacity for schools in the district (LBJ, TAMES, JFKHS, SACS, etc.) **GOAL #2: Enhance the safety and security of tourists and the local community throughout the Tumon-Tamuning Tourist District.** The installation of CCTV cameras will help deter criminal activity, promote public safety, and give our community a more reassuring sense of security. A reliable CCTV system will help safeguard property assets, cut crime, and supply law enforcement with actionable evidence when illegal events occur. GVB intends to install CCTV cameras throughout the district and at tourist-attraction designated sites. This project will include a dedicated monitoring station and manpower to support it. GVB intends to build the CCTV system on the backbone of the free public WiFi system. **GOAL #3: Bring building code compliance up to standard.** The main purpose of building codes is to protect public health, improve safety, and enhance the general welfare in the construction and occupancy of buildings. All hotels, restaurants, stores, and other facilities in the Tumon-Tamuning Tourist District must comply with local building codes and be up to standard to ensure the safety and security of our visitors and island community. It may also be advisable to develop a nonprofit Property Owners Association (POA) to

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
					assist with compliance within the district. It is equally important to include multilingual signage for beach/water safety and pedestrian guidance. Visitor-friendly environments depend on effective communication to guide pedestrians through diverse and often complex settings. From well-placed signage to crosswalk signals and public awareness campaigns, clear communication is essential to minimize risks, prevent accidents, and enhance the overall experience in Guam. Signs that safely point the way and warn pedestrians of hazards promote accessibility and foster a culture of safety. This is another step toward bringing our island up to world-class standards for the benefit of visitors and our island community. **GOAL #4: Improve flood mitigation throughout the district.** Although GVB has been told that it does not have jurisdiction over buildings or public properties outside of its headquarters in the Tourist District, the fact remains that GVB does have purview in the district and is willing to cooperate with Guam Housing and Urban Renewal Authority, Guam Homeland Security/Office of Civil Defense, the Department of Public Works, Guam Waterworks Authority, and other government agencies to help redevelop the Tourist District's inadequate stormwater runoff system, prevent flooding, and improve safety and security in the district. Aligning GVB's evolving stated goals with CDBG-DR requirements for sustainable community growth plans, public space and accessibility enhancements, and inclusive economic development projects: The Guam Visitors Bureau is aware that the CDBG-DR assistance program prioritizes the needs of Low-to-Moderate-Income (LMI) communities. And we want to help meet that

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					need, especially as it falls in line with the bureau's mission statement "to efficiently and effectively promote and develop Guam as a safe and world-class destination for visitors and to derive maximum benefits for the people of Guam." GVB's proposed project aims to help meet the needs of Guam's LMI community in the following ways: • The COVID-19 pandemic and Typhoon Mawar destroyed public and private property, dried up visitor arrivals, and decimated employment throughout Guam's number one private industry, tourism. GVB's interest in CDBG-DR funding centers around restoring the economic integrity and vitality of a visitor industry that has proven critical to the dramatic improvement of standards of living across Guam's socioeconomic spectrum over the course of several generations and counting. • Stimulate employment and self-advancement through job creation in the Tourist District. • Clear roadways for safer driving conditions in the Tourist District for residents, employees, and visitors: (1) via the use of CCTV surveillance and crime reporting as well as (2) hazard-free passage through roads that are free of standing water. • Improve the sense of personal security for residents, employees, and visitors as they seamlessly use the Tourist District's robust, accessible, high-speed WiFi broadband communications system. The following are a few useful purposes that can be served by enhanced online communication supporting WiFi and CCTV: GPS site location, the reporting of crime and suspicious activity, emergency response, business-friendly ad response, online payment services, cab and ride-service hailing, social networking, and general instant information gathering and sharing. • Improve the overall safety, security, and convenience of the Tourist District for the benefit of all who live, work, and visit there. • Clearing the way for streamlined, hazard-free traffic online and on the road will free up the flow of communications and physical ground travel. This, in turn, will help attract more

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					visitors and help retain and attract talent for Destination Guam USA's workforce. It stands to reason that increasing arrivals, gainful employment, and residency will result in more cash flow, a higher multiplier effect, the upscaling of businesses, and the growth of the government's revenue for the improvement of public services.

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Name of Commentor: Evangeline Lujan	Division: Compliance and Safety
Position: Senior Regulatory Analyst	Date of Completion: 09/86/2025
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GUAM WATERWORKS AUTHORITY
Gloria B. Nelson Public Service Building | 688 Route 15, Mangilao, Guam 96913
P.O. Box 3010, Hagåtña, Guam 96932
Tel. No. (671) 300-6846/47 Fax No. (671) 648-3290

September 30, 2025

Ms. Lola Leon Guerrero
Director
Bureau of Statistics and Plans
Sagan Planu Siha Yan Emfotmasion
P.O. Box 2950
Hagåtña, Guam 96932

Subject: DRAFT Guahan 2050 Sustainability Plan

Håfa Adai Ms. Leon Guerrero,

Attached are GWA's specific comments on the draft Guahan 2025 Sustainability Plan. During our review of the G50SP, we noted that the information regarding GWA's current and future strategies, activities, and projects is based on the 2018 Water Resources Master Plan (WRMP). Many of those projects have been completed. Please be advised that in 2024/2025 GWA updated the Water Resources Master Plan. If you wish to incorporate updated information from the current version of the WRMP please contact my office directly to arrange for an electronic link to transfer the three-volume document.

The G50SP may need to be updated to reflect projects completed under the 2011 Court Order and the projects that will be addressed under the 2024 Partial Consent Decree. GWA has nearly completed all projects identified under the 2011 Court Order, which primarily focused on upgrading critical water infrastructure. Currently, GWA is operating under the 2024 Partial Consent Decree and undertaking major initiatives to enhance existing wastewater collection system components and provide additional capacity for the overall wastewater collection network.

GWA also believes the G50SP should also broaden its scope to reflect ongoing collaborative efforts with the Department of Defense (DoD) under the One Guam Memorandum of Understanding (MOU). GWA, DoD, USGS, and UOG's WERI are also actively partnering through the One Guam Water Resource Information Program. This initiative aims to improve monitoring and management of the Northern Guam Lens Aquifer through enhanced data collection and analysis, improved maintenance of all monitoring assets, and more sustainable program funding.

A central theme of the Water and Wastewater Infrastructure portion of the plan is that development cannot proceed without adequate infrastructure. There appears to be limited information provided concerning how adequacy will be ensured, or how the needed infrastructure to allow development is to be funded. While GWA supports this principle, additional detail on implementation strategies and resolving existing conflicts within land use policies and regulations are needed.

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GWA also believes greater emphasis should be placed on cumulative impacts that affect the aquifer, to include unregulated development, contribution of certain development on the presence of emerging contaminants in the aquifer, and the influence of special interest groups in the approval of land use laws.

Thank you for the opportunity to provide GWA's comments. If you have any questions or comments, please feel free to contact Paul Kemp, Assistant General Manager of Compliance and Safety at paulkemp@guamwaterworks.org.

Sincerely,

MIGUEL C. BORDALLO, P. E.
General Manager

Attachment: Guahan 2050 Sustainability Plan Agency Comment Sheet

cc: Thomas A. Cruz, P.E. AGM Operations and Maintenance
Paul Kemp, AGM, Compliance and Safety
Brett Railey, P. E., AGM Engineer
Jacob Miller, P.E. Permits Engineer

MCB/edl

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1	Chapter 6 page 12-14	Cultural & Historic Preservation section	N/A	Plan prioritizes heritage sites and adaptive reuse; recommend heritage impact assessments for all major projects.	
2	page 3-86	Urban Design & Mixed Use section, paragraph 2	N/A	Mixed-use, pedestrian focus good but risks gentrification and displacement. Recommend equity safeguards, inclusionary zoning.	
3	page 4.7-8// Section 7.27	HRRA Governance section, second paragraph	N/A	Improved coordination is positive, but now risks bureaucratic overlap and unclear leadership. Explicit HRRA roles needed.	
4	p. 19-21	Affordable Housing section 61	N/A	Encouragement for diverse housing is positive, but details and guarantees for Hagåtña's affordability are missing.	
5	p. 43-45	Implementation & Funding section Chapter 8	Figure 8-1 missing HRRA in Development Review and Building Permit section	Measurable indicators and phased actions are good, but Hagatna may compete with other villages for funds; need commitments.	

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6	Throughout (general)	All relevant Community Engagement mentions	N/A	Village priorities referenced, but lacks continuous, local participation mechanisms. Mandate regular bottom-up engagement.	
7	p. 53-54	Resilience & Adaptation section	Table 1	Hazard/climate policies included, but should add Hagatna-specific details for adaptation and historic core resilience.	
8	p. 65 (suggestion area)	Summary table and conclusion section	Summary Table	Recommend public dashboard for HRRA project progress, investment flows, and preservation outcomes for transparency.	
9	p 8-2	Any Funding Mechanism or Prioritization section	N/A	Implementation lacks clear funding streams for Hagatna projects; recommend guaranteed HRRA funding and project prioritization.	
10	Entire plan	All references to Affordable Housing, Displacement	N/A	Stress the risk of displacement and need for rental safeguards (e.g. rent stabilization, community land trusts).	

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11	Throughout plan	Implementation/Action Plan sections	N/A	The plan should list concrete HRRA-led demonstration projects (e.g., adaptive reuse, affordable housing, community parks) to clarify implementation focus.	
12	Affordable Housing	Affordable Housing policy section, paragraph 3	N/A	Stronger commitment needed for long-term affordability: consider community land trusts, rent stabilization, and inclusionary zoning, specifically in Hagåtña.	
13	General, for each project	Project Approval/Development Process sections	N/A	Mandate a heritage impact assessment for any major new development in Hagåtña to document and mitigate effects on cultural and historic sites.	
14	8.43-45	Community Participation/Engagement section	N/A	Continuous, neighborhood-level engagement should be required—particularly with residents, local businesses, renters, and elders of Hagåtña.	

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Comment #	Page #	Sec/Par., Line	Fig/Table	Comment	
15	Governance/Monitoring	Implementation/Monitoring and Evaluation	Table 8-1 Sustainability Plan	Establish a public dashboard* for HRRA projects, showing timelines, financing, community engagement results, and heritage outcomes to improve transparency.	*could be across all villages
16	Resilience/Climate	Resilience/Adaptation and Infrastructure sections	N/A	Integrate specific resilience upgrades (e.g., elevating structures, microgrids, flood management*) and long-term maintenance in Hagåtña's historic core.	* living with water projects [Singapore and UK]
17	Risk & Natural Hazards	Hazard Mitigation / Adaptation	N/A	Expand on unique capital risks: Require Hagåtña-specific flood, sea level rise, and tropical storm adaptation standards in codes and infrastructure design.	
18	Funding Prioritization	Funding & Capital Investment sections	N/A	Guarantee dedicated funding streams or priority for Hagåtña projects within the G50SP to prevent deprioritization against other regions.	

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19	Urban Design/Equity	Design Guidelines, Social Equity sections	N/A	Prevent displacement and early gentrification by embedding equity reviews and monitoring outcomes for vulnerable populations, including renters and businesses.	
20	Maintenance	Historic Site Maintenance/Rehabilitation sections	N/A	Require long-term maintenance plans and dedicated funds for restored historic and public spaces in downtown Hagåtña.	
21	Maintenance, Resilience, Historic Preservation	Throughout historic core sections	N/A	The plan should require concrete long-term maintenance plans and secure funding allocations for all restored historic buildings and public areas in Hagåtña, ensuring that rehabilitation investments are preserved and that HRRA retains oversight over ongoing stewardship responsibilities.	

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22	Funding/Implementation	Funding enforcement sections	N/A	Stipulate enforceable funding for E7s key revitalization projects to avoid delays or defunding in implementation cycles.	
23	Oversight/Governance	Governance and oversight	N/A	Require an independent review board for HRRA to oversee compliance with plan goals, reporting directly to oversight agencies and the public.	
24	Performance Monitoring	Monitoring and evaluation, appendix	N/A	Include annual performance audits for all downtown revitalization and heritage projects, with corrective action requirements if benchmarks are missed.	
25	Housing Equity	Affordable housing targets	N/A	Mandate housing equity targets for indigenous CHamoru, low-income, and historically displaced residents within new housing developments.	
26	Access to Public Space	Urban design and parks	N/A	Ensure all public spaces are designed for universal accessibility and include regular	

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Comment #	Page #	Sec/Par., Line	Fig/Table	Comment	
				maintenance schedules in plan requirements.	
27	Governance Transparency	All governance sections	N/A	Publicize decision-making timelines, complaints, and appeals processes related to HRRA/Hagåtña projects on an accessible online platform.	
28	Capacity Building	HRRA staff and stakeholder training	N/A	Allocate resources for HRRA board and staff training (e.g. preservation, climate adaptation, equity policies, and project management best practices).	
29	Planning Support	Funding and technical assistance	N/A	Provide technical assistance and direct planning support to small businesses and local non-profits within Hagåtña.	
30	Climate Mitigation	Urban resilience, infrastructure	N/A	Expand scope for climate mitigation (e.g., green corridor linkages between open spaces, carbon-reducing building requirements).	

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31	Economic Diversity	Commerce/economic diversification	N/A	Incentivize non-tourism small businesses and creative industries to ensure diverse economic growth downtown.	
32	Cultural Programs	Heritage/cultural program appendix	N/A	Include sustained funding for traditional and intergenerational cultural programs hosted in HRRA-managed facilities.	
33	Archaeological Stewardship	Heritage protection	N/A	Establish protocols for archaeological discoveries during redevelopment, with transparent mitigation and preservation steps.	
34	Flood and Disaster Readiness	Resilience/hazard mitigation	N/A	Implement mandatory disaster readiness plans for all new commercial and mixed-use construction in the historic district.	
35	Local Business Retention	Economic development	N/A	Institute business retention policies, such as rent subsidies/concessions for long-term local tenants threatened by gentrification.	

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36	Energy Strategy	Resilience/energy	N/A	Prioritize decentralization (e.g. microgrids, renewables) for public infrastructure to improve resilience and lower costs.	
37	Public Health Integration	Parks, walkability, active transportation	N/A	Integrate public health criteria—air quality, shade, walkability—into infrastructure, park, and street upgrades.	
38	Restorative Justice	Inclusion/equity initiatives	N/A	Promote restorative justice: involve communities affected by past displacement in planning and benefit sharing.	
39	Youth Engagement	Community engagement/youth	N/A	Develop youth internship and mentorship programs centered around heritage, environmental, and public history work.	
40	Design Guidelines	Urban design guidelines	N/A	Set local design guidelines favoring CHamoru/Guam vernacular architecture, landscape, and signage in new developments.	

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Comment #	Page #	Sec/Par., Line	Fig/Table	Comment	
41	Interagency Coordination	Implementation/agency roles	N/A	Specify lead agency role for HRRA in reviewing all Hagåtña-district projects instead of “multi-agency” points of ambiguity.	
42	Inclusion Targets	Social equity/target policies	N/A	Require tracking of socioeconomic and demographic participation in all public plan engagement and hiring related to downtown projects.	
43	Project Phasing	Implementation timeline	N/A	Apply phasing so essential upgrades (e.g., housing, hazard adaptation) are implemented first before aesthetic or non-essential works downtown.	
44	Business Continuity Grants	Economic resilience	N/A	Establish a fund providing grants for local businesses forced to close temporarily due to major infrastructure or heritage projects.	
45	Historic District Marketing	Cultural/heritage marketing	N/A	Launch a heritage marketing campaign for Hagåtña’s historic district, coordinating with visitor agencies	

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				and CHamoru organizations to drive cultural tourism.	

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I Finaloffan i Manaotao Tåno'
CHamoru Historic Periodization
(Kumisión i Fino' CHamoru yan i Fina'nå'guen i Historia yan i Lina'la' i Taotao Tåno')

Historical Periods:

I Inásodda' i Manmo'fo'na na Taotao-ta yan i Taotao Sanlagu Siha
First Encounters with People from the West

I Tinilaika ginen i Sanhiyong
La Nao de China Trade

I Kilu'os yan i Sapble
The Cross and the Sword

I Inachåken i CHamoru Siha: U Mamumuyi pat U Fanlå'la'?
The CHamoru Dilemma: Rebellion or Survival?

Piråta, Biaheru, yan Bayaneru Siha
Pirates, Explorers, and Whalers

I Hiniyong i Manmestisu na CHamoru
Emergence of a Hybrid Colonial Identity

Ginanna Siha Ginen i Geran Espåña yan Amerika
Spoils of the Spanish-American War

Guåhan, Kolonisan Amerika
Guam, The American Colony

CHinachalån-ña para Uta FanmanAmerikånu
The Americanization Process

Ti Geran-måmi
A War Not of Our Making

I Lina'lå'-ta gi i Duranten i Areklamenton i CHapanís
Life During the Japanese Occupation

Hinalom Amerikånu Tåtte
Americans Return 1944-1945

I Machule' Tano' yan Hinipa'
Land Taking and Displacement

I Tinilaikan i Lina'lå'-ta ginen i Nina'siñan Maisa Asta i Suetdo na Fondon Ikonomiha
From Subsistence to a Wage-Based Economy

Ma Agonkåhat Guåhan
The Rebuilding of Guam

I Tinituhon i Gebietnamenton Sibít
The Beginning of Civilian Government

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Kumisión i Fino' CHamoru yan i Fina'nå'guen i Historia yan i Lina'la' i Taotao Tåno'

The Kumisión i Fino' CHamoru yan i Fina'nå'guen i Historia yan i Lina'la' i Taotao Tåno' (Commission on CHamoru Language and the Teaching of the History and Culture of the Indigenous People of Guam, was reestablished through the CHamoru Heritage Act of 2016 (P.L. 33-236, 5GCA CH 88). The Kumisión carries the critical mandate of developing and maintaining a standardized orthography, producing and approving CHamoru resources, guiding language policy across educational and government institutions, and ensuring the revitalization of the CHamoru language, history, and culture. In its role as the Kumisión i Na'an Lugåt (Place Names Commission), it is further tasked with creating, implementing, and advising on a coherent, culturally grounded, and historically accurate set of criteria for selecting place names. This work requires close coordination with the Guam Land Use Commission, the CHamoru Land Trust Commission, the Department of Education, the University of Guam, the Guam Community College, the village mayors, Dipåttamenton i Kaohao Guinahan CHamoru, and other civil and religious organizations to ensure appropriate place names and consistency in signage.

Kumisión i Fino' CHamoru yan i Fina'nå'guen i Historia yan i Lina'la' i Taotao Tåno'

Tinanga

U chalåni, u su'on mo'na yan u hotkonuyi i lina'la' CHamoru; u ta atitutuyi kinahulo' tinaotao yan u petsigi i fino' CHamoru, i lina'la', yan i finaloffan i taotao tåno' Guåhan.

Our Vision

We lead nation-building efforts to ensure the continuity of our CHamoru peoplehood and nationhood by fostering the restoration and revitalization of our language, culture, and history as Guåhan's Taotao Tåno'



These agencies and institutions shall seek the guidance of the Kumisión i Na'an Lugåt and to maintain records of their consultations. Beyond its advisory role, the Kumisión also studies ancient CHamoru terminology and the traditional pronunciation of place names, working to restore these forms within the framework of the current CHamoru orthography. It also conducts periodic reviews and evaluations as directed by the Government of Guam, ensuring that its work remains responsive to both cultural integrity and contemporary needs.

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I Tinituhon i Manaotao Tåno'
CHamoru Archaeological Periodization

(Kumisión i Fino' CHamoru yan i Fina'nå'guen i Historia yan i Lina'la' i Taotao Tåno')

Pre-Colonial Periods:

Manhålom i Mantátasi
The ocean voyagers came and went
(Unai I, archaeologist designation for C. 3500-3000 BP*)

Mañåga i Mantátasi
The ocean voyagers stayed and established their homeland
(Unai 2, archaeologist designation for 2500-1600 BP)

Manháttalom
They settled further inland
(Huyong, archaeologist designation for 1600-1000 BP)

Manmanhåtsa Latte
They became latte builders
(Latte, archaeologist designation C. 800-1700 CE*)

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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name of Commentor: Dr. Laura M. Torres Souder and Kumisión Staff	Division:
Position: Chairperson	Date of Completion: Thursday, September 25, 2025
Agency/Organization: Kumisión i Fino' CHamoru	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	6-1	2	2		Must integrate the protection of CHamoru sacred ancestral sites, burial sites, cultural and historic resources
2	6-1	2	5		Designating CHamoru ancestral, historical, and culturally significant areas
3	6-1	2	17		Guam Historic Preservation Office and the Kumisión i Fino' CHamoru yan i Fina'nå'guen i Historia yan i Lina'la' i Taotao Tåno'
4	6-1	2	19		Through thoughtful design, cultural tourism, conservation efforts, and education initiatives
5	6-2	Goal	1		Goal: Preserve and celebrate Guam's indigenous and multicultural heritage
6	6-2	Objective	1		Protect and manage ancestral, historic, and cultural sites through development reviews and overlays.
7	6-2	1	7		Latte (carved stone pillars), unique to the Marianas
8	6-2	6.1	2		Centralized villages known as pueblos, through the policy of Reducciónes
9	6-2	6.1	5		Over the next 200 years, the Spanish colonial regime imposed new forms their forms land ownership
10	6-3	1			The United States leveled Guam's capital city of Hagåtña and other villages throughout the island and repeatedly removed and forcibly relocated CHamoru families from their prewar homesteads.
11	6-3	1	4		At one point following the post–WWII era, the military had seized control over most of the island.
12	6-3	3	8		between the CHamoru people and their Homeland
13	6-4	6.2.1	1		The highest ranking female, the maga'håga and the oldest brother, the highest ranking maga'låhi, oversaw landuse. Inheritance was determined by the matralineal lines. (Souder, L. 1984 Doctoral Dissertation, University of Hawaii, Manoa)
14	6-4	6.2.1	3		Guam's CHamoru population or 8% of the total population
15	6-4	3	2		Key landmarks such as Seya Bay(Cella Bay Overlook) Ga'pang(Camel Rock), Åcho' Fuha, Asan Bay Overlook, Tolai Fonte

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16	6-4	4	1		maintaining such natural landmarks
17	6-5	2	9		Don't forget to add the number to the figure
18	6-10				Change all spellings of Chamorro to "CHamoru" (Green Box)
19	6-12	6.2.2.			Please see attached narrative, alternative Colonial Archaeological and Historical Periodization (insert after narrative about the Kumisión) for inclusion as part of 6.2.2.
20	6-12	3	4		Department of CHamoru Affairs(DCA) and Kumision i Fino' CHamoru (Kumisión)
21	6-12	3	5		DCA and the Kumisión promote
22	6-12	3	6		Cross out "both" and put all
23	6-13	1	1		Guam Preservations Trust , the Kumisión
24	6-13	2	5		By DCA, Kumisión and Guam Preservations Trust
25	6-13	5	3		DCA, Kumisión and Guam Preservations Trust
26	6-14	3	2		DCA, Kumisión and Guam Preservations Trust
27	6-14	4	4		Cross out "stone" villages
28	6-20	VC-2	1		Guam's CHamoru ancestral sites, burial sites, cultural and historic resources
29	6-20	VC-3	2		contributed by DCA, GPT, and Kumisión i Fino' CHamoru
30	6-20	VC-5	2		the Guam Preservation Trust, Kumisión i Fino' CHamoru and other
31	6-20	VC-6	2		Public Works, DCA, Kumisión i Fino' CHamoru, GPT
32	6-22	VC-18	1		Strengthen partnerships with institutions like the Guam Preservation Trust, Department of CHamoru Affairs, Kumisión i Fino' CHamoru and other local
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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name of Commentor: Strategic Planning Staff	Division: Administration
Position: Planner II, III, IV, and Chief Planner	Date of Completion: 09/29/2025
Agency/Organization: Port Authority of Guam	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	3-9 or pdf p.68			Table 3-2. Government of Guam Public Land Ownership	The Draft Plan cites 1,551 acres for the Port Authority of Guam (PAG) in Table 3-2, which is incorrect. PAG's 2023 Master Plan (Section 3, p. 3-1; PDF p. 52) and the 2025 Appraisal Report confirm total PAG property holdings as 1,006 acres, comprised of 556 acres of submerged properties (submerged lands and natural marine preserve areas) and 450 acres of upland and marine properties (cargo handling terminals, storage, wharves, import terminals, industrial lands, marinas, and recreation areas). We recommend revising Table 3-2 and related narrative to reflect 1,006 acres, which also adjusts the GovGuam total to 67,943 acres and PAG's share to 1.5%.
2	129-130 pdf or 3-70/1				We recommend revising references to the Port Authority of Guam (PAG) Sustainability and Resiliency Plan (SRP) from "2023" to **"2025"** to align with the final adopted plan (April 2025). For consistency, the document should use a **single, standardized reference** throughout when citing the plan (e.g., "Port Sustainability and Resiliency Plan" or simply "Port Plan"), rather than alternating between different terms. Additionally, we recommend **removing embedded page references**, as they do not align with the finalized versions of the 2023 PAG Master Plan (MP) or the April 2025 PAG Sustainability and Resiliency Plan (SRP). Page numbering may vary in revised documents, which could cause confusion.
3	130 pdf or 3-71			Figure 3-24 reference	The reference to **Figure 3-26** in the preceding sentence does not align with the figure presented above. In the document (PDF p. 143 / Section 3-84), **Figure 3-26 actually depicts "Public Response to Available Affordable Housing."**

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					We recommend **correcting the figure citation** so that the reference matches the appropriate figure content, or revising the text to align with the existing Figure 3-26.
4	463-464 pdf or 8-28/29	4	5		We recommend revising the verbiage on the scope of the 2021 EDA award to read, "Notably, in 2021 EDA awarded $2.4 million to the Port Authority of Guam **for installation of a disaster-resilient fuel pipeline connectivity between F-1 Fuel Pier and Golf Pier**."
5	464 or 8-29	1	1		We recommend revising the text to read, "This project (matched by local funds) improves fuel supply reliability ~~post~~ **during and after** typhoons..."
6	464 or 8-29	2	6-7		We recommend revising text to read, "The ~~port~~ **PAG** fuel pipeline ~~EDA~~ **connectivity project** also maps...".
7	139	SC-48/ SC-49			We recommend revising the section heading to read, "**Port Authority of Guam Land Use Designation and Sustainability"**
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Guåhan 2050 Sustainability Plan Agency Comment Form

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Name of Commentor: John Peterson	Division: GHRD-GSHPO
Position Senior Advisor/Liaison	Date of Completion: September 10, 2025
Agency/Organization: GHRD-GSHPO	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	2.4	Population		2.2	Population increase not reliable; high fertility rate and declining death rate as well as decreased out-migration since covid may result in higher total population, as well as changing (increasing) military missions
2	6.1	Guam's Cultural Land use Context			Earliest Chamoru communities "over 4,000 years ago" not accurate, earliest agreed date 3,200 years ago; Carson argues 3,500 years ago but that is not a date on cultural items, it is on environmental items
3	6.3				Same, not "over 4,000 years ago)"
4	6.12	Guam Preservation Trust			GPT mission does NOT include contributing to cultural resource assessments and land use decisions. These are the responsibility and function of Guam Historic Preservation Office/Guam Historic Resources Division. GPT has no official governmental oversight for heritage preservation or management, and therefore the statement "This is particularly important in areas under pressure from military buildup, tourism infrastructure, or commercial development" However, these do apply to GHPO/GHRD as both a line agency for GovGuam and a federal review agency under the auspices of the SHPO.
5					GPT is NOT central to the coordination of CLTC and GALC agencies into guam's comprehensive land use framework, nor in coordination with Department of CHamoru Affairs; GPT does NOT protect(s0 sites of historical, cultural, and architectural significance, as these are the functions of the line agency GHRD and the SHPO within the Section 106 management of historic preservation vis-à-vis federal undertakings. GPT is NOT involved in administrative, regulatory, or actual management of historic, cultural, and architectural sites.
6	6.13	1. land inventory			GPT is not engaged with GIS-based land inventory in coordination with CLTC and GALC and cultural and historic overlays contribute by DCA and GPT (sic, NO, it is GHPO/GHRD that manages the GIS)
7	6.13	2. infrastructure			GPT has no site significance data or authority of expertise in managing heritage assets and other land use objectives
8	6.14				Yes, the Guam Historic Preservation Office plays a central role in.....etc.and maintains the inventory
9	6-15	6.2.5			Micronesian Archaeological Research Services no longer exists though it did for many years contribute to island preservation; there are numerous contracting firms that contribute to that goal, some more than

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
					others, and so the GHRD eligible archaeological contractors list could be referenced, if not named individually
10	6-16				This is no doubt from OPA audit, already obsolete comment as reality has caught up. Staffing is slowly increasing, though more could be accommodated to fulfill the expanding mission, and some areas cited in the audit such as need to catch up with reviews and shorten interval between filing and resolution have already been accommodated. On the other hand, the GPT audit recently released shows serious deficiencies in their ability to manage and commit funds to historic preservation projects and to develop and support projects to utilize the funds on account. Apparently GPT receives 1.3 million / year from development permit fees, with receivables exceeding 1.3 million, still unpaid from past collections. There is currently 2.8 million in “restricted fund” 400,000 of which is in “investments”, questioned by the audit firm and OPA as subject to market risk. It maintains a net position of 16.7 million. These unspent and accumulating amounts are partly attributed to the lack of a board quorum to approve projects and expenditures, but also a dearth of projects encouraged by the staff and the absence of a board promoting more engagement in the community.
11	6.18				A result of the GSHPO audit called out the lack of a complete and publicly accessible mapping system. This is accurate and ongoing. This is partly an inability to fill key personnel positions for GIS and also poor support by OTEC – GovGuam. Accomplishing this would enhance transparency and accessibility of the site atlas and site files, as well as coordination with other agencies relative to Forest Reserves and Conservation Areas, the REPI program and other Legacy programs on Guam, the Guåhan Sentinel Landscapes Partnership.
12	6.16				Need for transparency and accessibility of reviews, yes, private development permit reviews should be posted online, and DOD reports and reviews that are not CUI or otherwise protected, at least until a period of time has passed that they could be accessible. Also, major reports and DOD documents should be online digital versions that are downloadable, along with GIS Atlas files that are accessed by permission.
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Guåhan 2050 Sustainability Plan Agency Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
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Guåhan 2050 Sustainability Plan Agency Comment Form

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Name of Commentor: Southern Guam SWCD POC: Erica Pangelinan	Division: Government Board
Position: Board of Directors	Date of Completion: 09/26/2025
Agency/Organization: Southern Guam Soil and Water Conservation District	

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	ii-v	Exec. Summary, and Governance Approach			The plan recognizes integrated governance but does not acknowledge Guam's Soil and Water Conservation Districts (SWCDs). Insert language recognizing SWCDs as locally led conservation entities that connect farmers, ranchers, and landowners with national USDA programs. While not regulatory, their national ties and local program delivery strengthen Guam's ability to achieve sustainability goals. **Suggested insertion:** *Guam's Soil and Water Conservation Districts (SWCDs), established under territorial statute and affiliated with the National Association of Conservation Districts, are non-regulatory, locally led entities that deliver technical assistance, conservation planning, and producer engagement. Their inclusion is essential to bridge local land stewardship with national USDA programs and Farm Bill funding streams. By recognizing SWCDs, Guam strengthens its governance architecture, ensuring that sustainability implementation integrates local knowledge with federal resources.*
2	3-106	Agricultural Preservation & Food Security Policies			The discussion of agricultural land protection should reference the SWCDs as partners that provide technical assistance and conservation practices to producers. **Suggested insertion:** *Partner with Guam's Soil and Water Conservation Districts (SWCDs), which under federal and territorial law serve as the authorized local partners of USDA-NRCS, to implement conservation planning, soil health practices, and irrigation management. This partnership ensures access to federal conservation funding and technical standards while enhancing local food security and agricultural resilience.*

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Guåhan 2050 Sustainability Plan Agency Comment Form

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
3	5-14 to 5-70	Watershed Protection, Habitat & Invasive Species Management			Given SWCDs' active role in watershed management, invasive species, and erosion control, the plan should explicitly name them as partners in implementing ridge-to-reef conservation strategies. **Suggested insertion:** *"SWCDs, authorized under Guam law and operating in partnership with USDA-NRCS, bring federal technical capacity and local implementation experience in erosion control, watershed protection, and invasive species management. Their inclusion as cooperating partners with local agencies will ensure alignment, continuity, and accountability of Ridge-to-Reef conservation strategies across federal and local programs."*
4	7-1 to 7-22	Village Planning Policies			Recommend inclusion of SWCDs in village sustainability strategies, particularly in southern Guam. **Suggested insertion:** *"Work with SWCDs to implement community-based conservation programs that integrate agricultural best practices, cultural heritage, watershed stewardship, and natural resource protection at the village level."*
5	8-4 to 8-16	Sustainability Plan and Implementation Task Force			SWCDs should be added as members of the Implementation Task Force or as formal cooperating partners. **Suggested insertion:** *"The Sustainability Plan Implementation Task Force shall include Guam's Soil and Water Conservation Districts as voting members and partners in implementation. Their role is to facilitate locally led conservation, producer engagement, and alignment with federal funding opportunities (Environmental Quality Incentives Program, Conservation Stewardship Program, Regional Conservation Partnership Program, Readiness and Environmental Protection Integration, and National Association of Conservation Districts) initiatives."*
6	8-4 to 8-16	Governance and Implementation			The plan should acknowledge Guam's SWCDs' unique role in representing the island's needs at the national level, particularly in Farm Bill policy discussions that

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					determine federal conservation program funding. **Suggested insertion:** *"Guam's SWCDs connect local sustainability priorities to national Farm Bill policy through their participation in the National Association of Conservation Districts. This advocacy ensures that the island's unique needs are represented in federal conservation programs, strengthening Guam's access to funding and technical assistance."* *Note: Guam's SWCDs were established under Title 5 of the Guam Code Annotated Chapter 71, consistent with the federal Soil Conservation Act of 1935. Their statutory authority makes them Guam's official partners for USDA-NRCS conservation programs, including EQIP (Environmental Quality Incentives Program), CSP (Conservation Stewardship Program), and RCPP (Regional Conservation Partnership Program). By formalizing their role, the Plan safeguards Guam's eligibility for long-term federal technical and financial assistance.*
7	5-71 to 5-112	Hazard Mitigation & Climate Resilience			Identify SWCDs as implementing partners in climate resilience strategies, particularly in erosion control, wildfire prevention, and flood mitigation. SWCDs contribute to post-typhoon erosion recovery projects, wildfire fuel reduction with farmers and ranchers, and FEMA-linked watershed flood mitigation plans. Their statutory role provides Guam with an established channel to secure federal hazard-mitigation and resilience funding.
8	8-40 to 8-46	Public Engagement & Implementation Transparency			Include SWCDs in public engagement strategies to ensure agricultural producers, ranchers, and rural landowners have a formal seat at the table. SWCD boards are elected by landowners and have hosted USDA farmer listening sessions, soil health workshops, and community conservation trainings. Their statutory structure offers Guam a democratic, grassroots mechanism to incorporate producer and rural community voices into sustainability policies.

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Stuff Household, Furniture, Pets & Stuff

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Categories

Animals for Sale: Livestock / Pets . **Automotive:** Cars/Motorcycle/Pickups and SUVs . **Celebrations . Fundraisers . Goods for Sale:** Auto Parts/Baby items/Computers/Electronics/Exercise Equipment/Furniture/Household Goods/Miscellaneous/ Musical Instruments/ Sports and Outdoors Equipment/Tools . **Lost and Found . Heavy Equipment . Repairs and Installation:** Air Conditioning/Appliances/Cellphones/Computers/Electrical/ Electronics/Plumbing/Repair and Installations Services Needed . **Services:** Child and Elderly Care/Educational/Lawn Care or Yardwork/Other Services/Therapeutic Massage/Tutoring/Cleaning Services . **Wanted to Buy . Watercraft:** Boats/Personal Water Craft

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IN THE SUPERIOR COURT OF GUAM
IN THE MATTER OF THE ESTATE OF
THOMAS JOSEPH ROZYCKI,
Decedent.

PROBATE CASE NO. PR0114-25
NOTICE OF HEARING

THIS NOTICE IS REQUIRED BY LAW. YOU ARE NOT REQUIRED TO APPEAR IN COURT UNLESS YOU DESIRE.

1. NOTICE IS HEREBY GIVEN that Jeffrey A. Cook has filed an Amended Petition for Probate of Will and for Letters of Administration with Copy of Will Annexed.

2. A hearing on the petition will be heard on **Wednesday, February 18, 2026, at 10:20 a.m., before the Hon. Judge Elyze M. Iriarte.**

3. To attend or to participate in the hearing, you may appear in person at the Guam Judicial Center, appear remotely at https://guamcourts-org.zoom.us and enter Meeting ID: 864 4387 2213 and Passcode: JEMI; or call into the courtroom at 671-300-6703 at the designated hearing time. For connectivity issues, you may contact Jannette Samson at (671) 475-0141 or email jsamson@guamcourts.gov.

DATED: 16 JAN 2026

JANICE M. CAMACHO-PEREZ,
Clerk of Court,
Superior Court of Guam

/s/ ALICE B. MENDOZA
Courtroom/Chamber Clerk

THE BUREAU OF STATISTICS AND PLANS

Sagan Planu Siha Yan Emfotmasion

LOLA E. LEON GUERRERO
Director

MATTHEW C. SANTOS
Deputy Director

LOURDES A. LEON GUERRERO
Governor of Guam

JOSHUA F. TENORIO
Lieutenant Governor

NOTICE OF PUBLIC HEARING

Bureau of Statistics and Plans
The Guahan 2050 Sustainability Plan
February 12, 2026, Hågat Mayor's Office
February 25, 2026, Dededo Mayor's Office
6:00 pm - 8:00pm

In accordance with the requirements of 5 GCA § 1205 and Public Law 35-110, the Bureau of Statistics and Plans (BSP), will be conducting public hearings for The Guahan 2050 Sustainability Plan.

The public is invited to attend and provide comment on The Guahan 2050 Sustainability Plan, which is available for public review on the BSP's website at https://bsp.guam.gov/gsp2050/. Hard copies are available for review at the Bureau of Statistics and Plans, Office of the Director, 513 West Marine Corps Drive, Ricardo J. Bordallo Complex, Hagatna, 8:00 am-5:00 pm. Oral and written testimonies will be accepted at the hearing or may be submitted online to gsp2050@bsp.guam.gov. Please include your name when submitting testimonies online. The deadline to submit comments is March 11, 2026, by 5:00 pm.

For more information, please contact Director Lola E. Leon Guerrero, at 671-472-4201/2. Any persons needing special accommodations, please email raymond.dungca@bsp.guam.gov or call 671-475-9683.

/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans

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Doc. No. 38GL-26-2651.*

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Guam Memorial Hospital Authority
Aturidát Espetát Mimuriát Guåhan
850 Gov. Carlos G. Camacho Rd.
Tamuning, Guam 96913

REQUEST FOR INTEREST

GMHA RFI-001-2026: Lease and Acquire Long-Term Care Services
Site Visit: 10:00a.m. CHST, Friday, February 13, 2026, located at the Skilled Nursing Facility in Barrigada.
Submission Time: 10:00 a.m. CHST, Thursday, February 26, 2026
Funding Source: GMHA General Fund

All submissions must be sealed and submitted in writing with one (1) original and two (2) copies, and received by the Materials Management Department by the due date. Hard Copies of the RFI are available until the submission date for a non-refundable fee of $50.00 per set, or can be downloaded free of charge from the GMHA website www.gmha.org.

Electronic submissions will be accepted, but must be emailed to **materials.mgmt@gmha.org** no later than 10:00 a.m. CHST, Thursday, February 26, 2026.

All interested firms should register with the GMHA Materials Management Department to participate in the RFI. Please register online at www.gmha.org. For assistance, you may call (671) 647-2165. Registration is required to ensure that all Amendments or Notices are communicated to all Prospective Offerors throughout the procurement process. GMHA shall not be liable for failure to provide notice to any parties not registered with GMHA for this solicitation.

/s/ Joleen M. Aguon, M.D.
Interim Hospital Administrator/CEO
This advertisement was paid for with government funds.

KUMISION I TANO' SAINA-TA' GUAM ANCESTRAL LANDS COMMISSION

The Guam Ancestral Lands Commission Regular Board Meeting will be held on **Friday, February 13, 2026 at 2:00 pm. This meeting is open to the public in Person, via ZOOM and Live Stream on YouTube at Guam Ancestral Lands Commission-GALC channel.**

JOIN ZOOM MEETING
https://us02web.zoom.us/j/83734758119?pwd=Z1RWUTNqRnY4Wkt5anBGdHBCRlg4dz09
Meeting ID: 837 3475 8119 **Passcode:** 2022

AGENDA
Call to Order; Roll Call / Fanohge CHamoru / Inifresi; Approval of Minutes; Executive Director's Report; GEDA Progress Report; Old Business: A. AT&T Appraisal-Status Update, B. Northern Market-Status Update on the Conditions of the Deferral; **New Business;** A. GALC-GEDA Investment MOU (extension), B. GALC Building No 15-6100 Tiyan – Approval of IFB for repairs C. GEPA-Request to install Fiber Optic Cables for Telephone Services; D. GPA Request for Easement at Polaris Point Properties **Public Comments; Announcements:** Next GALC Meeting; **Adjournment**

TO VIEW LIVE STREAMING
https://www.youtube.com/channel/UCbXB3Y05LKxz7lxy8MzMNjw

Details and link to this meeting is also available on the GovGuam Public Notices Portal at https://notices.guam.gov. Individuals requiring special accommodations, auxiliary aids or services, may call GALC Administration Office at 671-473-5263 or email admin@galc.guam.gov for more information.



VEHICLES FOR BID

2025 Nissan Versa	2023 Hyundai Elantra
2024 GMC Canyon	2023 Toyota Sienna
2024 Mitsubishi Mirage	2021 Toyota Tacoma Pre-Runner

Vehicles may be viewed at Bank of Guam Hagåtña Branch **by appointment only,** Monday through Friday, from 9:00am to 4:00pm. Last day for bidding will be on Friday, February 13, 2026 at 4:00pm. For more information, please contact Jesse Manibusan at (671) 472-5442/688-88626 or John Mendiola at (671) 472-5346/ 688-0485. Bank of Guam reserves the right to refuse any or all bids. All featured vehicles are sold "as is."

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Bank of Guam

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MATTHEW C. SANTOS
Deputy Director

BUREAU OF STATISTICS AND PLANS

Government of Guam
P.O. Box 2950 Hagåtña, Guam 96932
Tel: (671) 472-4201/3
Fax: (671) 472-2825

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/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans
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ALCOHOL BEVERAGE CONTROL BOARD NOTICE OF REGULAR MEETING

The Alcoholic Beverage Control Board will be meeting on Wednesday February 18, 2026 4:00pm via Zoom Video Conference

Meeting Link: https://us06web.zoom.us/j/81017395638
Livestream: Guam Department of Revenue and Taxation - Facebook page

AGENDA:
I. Call to Order:
II. Roll Call/Quorum:
III. Old Business:
(A) Meeting Minutes: October 15, 2025 (Pending Meeting Minutes)
(B) Meeting Minutes: November 19, 2025 (Pending Meeting Minutes)
(C) Meeting Minutes: December 17, 2025 (Pending Meeting Minutes)
(D) Meeting Minutes: January 21, 2026 (Pending Meeting Minutes)
IV. New Business:
Alcoholic Beverage License Application(s):
(A) Cubacub, Rosalie H. DBA: Kusina
V. Temporary Additional Consumption Area:
(A) Hermosa Ventures LLC DBA: Beans & Barrels
VI. Temporary Alcohol Beverage Applications:
(A) Umatac Municipal Planning Council DBA: Same
(B) Pacific War Museum Foundation DBA: Same
(C) Pacific War Museum Foundation DBA: Same
(D) Asahi Association Of Guam DBA: Same
(E) Bank Of Guam DBA: Same
(F) Merizo Municipal Planning Council DBA: Same
VII. Alcohol Beverage Control Violation (s):
(A) ABC-2026-VMGP-001 DBA: Max's Restaurant Guam
VIII. Manager/Assistant Manager Application(s):
(A) New/Renew
IX. Other Discussions
X. Open Forum:
XI. Meeting Adjourned:

For any special accommodations, please contact: 635-1806/02
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Smooth and finish surfaces of poured concrete, such as floors, walls, sidewalks, and curbs, using hand or power tools like floats and trowels. Level and shape freshly poured concrete.

2 - ELECTRICIAN WITH TWO YEARS EXP. ***$21.02 PER HOUR**
Plan, install, maintain, and repair electrical wiring, equipment, and fixtures. Design new or modified installations to minimize material waste. Follow blueprints or sketches to locate wiring, ensuring compliance with building and safety codes.

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Diagnose, adjust, repairs, and overhauls mobile mechanical, electrical, construction, hydraulic and pneumatic equipment, such as bulldozers, graders, conveyors, dump trucks, backhoes, excavators, and other heavy equipment.

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Operate multiple types of power construction equipment such as motor graders, bulldozers, scrapers, compressors, pumps, derricks, shovels, tractors, or front-end loaders to excavate, move, and grade earth, erect structures, or pour concrete or other hard surfaces pavement.

2 - PAINTER WITH ONE YEAR EXP. ***$19.82 PER HOUR**
Paint walls, equipment, buildings, bridges, and other structural surfaces using brushes, rollers, and spray guns. May remove old paint to prepare surface prior to painting. May mix colors or oils to obtain desired color or consistency

5 - PLUMBER WITH TWO YEARS EXP. ***19.48 PER HOUR**
Assemble, install, alter, and repair pipelines or pipe systems that carry water, steam, air, or other liquids or gasses. May install heating and colling equipment and mechanical control systems. Reads and studies blueprints and drawings.

Special wage rate: Work to be performed on DPRI-funded projects and projects covered by Davis Bacon, Service Contracts Act, and/or Executive Order 14206 will be paid no less than the indicated wage rate but may be paid more where special rates apply.

Benefits: Roundtrip airfare for off-island hire; Food & Lodging @ $80.00 per week; local transportation from employer's designated lodging facility to/from jobsite; and employer/employee-paid medical insurance.

Successful applicant must be able to obtain military base access. Off-island hires must complete a pre-arrival and post-arrival health screening.

The complete job duties may be viewed in person at American Job Center 414 W. Soledad Avenue, Suite 300 GCIC Building, Hagåtña, Guam Or apply online at www.hireguam.com; Enter Keyword: 2026-043

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Homes & Rentals Discover your new home

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Stuff Household, Furniture, Pets & Stuff

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Package line limit listed below.

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**Applies to all Categories except for Employment and Real Estate
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Pacific Daily News

THE BUREAU OF STATISTICS AND PLANS

Sagan Planu Siha Yan Emfotmasion

LOLA E. LEON GUERRERO
Director

MATTHEW C. SANTOS
Deputy Director

LOURDES A. LEON GUERRERO
Governor of Guam

JOSHUA F. TENORIO
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For more information, please contact Director Lola E. Leon Guerrero, at 671-472-4201/2. Any persons needing special accommodations, please email raymond.dungca@bsp.guam.gov or call 671-475-9683.

/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans

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Doc. No. 38GL-26-2651 *

Note that the Legislature has taken steps to ensure that any protected personal identifying information has been redacted or excluded in whole or in part in order to protect the privacy of any individual(s) whose information has been included as part of this transmittal.

JOB ANNOUNCEMENT

Opening for Civil Engineer w/Danes Construction Corporation in Yigo, GU. Min Reqs: Bach deg in Civil Engrg or Civil Engrg Technology (may be foreign educ equiv); 1 yr of exp as a Civil Engr or Project Civil Engr; 9 mos exp using Microsoft Project software & 6mos using AutoCAD. Performs civil engineering duties for const co engaged in const contracting services. Analyzes survey reports, maps, drawings, blueprints, & specs for projs to plan the most appropriate const methodologies for the projs. Inspects proj sites to monitor progress and ensure that work of is in conformance with the plans, specifications, and construction and safety standards. Provides technical advice regarding various aspects of the engineering works and prepares engineering references. Uses Microsoft Project and AutoCAD in performing job duties, Performs work four to five workdays a week at company project sites in the MSA of Guam. Send CV by mail to P. O. Box 11348, Yigo, GU 96929, or email to danes@guam.net. Verif of qualifs req.

GUAM EDUCATION BOARD

501 Mariner Avenue, Barrigada, Guam 96913-1608
Telephone: (671) 300-1627 Facsimile: (671) 472-5003
Website Address: www.gdoe.net/geb

JUDITH GUTHERTZ, DPA
Chair

MARY A.Y. OKADA, Ed D.
Vice-Chair

Guam Education Board
RESCHEDULED 2/17 REGULAR MEETING
Tuesday, February 24, 2026
3PM • Gallery, Bldg. B, Tiyan

AGENDA

I. **Meeting Call to Order**
INFO II. **Celebrate Success**
INFO/ACTION III. **Consent Calendar**
- a. January 27, 2026 Regular Meeting
- b. February 12, 2026 Special Meeting

IV. **Public Participation** (Board Policy 125.6) Time Limit 3 minutes
V. **Communications**
INFO a. Correspondence received by the Board after January 27, 2026
INFO VI. **Ex-Officio Member Reports**
- a. Islandwide Board of Governing Students (IBOGS) Report
- b. Guam Federation of Teachers (GFT) Report
- c. Mayor's Council of Guam (MCOG) Report

VII. **Unfinished Business/Committee Reports**
INFO/ACTION a. Superintendent's Report
- i. JFKHS/SSHS Double Session Status Report
- ii. FEMA Projects Status Report
- iii. FBLG Renovation Status Report
- iv. Mold Mitigation/Fencing Status Report
- v. Dashboard Status Report
- vi. CCSSO Legislature Conference-Washington, D.C. March 22-24, 2026

b. Executive Committee
- INFO/ACTION i. Legal Counsel for the Guam Education Board
- INFO/ACTION ii. 2nd Amended Employment Agreement for Dr. Won Pat as Superintendent of GDOE

c. Instructional & Academic Support Committee
- INFO/ACTION i. February Head Start Report

d. Safe & Healthy Schools Committee
- INFO i. Security Concerns

INFO e. Policy Review & Strategic Planning Committee
f. Fiscal Management Committee
- i. GDOE Financial Report
  - INFO 1. Accounts Payable Aging Report
  - INFO/ACTION 2. Declaration of Financial Status Designation
  - INFO 3. Unaudited Statement of Appropriation, Expenditures, and Encumbrances for Fiscal Year 2026
  - INFO 4. Grant Status Report for Fiscal Year 2026
- INFO ii. US Department of Education Specific Conditions Report
- INFO iii. FY 2024 Audit Report
- INFO/ACTION iv. Management and Curriculum Audit

g. Legislative Committee
- INFO/ACTION i. Legislative Proposals Introduced

VIII. **New Business**
INFO/ACTION a. Adjustment of Meeting Times for the Guam Education Board
INFO/ACTION b. Resolution 2026-03 Relative to Urging the Guam Department of Education to Consider Reintroducing and Requiring Civics Education at the Middle School and High School Levels and to Establish a GDOE Civics Recognition
INFO/ACTION c. 2026 GEB Standing Committee Assignments
INFO/ACTION IX. **Executive Session** (Board Policy 125.12)
- a. Personnel matters (5 GCA § 8111 (a))
- b. Matters within scope of Public Employee-Management Relations Act, including collective bargaining (5 GCA § 8111 (b))
- c. Superintendent's Evaluation
- d. Legal Matters

INFO/ACTION X. **Announcements & Adjournment**

The public is welcome to view the meeting via live stream at https://www.youtube.com/@guamdepartmentofeducation5142.

Individuals requiring special accommodations or information or wish to submit public testimony via email may contact Kathleen Lamorena by email: krlamorena@gdoe.net.

This advertisement was paid by GDOE local funds.

JOB ANNOUNCEMENT

Openings for Accountant with/ Pacific Rim Constructors, Inc. in Tamuning, GU. Min Reqs: Bachelor's degree in Accounting (may be foreign equivalent); one (1) year of experience as an Accountant, Accounting Supervisor, Financial Analyst, Financial Officer (any job title); and nine (9) months of experience using QuickBooks, SAP accounting software, ERP accounting software, or other accounting software program.
Works in conjunction with the Corporate Officers and Controller in preparing the annual operating budget. Prepares various cash management reports, including periodic financial reports comparing actual costs with budgeted costs; cost accounting reports detailing costs of operations for the company's construction projects and production elements, and assists with various other financial-related requirements for the company's construction projects. Supervises the company's bookkeeping staff; performs general account reconciliations; and plans and implements improvements to accounting control procedures. Uses QuickBooks and Sage accounting software in performing job duties. Send CV to Janelle R. Duenas, Pacific Rim Constructors, Inc.'s HR & Office Manager, by mail to 415 Chalan San Antonio, Baltej Pavilion, Suite 308, Tamuning, GU 96913 or email to janelle.duenas@pacificrimgc.com. Verification of qualifications required.

JOB ANNOUNCEMENT

Openings for Architect with/ Pacific Rim Constructors, Inc. in Tamuning, GU. Min Reqs: Bachelor's degree in Architecture (may be foreign educational equivalent); one (1) year of experience as an Architect or Architect-Project Manager; nine (9) months of experience using Excel for project scheduling and project estimating, and able to obtain U.S. military base access pass. Plans layout of architectural project works. Evaluates site conditions and restraints; prepares time, cost, and labor estimates for architectural works, and identifies and evaluates alternative construction methodologies which conform to the architectural requirements. Participates in formulating the most appropriate construction methodology plan for projects. Monitors compliance with critical path scheduling and project expenditures. Participates in the preparation of the contractor's schedule of values, as-built drawings, close-out documents, warranty, and owner acceptance of the projects Uses Excel software program for project scheduling and project estimating in performing job duties. Travels 4 to 5 workdays per week to company's job sites on Guam. Send CV to Janelle R. Duenas, Pacific Rim Constructors, Inc.'s HR & Office Manager, by mail to 415 Chalan San Antonio, Baltej Pavilion, Suite 308, Tamuning, GU 96913 or email to janelle.duenas@pacificrimgc.com. Verification of qualifications required.

JOB ANNOUNCEMENT

Opening for Civil Engineer w J.M. Robertson, Inc. dba Amorient Engineering in Tamuning, GU. Min Reqs: Bach deg in Civil Engrg or Civil Engrg Technology (may be foreign educ equiv); and licensed as a Guam Professional Civil Engineer by the Guam Board of Professional Engineers, Architects and Land Surveyors. Prepares, signs, and seals, civil engineering design plans, calculations, and specifications for the civil/structural works components of projects including design of foundation (isolated footing, mat foundation, drilled piers, tie beams, pole depth). Conducts site inspections and provides solutions for impending civil engineering issues that arise during construction and reviews and recommends for approval civil submittals from building contractors. Attends meetings from initial design, during construction and project turnover. Uses various software tools in performing job duties. Performs work four to five workdays a week at company's project sites in the MSA of Guam. Send CV to 643 Chalan San Antonio, KG Plaza, Ste. 114, Tamuning, Guam 96913 or by email to heman@amorient.com.

JOB ANNOUNCEMENT

Opening for Civil Engineer with Brownstone Construction, Inc. in Dededo, GU Min Reqs: Bach. Deg. in Civil Engrg. or Civil Engrg. Technology (may be foreign educ equiv.); 1 yr of exp as a Civil Engineer; nine (9) months using AutoCAD and one (1) year using Primavera project management software. Performs civil engineering duties for a construction company engaged in general construction contracting services. Analyzes survey reports, maps, const blueprints & drawings, & specif. for projects to plan the most appropriate construction methodologies. Assist with projects' construction scheduling. Inspect project sites to monitor progress and ensure conformance with/ the plans, specs, safety standards & quality control/quality assurance requirements. Uses Primavera project management software and AutoCAD in performing job duties. Performs work five workdays per week at company's project sites in the MSA of Guam. Send resume to Risa Ecal, Operations Manager, by mail to 674 Harmon Loop Rd., Guam Finance Center, Ste. #312, Dededo, Guam 96929 or email to risae@brownstonecon.com. Verif of qualifs req.

BUREAU OF STATISTICS AND PLANS

Lagan Pomu Ziyo Yan Pinilo'ngan

LOLA E. LEON GUERRERO
Director

MATTHEW C. SANTOS
Deputy Director

Government of Guam
P.O. Box 2950 Hagåtña, Guam 96932
Tel: (671) 472-4201/3
Fax: (671) 477-1812

LOURDES A. LEON GUERRERO
Governor of Guam

JOSHUA F. TENORIO
Lieutenant Governor

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/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans

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Categories

Animals for Sale: Livestock / Pets . **Automotive:** Cars/Motorcycle/Pickups and SUVs . **Celebrations . Fundraisers . Goods for Sale:** Auto Parts/Baby items/Computers/Electronics/Exercise Equipment/Furniture/Household Goods/Miscellaneous/ Musical Instruments/ Sports and Outdoors Equipment/Tools . **Lost and Found . Heavy Equipment . Repairs and Installation:** Air Conditioning/Appliances/Cellphones/Computers/Electrical Electronics/Plumbing/Repair and Installations Services Needed . **Services** Child and Elderly Care/Educational/Lawn Care or Yardwork/Other Services/Therapeutic Massage/Tutoring/Cleaning Services . **Wanted to Buy . Watercraft:** Boats/Personal Water Craft

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Categories

Help Wanted Full Time . Help Wanted Part Time

Real Estate Classified Packages

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Categories

Businesses for Sale . For Lease Land . For Rent Commercial . For Rent Residential . For Sale Commercial . For Sale Residential . For Sale Land . Rooms for Rent

Open Rate Liners

All liners are priced per line and include digital.
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/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans

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Announcements

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USED Aluminum Shutters, w/Rails, 8 Windows 4x4, 2 Windoes 3x3, 2 Doors ***SOLD**SOLD**SOLD***

SOUTHERN SOIL & WATER CONSERVATION DISTRICT REGULAR BOARD MEETING

Wednesday, January 28, 2026
4:00 pm
University of Guam College of Agriculture and Life Sciences Room 202

AGENDA

I. Call to Order & Roll Call
II. Acceptance of Agenda
III. Approval of Meeting Minutes - November 26, 2025
IV. Treasurer's Report
V. Administrator's Report
VI. Old Business
  a. USDA NRCS MOA – Approval
  b. 2025 NACD Executive Board Member Retreat – Report
  c. 2026 NACD Annual Meeting – Update
  d. Joint SWCD Committee Appointments
  e. NACD Grant Applications – Approval
  f. Taiwan Travel Abroad Program – Approval
VII. New Business
  a. 2026 Guam Educators Conservation Summit
  b. RCUOG MOA – Approval
  c. FY2025 Annual Report – Approval
  d. FY2027 Budget Request – Approval
  e. CARET/BAA Meeting, Washington, D.C.
VIII. Collateral Boards and Committees Served
  a. Southern District Feral Swine Committee
  b. Stewardship and Education Committee
IX. Public Comments/ Announcements
  • Next Meeting: February 25, 2026
X. Executive Session
  a. Personnel Action Items
  b. Active Membership Application Review
XI. Adjournment

The meeting will also be available via livestream at www.conservationguam.org/livestream.

For questions or special accommodations, please contact our office at southernguamswcd@gmail.com or (671) 735-2014.

Doc. No. 38GL-26-2651.*

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/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans

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GUAM ETHICS COMMISSION

Kumision I Ginlhan Areklamenton Guåhan
Telephone: (671) 969-5625 I Email: procurement@ethics.guam.gov

REQUEST FOR PROPOSAL
RFP NO. GECOM-RFP-26-001
RESEARCH SERVICES FOR THE DEVELOPMENT OF THE GUAM ETHICS COMMISSION TRUST METER

DUE DATE: MARCH 5, 2026 I TIME: 4:00 PM

LOCATION: 134 W. SOLEDAD AVE., CITADEL BLDG., SUITE 406, HAGATNA, GUAM 96910

The RFP package will be available at the Guam Ethics Commission (GECOM) office located at **134 W. SOLEDAD AVE., CITADEL BLDG., SUITE 406, HAGATNA, GUAM 96910** commencing on date of advertisement up to the due date as stated above and is available for download on the Guam Ethics Commission website: https://guamethics.com/announcements

Prospective offerors must register their current contact information with GECOM to ensure receipt of all notices regarding any changes or updates to the RFP. To register please fill out the RFP Acknowledgment Receipt Form which can be downloaded at https://guamethics.com/announcements. The procuring agency will not be liable for failure to provide notice to any party who did not register their current contact information. Please submit the completed form via email at procurement@ethics.guam.gov. For any questions, you may also call the Commission at (671) 969-5625.

For special accommodations or other assistance, please call the Guam Ethics Commission at (671) 969-5625.
This ad was paid for with Guam Ethics Commission funds.

DEPARTMENT OF ADMINISTRATION

DIPATTAMENTON ATMENESTRASION

EDWARD M. BIRN, Director (Direktot)
RENA K. BORJA, Deputy Director (Sigundo Direktot)

GENERAL SERVICES AGENCY
(Ahension Setbision Hinirat)
Telephone (Telifon): (671) 475-1705/1706

LOURDES A. LEON GUERRERO, Governor (Maga'hågan)
JOSHUA F. TENORIO, Lieutenant Governor (Sigundo Maga'lahi)

THIS ADVERTISEMENT WAS PAID WITH GOVERNMENT FUNDS BY: Department of Integrated Services for Individuals with Disabilities

A non-refundable fee of $10.00 per bid package will be assessed. Certified Check, Cashier's Check, Cash will be accepted. No personal or Company Check. Payment for bid package picked up after 3:00pm will not be accepted.

INVITATION FOR BID

BID NO: GSA-004-26
For: 36-Month Lease Agreement for Multifunction Color Copier/Printer/Scanner/Fax

Submission Deadline: 02/18/2026 **Time:** 10:00am
Opening Date: 02/18/2026 **Time:** 10:05am
Location to Submit: General Services Agency, ITC Building Tamuning, Guam

The General Services Agency is issuing this Invitation for Bid for 36-Month Lease Agreement for Multifunction Color Copier/Printer/Scanner/Fax. A pdf copy is available to download at www.gsa.doa.guam.gov, or a hard copy can beobtained at the General Services Agency located at 2nd floor ITC Bldg. Rm. 230, Tamuning, Guam 96931 from 8:00am – 5:00pm, Monday through Friday, beginning Monday, February 2, 2026 through Wednesday, February 18, 2026.

Bidders must register their current contact information with GSA to ensure they receive any notices regarding changes or updates to the IFB. The procuring agency and GSA will not be liable for failure to provide notice to any party who did not register current contact information.

/s/ ANDRIANA QUITUGUA
Acting Chief Procurement Officer*



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Categories

Animals for Sale: Livestock / Pets . **Automotive:** Cars/Motorcycle/Pickups and SUVs . **Celebrations . Fundraisers . Goods for Sale:** Auto Parts/Baby items/Computers/Electronics/Exercise Equipment/Furniture/Household Goods/Miscellaneous/ Musical Instruments/ Sports and Outdoors Equipment/Tools . **Lost and Found . Heavy Equipment . Repairs and Installation:** Air Conditioning/Appliances/Cellphones/Computers/Electrical/ Electronics/Plumbing/Repair and Installations Services Needed . **Services:** Child and Elderly Care/Educational/Lawn Care or Yardwork/Other Services/Therapeutic Massage/Tutoring/Cleaning Services . **Wanted to Buy . Watercraft:** Boats/Personal Water Craft

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Best: Text with border & image. 8 days in E-edition / 14 days on Classified of our website - line limit (15) lines. **$105.00**

Categories

Businesses for Sale . For Lease Land . For Rent Commercial . For Rent Residential . For Sale Commercial . For Sale Residential . For Sale Land . Rooms for Rent

Open Rate Liners

All liners are priced per line and include digital.
E-edition only options are not available.

Private Party Open Rate Liner:
**Applies to all Categories except for Employment and Real Estate
$14.45 per line/per day for E-edition and 3 days on Classified of our website
$50.00 5 days on Classified of our website

Employment Open Liners
$16.50 per line/per day for E-edition and 3 days on Classified of our website
$75.00 5 days on Classified of our website

Real Estate Open Liners
$14.70 per line/per day for E-edition and 3 day on Classified of our website
$85.00 5 days on Classified of our website

Optional Adds for Open Liners

- **Bold: $2.00**
- **Border: $7.00**
- **Image: $7.00**

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IN THE SUPERIOR COURT OF GUAM
IN THE MATTER OF THE ESTATE OF THOMAS JOSEPH ROZYCKI, Decedent.

PROBATE CASE NO. PRO114-25
NOTICE OF HEARING

THIS NOTICE IS REQUIRED BY LAW. YOU ARE NOT REQUIRED TO APPEAR IN COURT UNLESS YOU DESIRE.

1. NOTICE IS HEREBY GIVEN that Jeffrey A. Cook has filed an Amended Petition for Probate of Will and for Letters of Administration with Copy of Will Annexed.
2. A hearing on the petition will be heard on **Wednesday, February 18, 2026, at 10:20 a.m., before the Hon. Judge Elyze M. Irlarte.**
3. To attend or to participate in the hearing, you may appear in person at the Guam Judicial Center, appear remotely at https://guamcourts-org.zoom.us and enter Meeting ID: 864 4387 2213 and Passcode: JEMI; or call into the courtroom at 671-300-6703 at the designated hearing time. For connectivity issues, you may contact Jannette Samson at (671) 475-0141 or email jsamson@guamcourts.gov.

DATED: 16 JAN 2026

JANICE M. CAMACHO-PEREZ,
Clerk of Court,
Superior Court of Guam

/s/ ALICE B. MENDOZA
Courtroom/Chamber Clerk

THE BUREAU OF STATISTICS AND PLANS

Sagan Planu Siha Yan Emfotmasion

LOLA E. LEON GUERRERO
Director

MATTHEW C. SANTOS
Deputy Director

LOURDES A. LEON GUERRERO
Governor of Guam

JOSHUA F. TENORIO
Lieutenant Governor

NOTICE OF PUBLIC HEARING

Bureau of Statistics and Plans
The Guahan 2050 Sustainability Plan
February 12, 2026, Hågat Mayor's Office
February 25, 2026, Dededo Mayor's Office
6:00 pm - 8:00pm

In accordance with the requirements of 5 GCA § 1205 and Public Law 35-110, the Bureau of Statistics and Plans (BSP), will be conducting public hearings for The Guahan 2050 Sustainability Plan.

The public is invited to attend and provide comment on The Guahan 2050 Sustainability Plan, which is available for public review on the BSP's website at https://bsp.guam.gov/gsp2050/. Hard copies are available for review at the Bureau of Statistics and Plans, Office of the Director, 513 West Marine Corps Drive, Ricardo J. Bordallo Complex, Hagatna, 8:00 am-5:00 pm. Oral and written testimonies will be accepted at the hearing or may be submitted online to gsp2050@bsp.guam.gov. Please include your name when submitting testimonies online. The deadline to submit comments is March 11, 2026, by 5:00 pm.

For more information, please contact Director Lola E. Leon Guerrero, at 671-472-4201/2. Any persons needing special accommodations, please email raymond.dungca@bsp.guam.gov or call 671-475-9683.

/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans

This advertisement is paid with Government of Guam funds.

Doc. No. 38GL-26-2651.*

Note that the Legislature has taken steps to ensure that any protected personal identifying information has been redacted or excluded in whole or in part in order to protect the privacy of any individual(s) whose information has been included as part of this transmittal.

CLASSIFIEDS

Place an ad online TODAY!
PDN Lobby Hours: Monday-Friday 8am-5pm
Guampdn.com/Classifieds
Or call (671)472-1PDN (1736)

Jobs Find a new job or career

Homes & Rentals Discover your new home

Auto Turn here for your next vehicle

Stuff Household, Furniture, Pets & Stuff

Super Classified Deals

For all categories except employment and real estate. Package line limit listed below.

Good: Text only. 3 days in E-edition / 7 days on Classified of our website - line limit (5) lines. **$35.00**

Better: Text with border. 5 days in E-edition / 10 days on Classified of our website - line limit (10) lines. **$45.00**

Best: Text with border & image. 8 days in E-edition / 14 days on Classified of our website - line limit (15) lines. **$60.00**

Categories

Animals for Sale: Livestock / Pets . **Automotive:** Cars/Motorcycle/Pickups and SUVs . **Celebrations . Fundraisers . Goods for Sale:** Auto Parts/Baby Items/Computers/Electronics/Exercise Equipment/Furniture/Household Goods/Miscellaneous/ Musical Instruments/ Sports and Outdoors Equipment/Tools . **Lost and Found . Heavy Equipment . Repairs and Installation:** Air Conditioning/Appliances/Cellphones/Computers/Electrical/ Electronics/Plumbing/Repair and Installations Services Needed . **Services:** Child and Elderly Care/Educational/Lawn Care or Yardwork/Other Services/Therapeutic Massage/Tutoring/Cleaning Services . **Wanted to Buy . Watercraft:** Boats/Personal Water Craft

Employment Classified Packages

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Best: Text with border & image. 8 days in E-edition / 14 days on Classified of our website - line limit (15) lines. **$120.00**

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Help Wanted Full Time . Help Wanted Part Time

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Online Classifieds at GuamPDN.com

To place your ads, please:

1. Log onto GuamPDN.com
2. Click on "Place an ad" under the Quick Links on the left blue side bar
3. Click on "Start Creating Your Ad Now"
4. Complete the form and Make Payment

Pacific Daily News

THE BUREAU OF STATISTICS AND PLANS

Sagan Planu Siha Yan Emfotmasion

LOLA E. LEON GUERRERO, Director
MATTHEW C. SANTOS, Deputy Director
LOURDES A. LEON GUERRERO, Governor of Guam
JOSHUA F. TENORIO, Lieutenant Governor

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For more information, please contact Director Lola E. Leon Guerrero, at 671-472-4201/2. Any persons needing special accommodations, please email raymond.dungca@bsp.guam.gov or call 671-475-9683.

/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans

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MAYORS' COUNCIL OF GUAM

Mayors' Council of Guam will hold a Regular Meeting on Wednesday, March 4, 2026, at 10:00AM at the Mayors' Council of Guam Conference Room, Bldg. F, 2nd Floor, in the J&G Commercial Center, Hagåtña.

AGENDA

I. Call to Order
II. Roll Call
III. National Anthem/Guam Hymn/ Inifresi
IV. Guest Speaker
A. Maria Pangelinan, Guam Election Commission
V. Approval of February Minutes
VI. Approval of Treasurer's Report
VII. Executive Director's Report
VII. Committee Reports
A. Boards and Commissions
B. Standing Committees
IX. Unfinished Business
A. 82nd Guam Liberation
X. New Business
A. FY2027 Budget Discussion
XI. Announcements
XII. Adjournment

Join Zoom Meeting:
https://us02web.zoom.us/j/86578666706?pwd=m47d7ulsKP4ccT39whFr7yWdm6FHYZ.1
Meeting ID: 865 7866 6706 **Passcode: 980377**

This meeting will be live-streamed on the Mayors' Council of Guam YouTube channel. Individuals requiring special accommodations may contact Amber Sanchez-Benavente at E-mail: mcogadmin@teleguam.net or call (671) 472-6940.
This ad was paid for with government funds by the Mayors' Council of Guam.

THE BUREAU OF STATISTICS AND PLANS

Sagan Planu Siha Yan Emfotmasion

LOLA E. LEON GUERRERO, Director
MATTHEW C. SANTOS, Deputy Director

LOURDES A. LEON GUERRERO, Governor of Guam
JOSHUA F. TENORIO, Lieutenant Governor

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For more information, please contact Director Lola E. Leon Guerrero, at 671-472-4201/2. Any persons needing special accommodations, please email raymond.dungca@bsp.guam.gov or call 671-475-9683.

/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans

This advertisement is paid with Government of Guam funds.

LET THE PACIFIC DAILY NEWS CLASSIFIEDS WORK FOR YOU!
Pacific Daily News
Call **472-1PDN**
For More Information

Frankie T. Perez, Jr., Esq.
424 West O'Brien Drive, Ste. 217
Hagåtña, Guam 96910
ftperezlaw@gmail.com
671-787-8468

Attorney for Petitioner:
NAOMI M. VENTURA

IN THE SUPERIOR COURT OF GUAM

IN THE MATTER OF THE ESTATE OF

GEORGE WILLIAM TAYLOR

Decedent,

BY

NAOMI M. VENTURA,

Petitioner.

PROBATE CASE NO. PR0004-26

NOTICE OF HEARING ON VERIFIED PETITION FOR LETTERS OF ADMINISTRATION WITH THE WILL ANNEXED AND PROBATE OF WILL

NOTICE IS HEREBY GIVEN that NAOMI M. VENTURA has filed herein her Verified Petition for Letters of Administration with the Will Annexed and Probate of Will ("Petition"), upon the Estate of GEORGE WILLIAM TAYLOR, deceased, and that on March 04, 2026, at the hour of 9:30 a.m., of said day in the Courtroom of the Superior Court of Guam, Hagåtña, the Petition is set for hearing and all persons interested are hereby notified to appear at the time and place set for said hearing and show cause, if any they have, why the Petition should not be granted.

Reference is hereby made to the Petition for further particulars.

DATED this 26th day of January, 2026.

JANICE M. CAMACHO-PEREZ
Clerk of Court, Superior Court of Guam

By: /s/ PAULINE I. U. SANTOS
Chamber/Courtroom Clerk

You may appear in person at the Courtroom of the Honorable Dana A. Gutierrez, 120 W. O'Brien Drive, Hagåtña, Guam or you may participate via Zoom by logging onto https://guamcourts-org.zoom.us and enter **Meeting ID: 839 7874 0380** and **Passcode: 189701.** For technical assistance, please call (671) 475-3207 five (5) minutes prior the designated hearing time.

Note that the Legislature has taken steps to ensure that any protected personal identifying information has been redacted or excluded in whole or in part in order to protect the privacy of any individual(s) whose information has been included as part of this transmittal.

BUREAU OF STATISTICS AND PLANS

Lola E. Leon Guerrero, Director
Matthew C. Santos, Deputy Director

Government of Guam
P.O. Box 2950 Hagåtña, Guam 96932
Tel. (671) 472-4201/3
Fax. (671) 477-1812

Lourdes A. Leon Guerrero, Governor of Guam
Joshua F. Tenorio, Lieutenant Governor

NOTICE OF PUBLIC HEARING

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The Guahan 2050 Sustainability Plan
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/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans

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AVAILABLE JOBS FOR ELIGIBLE U.S. WORKERS

10 – CARPENTERS WITH ONE YEAR EXP. ***$18.34 PER HOUR**
Construct, erect, install, and repair structures and fixtures of wood, plywood and wallboard using carpenters hand tools and power tools conforming to local building codes.

25 - CONSTRUCTION SUPERVISORS WITH TWO YEARS EXP. ***$29.61 PER HOUR**
Supervises, coordinates and schedules the activities of construction workers at project site. Reads and inspects specifications and blueprints to determine construction requirements to plan procedures.

50 - ELECTRICIANS WITH TWO YEARS EXP. ***$21.02 PER HOUR**
Plans, layout, installs, maintains and repair electrical wiring, equipment, and fixtures. Plan new or modified installations to minimize waste of materials. Prepares sketches or follows blueprints to determine location of wiring to ensure conformance to building and safety codes.

2 - HEAVY EQUIPMENT MECHANIC WITH TWO YEARS EXP. ***$21.77 PER HOUR**
Diagnose, adjust, repairs, and overhauls mobile mechanical, electrical, construction, hydraulic and pneumatic equipment, such as bulldozers, graders, conveyors, dump trucks, backhoes, excavators, and other heavy equipment.

15 – HEAVY EQUIPMENT OPERATORS WITH ONE YEAR EXP. ***$18.97 PER HOUR**
Operate multiple types of power construction equipment such as motor graders, bulldozers, scrapers, compressors, pumps, derricks, shovels, tractors, or front-end loaders.

20 – LINEMEN WITH ONE YEAR EXP. ***$25.14 PER HOUR**
Install or repair cables or wires used in electrical power or distribution systems. May erect poles and light or heavy-duty transmission towers.

20 – PIPEFITTERS WITH TWO YEARS EXP. ***$19.48 PER HOUR**
Assemble, install, alter, and repair pipelines or pipe systems that carry water, steam, air, or other liquids or gasses. May install heating and cooling equipment and mechanical control systems.

20 – PLUMBER WITH TWO YEARS EXP. ***19.48 PER HOUR**
Assemble, install, alter, and repair pipelines or pipe systems that carry water, steam, air, or other liquids or gasses. May install heating and colling equipment and mechanical control systems.

29 – SHEET METAL WORKER WITH ONE YEAR EXP. ***$20.44 PER HOUR**
Fabricates, assembles, installs, and repairs sheet metal products and equipment such as ducts, control boxes, drainpipes, and casings. Set up and operates prefabricated sheet metal ducts used for heating, air conditioning, or other purposes.

15 – STRUCTURAL STEEL WORKERS WITH ONE YEAR EXP. ***$17.34 PER HOUR**
Erect, place, and join steel girders, columns, and other pieces to form structural frameworks. May assemble precut metal buildings and the cranes and derricks that move materials and equipment around the construction site.

10- WELDERS WITH ONE YEAR EXP. ***$20.30 PER HOUR**
Uses hand-welding, flame-cutting, hand soldering, or brazing equipment to weld or join metal components or to fill holes, indentations or seams of fabricated metal products. Welds components in flat, vertical, or overhead positions.

***Special wage rate:** Work to be performed on DPRI-funded projects and projects covered by Davis Bacon, Service Contracts Act, and/or Executive Order 14206 will be paid no less than the indicated wage rate but may be paid more where special rates apply.*

Benefits: Roundtrip airfare for off-island hire; Food & Lodging @ $80.00 per week; Local transportation from employer's designated lodging facility to/from jobsite; medical Insurance provided.

Successful applicant must be able to obtain military base access. Off-island hires must complete a pre-arrival and post-arrival health screening.

The job offer meets all EEO requirements, and initiates a temporary placement. The recruitment associated with this job offer is closely monitored by the Department of Labor. Qualified, available and willing U.S. workers are highly encouraged to apply. Should you qualify for the job and are not hired, you may appeal with the Department of Labor who will independently review matter.

The complete job duties may be viewed in person at American Job Center
414 W. Soledad Avenue, Suite 300 GCIC Building, Hagatna, Guam
Or apply online at www.hireguam.com; Enter Keyword: 2026-047

Doc. No. 38GL-26-2651.*

Lourdes A. Leon Guerrero, Honorable Governor, Maga'låhi
John "JQ" Quinata, Executive Manager

A.B. Won Pat International Airport Guam
P.O. Box 8770 Tamuning, GU 96931 • Tel: (671) 646-0300

Joshua F. Tenorio, Honorable Lt. Governor, Sigundo Maga'låhi
Dafne Mansapit-Shimizu, Deputy Executive Manager

INVITATION FOR BID

PURCHASE AND INSTALLATION OF GROUND POWER UNITS AND PRE-CONDITIONED AIR UNITS

IFB No. GIAA-001-FY26
AIP No. 3-66-0001-134-2025

Pre-Bid Conference	Deadline for Receipt of Written Questions (Single Point of Contact)	Bid Submission Deadline
02/05/2026 10:00 a.m. (ChST)	02/11/2026 5:00 p.m. (ChST)	03/03/2026 10:00 a.m. (ChST)

For additional information, contact Ms. Kathrina Bayson, the Single Point of Contact, via email at: **giaaifb126@guamairport.net**

The complete IFB packet and any addenda are available for public inspection at the GIAA Administration Office and for download from GIAA's website at www.guamairport.com. All Prospective bidders must register by submitting to GIAA the Acknowledgement of Receipt Form included as part of this IFB. GIAA shall not be liable for failure to provide notice(s) or addenda to any prospective bidder who does not submit an Acknowledgement of Receipt Form. GIAA reserves the right to reject any and all bids or offers and to waive any and all informalities, and such rejection or waiver will be in GIAA's best interest.

AD PAID FOR BY: ATURIDAT PUETTON BATKON AIREN ENTENASIONAT GUAHAN

GUAM LAND USE COMMISSION

Department of Land Management
ITC Building, Third Floor, Tamuning, GU 96913
P.O. Box 2950, Hagåtña, Guam 96932
Tel: 671-649-5263 Ext. 300 • Fax: 671-649-5383

AGENDA

A regular Guam Land Use Commission meeting will be held on Thursday, February 26, 2026, at 1:30 p.m., Department of Land Management Conference Room, 590 S. Marine Corps Dr., 3rd Floor, ITC Building, Tamuning. Livestreamed on YouTube at the Guam Department of Land Management Channel.

I. Notation of Attendance/Roll Call
II. Approval of Minutes – January 22, 2026 & February 12, 2026
III. Old or Unfinished Business [None]
IV. New Business
  A. Application No. 2024-21, Archway, Inc., Zone Change from "R1" to "C" for a proposed two-story coffee and tea restaurant, and a duplex on the second floor, on Lot 2322-NEW-1-2-R2, Mangilao.
  B. Application No. 2025-26, Carlito B. Pamintuan and Violeta T. Pamintuan, Zone Change from "A" to "M1", for the proposed construction of two, two-story, five-unit apartment buildings for a total of ten units, on Lot 5224-1-16, Tract 308, Barrigada.
  C. Application No. 2025-71, Guam Evergreen, Corp., Zone Change from "A" to "M1", for a proposed warehouse structure, Lot 6-R1, Block 1, Tract 221, Barrigada.
  D. Application No. 2025-72, Guam Evergreen, Corp., Zone Variance for Use, to allow for the location, operation, and to maintain a space rocket tracking station in an "A" Lot 6-R1, Block 1, Tract 221, Barrigada.
V. Administrative & Miscellaneous Matters
VI. Adjournment

Funding Source provided by the Applicant.
Persons requiring special accommodations, please call Cristina Gutierrez 671-649-5263, ext. 375

Bldg. 13-16A Mariner Avenue, Tiyan, Barrigada, Guam 96913
P.O. Box 23909 Barrigada, Guam 96921
Telephone: (671) 475-8473 (Switchboard); (671) 475-8508 / 8509 / 8512 · Fax: (671) 475-3222

First Notice of Public Hearing

The Guam Police Dept. will convene a Public Hearing on proposed additions to the General Order (GO) and proposed changes to the Guam Administrative Rules and Regulations (GARR) for Body-Worn Cameras (BWC).

February 12, 2026, 6:00pm Sinajana Senior Citizens Center
February 19, 2026, 6:00pm Yigo Senior Citizens Center
February 26, 2026, 6:00pm Malesso Senior Citizens Center

Agenda for each meeting:

I. Call to order and opening remarks
II. Purpose of the hearing
III. Proposed changes to the GO and GARR
IV. Discussion
V. Public Testimony
VI. Closing Remarks

How to Participate:

A copy of the draft General Order and draft Guam Administrative Rules and Regulations are available with the office of the Chief of Police in Tiyan, all police precincts: Dededo Precinct, Tumon/Tamuning Precinct, Central Precinct (Sinajana), Southern Precinct (Agat) and GPD's Records and ID Section.

Individuals wishing to attend in person or provide oral or written testimony may contact the office of the Chief of Police (671)475-8473. Written testimonies should be addressed to Stephen C. Ignacio, Chief of Police, via hand delivery or via electronic mail at chief@gpd.guam.gov at least one (1) day prior to the hearing.

Watch Live:

The Hearing will stream online on the official YouTube channel for the Office of the Governor of Guam, www.youtube.com/@govlouguam and will be recorded for later viewing.

Special Accommodations:

Individuals who require special accommodations, auxiliary aids, or services may contact the Office of the Chief of Police. All requests, inquiries, and submissions may be sent directly to the office, Bldg. 13-16A Mariner Avenue, Tiyan, Barrigada, Guam 96913, by phone at (671)475-8473 or via electronic mail at chief@gpd.guam.gov.

We look forward to your attendance and participation.

This ad is paid for by GPD funds.

Note that the Legislature has taken steps to ensure that any protected personal identifying information has been redacted or excluded in whole or in part in order to protect the privacy of any individual(s) whose information has been included as part of this transmittal.

BSP Holds Public Hearings, Invites Comments on the Draft Guåhan 2050 Sustainability Plan

BSP Holds Public Hearings, Invites Comments on the Draft Guåhan 2050 Sustainability Plan

PRESS RELEASE

Note that the Legislature has taken steps to ensure that any protected personal identifying information has been redacted or excluded in whole or in part in order to protect the privacy of any individual(s) whose information has been included as part of this transmittal.

Posted on: 01/26/2026 03:56 PM

Posted by: Steven Dierking

Department(s):
BUREAU OF STATISTICS AND PLANS (/notices?department_id=21)

Division(s): (/notices?division_id=)

Notice Topic(s): PRESS RELEASE (/notices?topic_id=40), PUBLIC HEARING (/notices?topic_id=74)

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FOR IMMEDIATE RELEASE

January 26, 2026
Media Contact: Lola E. Leon Guerrero, Director
Telephone: 671-472-4201
Email: lolalg@bsp.guam.gov

BSP Holds Public Hearings, Invites Comments on the Draft Guåhan 2050 Sustainability Plan

Adelup, GU (January 26, 2026) - The Bureau of Statistics and Plans (BSP) is proud to announce the release of the public draft of the **Guåhan 2050 Sustainability Plan (G50SP)**. Mandated by **Guam Public Law 35-110**, this comprehensive update to the Guam Comprehensive Development Plan establishes a 25-year roadmap to ensure that Guam meets the needs of the present without compromising the ability of future generations to thrive.
The G50SP is built upon five core sustainability principles: **Limits, Balance, Renewal, Equity, and Engagement**. These principles guide the plan's approach to five thematic goals: Sustainable Communities, a Prosperous Economy, a Thriving Environment, a Vibrant Culture, and Village Sustainability.

Addressing Public Law 35-110: Required Plan Elements
Public Law 35-110, enacted to renew the Guam Comprehensive Development Plan with the principles of sustainability, specifically mandated that the updated plan address twenty critical elements. The G50SP fully responds to these requirements through an integrated land use framework:

- **Land Use & Infrastructure**: The plan establishes an **Urban-Rural Boundary** to concentrate development in areas with existing infrastructure, such as water, sewer, and power, while protecting rural landscapes and the **Northern Guam Lens Aquifer**.
- **Housing & Redevelopment**: G50SP prioritizes **affordable housing** and the **redevelopment** of underutilized urban spaces, ensuring resilient and equitable housing options for Guam's growing population.
- **Environment & Conservation**: In direct response to the law's conservation requirements, the plan designates **Resource Conservation** areas to protect sensitive habitats, limestone forests, and watersheds.
- **Culture & Indigenous Connections**: The plan elevates the protection of **CHamoru heritage**, traditional practices, and historical sites, ensuring that land use decisions respect and celebrate Guam's unique cultural identity.
- **Public Safety & Resilience**: Integrated hazard and climate data, including flood maps and sea-level rise projections, are used to guide safe development and enhance island-wide resilience.

A Vision Grounded in Community
The G50SP was developed through an extensive community engagement process, including an island-wide survey of over 700 residents, focus groups, and interviews with village mayors and agency experts. This input confirmed that the people of Guam envision a future that prioritizes environmental stewardship, cultural preservation, and social cohesion.

From Plan to Action
"The Guåhan 2050 Sustainability Plan is more than a document; it is a living commitment to our island," said Lola Leon Guerrero, the Director of the Bureau of Statistics and Plans. "By aligning our land use decisions with these sustainability principles, we are moving away from fragmented decision-making toward a shared, proactive framework that secures a prosperous and resilient future for all".

If adopted, the implementation of the G50SP will be coordinated by the BSP and supported by a **Sustainability Plan Implementation Task Force**, with actions phased over short-term (2025-2030), mid-term (2030-2040), and long-term (2040-2050) horizons.

Where to find more information on the plan
To view the draft Guåhan 2050 Sustainability Plan Public Draft, please visit the Bureau of Statistics and Plans website at **https://bsp.guam.gov/gsp2050/ (https://bsp.guam.gov/gsp2050/)**. The Guåhan 2050 Sustainability Plan web page includes:

- Viewing or downloading the full draft
- Chapter Summaries
- FAQs
- Plan-related mapping tools and downloadable files

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Plan related mapping tools and downloadable files
Public Comment form with instructions
Schedule of public hearings

Public Hearings
In accordance with the requirements of 5 GCA § 1205 and Public Law 35-110, the Bureau of Statistics and Plans (BSP) is seeking public review and comment on The Guahan 2050 Sustainability Plan. Public hearings will be held on the following dates, times, and locations:

February 12, 2026 6:00 pm – 8:00 pm Hågat Mayor's Office
Residents can also join virtually through the following meeting link for this date:
https://meet.google.com/bib-frbm-nqj

February 25, 2026 6:00 pm – 8:00 pm, Dededo Mayor's Office
Residents can also join virtually through the following meeting link for this date:
https://meet.google.com/vks-pnvm-nou

The public is invited to attend and provide comments on The Guahan 2050 Sustainability Plan. Hard copies are available for review at the Bureau of Statistics and Plans, Office of the Director, 513 West Marine Corps Drive, Ricardo J. Bordallo Complex, Hagatna, 8:00 am-5:00 pm. Oral and written testimonies will be accepted at the hearing or may be submitted online to **gsp2050@ bsp.guam.gov (about:blank)**. Please include your name when submitting testimonies online. Click here to download the public comment form. The deadline to submit comments is March 11, 2026, by 5:00 pm.

For more information, email **gsp2050@ bsp.guam.gov (about:blank)**, or call (671) 472-4201/2/3.

###

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Pacific Daily News

THE BUREAU OF STATISTICS AND PLANS

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LOLA E. LEON GUERRERO
Director

MATTHEW C. SANTOS
Deputy Director

LOURDES A. LEON GUERRERO
Governor of Guam

JOSHUA F. TENORIO
Lieutenant Governor

NOTICE OF PUBLIC HEARING

Bureau of Statistics and Plans
The Guahan 2050 Sustainability Plan
February 12, 2026, Hågat Mayor's Office
February 25, 2026, Dededo Mayor's Office
6:00 pm - 8:00pm

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The public is invited to attend and provide comment on The Guahan 2050 Sustainability Plan, which is available for public review on the BSP's website at https://bsp.guam.gov/gsp2050/. Hard copies are available for review at the Bureau of Statistics and Plans, Office of the Director, 513 West Marine Corps Drive, Ricardo J. Bordallo Complex, Hagatna, 8:00 am-5:00 pm. Oral and written testimonies will be accepted at the hearing or may be submitted online to gsp2050@bsp.guam.gov. Please include your name when submitting testimonies online. The deadline to submit comments is March 11, 2026, by 5:00 pm.

For more information, please contact Director Lola E. Leon Guerrero, at 671-472-4201/2. Any persons needing special accommodations, please email raymond.dungca@bsp.guam.gov or call 671-475-9683.

/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans

This advertisement is paid with Government of Guam funds.

GUAM ETHICS COMMISSION

Kumision I Ginihan Areklamenton Guåhan
Telephone: (671) 969-5625 I Email: procurement@ethics.guam.gov

REQUEST FOR PROPOSAL
RFP NO. GECOM-RFP-26-001
RESEARCH SERVICES FOR THE DEVELOPMENT OF THE GUAM ETHICS COMMISSION TRUST METER

DUE DATE: MARCH 5, 2026 I TIME: 4:00 PM

LOCATION: 134 W. SOLEDAD AVE., CITADEL BLDG., SUITE 406, HAGATNA, GUAM 96910

The RFP package will be available at the Guam Ethics Commission (GECOM) office located at **134 W. SOLEDAD AVE., CITADEL BLDG., SUITE 406, HAGATNA, GUAM 96910** commencing on date of advertisement up to the due date as stated above and is available for download on the Guam Ethics Commission website: https://guamethics.com/announcements

Prospective offerors must register their current contact information with GECOM to ensure receipt of all notices regarding any changes or updates to the RFP. To register please fill out the RFP Acknowledgment Receipt Form which can be downloaded at https://guamethics.com/announcements. The procuring agency will not be liable for failure to provide notice to any party who did not register their current contact information. Please submit the completed form via email at procurement@ethics.guam.gov. For any questions, you may also call the Commission at (671) 969-5625.

For special accommodations or other assistance, please call the Guam Ethics Commission at (671) 969-5625.
This ad was paid for with Guam Ethics Commission funds.

DEPARTMENT OF ADMINISTRATION

DIPATTAMENTON ATMENESTRASION

EDWARD M. BIRN
Director (*Direktot*)

RENA K. BORJA
Deputy Director (*Sigundo Direktot*)

GENERAL SERVICES AGENCY
(*Ahension Setbision Hinirat*)
Telephone (Telifon):
(671) 475-1705/1706

LOURDES A. LEON GUERRERO
Governor (*Maga'håga*)

JOSHUA F. TENORIO
Lieutenant Governor (*Sigundo Maga'låhi*)

THIS ADVERTISEMENT WAS PAID WITH GOVERNMENT FUNDS BY: Department of Integrated Services for Individuals with Disabilities

A non-refundable fee of $10.00 per bid package will be assessed. Certified Check, Cashier's Check, Cash will be accepted. No personal or Company Check. Payment for bid package picked up after 3:00pm will not be accepted.

INVITATION FOR BID

BID NO:	GSA-004-26	
For:	36-Month Lease Agreement for Multifunction Color Copier/Printer/ Scanner/Fax	
Submission Deadline:	02/18/2026	Time: 10:00am
Opening Date:	02/18/2026	Time: 10:05am
Location to Submit:	General Services Agency, ITC Building Tamuning, Guam	

The General Services Agency is issuing this Invitation for Bid for 36-Month Lease Agreement for Multifunction Color Copier/Printer/ Scanner/Fax. A pdf copy is available to download at www.gsa.doa.guam.gov, or a hard copy can beobtained at the General Services Agency located at 2nd floor ITC Bldg. Rm. 230, Tamuning, Guam 96931 from 8:00am – 5:00pm, Monday through Friday, beginning Monday, February 2, 2026 through Wednesday, February 18, 2026.

Bidders must register their current contact information with GSA to ensure they receive any notices regarding changes or updates to the IFB. The procuring agency and GSA will not be liable for failure to provide notice to any party who did not register current contact information.

/s/ ANDRIANA QUITUGUA
Acting Chief Procurement Officer*



Doc. No. 38GL-26-2651.*

Note that the Legislature has taken steps to ensure that any protected personal identifying information has been redacted or excluded in whole or in part in order to protect the privacy of any individual(s) whose information has been included as part of this transmittal.

LAW OFFICE OF DANIEL J. BERMAN
Suite 801, DNA Building
238 Archbishop Flores Street
Hagåtña, Guam 96910
Telephone: (671) 922-7570
Email: djberman@pacificlawyers.law
Attorney for:
DKSH GUAM, INC. (formerly Caronel Guam Inc.)

IN THE SUPERIOR COURT OF GUAM
IN RE: VOLUNTARY DISSOLUTION OF
DKSH GUAM, INC. (formerly Caronel Guam Inc.)
CIVIL CASE NO. CV0004-26

NOTICE BY CLERK OF COURT OF APPLICATION FOR VOLUNTARY DISSOLUTION OF DKSH GUAM, INC. (formerly Caronel Guam Inc.)

NOTICE IS HEREBY given that DKSH GUAM, INC. (formerly Caronel Guam Inc.), a corporation organized and existing under the laws of the Territory of Guam, has filed herein its application for a decree dissolving the corporation.

That the application is to be heard on March 4th, 2026, at the hour of 10:40 a.m., at the Superior Court of Guam, Hagåtña, Guam, 96910.

On or before March 4th, 2026, any person may file herein his or her objections to such application or to the granting thereof by the above-entitled court.

IN WITNESS WHEREOF, I have affixed the seal of the Superior Court of Guam this JAN 07 2026.

JANICE M. CAMACHO-PEREZ, ESQ.
Clerk of Court, Superior Court of Guam
By: /s/MASON P. SAYAMA
Deputy Clerk



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Facsimile: (671) 472-9616
Email: guam@mcdonald.law
Attorneys for Petitioner
Martin Joseph Lujan Mendoza

IN THE SUPERIOR COURT OF GUAM
IN THE MATTER OF THE ESTATE OF
ELEUTERIO ALDAY MENDOZA,
Deceased,
BY **MARTIN JOSEPH LUJAN MENDOZA,**
Petitioner.
PROBATE CASE NO. **PR0204-25**

NOTICE OF HEARING ON PETITION FOR LETTERS OF ADMINISTRATION AND PROBATE

THIS NOTICE IS REQUIRED BY LAW. YOU ARE NOT REQUIRED TO APPEAR IN COURT UNLESS YOU DESIRE.

1. NOTICE IS HEREBY GIVEN that **MARTIN JOSEPH LUJAN MENDOZA,** filed a Petition for Letters of Administration and for Probate of Estate.

2. A hearing on the Petition is set for **FEB 04 2026 at 9:30 a.m.** of the said date, in the courtroom at the Superior Court of Guam, Hagåtña, Guam.

JANICE M. CAMACHO-PEREZ, ESQ.
Clerk of Court
Superior Court of Guam
By: /s/ **Pauline I. U. Santos**
Chamber/Courtroom Clerk

You may appear in person at Judge Dana A. Gutierrez's Courtroom, 120 West O'Brien Drive, Hagåtña, Guam or you may participate via Zoom by logging onto https://guamcourts-org.zoom.us and enter the **Meeting ID: 839 7874 0380** and **Passcode: 189701.** For technical assistance, please call (671) 475-3207 five (5) minutes prior to the designated hearing time.

GUAM PAROLE BOARD

Government of Guam
P.O. Box 3236 Hagåtña, Guam 96932
Tel: 671-735-4132/33 • Fax: 671-734-4051
Email: guamparoleboard@doc.guam.gov

Stephen J. Guerrero, Chairman
Lina N.B. McDaniel, Member
June G. Borja, Member
John Q. Lizama, Member

Guam Parole Board's *regular scheduled hearing will be on* ***Thursday, January 29, 2026,*** *4:00 p.m., at the Parole Services Division Office #203 Aspinall Avenue Hagåtña, Guam.*

AGENDA *I. Call to Order, II. Roll Call, III. Old Business (Parole Desirability Cases for Jose Baza, Robert James, KR Rousan, Dwain Piyelit, Joseph Materne, John Boy Duenas, [Preliminary Revocation Jayson Song. Brian Tenorio]). IV. New Business (Parole Desirability Cases for Frank Chargualaf, Joe Martin Mantanonna, Kelly Cepeda, Jarrett Atoigue, Dray Lujan, Elson Terry, Adam Borja, Ruben Katsuta, Manny Salas, Eric Fortes, Edward Meno.) (Preliminary Revocation Cases for Jordan Babauta, Eric Carriaga, Roque Mantanona.)*

Guam Pardon Review Board's *regular scheduled meeting will be on* ***Thursday, January 29, 2026,*** *5:00 p.m., at the Parole Services Division Office #203 Aspinall Avenue Hagåtña, Guam.*

AGENDA *I. Call to Order, II. Roll Call, III. Old Business (Pardon Request Case for Richard Quinata, Zarackai Patrick, Christopher Fejeran), IV. New Business (Victor Bilon, Christopher Presnell) (Pardon/Commutation Case None scheduled at this time), V. Deliberation, VI. Adjourn*

Meeting ID: 856 8877 1596 Passcode: 556746. To attend the hearing, we ask that you register via guamparoleboard@doc.guam.gov. For individuals requiring special accommodations, please contact the Parole Services Division at (671)735- 4132/33 for assistance. This ad was paid for by the Corrections Revolving Fund.

MONGMONG-TOTO-MAITE MUNICIPAL PLANNING COUNCIL (MTMMPC)
REGULAR MEETING
January 28, 2026 • 6:00PM • MTM COMMUNITY CENTER
AGENDA

I. Call to Order
II. Treasurer's Report
  A. MPC Accounts
  B. MTM Kid's Camp – Update
III. New Business
  A. Zone Change of Lot 100-2 (Mongmong) Municipality of Mongmong-Toto-Maite from "R-1" (Single Family Dwelling) to "R-2" (Multi-Family Dwelling) Zone in order to allow construction of a residential Duplex for family and rentals
  B. Street naming of new 7-unit townhomes (cul-de-sac) off of Sgt. Roy T. Damian Jr. Street, Toto
  C. Street naming of newly open street off of Chalan R.S. Sanchez, Mongmong
IV. Next meeting – scheduled for February 18, 2026
V. Adjournment

This as is paid for by MongMong-Toto-Maite Municipal Planning Council.

BUREAU OF STATISTICS AND PLANS
Sagan Planu Siha Yan Emfotmasion

Government of Guam
P.O. Box 2950 Hagåtña, Guam 96932
Tel: (671) 472-4201/3
Fax: (671) 477-1812

LOLA E. LEON GUERRERO, Director
MATTHEW C. SANTOS, Deputy Director
LOURDES A. LEON GUERRERO, Governor of Guam
JOSHUA F. TENORIO, Lieutenant Governor

NOTICE OF PUBLIC HEARING
Bureau of Statistics and Plans
The Guahan 2050 Sustainability Plan
February 12, 2026, Hågat Mayor's Office
February 25, 2026, Dededo Mayor's Office
6:00 pm – 8:00 pm

In accordance with the requirements of 5 GCA § 1205 and Public Law 35-110, the Bureau of Statistics and Plans (BSP), will be conducting public hearings for The Guahan 2050 Sustainability Plan.

The public is invited to attend and provide comment on The Guahan 2050 Sustainability Plan, which is available for public review on the BSP's website at https://bsp.guam.gov/gsp2050/. Hard copies are available for review at the Bureau of Statistics and Plans, Office of the Director, 513 West Marine Corps Drive, Ricardo J. Bordallo Complex, Hagåtña, 8:00 am-5:00 pm. Oral and written testimonies will be accepted at the hearing or may be submitted online to gsp2050@bsp.guam.gov. Please include your name when submitting testimonies online. The deadline to submit comments is March 11, 2026, by 5:00 pm.

For more information, please contact Director Lola E. Leon Guerrero, at 671-472-4201/2. Any persons needing special accommodations, please email raymond.dungca@bsp.guam.gov or call 671-475-9683.

/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans

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LOLA E. LEON GUERRERO
Director
MATTHEW C. SANTOS
Deputy Director

BUREAU OF STATISTICS AND PLANS

Sagan Planu Siha Yan Emfotmasion

LOURDES A. LEON GUERRERO
Governor of Guam
JOSHUA F. TENORIO
Lieutenant Governor

January 26, 2026

Memorandum

To: All Agency Heads

From: Director, Bureau of Statistics and Plans

Subject: Public Hearing of the Guåhan 2050 Sustainability Plan (G50SP)

***Buenas yan Håfa Adai*!** Pursuant to the requirements set forth in 5 GCA, Chapter 1, Article 2, §1205, §1205.1, §1205.2, and §1206, the Bureau of Statistics and Plans (BSP) is initiating the public review process for the adoption of the Guåhan 2050 Sustainability Plan (G50SP). Mandated by Public Law 35-110, this document serves as the comprehensive update to the Guam Comprehensive Development Plan, establishing a 25-year roadmap to ensure our island meets present needs without compromising the ability of future generations to thrive.

The G50SP is built upon five core principles—Limits, Balance, Renewal, Equity, and Engagement—which guide our thematic goals for sustainable communities, a prosperous economy, a thriving environment, a vibrant culture, and village sustainability.

In direct response to the twenty critical elements mandated by P.L. 35-110, the plan introduces an integrated land use framework focusing on:

- **Land Use & Infrastructure**: The plan establishes an **Urban-Rural Boundary** to concentrate development in areas with existing infrastructure, such as water, sewer, and power, while protecting rural landscapes and the **Northern Guam Lens Aquifer**.
- **Housing & Redevelopment**: G50SP prioritizes **affordable housing** and the **redevelopment** of underutilized urban spaces, ensuring resilient and equitable housing options for Guam's growing population.
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Note that the Legislature has taken steps to ensure that any protected personal identifying information has been redacted or excluded in whole or in part in order to protect the privacy of any individual(s) whose information has been included as part of this transmittal.

As the G50SP moves from vision to action, your technical expertise is vital. The implementation of this plan will be coordinated by the BSP and supported by a Sustainability Plan Implementation Task Force, with actions phased through 2050. We request that your agency review the sections pertinent to your mandate to ensure alignment with departmental long-range goals.

Review Materials and Public Hearings
The full draft, chapter summaries, and mapping tools are available at: https://bsp.guam.gov/gsp2050/.

We also invite you or your representatives to attend the scheduled public hearings:

February 12, 2026 (6:00 PM): Hågat Mayor's Office / Virtual Link

February 25, 2026 (6:00 PM): Dededo Mayor's Office / Virtual Link

Submission of Comments
Written testimonies and agency feedback should be submitted online to gsp2050@bsp.guam.gov or delivered to the BSP Office at the Ricardo J. Bordallo Complex. The deadline for all comments is March 11, 2026, by 5:00 PM. For more information, email gsp2050@ bsp.guam.gov, or call (671) 472-4201/2/3. Si Yu'os Ma'åse'.

LOLA E. LEON GUERRERO
Director

Cc: Director, Bureau of Budget Management Research
Director, Department of Administration
Administrator, Guam State Clearinghouse
Chief Technology Officer, Office of Technology
Executive Director, Civil Service Commission
Attorney General of Guam, Office of the Attorney General
Administrator, Guam Environmental Protection Agency
Director, Department of Land Management
Administrative Director, Chamorro Land Trust Commission
Executive Director, Guam Ancestral Lands Commission
Director, Department of Agriculture
Director, Department of Parks and Recreation
Director, Guam Energy Office
Director, Department of Public Works
General Manager, Guam Power Authority
General Manager, Guam Waterworks Authority
General Manager, Guam Solid Waste Authority
Administrator, Guam Economic Development Authority
President, Guam Visitors Bureau
General Manager, Port Authority of Guam
Executive Manager, Guam International Airport Authority

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Director, Department of Labor
Chief of Police, Guam Police Department
Fire Chief, Guam Fire Department
Homeland Security Advisor, Guam Homeland Security/Office of Civil Defense
The Adjutant General, Department of Military Affairs
Director, Guam Customs and Quarantine Agency
Director, Department of Corrections
Superintendent, Guam Department of Education
Director, Guam Behavioral Health and Wellness Center
Director, Department of Integrated Services for Individuals with Disabilities
Director, Department of Youth Affairs
Director, Guam Veterans Affairs Office
Executive Director, Public Defender Service Corporation
President, Mayors Council of Guam
President, Department of Chamorro Affairs
Executive Director, Commission on Decolonization
Executive Director, Hagåtña Restoration and Redevelopment Authority
Executive Director, Guam Housing and Urban Renewal Authority
President, Guam Housing Corporation
Director, Guam Council on the Arts & Humanity
Director, Bureau of Women's Affairs

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LOLA E. LEON GUERRERO
Director
MATTHEW C. SANTOS
Deputy Director

BUREAU OF STATISTICS AND PLANS

Sagan Planu Siha Yan Emfotmasion

LOURDES A. LEON GUERRERO
Governor of Guam
JOSHUA F. TENORIO
Lieutenant Governor

FOR IMMEDIATE RELEASE
January 26, 2026
Media Contact: Lola E. Leon Guerrero, Director
Telephone: 671-472-4201
Email: lolalg@bsp.guam.gov

BSP Holds Public Hearings, Invites Comments on the Draft Guåhan 2050 Sustainability Plan

Adelup, GU (January 26, 2026) - The Bureau of Statistics and Plans (BSP) is proud to announce the release of the public draft of the **Guåhan 2050 Sustainability Plan (G50SP)**. Mandated by **Guam Public Law 35-110**, this comprehensive update to the Guam Comprehensive Development Plan establishes a 25-year roadmap to ensure that Guam meets the needs of the present without compromising the ability of future generations to thrive.

The G50SP is built upon five core sustainability principles: **Limits, Balance, Renewal, Equity, and Engagement**. These principles guide the plan's approach to five thematic goals: Sustainable Communities, a Prosperous Economy, a Thriving Environment, a Vibrant Culture, and Village Sustainability.

Addressing Public Law 35-110: Required Plan Elements

Public Law 35-110, enacted to renew the Guam Comprehensive Development Plan with the principles of sustainability, specifically mandated that the updated plan address twenty critical elements. The G50SP fully responds to these requirements through an integrated land use framework:

- **Land Use & Infrastructure**: The plan establishes an **Urban-Rural Boundary** to concentrate development in areas with existing infrastructure, such as water, sewer, and power, while protecting rural landscapes and the **Northern Guam Lens Aquifer**.
- **Housing & Redevelopment**: G50SP prioritizes **affordable housing** and the **redevelopment** of underutilized urban spaces, ensuring resilient and equitable housing options for Guam's growing population.
- **Environment & Conservation**: In direct response to the law's conservation requirements, the plan designates **Resource Conservation** areas to protect sensitive habitats, limestone forests, and watersheds.
- **Culture & Indigenous Connections**: The plan elevates the protection of **CHamoru heritage**, traditional practices, and historical sites, ensuring that land use decisions respect and celebrate Guam's unique cultural identity.
- **Public Safety & Resilience**: Integrated hazard and climate data, including flood maps and sea-level rise projections, are used to guide safe development and enhance island-wide resilience.

A Vision Grounded in Community

The G50SP was developed through an extensive community engagement process, including an island-wide survey of over 700 residents, focus groups, and interviews with village mayors and agency

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experts. This input confirmed that the people of Guam envision a future that prioritizes environmental stewardship, cultural preservation, and social cohesion.

From Plan to Action

"The Guåhan 2050 Sustainability Plan is more than a document; it is a living commitment to our island," said Lola Leon Guerrero, the Director of the Bureau of Statistics and Plans. "By aligning our land use decisions with these sustainability principles, we are moving away from fragmented decision-making toward a shared, proactive framework that secures a prosperous and resilient future for all".

If adopted, the implementation of the G50SP will be coordinated by the BSP and supported by a **Sustainability Plan Implementation Task Force**, with actions phased over short-term (2025-2030), mid-term (2030-2040), and long-term (2040-2050) horizons.

Where to find more information on the plan

To view the draft Guåhan 2050 Sustainability Plan Public Draft, please visit the Bureau of Statistics and Plans website at https://bsp.guam.gov/gsp2050/. The Guåhan 2050 Sustainability Plan web page includes:

- Viewing or downloading the full draft
- Chapter Summaries
- FAQs
- Plan related mapping tools and downloadable files
- Public Comment form with instructions
- Schedule of public hearings

Public Hearings

In accordance with the requirements of 5 GCA § 1205 and Public Law 35-110, the Bureau of Statistics and Plans (BSP) is seeking public review and comment on The Guahan 2050 Sustainability Plan. Public hearings will be held on the following dates, times, and locations:

February 12, 2026 6:00 pm – 8:00 pm Hågat Mayor's Office

Residents can also join virtually through the following meeting link for this date:
https://meet.google.com/bib-frbm-nqj

February 25, 2026 6:00 pm – 8:00 pm, Dededo Mayor's Office

Residents can also join virtually through the following meeting link for this date:
https://meet.google.com/vks-pnvm-nou

The public is invited to attend and provide comments on The Guahan 2050 Sustainability Plan. Hard copies are available for review at the Bureau of Statistics and Plans, Office of the Director, 513 West Marine Corps Drive, Ricardo J. Bordallo Complex, Hagatna, 8:00 am-5:00 pm. Oral and written testimonies will be accepted at the hearing or may be submitted online to gsp2050@ bsp.guam.gov. Please include your name when submitting testimonies online. Click here to download the public comment form. The deadline to submit comments is March 11, 2026, by 5:00 pm.

For more information, email gsp2050@ bsp.guam.gov, or call (671) 472-4201/2/3.

###

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Director

MATTHEW C. SANTOS
Deputy Director

LOURDES A. LEON GUERRERO
Governor of Guam

JOSHUA F. TENORIO
Lieutenant Governor

NOTICE OF PUBLIC HEARING

Bureau of Statistics and Plans
The Guahan 2050 Sustainability Plan
February 12, 2026, Hågat Mayor's Office
February 25, 2026, Dededo Mayor's Office
6:00 pm - 8:00pm

In accordance with the requirements of 5 GCA § 1205 and Public Law 35-110, the Bureau of Statistics and Plans (BSP), will be conducting public hearings for The Guahan 2050 Sustainability Plan.

The public is invited to attend and provide comment on The Guahan 2050 Sustainability Plan, which is available for public review on the BSP's website at https://bsp.guam.gov/gsp2050/. Hard copies are available for review at the Bureau of Statistics and Plans, Office of the Director, 513 West Marine Corps Drive, Ricardo J. Bordallo Complex, Hagatna, 8:00 am-5:00 pm. Oral and written testimonies will be accepted at the hearing or may be submitted online to gsp2050@bsp.guam.gov. Please include your name when submitting testimonies online. The deadline to submit comments is March 11, 2026, by 5:00 pm.

For more information, please contact Director Lola E. Leon Guerrero, at 671-472-4201/2. Any persons needing special accommodations, please email raymond.dungca@bsp.guam.gov or call 671-475-9683.

/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans

This advertisement is paid with Government of Guam funds.

Doc. No. 38GL-26-2651.*

SOUTHERN SOIL & WATER CONSERVATION DISTRICT REGULAR BOARD MEETING

Wednesday, January 28, 2026
4:00 pm
University of Guam College of Agriculture and Life Sciences Room 202

AGENDA

I. Call to Order & Roll Call
II. Acceptance of Agenda
III. Approval of Meeting Minutes - November 26, 2025
IV. Treasurer's Report
V. Administrator's Report
VI. Old Business
  a. USDA NRCS MOA – Approval
  b. 2025 NACD Executive Board Member Retreat – Report
  c. 2026 NACD Annual Meeting – Update
  d. Joint SWCD Committee Appointments
  e. NACD Grant Applications – Approval
  f. Taiwan Travel Abroad Program – Approval
VII. New Business
  a. 2026 Guam Educators Conservation Summit
  b. RCUOG MOA – Approval
  c. FY2025 Annual Report – Approval
  d. FY2027 Budget Request – Approval
  e. CARET/BAA Meeting, Washington, D.C.
VIII. Collateral Boards and Committees Served
  a. Southern District Feral Swine Committee
  b. Stewardship and Education Committee
IX. Public Comments/ Announcements
  • Next Meeting: February 25, 2026
X. Executive Session
  a. Personnel Action Items
  b. Active Membership Application Review
XI. Adjournment

The meeting will also be available via livestream at www.conservationguam.org/livestream.

For questions or special accommodations, please contact our office at southernguamswcd@gmail.com or (671) 735-2014.

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GUAM ENVIRONMENTAL PROTECTION AGENCY
AHENSIAN PRUTEKSION LINA'LA GUAHAN

PUBLIC NOTICE

SOLID WASTE STORAGE & PROCESSING FACILITY
PERMIT RENEWAL

The Guam Environmental Protection Agency (Guam EPA) hereby notifies the general public and other interested parties of Guam EPA's intent to issue a Solid Waste Permit to:

FSM Recycling Guam Inc.— Storage & Processing (Scrap Metal, batteries, junk vehicles, used oil/filters)Location: Lot 5161-2-1, Tamuning, Guam 96932

The permits and their conditions are proposed and open for public comment, in accordance with 10 GCA § 51104. A copy of the proposed permit and permit applications for the applicant listed above, and all other supporting documents are available for public inspection, Monday through Friday (excluding holidays), 8:00 a.m. to 5:00 p.m. at the agency's administration building located at 17-3404 Mariner Avenue, Tiyan Barrigada.
A public hearing will be held in the event a reasonable request is made.

PUBLIC REVIEW AND COMMENT PERIOD:
MONDAY, FEBURARY 2, 2026 - THURSDAY, MARCH 19, 2026

Written comments are welcomed and must be received by the agency via hand delivery, or mail and should be addressed to: Administrator, Guam Environmental Protection Agency: 17-3304 Mariner Avenue Tiyan Barrigada, Guam 96913-1617. Written comments must be received, or postmarked no later that 5:00 p.m. ChST on Thursday, March 19, 2026.
Facsimile submissions will not be accepted.

The final decision to set conditions and issue the final permit or deny application for the permit will be decided after all comments have been considered. Please bring this information to the attention of all persons who may be interested in this matter. For more information, please contact James Cruz at 671.588.4745 or james.cruz@epa.guam.gov

/s/ MICHELLE C.R. LASTIMOZA, Administrator

GUAM EPA | 17-3304 Mariner Avenue Tiyan Barrigada, Guam 96913-1617 | Tel: (671) 588.4751/2 | Fax: (671) 588.4531 | epa.guam.gov
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JOB ANNOUNCEMENT

Electrical Engineers; Bach. deg. in Electrical Engrg. (may be foreign equiv); 1 yr. exp. as Electrical Engr, QA/QC Engr or Project Engr. Perform engrg. duties applying principles & techniques of electrical engrg. for const. co. located in Harmon, Guam. Assist project manager & superintendent with pre-const. activities, planning & daily execution of construction proj. Send resume to Black Construction Corporation, P.O. Box 24667, Barrigada, Guam 96921

JOB ANNOUNCEMENT

Mechanical Engineers; Bach. deg. in Mechanical Engrg. (may be foreign equiv); 2 yrs. exp. as Mechanical Engr, Construction Engr, Mechanical Site Mgr or Maintenance Mgr. Perform engrg. duties to plan, material estimate, implement, modify, test, validate & commission various mechanical installations & systems for const. co. located in Harmon, Guam. Update project schedules & prepare daily job reports. Send resume to Black Construction Corporation, P.O. Box 24667, Barrigada, Guam 96921

EDWARD M. BIRN
Director (Direktot)
REINA K. BORJA
Deputy Director (Sigundo Direktot)

DEPARTMENT OF ADMINISTRATION

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Lt. Governor (Sigundo Maga'lâhi)

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INVITATION FOR BID

BID NO:	GSA-005-26	
For:	60-Month Lease Agreement for Multifunction Color Copier/Printer/Scanner/Fax	
Submission Deadline:	02/18/2026	Time: 11:00 a.m.
Opening Date:	02/18/2026	Time: 11:05 a.m.
Location to Submit:	General Services Agency, ITC Building, Tamuning, Guam	

The General Services Agency is issuing this Invitation for Bid for 60-Month Lease Agreement for Multifunction Color Copier/Printer/Scanner/Fax. A pdf copy is available to download at www.gsa.doa.guam.gov, or a hard copy can be obtained at the General Services Agency located at 2nd floor ITC Bldg. Rm. 230, Tamuning, Guam 96931 from 8:00am – 5:00pm, Monday through Friday, beginning Monday, February 2, 2026 through Wednesday, February 18, 2026.

Bidders must register their current contact information with GSA to ensure they receive any notices regarding changes or updates to the IFB. The procuring agency and GSA will not be liable for failure to provide notice to any party who did not register current contact information.

/s/ ANDRIANA QUITUGUA
Acting Chief Procurement Officer

Lourdes A. Leon Guerrero Maga'håga
Joshua F. Tenorio Sigundo Maga'lâhi
Angie Taitague Acting Director

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Lt. Governor (Sigundo Maga'lâhi)

Guam Public Library System (GPLS) Regular Board Meeting
Saturday, February 07, 2026, 12:00 pm at the Hagåtña Library.

AGENDA:

AGENDA: Call to Order, Roll Call, Approval of Minutes (01/7), Director's report, Old Business (updates; archival grant update, update on grants, etc.), update of renewal of board members, New Business, Open Discussion, Adjournment

LIVE Streaming link: https://www.facebook.com/guampubliclibrarysystem
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3 – CEMENT MASON WITH 1 YEAR EXPERIENCE **$17.51 PER HR.**
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Duties: Positions and secures steel bars in concrete forms to reinforce concrete. Determines numbers, sizes, shapes, and locations of reinforcing rods from blueprints, sketches, or oral instructions. Selects and places rods in forms and spacing, and fastens them together using wire and pliers. Cuts bars to required lengths using hacksaw, bar cutters, or acetylene torch.

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Or apply online at www.hireguam.com; Enter Keyword: 2026-038

LOLA E. LEON GUERRERO
Director
MATTHEW C. SANTOS
Deputy Director

BUREAU OF STATISTICS AND PLANS
Sagan Planu Siha Yan Emfotmasion
Government of Guam
P.O. Box 2950 Hagåtña, Guam 96932
Tel: (671)472-4201/3
Fax: (671) 477-1812

LOURDES A. LEON GUERRERO
Governor of Guam
JOSHUA F. TENORIO
Lieutenant Governor

NOTICE OF PUBLIC HEARING

Bureau of Statistics and Plans
The Guahan 2050 Sustainability Plan
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February 25, 2026, Dededo Mayor's Office
6:00 pm – 8:00 pm

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The public is invited to attend and provide comment on The Guahan 2050 Sustainability Plan, which is available for public review on the BSP's website at https://bsp.guam.gov/gsp2050/. Hard copies are available for review at the Bureau of Statistics and Plans, Office of the Director, 513 West Marine Corps Drive, Ricardo J. Bordallo Complex, Hagåtña, 8:00 am-5:00 pm. Oral and written testimonies will be accepted at the hearing or may be submitted online to gsp2050@bsp.guam.gov. Please include your name when submitting testimonies online. The deadline to submit comments is March 11, 2026, by 5:00 pm.

For more information, please contact Director Lola E. Leon Guerrero, at 671-472-4201/2. Any persons needing special accommodations, please email raymond.dungca@bsp.guam.gov or call 671-475-9683.

/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans

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LOLA E. LEON GUERRERO
Director
MATTHEW C. SANTOS
Deputy Director

BUREAU OF STATISTICS AND PLANS

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LOURDES A. LEON GUERRERO
Governor of Guam
JOSHUA F. TENORIO
Lieutenant Governor

FOR IMMEDIATE RELEASE

March 11, 2026

The Bureau of Statistics and Plans Announces Extension of Public Comment Period for the 2050 Guåhan Sustainability Plan

HAGÅTÑA, Guam – The Bureau of Statistics and Plans (BSP) is announcing an extension of the public comment period for the draft **2050 Guåhan Sustainability Plan (GSP)**. In accordance with the requirements of 5 GCA § 1205, BSP conducted two public hearings on the draft 2050 Guåhan Sustainability Plan (GSP) on February 12, 2026, at the Hågat Mayor's Office and February 25, 2026, at the Dededo Mayor's Office.

To ensure that all residents have ample opportunity to review the document and contribute to the island's long-term strategic vision, BSP is extending the comment period by 45 days. This will make the **new deadline to submit comments to April 25, 2026**.

The 2050 GSP serves as a comprehensive framework for Guam's future, addressing critical areas such as economic resilience, environmental stewardship, and community well-being. This plan also acts as the official update to the **Guam Comprehensive Development Plan (Kabales)**, as mandated by **Public Law 35-110**.

How to Participate and Access Resources

Residents and stakeholders can visit bsp.guam.gov/gsp2050/ to access a digital library of planning resources, including:

- **Review the Draft:** View and download the full draft of the 2050 Guåhan Sustainability Plan.
- **Quick References:** Access FAQs and concise chapter summaries to navigate the plan's key components.
- **Legal & Historical Context:** View a plan summary with direct links to Public Law 35-110 and the original Kabales plan currently being updated.
- **Interactive Mapping:** Explore the **Draft Land Use Web Map** and download specific village-level maps included in the plan.
- **Data & Research:** Download the Residential Survey Results Report and the detailed analysis of surveys that informed the plan's development.
- **Public Hearing Archives:** View video recordings of the public presentations from the two previously held public hearings.

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Hard copies are available for review at the Bureau of Statistics and Plans, Office of the Director, 513 West Marine Corps Drive, Ricardo J. Bordallo Complex, Hagatna, 8:00 am-5:00 pm.

Submission Instructions

The Bureau encourages the public to use the official comment form available on the website.

- **Download:** Visit the site to view specific instructions and download the formal comment form.
- **Submit:** Please email all written comments and completed forms to **gsp2050@bsp.guam.gov**.

Your input is vital to ensuring the 2050 Guåhan Sustainability Plan reflects the values and aspirations of all who call Guam home.

Media Contact: April M. Trinidad

Email: april.trinidad@bsp.guam.gov, gsp2050@bsp.guam.gov

Website: bsp.guam.gov

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Kumision Inangokkon Tano' CHamoru
(CHamoru Land Trust Commission)

CHamoru Land Trust Commission
Regular Board Meeting
Thursday, March 19, 2026 at 1:00PM

CHamoru Land Trust Conference Room, 590 S. Marine Corp Drive ITC Building, Suite 223, 2nd Floor, Tamuning, Guam. Public Comments may be made at cltc.admin@cltc.guam.gov To view the meeting virtually, log on to GovGuam Live-YouTube or Google Meeting link: https://meet.google.com/qyb-jrfw-arv

AGENDA

I. Call to Order – Certification of Quorum Present
II. Certification – Public Notice Requirements
A. Pacific Daily News (March 12, 2026 and March 17, 2026)
B. Guam Public Notice Website (https://notices.guam.gov)
III. Chairman's Remark/Innovation
IV. Approval of Minutes:
February 19, 2026 (Regular Board Meeting)
February 23, 2026 (Working Session)
V. Administrative Director's Report
VI. Old Business
A. Lot 7055, Yigo
B. Lot 7161-R1, Yigo
C. Guam International Country Club Inc.
VII. New Business
A. Lot 440-4 and Lot 440-5, Merizo
B. Lot 198-R10, Yona
C. Declare and Designate a Portion of Tract 100-C, Block 6, Lot 3, Dededo for commercial leasing
D. FY 2027 Budget request
VIII. Public Comment(s)
IX. Next Meeting – Thursday, April 16, 2026 at 1:00PM, CLTC Conference Room, Suite 223, ITC Building, 590 S. Marine Corp. Drive, Tamuning, Guam
X. Adjournment

Individuals requiring special accomodations, auxilary aids or services, may call the CLTC Office at (671)300-3296 or email cltc.admin@cltr.guam.gov for more information.
This ad is paid for by CLTC Funds.

GUAM POWER AUTHORITY
ATURIDÅT ILEKTRESDÅT GUÅHAN
P.O. BOX 2977 • HAGÅTÑA, GUAM U.S.A. 96932-2977
Telephone Nos. (671) 648-3045/55 or Facsimile (671) 648-3165

Francis E. Santos
CCU Chairman

John M. Benavente, P.E.
General Manager

REQUEST FOR PROPOSALS

This notice is paid for by GUAM POWER AUTHORITY REVENUE FUNDS
Public Law 26-12

RFP NO.:	DUE DATE:	TIME:	DESCRIPTION:
GPA-RFP-26-004	04/09/2026	4:00 P.M.	GPWA Customer Information Systems (CIS) System Support

RFP package may be picked up at the GPA Procurement Office, 1ST Floor, Gloria B. Nelson Public Service Building, 688 Route 15, Mangilao, Guam 96913. All interested firms should register with GPA's Procurement Division to be able to participate in the RFP. Please call our office at 1 (671) 648-3054 / 3055 to register. Registration is required to ensure that all "Amendments and Special Reminders" are communicated to all proponents throughout the RFP process. Procurement instructions are posted on the Authority's web site at: https://notices.guam.gov.

/s/ John M. Benavente, P.E.
General Manager

GHURA

Guam Housing and Urban Renewal Authority
Aturidat Ginima' Yan Rinueban Siudat Guahan
117 Bien Venida Avenue, Sinajana, Guam 96910
Tel: (671) 477-9851 • Fax: (671) 300-7565 • TTY: (671) 472-3701
Website: www.ghura.org

EQUAL HOUSING OPPORTUNITY

Lourdes A. Leon Guerrero
Governor of Guam

Joshua F. Tenorio
Lt. Governor of Guam

REQUEST FOR PROPOSAL

RFP GHURA-26-005
STATEMENT OF QUALIFICATION (SOQ)
FOR
CERTIFIED HOME INSPECTOR SERVICES
(This ad is paid with HUD funds.)

The Guam Housing and Urban Renewal Authority (GHURA) is soliciting proposals from interested and qualified individuals or firms to provide **Statement of Qualification (SOQ) for Certified Home Inspector Services**.

RFP announcement is available to view on GHURA's website: https://www.ghura.org/doing-business-us/bids beginning **Thursday, March 12, 2026**. Interested parties must register on GHURA's website using the *"registration form"* link on the RFP announcement, or in person at GHURA' s Main Office in Sinajana, Guam. Registered vendors will receive access to a downloadable RFP packet file, receive notifications of any changes, amendments and/or addendums. To obtain a physical copy of the RFP packet, there is a fee of $25.00 (exact cash amount, money order, or company check) which is non-refundable. **Registration schedule is: Monday through Friday, 8:30 a.m. - 4:00 p.m. ChST with the exception of Government of Guam holidays.**

Any questions regarding the proposal or requirements must be submitted in writing via email to our procurement office, at proc@ghura.org no later than **Friday, March 20, 2026, at 5:00 p.m. ChST. The deadline for all proposal submissions is Friday, April 03, 2026, at 3:00 p.m. ChST.**

The Guam Housing and Urban Renewal Authority (GHURA) intends to award a contract to the most qualified offeror based on the evaluation factors defined in this Request for Proposal (RFP), subject to the negotiation of fair and reasonable compensation. If an agreement cannot be reached with the most qualified offeror, negotiations will be formally terminated. GHURA may then enter negotiations with the next-ranked qualified offeror, in order of their qualification, until an agreement is reached and a contract is awarded.

Proposals shall not be withdrawn for a period of 60 days following the opening of the RFP without prior written consent from GHURA.

The contractor must not discriminate on the basis of race, color, religion, sex, national origin, age, disability, or genetic information in employment or the provision of services. There is a restriction against contractors employing convicted sex offenders from working at Government of Guam venues. (5 GCA § 5253).

GHURA is an Equal Opportunity Employer

/s/ Elizabeth F. Napoli
Executive Director

GHURA does not discriminate against persons with disabilities.
The Chief Planner has been designated as Section 504 Coordinator.
The Coordinator can be contacted at the above address and telephone numbers.

THE BUREAU OF STATISTICS AND PLANS

Sagan Planu Siha Yan Emfotmasion

LOLA E. LEON GUERRERO
Director

MATTHEW C. SANTOS
Deputy Director

LOURDES A. LEON GUERRERO
Governor of Guam

JOSHUA F. TENORIO
Lieutenant Governor

NOTICE TO THE PUBLIC

EXTENSION OF PUBLIC COMMENT PERIOD
The Guåhan 2050 Sustainability Plan

In accordance with the requirements of 5 GCA § 1205, the Bureau of Statistics and Plans (BSP) conducted two public hearings on February 12, 2026, at the Hågat Mayor's Office and February 25, 2026, at the Dededo Mayor's Office on **The Guåhan 2050 Sustainability Plan (GSP)**. The GSP serves as a comprehensive framework for Guam's future, addressing critical areas such as economic resilience, environmental stewardship, and community well-being. This plan also acts as the official update to the Guam Comprehensive Development Plan (Kabales) as mandated by Public Law 35-110.

THE PUBLIC COMMENT PERIOD EXTENDED TO APRIL 25, 2026.

Residents and stakeholders can visit bsp.guam.gov/gsp2050/ to access a digital library of planning resources, including:

- Review the Draft: View and download the full draft of the 2050 Guåhan Sustainability Plan.
- Quick References: Access FAQs and concise chapter summaries to navigate the plan's key components.
- Legal & Historical Context: View a plan summary with direct links to Public Law 35-110 and the original Kabales plan currently being updated.
- Interactive Mapping: Explore the Draft Land Use Web Map and download specific village-level maps included in the plan.
- Data & Research: Download the Residential Survey Results Report and the detailed analysis of surveys that informed the plan's development.
- Public Hearing Archives: View video recordings of the public presentations from the two previously held public hearings.

Hard copies are available for review at the Bureau of Statistics and Plans, Office of the Director, 513 West Marine Corps Drive, Ricardo J. Bordallo Complex, Hagåtña, Monday through Friday, 8:00 a.m.-5:00 p.m. Written testimonies may be submitted online to gsp2050@bsp.guam.gov. Please include your name when submitting testimonies online. **Deadline to submit comments has been extended to April 25, 2026, by 11:59 p.m., ChST.** Facsimile submissions will not be accepted.

For more information, please contact Director Lola E. Leon Guerrero, at 671-472-4201/2. Any persons needing special accommodations, please email raymond.dungca@bsp.guam.gov or call 671-475-9683.

/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans

This advertisement is paid with Government of Guam funds by the BSP.

Doc. No. 38GL-26-2651.*

Note that the Legislature has taken steps to ensure that any protected personal identifying information has been redacted or excluded in whole or in part in order to protect the privacy of any individual(s) whose information has been included as part of this transmittal.

CLASSIFIEDS

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Or call (671)472-1PDN (1736)

Jobs — Find a new job or career

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Auto — Turn here for your next vehicle

Stuff — Household, Furniture, Pets & Stuff

Super Classified Deals

For all categories except employment and real estate.
Package line limit listed below.

Good: Text only. 3 days in E-edition / 7 days on Classified of our website - line limit (5) lines. **$35.00**

Better: Text with border. 5 days in E-edition / 10 days on Classified of our website - line limit (10) lines. **$45.00**

Best: Text with border & image. 8 days in E-edition / 14 days on Classified of our website - line limit (15) lines. **$60.00**

Categories

Animals for Sale: Livestock / Pets . **Automotive:** Cars/Motorcycle/Pickups and SUVs . **Celebrations . Fundraisers . Goods for Sale:** Auto Parts/Baby items/Computers/Electronics/Exercise Equipment/Furniture/Household Goods/Miscellaneous/ Musical Instruments/ Sports and Outdoors Equipment/Tools . **Lost and Found . Heavy Equipment . Repairs and Installation:** Air Conditioning/Appliances/Cellphones/Computers/Electrical/ Electronics/Plumbing/Repair and Installations Services Needed . **Services:** Child and Elderly Care/Educational/Lawn Care or Yardwork/Other Services/Therapeutic Massage/Tutoring/Cleaning Services . **Wanted to Buy . Watercraft:** Boats/Personal Water Craft

Employment Classified Packages

Package line limit listed below.

Good: Text only. 3 days in E-edition / 7 days on Classified of our website - line limit (5) lines. **$99.00**

Better: Text with border. 5 days in E-edition / 10 days on Classified of our website - line limit (10) lines. **$114.00**

Best: Text with border & image. 8 days in E-edition / 14 days on Classified of our website - line limit (15) lines. **$120.00**

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Real Estate Classified Packages

Package line limit listed below.

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Better: Text with border. 5 days in E-edition / 10 days on Classified of our website - line limit (10) lines. **$96.00**

Best: Text with border & image. 8 days in E-edition / 14 days on Classified of our website - line limit (15) lines. **$105.00**

Categories

Businesses for Sale . For Lease Land . For Rent Commercial . For Rent Residential . For Sale Commercial . For Sale Residential . For Sale Land . Rooms for Rent

Open Rate Liners

All liners are priced per line and include digital.
E-edition only options are not available.

Private Party Open Rate Liner:
**Applies to all Categories except for Employment and Real Estate
$14.45 per line/per day for E-edition and 3 days on Classified of our website
$50.00 5 days on Classified of our website

Employment Open Liners
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$75.00 5 days on Classified of our website

Real Estate Open Liners
$14.70 per line/per day for E-edition and 3 day on Classified of our website
$85.00 5 days on Classified of our website

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All Classified ads are subject to the applicable rate card, copies of which are available from our Advertising Dept. All ads are subject to approval before publication. The Pacific Daily News/Pacific Sunday News reserves the right to edit, refuse, reject, classify or cancel any ad at any time. Errors must be reported in the first day publication. The Pacific Daily News/Pacific Sunday News shall not be liable for any loss or expenses that results from an error in or omission of an advertisement. No refunds for early cancellation of order.

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Now Hiring: Electrical Engineer

2-yrs Experience, Maintenance, Troubleshooting and Repairs
Company Benefits:
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Full time only, O/T when needed.

671-648-0030 / fredridm@ussicorp.com

THE BUREAU OF STATISTICS AND PLANS

Sagan Planu Siha Yan Emfotmasion

LOLA E. LEON GUERRERO
Director

MATTHEW C. SANTOS
Deputy Director

LOURDES A. LEON GUERRERO
Governor of Guam

JOSHUA F. TENORIO
Lieutenant Governor

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For more information, please contact Director Lola E. Leon Guerrero, at 671-472-4201/2. Any persons needing special accommodations, please email raymond.dungca@bsp.guam.gov or call 671-475-9683.

/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans

This advertisement is paid with Government of Guam funds by the BSP.

VANESSA WILLIAMS CRUZ, ESQ.
WILLIAMS CRUZ LAW
204 Hesler Place, Suite 203B
Hagåtña, Guam 96910
Telephone: 671-922-5689 | 888-477-5657
Email: service@williamscruz.law

Attorney for Petitioner
Andrew Barcinas Cruz

IN THE SUPERIOR COURT OF GUAM

IN THE MATTER OF THE ESTATES

OF

CHARLES GARRIDO CRUZ and RITA BARCINAS CRUZ,

Deceased.

PROBATE CASE NO.: PR0143-25

NOTICE OF FIRST AND FINAL REPORT OF ADMINISTRATOR AND PETITION FOR FINAL DISTRIBUTION

NOTICE IS HEREBY GIVEN that Petitioner ANDREW BARCINAS CRUZ, Administrator of the Estates of CHARLES GARRIDO CRUZ and RITA BARCINAS CRUZ, deceased, has filed the FIRST AND FINAL ACCOUNT AND REPORT OF ADMINISTRATION AND PETITION FOR FINAL DISTRIBUTION, in said Court, and that on April 15, 2026 at 9:30 A.M. at the Superior Court of Guam, Hagåtña, Guam, a hearing has been set for the settlement of said accounts for final distribution of said estates. All persons interested in attending said hearing are notified then and there to appear and show cause, if any, why said Petition should not be granted.

Reference is hereby made to the said account and Petition for further particulars.

Dated: February 19, 2026

WILLIAMS CRUZ LAW
Attorney for Petitioner
/s/ VANESSA WILLIAMS CRUZ

You may appear in person at the Courtroom of the Honorable Dana A. Gutierrez, 120 West O'Brien Drive, Hagåtña, Guam or you may participate via Zoom by logging onto https://guamcourts-org.zoom.us and enter **Meeting ID: 839 7874 0380** and **Passcode: 189701**. For technical assistance, please call (671) 475-3207 five (5) minutes prior to the designated hearing time.

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Doc. No. 38GL-26-2651.*

Note that the Legislature has taken steps to ensure that any protected personal identifying information has been redacted or excluded in whole or in part in order to protect the privacy of any individual(s) whose information has been included as part of this transmittal.

VEHICLES FOR BID

YEAR	MAKE	MODEL	COLOR	MILEAGE subject to change	MINIMUM BID
2022	NISSAN	VERSA	GRAY	30,405	$9,000.00
2024	NISSAN	SENTRA	BLUE	12,882	$11,900.00
2016	HONDA	PILOT	SILVER	N/A	$7,300.00

BID STARTS MARCH 13, 2026 AND ENDS MARCH 17, 2026. BIDS ARE DUE AT 4:00PM ON THE LAST DAY. VEHICLES WILL BE SOLD AS IS, WITHOUT WARRANTIES. VEHICLES WILL BE SOLD TO THE HIGHEST BIDDER. FINANCING AVAILABLE, SUBJECT TO CREDIT APPROVAL.

First Hawaiian Bank.

For more information or to obtain a bid form, please contact us at (671) 475-7933 or email: gdccollections@fhb.com.

THE LAW OFFICES OF
DUNCAN G. MCCULLY, P.C.
ATTORNEYS AT LAW

is seeking a qualified applicant to fill the position of:

BOOKKEEPER

Experience and references required.
Part time, $22.00 per hour plus benefits.

Please email your resume or any questions to:
mblaw@guam.net

(671) 477-7418

LOLA E. LEON GUERRERO
Director
MATTHEW C. SANTOS
Deputy Director

BUREAU OF STATISTICS AND PLANS
Sagan Plana Siha Yan Estatistikan
Government of Guam
P.O. Box 2950 Hagåtña, Guam 96932
Tel: (671) 472-4201/2
Fax: (671) 477-1812

LOURDES A. LEON GUERRERO
Governor of Guam
JOSHUA F. TENORIO
Lieutenant Governor

NOTICE TO THE PUBLIC
EXTENSION OF PUBLIC COMMENT PERIOD
The Guåhan 2050 Sustainability Plan

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Hard copies are available for review at the Bureau of Statistics and Plans, Office of the Director, 513 West Marine Corps Drive, Ricardo J. Bordallo Complex, Hagåtña, Monday through Friday, 8:00 a.m.-5:00 p.m. Written testimonies may be submitted online to gsp2050@bsp.guam.gov. Please include your name when submitting testimonies online. **Deadline to submit comments has been extended to April 25, 2026, by 11:59 p.m., ChST.** Facsimile submissions will not be accepted.

For more information, please contact Director Lola E. Leon Guerrero, at 671-472-4201/2. Any persons needing special accommodations, please email raymond.dungca@bsp.guam.gov or call 671-475-9683.

/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans
This advertisement is paid with Government of Guam funds by the Bureau of Statistics and Plans

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YMLG LADIES AUXILIARY

238 Chalan Santo Papa
YMLG Building, Suite 202
Maite, Guam, 96910

FINANCIAL STATEMENT
For the year ended December 31, 2025

Assets:	
Cash in Bank	$ 13,082.70
Total Assets	$ 13,082.70
Liabilities	$ 0.00
Net Assets, Unrestricted	$ 13,082.70
Total Liabilities and Net Assets	$ 13,082.70

STATEMENT OF ACTIVITIES

Support & Revenue:	
Membership dues	$ 300.00
Contributions/Fund Raising	$ 1,698.25
Bank Interest	$ 28.28
Total Support and Revenue:	$ 2,026.53
Expenditures:	
Fundraising, Printing, Box Rental	$ 904.90
Donations	$ 900.00
25th Anniversary Celebration	$ 2,450.91
Bank Fees-Service Charge	$ 0.00
Total Expenditures	$ 4,225.81
Net Assets Beginning of the Year	$ 13,082.70
Net Assets End of the Year	$ 10,853.42





Note that the Legislature has taken steps to ensure that any protected personal identifying information has been redacted or excluded in whole or in part in order to protect the privacy of any individual(s) whose information has been included as part of this transmittal.

Guam Shipyard is currently looking for an individual to fill the position of

HR/PAYROLL TECHNICIAN

Interested individuals may pick up and drop off applications at the MH Plaza Building, 272 E. Harmon Industrial Park Road, Unit 201, Tamuning, Guam 96913
Monday-Friday, 8:00 am to 4 pm

GSY is an Equal Opportunity Employer and a Drug-Free Workplace
For more information, please call:
(671) 648-1160 ext. 102

PUBLICATION NOTICE

In accordance with the provisions of Guam Code Annotated, Title XI, Chapter III, Section 3315, notice is hereby given that:

SJC GLOBAL CORPORATION (TAKEOVER)
DBA: K-CHICKEN

has applied for a Class: 4General On Sale Alcoholic Beverage License said premises being marked as Lot: 5096-1-3-1-NEW, BLK 1, TRACT 149, 888 N Marine Corps Dr., 114 Star Bldg.
Tamuning/Tumon/Harmon (TAKEOVER)

THE LAW OFFICES OF PHILLIPS & BORDALLO
A Professional Corporation
410 West O'Brien Drive, Ste. 102, Hagåtña, Guam 96910-5044
Telephone: (671) 477-ABCD (2223) • Fax: (671) 477-2FAX (2329)
Attorney for Petitioner

IN THE SUPERIOR COURT OF GUAM
IN THE MATTER OF THE ESTATE OF
MILDRED CHACO ANDERSON,
Decedent.
PROBATE CASE NO. PR0024-26

NOTICE OF HEARING

THIS NOTICE IS REQUIRED BY LAW. YOU ARE NOT REQUIRED TO APPEAR IN COURT UNLESS YOU DESIRE.

1. NOTICE IS HEREBY GIVEN that Petitioner Michele LA. King has filed a Petition for Probate and for Letters of Administration.
2. A hearing on the petition will be heard on **Wednesday, April 15, 2026, at 10:50 a.m. before Hon. Judge Elyze M. Iriarte.**
3. To attend or to participate in the hearing, you may appear in person at the Guam Judicial Center, appear remotely at https://guamcourts-org.zoom.us and enter Meeting ID: 864 4387 2213 and Passcode: JEMI, or call into the courtroom at 671-300-6703 at the designated hearing time. For connectivity issues, you may contact Jannette Samson at (671) 475-0141 or email jsamson@guamcourts.gov.

DATED: 12 FEB 2026

JANICE M. CAMACHO-PEREZ, Esq.
Clerk of Court, Superior Court of Guam
By: /s/ Alice B. Mendoza
Courtroom/Chamber Clerk

BROOKS CONCEPCION LAW, P.C.
247 Martyr Street, Ste. 101
Hagåtña, Guam 96910
(671) 472-6848 • (671) 477-5790
Attorneys for Petitioner

IN THE SUPERIOR COURT OF GUAM
IN THE MATTER OF THE ESTATE OF:
CARMEN BLAS LIZAMA,
Deceased.
PROBATE CASE NO. PR0015-26
NOTICE TO CREDITORS

Notice is hereby given by the undersigned, Monique B. Lizama, Administratrix of the Estate of Carmen Blas Lizama, deceased, to the creditors of, and all persons having claims against the said estate or against said deceased, that within sixty (60) days after the first publication of this notice, they either file them with necessary vouchers in the office of the Clerk of the Superior Court, Guam, or exhibit them with the necessary vouchers to Monique B. Lizama, Administratrix, at the law offices of BROOKS CONCEPCION LAW, P.C., at 247 Martyr Street, Ste. 101, Hagåtña, Guam, the same being the place for the transaction of the said estate.

Dated: 3/26/26

By: /s/ Monique B. Lizama
Administratrix for the Estate of
Carmen Blas Lizama

BROOKS CONCEPCION LAW, P.C.
247 Martyr Street, Ste. 101
Hagåtña, Guam 96910
(671) 472-6848 • (671) 477-5790
Attorneys for Petitioner

IN THE SUPERIOR COURT OF GUAM
IN THE MATTER OF THE ESTATE OF:
JESUS TAINATONGO LUJAN,
Decedent.
PROBATE CASE NO. PR0059-05
NOTICE OF HEARING

THIS NOTICE IS REQUIRED BY LAW. YOU ARE NOT REQUIRED TO APPEAR IN COURT UNLESS YOU DESIRE.

1. NOTICE IS HEREBY GIVEN that Julia Lujan Warwick has filed a Petition to Reopen Probate Proceedings and for Letters of Administration.
2. A hearing on the petition will be heard on **Wednesday, April 15, 2026, at 9:40 a.m. before Hon. Judge Elyze M. Iriarte.**
3. To attend or to participate in the hearing, you may appear in person at the Guam Judicial Center, appear remotely at https://guamcourts-org.zoom.us and enter Meeting ID: 864 4387 2213 and Passcode: JEMI, or call into the courtroom at 671-300-6703 at the designated hearing time. For connectivity issues, you may contact Jannette Samson at (671) 475-0141 or email jsamson@guamcourts.gov.

DATED: 25 FEB. 2026

JANICE M. CAMACHO-PEREZ
Clerk of Court, Superior Court of Guam
By: /s/ Alice B. Mendoza.
Courtroom/Chamber Clerk

BROOKS CONCEPCION LAW, P.C.
247 Martyr Street, Ste. 101
Hagåtña, Guam 96910
(671) 472-6848 • (671) 477-5790
Attorneys for Petitioner

IN THE SUPERIOR COURT OF GUAM
IN THE MATTER OF THE ESTATE OF:
VICENTE BLAS LIZAMA,
Deceased.
PROBATE CASE NO. PR0009-26
NOTICE TO CREDITORS

Notice is hereby given by the undersigned, Bertha Ann Quintanilla Mendiola, Executrix of the Estate of Vicente Blas Lizama, deceased, to the creditors of, and all persons having claims against the said estate or against said deceased, that within sixty (60) days after the first publication of this notice, they either file them with necessary vouchers in the office of the Clerk of the Superior Court, Guam, or exhibit them with the necessary vouchers to Bertha Ann Quintanilla Mendiola, Executrix, at the law offices of BROOKS CONCEPCION LAW, P.C., at 247 Martyr Street, Ste. 101, Hagåtña, Guam, the same being the place for the transaction of the said estate.

Dated: 3/26/26

By: /s/ Bertha Ann Quintanilla Mendiola,
Executrix for the Estate of
Vicente Blas Lizama

NOTICE OF
ROADSIDE WORK

The IT&E Team will be performing trenching and fiber expansion along listed roads from

April 6th, 2026 - May 30th, 2026

Route 1

Route 10A

Route 16

Route 27

Motorists should expect intermittent lane closures and shifts along these routes. Slow-moving traffic and delays are anticipated due to trenching work and the installation of IT&E communication facilities

IT&E
Connections that matter
ite.net iteguam itecomm 671-922-4483

LOLA E. LEON GUERRERO
Director
MATTHEW C. SANTOS
Deputy Director

BUREAU OF STATISTICS AND PLANS
Siniyan Planu Siha Yan Estatistikat
Government of Guam
P.O. Box 2950 Hagåtña, Guam 96932
Tel: (671) 472-4201/3
Fax: (671) 477-1812

LOURDES A. LEON GUERRERO
Governor of Guam
JOSHUA F. TENORIO
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- Public Hearing Archives: View video recordings of the public presentations from the two previously held public hearings.

Hard copies are available for review at the Bureau of Statistics and Plans, Office of the Director, 513 West Marine Corps Drive, Ricardo J. Bordallo Complex, Hagåtña, Monday through Friday, 8:00 a.m.-5:00 p.m. Written testimonies may be submitted online to gsp2050@bsp.guam.gov. Please include your name when submitting testimonies online. **Deadline to submit comments has been extended to April 25, 2026, by 11:59 p.m., ChST.** Facsimile submissions will not be accepted.

For more information, please contact Director Lola E. Leon Guerrero, at 671-472-4201/2. Any persons needing special accommodations, please email raymond.dungca@bsp.guam.gov or call 671-475-9683.

/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans

This advertisement is paid with Government of Guam funds by the Bureau of Statistics and Plans.

Note that the Legislature has taken steps to ensure that any protected personal identifying information has been redacted or excluded in whole or in part in order to protect the privacy of any individual(s) whose information has been included as part of this transmittal.

The Bureau of Statistics and Plans Announces Extension of Public Comment Period for the 2050 Guåhan Sustainability Plan

PRINT

The Bureau of Statistics and Plans Announces Extension of Public Comment Period for the 2050 Guåhan Sustainability Plan

PRESS RELEASE

Posted on: 03/24/2026 02:35 PM

Posted by: Steven Dierking

Department(s):
BUREAU OF STATISTICS AND PLANS (/notices?department_id=21)

Division(s): (/notices?division_id=)

Notice Topic(s): PRESS RELEASE (/notices?topic_id=40), GENERAL ANNOUNCEMENT (/notices?topic_id=75)

Types of Notice: PRESS RELEASE (/notices?type_id=2)

For Audience(s): PUBLIC (/notices?public=1)

Share this notice

Note that the Legislature has taken steps to ensure that any protected personal identifying information has been redacted or excluded in whole or in part in order to protect the privacy of any individual(s) whose information has been included as part of this transmittal.

FOR IMMEDIATE RELEASE

The Bureau of Statistics and Plans Announces Extension of Public Comment Period for the 2050 Guåhan Sustainability Plan

HAGÅTÑA, Guam – The Bureau of Statistics and Plans (BSP) is announcing an extension of the public comment period for the draft **2050 Guåhan Sustainability Plan (GSP)**. In accordance with the requirements of 5 GCA § 1205, BSP conducted two public hearings on the draft 2050 Guåhan Sustainability Plan (GSP) on February 12, 2026, at the Hågat Mayor's Office and February 25, 2026, at the Dededo Mayor's Office.

To ensure that all residents have ample opportunity to review the document and contribute to the island's long-term strategic vision, BSP is extending the comment period by 45 days. This will make the **new deadline to submit comments to April 25, 2026**.

The 2050 GSP serves as a comprehensive framework for Guam's future, addressing critical areas such as economic resilience, environmental stewardship, and community well-being. This plan also acts as the official update to the **Guam Comprehensive Development Plan (Kabales)**, as mandated by **Public Law 35-110**.

How to Participate and Access Resources

Residents and stakeholders can visit **bsp.guam.gov/gsp2050/ (https://bsp.guam.gov/gsp2050/)** to access a digital library of planning resources, including:

- **Review the Draft:** View and download the full draft of the 2050 Guåhan Sustainability Plan.
- **Quick References:** Access FAQs and concise chapter summaries to navigate the plan's key components.
- **Legal & Historical Context:** View a plan summary with direct links to Public Law 35-110 and the original Kabales plan currently being updated.
- **Interactive Mapping:** Explore the **Draft Land Use Web Map** and download specific village-level maps included in the plan.
- **Data & Research:** Download the Residential Survey Results Report and the detailed analysis of surveys that informed the plan's development.
- **Public Hearing Archives:** View video recordings of the public presentations from the two previously held public hearings.

Hard copies are available for review at the Bureau of Statistics and Plans, Office of the Director, 513 West Marine Corps Drive, Ricardo J. Bordallo Complex, Hagatna, 8:00 am-5:00 pm.

Submission Instructions

The Bureau encourages the public to use the official comment form available on the website

Doc. No. 38GL-26-2651.*

Note that the Legislature has taken steps to ensure that any protected personal identifying information has been redacted or excluded in whole or in part in order to protect the privacy of any individual(s) whose information has been included as part of this transmittal.

- **Download:** Visit the site to view specific instructions and download the formal comment form.
- **Submit:** Please email all written comments and completed forms to **gsp2050@bsp.guam.gov (mailto:gsp2050@bsp.guam.gov)**.

Your input is vital to ensuring the 2050 Guåhan Sustainability Plan reflects the values and aspirations of all who call Guam home.

Media Contact: April M. Trinidad
Email: **april.trinidad@bsp.guam.gov (mailto:april.trinidad@bsp.guam.gov)**, **gsp2050@bsp.guam.gov (mailto:gsp2050@bsp.guam.gov)**
Website: **bsp.guam.gov (http://bsp.guam.gov/)**

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LOLA E. LEON GUERRERO
Director
MATTHEW C. SANTOS
Deputy Director

BUREAU OF STATISTICS AND PLANS

Sagan Planu Siha Yan Emfotmasion

LOURDES A. LEON GUERRERO
Governor of Guam
JOSHUA F. TENORIO
Lieutenant Governor

O I I A E

April 24, 2026

The Bureau of Statistics and Pl a u a S c u : Comment e od th 2050 G åh ustainability Plan

HAGÅTÑA, Guam – The Burea cs la (B nnounc a second i c m t period for the draft **205 n u ty Plan (GSP)**. In accordance with the requirem s 205, P nduc public hearings on the draft **2050 å u bility Plan (GSP)** Hågat Mayor's ff e ar 2026, a the Dededo Mayor's Office.

To ensure that all residents have a uni o re w he m a contribute to the island's long-term strategic visio s x ng e r days. This will make the **new deadline to subm c mm to y 5 pm**.

The 2050 GSP serves as a compr e fra w G fut , re sing critical areas suc c c l e nvironmental stewardship, and community well- eing. This plan s s l pd the **G C r D v op n (Kabales)**, as mandated by **Public Law 35-)**.

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a ci te nd :ess Resources

Resi nt a ke de s a visit bsp.guam.gov/gsp2050/ o a e a a ibrary of planning resources, including:

- **Review the Draft:** View a n t ul t of 2 u ha n Sustainability Plan.
- **Quick References:** Acce F a c i t s ma e t igate the plan's key components.
- **s i text:** w a s m h di t Public Law 35- t gi ales plan currently being updated.
- **Interactive Mapping:** Explore the **Draft Land Use Web Map** nload specific village- i ed in the plan.
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Submission Instructions

The Bureau encourages the public to use the official comment form available on the website.

- **Download:** Visit the site to view specific instructions and download the formal comment form.
- **Submit:** Please email all written comments and completed forms to **gsp2050@bsp.guam.gov**.

Your input is vital to ensuring the 2050 Guåhan Sustainability Plan reflects the values and aspirations of all who call Guam home.

Media Contact: Steven Derking

Email: steven.dierking@bsp.guam.gov, gsp2050@bsp.guam.gov

Website: bsp.guam.gov

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Motocross

Continued from Page 23

Vet class

In the over 40 vet class, #505 Justin Chinana took the overall round win over #77 Gregorio Perez, who was followed by the overall winner in the over 55 legends class #75 Jeffro Rios and 2nd place finisher #101 Rob Bucek, who was taking up racing on both motorcycles and ATVs this season.

Kids

The kids minibike and kids mini ATV classes were as it had before a crowd favorite as friends and family became quite vocal cheering and waving their arms to help inspire their friend, brother, sister or child on.

The racing is always exciting and the young guns always give it their 100%.

In the 65cc class round 4 had #38 Jayce Mantanona take the win, with #111 Mazzy Chinana in second and #23 Gianna GiGi Lane finished in third.

The 85cc class had Aiden Mantanona take another 1st with Elias SanNicolas in 2nd.

The Mini ATV class #10 Giancarlo Lorenzo took the win over #93 Tyler Onedera in second with Jonelle Mantanona taking 3rd.

Family sport

Motocross island style is a family sport in which the entire family gets involved, with championship classes that include kids mini bike and mini ATV classes that are best suited for anyone's particular skill level.

It has been a growth year as first time riders along with older vet riders have been taking up the thrill of twisting a throttle and going and logging in some flight time.

Round 4 was a triple crown. Each class raced three times and awarded points according to their finish for each of the three races, known also as heats or motos, to determine their overall standing for the round.

Each weekend championship round is then accumulated and at the end of the championship series, the rider with the highest point total is crowned a champion in that particular class.

After a long day of bar banging, the late afternoon cool down for the riders and their friends and family was blessed with a cool breeze and great food hot off the barbecues.

Race organizers thanked the support from island businesses, including Pacific Trucking, Fleet Services, Triple J, CyclesPlus, Rocky Mountain Precast, Fastenal, Proa, MPFE, Unitek, and Monster Energy, for making it all possible.

Round 5 coming up

Round 5 is the Moto Mash and will be open for spectators to come and enjoy on May 23 and 24 at the Tebo Motocross Park in Yona.

It is a special two-day event that will see close championship motocross on both days.

For more information, WhatsApp Rob Bucek at (671) 727-5381 or visit the GMXC web site at guammotocrossclub.teamapp.com. Follow guam_motocross_club on Instagram.

THE BUREAU OF STATISTICS AND PLANS

Sagan Planu Siha Yan Emfotmasion

LOLA E. LEON GUERRERO
Director

MATTHEW C. SANTOS
Deputy Director

LOURDES A. LEON GUERRERO
Governor of Guam

JOSHUA F. TENORIO
Lieutenant Governor

NOTICE TO THE PUBLIC

SECOND EXTENSION OF PUBLIC COMMENT PERIOD
The Guåhan 2050 Sustainability Plan

In accordance with the requirements of 5 GCA § 1205, the Bureau of Statistics and Plans (BSP) conducted two public hearings on February 12, 2026, at the Hågat Mayor's Office and February 25, 2026, at the Dededo Mayor's Office on **The Guåhan 2050 Sustainability Plan (GSP)**. The GSP serves as a comprehensive framework for Guam's future, addressing critical areas such as economic resilience, environmental stewardship, and community well-being. This plan also acts as the official update to the Guam Comprehensive Development Plan (Kabales) as mandated by Public Law 35-110.

THE PUBLIC COMMENT PERIOD EXTENDED TO MAY 22, 2026.

Residents and stakeholders can visit bsp.guam.gov/gsp2050/ to access a digital library of planning resources, including:

- **Review the Draft:** View and download the full draft of the 2050 Guåhan Sustainability Plan.
- **Quick References:** Access FAQs and concise chapter summaries to navigate the plan's key components.
- **Legal & Historical Context:** View a plan summary with direct links to Public Law 35-110 and the original Kabales plan currently being updated.
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- **Public Hearing Archives:** View video recordings of the public presentations from the two previously held public hearings.

Hard copies are available for review at the Bureau of Statistics and Plans, Office of the Director, 513 West Marine Corps Drive, Ricardo J. Bordallo Complex, Hagåtña, Monday through Friday, 8:00 a.m.-5:00 p.m. Written testimonies may be submitted online to gsp2050@bsp.guam.gov. Please include your name when submitting testimonies online. **Deadline to submit comments has been extended to Friday, May 22, 2026, by 5:00 p.m., ChST.** Facsimile submissions will not be accepted.

For more information, please contact Director Lola E. Leon Guerrero, at 671-472-4201/2. Any persons needing special accommodations, please email raymond.dungca@bsp.guam.gov or call 671-475-9683.

/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans

This advertisement is paid with Government of Guam funds by the BSP.

GUAM WATERWORKS AUTHORITY

Gloria B. Nelson Public Service Building
688 Route 15, Mangilao, Guam 96913
P.O. Box 3010, Hagåtña, Guam 96932
Tel. No.: (671) 300-6846/48 Fax: (671) 648-3290

THIS AD IS PAID FOR BY GWA (PUBLIC LAW 26-12)

INVITATION FOR BID

IFB-04-ENG-2026
GWA Project No. 12310
OPC Negotiation# CIP-202600028

The GUAM WATERWORKS AUTHORITY will receive sealed bids for the **Asbestos Cement Pipe (ACP) Waterline Replacement - Construction; GWA Project No. 12310.**

GWA uses an Online Procurement Cloud Portal (Portal) to facilitate the Invitation for Bid (IFB) process. This system is designed to uphold the integrity and transparency of procurement procedures while enhancing efficiency in transactions between the GWA and potential offerors. Through the Portal registered bidders gain access to the bid documents, can submit their bids, invoices, engage in communication with the procurement office, and utilize additional functionalities aimed at optimizing the procurement experience. Interested suppliers must be registered and create an account on GWA's Portal to participate in any GWA solicitation. If you are not an existing registered GWA supplier, then you can register at https://supplierportal.guamwaterworks.org/supplierregistration. (**If you have done business with GWA in the past, you already have an account. DO NOT try to register again; send an email to engbids@guamwaterworks.org for login assistance**)

Registered Suppliers must send an email to engbids@guamwaterworks.org and request to be invited to participate in this solicitation. Once invited, the solicitation documents are available on GWA's Portal starting from **5/1/26 8:30 AM.**

All sealed bids must be submitted through GWA's Portal in the format stipulated in the IFB document. Bids must be received by GWA no later than **6/12/26 3:00 PM** Chamorro Standard Time. The contract time for this project is 240 calendar days for the Base Bid portion of the project. All bids must be accompanied by a Bid Bond in the amount of fifteen percent (15%) of the total bid amount. Bid security may be in the form of a bid bond, certified check or cashier check made payable to Guam Waterworks Authority. Failure to adhere to the specified submission instructions via the Portal by the designated date and time may be cause for rejection of the bid.

This and other solicitation can be found online at the following web address where additional information is available by clicking on the Details icon.
https://supplierportal.guamwaterworks.org/negotiationabstract

Amendments will also be available via the Portal as well as on GWA's website at https://guamwaterworks.org/bids. Automated communications regarding amendments to the IFB, responses to RFIs, and reminders are provided to all invited suppliers of this IFB throughout the solicitation process. Suppliers bear all risks associated with failure to register with GWA and request for invitation to participate. Suppliers should routinely review the website for updates as well as emails from GWA notifying suppliers about changes in bid status or providing responses to inquiries.

A dedicated workstation is available at the GWA Procurement office at the Gloria B. Nelson Public Service Building, 688 Route 15 in Mangilao (Fadian) for firms that need assistance with the registration process. The workstation is also available to submit bids, requests for information (RFI) inquiries and any other activity required in the Portal. Firms that choose to submit information at the GWA Procurement office are required to bring a USB thumb drive containing all required IFB documents for submission to upload onto the GWA Portal.

A **Mandatory Pre-Bid Conference** has been schedule for **5/8/26 at 10:00 a.m.** at the **Guam Waterworks Authority, Gloria B. Nelson Public Service Building, 688 Route 15, Mangilao, Guam 96913. A Mandatory Site Visit** will immediately follow. Failure to attend may be cause for rejection of the bid.

All questions or clarifications must be submitted by email to engbids@guamwaterworks.org or by utilizing Messages in the Portal on or before **05/27/26.**

GWA reserves the right to reject any or all bids and to waive any imperfection in a bid that is in the best interest of the Authority.

/s/ Miguel C. Bordallo, P.E.
General Manager

Doc. No. 38GL-26-2651.*

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NOTICE OF SALE UNDER MORTGAGE

NOTICE IS HEREBY GIVEN, pursuant to Section 2932 of the Civil Code of Guam, as codified by 18 G.C.A. § 36113, that the Mortgage executed and delivered by **NICHOLAS MAURICE WILSON**, whose mailing address is CMR 467 BOX 676, APO AE 09015, and 208 Jose T. Pangelinan St., Yona, GU 96915, Mortgagor, in favor of **PENTAGON FEDERAL CREDIT UNION**, Mortgagee, which Mortgage was executed on December 17, 2018, and recorded with the Department of Land Management, Government of Guam, on December 17, 2018, under Instrument No. 929656, will be **FORECLOSED** pursuant to a **POWER OF SALE** contained in the above Mortgage. The property described below will be sold WITHOUT WARRANTY BEING GIVEN, express or implied, regarding title, possession, rights of redemption or encumbrances, as hereinafter described, to the highest bidder at public auction, at the **Mayor's Office, Yona, Guam at 2:00 p.m. on May 19, 2026**, to satisfy the amount due on such mortgage on the day of sale. Terms of sale are strictly cash or as otherwise deemed acceptable by Seller.

The premises that are described in such Mortgage and that will be sold to satisfy the Mortgage are more particularly described as follows:

Lot 5, Block 16, Tract 268, Yona, Guam, Urban, as said Lot is described in that Disposition Map Yona Project, as shown on Drawing Number 3001-2, as L.M. Check Number 721 FY 72, recorded on 30 May 78 under Instrument No. 293014 at Land Management.

For informational purposes only, the above referenced map indicates the property contains an area of 6,977± square feet.

Last Certificate of Title Numbers: 14768 - Jesus S. Leon Guerrero and Eugenia A. Leon Guerrero (as to Basic Lot A-5-1; Estate Number 12218).

Together with the buildings, improvements, tenements, rights, easements, privileges and appurtenances to the same belonging or appertaining or held and enjoyed herewith, including the reversions, remainders, rents, issues and profits thereof, all personal property, fixtures, chattels, furnishings and inventory thereon, and all of the estate, right, title and interest of the Mortgagor, both at law and in equity, therein and thereto.

The undersigned is the attorney for the lawful owner of such Mortgage and the Note secured thereby. **NICHOLAS MAURICE WILSON** has defaulted in performance of the terms and conditions of the Note and Mortgage in favor of Mortgagee dated December 17, 2018, and the unpaid principal, accrued interest, escrow balance, late charges, attorney fees, title search, NOD recording fee, mailing and property inspection sum of **THREE HUNDRED FIFTY-SEVEN THOUSAND FOUR HUNDRED FIFTY-ONE and 04/100 DOLLARS ($357,451.04)** as of April 3, 2026, plus interest on the unpaid principal balance at the rate of $33.07 per day from April 3, 2026 to the date of full payment, together with costs of sale, additional late charges and attorneys' fees, are due and owing.

The undersigned reserves the right to withdraw this Notice, to reject any bid or to accept the highest bid, and to postpone the sale from time to time.

This Notice of Sale Under Mortgage is made for the purpose of collecting a debt and any information obtained by the undersigned will be used for that purpose.

DATED this 7 day of April, 2026.

LAW OFFICE OF DANIEL J. BERMAN
Attorneys for Mortgagee
PENTAGON FEDERAL CREDIT UNION
By: **/s/ DANIEL J. BERMAN**

Guam, U.S.A)
)
City of Hagåtña)

ON THIS 7th day of April, 2026, before me, the undersigned notary, personally appeared **DANIEL J. BERMAN**, known to me to be the person whose name is signed on the preceding document, and he acknowledged to me that he signed it voluntarily for its stated purpose, as attorney for **PENTAGON FEDERAL CREDIT UNION.**

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.

/s/ VANESSA R. SANTOS-PINKNEY
NOTARY PUBLIC
In and for Guam, U.S.A.
My Commission Expires: JUL 24, 2029
Commission Number NP: 25-0882P
P.O. Box 899, Hagåtña, Guam 96932

JOB ANNOUNCEMENT

STAFF PHYSICIAN - INTERNAL MEDICINE: Doctor of Medicine (may be foreign equivalent). 12 months experience as a Medical Doctor. 36 months of training in Medical Residency and/or fellowship programs. Certificate of completion of Internal Medicine Residency Training, Board Certification in Internal Medicine, Educational Commission for Foreign Medical Graduates (ECFMG) certification, and Physician License. Provide and oversee comprehensive inpatient medical care, including diagnosing and treating patients, prescribing medications, ordering and interpreting diagnostic tests, coordinating with specialists and support staff, managing patient care activities, and maintaining clinical knowledge through ongoing education.

Send resume to:
GUAM HEALTHCARE DEVELOPMENT, INC.
dba GUAM REGIONAL MEDICAL CITY
Attn: Charlotte Huntsman
133 Route 3, Dededo, Guam 96929



Department of Agriculture
Dipåttamenton Agrikottura
163 Dairy Road, Mangilao, Guam 96913

Department of Agriculture Community Listening Session
Mangilao Village,
Mangilao Community Center
May 12, 2026
5:30 PM-7:30 PM

The agenda will be as follows:

1. Updated Bona Fide Farmer's Application
2. Little Fire Ant Program
3. Animal Entry Permits/Application Forms
4. Changes to Rules and Regulations regarding Animal Importation
5. Trap-Neuter-Vaccinate-Return Program
6. Open Discussion

/s/ Chelsa D. Muña
Director, Department of Agriculture
This ad is paid for Guam Department of Agriculture General Funds.

CAMACHO CALVO LAW GROUP LLC

VINCENT C. CAMACHO
vcamacho@camachocalvo.law
356 E. Marine Corps Drive, Suite 201
Hagåtña, Guam 96910
Telephone No. 671.472.6813
Facsimile No. 671.477.4375

Attorneys for Petitioner
ROSALINDA PORTA PETERSON

IN THE SUPERIOR COURT OF GUAM
IN THE MATTER OF THE ESTATE OF KURT DAVID PETERSON,
Deceased.
PROBATE CASE NO. PR0045-26
NOTICE OF RESCHEDULED HEARING
THIS NOTICE IS REQUIRED BYLAW. YOU ARE NOT REQUIRED TO APPEAR IN COURT UNLESS YOU DESIRE.

1. NOTICE IS HEREBY GIVEN that **Petitioner, Rosalinda Porta Peterson** has filed a **Petition for Probate of Will and For Letters of Administration with the Will Annexed; Exhibits A-B**, reference to such Petition is hereby made for further particulars.
2. A hearing on the Petition will be heard on **Thursday, May 14, 2026 at 11:00 a.m.** before Judge Dana A. Gutierrez in the Superior Court of Guam.
3. To attend or participate in the hearing, you may appear in person at the courtroom of Judge Dana A. Gutierrez, 120 West O'Brien Drive, Hagåtña, Guam or you may appear via Zoom by logging onto https://guamcourts-org.zoom.us and enter the **Meeting ID: 839 7874 0380** and **Passcode: 189701**. For technical assistance, please call (671) 475-3207 five (5) minutes prior to the designated hearing time.

Dated: April 7, 2026
Janice Camacho-Perez
Clerk of Court, Superior Court of Guam
/s/ Pauline I. U. Santos
Courtroom/Chamber Clerk

APPLY NOW!!

4-HEAVY & TRACTOR-TRAILER TRUCK DRIVER w/1 yr. exp. **$18.54 PER HR.**
Guam Commercial Driver's License required after hire. Drives trucks with capacities greater than 3 tons, including tractor-trailer combinations, to transport & deliver fuel petroleum. Check vehicles to ensure that mechanical, safety & emergency equipment is in good working order. Follow appropriate safety procedures for transporting fuel petroleum. Maintain logs of working hours or of vehicle service or repair status. Maneuver trucks into loading or unloading positions checking that vehicle is properly positioned. Obtain signatures for delivered services when required. Operate equipment such as truck cab computers, radios or phones to exchange necessary information with bases, supervisors or other drivers. May be in driving training to understand road way rules & regulations towards obtaining Guam commercial driver's license & while waiting for delays & scheduling with the Guam Department of Motor Vehicles.

Successful applicants must be able to obtain military base access.

Benefits: Roundtrip airfare for off-island hire; food & housing at $80.00 per week; medical & dental insurance; sick leave at 3.33 hours per month with max cap of 120 hours; local transportation from employer's designated lodging facility to/fr jobsite.

The job offer meets all EEO requirements, and initiates a temporary placement. The recruitment associated with this job offer is closely monitored by the Department of Labor. Qualified, available and willing U.S. workers are highly encouraged to apply. Should you qualify for the job and are not hired, you may appeal with the Department of Labor who will independently review the matter.

Apply in person at American Job Center
414 W. Soledad Avenue, Suite 300 GCIC Building, Hagatna, Guam
Or apply online at www.hireguam.com; Enter Keyword: 2026-070

AVAILABLE JOBS FOR ELIGIBLE U.S. WORKERS

3 – CARPENTERS WITH ONE YEAR EXP. ***$18.34 PER HOUR**
Construct, install, and repair wooden structures and fixtures using hand and power tools, adhering to local building codes. Interprets blueprints, sketches, and plans to determine material type and dimensions needed.

1 – ELECTRICIAN WITH TWO YEARS EXP. ***$21.02 PER HOUR**
Plan, install, maintain, and repair electrical wiring, equipment, and fixtures. Design new or modified installations to minimize material waste. Follow blueprints or sketches to locate wiring, ensuring compliance with building and safety codes.

1 – HEAVY EQUIPMENT MECHANIC WITH TWO YEARS EXP. ***$21.77 PER HOUR**
Diagnose, adjust, repairs, and overhauls mobile mechanical, electrical, construction, hydraulic and pneumatic equipment, such as bulldozers, graders, conveyors, dump trucks, backhoes, excavators, and other heavy equipment.

1 – HEAVY EQUIPMENT OPERATOR WITH ONE YEAR EXP. ***$18.97 PER HOUR**
Operate multiple types of power construction equipment such as motor graders, bulldozers, scrapers, compressors, pumps, derricks, shovels, tractors, or front-end loaders to excavate, move, and grade earth, erect structures, or pour concrete or other hard surfaces pavement.

1 – PAINTER WITH ONE YEAR EXP. ***$19.82 PER HOUR**
Paint walls, equipment, buildings, bridges, and other structural surfaces using brushes, rollers, and spray guns. May remove old paint to prepare surface prior to painting. May mix colors or oils to obtain desired color or consistency.

3 – STRUCTURAL STEEL WORKERS WITH ONE YEAR EXP. ***17.34 PER HOUR**
Erect, place, and join steel girders, columns, and other pieces to form structural frameworks. May assemble precut metal buildings and the cranes and derricks that move materials and equipment around the construction site.

**Special wage rate: Work to be performed on DPRI-funded projects and projects covered by Davis Bacon, Service Contracts Act, and/or Executive Order 14206 will be paid no less than the indicated wage rate but may be paid more where special rates apply.*

Benefits: Roundtrip airfare for off-island hire; Lodging @ $80.00 per week; local transportation from employer's designated lodging facility to/from jobsite; and employer/employee-paid medical insurance.

Successful applicant must be able to obtain military base access. Off-island hires must complete a pre-arrival and post-arrival health screening.

The complete job duties may be viewed in person at American Job Center
414 W. Soledad Avenue, Suite 300 GCIC Building, Hagatna, Guam
Or apply online at www.hireguam.com; Enter Keyword: 2026-071

BUREAU OF STATISTICS AND PLANS

Lagan Plana Siha Yan Estatistikan

LOLA E. LEON GUERRERO
Director
MATTHEW C. SANTOS
Deputy Director

Government of Guam
P.O. Box 2950 Hagåtña, Guam 96932
Tel: (671) 472-4201/3
Fax: (671) 477-1812

LOURDES A. LEON GUERRERO
Governor of Guam
JOSHUA F. TENORIO
Lieutenant Governor

NOTICE TO THE PUBLIC
SECOND EXTENSION OF PUBLIC COMMENT PERIOD
The Guåhan 2050 Sustainability Plan

In accordance with the requirements of 5 GCA § 1205, the Bureau of Statistics and Plans (BSP) conducted two public hearings on February 12, 2026, at the Hågat Mayor's Office and February 25, 2026, at the Dededo Mayor's Office on **The Guåhan 2050 Sustainability Plan (GSP)**. The GSP serves as a comprehensive framework for Guam's future, addressing critical areas such as economic resilience, environmental stewardship, and community well-being. This plan also acts as the official update to the Guam Comprehensive Development Plan (Kabales) as mandated by Public Law 35-110.

THE PUBLIC COMMENT PERIOD EXTENDED TO MAY 22, 2026.

Residents and stakeholders can visit bsp.guam.gov/gsp2050/ to access a digital library of planning resources, including:

- **Review the Draft:** View and download the full draft of the 2050 Guåhan Sustainability Plan.
- **Quick References:** Access FAQs and concise chapter summaries to navigate the plan's key components.
- **Legal & Historical Context:** View a plan summary with direct links to Public Law 35-110 and the original Kabales plan currently being updated.
- **Interactive Mapping:** Explore the Draft Land Use Web Map and download specific village-level maps included in the plan.
- **Data & Research:** Download the Residential Survey Results Report and the detailed analysis of surveys that informed the plan's development.
- **Public Hearing Archives:** View video recordings of the public presentations from the two previously held public hearings.

Hard copies are available for review at the Bureau of Statistics and Plans, Office of the Director, 513 West Marine Corps Drive, Ricardo J. Bordallo Complex, Hagåtña, Monday through Friday, 8:00 a.m.-5:00 p.m. Written testimonies may be submitted online to gsp2050@bsp.guam.gov. Please include your name when submitting testimonies online. **Deadline to submit comments has been extended to Friday, May 22, 2026, by 5:00 p.m., ChST.** Facsimile submissions will not be accepted.

For more information, please contact Director Lola E. Leon Guerrero, at 671-472-4201/2. Any persons needing special accommodations, please email raymond.dungca@bsp.guam.gov or call 671-475-9683.

/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans
This advertisement is paid with Government of Guam funds by the Bureau of Statistics and Plans

Note that the Legislature has taken steps to ensure that any protected personal identifying information has been redacted or excluded in whole or in part in order to protect the privacy of any individual(s) whose information has been included as part of this transmittal.

LOLA E. LEON GUERRERO
Director
MATTHEW C. SANTOS
Deputy Director

BUREAU OF STATISTICS AND PLANS

Sagan Planu Siha Yan Emfotmasion

LOURDES A. LEON GUERRERO
Governor of Guam
JOSHUA F. TENORIO
Lieutenant Governor

NOTICE TO THE PUBLIC
UPDATED PUBLIC COMMENT PROCEDURES
The Guåhan 2050 Sustainability Plan

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Your input is vital to ensuring the 2050 Guåhan Sustainability Plan reflects the values and aspirations of all who call Guam home.

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

RESCIND and REPLACE: NEWS: Update to Public Comment Procedures for the Guahan 2050 Sustainability Plan

April Trinidad <april.trinidad@bsp.guam.gov> Wed, May 6, 2026 at 4:00 PM

Bcc: "reporters@kuam.com" <reporters@kuam.com>, "news@guampdn.com" <news@guampdn.com>, reporters@postguam.com, "publisher@glimpsesofguam.com" <publisher@glimpsesofguam.com>, "managingeditor@glimpsesofguam.com" <managingeditor@glimpsesofguam.com>, MVC Guam <publisher@pacificislandtimes.com>, Pacific Island Times <pacificislandtimes@gmail.com>, news@kanditnews.com, News@guamnewsonline.com, [redacted], "raygibsonshow@gmail.com" <Raygibsonshow@gmail.com>, editor@glimpsesofguam.com, "reporter2@glimpsesofguam.com" <reporter2@glimpsesofguam.com>, radio_ops@glimpsesofguam.com, patti@thewave105.com, dice@power98.com, reese@power98.com, thomas.manglona@marianaspress.com, Wilson.Alex@stripes.com, [redacted]>, Brad.ruszala@nminewsservice.com, Catherine.c.norton2.civ@us.navy.mil, chbal357@students.gdoe.net, speakerblas@guamlegislature.gov, Ed Pocaigue <sgtarms@guamlegislature.gov>, vicespeakertonyada@guamlegislature.gov, office.senatorbri@guamlegislature.gov, senator.lujan@guamlegislature.gov, senator.duenas@guamlegislature.gov, officeofsenatorshellycalvo@guamlegislature.gov, vince.borja@guamlegislature.gov, senatortelot@gmail.com, office.senatorshawn@guamlegislature.gov, senator.munabarnes@guamlegislature.gov, Senator Darrel Christopher Barnett <malafunkshun@guamlegislature.gov>, senator.parkinson@guamlegislature.gov, office.senatorperez@guamlegislature.gov, "dmuna@pbsguam.org" <dmuna@pbsguam.org>, KColeman@erienewsnow.com, nrlee@guamwaterworks.org, nrao@triton.uog.edu, [redacted], "krystal.paco" <krystal.paco@guam.gov>, "mabuhaynews@yahoo.com" <mabuhaynews@yahoo.com>, kmead@reorg.com, pearlh@benarnews.org, [redacted], kritters@nlga.us, nlim@washingtonexaminer.com, leann.abonales@picguam.com, Clynton Ridgell <clynton.ridgell@guam.gov>, daren.burrier@gfd.guam.gov, Elizabeth.Fisher@doa.guam.gov, "Marie P. Lizama" <Marie.Lizama@revtax.guam.gov>, [redacted], "laureal.villagomez@dphss.guam.gov" <Laureal.Villagomez@dphss.guam.gov>, Bertha.Pereda@doa.guam.gov, cepoh-pa@usace.army.mil, Leslie Travis <leslie.travis@guam.gov>, Valerie Sablan <Valerie.sablan@visitguam.org>, cme@ocmeguam.com, [redacted], Chloe Weilbacher <chloe.weilbacher@guam.gov>, [redacted], "jenna.g.blas@ghs.guam.gov" <jenna.g.blas@ghs.guam.gov>, "editor@mvariety.com" <editor@mvariety.com>, paul.tapao@gpd.guam.gov, info@guamairport.net, tony.diaz@archagana.org, bmeno@portofguam.com, Jonas Macapinlac <jmac@triton.uog.edu>, "Hanson, Jackie" <jhanson@triton.uog.edu>, "spcscommunications@gmail.com" <spcscommunications@gmail.com>, [redacted], chalorna.lauron@grmc.gu, 36wg.igstafforg@us.af.mil, Jesse.Santos@ic.fbi.gov, tbalajadia@fbi.gov, msolson@fbi.gov, Joanna.Delfin@fe.navy.mil, 하갓냐출장소 <kconsul_guam@mofa.go.kr>, oikawa.t-eq@nhk.or.jp, fema-r9watchofficer@dhs.gov, Pat.S.Gomes@uscis.dhs.gov, jessica.egli@hq.dhs.gov, [redacted], Rebecca.F.Maliuwelur@uscis.dhs.gov, teammrfc@mlrin.org, jpncon@ag.mofa.go.jp, seccgj@ag.mofa.go.jp, cnmi_eoc1@cnmihsem.gov.mp, Christopher.m.chase@uscg.mil, fbcsprincipal@gmail.com, guam@bnonews.com, heath.gogue@doc.guam.gov, matthew.chargualaf@bankofguam.com, lisa.bazacruz@sfcscrusaders.com, lucille.mayo@guamcc.edu, lyann.cruz@visitguam.org, mjfuller@lotte.net, Nadine Leon Guerrero <nadine.leonguerrero@visitguam.org>, [redacted], "vote@gec.guam.gov" <Vote@gec.guam.gov>, tlimtiaco@gpagwa.com, cjones@ap.org, ready@guamwebz.com, webcare@guamwebz.com, [redacted], joanne.ige@guamcc.edu, guamomb@gmail.com, Michele Catahay Perez <mcatahay@gta.net>, "tbcsguam@gmail.com" <tbcsguam@gmail.com>, Rhaj at GuamWEBZ <rhaj@guamwebz.com>, pikman.lam@guamcc.edu, "Mayor Kevin J.T. Susuico" <agatmayor@yahoo.com>, "agatvice.chrisfejeran@yahoo.com" <agatvice.chrisfejeran@yahoo.com>, "Mayor Frankie A. Salas" <asanmainamayor@gmail.com>, [redacted]>, Jesse Blas [redacted]>, Mayor Allan RG Ungacta <mayorallan.ungacta@yahoo.com>, Mayor Rudy Paco <mtmmayorpaco17@gmail.com>, [redacted], senatorjoessanagustin@gmail.com, "vicemayortomduenas@gmail.com" <vicemayortomduenas@gmail.com>, "Mayor Ernest T. Chargualaf" <mayorernestc@yahoo.com>, Anthony Sanchez <yigovice@gmail.com>, Cayetano Blas <bmomayor@gmail.com>, "Mayor Dale E. Alvarez" <[redacted]>, [redacted], Jesse Alig <jesse.alig@pitiguam.com>, "Vice Mayor Jessie P. Bautista" [redacted]>, "ocp.mayor@gmail.com" <ocp.mayor@gmail.com>, "Mayor Paul M. McDonald" <mayor.mcdonald671@gmail.com>, "guammayor@gmail.com" <guammayor@gmail.com>, "Mayor Melissa B. Savares" [redacted]>, [redacted], [redacted], "umatacmo@gmail.com" <umatacmo@gmail.com>, "Vice Mayor Ken C. Santos" <vicemayorksantos.tatuha@gmail.com>, [redacted], "jon.calvo@guam.gov" <jon.calvo@guam.gov>, "ahernandez@guamairport.net" <ahernandez@guamairport.net>, charles.esteves@icloud.com, [redacted], "david.dellisola@dol.guam.gov" <david.dellisola@dol.guam.gov>, Elizabeth Napoli <enapoli@ghura.org>, Miguel C Bordallo <mcbordallo@guamwaterworks.org>, [redacted], Stephen Ignacio <stephen.ignacio@gpd.guam.gov>, Carissa Pangelinan <Carissa.Pangelinan@gbhwc.guam.gov>, "Carlotta A. Leon-

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Guerrero" <carlotta.leonguerrero@guam.gov>, Charles Esteves <charles.esteves@ghs.guam.gov>, "cjanderson@gdoe.net" <cjanderson@gdoe.net>, Daniel Leon Guerrero <daniel.leonguerrero@csc.guam.gov>, "eliza.dames@guam.gov" <eliza.dames@guam.gov>, "frank.lujan@otech.guam.gov" <Frank.Lujan@otech.guam.gov>, "ignacio.peredo@cqa.guam.gov" <ignacio.peredo@cqa.guam.gov>, icarillo <icarillo@pbsguam.org>, Cathi Blas <cathi.blas@galc.guam.gov>, [redacted], "jayne.flores@guam.gov" <jayne.flores@guam.gov>, "jermaine.alerta@gddc.guam.gov" <jermaine.alerta@gddc.guam.gov>, [redacted], "Josephine C. Cepeda" <josephine.cepeda@guam.gov>, Lester Carlson <lester.carlson@bbmr.guam.gov>, lillian perez-posadas <lillian.perez-posadas@gmha.org>, Mary Okada <mary.okada@guamcc.edu>, [redacted], Melanie Brennan <melanie.brennan@dya.guam.gov>, "rebecca.respicio@energy.guam.gov" <Rebecca.Respicio@energy.guam.gov>, "vera.topasna@guam.gov" <vera.topasna@guam.gov>, "dlmdir@land.guam.gov" <dlmdir@land.guam.gov>, Everyone <everyone@guam.gov>, Joshua F Tenorio <Joshua.tenorio@guam.gov>, "Gov. Lourdes A. Leon Guerrero" <governor@guam.gov>, "Shamra L.A. Chargualaf" <shamra.chargualaf@guam.gov>, Tyrone Taitano <tyrone.taitano@bsp.guam.gov>, "edward.birn@doa.guam.gov" <edward.birn@doa.guam.gov>, [redacted], Gerard Toves <gerard.toves@dol.guam.gov>, guamguardpao@gmail.com, Laurent Duenas <laurent.duenas@dphss.guam.gov>, "dafne.shimizu@revtax.guam.gov" <dafne.shimizu@revtax.guam.gov>, "Michele B. Santos" <michele.santos@revtax.guam.gov>, "Stephanie G. Flores" <Stephanie.flores@guam.gov>, administration@gmha.org, Frankie Salas <frankie.salas@mcog.guam.gov>, BSP STAFF-Everyone <everyone@bsp.guam.gov>, Guam Coastal Management Program <gcmp@bsp.guam.gov>, Pauly Suba <[redacted]>, Lola Leon Guerrero <lolalg@bsp.guam.gov>, Matthew Santos <matthew.santos@bsp.guam.gov>

FOR IMMEDIATE RELEASE
May 6, 2026

UPDATE: The Bureau of Statistics and Plans Updates Public Comment Procedures for the Guåhan 2050 Sustainability Plan

Hagåtña, Guam – The Bureau of Statistics and Plans' (BSP) website is currently experiencing service disruptions due to a widespread cyber incident involving cPanel-hosted platforms globally. Because the Guåhan 2050 Sustainability Plan is currently open for public comment, the BSP is issuing the following alternative instructions to ensure all residents and stakeholders can continue to access the Plan documents and submit feedback without interruption.

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The Bureau encourages the public to use the official comment form available on the via the Google drive link.

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COMMENT DEADLINE: Comments must be submitted no later than Friday, May 22, 2026, by 5:00 p.m., ChST. Facsimile submissions will not be accepted.

Your input is vital to ensuring the 2050 Guåhan Sustainability Plan reflects the values and aspirations of all who call Guam home.

Media Contact: Lola E. Leon Guerrero

Email: lolalg@bsp.guam.gov

Doc. No. 38GL-26-2651.*

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---------- Forwarded message ---------
From: **April Trinidad** <april.trinidad@bsp.guam.gov>
Date: Wed, May 6, 2026 at 3:32 PM
Subject: NEWS: Update to Public Comment Procedures for the Guahan 2050 Sustainability Plan
To:

FOR IMMEDIATE RELEASE

May 6, 2026

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Email: lolalg@bsp.guam.gov

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Si Yu'os Ma'ase,

April M. Trinidad
Senior Planner
Planning Information Program
Bureau of Statistics and Plans
Tel: 671-475-9680
Fax: 671-477-1812

Doc. No. 38GL-26-2651.*

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Pacific Daily News

THE BUREAU OF STATISTICS AND PLANS

Sagan Planu Siha Yan Emfotmasion

LOLA E. LEON GUERRERO, Director
MATTHEW C. SANTOS, Deputy Director
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Director, Bureau of Statistics and Plans

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IN THE SUPERIOR COURT OF GUAM

IN THE MATTER OF THE ESTATE

OF

JOSE LIZAMA FRANCISCO,

Decedent.

PROBATE CASE NO. PR0062-26

NOTICE OF HEARING

THIS NOTICE IS REQUIRED BY LAW. YOU ARE NOT REQUIRED TO APPEAR IN COURT UNLESS YOU DESIRE.

1. NOTICE IS HEREBY GIVEN that Carmen F. Castro has filed Petition for Letters of Administration.

2. A hearing on the petition will be heard on **Wednesday May 13th, 2026, at 11:50 a.m., before the Hon. Judge Elyze M. Iriarte.**

3. To attend or to participate in the hearing, you may appear in person at the Guam Judicial Center, appear remotely at https://guamcourts-org.zoom.us and enter Meeting ID: 864 4387 2213 and Passcode: JEM; or call into the courtroom at 671-300-6703 at the designated hearing time. For connectivity issues, you may contact Jannette Samson at (671) 475-0141 or email jsamson@guamcourts.gov

DATED: 10 APRIL 2026

JANICE M. CAMACHO-PEREZ
Clerk of Court, Superior Court of Guam

/s/ FLORA W. FAGAN
Courtroom/Chamber Clerk

Serve Guam Commission, Office of the Governor Special Board of Commission Meeting

Wednesday, May 13,2026 at 11:30am

SGC Conf Room, 2nd Floor Suite 202, GCIC Building, In-person, Zoom, and Live Streamed via SGC Facebook.

Facebook Link:
https://www.facebook.com/serveguam

Zoom Link:
https://us06web.zoom.us/j/87455239122?pwd=zjXyNnmlqzplODqVADrb45LFf9S4Mz.1

Meeting ID:
874 5523 9122
Passcode: 198415

AGENDA

I. Call to Order / Roll Call
II. Action Item-FY 26-27 AmeriCorps Competitive Formula Grant Results to vote and approve applications for submission to AmeriCorps eGrants.
III. Old Business - None
IV. New Business
V. Announcements
VI. Next Scheduled Meeting, Wednesday, June 10,2026
VII. Adjournment

Individuals requiring special accommodations may contact Marian Aguon, at (671) 682-4599 marian.aguon@sgc.guam.gov

Paid for by SGC, AmeriCorps Grant No. 25CAIGU001



Doc. No. 38GL-26-2651.*

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Benefits: Roundtrip airfare for off-island hire; board and lodging @ $80.00 per week; local transportation from employer's designated lodging facility to/from jobsites; employer/employee paid medical insurance.

***Special wage rate:** Work to be performed on DPRI-funded projects and projects covered by Davis Bacon, Service Contracts Act, and/or Executive Order 14206 will be paid no less than the indicated wage rate but may be paid more where special rates apply.

Successful applicant must be able to obtain military base access. Off-island hires must complete a health screening prior to working on Guam.

The job offer meets all EEO requirements, and initiates a temporary placement. The recruitment associated with this job offer is closely monitored by the Department of Labor. Qualified, available and willing U.S. workers are highly encouraged to apply. Should you qualify for the job and are not hired, you may appeal with the Department of Labor who will independently review the matter.

Apply in person at American Job Center
414 W. Soledad Avenue, Suite 300 GCIC Building, Hagatna, Guam
Or apply online at www.hireguam.com; Enter Keyword: 2026-073

Kumision Inangokkon Tano' CHamoru
(CHamoru Land Trust Commission)

The Chamoru Land Trust Commission Working Session will be held on Thursday, May 14, 2026 at 10:00AM in the CHamoru Land Trust Commission Conference Room, Suite 223, ITC Building, Tamuning, Guam

WORKING SESSION AGENDA

CLTC Forest System Plan Parcels for Conservation Interests

To view the working session virtually, log on to Google Meeting link: meet.google.com/bwa-jddb-oha Individuals requiring special accommodations, auxiliary aids or service may call the CLTC Office at (671)300-3296 or email cltc.admin@cltc.guam.gov for more information.

BUREAU OF STATISTICS AND PLANS
Sagan Plania Siha Yan Estatistikas

LOLA E. LEON GUERRERO, Director
MATTHEW C. SANTOS, Deputy Director

Government of Guam
P.O. Box 2950 Hagåtña, Guam 96932
Tel: (671) 472-4201/3
Fax: (671) 477-1812

LOURDES A. LEON GUERRERO, Governor of Guam
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UPDATE: Submission Instructions

The Bureau encourages the public to use the official comment form available via the Google drive link.

- **Download:** Click on the Google link to download the formal comment form.
- **Submit:** Please email all written comments and completed forms to gsp2050@bsp.guam.gov.

COMMENT DEADLINE: Comments must be submitted no later than Friday, May 22, 2026, by 5:00 p.m., ChST. Facsimile submissions will not be accepted.

Your input is vital to ensuring the 2050 Guåhan Sustainability Plan reflects the values and aspirations of all who call Guam home.

For more information, please contact Director Lola E. Leon Guerrero, at 671-472-4201/2. Any persons needing special accommodations, please email raymond.dungca@bsp.guam.gov or call 671-475-9683

/s/ LOLA E. LEON GUERRERO
Director, Bureau of Statistics and Plans
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GUAM EDUCATION BOARD

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Website Address: www.gdoe.net/geb

JUDITH GUTHERTZ, DPA, Chair
MARY A.Y. OKADA, Ed.D., Vice-Chair

Guam Education Board
REGULAR MEETING
Tuesday, May 19, 2026
3 PM
Gallery, Bldg. B, Tiyan
AGENDA

INFO	I.	**Meeting Call to Order**
INFO/ACTION	II.	**Consent Calendar**
		a. April 28, 2026 Regular Meeting Minutes
		b. April 28, 2026 Superintendent's Report
	III.	**Communications**
INFO		a. Correspondence received by the Board after April 28, 2026
INFO	IV.	**Ex-Officio Member Reports**
		a. Islandwide Board of Governing Students (IBOGS) Report
		b. Guam Federation of Teachers (GFT) Report
		c. Mayor's Council of Guam (MCOG) Report
	V.	**Unfinished Business/Committee Reports**
INFO/ACTION		a. Superintendent's Report
		i. JFKHS/SSHS Double Session Status Report
		ii. FEMA Projects Status Report
		iii. FBLG Renovation Status Report
		iv. Mold Mitigation/Fencing Status Report
		v. Dashboard Status Report
		vi. Financial Issues
		vii. JP Torres Success Academy
INFO		b. Executive Committee
		c. Instructional & Academic Support Committee
INFO/ACTION		i. May Head Start Report
INFO/ACTION		ii. Resolution 2026-03 Relative to Strengthening the Integration of Civics Education at the Guam Department of Education Middle and High Schools
		d. Safe & Healthy Schools Committee
INFO		i. Security Concerns
		e. Policy Review & Strategic Planning Committee
INFO/ACTION		i. BP 705 Food and Nutrition Services Management
		f. Fiscal Management Committee
		i. GDOE Financial Report
INFO		1. Accounts Payable Aging Report
INFO/ACTION		2. Declaration of Financial Status Designation
INFO		3. Unaudited Statement of Appropriation, Expenditures, and Encumbrances for Fiscal Year 2026
INFO		4. Grant Status Report for Fiscal Year 2026
INFO		ii. US Department of Education Specific Conditions Report
INFO		iii. FY 2025 Audit Update
INFO/ACTION		iv. Management and Curriculum Audit
		g. Legislative Committee
INFO		i. Legislative Proposals Introduced
	VI.	**New Business**
INFO/ACTION		a. Waiver on Loss of Instructional Days
INFO/ACTION		b. Board Policy 379a Artifical Intelligence (AI) Use Policy
INFO/ACTION		c. Spend Plan – Lapsed Funds
		i. Prior FY Fiscal Lapses
		ii. ARP Payroll Reimbursements
INFO/ACTION	VII.	**Executive Session** (Board Policy 125.12)
		a. Personnel matters (5 GCA § 8111 (a))
		b. Matters within scope of Public Employee-Management Relations Act, includingcollective bargaining (5 GCA § 8111 (b))
		c. Superintendent's Evaluation
		d. Legal Matters
INFO	VIII.	**Celebrate Success**
INFO	IX.	**Public Participation** (Board Policy 125.6) Time Limit 3 minutes
INFO/ACTION	X.	**Announcements & Adjournment**

The public is welcome to view the meeting via live stream at https://www.youtube.com/@guamdepartmentofeducation5142.

Individuals requiring special accommodations or information or wish to submit public testimony via email may contact Kathleen Lamorena by email: krlamorena@gdoe.net.

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Guahan 2050 Sustainability Plan
Public Hearing
February 12, 2026
Sign In Sheet

#	Name (Please print clearly)	Agency/Village	Contact Information
1	Eileen Pangelinan	Maite	
2	Sonia Siliang	Dededo	
3	James Pangelinan	Mongmong - Toto - Maite	[redacted]
4	ESTHER CAMACHO	Dededo	
5	Raymond Dungca	BSP - Tamuning	
6	Camille Quichocho	BSP MTM	
7	[illegible]	BSP-Odyssey	
8	Clarissa Manley	BSP	
9	Cyril Trinidad	BSP	
10	DIANA BRENNAN	BSP	
11	STEVEN DIERKING	BSP - GCMP	
12	[illegible]	BSP	[redacted]
13	Jonah Babauta		
14	ESTHER TAITAGUE	BSP GCMP	
15	Cynthia Naval	MR+D	[redacted]

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Guahan 2050 Sustainability Plan
Public Hearing
February 12, 2026
Sign In Sheet

#	Name (Please print clearly)	Agency/Village	Contact Information
16	David Castro	POST	[illegible]
17			
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Guahan 2050 Sustainability Plan
Public Hearing – February 25, 2026 – Dededo Mayor's Office
Sign In Sheet

#	Name (Please print clearly)	Agency/Village	Contact Information
1 *	Ian R. Shelley	DEDEDO	[redacted]
2 *	Barbara Burkhardt	Dededo	[redacted]
3	Amm S.A. Leon Guerrero	"	AMM.SALG@MCOG.GUAM.GOV
4	Nolan Muña	Sinahaña	munan16684@astritons.uog.edu [redacted] (WhatsApp ok)
5	Frank Son Nicolas	Santa Rita	fsn@postguam.com
6	Jesse Chargualaf	Dededo / Island Girl Power	[redacted]
7 *	Somrak Atao	Chalan Pago	[redacted]
8 *	Juanita Blaz	Dededo	[redacted]
9	Johnsiny Relech	Dededo	"
10	Kaulana Rapolla	Dededo	
11	Shuela Vitoria	Dededo	
12	Jay Merritt	Yigo	[redacted]
13	Rocio Merrill	Yigo	[redacted]
14	STEVEN DIERKING	SANTA RITA	[redacted]
15	Raymond Dungca	MTM	

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Guahan 2050 Sustainability Plan
Public Hearing – February 25, 2026 – Dededo Mayor's Office
Sign In Sheet

#	Name (Please print clearly)	Agency/Village	Contact Information
1 *	Mike Gawel	Dededo / retired BSP, GEPA NPS	mgawel@guam.net
2	Dave Lotz	Yigo	davelotz@ite.net
3	Heather Perez	Dededo	[redacted]
4	Sonia Siliang	Dededo	Sonia.Siliang@BSP.Guam.Gov
5	Camille Quichocho	BSP	camille.quichocho@bsp.gua
6	Rogue Agun	GRTA	[redacted]
7	Ethan Valoria	DEDEDO	
8	Christian Benitez	Yigo	
9	ESTHER CAMACHO	DEDEDO	
10	Matt Santos	Tamuning	
11	Edwin Reyes	Malesso'	
12	Kursten Rosario	Agana Hts	[redacted]
13			
14			
15			

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The GUÅHAN 2050 Sustainability Plan

AN UPDATE TO THE GUAM COMPREHENSIVE DEVELOPMENT PLAN

Public Hearing Presentation

Bureau of Statistics & Plans | February 2026

THE BUREAU OF STATISTICS AND PLANS
Government of Guam

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Statutory Context

Mandated by Public Law 35-110 and Title 5 GCA, §1205.

Ensuring the people of Guam have a voice in shaping the island's future.

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The Approval Process

1

Jan 2026

Draft Plan Released & Notices Issued

2

Feb 2026

Public Hearings (Feb 12 & 25)

3

Apr 7, 2026

BSP Transmittal to Governor

4

Apr 17, 2026

Governor Approval & Legislature Review

The Guam Legislature has 180 days to review and approve the plan upon receipt.

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A Vision for 2050

The Guåhan 2050 Sustainability Plan outlines a future where our island thrives as a resilient, sustainable, and culturally vibrant community.



Core Objectives:

- Integrate environmental responsibility into all decisions.
- Address climate change and demographic shifts.
- Ensure long-term livability and cultural continuity.

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Land Use & Housing Strategy

Urban-Rural Boundary

The Plan establishes clear boundaries to focus development in areas with existing water, sewer, and power infrastructure.

This prevents urban sprawl and protects our vital Northern Guam Lens Aquifer and rural landscapes.

Housing & Redevelopment

Prioritizes **affordable housing** and revitalizes underutilized urban zones.

Ensures equitable housing options for Guam's growing population while maximizing existing resources.

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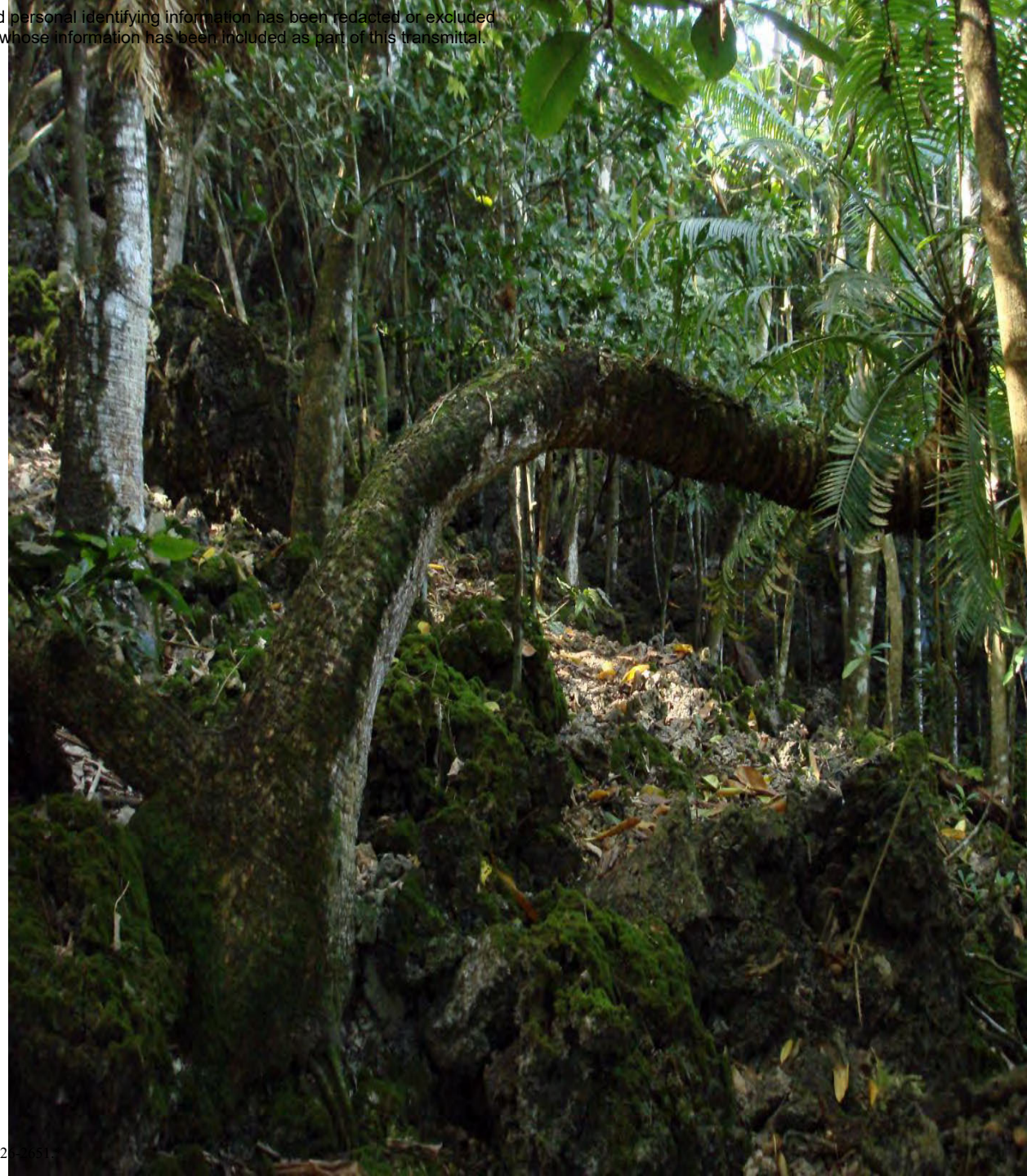
Environmental Stewardship

Resource Conservation: Designates protected areas for sensitive habitats, limestone forests, and critical watersheds.

Resilience & Safety: Integrates modern hazard data—including flood maps and sea-level rise projections—to guide safe development.

This proactive approach safeguards Guam's ecological health for future generations.



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Cultural Preservation

The Plan places CHamoru heritage at the center of development decisions.

- Protects historic sites and traditional practices.
- Ensures land-use policies honor Guam's unique cultural identity.
- Fosters a deep sense of place and community connection.



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Community Driven

700+

Residents Surveyed

This plan is not just policy; it is the voice of the people.

Developed through extensive engagement:

- Island-wide surveys & focus groups.
- Direct input from Village Mayors.
- Collaboration with agency experts.

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Public Participation

Review Plan

Available at **bsp.guam.gov** and the GovGuam Public Notice Portal.

Hearings

Participate in public hearings on **Feb 12** and **Feb 25, 2026**.

Comments

Submit written comments by **March 11, 2026**.

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Si Yu'os Ma'åse'

Questions & Comments?

Bureau of Statistics and Plans

Guam Coastal Management Program

www.bsp.guam.gov

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THE BUREAU OF STATISTICS AND PLANS
Government of Guam

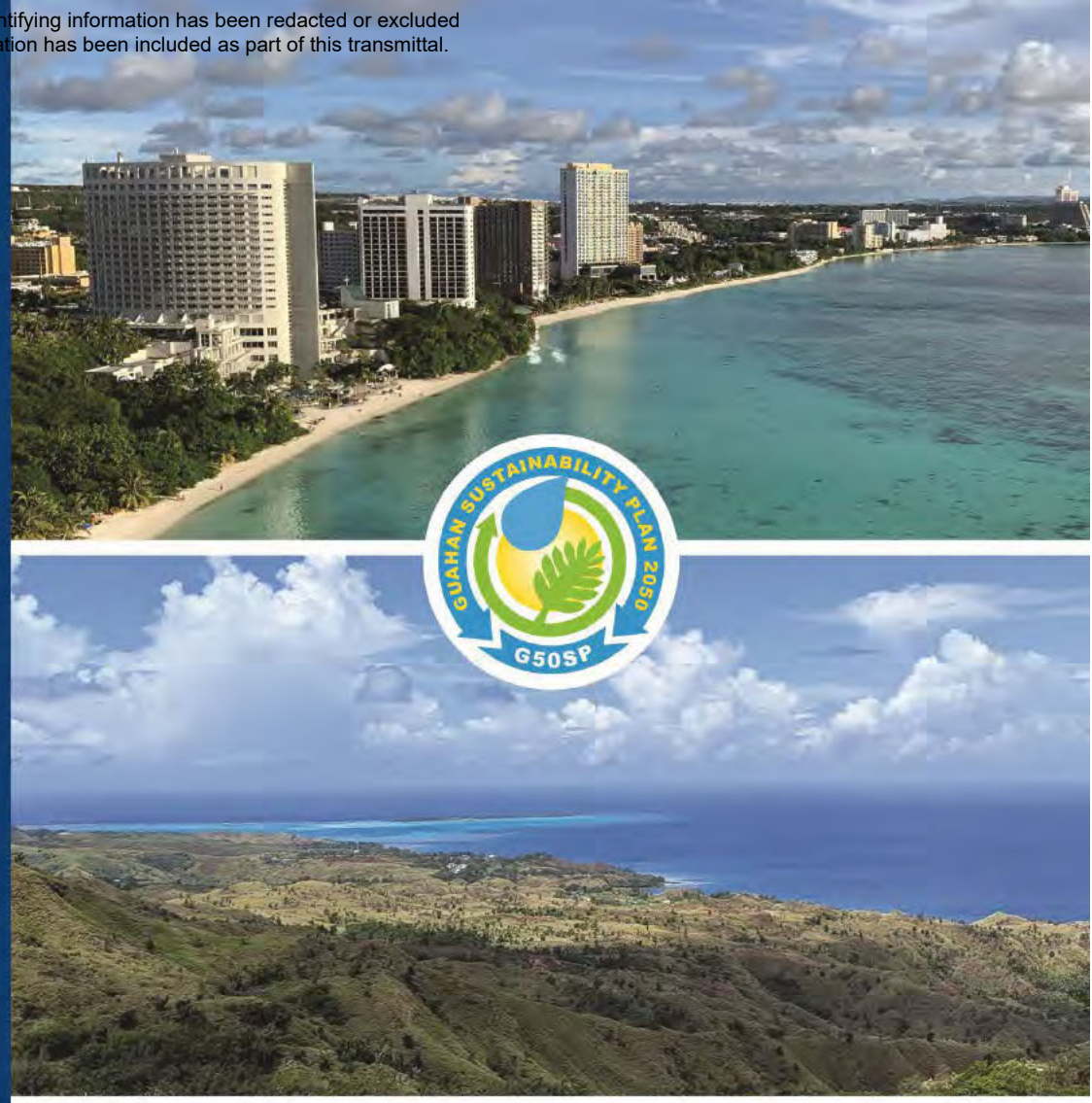
Guåhan 2050 Sustainability Plan

A Balanced Path Forward for the Island and People of Guam

Public Hearings

- *Southern Hearing*: Hågat Mayor's Office, February 12, 2026, 6:00 pm – 8:00 pm
- *Northern Hearing*: Dededo Mayor's Office, February 25, 2026, 6:00 pm – 8:00 pm

Doc. No. 38GL-26-2651.*



THE GUÅHAN
2050 SUSTAINABILITY PLAN
AN UPDATE TO THE GUAM COMPREHENSIVE DEVELOPMENT PLAN

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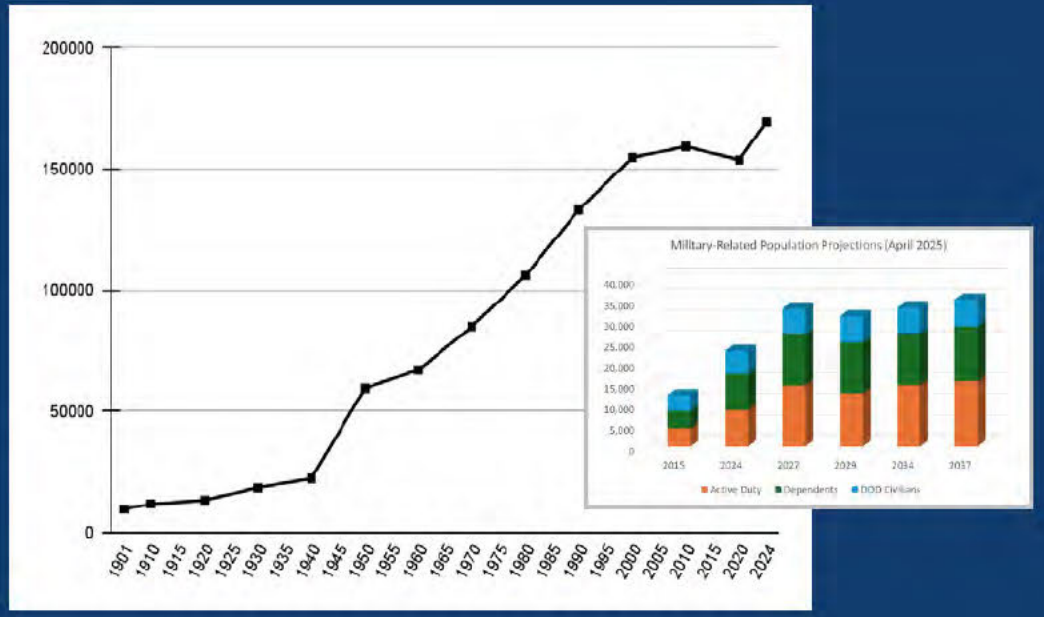
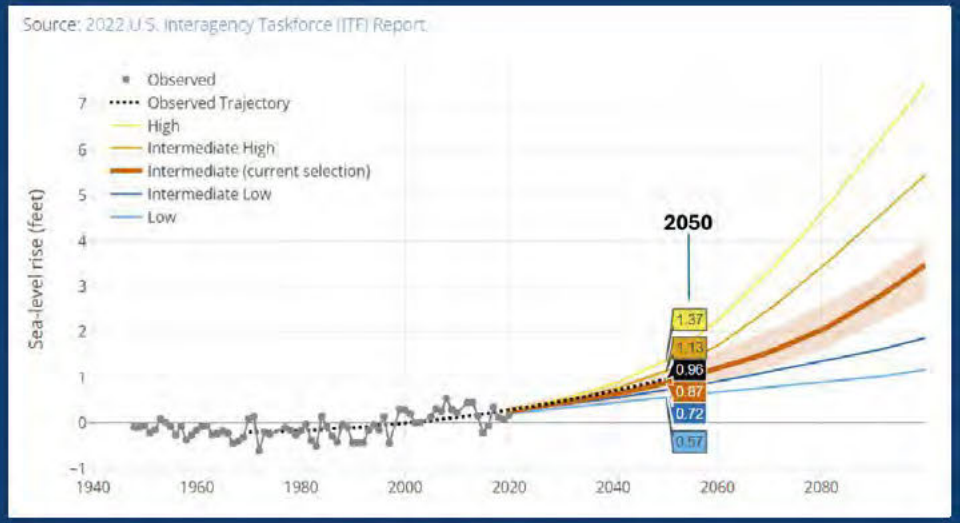
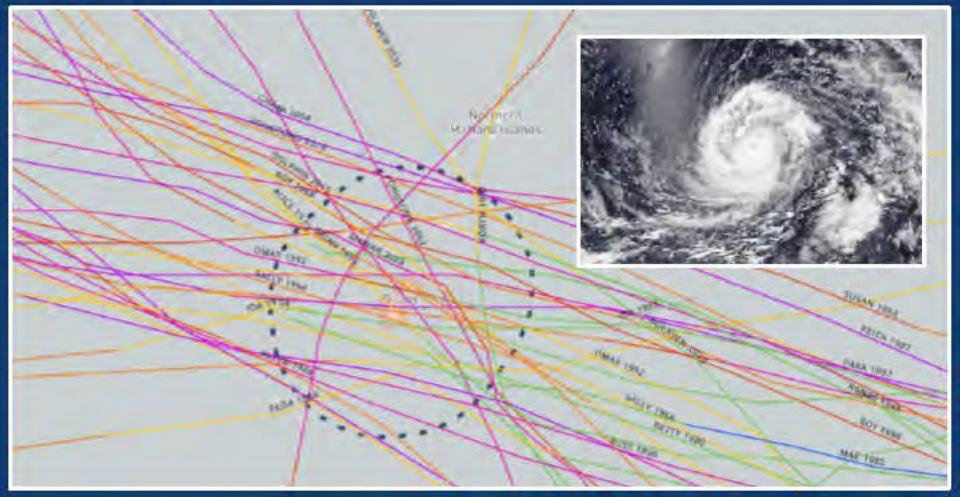
Why Plan for 2050?

"It is imperative that we better meet the needs of the present without compromising the ability of future generations to meet their needs."

- Guam faces converging pressures, climate change, growth, affordability
- Decisions today shape generations
- Sustainability means planning with long-term horizons







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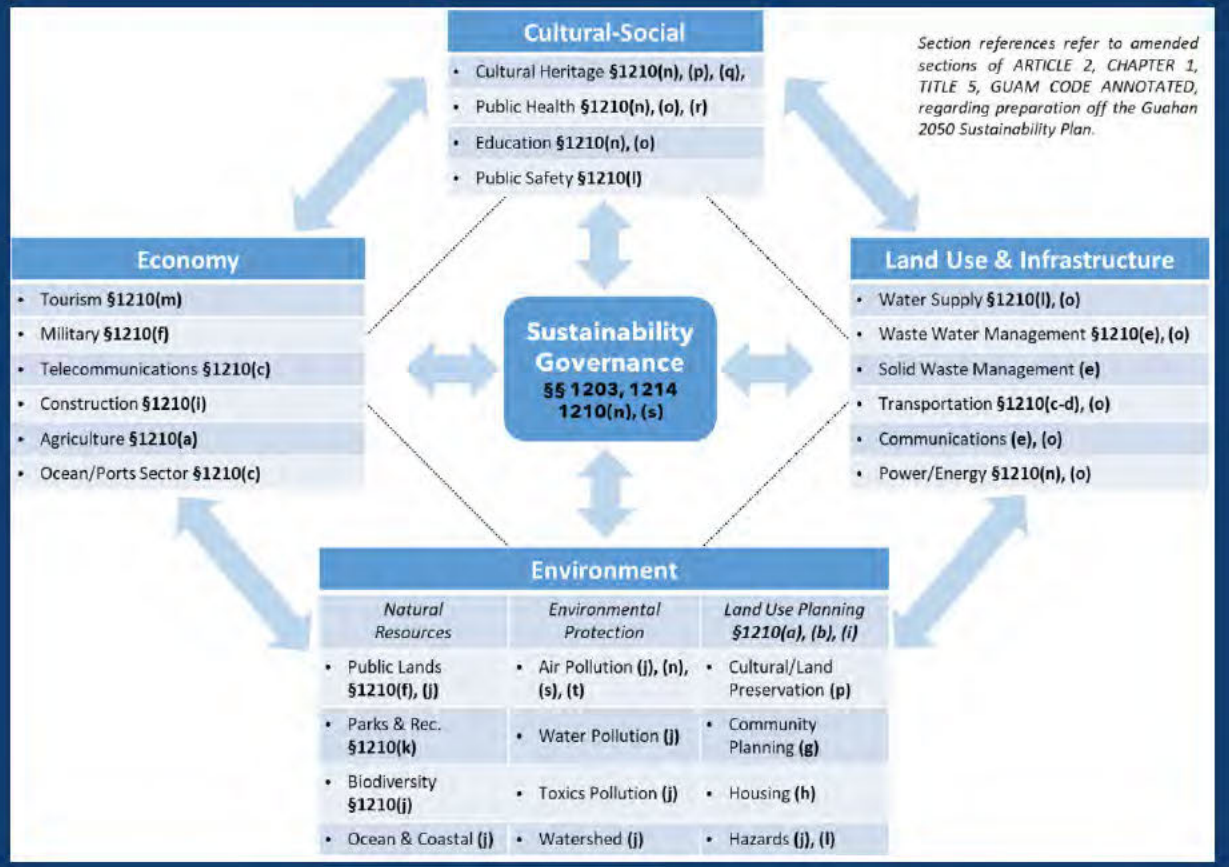
Why this Plan? The Legislature found:

- Guam's Comprehensive Development Plan is **out of date**
- Land use decisions lack an integrated framework to **balance** economy, environment, & culture
- **Coordination** across agencies will better support sustainable development across sectors
- Development interests need more guidance and consistency **[certainty]**



P.L. 35-110 Framework

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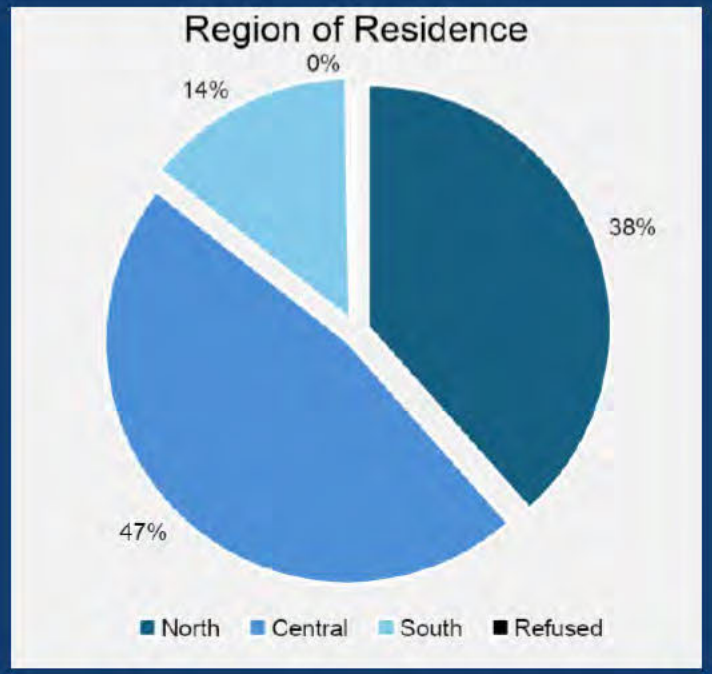
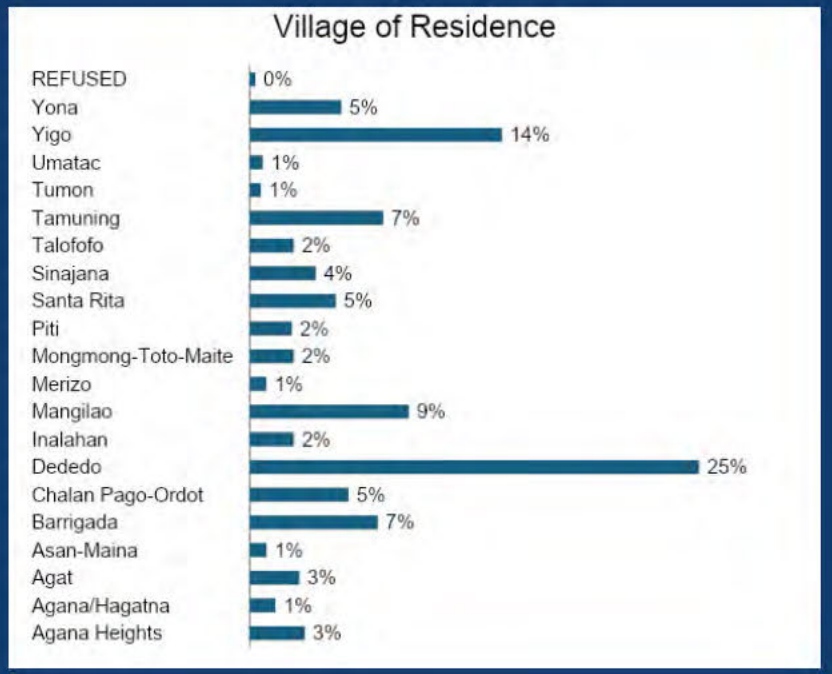
Built with the Community

- Village and regional engagement
- Island-wide survey of 700+ residents
- Consistent priorities across time









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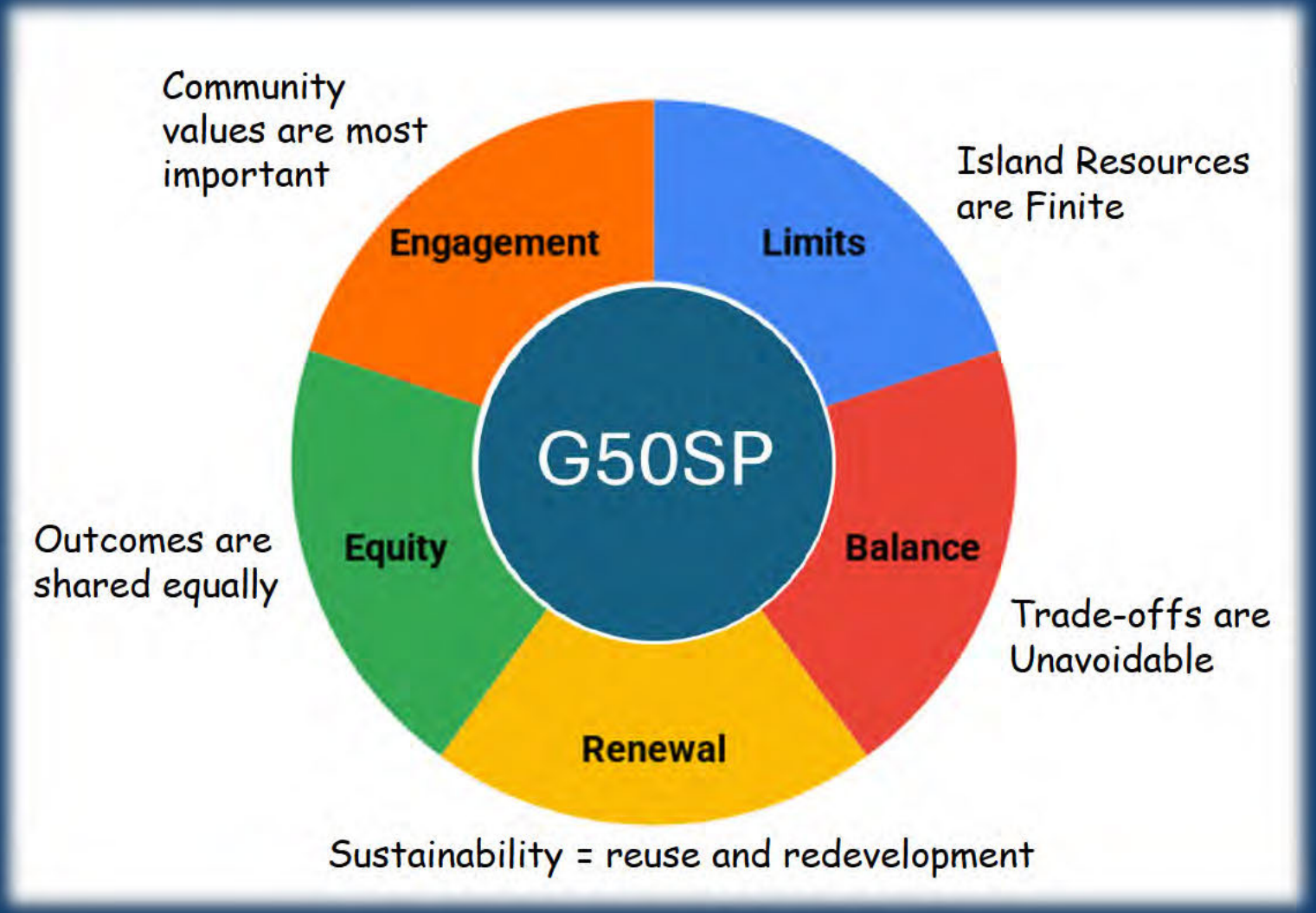
Core Principles



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Five Interconnected Goals

- Sustainable Communities (Chap. 3)
- Prosperous Economy (Chap. 4)
- Thriving Environment (Chap. 5)
- Vibrant Culture (Chap. 6)
- Village Sustainability (Chap. 7)





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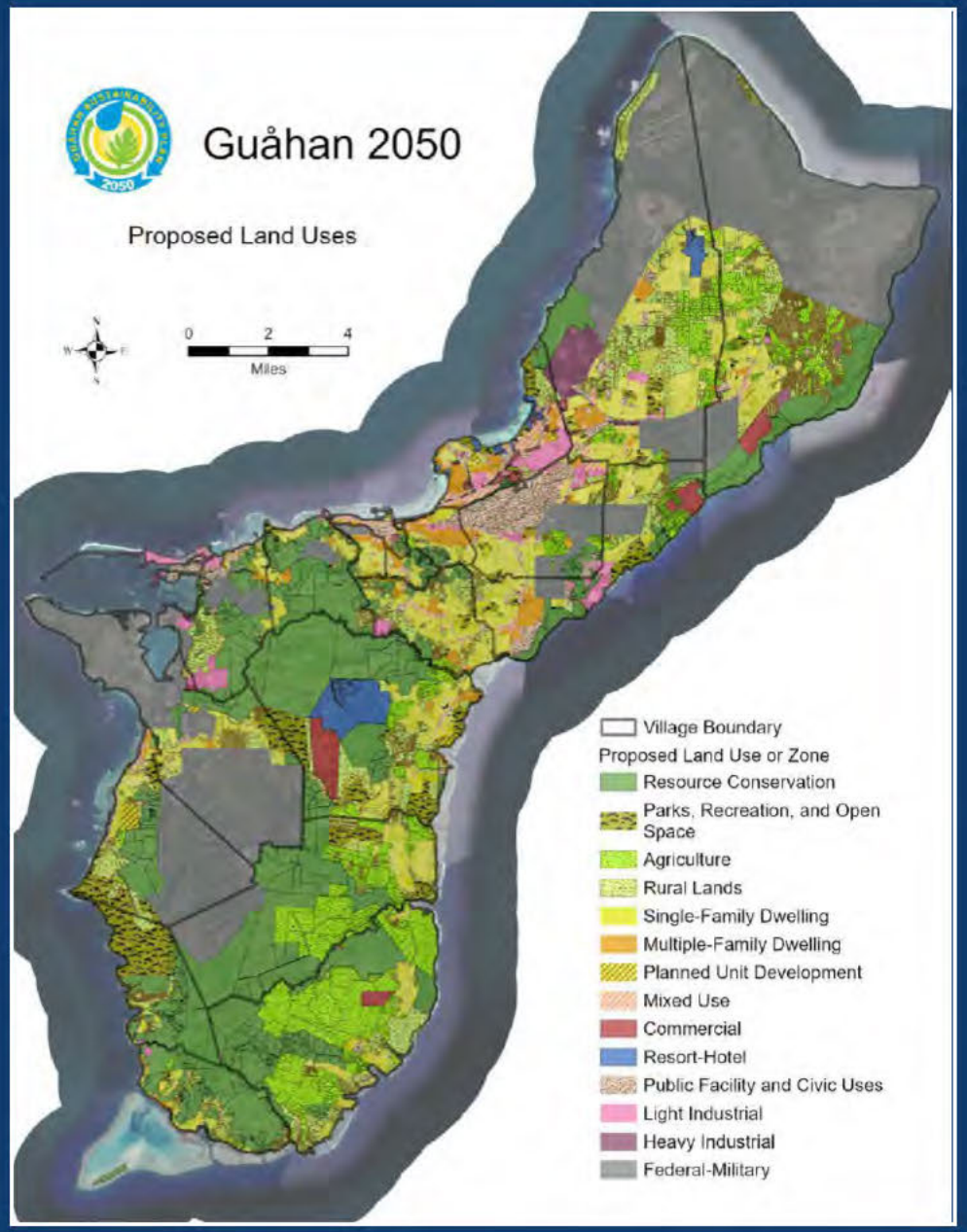
Sustainable Communities

- ➔ Growth where infrastructure exists
- ➔ Protect aquifers, rural lands, agriculture, and cultural heritage
- ➔ Compact, walkable development





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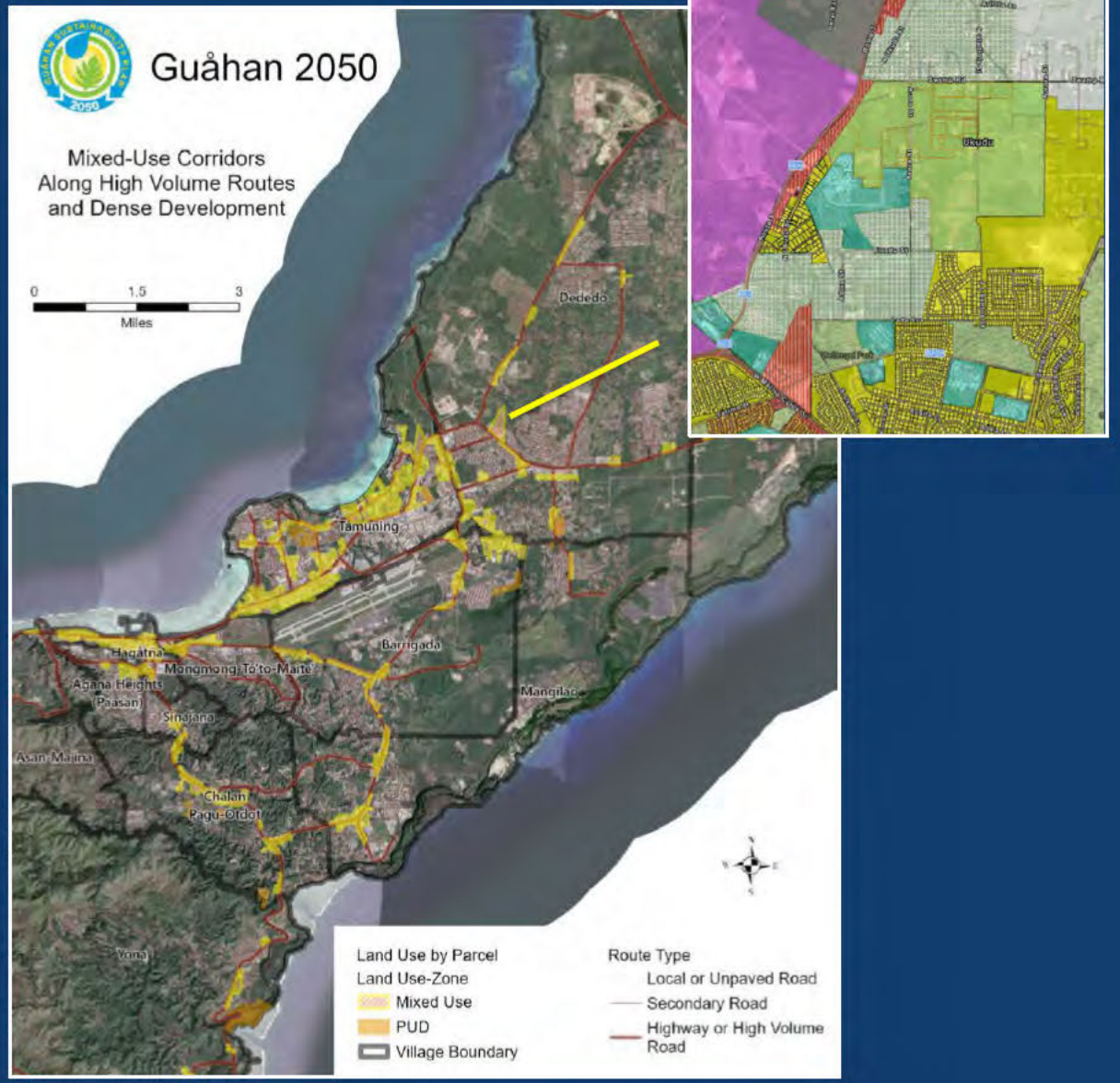
Prosperous Economy

- ➔ Redevelopment over sprawl
- ➔ Mixed-use village centers
- ➔ Right-sized tourism





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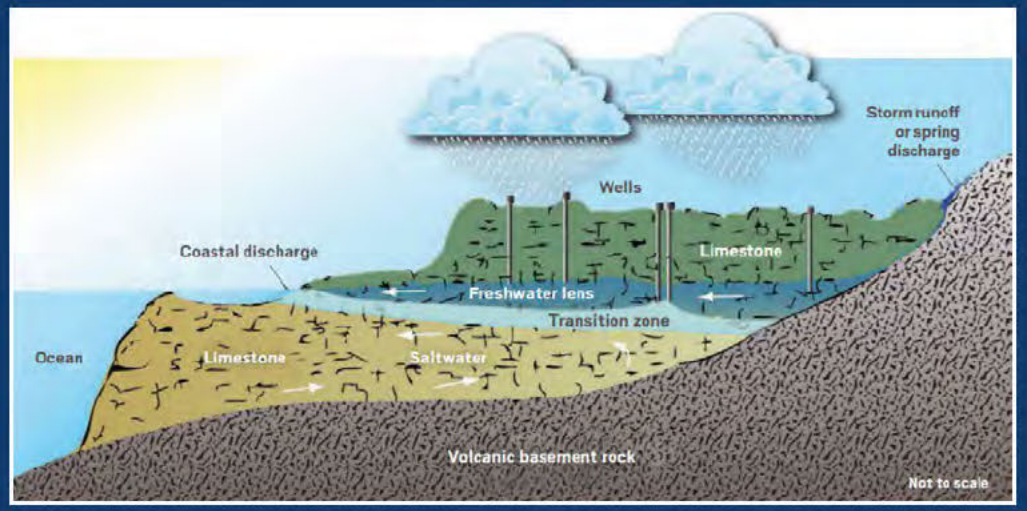
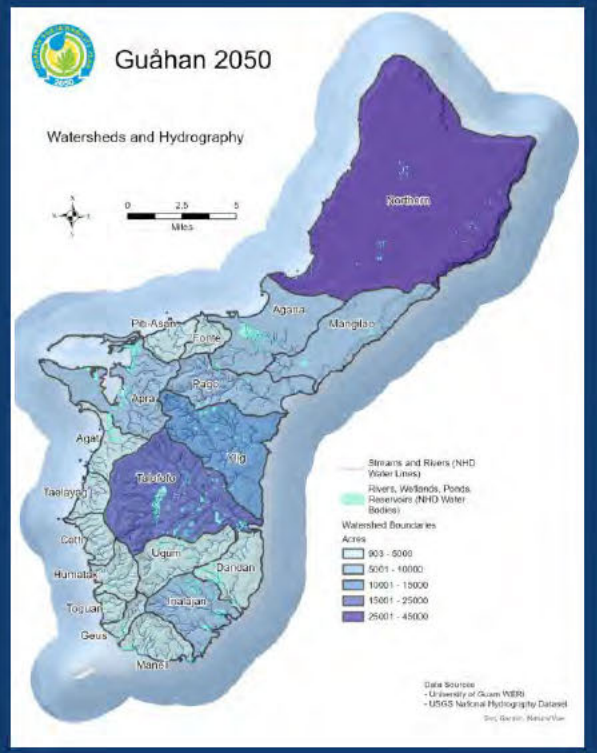
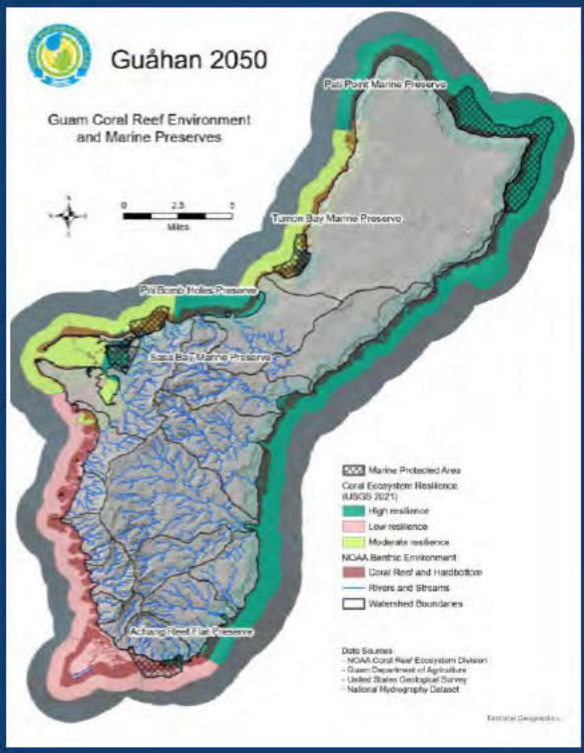
Thriving Environment

- ➔ Climate-informed planning
- ➔ Watershed and aquifer protection
- ➔ Nature-based solutions









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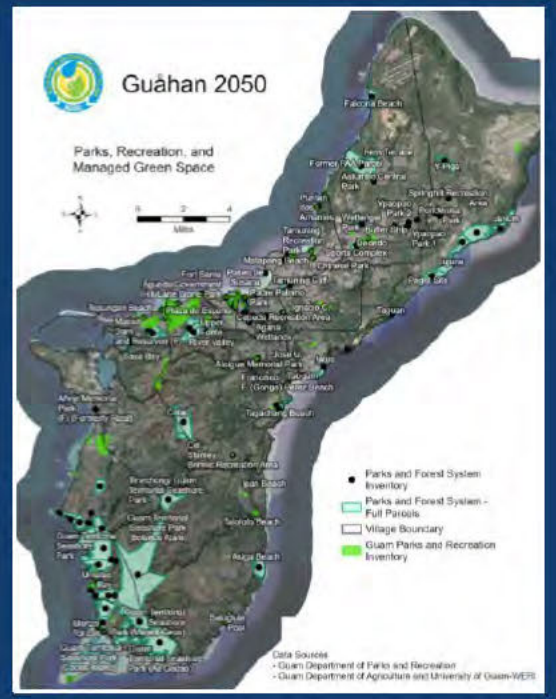
Vibrant Culture & Villages



- ➔ Protect cultural and historic sites
- ➔ Village-specific planning
- ➔ Community health and identity







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Balancing Trade-Offs

- Development and Environment
  - Affordable Housing vs. Drinking Water protection
- Economic Growth vs. Village character
  - "Right-sizing" and appropriate types of development in context
- Short-term needs and long-term resilience
  - Economic and Social Recovery vs. Investment in Future Generations



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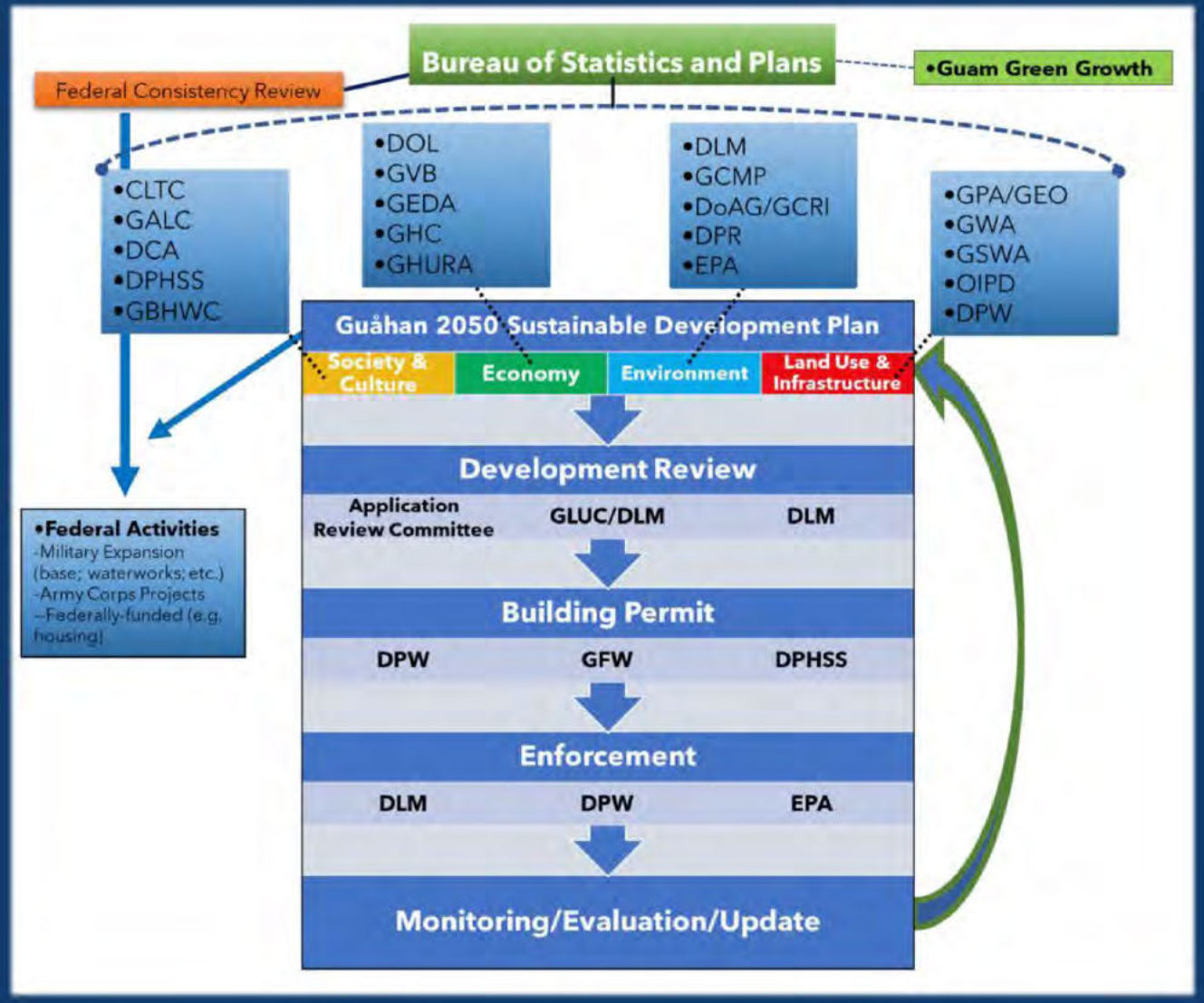
From Vision to Action

- Phased implementation to 2050
- Coordination and accountability
- Adaptive and transparent



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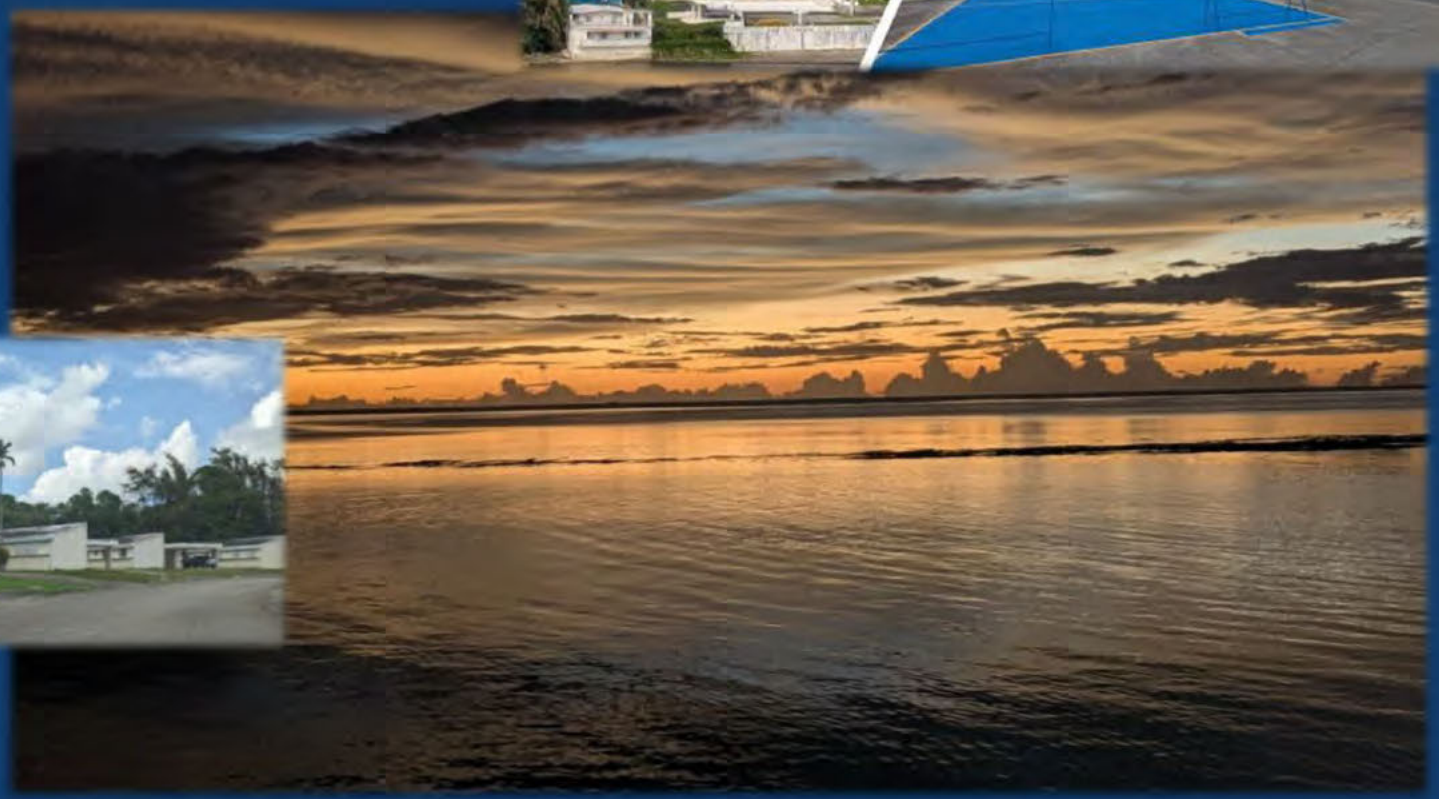
Planning for Generations

- Stewardship
- Balance
- Shared responsibility







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G50SP Public Comments and Response

Comment ID	Commenter	Page #	Section /Paragraph	Figure/Table #	Original Comment / Recommendation (verbatim)	Response	Plan Revision / Action Taken
GSP-001	Senator Sabina Flores Perez				I am submitting this comment in my capacity as an elected official regarding the 2050 Sustainability Plan. The goals of the Plan are holistic and effective, and I appreciate the effort to establish a long-term vision for Guam's future. However, I remain concerned that the process did not fully capture the broad range of concerns, experiences, and aspirations across our island community. Greater inclusiveness and broader public participation during the early stages of information gathering would strengthen the Plan and contribute to more effective long-term outcomes. I believe it is important to further engage the community on a larger scale before the Plan is finalized and re-drafted.	BSP implemented a multi-layered public engagement process to gather input from residents, stakeholders, and subject-matter practitioners. This included coordination with government entities and utility agencies, interviews with mayors, and collaboration with G3 to obtain information, feedback, and technical insights to inform the Guam 2050 Sustainability Plan. BSP also conducted village charrettes at the Inalåhan Mayor's Office, the University of Guam in Mangilao, and the Dededo Mayor's Office, complemented by a residential survey to capture community perspectives across the island. In addition, the 2050 Sustainability Plan was a featured topic during the Assembly of Planners, providing another venue for professional input.	
GSP-002	Senator Sabina Flores Perez				I also strongly recommend adding a dedicated section or chapter addressing the growing role and emerging challenges of Artificial Intelligence (AI) throughout the Government of Guam. As AI technologies become increasingly integrated into government systems, Guam will need thoughtful regulations and safeguards to address misinformation, inaccurate data, transparency, and the ethical use of AI in public decision-making, planning, and the judicial system. From a land-use and infrastructure perspective, this should also include consideration of data center development and the potential impacts on Guam's land, water, energy consumption, and environmental resources.	Policy for AI use should be developed separate from the G50SP. The land use plan has numerous policies that control allowable uses and potential impacts to public services, community, and environmental resources. Propose new policy specific to data centers.	ADD: SC-70a. Data Centers and High-Demand Digital Infrastructure. Require that data centers and other high demand digital infrastructure be planned, sited, designed, and operated in a manner that protects Guam's limited land, water, energy, and environmental resources; supports the island's renewable energy and sustainability objectives; and avoids or mitigates adverse impacts on communities, public infrastructure, and natural systems. Projects shall demonstrate consistency with Guam's sustainability, resilience, and equity objectives by minimizing energy and water consumption; protecting the Northern Guam Lens Aquifer and other sensitive environmental resources; avoiding or mitigating impacts to agricultural lands, cultural and historic resources, and village character; ensuring adequate infrastructure and public service capacity; reducing greenhouse gas emissions and other forms of pollution; and addressing potential cumulative impacts on energy demand, water supplies, climate adaptation efforts, and community well being. Data centers should be located in industrial areas with appropriate infrastructure capacity and designed to support Guam's transition toward a more resilient, efficient, and self sufficient future.

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G50SP Public Comments and Response

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GSP-003	Senator Sabina Flores Perez				Additionally, I remain greatly concerned about the long-term effects of federal funding reductions and broader geopolitical instability on Guam's economy and cost of living. While these issues are 2050 GSP Public Comment Form briefly acknowledged in the draft Plan, I believe they warrant a more substantial and focused discussion. There are many external factors beyond Guam's direct control that may significantly affect our island's economic stability, public services, and long-term resilience. I recommend adding a section specifically addressing strategies for adapting to federal funding cuts, global economic volatility, supply chain disruptions, and geopolitical shocks.	The draft plan acknowledges current and possible future cuts in federal programs. It includes discussions of potential local funding sources, including public-private partnerships, fees, and taxes. The proposed implementation plan includes direction to BSP to prepart a Sustainability Strategic Financing Plan (an integrated financing strategy for the Guåhan Sustainability Plan) with the first two years of implementation. Further research and development of potential funding sources is beyond the scope of the current phase of planning.	None
GSP-004	Senator Sabina Flores Perez				Finally, I respectfully recommend that the Sustainability Plan be reviewed and updated on a three-year basis rather than every five years. Shorter review periods would allow the Plan to remain more flexible, responsive, and adaptive to rapidly changing conditions and emerging challenges that may require immediate recalibration.	The five year review cycle is proposed taking into account available resources for planning work. A three-year review cycle could be contempleted if additional resources are made available to BSP.	Add a sentence to section 8.4.2: **Scheduled Plan Reviews and Updates.** "To ensure long-term relevance, the G50SP will undergo a formal review and update every five years, in coordination with government agencies and public stakeholders. These reviews will reevaluate goals, policies, and priorities based on progress achieved, changes in conditions, and emerging needs. A more comprehensive update may occur at the 10-year mark (2035), including new land use and development forecasts. BSP will prepare a status report as part of each five-year review to inform adjustments to the implementation strategy. Consider updating every three years if additional funding is available."

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G50SP Public Comments and Response

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GSP-005	Senator Sabina Flores Perez	1-3	Community Engagement		I recommend providing the public with the referenced "Appendix xx," to provide us with information on the subject matter experts, primary stakeholders, and focus groups who were involved in shaping the Sustainability Plan. This information is critical to transparency. I recall Sustainability Plan surve Plan? If so, that should be stated under Community Engagement. Overall, it seems as though increased and more widespread community engagement may be needed to ensure this Plan has captured a multitude of perspectives and opinions.	The Appendix will be made available online with other plan materials.	Post the Appendix
GSP-006	Senator Sabina Flores Perez	1-4	Regional Meetings		How were invitations for the regional meetings distributed to the public? BSP should provide this information, as well as exact numbers of residents who attended these meetings in each village.	The mayors of each village included in each regional meeting posted notices in the village about the meeting, and the Bureau of Statistics and Plans posted notices on Facebook, and Instagram regarding each meeting two weeks in advance. Finally, there were announcements placed in the Guam Daily Post and the Pacific Daily News one week and then again three days before each meeting. BSP can provide the roster for each meeting for public review.	

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G50SP Public Comments and Response

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GSP-007	Senator Sabina Flores Perez	1-10	Evolving Emphases and Differences		It is stated that 'some topics in 2022 received less attention in 2024/2025.' Can BSP clarify if anything changed in the ways surveys were structured within this timeframe or did the survey remain the same throughout the process? Can the evolution of answers be attributed to different demographics of survey takers in 2022 vs. 2024/2025?	Both surveys were conducted utilizing a Computer Aided Telephone Interviews (CATI) among randomly selected residents. The initial survey was among 500 respondents and the second was among 700 randomly selected respondents. The demographics of both surveys were similar to each other within the margin of error. There was no difference in the method utilized for each survey. The two surveys served different purposes. The first survey was to gauge the community's perception of the need for a sustainability study, what they felt sustainability meant and the issues most important to them that should be included in the Guahan 2050 Sustainability Plan. The second survey was designed to provide direct input into the sustainability plan which at its core was a land use plan. The questions were derived form an extensive qualitative investigation through individual interviews and focus groups conducted among community stakeholders, government officials and business leaders throughout Guam. That research raised a few hypotheses regarding issues important in guiding the land use and sustainability aspects of the plan. Those hypotheses were placed in four distinct categories: -Prosperous economy -Thriving environment -Sustainable community, and -A vibrant culture. Questions were developed to address each of the hypotheses identified in each of these categories. So, while different in purpose the two surveys were complementary which helped to translate general concerns and issues into evidence to support the specific policy recommendations in the plan.	

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G50SP Public Comments and Response

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GSP-008	Senator Sabina Flores Perez	1-11	Equity		I recommend amending the phrase “How can Guam sustain the military buildup…” to read: “How can Guam sustain land availability, ensure infrastructure and housing needs are met, and protect CHamoru cultural sites and artifacts in spite of the military buildup?”	Noted. Clarifying edits are proposed.	Edit the following paragraph, p. 1-11 as follows: "Equity. Sustainability cannot be achieved without social equity and environmental justice. How can Guam sustain the military buildup or support the economy if there are not enough affordable homes to live in or good jobs for all of Guam’s residents the island, including its special environment and cultural resources, in the face of the military buildup, if there are not enough affordable homes to live in or good jobs for all of Guam’s residents? How can Guam thrive if it does not invest in each of the villages to support a vibrant culture of island stewardship and care?
GSP-009	Senator Sabina Flores Perez	1-11	Social Cohesion		In reference to transit-accessible development, please add: “to ensure all residents- especially elders, individuals with disabilities, youth, and lower-income households…”	Agree. Proposed edits on page 1-11.	Edit text on page 1-11 section 1.1.4. as follows: The Guåhan 2050 Sustainability Plan responds to these challenges by integrating social equity and cultural sustainability into its land use policies and infrastructure planning. As explained below, the plan promotes compact, walkable, and transit-accessible development to ensure all residents—especially elders, individuals with disabilities, youth, and lower-income households—can access education, health care, recreation, and support services. It encourages the co-location of schools, clinics, childcare, and social service facilities within village centers and mixed-use neighborhoods.
GSP-010	Senator Sabina Flores Perez	1-11 - 1-12	Social Cohesion		Instead of using the term “senior-friendly,” use “accessible designs” instead.	Agree. Proposed edits on page 1-12.	Edit text on top of page 1-12 as follows: Policies also support diverse housing options, including multi-generational and accessible senior-friendly designs

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G50SP Public Comments and Response

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GSP-011	Senator Sabina Flores Perez	1-19 – 1-20	1.2.4 Cultural Heritage and Indigenous Connections		The G50SP needs to clarify that the military buildup and military construction is currently one of the biggest threats to cultural resources, including native flora and fauna. The Plan should also clarify that 'preservation-in-place' should be the main goal of protecting ancient remains, historic sites and cultural artifacts. Preservation-in-place provides us with a full picture of how our ancestors once lived. Once historic sites are disturbed and resources are removed, these immediate connections are severed and difficult to piece back together. Preservation-in-place should be a default practice by the Department of Defense (DoD), as cultural artifacts continue to be lost or broken in the process of military construction despite agreements meant to preserve them. The Plan should highlight the importance of the National Historic Preservation Act Section 106 process vs. relying on Programmatic Agreements for the protection of historic sites and cultural resources. However, BSP should request to be a 'consulting party' for Section 106 processes and all existing programmatic agreements. In terms of connecting the community to our culture, the Plan should include a Public Access Plan that will be fully implemented for both cultural properties on and off DoD property.	The plan describes the impacts of the military buildup in multiple locations, including impacts to affordable housing, transportation, the NGLA, cultural, and environmental resources. The intent of cultural resource policies is to protect these resources in place, including through policies VC-1, VC-2 ("Identify, preserve, and protect historic/cultural properties."), VC-9, VC-10, VC-15, and VC-16. Policy IP-3 and IP-5 direct collaboration with the federal government and use of the Federal Consistency review process to assure that all federal government activities, including those related to the military buildup, are consistent with the G50SP," Section 6.2.5. "Protecting Historic Resources" describes the role of the National Historic Preservation Act and following policies VC- to VC23 are intended to protect historic and cultural resources. Clarifying edits are proposed for Policy IP-3.	Amend Policy IP-3. **Intergovernmental Coordination.** The Government of Guam shall coordinate as necessary with the U.S. Department of Defense and the Joint Region Marianas, <u>including through the federal consistency process and other available consultation processes (such as section 106 of the National Historic Preservation Act),</u> concerning the military population, including personnel and their families, and other related demands, as well as natural resources, <u>historic and cultural resources,</u> land use, economic, social, environmental, infrastructure, and other impacts.
GSP-012	Senator Sabina Flores Perez	1-20	1.2.4 Community Health & Well-Being		There is a need for additional sites for placement of junk/abandoned vehicles. The Plan should identify lots designated for the safe storage of junk/abandoned vehicles in ways that don't pose fire or contamination hazards. Designation of these lots should be aligned with GEPA and other safety regulations, preferably in an already-developed area. Enforcement would be needed to ensure that these vehicles are safely stored, with all of its dangerous contaminants and components removed and recycled/properly disposed of.	Agree. The plan acknowledges the Abandoned Vehicle Program (p. 3-58). Policy SC-31. Infrastructure Siting Coordination, directs that BSP and other agencies "Use land use planning to reduce illegal dumping by ensuring accessible, conveniently located drop-off and processing facilities."	It is not necessary to identify additional sites for placement of junk/abandoned vehicles as this is already in place. Junk/abandoned vehicles can only be placed in heavily industrialed zoning areas; and you must have a permit.

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G50SP Public Comments and Response

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GSP-013	Senator Sabina Flores Perez	2-11	2.2 Coordination with the DoD		Other aspects of coordination with the DoD that will increase Guam's sustainability that should be included in this Plan: • Negotiation/Coordination for the assessment, cleanup, and return of unused federal lands to their original owners or to the Government of Guam (e.g. the CHamoru Land Trust Commission-CLTC) when original owners cannot be found. • Negotiation or opposition when the DoD aims to utilize or purchase private land for the development of military housing. No increase in DoD footprint and no further acquisition of lands by Department of War (DoW). • Negotiation to prevent further harm to ecologically and culturally sensitive lands caused by military construction. • Negotiation/coordination for Guam residents to be included within the Radiation Exposure Compensation Act (RECA). • Negotiation/coordination for funding infrastructure development (e.g. energy, sewer/public wastewater systems, telecommunications) on CLTC land specifically for the development of housing. • Negotiation to increase funding for contamination mitigation and requiring the DoD to clean up Superfund sites or prohibit Open Detonation of munitions waste. • Negotiations for Guam to not be required to pay for Fena Lake water. I request that BSP works towards collaborating with the DoD to establish data sharing with GEPA, GWA, or WERI regarding potential contaminants in the Fena Reservoir. In previous years, it seemed as though the DoD shared no data regarding Fena Reservoir with local agencies. Although pg. 2-13 does have an objective that states "Coordinate proactively with the U.S. DoD to mitigate impacts," it may be helpful to list specific goals/plans such as the ones listed above.	Chapter 8 Implementation Plan(p. 8-11) recommends the establishment of a GovGuam-U.S. Government Planning Task Force to coordinate and integrate GovGuam and U.S. government planning objectives, including financing and impact mitigation strategies. This could include the various coordination aspects suggested in the comment.	

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GSP-014	Senator Sabina Flores Perez	2-12	2.3 Land Use & Sustainability for the Island and People		Please clarify the use of the word “mitigation” in this context. What are we aiming to mitigate and what are ‘mitigation investments’ (later in the same section) referring to? There needs to be a full accounting of cumulative impacts by DoD, and we need to advocate for avoiding these impacts rather than mitigating them.	The plan describes the impacts of the military buildup in multiple locations, including impacts to affordable housing, transportation, the NGLA, cultural, and environmental resources. Mitigation in this context refers to offsets, including monetary, to account for any impacts to island resources from the military buildup. Investments might consist of expenditures by the federal government in anticipation of land use mitigation (e.g. infrastructure development), or financial transfers to the Government of Guam to offset impacts to social, environmental, and cultural resources from federal government activitie.	
GSP-015	Senator Sabina Flores Perez	3-16	3.2.6	Table 3-3	MU Mixed Use: Hotels are mentioned in both R-2 Permitted Uses and under Conditional Uses. It would be best to keep “hotels” under Conditional Uses rather than Permitted Uses within mixed-use developments. The primary focus for Mixed Use developments should be residential rather than tourist- affiliated. Therefore, removing hotels as a permitted use may be necessary. The Plan may also need to establish a list of businesses that are not allowed in mixed-use zones, known as commercial-use restrictions, such as: • bars, night-clubs, gas stations, liquor stores, vape stores, cannabis dispensaries, heavy manufacturing plants, and adult-oriented shops and entertainment establishments, and others in order to prevent a mix of uses unsuitable for residential use.	Hotels are removed as a permitted use in R-2 and MU zones but allowed as conditional. Policy SC-58, "Land Use Compatibility," directs that residential areas are, "where necessary, protected from and do not conflict with adjacent uses, such as intensive industrial, commercial, and agricultural land use activities." This provides a basis for assuring that incompatible commercial usess are sited in proximity to residential areas.	Strike hotels as a permitted use in the R-2 zone (keep as conditional).
GSP-016	Senator Sabina Flores Perez	3-16 – 3-22	3.2.6	Table 3-3	Could BSP please highlight all the specific changes suggested for zoning (that differ from the current zoning law) in a different color? This will make it easier to compare suggested changes to current law.	Table 3-2 will be replaced with a version showing changes from existing land use designations and uses to proposed designations and uses.	Replace Table 3-2 with an updated version showing changes from existing to proposed land use designations, permitted uses, and conditional uses.

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GSP-017	Senator Sabina Flores Perez	3-20	3.2.6	Table 3-3	Under RL/Rural Lands, Conditional Uses, remove “golf courses” from #6. To perpetuate responsible and sustainable land-use, it is critical to discourage any further use of lands as ‘golf courses’ as they are a waste of green space and water. I respectfully request that BSP consider promoting policies to discourage the proliferation of recreation that harms the environment. How can we amend the law to promote this initiative? • #7: Extractive industry should not be allowed near any type of residential or agricultural area, as they lead to high rates of chronic illness, environmental degradation, noise impacts, and are overall unsuitable for community-living. These same comments apply to all other land-use designations, including	Concur. Golf courses may be deleted as a conditional use in the Rural Lands designation. Future golf course proposals could be considered through a land use plan/zoning amendment. "Extractive Industry" may be deleted as a conditional use in the RL category and potentially pursued through a land use plan/zoning amendment.	Delete "golf courses" as conditional use in RL designation. Delete "extractive industries as a conditional use in the RL zone.
GSP-018	Senator Sabina Flores Perez	3-23	3.3.1		Add to: • (Protecting the NGLA): Collaborate with the Guam Environmental Protection Agency to update rules and regulations regarding enforcing the construction of public sewers prior to development/construction, including requiring all/any developers to pay for sewage infrastructure. • (Sustainable Water and Wastewater Management): o Prioritize and incentivize businesses towards low-impact development vs. businesses that intensively consume resources at the detriment to the resident population. o Ensure GEPA develops regulations for water catchment systems and incentivize the addition of water catchment systems in homes and businesses.	Primary responsibility for enforcement of the proposed G50SP would be with BSP and DLM through the land use entitlement process. proposed new development inconsistent with the public services requirements should not be approved. EPA is a collaborating partner in the development review process. Low impact development is addressed in the stormwater and watershed management sections of the plan. Water catchment systems may be considered as an additional water supply, subject to further review by GEPA.	Amend SC-13, Private Water Supply, as follows: Private water supply systems shall be designed, operated, and function consistent with the protection of public health. Consider water catchment systems subject to further review by GEPA.

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GSP-019	Senator Sabina Flores Perez	3-34	3.3.3.2		Add paragraphs that discuss: • Ensure funding for DPHSS Environmental Health branch to conduct islandwide testing of water stations at private businesses to ensure filtration systems are operating properly and to enforce contamination mitigation. • Develop policy to test/screen local and imported bottled water for contaminants and ban those which test positive for high levels of contaminants. (there is no international regulatory body for testing bottled water).	As a land use plan, the G50SP has limited ability to affect public and environmental health standards and monitoring. Proposed policy SC-13 requires that private water supply systems (such as use of water stations and imported bottled water) shall be designed, operated, and function consistent with the protection of public health. New development with private water supplies may be reviewed for consistency with public health and safety standards.	
GSP-020	Senator Sabina Flores Perez	3-40	3.3.4.5		Although this suggestion is not a GWMP strategy, it could be added to the Plan: • Density of septic systems needs to be regulated so that it does not impair water quality. This can include amending the existing law pertaining to parental and decedent lots. • Prevent harmful and illegal subdivisions that utilize septic systems through enforcement and monitoring.	The G50SP addresses septic systems over the NGLA through proposed changes in zoning for the current "A" zone by rezoning lands to RL and A, limiting subdivision with public sewer, and increasing minimum lot sizes, consistent with recent legislative action on septic density. Enforcement of the G50SP would seek to prevent illegal subdivisions.	
GSP-021	Senator Sabina Flores Perez	3-47	3.3.5.3		GRTA is set to receive around 40 new buses for public transportation. This can be added to the updated Sustainability Plan. However, adequate maintenance of these buses must be established as a priority. Another idea for the Plan would be to discuss retrofitting these buses in the future to transition them from diesel to either electric or bio-fuel. Another aspect of GRTA that needs improvement is the condition of leased vehicles/vans from private businesses. Before any vehicle is purchased or leased from private companies, they need to be inspected to ensure that they are in good working order and comply with the terms of the lease.	Concur.	Amend SC-18, Adequate Roads, Circulation, and EV Infrastructure, as follows: New development shall be served by adequate public roadways and circulation capacity, including bicycle, pedestrian, and transit options and supporting infrastructure (e.g., bike racks, lighting, benches), consistent with applicable federal standards. EV charging infrastructure shall be supported to meet EV demand. New and existing public transportation infrastructure shall maximize opportunities to use sustainable power, such as electric vehicles, and be maintained to ensure long-term efficiency.

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GSP-022	Senator Sabina Flores Perez	3-47/48	3.3.5.4		At areas of high traffic, more crosswalks with street lights are needed to prevent pedestrian injury and fatalities. To improve accessibility, install crosswalk infrastructure with sounds such as those in Japan- for people who are visually impaired.	Proposed policies SC-18 and 19 provide require adequate pedestrian infrastructure in new development (including "safe" designs: **SC 18. Adequate Roads, Circulation, and EV Infrastructure.** New development shall be served by adequate public roadways and circulation capacity, including bicycle, pedestrian, and transit options and supporting infrastructure (e.g., bike racks, lighting, benches), consistent with applicable federal standards. EV charging infrastructure shall be supported to meet EV demand. **SC-19. Multi-modal Transportation.** Public roads shall be designed and operated for safe, multi-modal transportation, including automobile, bicycle, and pedestrian use. Existing roads shall be regularly assessed and those not in compliance with required safety standards shall be upgraded as soon as possible. Existing transportation facilities shall be enhanced with bicycle and pedestrian infrastructure, including bike lanes, sidewalks, and crosswalks.	Proposed policies SC-18 and 19 provide require adequate pedestrian infrastructure in new development (including ""safe"" designs: SC 18. Adequate Roads, Circulation, and EV Infrastructure. New development shall be served by adequate public roadways and circulation capacity, including bicycle, pedestrian, and transit options and supporting infrastructure (e.g., bike racks, lighting, benches), consistent with applicable federal standards. EV charging infrastructure shall be supported to meet EV demand. Amend SC-19. Multi-modal Transportation. Public roads shall be designed and operated for safe, multi-modal transportation, including automobile, bicycle, and pedestrian use **in compliance with the American with Disabilities Act**. Existing roads shall be regularly assessed and those not in compliance with required safety standards shall be upgraded as soon as possible. Existing transportation facilities shall be enhanced with bicycle and pedestrian infrastructure, including bike lanes, sidewalks, and crosswalks.
GSP-023	Senator Sabina Flores Perez	3-56	3.3.7.2		Another aspect of collaboration with the U.S. DoD should include encouraging waste reduction/diversion practices on-base. For example, collaborating with base authorities to enforce plastic bag bans and the existing Bottle Bill regulations. Without DoD collaboration, enactment of the bottle bill has been indefinitely delayed. This program should be re- enacted with base collaboration.	Concur. Chapter 8 Implementation Plan(p. 8-11) recommends the establishment of a GovGuam-U.S. Government Planning Task Force to coordinate and integrate GovGuam and U.S. government planning objectives, including financing and impact mitigation strategies. This could include waste management.	

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GSP-024	Senator Sabina Flores Perez	3-59	3.3.7.6		The Islandwide Residential Waste Collection law (Public Law 38-39) has passed and is set to enact some time in 2027. Please update the Plan to reflect this change in law.	Concur.	Add the following paragraph at the end of section 3.3.7.6: In 2025, Guam enacted Public Law 38-39, establishing an Islandwide Collection Plan administered by the Guam Solid Waste Authority (GSWA). The law requires most residential properties to subscribe to either public or private solid waste collection services, with the goals of reducing illegal dumping and litter, increasing participation in waste collection, improving operational efficiency through economies of scale, and strengthening the long-term financial sustainability of GSWA. The law also creates a Customer Assistance Program for eligible low-income households, authorizes subsidies and lifeline-rate assistance, and provides exemptions for certain vacant properties, self-haulers, and properties served by private haulers. By moving toward universal waste collection, the legislation represents a significant step toward improving solid waste management, protecting public health, and advancing Guam's broader sustainability and environmental stewardship objectives.
GSP-025	Senator Sabina Flores Perez	3-62	3.3.8.3		It should be mentioned that the Ukudu Power Plant is almost operational now in 2026.	Concur.	Amend the second paragraph of section 3.3.8.2: "The completion of the 198 MW Ukudu Power Plant was commissioned in December, 2025 and celebrated with a ribbon-cutting in May, 2026. It will is expected to provide critical new base load capacity, replacing older fossil-based units and enabling the retirement of the Cabras 1 & 2 steam plants. However, construction delays from Typhoon Mawar have postponed full operational status until at least 2025. In the interim, GPA continues to rely on its interruptible load program, smart grid technology, and rotating outages during peak periods to maintain grid stability. Long-term reliability will require resilient infrastructure, grid automation, and diversified generation sources.

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GSP-026	Senator Sabina Flores Perez	3-65	3.3.9.1		Precautions need to be taken to ensure that data centers do not proliferate to the extent that they negatively impact water resources or harm the environment. Land-use and siting for data centers must be cognizant of water-use, power generation capacity, and surrounding residential areas- to ensure the community is safe from any harm that data centers (such as those in the states) can cause. In fact, the newly constructed data center in Tamuning should be heavily monitored for years to come, to ensure it does not negatively impact the surrounding community. I recommend that this Plan discuss the potential negative impacts associated with data centers and the use of artificial intelligence, especially those impacts on the environment and infrastructure.	See Response to Comment GSP-002	
GSP-027	Senator Sabina Flores Perez	3-69	3.3.10		More must be done to ensure that fire suppressant (firefighting foam) used at the airport does not become a significant source of PFAS contamination, in regard to runoff and the protection of nearby water sources. Implement use of a PFAS-free firefighting foam as soon as practicable when it's available. The Plan should discuss plans to mitigate the run-off of contaminants like PFAS from the airport.	Mitigation of potential PFAS contaminants at the airport may be addressed through **Policy SC-46, Integrate Sustainable Stormwater Management into Airport Development**, requires "all new and redeveloped airport and adjacent facilities to implement sustainable stormwater management practices consistent with other policies of this plan, including green infrastructure, detention systems, and runoff quality treatment to manage flood risks and protect water quality."	
GSP-028	Senator Sabina Flores Perez	3-77	SC-32		Edit "disproportionally" to "disproportionate."	Concur.	Edit Policy SC-32. Distribution of Waste Management Infrastructure: Ensure that zero waste infrastructure and services are equitably distributed without disproportionately impacts across the villages. Engage village residents in site selection and planning of reuse and recycling facilities

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GSP-029	Senator Sabina Flores Perez	3-78	SC-35		Regarding land to avoid placing large solar arrays, please include: • land near (within a certain distance of) watersheds/atop the Groundwater Protection Zone (GPZ), and • culturally significant sites with medium to high potential of having cultural artifacts &/or ancestral remains.	Concur. The intention of policy SC-35 is to protect all significant resources. See proposed clarifying amendments.	Amend SC-35,. **Locating and Planning for New Energy Facilities** as follows: a. Energy facility development shall be located to avoid adverse impacts to natural resources (including groundwater), parks, cultural resources, significant visual resources, and communities to the maximum extent feasible. This includes utilizing distributed and diverse energy sources using developed locations, such as solar facilities over public parking areas and larger industrial and commercial buildings. b. Large Solar Arrays. BSP shall complete, in coordination with GPA, DLM, and other relevant agencies, a siting and feasibility study to identify appropriate locations for large solar arrays that (1) avoid to the maximum extent feasible lands designated as resource conservation or prime agricultural land, sensitive habitats, wetlands, or streams, cultural resources, other significant environmental resources, and land located in a hazard zone, including coastal setback areas, flood zones, and steep slopes or unstable lands; (2) consider and minimize potential impacts to residential areas; (3) minimize impacts to scenic landscapes or public views; and (4) optimize proximity to the power grid and other energy system infrastructure.

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G50SP Public Comments and Response

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GSP-030	Senator Sabina Flores Perez	3-83	3.4.2		Recommend policies pertaining to blight buildings and areas.	Chapter 4 addresses redevelopment, including addressing blight: **PE-12. Redevelopment.** Promote redevelopment of commercial and residential properties in designated areas. Consider opportunities for redevelopment before allowing new development in rural areas. **PE-13. Redevelopment for Affordable Housing**. Consider redevelopment of existing buildings for affordable housing. Amend zoning codes to support creative reuse. **PE-14. Rejuvenation of Existing Properties.** Promote investment, refurbishment, and enhancement of existing commercial and residential properties in core urban areas, especially the tourist and hotel districts in Tamuning. Use tax or fee reduction incentives to promote investment and refurbishment of dilapidated and blighted properties.	
GSP-031	Senator Sabina Flores Perez	3-92	SC-57		Address setback changes that can increase density while avoiding environmental impacts such as 'increasing the height restrictions for residential buildings in sewered areas only.'	Policy SC-60, **Planned Unit and Other Innovative Housing**, provides: Where appropriate, promote innovation in housing, such as small lot development, flexible setbacks, attached single family residential development, mid-rise development, mixed-use buildings, clustering and other measures that support design creativity. Use Planned Unit Development (PUD) designations where appropriate.	
GSP-032	Senator Sabina Flores Perez	3-104	Land Use Policy Implications, last paragraph	Suitability Guidelines for Submerged Cable Landings on Guam (2023)	Edit "Cham01rn Land Trust Commission" to CHamoru Land Trust Commission	Concur.	Edit "Cham01rn Land Trust Commission" to CHamoru Land Trust Commission on page 3-1-5 (Suitability Guidelines...).

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G50SP Public Comments and Response

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GSP-033	Senator Sabina Flores Perez	3-117	Agriculture and Rural Lands Policy		• Encourage youth farming initiatives: DOAG in collaboration with UOG CIS and non-profits such as Guahan Sustainable Culture and/or Guam Unique Merchandise & Art (GUMA) to promote farming & agriculture as a steady career path and/or economic driver. Encourage gardening or farming in public schools as an extracurricular or core class, if possible. • Improve policies or funding to combat the spread of invasive species. One option could be to prohibit the import of fertilizers or to subsidize/encourage the use of locally made compost & fertilizer. • Promote the use of community gardens for food distribution.	The plan proposes policies that support the promotion of farming and agriculture as an economic and sustainability driver, including: PE-11. Subsistence and Community Agriculture: Protect and promote agricultural and rural lands capable of supporting subsistence and community agricultural activities. Encourage small-scale farming in community gardens and on residential properties where appropriate. VC-26. Active Lifestyles: Mandate the inclusion of pedestrian-friendly infrastructure, bike paths, and public transportation connectivity to promote active lifestyles. Designate and protect areas for community gardens, nature reserves, and urban forests to improve air quality and provide mental health benefits. Develop a network of multi-use trails and recreational areas that promote physical activity and social interaction. Introduce programs that encourage the use of parks for fitness, education, and cultural exchange. VS-57. Agricultural and Small Business Support. Promote mixed-use and agri-commercial zones that allow integration of small farms, community gardens, and food-related microenterprises within the village core and outskirts. The plan also addresses invasive species in multiple sections and includes two specific policies. VS-34. Invasive Species. Control feral pigs and other invasive species to allow for utilization of residential gardens. TE-107. Living Organisms. Protect the continued existence of optimum populations of endemic and non-invasive species of living organisms in Guam's territorial seashore. Integrate invasive species controls with watershed management/erosion control, reforestation and habitat protection.	

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G50SP Public Comments and Response

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GSP-034	Senator Sabina Flores Perez	3-117/3-125	3.7.1/3.7.4	Hazard Risk Reduction & Disaster Safety	The Sustainability Plan should take into consideration all the already existing infrastructure near the coastline that may need to be moved inward if sea-levels continue to rise over the next decades, including roads & streetlights close to the coast in Merizo, Inalajan, Agat, Anigua, east Agana, etc., housing developments, cemeteries, & other infrastructure that may eventually be impacted by sea-level rise. Despite having plans for coastal breaks and seawalls, etc., we should also have plans in place to move infrastructure inland, gradually & when needed. Priority for stormwater drainage and flood mitigation should be given to areas in the south that are prone to extreme flooding, due to recent incidents during extreme weather events.	Agree. The plan discusses shoreline hazards, sea level rise, and the need for adaptation planning, including possible retreat (3-128). The plan includes the following policies: SC-126. Shoreline Adaptation Plans. Maintain the Guam Shoreline Atlas in support of shoreline adaptation plans for areassubject to wave hazards, erosion, and long term sea level rise. Plans should include short and long-term goals consistent with the G50SP, management strategies, policies, and actions to achieve the goals, and monitoring to ensure effectiveness. Plans should consider shoreline vulnerability, projected shoreline changes, and preferred strategies for maintaining safety, maximizing public access and recreation, and avoiding natural resource impacts, including shoreline restoration, realignment or relocation of development elevation and flood-proofing, living shorelines, and other protective measures. VS-11. Climate and Hazard Resilience. Ensure that all village land use plans address hazard mitigation and climate adaptation through strategies such as shoreline management, flood mitigation infrastructure, and emergency preparedness. VS-75. Shoreline Management. Consider establishing a shoreline management district to promote beach protection and tourism, water quality enhancement, public shoreline access and adaptation to sea level rise.	
GSP-035	Senator Sabina Flores Perez	3-135	3.7.6		If possible, DOAG & GFD could also conduct wildfire educational campaigns & fire prevention trainings with Guam's licensed hunters and during hunting derbies, since several fires are thought to occur as a hunting strategy.	Agree. The plan includes policies to address wildfire, including through the development of community protection plans, which could include education of specific groups. Clarifying language is proposed to policy SC-132.	Amend SC-132, Minimize Fire Hazards/Community Wildfire Protection Plans, as follows: Minimize fire hazards by appropriately siting development and managing fuels and ensuring adequate fuel breaks and firebreaks and buffers around high-risk areas. Develop Community Wildfire Protection Plans (CWPPs) for management areas and neighboring communities to identify and prioritize areas for hazardous fuel reduction treatments and recommendations to break the fire cycle. Use educational campaigns to reduce the risks of human-caused fires.

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G50SP Public Comments and Response

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GSP-036	Senator Sabina Flores Perez	4-16	4.3.6		Utilize Ko'ko's Island as a model for eco-tourism and conservation, with particular activities such as: • Enabling nature walks and conservation tours for small groups (tourists/locals) • Providing grants/assistance to groups like Friends of Island Dano for snake eradication • Camping trips for tourists and locals, with local guides from Malesso • Bird watching (ko'ko' bird) tours	The plan promotes eco-tourism as a sustainable economy strategy. Policies provide ample basis for pursuing the possible use of Ko'ko's Island as a model for ecotourism. In addition, the implementation plan in Chapter 8 identifies eco-tourism initiatives as an action in 2028, possibly led by GVB, GPT, SHPO, DPR, DOAG, and the Mayors Council. Policies include: **PE-21. Eco-tourism**. Promote eco-tourism initiatives that respect local culture and natural resources. **VS-79. Balanced Community Development.** Promote sustainable development that preserves local heritage sites while improving infrastructure. Promote eco-tourism, small-scale businesses and residential development, while avoiding high-rise developments. **VS-72. Scenic Landscapes and Sustainable Tourism.** Preserve scenic landscapes and promote eco-tourism. Enhance recreational facilities, improve road networks, and support sustainable growth.	
GSP-037	Senator Sabina Flores Perez	4-23	4.6		Career-based educational opportunities and workforce development should start in middle school through high school. We should promote the construction of facilities related to trade, art, etc. in GDOE schools, or the conversion of already existing classrooms for such purposes.	Concur. The plan emphasizes the importance of community facilities, including: SC-71. Critical Infrastructure and Community Facilities.: Provide well-planned and adequate locations for important infrastructure and community uses, such as renewable energy facilities and civic buildings.VS-3. Community Facilities. Ensure that every village has access to well-maintained, adequately sized community facilities—including libraries, mayor's offices, and multipurpose centers—to support local programming and services.	Amend VS-3, Community Facilities, as follows: Ensure that every village has access to well-maintained, adequately sized community facilities—including libraries, mayor's offices, innovative school spaces supporting workforce development, and multipurpose centers—to support local programming and services.
GSP-038	Senator Sabina Flores Perez	4-24	4.6.1	4-5	19 is not an adequate sample size for this data graphic. I recommend that responses be broken down by village, number and percentage of respondents, and answers. Throughout the Plan, each graph should list the number of respondents to each survey. Having context behind the provided data will give better insight into answers/the community's greatest concerns.	Additional data analysis is beyond the scope of the current G50SP work program. Survey methods and analysis are documented in the plan and supporting appendix. Analytical conclusions or inferences are qualified with data limitations where appropriate.	

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G50SP Public Comments and Response

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GSP-039	Senator Sabina Flores Perez	5-7		Summary of Water Resources on GU: Recommendations	To "Land Use Planning," add: encourage the development of sewer infrastructure to replace septic systems in areas over the NGLA- with policies that require developers to install sewage infrastructure for new housing/commercial developments and/or provide funding for the broad installation of sewer systems throughout northern Guam. To the list, add: "Research the potential effects the proliferation of data centers could have on water resources throughout Guam."	Chapter 3 Policies require new development over the aquifer to be supported with public sewer or otherwise comply with EPA septic discharge rules. The plan highlights the potential for federal mitigation monies to support needed infrastructure development, like sewer and roads. See comment GSP-002 above regarding data centers.	

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G50SP Public Comments and Response

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GSP-040	Senator Sabina Flores Perez	5-55	5.4.4		Guam is biodiverse in its species and ecosystems, which include: - Limestone forests - Wetlands - Savannas - Mangrove - Coastal areas - Ravine/Riparian areas There is a huge impact on these terrestrial habitats due to development and deforestation, and more needs to be done to protect these unique native ecosystems, in terms of (1) removing invasive species, (2) successfully outplanting native tree species, and (3) protecting critically endangered plants and animals from development and the military buildup. We need an integrated ridge-to-reef conservation approach, with residents becoming stewards of sensitive terrestrial and marine habitats. Even with federal laws in place, protection of native species has faltered. Therefore, more local measures are needed to protect species that fall through the cracks such as the mother Hayun Lagu tree.	Policies require protection and avoidance of significant habitat areas, including: TE-77. Sensitive Habitat Protection. Development shall protect and enhance Guam's sensitive terrestrial habitats and species. TE-84. Habitat Avoidance. Locate new development outside of sensitive habitat areas to the maximum extent feasible. Within habitat areas, allow only development dependent on the resource, such as restoration work, or low-intensity, passive recreation and nature study. Policies also require coral reef protection through watershed management, ridge to reef, including: TE-91. Decreased Land-based Sources of Pollution (LBSP). Enhance the resilience of Guam's coral reef ecosystems by reducing the introduction of sediment, nutrients, and pollution from coastal development, fires, land-based recreational users, and agriculture in Guam's watersheds. TE-92. Best Management Practices. Require use of best management practices, including stormwater management, erosion control and green infrastructure technology, at commercial and residential sites, consistent with the G2050SP. TE-93. Building Code Update. Update Guam's Building Code to include green infrastructure requirements for new development TE-94. Sediment Control. Install sediment catchment systems in appropriate areas with consideration of future climate change impacts, including changing precipitation and storm patterns. TE-95. Watershed Restoration. Implement watershed restoration in priority watersheds. TE-96. Land Protection. Promote land conservation through acquisitions and conservation easements. TE-97. Fire Mitigation Plans. Develop plans to restore watersheds with native and fire resistant vegetation and fire breaks at the Wildland-Urban Interface (WUI). TE-98. Reduce Agricultural Impacts. Reduce the impacts of agriculture by promoting organic farming, appropriate farming methods on steep hillsides, preventing burning for land clearance, and controlling adverse pesticide use. TE-99. Sustainable Recreational Use. Use maximum and conspicuous	

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GSP-041	Senator Sabina Flores Perez	6-12	6.2.2		After Guam Preservation Trust, please add a section that discusses the job of the State Historic Preservation Office in cultural preservation especially in regard to military & federal projects, reburials, and collaboration with the Cultural Repository. Please also add a section about the Cultural Repository. Programmatic Agreements between SHPO & federal partners could be explained in this added section as well. Or Programmatic Agreements can be explained in Section 6.2.5 on page 6-16 (the final paragraph). Please note that the Guam Preservation Trust is currently asking for responses to the Guam National Heritage Area Feasibility Study by the National Park Service: https://parkplanning.nps.gov/projectHome.cfm?projectId=124223	The role GSHPO is discussed in section 6.2.5, including its responsibilities in consultations with the federal government. Additional information is recommended to address the comment.	Add the following text at the end of section 6.2.5: "Finally, the Guam Cultural Repository (I Sagan Fandipositon Kotturåt Guåhan), a partnership between the University of Guam and the Department of Chamorro Affairs, serves as the island's primary facility for the preservation, curation, research, and repatriation of cultural artifacts, archaeological collections, and historical records. Supporting both the Guam Museum and regional cultural research, the Repository plays a critical role in safeguarding Guåhan's tangible and intangible heritage. The facility also highlights the importance of preserving cultural resources in situ whenever possible, recognizing that many archaeological collections have already been displaced by military activities, tourism, and development, and emphasizing the need to protect Guam's cultural landscapes for future generations. Policies highlight the importance of working with this repository and other opportunities to preserve historic and cultural resources. This should include opportunities such as the current solicitation by the National Park Service concerning the Guam National Heritage Feasibility Study (https://parkplanning.nps.gov/projectHome.cfm?projectID=124223)."
GSP-042	Senator Sabina Flores Perez	6-22	Following VC-23		Add: • Promote preservation-in-place as the main method of protecting ancestral remains and cultural artifacts across all agencies. • Prepare safe & secure public spaces (e.g. museums, set aside areas of a park) for displaying repatriated artifacts to be displayed. Prepare specific sites for the return and reburial of repatriated ancestral remains.	See comment GSP-011. The intention of proposed policies is to address the listed concerns.	

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G50SP Public Comments and Response

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GSP-043	Senator Sabina Flores Perez	6-24	6.3.2		Please clarify the following statement: “The land use [sustainability] plan also recognizes the current effort to site work toward potentially developing a new hospital and has assigned a property designation accordingly.”	Section 6.3.2 was updated to include the following paragraph: "The Guam 2050 Sustainability Plan provides an overarching framework that supports this balance by aligning essential public facilities with appropriate land use designations. With respect to the need for new hospital services the plan designates the Mangilao parcel and approved by the Guam Land Use Commission, as well adjacent area, as suitable for institutional and community service uses (public facility) —consistent with development of a new hospital and associated health infrastructure. By guiding the hospital’s siting within an already planned institutional area, the Guam 2050 Plan helps ensure that critical health investments advance in a manner consistent with long-term sustainability goals, coordinated infrastructure expansion, and protection of surrounding land uses and community character."	
GSP-044	Senator Sabina Flores Perez	6-31	6.3.5:		Can the Plan include a targeted investment in designing and constructing an ADA-accessible park, including playgrounds that can accommodate children and adults with disabilities, as well as their mobility devices?	The intention of the plan is to provide park facilities that are universally accessible. Clarification is recommended.	Amend Policy VC-31. Recreational Areas (CZM), as follows: The Government of Guam shall encourage development of varied types of recreation facilities that are readily accessible to and usable by individuals with disabilities in accordance with the ADA Standards for Accessible Design, located and maintained so as to be compatible with the surrounding environment and land uses, adequately serve community centers and urban areas, and protect beaches and such passive recreational areas as wildlife and marine conservation areas, scenic overlooks, parks, and historic sites.
GSP-045	Senator Sabina Flores Perez	8-5	8.1.3		In the short-term, the Plan should include upgrading government software and IT systems so that they are interoperable, enabling multiple agencies to communicate/share certain data and information effectively, efficiently, and with little error or loss of data. In the long-term, the Plan should ensure efforts are geared towards relocating important infrastructure from the coast to avoid impacts of sea-level rise.	The plan recommends multiple implementation actions to better integrate governance, including information management. This includes the proposed development of a "One-Guam GIS Land Use System." Additional IT upgrades and enhancements could be pursued through the recommended inter-agency task force. See comment GSP-034 regarding sea level rise and vulnerability of crtical infrastructure.	

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GSP-046	Senator Sabina Flores Perez	8-10	Implementation	Table 8-1	Please add the following agencies to the task force: OTECH, DOAG, GDOL, GEDA, GDOE	Concur.	Add the following agencies to the task force recommended in Table 8-1: OTECH, DOAG, GDOL, GEDA, GDOE
GSP-047	Senator Sabina Flores Perez	8-12	Public Services	Table 8-1	Add: “including improving ADA compliance and accessibility,” to “Prioritize infrastructure investment in designated urban centers”	Concur.	Add: “including improving ADA compliance and accessibility,” to “Prioritize infrastructure investment in designated urban centers” in Table 8-1, Public Services.
GSP-048	Senator Sabina Flores Perez	8-12	Natural Hazards	Table 8-1	Add Utilities like GPA & GWA to Partners (to help plan the relocation of critical infrastructure).	Concur.	Add "Other agencies as may be warranted, such GPA and GWA" to partners for Natural Hazards action in Table 8-1.
GSP-049	Senator Sabina Flores Perez	8-13	Tourism and Cultural Enterprise	Table 8-1	Add GEDA and GDOL as partners	Concur.	Add GEDA and GDOL as partners to Tourism and Cultural Strategy in Table 8-1.
GSP-050	Senator Sabina Flores Perez				Please add a section or chapter to the Plan that includes “Lessons Learned from Typhoon Sinlaku” which can include: • Community preparations: ensuring all households know the dangers of running generators indoors through mass media and door-to-door (flyer) campaigns, prohibiting & preventing price gouging across the island, education regarding the potential for tsunamis (combatting myths), cutting down dangerous trees and foliage in advance, and clearing out stormwater drains or creating deeper drainage ditches, etc.; • Potential utility responses or infrastructure needed; • Potential improvements for emergency response; etc.	Concur.	Add the following paragraph in section 3.7.2, between the third and fourth paragraph: "Most recently, Typhoon Sinlaku reinforced several key resilience lessons for Guam. The storm highlighted the interconnected vulnerabilities of power, water, wastewater, communications, and transportation systems, demonstrating how disruptions in one sector can quickly affect others. Response efforts underscored the importance of backup power, redundant communications, resilient water infrastructure, and strong coordination among local, federal, military, and community partners. The event also reaffirmed the value of household preparedness and proactive emergency planning. Looking forward, Sinlaku emphasized the need for continued investment in climate-resilient infrastructure, hazard-informed land use planning, and adaptation strategies that can reduce future risks from increasingly severe tropical cyclones and related hazards."

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GSP-051	Julian Janssen	2-14	4		Amend Policy IP-5 to read: “IP-5. Federal Consistency Review. GovGuam shall use the federal consistency review process to ensure federal actions are consistent with, in accordance with the Coastal Zone Management Act, the planning and development goals of the Guahan 2050 Sustainability Plan.” This would make it clear that the intent is to incorporate policies of the Guahan 2050 Sustainability Plan into the Guam Coastal Zone Management Program, following the review and approval of NOAA.	The intention is that the G50SP would become an enforceable component of Guam's coastal management program. A clarifying action is recommended for Table 8-1.	Add to Table 8-1, an action to the Legal Framework category, for BSP to submit the adopted G50SP to the federal coastal zone management program for incorporation into Guam's enforceable CZM policies.
GSP-052	Julian Janssen	2-14	After 4		Add new IP policy to read: "Land Use Regulation. GovGuam shall use the land use planning process, including approvals through the Land Use District process, Application Review Committee and Guam Land Use Commission, Guam Seashore Protection Commission, and Guam Natural Resources Board, to promote consistency of public and private land and resource use decisions with the planning and development goals of the Guahan 2050 Sustainability Plan." This would strengthen the position of GCMP in being able to use federal consistency, as it is clear that the planning and development goals would be implemented in non-federal projects. Enforceable policies and mechanisms are supposed to be generally applicable, legally binding policies.	The intention is that upon legislative enactment, the G50SP would be guide all land use planning and development decisions, coordinated by BSP. A clarifying new policy is recommended.	Add a new policy in Chapter 1: GOV-2 Land Use Planning and Regulation. Except as it may concern existing legislative land use designations (such as prior government land use reservations, or approved master plans), the Bureau of Statistics and Plans shall coordinate GovGuam’s implementation of the G50SP, working in partnership with the Department of Land Management to ensure that land-use planning, zoning administration, and regulatory processes conform to the G50SP's goals, objectives, and policies to the maximum extent feasible and consistent with existing law. This shall include collaboration with the Application Review Committee, the Guam Land Use Commission, the Guam Seashore Commission, and other relevant land-use planning programs to implement the land use designations, policies, and programs of the Guahan 2050 Sustainability Plan
GSP-053	Julian Janssen	3-75	2		Add “and green infrastructure” after “benches” in parenthetical phrase on Policy SC-18. This would recognize that not all transportation-related infrastructure are built from metal, concrete, etc.	Concur.	Amend SC-18, Adequate Roads, Circulation, and EV Infrastructure: New development shall be served by adequate public roadways and circulation capacity, including bicycle, pedestrian, and transit options and supporting infrastructure (e.g., bike racks, lighting, benches, green infrastructure), consistent with applicable federal and local standards. EV charging infrastructure shall be supported to meet EV demand.

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G50SP Public Comments and Response

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GSP-054	Julian Janssen	3-75	5		Add clause “"incorporating low-impact development solutions as feasible" following "adequate parking facilities." This would recognize the desirability of adopting low-impact parking facilities, which allow more permeable surfaces, use of rain gardens or bioretention cells.	Concur. Policy TE-39 Green Infrastructure, states: "Promote and prioritize the use of Low Impact Development (LID) strategies, Best Management Practices (BMPs), and on-site infiltration to create green infrastructure for treating and reducing stormwater runoff. Use green infrastructure projects for natural restoration purposes and provision of buffer areas to allow for natural erosion, evolution of natural drainage flows, and sediment transport balance."	Amend Policy SC-21, Parking, as follows: New development, including redevelopment of existing structures and land uses, shall be served by adequate parking facilities, incorporating low-impact development solutions as feasible. Parking requirements may be reduced if supported by offsetting transit options."
GSP-055	Julian Janssen	3-75 to 3-77			Add a new SC policy: “Transit Bus Stops. Bus stops should be upgraded to ensure ADA compliant accessibility, adequate signage, and pedestrian and transit rider safety.” Bus stops are inadequately developed, with most having no signage at all, frequently no infrastructure at all. This hampers the ability of individuals with a disability or others with limited transportation to use the transit system.	Concur.	Amend Policy SC-19, Multi-modal Transportation, as follows: Public roads shall be designed and operated for safe, multi-modal transportation, including automobile, bicycle, and pedestrian use. Existing roads shall be regularly assessed and those not in compliance with required safety standards shall be upgraded as soon as possible. Existing transportation facilities, including bus/transit stops, shall be enhanced with bicycle and ADA-accessible pedestrian infrastructure, including signage and benches where applicable, bike lanes, sidewalks, and crosswalks.
GSP-056	Julian Janssen	3-75 to 3-77			Add a new SC policy: “Higher Speed Transit. The feasibility of incorporating various approaches to encourage higher speed transit and efficient round-trips should be explored. These may include use of bidirectional corridors, transit smart cards, investments in transit signal priority, bus priority lanes, or implementation of a yield-to-bus law.” In addition to excessive headways in transit and circuitous routes, the average speed of transit on Guam makes transit less desirable than it otherwise could be. Additional buses reduce average wait time, but not reduce total time in transit to and from destinations.	Concur.	Amend Policy SC-20, Public Transportation, as follows: Public transit systems, rideshare, bike lanes, on-demand transit, and other innovative non single-occupancy vehicle transportation strategies and programs shall be facilitated and provided for in new development and infrastructure improvements where applicable, including to facilitate higher speed public transit. Sponsored ride programs shall be considered to support disadvantaged community ridership.

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G50SP Public Comments and Response

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GSP-057	Julian Janssen	3-75 to 3-77			Add a new SC policy: "Sponsored Rides for Public Beneficiaries Ride sponsorship by public agencies should be explored as a mechanism to offer free, paid transit rides for targeted low-income groups." Developing sponsored ridership arrangements can improve the predictability of revenue for the transit system, plus take the financial burden of riding on transit off of targeted low-income groups, such as GHURA clients, SNAP, work programs, or public health program beneficiaries.	Concur.	Amend Policy SC-20, Public Transportation, as follows: Public transit systems, rideshare, bike lanes, on-demand transit, and other innovative non single-occupancy vehicle transportation strategies and programs shall be facilitated and provided for in new development and infrastructure improvements where applicable, including to facilitate higher speed public transit. Sponsored ride programs shall be considered to support disadvantaged community ridership.
GSP-058	Michael Gawel				BSP Planners et al., I hope my following comments on the Draft Guahan Sustainability 2050 Plan will be seriously considered. I am sorry that more resources, funding and time were not allowed for the Plan development. I appreciate the challenging efforts and many valuable parts included in the draft Plan such as matching UN Sustainability Goals and providing the useable mapping products.	BSP addressed the mandate of P.L. 35-110 as much as possible with the funding available.	
GSP-059	Michael Gawel				This draft does well to build on important predecessor Government of Guam planning efforts, such as the 1965 Territory of Guam Master Plan, 1978 Kabales Na Planu Para Guåhan, comprehensive land use plan, the I Tano'-Ta plan passed by law in the 1990s, and the North and Central Guam Land Use Plans (2009). While working in the Bureau of Planning on establishment of Guam's Coastal Management Program I was able to contribute to the 1978 Plan and while a planner in the Territorial Planning Council (TPC) I spent years on the development of I Tano'-Ta. Just as the G50SP prioritizes initial land use planning, the TPC did likewise, while coordinating other sectoral master plans like the Highway Master Plan, and water, wastewater, power and other plans.	Concur.	

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GSP-060	Michael Gawel				Unfortunately, the 1966 zoning regulations and maps, which were valuable when established, still remain and have not been comprehensively replaced. When they were established, the amount of non-Agriculture zoning was appropriate and minimal, while most private lands were undeveloped and zoned Agriculture. But for the last sixty years, legislative and TLUC spot rezoning approvals have disrupted land use planning goals. Except for the I Tano'-Ta Plan, zoning laws were not updated by previous plans. Legislative action is required to make such changes. And although the I Tano'-Ta Plan was passed into law with support and understanding of Senators Marcel Camacho and the late Senators John Salas, Ben Pangelinan and Angel Santos and others, and was implemented for a month, its Implementation Plan was not funded. This funding cut was done when a newly elected senator (who was upset by requirements imposed on his residence in the Mainland) joined other large landowners who had opposed controls on their land uses.	The G50SP implementation chapter 8 recommends "a comprehensive review of existing land use and environmental laws to identify any inconsistencies with G50SP policies and propose necessary amendments of existing authorities." (8-10).	
GSP-061	Michael Gawel				I hoped that the draft GS50 plan would make a stronger statement than "Effective implementation may (my emphasis) require updates to relevant land use statutes and agency mandates to ensure alignment with the G50SP." The continuance of lot-by-lot unrelated zone change approvals should be stopped under the G50SP. The Implementation section notes "Existing authorities and plans will remain in effect to the extent that they do not conflict with the mandates of the G50SP." The plan should provide or require development of proposed draft legislation and a conceptual draft Implementation Plan to finally replace the old Zoning Code and TLUC, which is not required to follow ARC advice, and also to stop Legislative spot zoning.	See response to Comment GSP-061. Effective implementation of the G50SP is contingent on gubernatorial and legislative direction.	

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G50SP Public Comments and Response

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GSP-062	Michael Gawel				As I noted at the recent Dededo public meeting on D50SP, depending on a phone survey, roundtable meetings (who was participating?) and only a few public input meetings is inadequate for such a plan. When we developed the I Tano'-Ta Plan, we held over 100 public input meetings with at least three progressively in each of the 19 villages. They were attended well by Municipal Planning Councils, Mayors and residents. We included many other regular meetings of business and development representatives and Government Agency representatives.	BSP conducted public engagement at a level that could be sustained by available funding while meeting the direction of P.L. 35-110.	
GSP-063	Michael Gawel				The funding and time limits for GS50 are not adequate and should be reconsidered. Whether the Guam Legislature would support this should be on the public's political agenda. Perhaps Public Law 35-110 could be amended to extend the Plan deadline and provide funds for additional resources to improve it. If our elected leaders do not take action to improve and implement the G50SP, they should be replaced by new leaders who understand and campaign to support comprehensive planning.	The G50SP is currently in the public review process, including by the Governor and the legislature. BSP is recomending the plan for adoption. Implementation of the plan will necessarily involve more public engagement. BSP will follow the direction of the Governor and legislature concerning the possibility of additional time and funding for plan refinement.	
GSP-064	Michael Gawel				Another hot planning issue that should be added to the Plan is Deep Seabed Mining.	Offshore marine issues such as deep seabed mining are beyond the scope of the G50SP, though the plan provides recommended policies to address any potential land use impacts from industrial activities (like processing mined materials).	

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GSP-065	Michael Gawel				I also recommend that the “One Guam” policy incorporating military uses with off-Base uses and plans be emphasized more. Guam needs to continue joint use, development and planning with the Department of War for shared resources such as water, sewer, transportation, power, environment, etc. For example, our 1978 Kabales Na Planu Para Guåhan sought Ocean Thermal Energy Conversion as a clean economical source of power to be planned for the whole Island in the following decade. We still await that and probably only the Department of War could afford to fund the capital costs to implement that. Guam should not lose these shared responsibilities as when we lost the shared education system.	See response to comment GSP-11. The G50SP provides for collaboration and coordination between the Government of Guam and the federal government, including to address the many land use impacts from the on-going military build-up.	
GSP-067	Michael Gawel		Fig. 3.2		Fig. 3.2 Show Guam Gov. and private ownerships of Isla Dano. And show National Park ownership of Asan and Agat Units.	Noted. To be Updated.	
GSP-068	Michael Gawel		Fig. 3-7		Fig. 3-7, Correct spelling of area to “I-Papao”	Noted. To be Updated.	

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G50SP Public Comments and Response

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GSP-069	Michael Gawel		Among toxics in 3.3.3.2		Among toxics in 3.3.3.2, mention the sources of drinking water that are contaminated with trichloroethylene and how the Air Force failed to clean up the contamination and abandoned and transferred the contaminated water facilities to Guam Waterworks Authority	Noted.	Add the following discussion at the end of section 3.3.3.2: "**Previous Concerns with Military Activities and Contamination of the NGLA**. The Northern Guam Lens Aquifer (NGLA), which supplies drinking water to approximately 75–80 percent of Guam's population, has long been affected by concerns over contamination associated with military activities, hazardous waste disposal, fuel storage, and industrial operations. Beginning in the 1970s, groundwater monitoring at Andersen Air Force Base detected trichloroethylene (TCE) and other contaminants in drinking water wells, leading to investigations that identified numerous abandoned disposal sites and potential contamination pathways within the aquifer recharge area. A 1987 U.S. Government Accountability Office report concluded that hazardous waste sites on Andersen Air Force Base and Naval installations posed potential risks to Guam's principal drinking water source and recommended expanded investigation and monitoring efforts. Since then, multiple military sites in northern Guam have been investigated and remediated under federal environmental programs, including the Andersen Air Force Base Superfund site, where groundwater contamination from chlorinated solvents, fuels, pesticides, and other hazardous substances has required decades of monitoring and cleanup. Despite substantial progress, the history of contamination underscores the vulnerability of the NGLA to activities occurring within its recharge zone and highlights the continuing importance of groundwater protection, contaminant monitoring, interagency coordination, and careful management of both civilian and military land uses in northern Guam."

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GSP-070	Michael Gawel		In 3.3.4.3		In 3.3.4.3, 3.3.4.5 and 5.3.6, note how recent Guam law promotes more residential increases in non- sewered wastewater discharges over the Northern Aquifer adding toxics to public well sources although assuming new septic systems will cut rate of adding new toxics in half if built and individually maintained properly.	The G50SP includes extensive discussin of the problem of septic discharges over the NGLA and includes two specific policies for new development, consistent with recent legislative direction: S**C-9. Development Over the Aquifer.** New development, including single family residential, over the aquifer must be served by public sewer or meet Guam EPA septic discharge requirements pursuant to P.L. 37-105. **SC-10. Subdivision Over the Aquifer.** Subdivision of parcels over the Northern Guam Lens Aquifer not served by public wastewater or able to comply with Guam EPA septic discharge requirements pursuant to P.L. 37-105 is prohibited.	
GSP-071	Michael Gawel		In 3.3.7.3		In 3.3.7.3, The Plan should mention the potential for Waste-to-Energy facilities and suggest location requirements for this. The dis-approved WTE facility planned for Santa Rita was located next to military housing with a school and church downwind. Such a possible risk to adjacent uses should be prevented in development approvals.	The plan includes policies to limit and minimize offsite impacts from industrial development, including one policy specific to energy facilities: SC-69. Siting of Intensive Industry. Limit intensive industrial development to M-1 zones without exception. SC-70. Offsite Impacts. New industrial development shall minimize and mitigate offsite impacts to the maximum extent feasible.SC-35. Locating and Planning for New Energy Facilities. a. Energy facility development shall be located to avoid adverse impacts to natural resources, parks, and communities to the maximum extent feasible. This includes utilizing distributed and diverse energy sources using developed locations, such as solar facilities over public parking areas and larger industrial and commercial buildings.	
GSP-072	Michael Gawel		In 3.3.7.6		In 3.3.7.6, Can the used oil microfinery wait to 2040 for implementation, when we are currently losing the ability to burn waste oil in the old Cabras power plants as they close this year?	The details of the Guam Zero Waster Plan are beyond the scope of the G50SP, though proposed G50SP Policy SC-34 prioritizes "non-fossil fuel energy developments and infrastructure."	
GSP-073	Michael Gawel		In 3.8		In 3.8, We should rethink power supply plans to meet the sudden rapidly increasing demand from improved technology, A.I, and Department of War.	The G50SP supports power supply planning to support sustainable, renewable energy, including solar. The plan requires new development, including energy-intensive data centers, to be served by adequate power prior to occupancy: **SC-33. Sustainable Power**. New development, including single family residential, shall be served by adequate and sustainable power.	

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GSP-074	Michael Gawel		In 3.3.11		In 3.3.11, Can on-shore OTEC and Aquaculture project feasibility and possibility be noted for planning of Cabras area's old power plant removals?	The uses may be considered, consistent with other policies to protect port uses.	Amend **SC-50**, **Ensure Land Use Compatibility and Buffer Zones around the Port**, as follows: Maintain zoning and land use designations that preserve industrial and maritime functions within the port district and prevent encroachment of incompatible uses. Consider coastal-dependent uses such as aquaculture and Ocean Thermal Energy Conversion (OTEC) as may be appropriate, consistent with maintaining priority port functions. Encourage land use buffers and mitigation strategies (e.g., traffic controls, vegetation, setbacks) to reduce conflicts with adjacent communities.
GSP-075	Michael Gawel		Can OTEC be included in SC-35?		Can OTEC be included in SC-35?	See response to GSP-074	
GSP-076	Michael Gawel		In 3.5.3.1		In 3.5.3.1 and 4.2.5, Can deep off-shore net culture of fishes, as privately successful off Kona Hawaii, be included as quite feasible for Guam if planning (GCMP?) reserves specific use sites and favorable permitting. Can 4.14 note Guam's advantages for native fish species and export and local markets?	The G50SP does not address offshore fisheries and other marine uses. However, it provides for priority coastal dependent land uses such as aquaculture" S**C-72. Priority Island and Coastal Developments.** Assure adequate land and locations for important coastal-dependent and related development, such as boating and fishing facilities. Evaluate the status of existing moorings and buoys and impacts to the nearshore environment. Mitigate development impacts to boating and fishing resources.	
GSP-077	Michael Gawel		In 5.1		In 5.1 I recommend some updating and rewriting about "Climate Change".	Noted.	
GSP-078	Michael Gawel		In 5.2.1		In 5.2.1 and SC-11 to SC-14, Reference could be made to the Tumon Development Plan from decades ago which required set-backs of structures from beach erosion sites, as was done at the Hyatt Hotel. But this was another good plan blocked by politics.	The G50SP includes multiple policies to address coastal hazards, setbacks, and erosion, including SC 113 and 114.	

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GSP-079	Michael Gawel		In 5.2.6		In 5.2.6, I recommend OTEC and shared Deep Seawater Air Conditioning be added.	The G50SP suports development of renewable, non-fossil fuel energy supplies. Additional references to OTEC and SWAC are proposed.	Amend the following paragraph (5-8) as follows: Solar and Wind Energy Expansion. Policies should promote the development of solar and wind farms, including potentially offshore wind, wave energy, Ocean Thermal Energy Conversion and Sea Water Air Conditioning technologies as feasible, as well as community microgrids that enhance energy independence ....
GSP-080	Michael Gawel		In Figure 5-62		In Figure 5-62, in Table 6.1 and Fig. 6.7, make sure that DOI's National Park Service subaerial and submerged reef units and the Ritidian National Wildlife Reserve and Guam National Wildlife Refuge Overlay are accurately covered and proposed changes at Ritidian noted.	Noted. To be Updated.	
GSP-081	Michael Gawel		In Figure 5-62		In Figure 5-62, Anao Conservation Area is missing. Can the adjacent Tano, Tasi Yan Todu Conservation area be added, too? And can US National Natural Landmarks, as mapped by WERI or DOI, be added?	Noted. To be Updated.	
GSP-082	Michael Gawel				1) Please include maps of existing and planned Photovoltaic Energy sites and discuss existing, planned and projected needs for these.	Noted. To be Updated.	
GSP-083	Michael Gawel				2) Please include maps and discussions of potential on-shore Ocean Thermal Energy Conversion and Sea Water Air Condition facilities	Noted. To be Updated.	
GSP-084	Michael Gawel				3) Please include maps and discussions of existing active and closed and potential quarry sites	Noted. To be Updated.	
GSP-085	Michael Gawel				4) Please consider and discuss anchored fish net/cage culture sites in deeper water,outside our shallow reefs (as successfully practiced commercially in Kona Hawaii)	See response to GSP-076.	
GSP-087	Michael Gawel				If timing and resources allow during draft improvement, I suggest obtaining new input from the UoG Center on Island Sustainability.	Noted.	

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GSP-088	Juanita C. V. Blaz				In addition to the beautiful patches of limestone forest in our testimonies.... Our Service Learning Campaign "Friends of the Parks" has been promoting for 12 years, walkable parks that already exist .... they were built in the 1960s and more recently. They are worth refurbishing and they are located in 10 of our villages. There are nearly 75 parks. Some were set up with sidewalks and recreational features after typhoon Pamela. I would love to share what I know about these neighborhood parks. They are perfect for conservation, recreation and native habitat objectives. They are not officially part of govt park inventory and are not individually private owned.	Thank you for your comment. BSP would welcome additional information about these neighborhood parks. Policy VC-31 addresses the protection of recreational areas and facilities: VC-31. Recreational Areas (CZM). The Government of Guam shall encourage development of varied types of recreation facilities located and maintained so as to be compatible with the surrounding environment and land uses, adequately serve community centers and urban areas, and protect beaches and such passive recreational areas as wildlife and marine conservation areas, scenic overlooks, parks, and historic sites.	
GSP-089	Peter P. Bautista, P.E.		I. Purpose and Position Statement		The current 2010-era manual and Executive Order 2012-02 rely on historical data and "gray" infrastructure solutions that are insufficient to meet the G50SP goals for a "Thriving Environment" and village-level sustainability. Our objective is to pivot toward Nature-Based Solutions (NBS) and predictive engineering to protect the purity of wetlands, streams, and marine waters as mandated by current law.	The G50SP promotes the maximum use of nature-based solutions: SC-120. Nature-based Solutions. Maximize use of nature-based solutions (“living shorelines”) where feasible and appropriate as a preferred alternative to the placement of hard shoreline protection in order to protect development or other resources and to enhance natural resource areas. Examples of soft solutions include vegetative planting of native plant species, dynamic revetments, cobble wave trippers, dune restoration, and sand nourishment. In addition, the use of native plants in restoration, adaptation, and other projects should be prioritized. TE-3. Nature-Based Shoreline Protection. Prioritize the preservation and restoration of mangroves and coral reefs as natural buffers against storm surges. Prioritize and incorporate living shoreline strategies as appropriate in lieu of more traditional engineered seawalls and other hard armoring structures.	

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GSP-090	Peter P. Bautista, P.E.		GEPA Stormwater Drainage Manual Update		Maintenance of Sustainable Infrastructure: Existing regulations require a maintenance program for all control structures and hold subsequent owners responsible for their upkeep. The updated manual must provide a standard legal framework for Village-level "Sustainability Maitenance Agreements" to prevent green infrastructure from becoming a source of pollution through neglect.	Concur. Policy SC-23, Stormwater Facilities, provides a basis for such maintenance agreements: New development, including redevelopment, shall include or be served by adequate stormwater detention, treatment, conveyance capacity, and maintenance, including on and offsite best management practices as specified in the CNMI and Guam Stormwater Management Manual and Supplement. Development of individual residential parcels shall include stormwater best management practices to allow infiltration to account for the increase in impervious surface.	
GSP-091	Peter P. Bautista, P.E.		GEPA Stormwater Drainage Manual Update		Buffer Zone Standardization: Current regulations specify horizontal distances for cuts and fills based on height (e.g., 10 feet for cuts over 15 feet). However, to protect environmentally sensitive areas like the Northern Guam Lens Aquifer, the manual should expand these buffers based on soil erodibility factors and proximity to sinkholes.	See response to GSP-090. In addition: **TE-16. Drinking Water Protection.** Establish buffer zones around aquifers and water sources to prevent contamination and over-extraction.	
GSP-092	Peter P. Bautista, P.E.		GEPA Stormwater Drainage Manual Update		Hydrologic Assessment Gaps: While earth-moving activities are prohibited in sinkholes unless authorized by the Administrator , the manual lacks a standardized protocol for the "Environmental and Hydrogeologic Assessment" required to ensure these natural features are not polluted by urban runoff.	See response to GSP-091.	
GSP-093	Peter P. Bautista, P.E.		GEPA Stormwater Drainage Manual Update		Penalty Deterrence: The G50SP implementation requires a credible deterrent for non-compliance. While older statutes cite minimal fines, the updated manual should explicitly reference the administrative penalty tier of up to $10,000 per day per violation to align with current GEPA enforcement powers.	The G50SP could provide a basis for administrative penalties to address water quality and other environmental resources.	

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GSP-094	Peter P. Bautista, P.E.		GEPA Stormwater Drainage Manual Update		Predictive IDF Curves: Move beyond historical rainfall data to include a 15-20% "Resilience Factor" in design calculations to account for increased storm intensity projected by 2050.	The G50SP includes a policy basis for stormwater best management practices based on the best available science: TE-38. Development Discharges and Best Management Practices. All point and nonpoint source discharges from development shall comply with GEPA water quality requirements. Construction and post-construction best management practices shall be required, consistent with the GEPA requirements and the CNMI and Guam Stormwater Management Manual and supplemental materials as applicable. All stormwater runoff generated from new development shall be adequately treated prior to discharging into jurisdictional wetlands or inland and coastal waters of Guam. TE-46. Construction Best Management Practices (BMPs). To prevent adverse impacts from construction site runoff, general performance standards for construction stormwater treatment (designated as erosion and sediment control standards or E&SC Standards) for all new development and redevelopment construction sites are described in the CNMI Guam Stormwater Management Manual, Volume 1, Chapter 2. The performance criteria shall be applied to the maximum extent practicable. Require new development proposals as appropriate to include construction phase erosion control and polluted runoff control plans. These plans shall specify BMPs that will be implemented to minimize erosion and sedimentation, provide adequate sanitary and waste disposal facilities and prevent contamination of runoff by construction chemicals and materials. Minimize unnecessary clearing and grading from all construction sites. Clearing and grading shall only be performed within areas needed to build the project, including structures, utilities, roads, recreational amenities, postconstruction stormwater management facilities, and related infrastructure. Clearing should only be scheduled during the dry season if possible. Mass clearing during the wet season should be avoided.	

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GSP-095	Peter P. Bautista, P.E.		GEPA Stormwater Drainage Manual Update		Outfall Backflow Prevention: Require all drainage outfalls in coastal "Sustainability Villages" to be designed for high-tide and 2-foot sea-level rise projections to prevent system failure during surge events.	Concur. G50SP policy **TE-60. New Stormwater Outfalls**, states: Prioritize the use of green infrastructure instead of new stormwater outfalls when feasible. Otherwise ensure that new stormwater outfalls are sited and designed to minimize impacts from sea level rise and to coastal resources. Consolidate new and existing outfalls where appropriate.	
GSP-096	Peter P. Bautista, P.E.		GEPA Stormwater Drainage Manual Update		Inverted Design Hierarchy: Formally update the manual to require developers to technically prove NBS (e.g., bioswales, permeable pavements) are infeasible before traditional detention basins are permitted.	See response to GSP-89	
GSP-097	Peter P. Bautista, P.E.		GEPA Stormwater Drainage Manual Update		Native Vegetation standards: Standardize the "Establishment of Vegetation" requirements to prioritize native species that maximize nutrient uptake to protect coral reefs from nonpoint source pollution.	The G50SP addresses stormwater management in multiple policies and directs the maximum use of green infrastructure and water quality BMPs. Technical refinements and updated practices may be pursued under existing proposed policies. Amendment of Policy TE-38. Development Discharges and Best Management Practices, is recommended to direct updating of the Stormwater Management Manual as necessary.	Amend **TE-38. Development Discharges and Best Management Practices,** as follows: All point and nonpoint source discharges from development shall comply with GEPA water quality requirements. Construction and post-construction best management practices shall be required, consistent with the GEPA requirements and the CNMI and Guam Stormwater Management Manual and supplemental materials as applicable. All stormwater runoff generated from new development shall be adequately treated prior to discharging into jurisdictional wetlands or inland and coastal waters of Guam. Update the Stormwater Management Manual to incorporate state-of-the art drainage BMPs and implementation practices.

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GSP-098	Peter P. Bautista, P.E.		GEPA Stormwater Drainage Manual Update		GIS Submission Requirements: Require all drainage plans to be submitted as georeferenced digital files compatible with the G50SP's Integrated Hazard and Spatial Data maps.	The G50SP addresses stormwater management in multiple policies and directs the maximum use of green infrastructure and water quality BMPs. Technical refinements and updated practices may be pursued under existing proposed policies. Amendment of Policy TE-38. Development Discharges and Best Management Practices, is recommended to direct updating of the Stormwater Management Manual as necessary.	Amend **TE-38. Development Discharges and Best Management Practices,** as follows: All point and nonpoint source discharges from development shall comply with GEPA water quality requirements. Construction and post-construction best management practices shall be required, consistent with the GEPA requirements and the CNMI and Guam Stormwater Management Manual and supplemental materials as applicable. All stormwater runoff generated from new development shall be adequately treated prior to discharging into jurisdictional wetlands or inland and coastal waters of Guam. Update the Stormwater Management Manual to incorporate state-of-the art drainage BMPs and implementation practices.
GSP-099	Peter P. Bautista, P.E.		GEPA Stormwater Drainage Manual Update		One-Stop Permit Center Coordination: Utilize the existing application process to implement a "Sustainability Checklist" for all government and private projects.	The G50SP recommends using the existing development review process, including the Application Review Committee, to implement the sustainability plan.	
GSP-100	Peter P. Bautista, P.E.		GEPA Stormwater Drainage Manual Update		Water Protection Fund Leverage: Utilize the fund established under 22 GAR §10109(g) to finance research into advanced stormwater filtration technologies specifically for coralline soil environments.	The G50SP seeks to match available funding to implementation of the plan, including research and development of new technologies as applicable.	

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GSP-101	Peter P. Bautista, P.E.		GEPA Stormwater Drainage Manual Update		Environmental Impact Assessments (EIA): Use existing authority to require sustainability modelling as part of the EIA for any project located in environmentally sensitive areas.	Chapters 3 and 5 of the G50SP include multiple policies to evaluate the sustainability of new projects, including avoidance, minimization, and mitigation of any impacts to environmentally-sensitive areas.	
GSP-102	Peter P. Bautista, P.E.		I. Position Statement		The Guam Environmental Protection Agency (GEPA) formally endorses the vision and thematic goals of the Guåhan 2050 Sustainability Plan (G50SP). Our comprehensive review indicates that the G50SP serves as a critical policy bridge between high-level conservation and the technical enforcement mandates of the Water Pollution Control Act and the Guam Environmental Protection Agency Act. GEPA's position is that the success of the G50SP depends on the immediate modernization of Guam's engineering standards—specifically the Guam Stormwater Drainage Manual—to move from traditional "gray" infrastructure to Nature-Based Solutions (NBS). The Agency is prepared to utilize its full authority under 22 GAR Division 2 to ensure that "Sustainable Village" growth does not compromise the island's soil stability or the long-term potability of our groundwater resources.	BSP appreciates the support of GEPA for the G50SP. Strong agency collaboration and coordination will be required to effectively implement the plan.	
GSP-103	Peter P. Bautista, P.E.		GEPA Regulatory Review		Northern Guam Lens Aquifer (NGLA): The G50SP prioritizes the NGLA as a critical resource. GEPA will enforce 10 GCA § 47108.1, which mandates the creation of a Groundwater Protection Zone (GPZ) map. We will require that all high-density redevelopments proposed in the G50SP within this zone undergo rigorous hydrogeologic assessments to prevent the introduction of pollutants into the water lens.	Noted.	

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GSP-104	Peter P. Bautista, P.E.		GEPA Regulatory Review		Sinkhole Protection: Under 22 GAR § 10107(f), sinkholes are protected "Waters of Guam". The G50SP's urban growth strategy must include updated manual criteria that prohibit direct discharge of untreated runoff into these features, requiring bio- retention pre-treatment.	See response to comment GSP-091.	
GSP-105	Peter P. Bautista, P.E.		GEPA Regulatory Review		Predictive Design: Current regulations and the 2012 Stormwater Management criteria rely on historical data. GEPA recommends that the manual update integrate a 15-20% "Resilience Factor" to account for increased storm intensity and Sea-Level Rise (SLR) projections through 2050, specifically for coastal outfall designs to prevent system backflow.	The G50SP addresses stormwater management in multiple policies and directs the maximum use of green infrastructure and water quality BMPs. Technical refinements and updated practices may be pursued under existing proposed policies. Amendment of Policy TE-38. Development Discharges and Best Management Practices, is recommended to direct updating of the Stormwater Management Manual as necessary.	Amend **TE-38. Development Discharges and Best Management Practices,** as follows: All point and nonpoint source discharges from development shall comply with GEPA water quality requirements. Construction and post-construction best management practices shall be required, consistent with the GEPA requirements and the CNMI and Guam Stormwater Management Manual and supplemental materials as applicable. All stormwater runoff generated from new development shall be adequately treated prior to discharging into jurisdictional wetlands or inland and coastal waters of Guam. Update the Stormwater Management Manual to incorporate state-of-the art drainage BMPs and implementation practices.
GSP-106	Peter P. Bautista, P.E.		GEPA Regulatory Review		Nature-Based Solutions (NBS): To achieve the "Thriving Environment" goal, GEPA will invert the design hierarchy. Developers must now technically justify the use of traditional concrete basins over NBS (bioswales, rain gardens, permeable pavement) during the One-Stop Permit Center review.	The noted strategy would be consistent with the policies and objectives of the G50SP.	
GSP-107	Peter P. Bautista, P.E.		GEPA Regulatory Review		Life-Cycle Enforcement: A critical gap exists in maintaining village-level green infrastructure. While 22 GAR § 10106(b)(7) holds subsequent property owners responsible for permanent control measures, GEPA recommends the G50SP implement Sustainability Maintenance Agreements to ensure decentralized systems do not become pollution sources via neglect.	See response to comment GSP-090.	

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G50SP Public Comments and Response

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GSP-108	Peter P. Bautista, P.E.		GEPA Regulatory Review		Government Compliance: GEPA emphasizes that per 21 GCA § 66202.1, all government, autonomous, and public entities are required to obtain the same clearing and grading permits as private citizens. This ensures that G50SP public works projects lead by example in environmental standard-setting. III. Identified Issues and Strategic OpportunitiesCategory Issue / Risk Strategic Opportunity Infrastructure Aging wastewater systems may lack Use G50SP spatial data to target the capacity for the G50SP's high- "Kabales" (comprehensive) sewer line density urban growth goals. upgrades in designated growth zones. Permitting Current building permits lapse after Formalize the One-Stop Permit Center 3-12 months of cessation, which with a "Sustainability Track" for may hinder large-scale, multi-year projects that exceed minimum sustainability projects. environmental standards. Funding Ongoing inspection and research Leverage the Water Protection Fund costs for new "Green" technologies (22 GAR § 10109(g)) to finance R&D are high. for coralline-specific bio-filtration systems. Deterrence Legacy fine structures ($1,000/day) Enforce the updated administrative are insufficient for modern penalty of up to $10,000 per day to industrial-scale violations. ensure plan compliance is more economical than violation.	The G50SP is intended to apply to all development projects, public and private. Effective implementation will require systematic actions as anticipated in Chapter 8.	
GSP-109	Peter P. Bautista, P.E.		Final Recommendations / Strategic Opportunities		1. Regulatory Synchronization: Establish a task force to harmonize definitions of "clearing and grubbing" across 21 GCA (Building Law) and 22 GAR (GEPA Regulations) to eliminate jurisdictional confusion.	BSP would support efforts to harmonize definitions of grading, clearing and grubbing, and terms applicable to land disturbance through the Sustainability Implementation Task Force contemplated in the G50SP Implementation chapter.	

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GSP-110	Peter P. Bautista, P.E.		Final Recommendations / Strategic Opportunities		2. GIS-Driven Permitting: Require all drainage and erosion control plans to be submitted as georeferenced digital files to allow GEPA to conduct Cumulative Impact Assessments across entire watersheds, rather than site-by-site reviews.	BSP supports the use of improved GIS technologies and applications, contingent on adequate funding and staffing	
GSP-111	Peter P. Bautista, P.E.		Final Recommendations / Strategic Opportunities		3. Establishment of Native Buffers: Update manual criteria to mandate native vegetation in all "Sustainability Buffers" to maximize nutrient uptake and protect reef flats from sedimentation.	BSP supports the use native vegetation in vegetate buffers, consistent with policies requiring best management practices and maximum use of nature-based solutions.	
GSP-112	Dave Lotz	1-12		PDF Page 26	This map of Guam incorrectly shows the land along the northeastern coast from Ague Coast south to South Fainegayan as military. That is incorrect.	Noted. To be Updated.	
GSP-113	Dave Lotz	3-14		PDF Page 73	The coastline from Tanguisson north to Uruno should be shown as Conservation and all of the Guam National Wildlife Refuge at Ritidian should be shown as Conservation.	Noted. To be Updated.	
GSP-114	Dave Lotz	5-62		PDF Page 303	The military lands are incorrectly labeled as “Ecological Reserve”. Omitted is the lands and submerged lands of the War in the Pacific National Historical Park, National Park Service, Department of Interior. The Guam National Wildlife Refuge overlay component ius not shown. The Guam Marine Preserves should be shown on this map.	Figure 5-12 correctly shows the national wildlife refuge, as well as recognized marine protected areas.	
GSP-115	Dave Lotz	6-9		PDF Page 336	On the map, lands at the Guam International Airport under the A.B. Won Pat International Airport Authority are incorrectly designated as Ancestral Lands Commission Lands.	Concur. Figure 6-2 will be updated.	Replace Figure 6-2 with updated version.

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GSP-116	Dave Lotz	6-20		PDF Page 347	NRHP sites are missing from this map for example, Pagat Archaeological Site, Sella Bay, and SMS Cormoran. Manangon, a National Historic Landmark is not on the map. Other historic sites missing are the Libugon Radio Station and Aguada power plant. Has these sites on the map been verified such as the Light Model Tank No. 95 which is no longer where located on the map. Using a map of only just the NRHP historic features sends the wrong message that these are the only sites worthy of preservation. Show all NRHP and historic/cultural features on the island. The federal restriction of site locations does not apply under Guam law.	There are 134 listed sites on the US National Register. Of that only 67 sites have public locations and the rest are hidden intentionally to aid in their preservation. A table listing the 134 sites will be added to the plan.	Update the third paragraph of section 6.2.5 as follows. Add a new table ("6.1. National Registor of Historic Places on Guam"- https://www.google.com/url?q=https://docs.google.com/spreadsheets/d/1qyEljv0DvaLIvpOAHhiwgfPispxo9BQB/edit?usp%3Dsharing%26ouid%3D112078639979953434928%26rtpof%3Dtrue%26sd%3Dtrue&sa=D&source=editors&ust=1781523349232557&usg=AOvVaw2eBsS1pUKJbhcMwt8SEPdE) following the paragraph. "There are currently 134 sites on Guam that are on the National Register of Historic Places, including one National Historical Park: War in the Pacific National Historical Park (Table 6.1). The National Register of Historic Places which was established under the National Historic Preservation Act. The 134 historic sites are spread across 17 of the 19 villages of Guam. Figure 6-3 shows the publicly-available location information. The oldest archaeological sites on Guam date back hundreds of years before western contact first occurred in 1521 (Dept. of the Navy 2010). Guam's historic resources also reflect its former status under Spanish rule, occupation by Japan, and two American territorial periods (Dept. of the Navy 2010).
GSP-117	Dave Lotz	6-32		PDF Page 359	The map of parks needs to be undated. For example: Nimitz Bech is Missing and Afleje Memorial Park is no longer a park; Anao Conservation Area is missing. The green markers for parks are inaccurate. For instance, for Talofofo Beach and Ipan Beach. Why is the Former FAA Parcel designated for Park and Forest System. It is apparently now private land. National Natural Landmarks are omitted	Noted, the map will be updated as resources allow.	Replace Figure 6-5 with updated version.
GSP-118	Dave Lotz	6-42		PDF Page 369	Many overlooks are missing such as Memorias Park and Southern Mountains. Include those reached by hiking such as Mount Tenjo, Mount Alutom, and Anao.	Additional mapping of scenic overlooks is beyond the scope of the current G50SP work program. However, the plan notes: "Future land use planning efforts should expand view corridor mapping, designate additional scenic overlooks, and promote climate-resilient public infrastructure in ways that honor and preserve Guam's scenic heritage." Polices VC 30, 31, 35, and 36 protect visual and scenic resources and are not limited to mapped resources.	

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G50SP Public Comments and Response

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GSP-119	Dave Lotz	7-8		PDF Page 381	The mushroom rock is north of Tanguission Beach at Guma Fahou and the sinkhole is further north at Hilaan and is known as Lost Pond.	Noted.	
GSP-120	Dave Lotz				The terms “quarry” and “quarries” was only found in 2 searches. Our proliferation of quarries needs to be addressed in this plan.	The G50SP requires quarries and other industrial uses to be limited to areas designated for industrial development. Other policies protect the NGLA, native forest habitat and other sensitive resources. Quarries would not be allowed in sensitive habitat areas.	
GSP-121	Dave Lotz				The term “alien worker housing” was not found at all and this issue needs to be addressed in this plan.	Section 3.4.4 of the G50SP addresses temporary workforce planning. This land use is identified as a conditional use in R-2, mixed-use/C, and light-industrial land use designations, and as a permitted use in the PUD zone.	
GSP-122	Dave Lotz				Needs maps of hiking trails, surfing locations, and snorkeling and SCUBA diving spots.	Additional mapping of recreational resources is beyond the current scope of the G50SP work program. Policies VC-30 to VC-38 protect and promote existing and future recreational assets.	
GSP-123	Dave Lotz				These maps need to be broken down into 3 maps of the island for clarity and accuracy: North, Central, and South.	Noted.	
GSP-124	Dave Lotz				These comments are only based on a review of just selected portions of the Plan, mostly maps, which leads me to conclude that the entire plan needs an extensive internal review, updated, field checked, edited, and further public scrutiny is necessary.	Noted. BSP is conducting a comprehensive effort to complete the mandate of P.L. 35-110 as resources allow.	

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GSP-125	Daniel Swavely				I applaud the BSP for undertaking a vision and plan for Guam between now and 2050. Land use planning is a vital component for managing growth and development. Accordingly, the stated goals of Sustainable Communities, Prosperous Economy, Thriving Environment, Vibrant Culture, and Village Sustainability are all on target. As a 50-year practitioner in land use planning on Guam, I think DLM and GLUC do a good job today at protecting our longterm land use interests, albeit mostly in a reactive role to applications for proposed developments. In fact, an argument can be made that the land use component of Guam's overall community planning is the most efficient of all components. I say this because the current process guarantees: 1. Application Review Committee position statements, which ultimately become binding to a project's Notice of Action by GLUC. Such position statements address water, wastewater, power, traffic, environmental protection, cultural preservation and recreation matters, etc. 2. Three public hearings, assuring ample opportunities for input by neighbors, mayors and other concerned residents. 3. A Staff Report by the DLM Case Planner analyzing the merits of the application, public feedback and compliance with the law. 4. A fourth and final public hearing conducted by the Guam Land Use Commission where the applicant makes its case, public input is again invited and Commissioners personally interact with all parties before adjudicating the application.	Noted. The G50SP seeks to leverage the referenced items with integrated, stronger policies directed toward long-term island sustainability.	

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GSP-126	Daniel Swavely				I am unconvinced that a new land use planning process is necessary at this time. Any changes to our current land use planning process should make things more simple, not more complicated. Ideally, any new system would allow for a landowner to apply for and defend his own proposed changes, not hire a consultant. And, recall the previous I- Tanota' land use plan which was ultimately scrapped, largely because it created non-conforming property designations that triggered violations to existing mortgages, residential and otherwise.	Guåhan 2050 Sustainability Plan (G50SP) was mandated by Public Law 35-110.	
GSP-127	Daniel Swavely				I view land use planning as one subcomponent of community planning: however, it should not exist out-of-balance with other forces of community development such as the health, education and welfare components. As such, pinning Guam's future sustainability on only land use planning overlooks the plethora of other maladies facing us today.	The G50SP seeks to integrate land use, economic, environmental, and cultural sustainability concerns through applicable land use planning mechanisms. The plan does not assume that other aspects of community sustainability are not also important.	
GSP-128	Daniel Swavely				Only BSP, among all GovGuam agencies, has the mandate to tackle every aspect of community planning; and I'm asking that, under your leadership, the Bureau cast a much wider net than land use. In the mid-1970s John Gilliam and I, under the direction Governor Bordallo and Paul Souder, wrote the bill that established the Bureau of Planning. I had high expectations then, as I do now, for a super agency of sorts that could cross all barriers to identify problems and generate solutions so as to assure that Guam and all Guamanians reach their fullest potential.	The G50SP proposes an integrated, multi-agency approach to implement the land use plan goals, objectives, and policies.	
GSP-134	Daniel Swavely				1. A GovGuam budget of $1.3 billion ($8,000 per resident) with an unsustainable expenditure of $1,000,000 per day for personnel alone.	Thank you for the comment. BSP acknowledges that effectively addressing Guam's social and environmental challenges requires more than land use planning and implementation. The G50SP has attempted to address as many issues as possible through appropriate land use planning and policies, consistent with the mandate of P.L. 35-110 and avaialable resources.	

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G50SP Public Comments and Response

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GSP-135	Daniel Swavely				2. A huge and growing affordability gap for housing.	Thank you for the comment. BSP acknowledges that effectively addressing Guam's social and environmental challenges requires more than land use planning and implementation. The G50SP has attempted to address as many issues as possible through appropriate land use planning and policies, consistent with the mandate of P.L. 35-110 and avaialable resources.	
GSP-136	Daniel Swavely				3. A meth addiction problem that threatens both the CHamoru culture and everyone’s safety.	Thank you for the comment. BSP acknowledges that effectively addressing Guam's social and environmental challenges requires more than land use planning and implementation. The G50SP has attempted to address as many issues as possible through appropriate land use planning and policies, consistent with the mandate of P.L. 35-110 and avaialable resources.	
GSP-137	Daniel Swavely				4. Troubling high school dropout rates and subpar reading and math scores.	Thank you for the comment. BSP acknowledges that effectively addressing Guam's social and environmental challenges requires more than land use planning and implementation. The G50SP has attempted to address as many issues as possible through appropriate land use planning and policies, consistent with the mandate of P.L. 35-110 and avaialable resources.	
GSP-138	Daniel Swavely				5. Severely understaffed Police, Corrections, and Health services, despite robust recruitment efforts.	Thank you for the comment. BSP acknowledges that effectively addressing Guam's social and environmental challenges requires more than land use planning and implementation. The G50SP has attempted to address as many issues as possible through appropriate land use planning and policies, consistent with the mandate of P.L. 35-110 and avaialable resources.	
GSP-139	Daniel Swavely				6. Some 15,000 abandoned vehicles, most of which are parked over the aquifer and leaking oil and lubricants.	Thank you for the comment. BSP acknowledges that effectively addressing Guam's social and environmental challenges requires more than land use planning and implementation. The G50SP has attempted to address as many issues as possible through appropriate land use planning and policies, consistent with the mandate of P.L. 35-110 and avaialable resources.	

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GSP-140	Daniel Swavely				7. An estimated 400,000 used tires, all highly combustible.	Thank you for the comment. BSP acknowledges that effectively addressing Guam's social and environmental challenges requires more than land use planning and implementation. The G50SP has attempted to address as many issues as possible through appropriate land use planning and policies, consistent with the mandate of P.L. 35-110 and avaialable resources.	
GSP-141	Daniel Swavely				8. An estimated 60,000 stray dogs.	Thank you for the comment. BSP acknowledges that effectively addressing Guam's social and environmental challenges requires more than land use planning and implementation. The G50SP has attempted to address as many issues as possible through appropriate land use planning and policies, consistent with the mandate of P.L. 35-110 and avaialable resources.	
GSP-142	Daniel Swavely				9. Pockets of neglectful property maintenance that resemble a third world country. https://mail.google.com/mail/u/0/?ik=56d2f63d6f&view=pt&search=all&permmsgid=msg-f:1865575656837011119&simpl=msg-f:1865575656837011119 1/2 5/19/26, 1:56 PM Government of Guam Mail - Fwd: Guam between now and 2050	Thank you for the comment. BSP acknowledges that effectively addressing Guam's social and environmental challenges requires more than land use planning and implementation. The G50SP has attempted to address as many issues as possible through appropriate land use planning and policies, consistent with the mandate of P.L. 35-110 and avaialable resources.	

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GSP-143	Barbara Burkhardt		Fourth Comment – What is missing		Fourth Comment – What is missing As an architect, my view is that successful implementation on Guam has been largely engineering- centric in response to the Military Master Plan for buildup identified more than 20 years ago. Engineers are asked to solve specific problems — power, roads, drainage, buildings — one strategic project at a time. The military provided the Master Plan and timelines, not starting construction on Camp Blaz and other projects until the 20-year plan for infrastructure and the Navy Hospital was in place. Civilian short comings were clearly identified 20 years ago. A side note is, what happened to all the proposed on base family housing? Are we are paying the civilian price on that Master Plan deletion today. Whats next for Guam? I can't find these two Land Use actions clearly in the Plan. • Short term ongoing heavy development adjacent to the completed buildup infrastructure improvements? • What is the 20 year infrastructure plan that will enable development in ancillary areas? Without this 2 prong planning lens, private and public development projects continue to move forward and create chaos. Each may meet technical standards, but together they can undermine groundwater protection, green space, housing stability, traffic flow, and community health. Continuing my comments, I will focus on Dededo, and on the three systems carrying the greatest burden of current land use decisions: recreational space, limestone forest, power, water, and roads. Dededo is briefly in the Plan is Section 7.2.1 Dededo Comment 1 – Short Term Land Use Plan Wins toward the Guåhan 2050 Sustainability Plan (G50SP) Goals Example Poster – MCD grubbing & clearing, Land Use on a visible intersection. Pictured is Marine Corps Drive at Micronesia Mall, as a resident of Dededo, this is how I enter the village heading home, what an eyesore. I will not comment on Route 3 today (see second	G50SP policies require that adequate public services be available prior to development approval, and that new public services not be growth-inducing. Implementation of this policy framework would require infrastructure planning and investment by development proponents, prior to considering approval of new land use entitlements. The plan also requires the protection of native limestone forest, through avoidance and mitigation requirements for new development. In addition, restoration and green infrastructure, including through the planting of native species, is promoted by the plan.	

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G50SP Public Comments and Response

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GSP-144	Barbara Burkhardt		Dededo Comment No. 2	Figure 5-4, aquifer geologic cross section, 3 major	Dededo Comment No. 2 Dededo Residents Have Already Spoken – Page 4-23 & 7–9, I assert trust is lost in Land Use planning and implementation by year over year Land Use failures. On page 7-9, the plan documents survey responses representing what Dededo residents have been saying again and again. Dededo still contains important limestone forest habitat, although much of it has already been impacted by the development in support of Camp Blaz. Large forest and reforestation parcels are set aside in the unfunded Guam Forest Action Plan. Dededo is also absorbing major growth — both permanent industrial, power, commercial, housing and temporary workforce housing to support the current population buildup. At the same time, residents need: more affordable homes, reliable transportation, and safe green public spaces. These are basic quality-of-life needs. The land use maps clearly show a serious lack of recreational space for Dededo, Guam's largest Village. The survey confirms that Dededo residents do not believe current park space is adequate for the population. Dededo Comment No 3 – Immediate need for increased recreational space - The Land Use Plan needs to act on pilots and community partnerships to carve out this space now. The people of Dededo have already made this clear. With housing demand outside the fence and increased military staff, the need for recreational areas becomes even more urgent. These survey results cannot be separated from what is current needs. As Dededo absorbs more housing, military- related development, and infrastructure, it is also losing limestone forest and tree canopy — the very systems that protect roundwater, reduce heat, and support wildlife. Much of this loss has accelerated with the buildup at Camp Blaz and nearby rezonings. At the same time, industrial-scale energy projects and dense development are being placed over critical recharge areas of the Northern Aquifer.	Noted. The G50SP proposes various policies to protect habitat, promote and increase recreation areas, and discourage residential sprawl over the NGLA. The plan also proposes policies to address affordable housing, water management, stormwater management, solar farms and other large industrial uses. The plan requires the provision of adequate public services, including road capacity, prior to approving new development. The plan proposes a potential TDR program to direct new development to appropriate areas already served by public infrastructure and provide potential area for a parks corridor, supporting recreation, agriculture, environment, and cultural heritage.	

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GSP-145	Barbara Burkhardt		Phase 1A -3 mile Loop Land Use – 2026 win for the plan		• Areas of mixed and limestone forest fragments would be a Mayor, school, agency, commercial, non profit and resident priority, supported by small planting Grants and Guam Forestry native plant nursery and experts. • Rubbish removal road sections have already been staked by entities, Mayor's Office, Food Coop, Rotaract, Kurason I Sengsong and ???. The community could be asked to adopt the entire route in additional sections. Fortunately dumped cars are not a problem as they are to the north of the Loop. • Nice artistic signage celebrating the loop experience • Again, sidewalks and a continuous bike path. Perhaps set aside Sunday mornings for car free use. Loop traffic on one lane one way. Phase 1 -B – Fix the previously mentioned MCD eye blight from the Dos Amantes to the GRMC intersection. Both sides. Same strategy as above but would require CCU agreement to improve their properties and easements. 3 Commercial Sites would need to agree to improve their landscaping and curb appeal in a native plant Land Use mandate. Department of Public Works would need to take responsibility at public road curb cuts to MCD. I would recommend a professional civic Landscape design firm take the curb appeal up a notch. Why wouldn't CCU and the large commercial property entities agree to underwrite the landscape design as a demonstration of civic pride. Phase 2 A– longer process, make a meaningful leadership driven agreement with CLTC to identify the land use of what is ½ the central area of this plan. Make a master plan and begin the 20 year infrastructure upgrade to accommodate homes, farms and accessible public green space. Is it too late for the failure of the GICC Legislation to be reversed? Speaker Blas?	BSP acknowledges the comments. The G50SP provides a framework for more sustainable land use planning and development decisions to support the protection of remaining limestone forst, address inadequate road infrastructure, promote pedestrian and bike access/transit, address community blight, and so on.	

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GSP-146	Barbara Burkhardt		Phase 2 B - Bisect North South indicating Ysengsong Rd		Phase 2 B - Bisect North South indicating Ysengsong Rd and that it's future is further improvements. The improvements would generate an additional Land Use revision along the Road and areas not covered in Phase 2 A. Dededo No 8 – Correction to the Land Use Plan – Dededo Central Urban Core – Impact immediate Land Use corrections indicating current trends would win back some trust. In particular the West Santa Monica/ MCD Intersection is residential and the Food Coop – why a Land Use change? Large green spaces are mislabeled. The Green Belt diagonal is not clear. The KIS Community Center and Limestone Forest Restoration Project is labeled as housing. "Green" large utility easements should be labeled as such, they cut a large swath through the map. On a graphic note, MCD, Route 3, Ysengsong,West Santa Monica, Hamburger Road and are not "popping".	Noted. Land uses are proposed based on current land cover, proximity to existing public services, and potential benefits related to future use.	
GSP-147	Barbara Burkhardt		In closing:		At its core, for Dededo this is about people, forests, and water — and how wisely we spend public money. Dededo residents are asking for green space, rubbish removal, abandoned cars and dumped puppy free neighborhoods, to preserve their basic quality of life. The forests they are losing protect the aquifer that supplies 80% of Guam's drinking water. When land is cleared first and planned later, the cost of fixing roads, drainage, heat, and water quality falls on taxpayers and utility ratepayers. Protecting forest, recharge areas, and community spaces now is far cheaper than retrofitting bare land later. If the 2050 Land Use Plan is meant to guide development, it must be in action today — because once Dededo's land and aquifer are compromised, there is no affordable way back.	Concur. The intention of the G50SP is to address the identified issues. Successful implementation will be contingent on following the plan requirements through the development review process.	

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Comment ID	Commenter	Page #	Section /Paragraph	Figure/Table #	Original Comment / Recommendation (verbatim)	Response	Plan Revision / Action Taken
GSP-148	Barbara Burkhardt		On the leadership and implementation section		On the leadership and implementation section, a comment on going forward. Guam Green Growth and the Center for Island Sustainability (G3 CIS) was neither asked by the Committee nor volunteered to present expert Plan land use testimony during the 2 years of GICC public hearings, despite the scale and impact of that legislation on the Plan we are reviewing today. Dededo is being built first and planned later — and that puts our forests, our aquifer, and our children's future at risk. If Guam is to remain a place people want to live in and visitors want to return to, we must care for our forests, our coastlines, and our open spaces — because once they are gone, they cannot be rebuilt.	Guam Green Growth and the CIS were invited to participate in all public meetings concerning the plan. Mr. Austin Shelton participated in one of the roundable meetings held for the plan. In addition, the consulting team conducted a focus group with Austin Shelton concerning GGG. The draft plan was available for review and comment to all members and organizations of the community, including GGG and the CIS.	

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Community Based
Dededo Limestone Forest Restoration Project
Northern Plateau

Kurason I Sengsong
HEART OF THE VILLAGE

island girl power
To Empower, Encourage, and Inspire!

@igp_kurasonisengsong

@islandgirlpower.thriftstore

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PROVEN, EFFECTIVE COMMUNITY SOCIAL WORK METHODOLOGY



PROGRAMS

Environmental

Youth

Adults

Youth ages 7-25, Families and Volunteers invest time and passion

More confident with life skills and culturally aware youth

Self Reliance in everyday life

Lifelong Community Involvement

OUTCOMES

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Adults

Youth/ Adult Volunteer Ratio



PROGRAMS

Environmental

1 Youth : 20 Adult Volunteer Hours

Youth

6-12 Youth : 2 Adult Volunteers

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Environmental

Kurason I Sengsong Environmental

PROGRAMS



Kaiser
Storm water Basin

2014 Urban Blight
Partner with
Dededo
Mayor's Office
& GHURA

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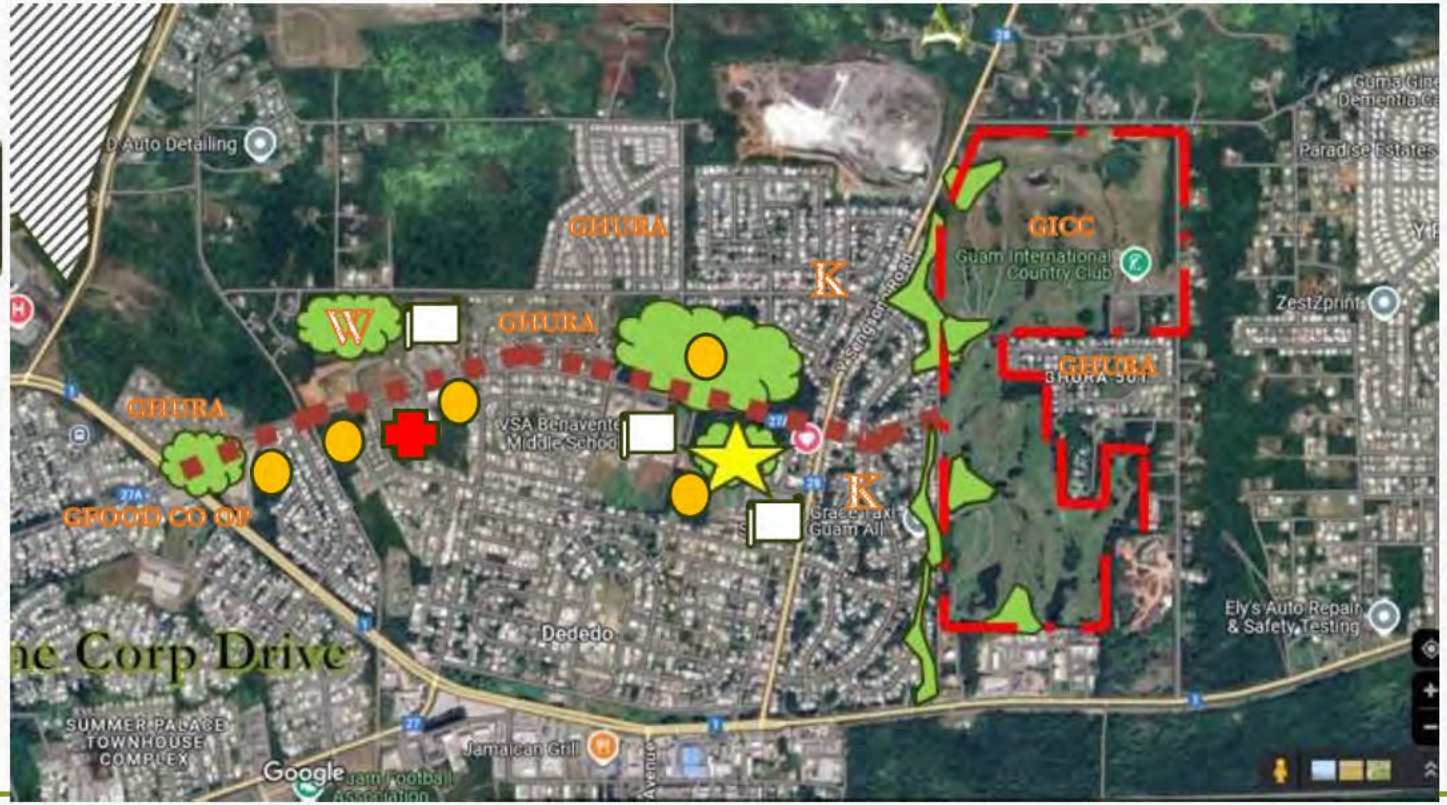
Environmental

Kurason I Sengsong
Environmental

PROGRAMS



2034 Ten Year Plan

West Santa Monica Parkway
1.5 Mile
Reforestation Partnership
Food Co op, 3 GDOE Schools, Guam Forest Plan - Wettengal Field, Northern Public Health Complex, Dededo Mayor's Lands, Kaiser low-income housing & GHURA low-income housing
Save the GICC public recreational land from a solar farm rezoning.

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Environmental

Kurason I Sengsong
Urban Blight – GHURA MOU

PROGRAMS





- Mawar revealed trash extent
- July 2023 – 80 people
  - 200 bags of trash
  - 3 – 20' trailers white goods, metal
- February 2024 - more dumping & camping

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Environmental

Friends of the Park

Community Based

PROGRAMS



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Environmental

Friends of the Park
Community Based

PROGRAMS







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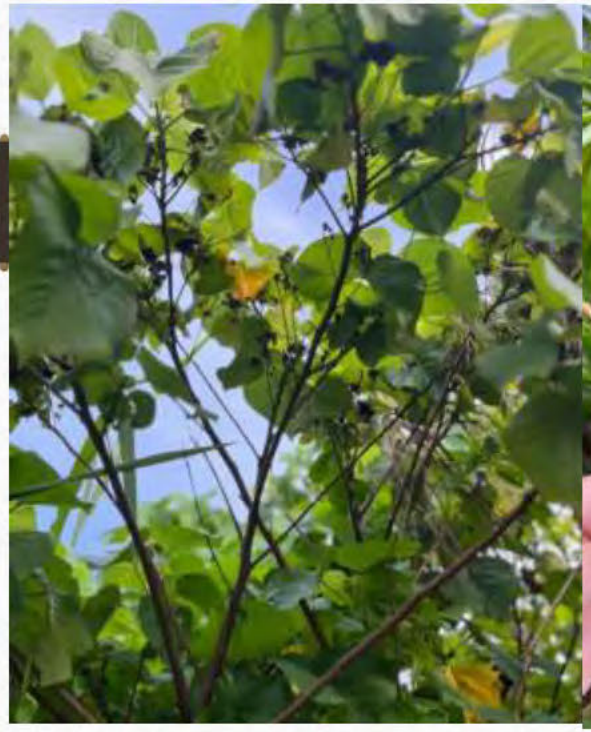
Environmental

Friends of the Park

Local Native Plant Blindness
Cure by guided tours
Propogate & Plant specie

PROGRAMS



(Ahgao)



(Mapuñao)



(Kafu)



(Sumak)

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Environmental

Friends of the Park
Community Based



Limestone Forest Restoration	Citizen Forester	Guam Native Plant Society	Native Plant Nursery	Village Parks Project
• Unique on Guam • Community Forest • 11 acres • 1000 Hours yearly	• 20 CF, 2024 • 100 trees surveyed • ½ mile radius from KIS/IGP	• Facebook/ Instagram • Since 2022 • Amateur & Professional	• 42 Native Species • 2x Expansion 2025	• 26 HOA Kaiser Parks • School Yards • Stormwater Basins • Mayor's Offices

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Environmental

Friends of the Park

Dededo Limestone Forest Restoration Project Pre Mawar

PROGRAMS






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Environmental

Limestone Forest Restoration Project

Typhoon Mawar Damage May 2023

PROGRAMS









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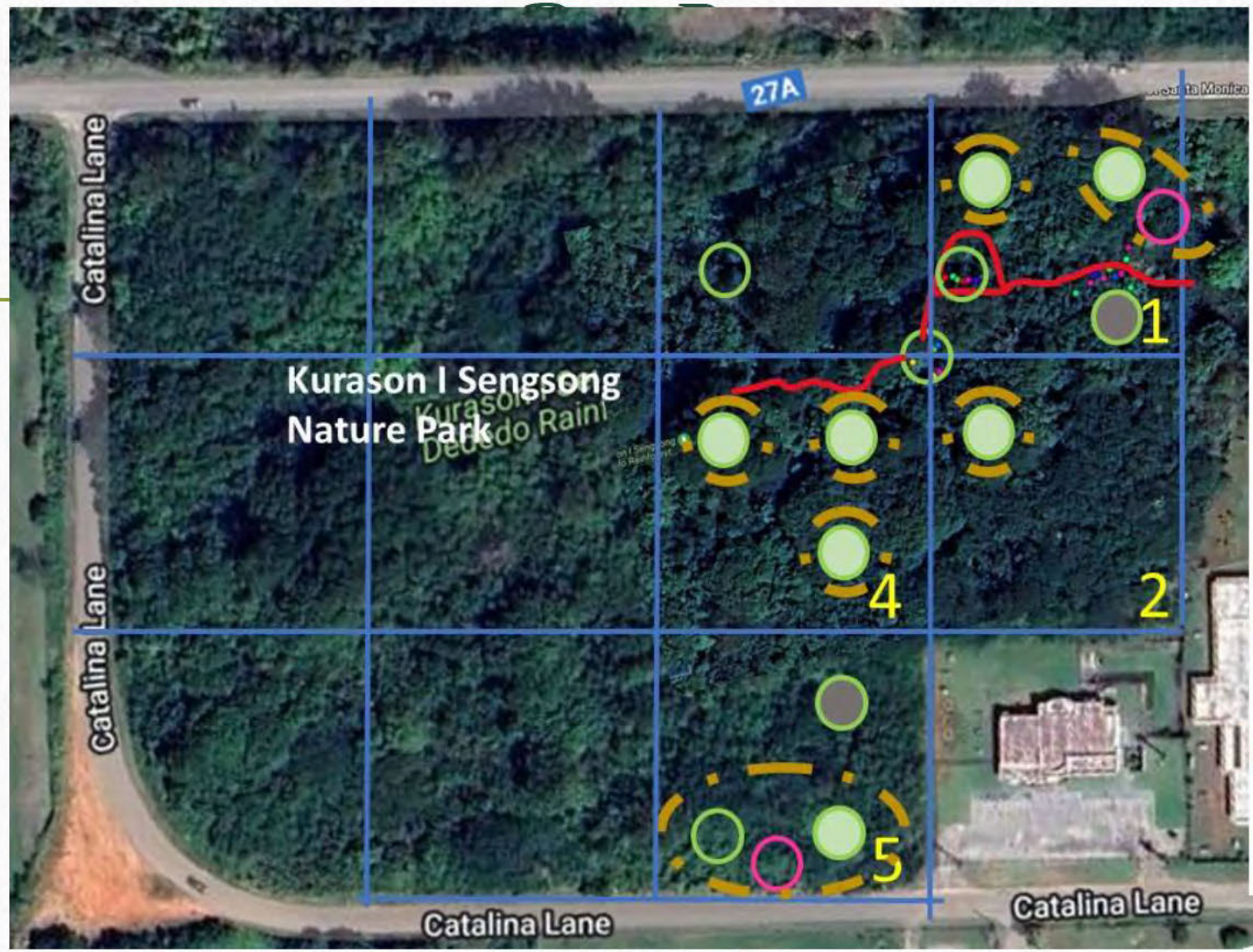

Kurason I Sengsong
Nature Park

Dededo Rainforest Restoration Project

Clear path to existing Dug Dug, verify Mawar survival, underplant up to 6 – 8 understory natives.

Clear new path, Plant 1 Dug Dug, and 6 – 8 understory trees, 2 -4 shrubs. Pagu thicket will be thinned/ removed

Future Dug Dug planting area. Post Grant

Nunu

Clearing limit
Feb – April 2024

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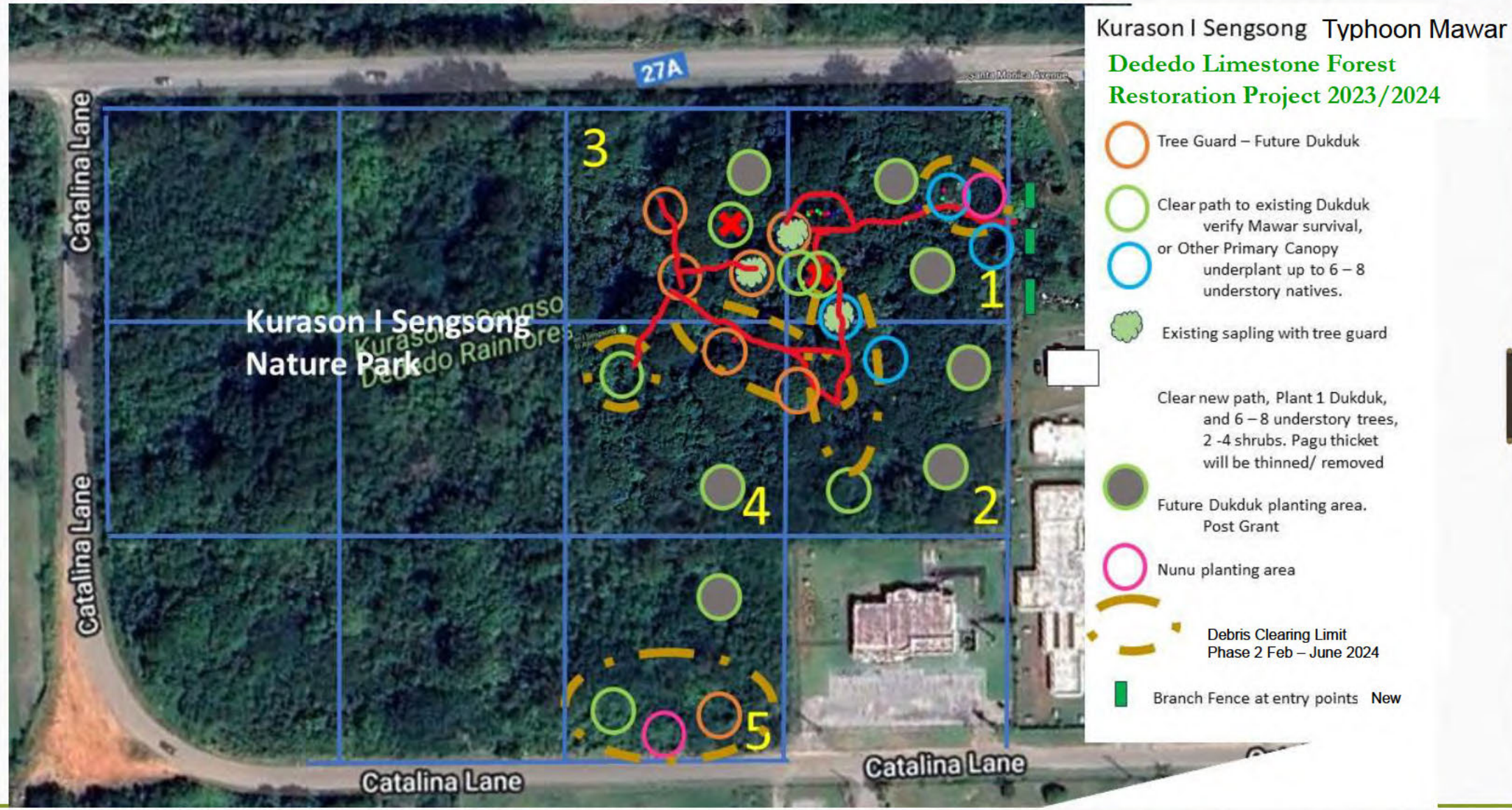

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Environmental

Primary Canopy

duk duk, yoga

Restoring Habitat

PROGRAMS

Forest Plant List

39 natives

- 25 existing
  1 vine listed
  April 2024
- 14 planted
  since 2014

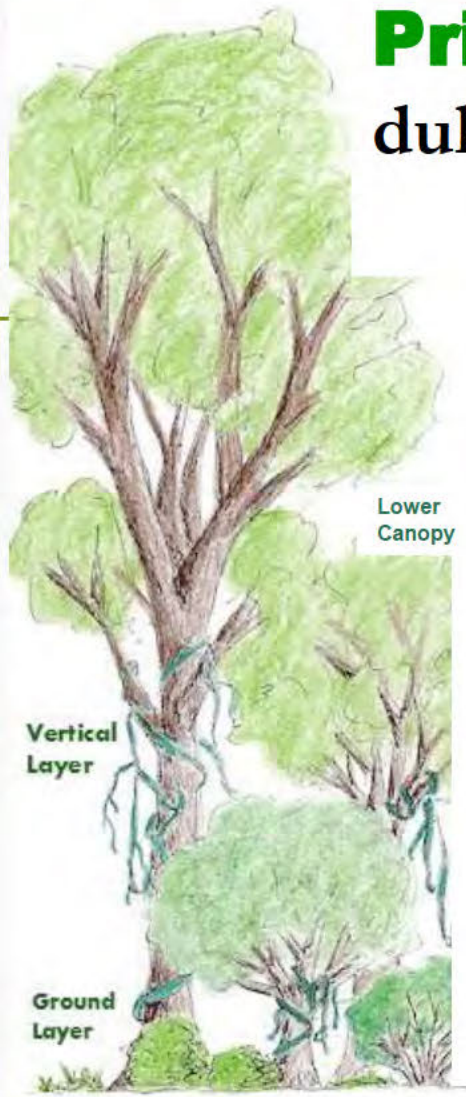
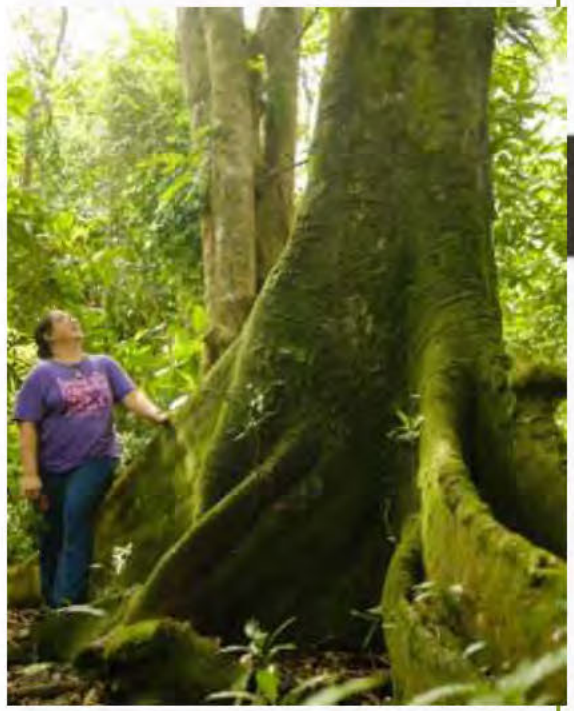


Table 2. Plant parts commonly eaten by fanihi on different islands in the Marianas (Wiles 1987a, Glass and Taisacan 1988, Worthington *et al.* 2001, Wiles and Johnson 2004, Jancke 2006). Fl = flowers, fr = fruits, lv = leaves.

Species	Parts Eaten	Guam	Rota	Aguiguan	Northern Islands
Artocarpus mariannensis	fr, lv	x	x		
*Artocarpus altilis**	fr	x	x	x	
*Ceiba pentandra**	fl	x	x		
*Cestrum diurnum**	fr	x			
Cocos nucifera	fl, sap	x			x
Cycas micronesica	fr	x			
Elaeocarpus joga	fr, fl		x		
Erythrina variegata	fl	x	x		x
Ficus spp.	fr	x	x		x
Guettarda speciosa	fl		x		
Mammea odorata	fr, fl	x			
Mucuna gigantea	fl		x		
Neisosperma oppositifolia	fr	x			x
Ochrosia mariannensis	fr			x	
Pandanus tectorius	fr	x			x
*Persea americana**	fr, fl		x		
Premna obtusifolia	fr				x
Terminalia catappa	fr, fl	x			x

* = introduced species

(Fanihi) Endemic Bat food list



(Duk duk) Endemic breadfruit

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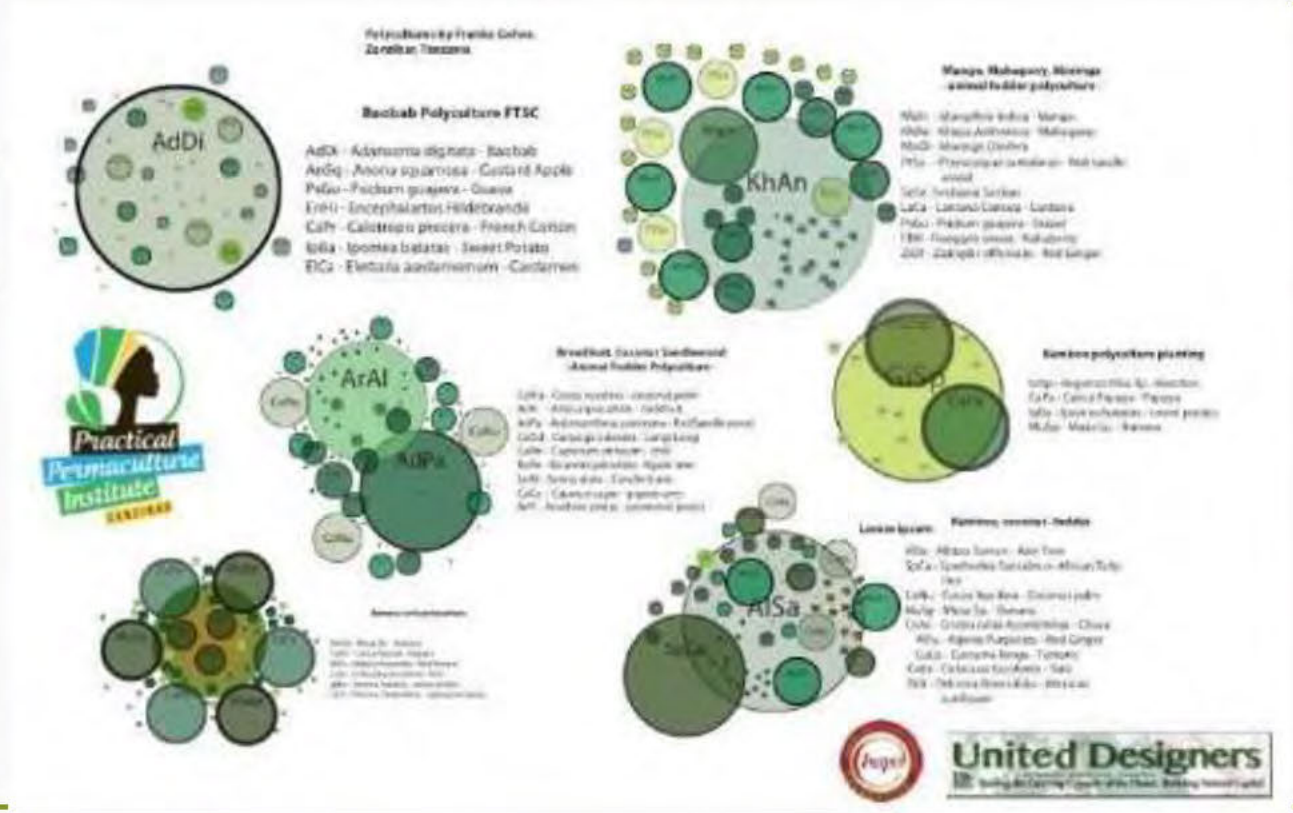
Environmental

Dededo Limestone Forest Restoration Project

Planting Circles

PROGRAMS



Planting concepts

- 25’ diameter
- Duk duk Center
- 6 native lower canopy trees
- Shrubs Ground cover

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Environmental

Dededo Limestone Forest Restoration Project

Planting Circles

PROGRAMS





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Environmental

Citizen Forester Training & Certification

PROGRAMS





- 50% path surveyed
- 20 CF certified 2024
- 90% native plants adjacent to paths
- Existing & new Dukduk locations
- Pg-cloud.com/Guam

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Environmental

Citizen Forester Surveys

PROGRAMS





25' CF survey sample

- 95% native Typhoon Mawar survivors
- Dukduk - 15' self seeded
  Kafu – 4 mature, 15'
- Sumak
- Paipai
- Vines and fern

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Environmental

Citizen Forester Dededo Range

PROGRAMS



½ mile survey range

- 2 cohorts trained 2024. 1 cohort 2025
- 100 trees tagged on data base

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Environmental

Guam Native Plant Society Online Content Facebook/ Instagram/Whatsapp

PROGRAMS



Monthly Native Plant Focus

January - 2023

CHosga

Phyllanthus mariannensis

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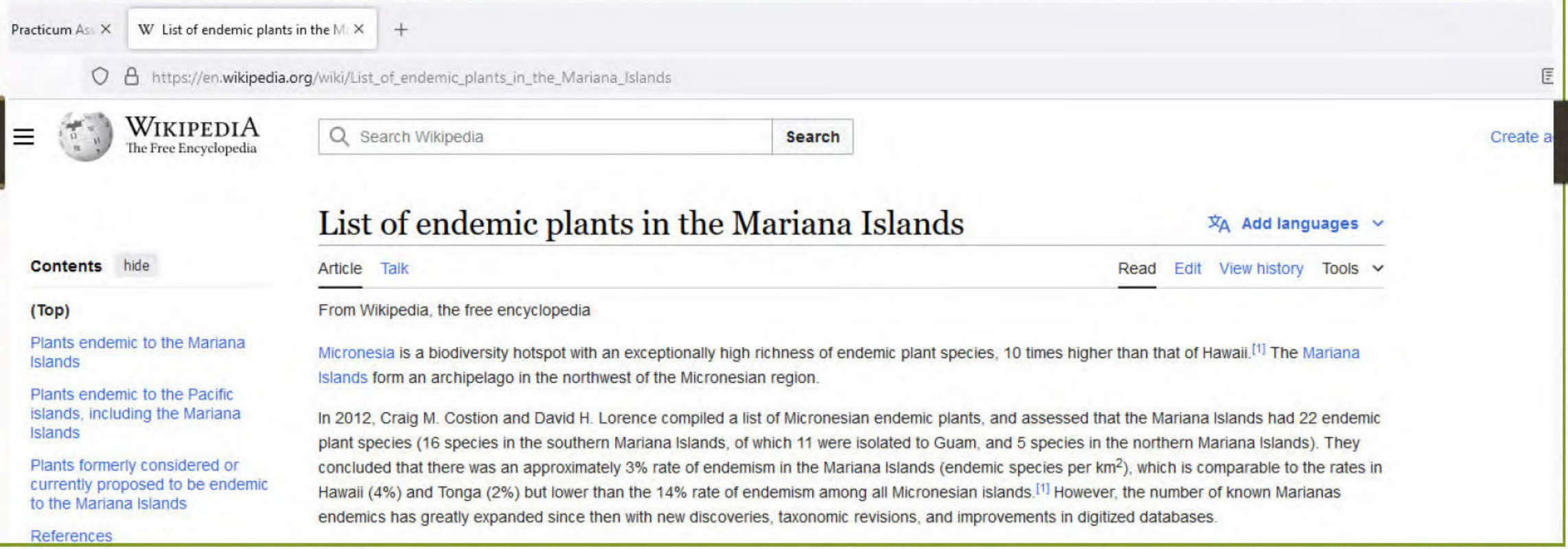
Environmental

Guam Native Plant Society Online Content

wikipedia.com

PROGRAMS



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Environmental

Guam Native Plant Society Online Content

wikipedia.com

PROGRAMS

Scientific name	Chamorro name(s)	Order	Native Distribution	Conservation status
Terminalia rostrata Fosberg & Falanruw[3]		Myrtales	Asuncion[3]	
Leptecophylla mariannensis (Kaneh.) C.M.Weiller[4]		Ericales	Alamagan[4]	
Psychotria hombroniana (Baill.) Fosberg[5] • *Psychotria hombroniana* var. *mariannensis* (Kaneh.) Fosberg[6] • *Psychotria hombroniana* var. *ladronica* (Hosok.) Fosberg[7] • *Psychotria hombroniana* var. *hombroniana*[8]	Aplokating-palaoan[9]	Rubiales	*Psychotria hombroniana*: Marianas, Caroline Islands[5] • var. *mariannensis*: Alamagan[6] • var. *ladronica* (Hosok.) Fosberg: Rota[7] • var. *hombroniana*: Marianas	
Osmoxylon mariannense (Kaneh.) Fosberg & Sachet[10]	No known common name[11]	Apiales	Rota[10]	Critically endangered (IUCN)[12] Endangered (USFWS)[11]
Nesogenes rotensis Fosberg & D.R.Herbst[13]	No known common name[14]	Lamiales	Rota[13]	Endangered (USFWS)[11]
Derris mariannensis Hosok.[15]		Fabales	Rota[15]	
			Psychotria rotensis:	*Psychotria rotensis* is

GNPS List Compiled from Plants of the World Online Guam biodiversity hotspot

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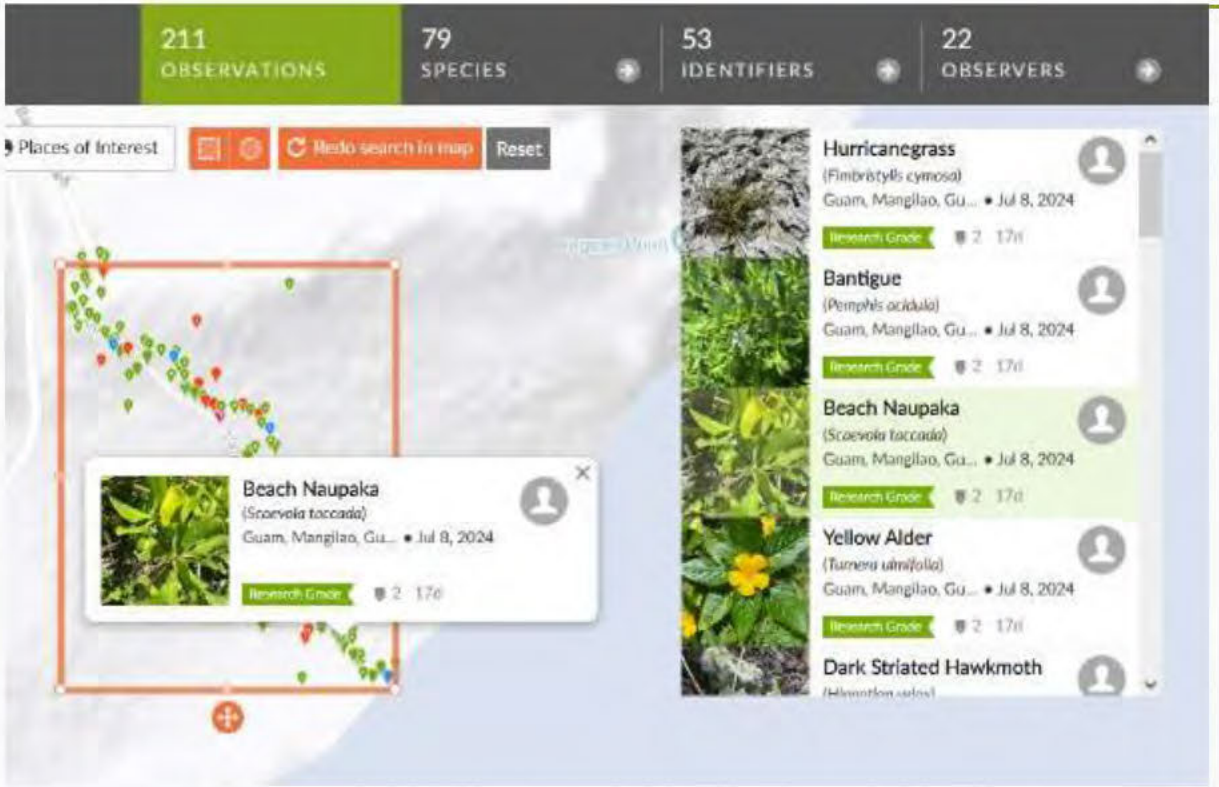
Environmental

Guam Native Plant Society Online Content

inaturalist.org

PROGRAMS



Surveys

- 1000 steps
- 211 Observations
- 79 Species
- 53 ID Confirmed

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Environmental

Native Plant Nursery

PROGRAMS





Start up 2016

Expansion 2020

Future Site

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Environmental

Native Plant Nursery

Outplanting

PROGRAMS





Community Garden Pollinator Plot









DLFRP – Planting Days

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Neighborhood Parks Project

Environmental

PROGRAMS



4

- 13 combined acres
- Kaiser abandoned Homeowners Association parks
- Dededo Mayors jurisdiction- MOU

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Environmental

Friends of the Park
Community Based



Limestone Forest Restoration	Citizen Forester	Guam Native Plant Society	Native Plant Nursery	Village Parks Project
• Unique on Guam • Community Forest • 11 acres • 1000 Hours 2023/2024/ 2025	• 20 CF, 2024 • 100 trees surveyed • ½ mile radius from KIS/IGP	• Facebook/ Instagram • Since 2022 • Amateur & Professional • Wikipedia • inatualist	• 42 Native Specie • 2x Expansion 2025	• 26 HOA Kaiser Parks • School Yards • Stormwater Basins • Mayor's Offices

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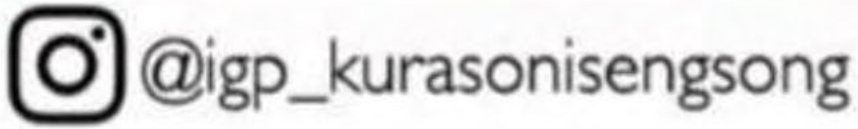
We strengthen our youth, our youth strengthen us

Empower, Encourage and Inspire!









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Kurason I Sengsong Native Plant Portfolio

Active Environmental Programs

Submitted to Granite Construction, June 9, 2025 as part of a Fundraising Proposal

Summary Statement of Goals and Objectives

🌿 Rooting for Our Future with Kurason I Sengsong 🌿 Discover the remarkable journey of Kurason I Sengsong. We are on a mission to restore an 11-acre invasive mixed forest back to its traditional native interior limestone forest glory.

🌳 Vision for Conservation and Education: Since 2014, Kurason I Sengsong has provided active volunteer driven stewardship for a publicly accessible urban endemic and native interior limestone forest on Guam's Northern Plateau and Aquifer. This not only promotes Guam's unique biodiversity but also fosters indigenous heritage, education, community building, and civic pride.

🚶🚶‍♀️ Community-Accessible Restoration: Located in the low income Kaiser subdivision and easily accessible via roads and sidewalks, the **Kurason I Sengsong Sagan Tinamon** is adjacent to two elementary schools and one middle school, making it a unique and valuable resource for the community.

🌱 Preserving Guam's Natural Heritage: Kurason I Sengsong's restoration model mirrors the description of the endemic breadfruit rainforest canopy as documented in pre-World War 2 botany literature. We are planting the seeds of a sustainable future with 4 dukduk primary canopy trees per acre. A 40 specie limestone forest is supplemented and expanded from the established dukduk. **KIS Native Plant Nursery** is also the repository for seed germination and seedling donations from the public. **KIS Guam Native Plant Society.**

📚 Education and Outreach: We engage youth age 7 through 25 in endemic and native plant and animal learning through the KIS Service Learning program. From workshops to planting activities, we are nurturing the conservationists of tomorrow. **guamservicelearning.com**

👶 Celebrating Indigenous Culture: Kurason I Sengsong envisions a brighter future by celebrating indigenous culture with an annual Dokdok day where the community will come together at the Community Center to celebrate the harvest and sharing of the hutu (large nut/seed) of the endemic breadfruit.

🌎 A Glimpse into the Future: As they continue their dedicated efforts, they aspire to restore more of the Dededo Rainforest Restoration Project, with exciting plans on the horizon.

"Join us in supporting Kurason I Sengsong as they work to protect and restore this native land. Together, we can ensure a greener, more sustainable future for all. 💚" Department of Agriculture

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Kurason I Sengsong
Native Plant Nursery

Established in 2016, during 2025 the KIS Native Plant Nursery will be doubled in capacity to accommodate 3,500 plants under propagation. In 2020 a shade structure and planting racks were added to the nursery. Local companies and private donors provide equipment, hand tools, soil and pots. A 1000 gal rainwater tank collects roof run off. The 2025 expansion shade structure and racks have already been procured by donation.

The Native Plant Nursery provides material for the on going reforestation project at the 11-acre KIS **Dededo Limestone Forest Restoration Park**. As we increase capacity, we also anticipate providing plants and planning for selected reforestation projects at schools, mayor's offices/parks and governmental grounds.

The day-to-day propagation native plant List supports a 40-item native tree and plant biology survey of our limestone forest species. Research for the list is provided by our **Guam Native Plant Society**. They also regularly survey our DLFRP site for additional native species additions to the List.

Kurason I Sengsong Native Plant Nursery works in cooperation and support of the Department of Agriculture, Forestry Division- Native Plant Nursery.



Native Plant Nursery 2019



Native Plant Outplanting June 2024
KIS **Dededo Limestone Reforestation Project.**
Propagation goals: 11 acres - 900 plants per acre.



Native Plant Nursery March 2022 Far Right Location of 2025 Expansion

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Kurason I Sengsong
Dededo Limestone Forest Restoration Project
@ Sagan Tinamon

Since 2015 1/3 of 11 acres will have been cleared of invasives. We are currently fundraising to clear another 1/3 to undergo rapid reforestation. We are motivated by having a goal to provide protection and habitat to our native edemic animal, the Fanihi.

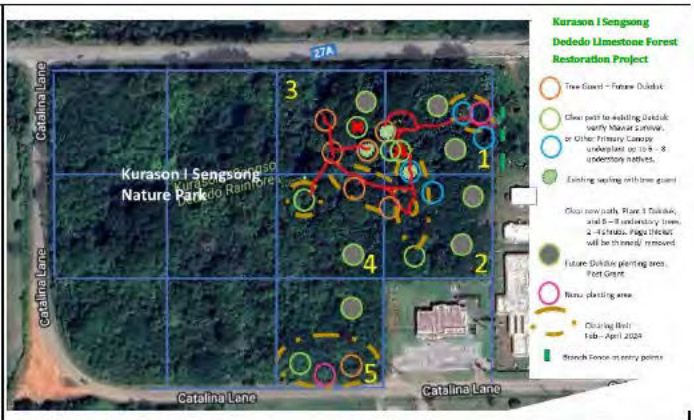
On 1st & 3rd Saturdays, 6-10 volunteers are led by our volunteer Citizen Foresters into the forest to remove invasives and plant trees. Special groups volunteer at the forest quarterly with upwards of 40 or more participants. We also create supporting infrastructure, one project at a time. Average annual total volunteer labor is **1000 hours.**

Kurason I Sengsong **Dededo Limestone Forest Restoration Project** works in cooperation and support of:

- Dededo Mayor's Office
- GHURA
- Department of Agriculture, Forestry Division
- Northern Guam Soil & Water Conservation District
- USDA - Forestry

guamservicelearning.com – a youth service program of KIS.

KIS Native Plant Nursery
KIS Guam Native Plant Society



October 2023 – October 2024 Reforestation Work Plan



February 2024 Volunteer Work Group



October 2024 – October 2025 Reforestation Work Plan

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Kurason I Sengsong
Guam Native Plant Society

Established 2022, 40+ members, **Guam Native Plant Society (GNPS)** Instagram now has >1,000 followers, and Facebook has >1,900 followers. Our goals are to decrease local native plant "blindness", correct the public record on native plants, create resources for use by the public with printed and digital plant reference guides, informative trail plant labeling, educational and actual plant experiences. Amateur and professional Guam native flora and fauna enthusiasts are welcome.

In preparation for a public Digital Plant Reference Guide, **GNPS** has accumulated resources and scientific references in support of endemic and local Limestone Forest Plants.

The research for scientific references of the endemic plants of Guam and the Marianas Island is tracked on Wikipedia. **GNPS** created the page List of Endemic Plants of the Marianas Island in early 2022. Blue links are plant pages added or edited to standard by GNPS since early 2022. The red text species have yet to be vetted within Wikipedia by GNPS.

https://en.wikipedia.org/wiki/List_of_endemic_plants_in_the_Mariana_Islands

Research for the **Dededo Limestone Forest Restoration Project** plant List is provided by our **Guam Native Plant Society**. They also regularly survey our site for native specie additions to the their site biological survey. **GNPS** has identified up to 42 native species in the Nature Park. This list does not include the many invasive species present in areas targeted for clearing. As we hand clear invasives, space for outplanting is created, but also existing native plants emerge and thrive.

Our **Native Plant Nursery** benefits greatly from **GNPS** with seed and propagation assistance.



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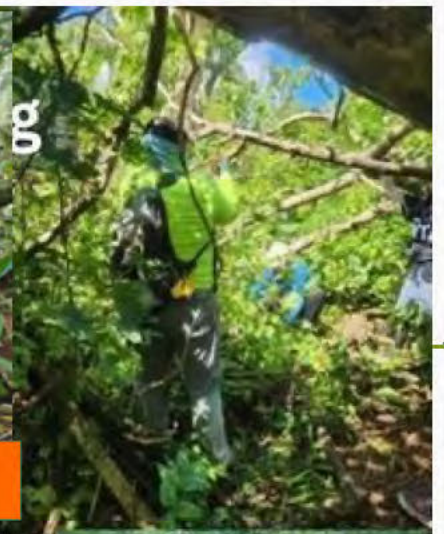









Rooting For Our Future

Arbor Month 2023

GUAM DEPARTMENT OF AGRICULTURE
FORESTRY & SOIL RESOURCES DIVISION

PROGRAMS

Volunteers (since 2014)

Guam Forestry Partner

Fina'maolek Grant Typhoon Mawar

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Conservation project location and description follow up

Barbara Burkhardt [redacted] > Thu, Feb 26, 2026 at 6:21 PM
To: Edwin Reyes <edwin.reyes@bsp.guam.gov>
Cc: Lola Leon Guerrero <lolalg@bsp.guam.gov>, Matthew Santos <matthew.santos@bsp.guam.gov>, April Trinidad <april.trinidad@bsp.guam.gov>, Guam Coastal Management Program <gcmp@bsp.guam.gov>, Admin MCCA <admin@mccalliance.org>, Juanita Blaz <KISsenvironmental671@gmail.com>, Van Shelly <[redacted]>

One more item of information covering our 3 Programs that support Sagan Tinamon and if we have capacity, our neighborhood. Attached below labeled 8. Granite Construction KIS Native Plant Portfolio.

And some other misc information. The Presentation has been given more than 10 times since 2024 to agency, agency sponsored and organization workshops, gatherings and meetings.

Thank you for your time, I blasted out my files of ready information over a couple of emails.

Best Regards,
Barbara Burkhardt

On Thu, Feb 26, 2026 at 2:38 PM Edwin Reyes <edwin.reyes@bsp.guam.gov> wrote:

> Hafa Adai Barbara and Juanita,
>
> Thank you for your participation and input during last night's public hearing regarding the Guam 2050 Sustainability Plan draft.
>
> To ensure we accurately document the existing use and conditions of your community garden and native tree parkway initiative, could you please provide the following:
>
> The specific project location (lot numbers if you have them)
> A PDF map of the area
> A description of current conservation measures
>
> This information will help us address your concerns within the draft plan.
>
> Best regards,
>
> Edwin Reyes

Edwin Reyes
Administrator
Guam Coastal Management Program
Bureau of Statistics and Plans
P.O. Box 2950
Hagatna, Guam 96932
671-475-9672
www.BSP.Guam.Gov

4 attachments

- **Friends of the Park Artwork.pdf** 911K
- **Arbor Month 2023.pdf** 1000K
- **8. Granite Construction KIS Native Plant Portfolio.pdf** 1081K
- **7. DLFRPCommunity Forest Presentation.pdf** 3127K

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Conservation project location and description follow up

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Community Based
Dededo Limestone Forest Restoration Project
Northern Plateau

Kurason I Sengsong
HEART OF THE VILLAGE

island girl power
To Empower, Encourage, and Inspire!

@igp_kurasonisengsong

@islandgirlpower.thriftstore

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PROVEN, EFFECTIVE COMMUNITY SOCIAL WORK METHODOLOGY



PROGRAMS

Environmental

Youth

Adults

Youth ages 7-25, Families and Volunteers invest time and passion

More confident with life skills and culturally aware youth

Self Reliance in everyday life

Lifelong Community Involvement

OUTCOMES

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Adults

Youth/ Adult Volunteer Ratio



PROGRAMS

Environmental

1 Youth : 20 Adult Volunteer Hours

Youth

6-12 Youth : 2 Adult Volunteers

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Environmental

Kurason I Sengsong Environmental

PROGRAMS



Kaiser
Storm water Basin

2014 Urban Blight
Partner with
Dededo
Mayor's Office
& GHURA

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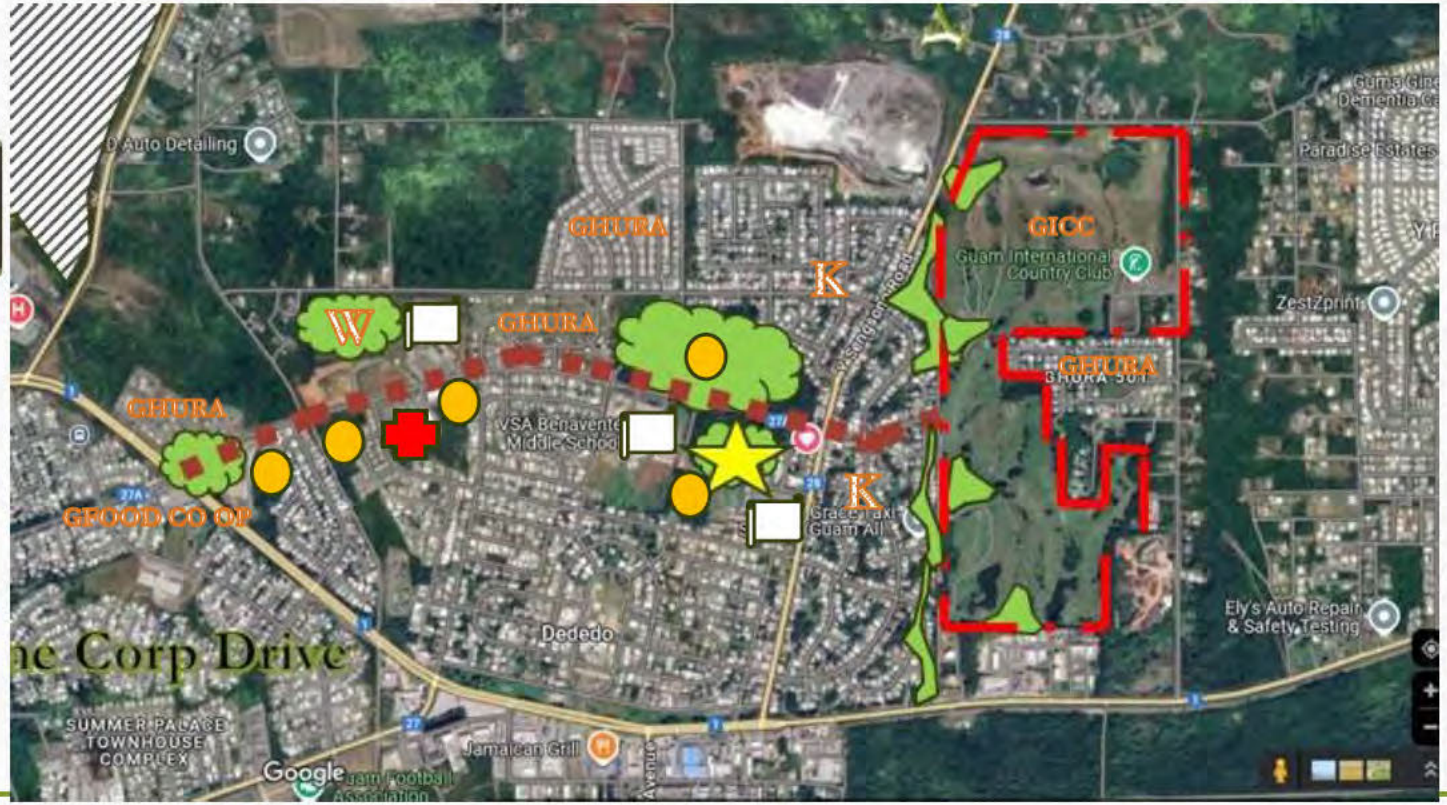
Environmental

Kurason I Sengsong
Environmental

PROGRAMS



2034 Ten Year Plan

West Santa Monica Parkway
1.5 Mile
Reforestation Partnership
Food Co op, 3 GDOE Schools, Guam Forest Plan - Wettengal Field, Northern Public Health Complex, Dededo Mayor's Lands, Kaiser low-income housing & GHURA low-income housing
Save the GICC public recreational land from a solar farm rezoning.

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Environmental

Kurason I Sengsong
Urban Blight – GHURA MOU

PROGRAMS





- Mawar revealed trash extent
- July 2023 – 80 people
  - 200 bags of trash
  - 3 – 20' trailers white goods, metal
- February 2024 - more dumping & camping

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Environmental

Friends of the Park

Community Based

PROGRAMS



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Environmental

Friends of the Park
Community Based

PROGRAMS







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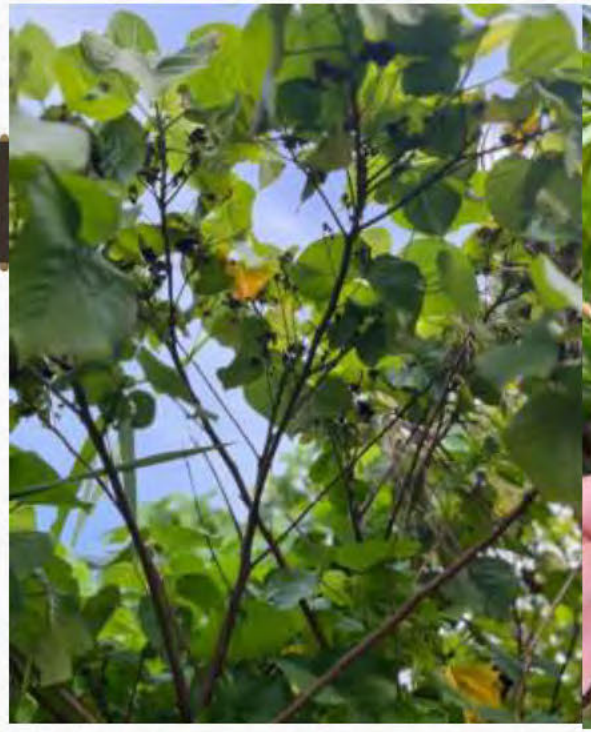
Environmental

Friends of the Park

Local Native Plant Blindness
Cure by guided tours
Propogate & Plant specie

PROGRAMS



(Ahgao)



(Mapuñao)



(Kafu)



(Sumak)

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Environmental

Friends of the Park
Community Based



Limestone Forest Restoration	Citizen Forester	Guam Native Plant Society	Native Plant Nursery	Village Parks Project
• Unique on Guam • Community Forest • 11 acres • 1000 Hours yearly	• 20 CF, 2024 • 100 trees surveyed • ½ mile radius from KIS/IGP	• Facebook/ Instagram • Since 2022 • Amateur & Professional	• 42 Native Species • 2x Expansion 2025	• 26 HOA Kaiser Parks • School Yards • Stormwater Basins • Mayor's Offices

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Environmental

Friends of the Park

Dededo Limestone Forest Restoration Project Pre Mawar

PROGRAMS






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Environmental

Limestone Forest Restoration Project

Typhoon Mawar Damage May 2023

PROGRAMS









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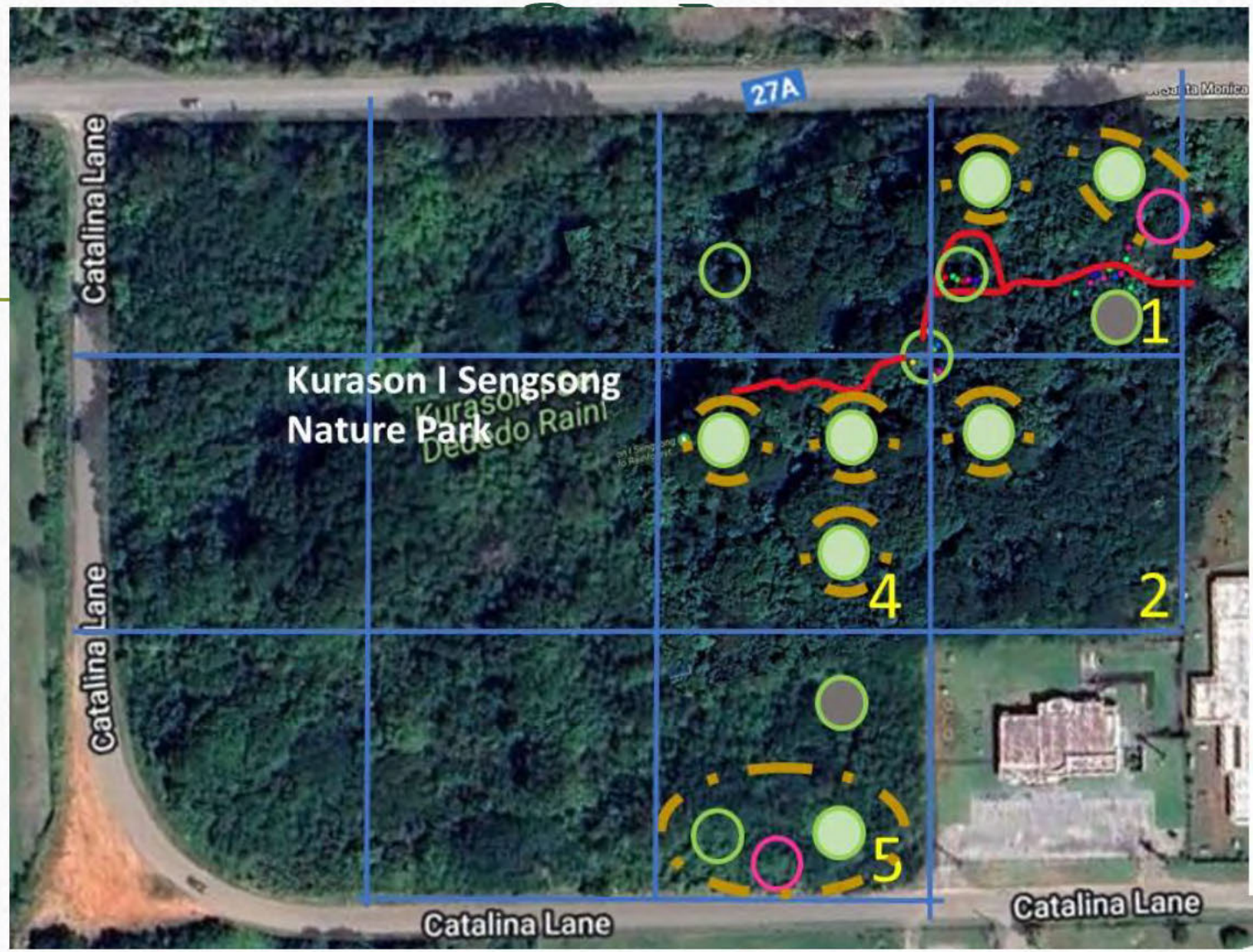

Kurason I Sengsong
Nature Park

Dededo Rainforest Restoration Project

Clear path to existing Dug Dug, verify Mawar survival, underplant up to 6 – 8 understory natives.

Clear new path, Plant 1 Dug Dug, and 6 – 8 understory trees, 2 -4 shrubs. Pagu thicket will be thinned/ removed

Future Dug Dug planting area. Post Grant

Nunu

Clearing limit
Feb – April 2024

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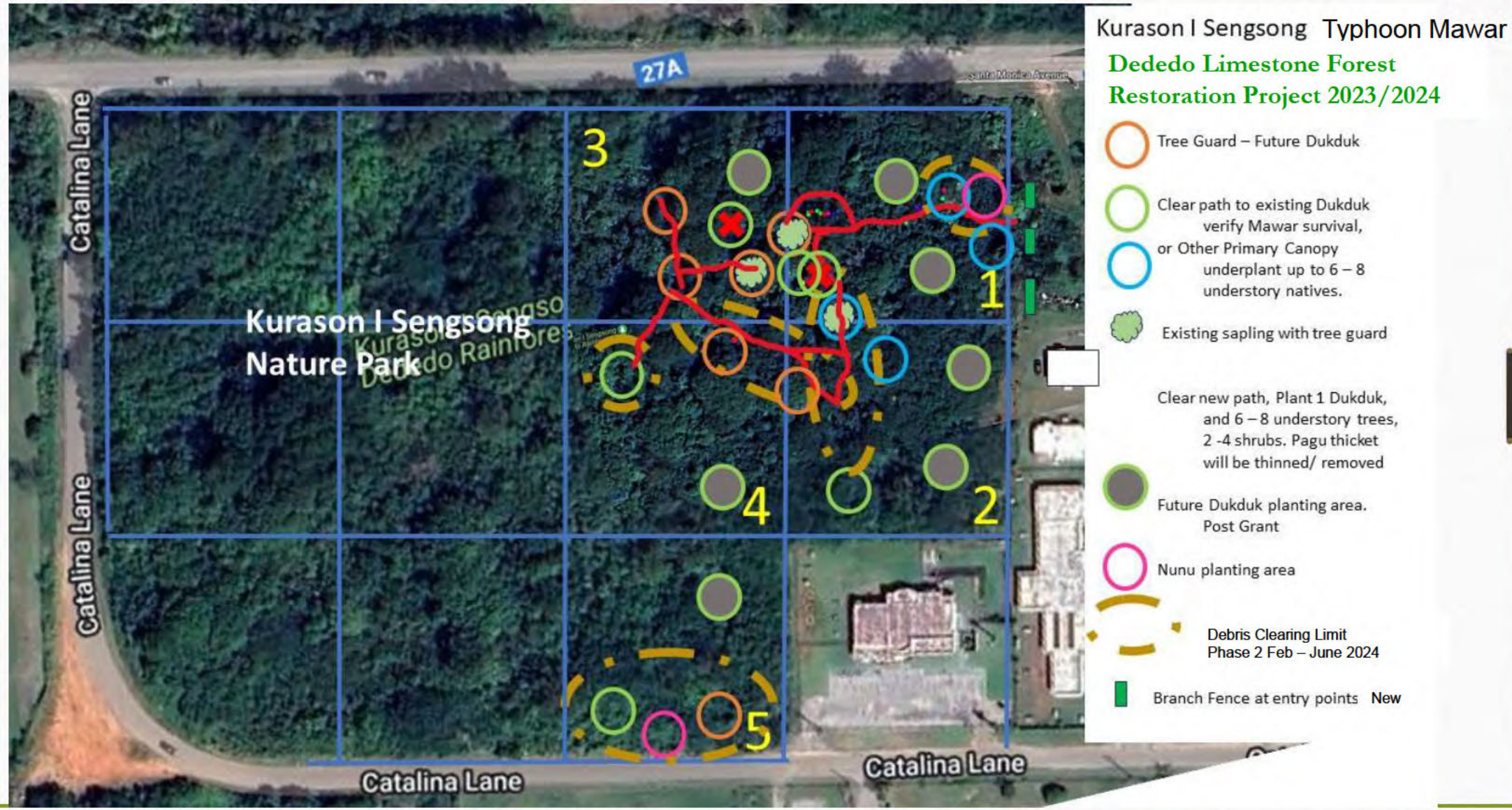

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Environmental

Primary Canopy

duk duk, yoga

Restoring Habitat

PROGRAMS

Forest Plant List

39 natives

- 25 existing
  1 vine listed
  April 2024
- 14 planted
  since 2014

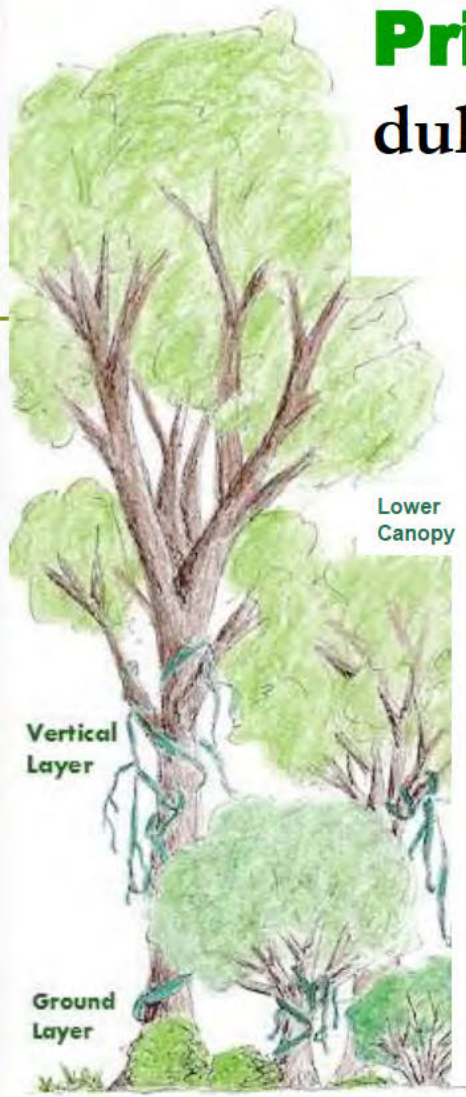
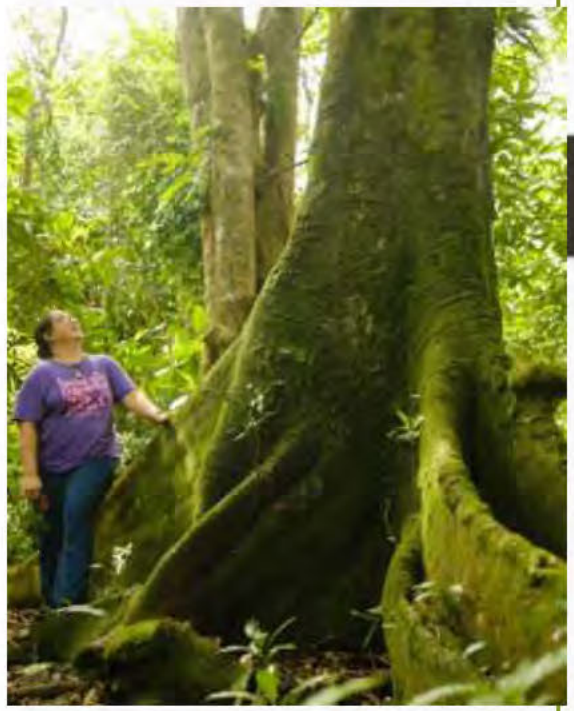


Table 2. Plant parts commonly eaten by fanihi on different islands in the Marianas (Wiles 1987a, Glass and Taisacan 1988, Worthington *et al.* 2001, Wiles and Johnson 2004, Jancke 2006). Fl = flowers, fr = fruits, lv = leaves.

Species	Parts Eaten	Guam	Rota	Aguiguan	Northern Islands
Artocarpus mariannensis	fr, lv	x	x		
*Artocarpus altilis**	fr	x	x	x	
*Ceiba pentandra**	fl	x	x		
*Cestrum diurnum**	fr	x			
Cocos nucifera	fl, sap	x			x
Cycas micronesica	fr	x			
Elaeocarpus joga	fr, fl		x		
Erythrina variegata	fl	x	x		x
Ficus spp.	fr	x	x		x
Guettarda speciosa	fl		x		
Mammea odorata	fr, fl	x			
Mucuna gigantea	fl		x		
Neisosperma oppositifolia	fr	x			x
Ochrosia mariannensis	fr			x	
Pandanus tectorius	fr	x			x
*Persea americana**	fr, fl		x		
Premna obtusifolia	fr				x
Terminalia catappa	fr, fl	x			x

* = introduced species

(Fanihi) Endemic Bat food list



(Duk duk) Endemic breadfruit

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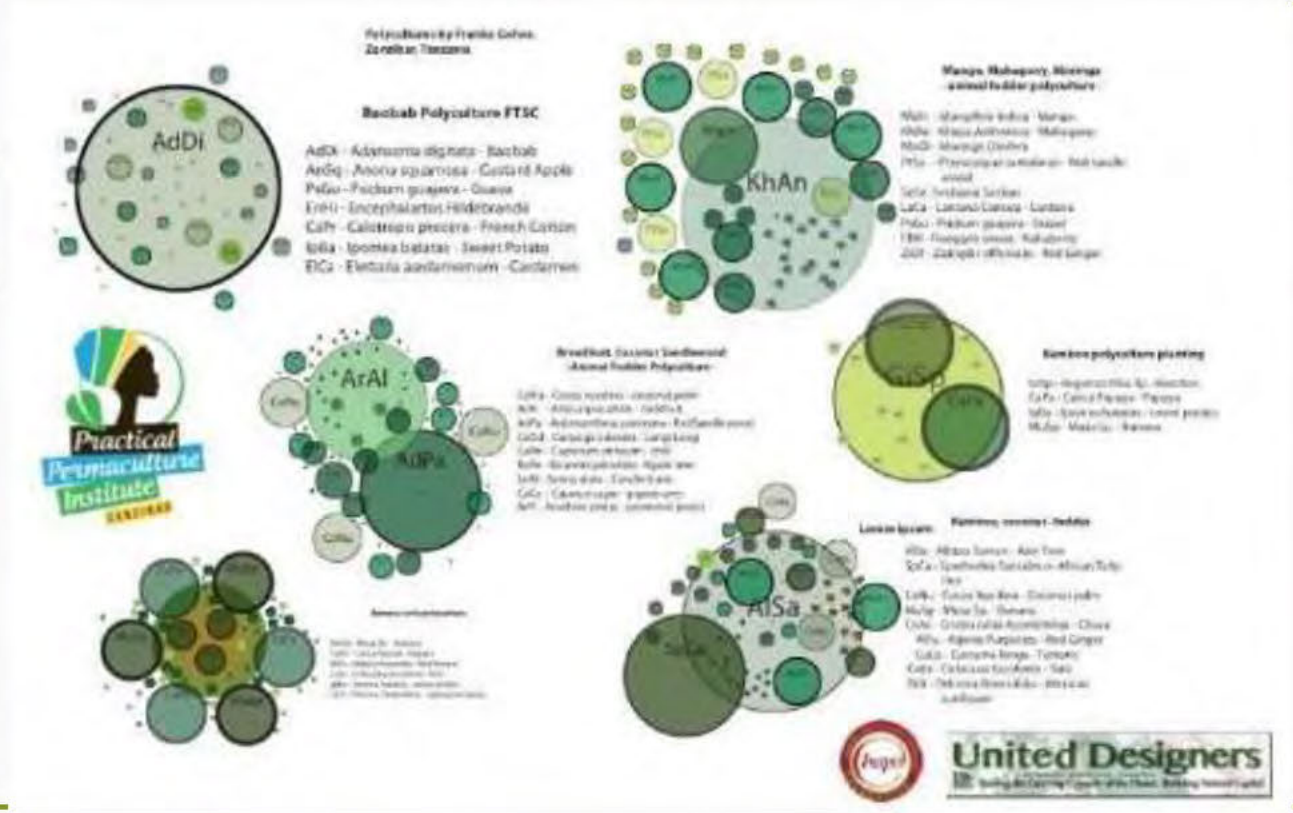
Environmental

Dededo Limestone Forest Restoration Project

Planting Circles

PROGRAMS



Planting concepts

- 25’ diameter
- Duk duk Center
- 6 native lower canopy trees
- Shrubs Ground cover

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Environmental

Dededo Limestone Forest Restoration Project

Planting Circles

PROGRAMS





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Environmental

Citizen Forester Training & Certification

PROGRAMS





- 50% path surveyed
- 20 CF certified 2024
- 90% native plants adjacent to paths
- Existing & new Dukduk locations
- Pg-cloud.com/Guam

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Environmental

Citizen Forester Surveys

PROGRAMS





25' CF survey sample

- 95% native Typhoon Mawar survivors
- Dukduk - 15' self seeded
  Kafu – 4 mature, 15'
- Sumak
- Paipai
- Vines and fern

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Environmental

Citizen Forester Dededo Range

PROGRAMS



½ mile survey range

- 2 cohorts trained 2024. 1 cohort 2025
- 100 trees tagged on data base

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Environmental

Guam Native Plant Society Online Content Facebook/ Instagram/Whatsapp

PROGRAMS



Monthly Native Plant Focus

January - 2023

CHosga

Phyllanthus mariannensis

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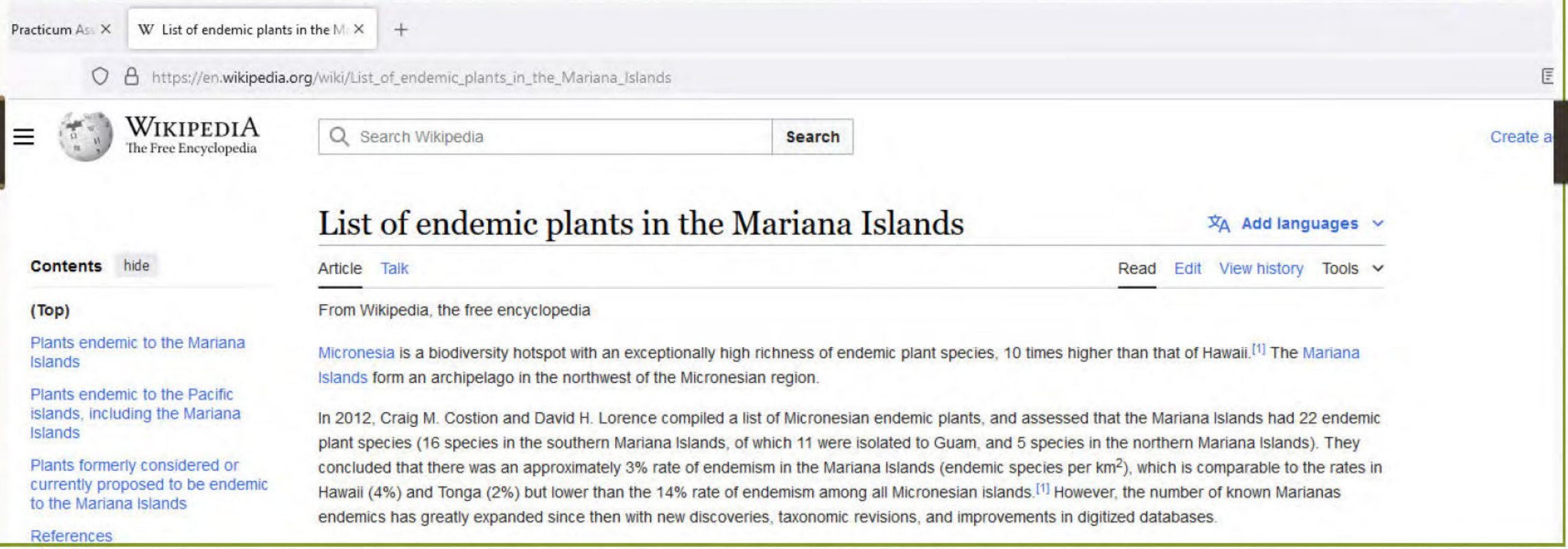
Environmental

Guam Native Plant Society Online Content

wikipedia.com

PROGRAMS



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Environmental

Guam Native Plant Society Online Content

wikipedia.com

PROGRAMS

Scientific name	Chamorro name(s)	Order	Native Distribution	Conservation status
Terminalia rostrata Fosberg & Falanruw[3]		Myrtales	Asuncion[3]	
Leptecophylla mariannensis (Kaneh.) C.M.Weiller[4]		Ericales	Alamagan[4]	
Psychotria hombroniana (Baill.) Fosberg[5] • *Psychotria hombroniana* var. *mariannensis* (Kaneh.) Fosberg[6] • *Psychotria hombroniana* var. *ladronica* (Hosok.) Fosberg[7] • *Psychotria hombroniana* var. *hombroniana*[8]	Aplokating-palaoan[9]	Rubiales	*Psychotria hombroniana*: Marianas, Caroline Islands[5] • var. *mariannensis*: Alamagan[6] • var. *ladronica* (Hosok.) Fosberg: Rota[7] • var. *hombroniana*: Marianas	
Osmoxylon mariannense (Kaneh.) Fosberg & Sachet[10]	No known common name[11]	Apiales	Rota[10]	Critically endangered (IUCN)[12] Endangered (USFWS)[11]
Nesogenes rotensis Fosberg & D.R.Herbst[13]	No known common name[14]	Lamiales	Rota[13]	Endangered (USFWS)[11]
Derris mariannensis Hosok.[15]		Fabales	Rota[15]	
			Psychotria rotensis:	*Psychotria rotensis* is

GNPS List Compiled from Plants of the World Online Guam biodiversity hotspot

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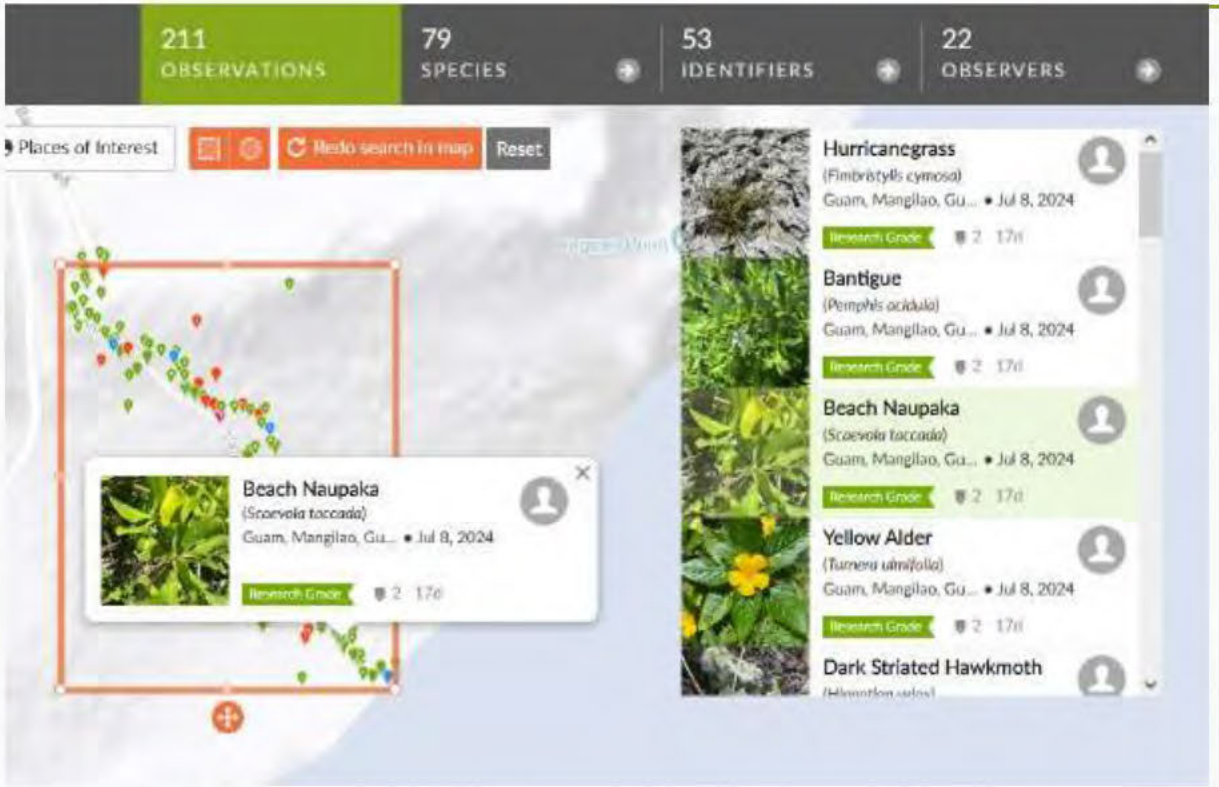
Environmental

Guam Native Plant Society Online Content

inaturalist.org

PROGRAMS



Surveys

- 1000 steps
- 211 Observations
- 79 Species
- 53 ID Confirmed

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Environmental

Native Plant Nursery

PROGRAMS





Start up 2016

Expansion 2020

Future Site

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Environmental

Native Plant Nursery

Outplanting

PROGRAMS





Community Garden Pollinator Plot









DLFRP – Planting Days

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Neighborhood Parks Project

Environmental

PROGRAMS



4

- 13 combined acres
- Kaiser abandoned Homeowners Association parks
- Dededo Mayors jurisdiction- MOU

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Environmental

Friends of the Park
Community Based



Limestone Forest Restoration	Citizen Forester	Guam Native Plant Society	Native Plant Nursery	Village Parks Project
• Unique on Guam • Community Forest • 11 acres • 1000 Hours 2023/2024/ 2025	• 20 CF, 2024 • 100 trees surveyed • ½ mile radius from KIS/IGP	• Facebook/ Instagram • Since 2022 • Amateur & Professional • Wikipedia • inatualist	• 42 Native Specie • 2x Expansion 2025	• 26 HOA Kaiser Parks • School Yards • Stormwater Basins • Mayor's Offices

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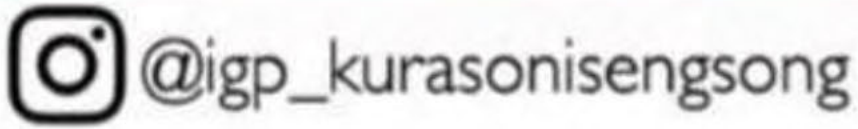
We strengthen our youth, our youth strengthen us

Empower, Encourage and Inspire!









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Kurason I Sengsong Native Plant Portfolio

Active Environmental Programs

Submitted to Granite Construction, June 9, 2025 as part of a Fundraising Proposal

Summary Statement of Goals and Objectives

🌿 Rooting for Our Future with Kurason I Sengsong 🌿 Discover the remarkable journey of Kurason I Sengsong. We are on a mission to restore an 11-acre invasive mixed forest back to its traditional native interior limestone forest glory.

🌳 Vision for Conservation and Education: Since 2014, Kurason I Sengsong has provided active volunteer driven stewardship for a publicly accessible urban endemic and native interior limestone forest on Guam's Northern Plateau and Aquifer. This not only promotes Guam's unique biodiversity but also fosters indigenous heritage, education, community building, and civic pride.

🚶🚶‍♀️ Community-Accessible Restoration: Located in the low income Kaiser subdivision and easily accessible via roads and sidewalks, the **Kurason I Sengsong Sagan Tinamon** is adjacent to two elementary schools and one middle school, making it a unique and valuable resource for the community.

🌱 Preserving Guam's Natural Heritage: Kurason I Sengsong's restoration model mirrors the description of the endemic breadfruit rainforest canopy as documented in pre-World War 2 botany literature. We are planting the seeds of a sustainable future with 4 dukduk primary canopy trees per acre. A 40 specie limestone forest is supplemented and expanded from the established dukduk. **KIS Native Plant Nursery** is also the repository for seed germination and seedling donations from the public. **KIS Guam Native Plant Society.**

📚 Education and Outreach: We engage youth age 7 through 25 in endemic and native plant and animal learning through the KIS Service Learning program. From workshops to planting activities, we are nurturing the conservationists of tomorrow. **guamservicelearning.com**

👶 Celebrating Indigenous Culture: Kurason I Sengsong envisions a brighter future by celebrating indigenous culture with an annual Dokdok day where the community will come together at the Community Center to celebrate the harvest and sharing of the hutu (large nut/seed) of the endemic breadfruit.

🌎 A Glimpse into the Future: As they continue their dedicated efforts, they aspire to restore more of the Dededo Rainforest Restoration Project, with exciting plans on the horizon.

"Join us in supporting Kurason I Sengsong as they work to protect and restore this native land. Together, we can ensure a greener, more sustainable future for all. 💚" Department of Agriculture

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Kurason I Sengsong
Native Plant Nursery

Established in 2016, during 2025 the KIS Native Plant Nursery will be doubled in capacity to accommodate 3,500 plants under propagation. In 2020 a shade structure and planting racks were added to the nursery. Local companies and private donors provide equipment, hand tools, soil and pots. A 1000 gal rainwater tank collects roof run off. The 2025 expansion shade structure and racks have already been procured by donation.

The Native Plant Nursery provides material for the on going reforestation project at the 11-acre KIS **Dededo Limestone Forest Restoration Park**. As we increase capacity, we also anticipate providing plants and planning for selected reforestation projects at schools, mayor's offices/parks and governmental grounds.

The day-to-day propagation native plant List supports a 40-item native tree and plant biology survey of our limestone forest species. Research for the list is provided by our **Guam Native Plant Society**. They also regularly survey our DLFRP site for additional native species additions to the List.

Kurason I Sengsong Native Plant Nursery works in cooperation and support of the Department of Agriculture, Forestry Division- Native Plant Nursery.



Native Plant Nursery 2019



Native Plant Outplanting June 2024
KIS **Dededo Limestone Reforestation Project.**
Propagation goals: 11 acres - 900 plants per acre.



Native Plant Nursery March 2022 Far Right Location of 2025 Expansion

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Kurason I Sengsong
Dededo Limestone Forest Restoration Project
@ Sagan Tinamon

Since 2015 1/3 of 11 acres will have been cleared of invasives. We are currently fundraising to clear another 1/3 to undergo rapid reforestation. We are motivated by having a goal to provide protection and habitat to our native edemic animal, the Fanihi.

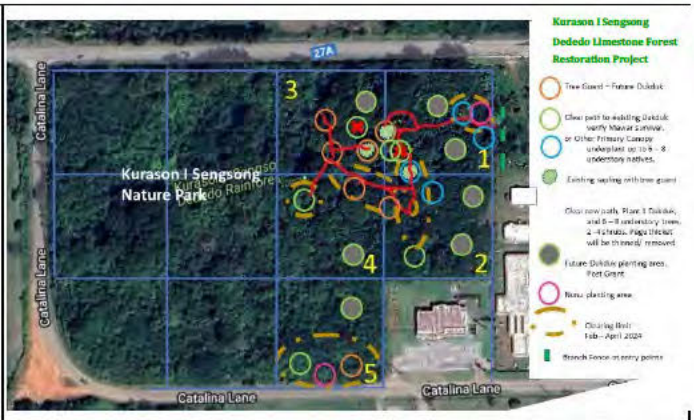
On 1st & 3rd Saturdays, 6-10 volunteers are led by our volunteer Citizen Foresters into the forest to remove invasives and plant trees. Special groups volunteer at the forest quarterly with upwards of 40 or more participants. We also create supporting infrastructure, one project at a time. Average annual total volunteer labor is **1000 hours.**

Kurason I Sengsong **Dededo Limestone Forest Restoration Project** works in cooperation and support of:

- Dededo Mayor's Office
- GHURA
- Department of Agriculture, Forestry Division
- Northern Guam Soil & Water Conservation District
- USDA - Forestry

guamservicelearning.com – a youth service program of KIS.

KIS Native Plant Nursery
KIS Guam Native Plant Society



October 2023 – October 2024 Reforestation Work Plan



February 2024 Volunteer Work Group



October 2024 – October 2025 Reforestation Work Plan

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Kurason I Sengsong
Guam Native Plant Society

Established 2022, 40+ members, **Guam Native Plant Society (GNPS)** Instagram now has >1,000 followers, and Facebook has >1,900 followers. Our goals are to decrease local native plant "blindness", correct the public record on native plants, create resources for use by the public with printed and digital plant reference guides, informative trail plant labeling, educational and actual plant experiences. Amateur and professional Guam native flora and fauna enthusiasts are welcome.

In preparation for a public Digital Plant Reference Guide, **GNPS** has accumulated resources and scientific references in support of endemic and local Limestone Forest Plants.

The research for scientific references of the endemic plants of Guam and the Marianas Island is tracked on Wikipedia. **GNPS** created the page List of Endemic Plants of the Marianas Island in early 2022. Blue links are plant pages added or edited to standard by GNPS since early 2022. The red text species have yet to be vetted within Wikipedia by GNPS.

https://en.wikipedia.org/wiki/List_of_endemic_plants_in_the_Mariana_Islands

Research for the **Dededo Limestone Forest Restoration Project** plant List is provided by our **Guam Native Plant Society**. They also regularly survey our site for native specie additions to the their site biological survey. **GNPS** has identified up to 42 native species in the Nature Park. This list does not include the many invasive species present in areas targeted for clearing. As we hand clear invasives, space for outplanting is created, but also existing native plants emerge and thrive.

Our **Native Plant Nursery** benefits greatly from **GNPS** with seed and propagation assistance.



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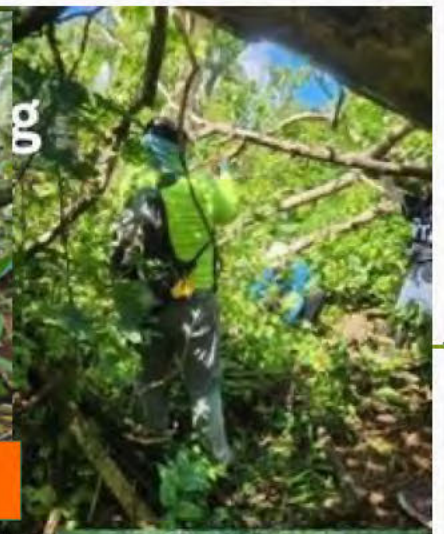









Rooting For Our Future

Arbor Month 2023

GUAM DEPARTMENT OF AGRICULTURE
FORESTRY & SOIL RESOURCES DIVISION

PROGRAMS

Volunteers (since 2014)

Guam Forestry Partner

Fina'maolek Grant Typhoon Mawar

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Environmental

Friends of the Park

Community Based

PROGRAMS



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PROGRAMS



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Draft Public Comments –
Guåhan 2050 Sustainability Plan (G50SP)
February 25, 2026

Barbara Burkhardt

My name is Barbara Burkhardt. Thank you for the opportunity to provide constructive comments on the 2050 Land Use Plan.

I appreciate the time and resources that went into this document. The 480 pages are not filler. They show the wide scope of land use on Guam and its many impacts.

I am a retired architect. In the past, I worked on land use rezoning for project development before the Guam Department of Land Management. Today, I plant trees and help restore urban forest fragments in Dededo. I am familiar with Guam's land use laws, and from that experience, I recognize the quality and depth of this report.

My comments tonight focus on Dededo. I am a resident of Dededo.

Dededo is bearing the brunt of today's ad-hoc, "Wild West" land use decisions. Permanent damage is happening now while this "Phase 1" planning document rolls out to the public. There is a figure indicating bare land outcomes of the development rate 2006 – 2016. This

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figure leaves out the “Wild West” bare land acceleration 2016 – 2026.

First Comment – The Plan Needs a Timeline and strategic outcomes

As an architect, I see this document as a strong **Phase 1** report. It does an excellent job collecting data and describing past conditions. It took 5 years to put together in the 30 year time frame. It is not ready to go before the Legislature.

What is missing is milestones and outcomes at the macro level. That would be a complimentary **Phase 2** report.

There are no defined milestones. No strategic and short-term outcomes. No sense of what is already underway, what has not started, or when residents might see real results.

Without this, it is difficult to trust how the Guåhan 2050 Sustainability Plan (G50SP) will move forward. At the end of my comments I will address gaining public trust.

Second Comment – Federal Funding Reality Is Not Acknowledged

The section on financial support from Federal agencies and legislation does not reflect current reality.

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In 2025, major federal programs were disrupted by actions of the Trump administration. This directly affects Guam's ability to implement what is in the plan. That setback — and its impact on timelines — is not acknowledged. I write Grants for nonprofits and have done this heart breaking analysis and received the emails.

An honest implementation plan must reflect this withdrawal of Federal funding in 2025.

Third Comment – Guam Can Execute When There Is Land Use Leadership

In my 17 years on Guam, I have seen that we *can* deliver large projects when there is focus and leadership.

GPA's long-term power planning is one example. The current infrastucture work spans more than 20 years and connects directly to the Master Plan for the current military buildup.

The same is true for roads, water, and sewer systems – improvements largely completed as the infrastructure for the current buildup.

These are core land use systems — and they must be clearly overlaid on this plan as they have long term impacts, and will quite likely be the last projects completed during the timeline of the Plan.

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Fourth Comment – What is missing

As an architect, my view is that successful implementation on Guam has been largely **engineering-centric** in response to the Military Master Plan for buildup identified more than 20 years ago.

Engineers are asked to solve specific problems — power, roads, drainage, buildings — one strategic project at a time. The military provided the Master Plan and timelines, not starting construction on Camp Blaz and other projects until the 20-year plan for infrastructure and the Navy Hospital was in place.

Civilian short comings were clearly identified 20 years ago. A side note is, what happened to all the proposed on base family housing? Are we are paying the civilian price on that Master Plan deletion today.

Whats next for Guam? I can't find these two Land Use actions clearly in the Plan.

- Short term ongoing heavy development adjacent to the completed buildup infrastructure improvements?
- What is the 20 year infrastructure plan that will enable development in ancillary areas?

Without this 2 prong planning lens, private and public development projects continue to move forward and create chaos. Each may meet technical standards, but together they can undermine groundwater protection,

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green space, housing stability, traffic flow, and community health.

Continuing my comments, I will focus on Dededo, and on the three systems carrying the greatest burden of current land use decisions: recreational space, limestone forest, power, water, and roads. Dededo is briefly in the Plan is Section 7.2.1

Dededo Comment 1 – Short Term Land Use Plan Wins toward the Guåhan 2050 Sustainability Plan (G50SP) Goals

Example Poster – MCD grubbing & clearing, Land Use on a visible intersection.



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Pictured is Marine Corps Drive at Micronesia Mall, as a resident of Dededo, this is how I enter the village heading home, what an eyesore. I will not comment on Route 3 today (see second attachment to this email for further comments)

This photograph from the PDN 3 years ago shows a completed Land Use Master plan for infrastructure supporting growth for military buildup on island.

- Completed roads & Power infrastructure upgrades
- Right to left. GRMC Hospital, a large site for sale, GPA transmission site, Industrial private land use
- Not pictured to the left, GWA pumping station, new road into Harmon Annex and the access road to Dos Amantes Visitor attraction.

All of this is an eye sore to Micronesia Mall and a major road intersection. There is land cover with vegetation but it is ad hoc until the next parking lot and building goes in. It is a mix of invasive tangen tangen and pagu with chain of love vine starting in infiltrate.

The is an example of a lost opportunity and a short term (G50SP) gain. All can be improved today with landscape easements of limestone forest species: Through Mandates from ratepayers for the utilities and negotiations with private landowners. I would propose leadership from

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Guam Forestry. Native limestone forest landscape is my bias.

An example I offer is a Land Use experience at my first job as an architect in Houston, Texas. In the 1980's. driving East from Houston on I 10, there are miles of heavy industry on the right, oil products refinery's on the left. You can smell it before you get there. ½ mile landscape buffers of native piney woods separate the 8 - 12 lane highway from the industrial land use. South of all is the massive 40,000 acre National Wildlife Refuge in the path of the Central Flyway for birds traveling from the Great Plains and South Central America.

This land use and set aside dates from the 1950's. The Flyway conservation as been an ongoing effort of Federal, State and local nonprofits. The piney woods buffer have been in decline for decades. That is another story.

As a core urban example in Seattle, where landscaping is often not an option, municipal art forward competitions for fencing and road facing façade upgrades are solutions to the eye blight urban infrastructure. And then there are the murals made of substantial long-lasting materials.

Dededo Comment No. 2

Dededo Residents Have Already Spoken – Page 4-23 & 7–9, I assert trust is lost in Land Use planning and implementation by year over year Land Use failures.

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On page 7-9, the plan documents survey responses representing what Dededo residents have been saying again and again.

Dededo still contains important limestone forest habitat, although much of it has already been impacted by the development in support of Camp Blaz. Large forest and reforestation parcels are set aside in the unfunded Guam Forest Action Plan.

Dededo is also absorbing major growth — both permanent industrial, power, commercial, housing and temporary workforce housing to support the current population buildup.

At the same time, residents need:

- more affordable homes
- reliable transportation,
- and safe green public spaces.

These are basic quality-of-life needs.

The land use maps clearly show a serious lack of recreational space for Dededo, Guam's largest Village. Figure

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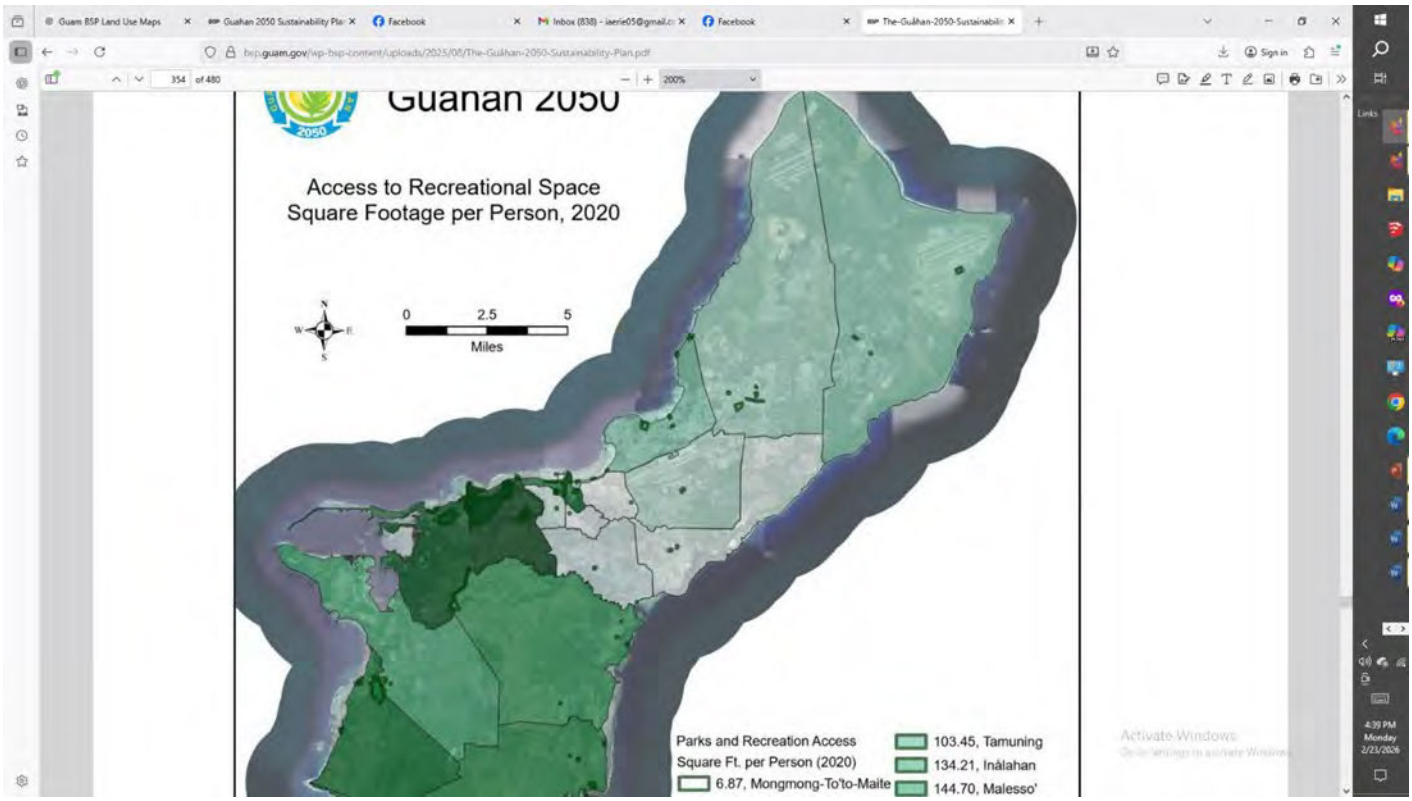

The survey confirms that Dededo residents do **not** believe current park space is adequate for the population.

Dededo Comment No 3 – Immediate need for increased recreational space - The Land Use Plan needs to act on pilots and community partnerships to carve out this space **now.**

The people of Dededo have already made this clear.

With housing demand outside the fence and increased military staff, the need for recreational areas becomes even more urgent.

These survey results cannot be separated from what is current needs. As Dededo absorbs more housing, military-

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related development, and infrastructure, it is also losing limestone forest and tree canopy — the very systems that protect groundwater, reduce heat, and support wildlife. Much of this loss has accelerated with the buildup at Camp Blaz and nearby rezonings. At the same time, industrial-scale energy projects and dense development are being placed over critical recharge areas of the Northern Aquifer.

Dededo Comment No 4 – we are bearing the impact of power projects on the northern aquifer, while providing the majority of fresh water to the island.

On the Figure 5-4, aquifer geologic cross section, 3 major aquifer impact projects were allowed by Land Use change in 2025. 2 – 60 MW Solar Farms with BESS, 1 50,000 square foot data center with batteries and a 45’ water retention tower. In 2016 the new 198 – megawatt Ukudu Power Plant lies on the same cross section.

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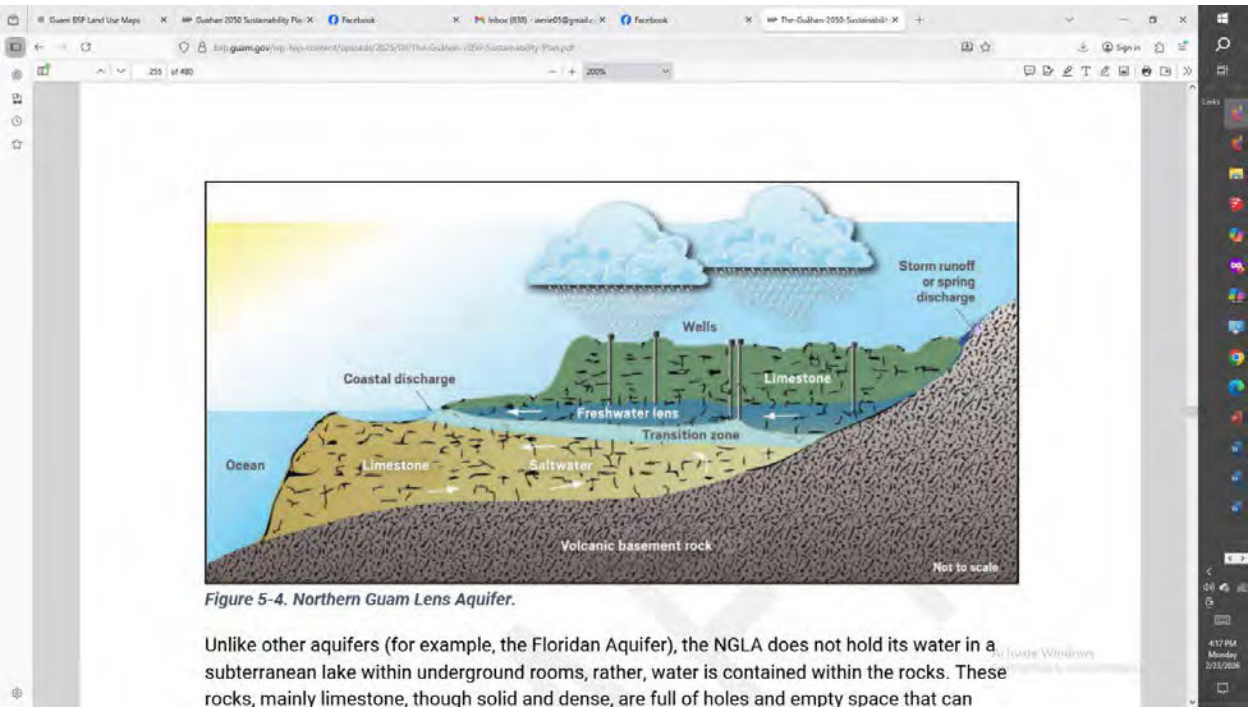

Figure 5-4. Northern Guam Lens Aquifer.

Unlike other aquifers (for example, the Floridan Aquifer), the NGLA does not hold its water in a subterranean lake within underground rooms, rather, water is contained within the rocks. These rocks, mainly limestone, though solid and dense, are full of holes and empty space that can

Focusing closer in to the major pumping and recharge zone on the west side of the GICC CLTC property and Ysengsong Rd.

Graphic – WEIR map of the above referenced area. We believe it's 1.2 million gallons per day.

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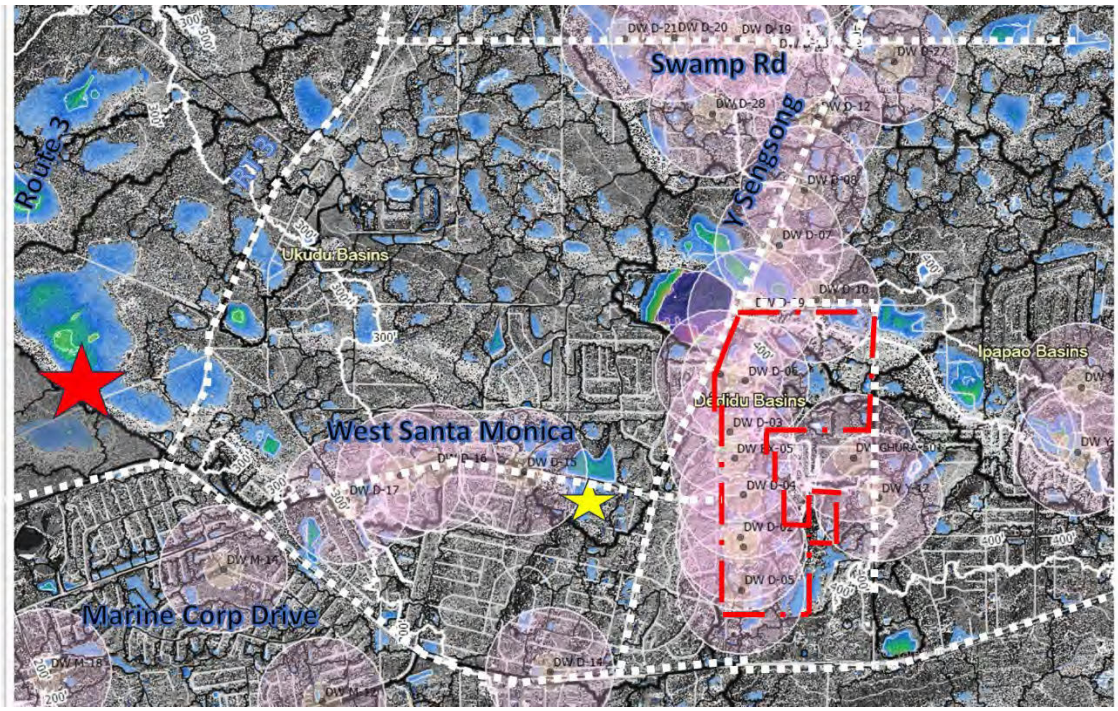

The land use issue not addressed in the Plan: When forests are cleared and land is hardened, less water filters safely underground, and contamination risks increase. What residents are asking for — parks, green space, and livable neighborhoods — is the same thing the aquifer needs: connected forest, permeable land, and thoughtful planning. Ignoring this link puts both community health and Guam's primary drinking water supply at risk.

Last Plan reference is to Table 3-2 page 3-15. Solar farms and Data Centers are not identified with what we feel are necessary Land Use public safety and water protection for DLM implementation during reviews.

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We have testified at public hearings numerous times in the last 2 years with this WEIR graphic. Our concerns and recommendations were ignored. There continues to be no Land Use mandate to additional solar farms or data centers on this important portion of the aquifer.

Dededo No 5 - The recent improvement of Ysengsong Road is shown as inadequate in the Land Use Plan, **Figure 3-14 page 3 - 42**

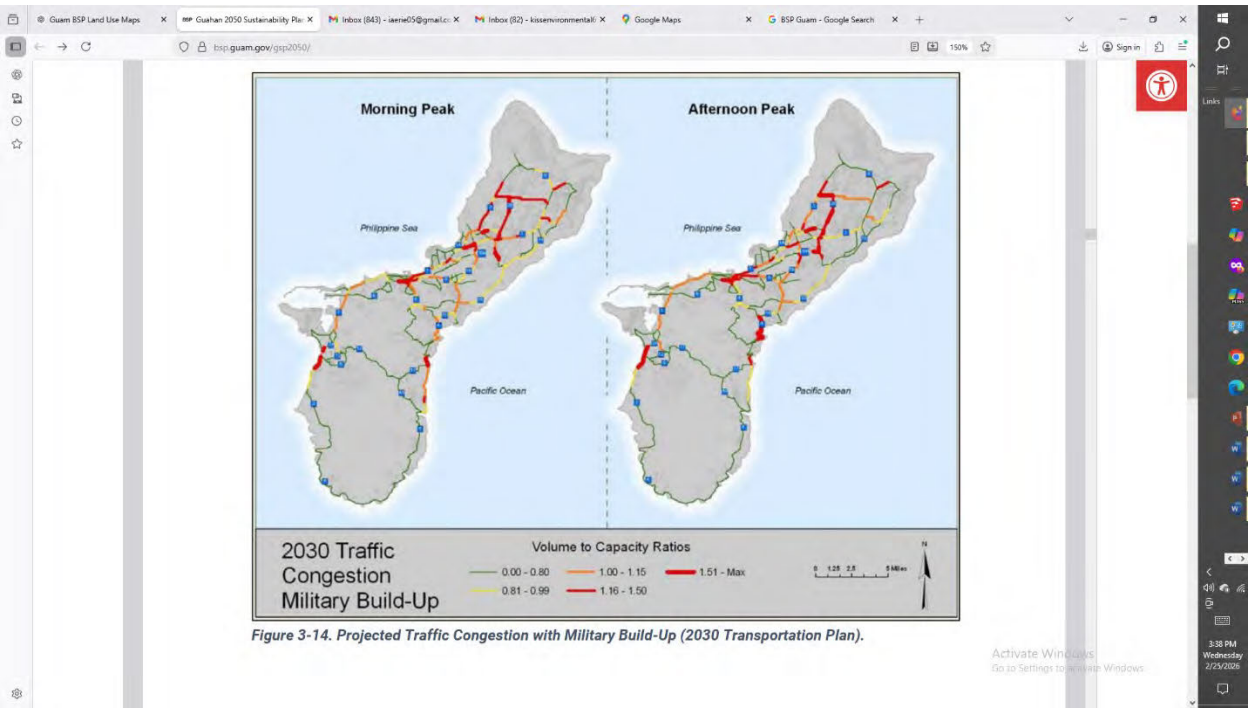

Figure 3-14. Projected Traffic Congestion with Military Build-Up (2030 Transportation Plan).

Flagged with red congestion during peak hours. Planned traffic lights have not been installed. The impact of condemning land where farms, schools and homes occur is an immediate red flag issue. Condemning land for road

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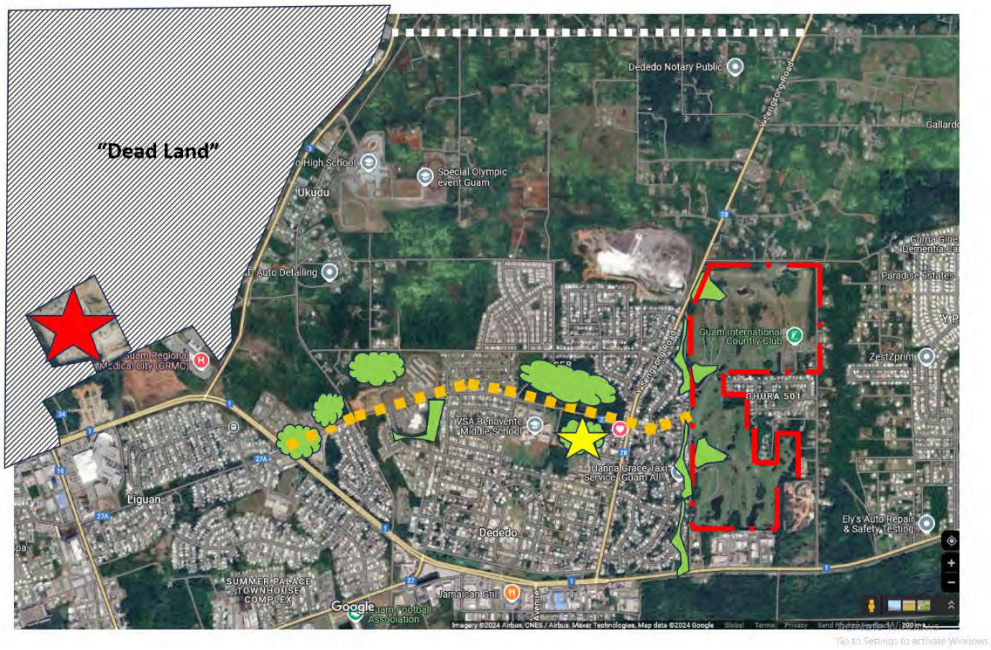
improvements that will set back key quality of life components of the Dededo urban core is our concern.

Graphic Map of the area of concern. **Hold Up**



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Key Features: 3 mile loop of West Santa Monica, Y Sengsong and MCD. 1/3 of the loop is already shaded by some mixed forest and remarkable native limestone forest fragments and reforestation projects.

What would be an immediate improvement pilot, the roads already have accessible maintained sidewalks and a possibility of bike lanes on the Loop. On the north South Y Sengsong, if not widened sidewalks, bike lanes and limestone forest easement should be added.

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Dededo No 6 – The most flawed actual proposed Land Use plan & the one with immediate implementation possibilities. This would be seen as a win by the ignored people of Dededo.

Figure 3-7 page 3 -27 – Parks and Open Space Corridor

Before I comment on the above I want to thank you for putting this graphic in the Plan.

Figure 3 -6

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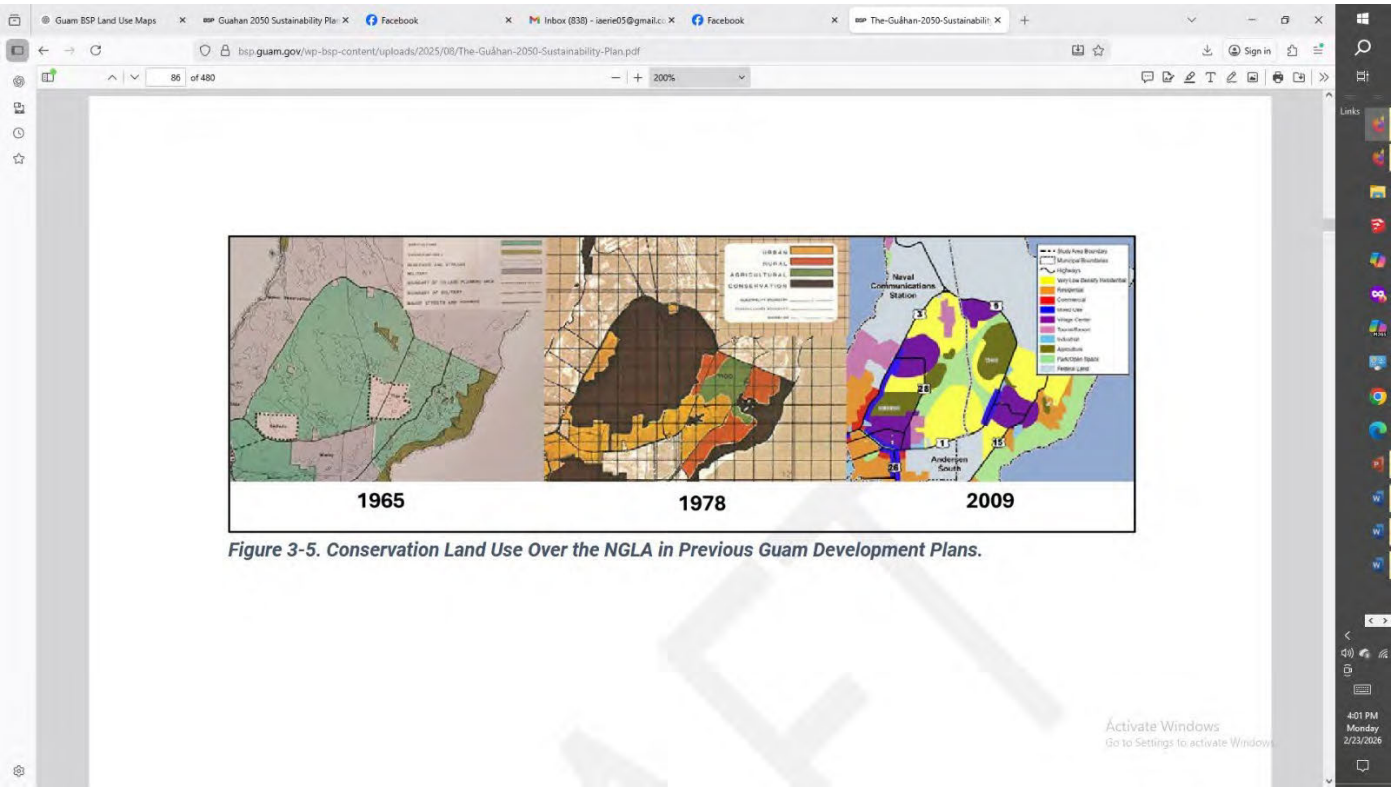

Figure 3-5. Conservation Land Use Over the NGLA in Previous Guam Development Plans.

I found the 2009 Land Use Map in 2023 and could not find any reference to the light green central diagonal splotch. At the time it very clearly acknowledges the importance of GICC to the green space zone running between Dededo and Yigo. Off screen it documents when 3,000 acres of housing was taken off the map for the Harmon Industrial Annex in 2016.

Back to **Figure 3 – 7** - as a schematic proposal in this Plan, it is very disappointing and again evidence that the people of Dededo are not heard.

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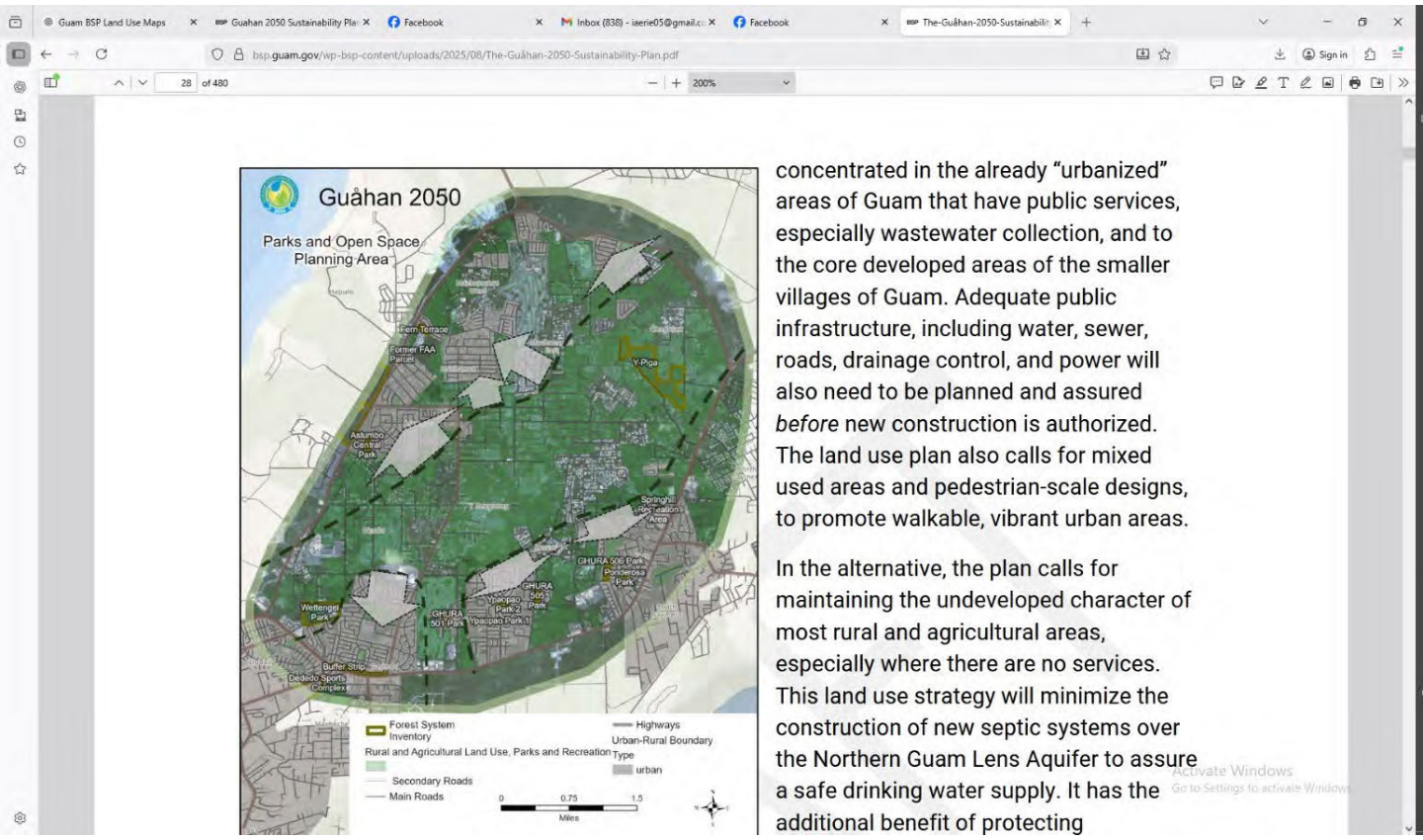

On the upside this area could be an immediate Land Use win for Dededo in 3 Phases.

Phase 1A -3 mile Loop Land Use – 2026 win for the plan

The 3 mile loop Land Use of few remaining public and private parcels would be solidified.

Graphic Map – Hold up

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- Areas of mixed and limestone forest fragments would be a Mayor, school, agency, commercial, non profit and resident priority, supported by small planting Grants and Guam Forestry native plant nursery and experts.
- Rubbish removal road sections have already been staked by entities, Mayor's Office, Food Coop, Rotaract, Kurason I Sengsong and ???. The community could be asked to adopt the entire route in additional sections. Fortunately dumped cars are not a problem as they are to the north of the Loop.

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- Nice artistic signage celebrating the loop experience
- Again, sidewalks and a continuous bike path. Perhaps set aside Sunday mornings for car free use. Loop traffic on one lane one way.

Phase 1 -B – Fix the previously mentioned MCD eye blight from the Dos Amantes to the GRMC intersection. Both sides. Same strategy as above but would require CCU agreement to improve their properties and easements. 3 Commercial Sites would need to agree to improve their landscaping and curb appeal in a native plant Land Use mandate. Department of Public Works would need to take responsibility at public road curb cuts to MCD. I would recommend a professional civic Landscape design firm take the curb appeal up a notch. Why wouldn't CCU and the large commercial property entities agree to underwrite the landscape design as a demonstration of civic pride.

Phase 2 A– longer process, make a meaningful leadership driven agreement with CLTC to identify the land use of what is ½ the central area of this plan. Make a master plan and begin the 20 year infrastructure upgrade to accommodate homes, farms and accessible public green space.

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Is it too late for the failure of the GICC Legislation to be reversed? Speaker Blas?

Phase 2 B - Bisect North South indicating Ysengsong Rd and that it's future is further improvements. The improvements would generate an additional Land Use revision along the Road and areas not covered in Phase 2 A.

Dededo No 8 – Correction to the Land Use Plan – Dededo Central Urban Core – Impact immediate Land Use corrections indicating current trends would win back some trust. In particular the West Santa Monica/ MCD Intersection is residential and the Food Coop – why a Land Use change? Large green spaces are mislabeled. The Green Belt diagonal is not clear. The KIS Community Center and Limestone Forest Restoration Project is labeled as housing. "Green" large utility easements should be labeled as such, they cut a large swath through the map. On a graphic note, MCD, Route 3, Ysengsong,West Santa Monica, Hamburger Road and are not "popping".

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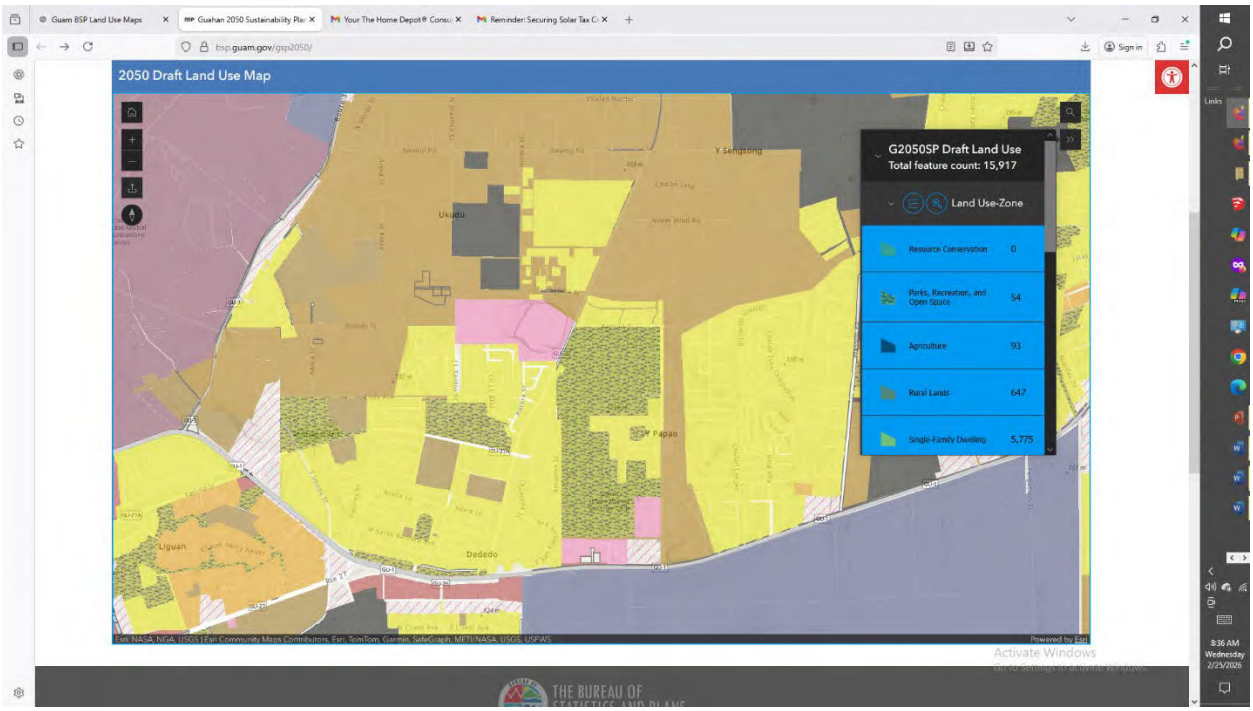

In closing:

At its core, for Dededo this is about people, forests, and water — and how wisely we spend public money. Dededo residents are asking for green space, rubbish removal, abandoned cars and dumped puppy free neighborhoods, to preserve their basic quality of life. The forests they are losing protect the aquifer that supplies 80% of Guam's drinking water. When land is cleared first and planned later, the cost of fixing roads, drainage, heat, and water quality falls on taxpayers and utility ratepayers. Protecting forest, recharge areas, and community spaces now is far cheaper than retrofitting bare land later.

If the 2050 Land Use Plan is meant to guide development, it must be in action today — because once Dededo's land

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and aquifer are compromised, there is no affordable way back.

On the leadership and implementation section, a comment on going forward. Guam Green Growth and the Center for Island Sustainability (G3 CIS) was neither asked by the Committee nor volunteered to present expert Plan land use testimony during the 2 years of GICC public hearings, despite the scale and impact of that legislation on the Plan we are reviewing today.

Dededo is being built first and planned later — and that puts our forests, our aquifer, and our children's future at risk.

If Guam is to remain a place people want to live in and visitors want to return to, we must care for our forests, our coastlines, and our open spaces — because once they are gone, they cannot be rebuilt.

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

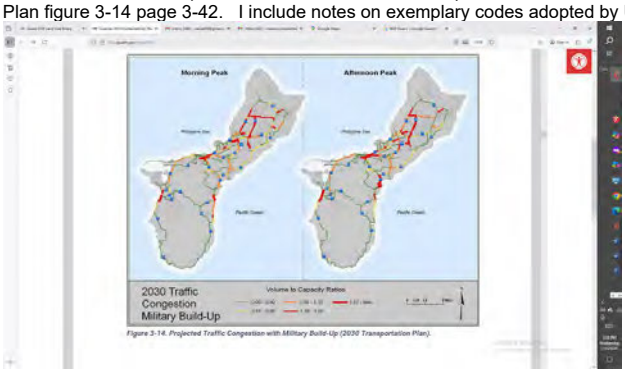
February 25, Barbara Burkhardt Testimony

Barbara Burkhardt <[redacted]> Wed, Mar 11, 2026 at 4:33 PM
To: gsp2050@bsp.guam.gov

Please find attached my public testimony given on February 25.

I also attach some further notes on

1. Exemplary Land Use codes for Solar Farms and Data Centers.
2. Expansion of the Dededo Loop Land Use Provisions to include **Environmental Heritage.**
3. Notes on 3 Dededo public roads and intersections improved within the Military Infrastructure projects for roads and utilities. Most of the roads show up currently as red in this Plan figure 3-14 page 3-42. I include notes on exemplary codes adopted by US towns to accomodate more than engineering solutions to land use problems.



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To view this discussion visit https://groups.google.com/a/bsp.guam.gov/d/msgid/gsp2050/CALNixsP_uT2OKfO8NMiheOG-f9sfD4TjyjEgQ_KtTGwJ-e1wWw%40mail.gmail.com.

6 attachments

- **Barbara Burkhardt 2050 Guam Land Use Plan Public Comment.pdf** 3418K
- **Environmental Heritage.pdf** 269K
- **Exemplary land use regulations for solar farms balance clean energy goals with aquifer protection.pdf** 295K
- **BESS_Alignment_IFC_NFPA855_DoD_EPA_NGLA_v2_with_citations_risk_matrix-1.pdf** 177K
- **The Loop.pdf** 214K
- **Notes From Military Infrastructure to Community Landscapes in Dededo.pdf** 202K

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Regulatory Alignment Matrix: BESS Installation over the Northern Guam Lens Aquifer

Purpose: This document aligns key review questions and risk considerations for proposed Battery Energy Storage System (BESS) installations with applicable standards and guidance from IFC, NFPA 855, the U.S. Department of Defense (DoD), and the U.S. Environmental Protection Agency (EPA), with specific relevance to the Northern Guam Lens Aquifer.

Review Area	IFC Guidance	NFPA 855	DoD Criteria	EPA / Aquifer Protection
Site Selection & Land Use	Avoidance of high-risk environmental receptors, including sole-source aquifers	Requires evaluation of exposure risks to adjacent critical infrastructure	Mission assurance and protection of critical resources	Sole-source aquifer protection and recharge zone safeguarding
Fire & Thermal Runaway	Hazard identification and emergency planning	Thermal runaway separation, fire suppression, and containment requirements	Force protection and continuity of operations	Prevention of hazardous substance releases to groundwater
Containment & Runoff Control	Secondary containment and spill prevention	Chemical-resistant barriers and drainage controls	Infrastructure resilience standards	Stormwater and hazardous waste containment
Monitoring & Reporting	Environmental monitoring and disclosure	System monitoring and alarms	Operational risk monitoring	Groundwater monitoring and public reporting
Decommissioning & Liability	End-of-life management and remediation	Decommissioning planning	Long-term site stewardship	CERCLA liability and long-term cleanup responsibility

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Northern Guam Lens Aquifer Context (Why Standards Must Be Elevated Here)

- Groundwater supplies about 80% of Guam's drinking water; the NGLA is the primary source in northern Guam. [F1][F2][F3]
- The NGLA is designated as a Sole Source Aquifer under Section 1424(e) of the Safe Drinking Water Act; EPA documentation references Federal Register citation 43 FR 17888 (April 26, 1978). [F4][F5]
- The NGLA is a limestone/karst aquifer with high permeability and rapid recharge pathways; releases at the surface can migrate quickly via preferential flow. [F6][F7]
- Guam groundwater regulations identify the Northern Guam water lens as a principal source aquifer and emphasize protection for drinking-water use. [F8]

Implication for standards alignment: In a rapid-recharge limestone aquifer, the review must treat firewater/runoff containment, secondary containment integrity, and monitoring/well placement as mission-critical controls—not optional best practices.

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Expanded Alignment Matrix (Key Requirements to Document in the Administrative Record)

Review Topic	International Fire Code (IFC)	NFPA 855	DoD (UFC / DoDI / Guidance)	EPA / SDWA / SSA	NGLA-Specific Proof to Require
Spill control & secondary containment	IFC Ch.12 spill control must contain spill from largest battery/vessel. [C1]	Basis for ESS hazard mitigation; referenced by IFC as source material. [N1][C2]	UFC/UFGS provide criteria for water systems and monitoring wells; require enforceable O&M. [D1][D2]	SSA review focuses on projects with potential to contaminate aquifer (federal assistance). [E1]	Design drawings showing impermeable pad/liner/curbing; containment volume calcs; chemical compatibility; no-infiltration zone specs.
Fire suppression & contaminated runoff	IFC requires hazard controls; local code adoption may specify drainage/containment. [C1]	Addresses separation, protection, emergency planning for ESS installations. [N1]	DoDI 4715.06 requires environmental compliance and pollution prevention hierarchy; DoD NEPA procedures for environmental review. [D3][D4]	EPA SSA review requires preventing contamination; SDWA framework applies. [E1][E2]	Runoff capture plan (valves, sumps, tanks), disposal pathway, PFAS-free agent specification where feasible, and drills with responders.
Groundwater monitoring network	IFC supports verification of hazard controls; monitoring driven by	Supports detection/ alarm systems	UFGS 33 51 39 provides requirements for monitoring well	SSA and groundwater protection programs	Monitoring wells placed upgradient/downgradient per modeled flow; baseline +

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	environmental permits. [C1]	for ESS. [N1]	installation/ testing. [D2]	emphasize vulnerability; Guam regs require protection of principal source aquifer. [E1][G1]	routine analytes (metals, fluoride compounds, etc.).
Project siting and alternatives analysis	IFC (as a code) ties to site hazard evaluation; local zoning overlays may apply.	NFPA 855 focuses on safety; informs acceptable separation and siting constraints. [N1]	DoD mission assurance and source-water protection guidance for installations operating drinking water systems. [D5]	SSA review triggered for federally assisted projects; encourages avoidance of contamination risk. [E1]	Alternatives outside recharge zones documented; comparative risk assessment; justification if remaining in aquifer review area.
Decommissioning, waste handling, and liability	IFC requires safe removal and hazard controls in decommissioning plans (via local adoption).	NFPA 855 includes operational and decommissioning safety expectations. [N1]	DoDI 4715.06 emphasizes compliance and pollution prevention; DoD standards for water/stormwater management overseas can be	EPA frameworks for protecting drinking-water sources and cleanup liability apply if releases occur.	Bond/insurance/escrow sized for worst-case aquifer remediation and alternative water supply; enforceable post-closure monitoring.

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analogous.
[D3][D6]

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Appendix: Risk Matrix (Template) for Standards-Based Review

This appendix supports alignment of code/standard requirements to quantified risk. Populate with site-specific data (UL 9540A, hazard analysis, hydrologic modeling, response capability).

Scenario	Relevant Standard Hook	Likelihood	Consequence	Record Evidence Needed
Spill/leak to ground	IFC spill control; Guam groundwater regs. [C1][G1]			Containment calcs; pad/liner specs; inspection logs; spill response plan.
Thermal runaway with runoff	NFPA 855 / IFC hazard controls. [N1][C1]			UL 9540A; suppression plan; runoff capture; disposal contracts; drills.
Typhoon breach + rainfall	Design basis + emergency plan; verify to Guam conditions.			Wind load design; anchoring; debris protection; post-event inspection protocol.
Monitoring detection failure	UFGS monitoring wells + alarm/monitoring.			Well network design; QA/QC; thresholds; notification SOPs; maintenance.

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References (for section citations)

1. [C1] 2024 International Fire Code (IFC), Chapter 12 (Energy Systems), spill control section 1207.6.2.1.
2. [C2] IFC notes material based on NFPA 855 (2023 ed.) within energy storage provisions.
3. [N1] NFPA 855 Standard Development page (overview of minimum ESS hazard mitigation requirements).
4. [D1] UFC 3-230-02 O&M: Water Supply Systems (DoD).
5. [D2] UFGS 33 51 39 Monitoring Wells (DoD).
6. [D3] DoDI 4715.06 Environmental Compliance and Pollution Prevention (DoD).
7. [D4] DoD NEPA Procedures (2025).
8. [D5] US Army Technical Guide – Source Water Assessment and Protection.
9. [D6] DoDM 4715.05 Vol. 3 Water Management (Overseas Environmental Baseline Guidance).
10. [E1] EPA – Sole Source Aquifer Project Review (SSA review process; updated July 15, 2025).
11. [E2] EPA Region 9 – SSA program background (archived snapshot).
12. [G1] Guam Administrative Rules (22 GAR) groundwater protections referencing Northern Guam water lens.
13. [F4] EPA Region 9 – Northern Guam SSA map (SDWA 1424(e); 43 FR 17888; 04/26/1978).
14. [F2] WERI/UOG – NGLA supplies ~80% of Guam potable water.

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

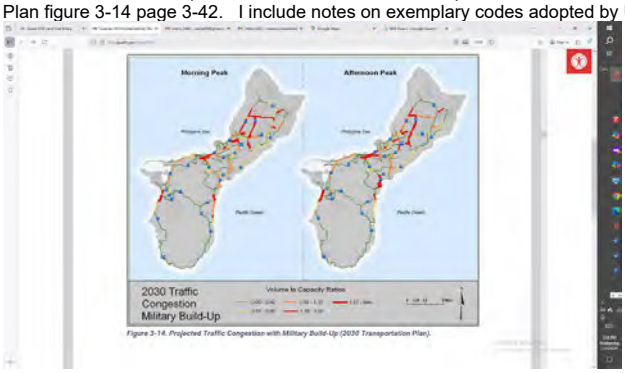
February 25, Barbara Burkhardt Testimony

Barbara Burkhardt <[redacted]> Wed, Mar 11, 2026 at 4:33 PM
To: gsp2050@bsp.guam.gov

Please find attached my public testimony given on February 25.

I also attach some further notes on

1. Exemplary Land Use codes for Solar Farms and Data Centers.
2. Expansion of the Dededo Loop Land Use Provisions to include **Environmental Heritage.**
3. Notes on 3 Dededo public roads and intersections improved within the Military Infrastructure projects for roads and utilities. Most of the roads show up currently as red in this Plan figure 3-14 page 3-42. I include notes on exemplary codes adopted by US towns to accomodate more than engineering solutions to land use problems.



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You received this message because you are subscribed to the Google Groups "2050 Guahan Sustainability Plan" group.
To unsubscribe from this group and stop receiving emails from it, send an email to gsp2050+unsubscribe@bsp.guam.gov.
To view this discussion visit https://groups.google.com/a/bsp.guam.gov/d/msgid/gsp2050/CALNixsP_uT2OKfO8NMiheOG-f9sfD4TjyjEgQ_KtTGwJ-e1wWw%40mail.gmail.com.

6 attachments

- **Barbara Burkhardt 2050 Guam Land Use Plan Public Comment.pdf** 3418K
- **Environmental Heritage.pdf** 269K
- **Exemplary land use regulations for solar farms balance clean energy goals with aquifer protection.pdf** 295K
- **BESS_Alignment_IFC_NFPA855_DoD_EPA_NGLA_v2_with_citations_risk_matrix-1.pdf** 177K
- **The Loop.pdf** 214K
- **Notes From Military Infrastructure to Community Landscapes in Dededo.pdf** 202K

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Draft Public Comments –
Guåhan 2050 Sustainability Plan (G50SP)
February 25, 2026

Barbara Burkhardt

My name is Barbara Burkhardt. Thank you for the opportunity to provide constructive comments on the 2050 Land Use Plan.

I appreciate the time and resources that went into this document. The 480 pages are not filler. They show the wide scope of land use on Guam and its many impacts.

I am a retired architect. In the past, I worked on land use rezoning for project development before the Guam Department of Land Management. Today, I plant trees and help restore urban forest fragments in Dededo. I am familiar with Guam's land use laws, and from that experience, I recognize the quality and depth of this report.

My comments tonight focus on Dededo. I am a resident of Dededo.

Dededo is bearing the brunt of today's ad-hoc, "Wild West" land use decisions. Permanent damage is happening now while this "Phase 1" planning document rolls out to the public. There is a figure indicating bare land outcomes of the development rate 2006 – 2016. This

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figure leaves out the “Wild West” bare land acceleration 2016 – 2026.

First Comment – The Plan Needs a Timeline and strategic outcomes

As an architect, I see this document as a strong **Phase 1** report. It does an excellent job collecting data and describing past conditions. It took 5 years to put together in the 30 year time frame. It is not ready to go before the Legislature.

What is missing is milestones and outcomes at the macro level. That would be a complimentary **Phase 2** report.

There are no defined milestones. No strategic and short-term outcomes. No sense of what is already underway, what has not started, or when residents might see real results.

Without this, it is difficult to trust how the Guåhan 2050 Sustainability Plan (G50SP) will move forward. At the end of my comments I will address gaining public trust.

Second Comment – Federal Funding Reality Is Not Acknowledged

The section on financial support from Federal agencies and legislation does not reflect current reality.

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In 2025, major federal programs were disrupted by actions of the Trump administration. This directly affects Guam's ability to implement what is in the plan. That setback — and its impact on timelines — is not acknowledged. I write Grants for nonprofits and have done this heart breaking analysis and received the emails.

An honest implementation plan must reflect this withdrawal of Federal funding in 2025.

Third Comment – Guam Can Execute When There Is Land Use Leadership

In my 17 years on Guam, I have seen that we *can* deliver large projects when there is focus and leadership.

GPA's long-term power planning is one example. The current infrastucture work spans more than 20 years and connects directly to the Master Plan for the current military buildup.

The same is true for roads, water, and sewer systems – improvements largely completed as the infrastructure for the current buildup.

These are core land use systems — and they must be clearly overlaid on this plan as they have long term impacts, and will quite likely be the last projects completed during the timeline of the Plan.

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Fourth Comment – What is missing

As an architect, my view is that successful implementation on Guam has been largely **engineering-centric** in response to the Military Master Plan for buildup identified more than 20 years ago.

Engineers are asked to solve specific problems — power, roads, drainage, buildings — one strategic project at a time. The military provided the Master Plan and timelines, not starting construction on Camp Blaz and other projects until the 20-year plan for infrastructure and the Navy Hospital was in place.

Civilian short comings were clearly identified 20 years ago. A side note is, what happened to all the proposed on base family housing? Are we are paying the civilian price on that Master Plan deletion today.

Whats next for Guam? I can't find these two Land Use actions clearly in the Plan.

- Short term ongoing heavy development adjacent to the completed buildup infrastructure improvements?
- What is the 20 year infrastructure plan that will enable development in ancillary areas?

Without this 2 prong planning lens, private and public development projects continue to move forward and create chaos. Each may meet technical standards, but together they can undermine groundwater protection,

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green space, housing stability, traffic flow, and community health.

Continuing my comments, I will focus on Dededo, and on the three systems carrying the greatest burden of current land use decisions: recreational space, limestone forest, power, water, and roads. Dededo is briefly in the Plan is Section 7.2.1

Dededo Comment 1 – Short Term Land Use Plan Wins toward the Guåhan 2050 Sustainability Plan (G50SP) Goals

Example Poster – MCD grubbing & clearing, Land Use on a visible intersection.



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Pictured is Marine Corps Drive at Micronesia Mall, as a resident of Dededo, this is how I enter the village heading home, what an eyesore. I will not comment on Route 3 today (see second attachment to this email for further comments)

This photograph from the PDN 3 years ago shows a completed Land Use Master plan for infrastructure supporting growth for military buildup on island.

- Completed roads & Power infrastructure upgrades
- Right to left. GRMC Hospital, a large site for sale, GPA transmission site, Industrial private land use
- Not pictured to the left, GWA pumping station, new road into Harmon Annex and the access road to Dos Amantes Visitor attraction.

All of this is an eye sore to Micronesia Mall and a major road intersection. There is land cover with vegetation but it is ad hoc until the next parking lot and building goes in. It is a mix of invasive tangen tangen and pagu with chain of love vine starting in infiltrate.

The is an example of a lost opportunity and a short term (G50SP) gain. All can be improved today with landscape easements of limestone forest species: Through Mandates from ratepayers for the utilities and negotiations with private landowners. I would propose leadership from

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Guam Forestry. Native limestone forest landscape is my bias.

An example I offer is a Land Use experience at my first job as an architect in Houston, Texas. In the 1980's. driving East from Houston on I 10, there are miles of heavy industry on the right, oil products refinery's on the left. You can smell it before you get there. ½ mile landscape buffers of native piney woods separate the 8 - 12 lane highway from the industrial land use. South of all is the massive 40,000 acre National Wildlife Refuge in the path of the Central Flyway for birds traveling from the Great Plains and South Central America.

This land use and set aside dates from the 1950's. The Flyway conservation as been an ongoing effort of Federal, State and local nonprofits. The piney woods buffer have been in decline for decades. That is another story.

As a core urban example in Seattle, where landscaping is often not an option, municipal art forward competitions for fencing and road facing façade upgrades are solutions to the eye blight urban infrastructure. And then there are the murals made of substantial long-lasting materials.

Dededo Comment No. 2

Dededo Residents Have Already Spoken – Page 4-23 & 7–9, I assert trust is lost in Land Use planning and implementation by year over year Land Use failures.

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On page 7-9, the plan documents survey responses representing what Dededo residents have been saying again and again.

Dededo still contains important limestone forest habitat, although much of it has already been impacted by the development in support of Camp Blaz. Large forest and reforestation parcels are set aside in the unfunded Guam Forest Action Plan.

Dededo is also absorbing major growth — both permanent industrial, power, commercial, housing and temporary workforce housing to support the current population buildup.

At the same time, residents need:

- more affordable homes
- reliable transportation,
- and safe green public spaces.

These are basic quality-of-life needs.

The land use maps clearly show a serious lack of recreational space for Dededo, Guam's largest Village. Figure

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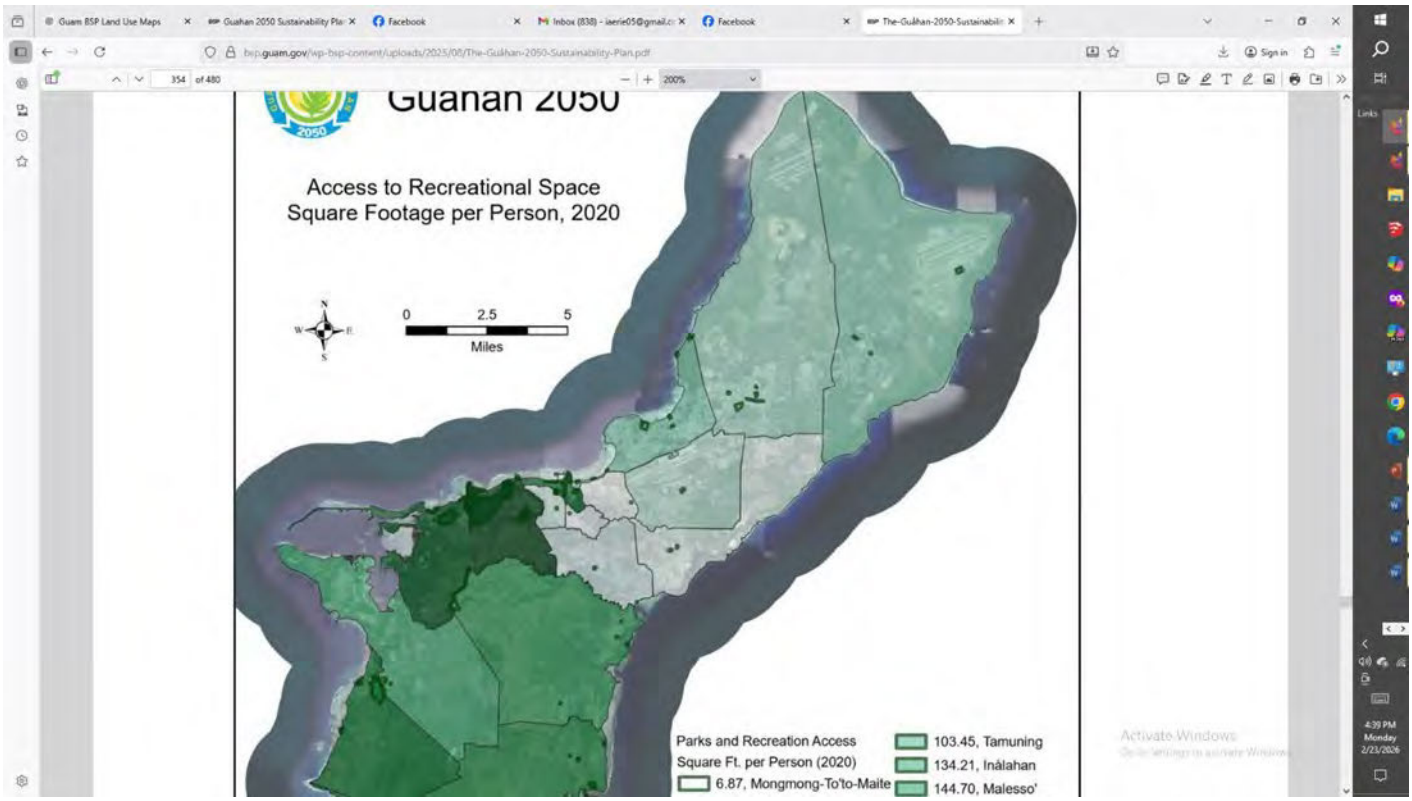

The survey confirms that Dededo residents do **not** believe current park space is adequate for the population.

Dededo Comment No 3 – Immediate need for increased recreational space - The Land Use Plan needs to act on pilots and community partnerships to carve out this space **now.**

The people of Dededo have already made this clear.

With housing demand outside the fence and increased military staff, the need for recreational areas becomes even more urgent.

These survey results cannot be separated from what is current needs. As Dededo absorbs more housing, military-

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related development, and infrastructure, it is also losing limestone forest and tree canopy — the very systems that protect groundwater, reduce heat, and support wildlife. Much of this loss has accelerated with the buildup at Camp Blaz and nearby rezonings. At the same time, industrial-scale energy projects and dense development are being placed over critical recharge areas of the Northern Aquifer.

Dededo Comment No 4 – we are bearing the impact of power projects on the northern aquifer, while providing the majority of fresh water to the island.

On the Figure 5-4, aquifer geologic cross section, 3 major aquifer impact projects were allowed by Land Use change in 2025. 2 – 60 MW Solar Farms with BESS, 1 50,000 square foot data center with batteries and a 45’ water retention tower. In 2016 the new 198 – megawatt Ukudu Power Plant lies on the same cross section.

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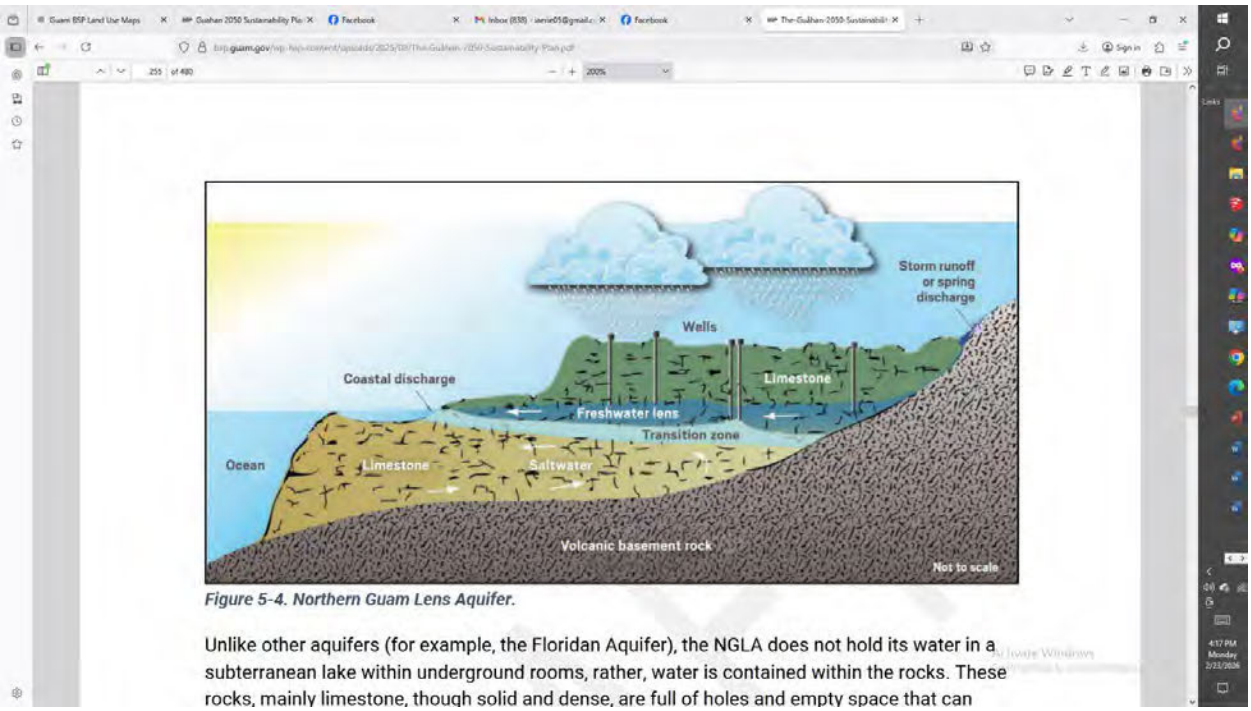

Figure 5-4. Northern Guam Lens Aquifer.

Unlike other aquifers (for example, the Floridan Aquifer), the NGLA does not hold its water in a subterranean lake within underground rooms, rather, water is contained within the rocks. These rocks, mainly limestone, though solid and dense, are full of holes and empty space that can

Focusing closer in to the major pumping and recharge zone on the west side of the GICC CLTC property and Ysengsong Rd.

Graphic – WEIR map of the above referenced area. We believe it's 1.2 million gallons per day.

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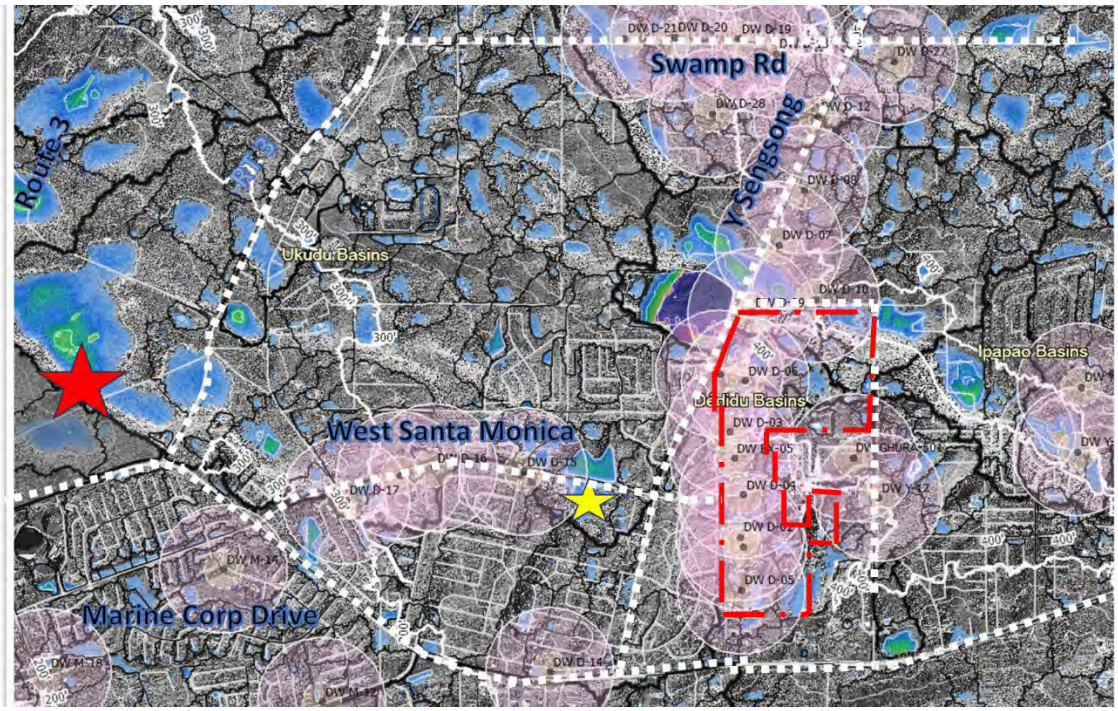

The land use issue not addressed in the Plan: When forests are cleared and land is hardened, less water filters safely underground, and contamination risks increase. What residents are asking for — parks, green space, and livable neighborhoods — is the same thing the aquifer needs: connected forest, permeable land, and thoughtful planning. Ignoring this link puts both community health and Guam's primary drinking water supply at risk.

Last Plan reference is to Table 3-2 page 3-15. Solar farms and Data Centers are not identified with what we feel are necessary Land Use public safety and water protection for DLM implementation during reviews.

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We have testified at public hearings numerous times in the last 2 years with this WEIR graphic. Our concerns and recommendations were ignored. There continues to be no Land Use mandate to additional solar farms or data centers on this important portion of the aquifer.

Dededo No 5 - The recent improvement of Ysengsong Road is shown as inadequate in the Land Use Plan, **Figure 3-14 page 3 - 42**

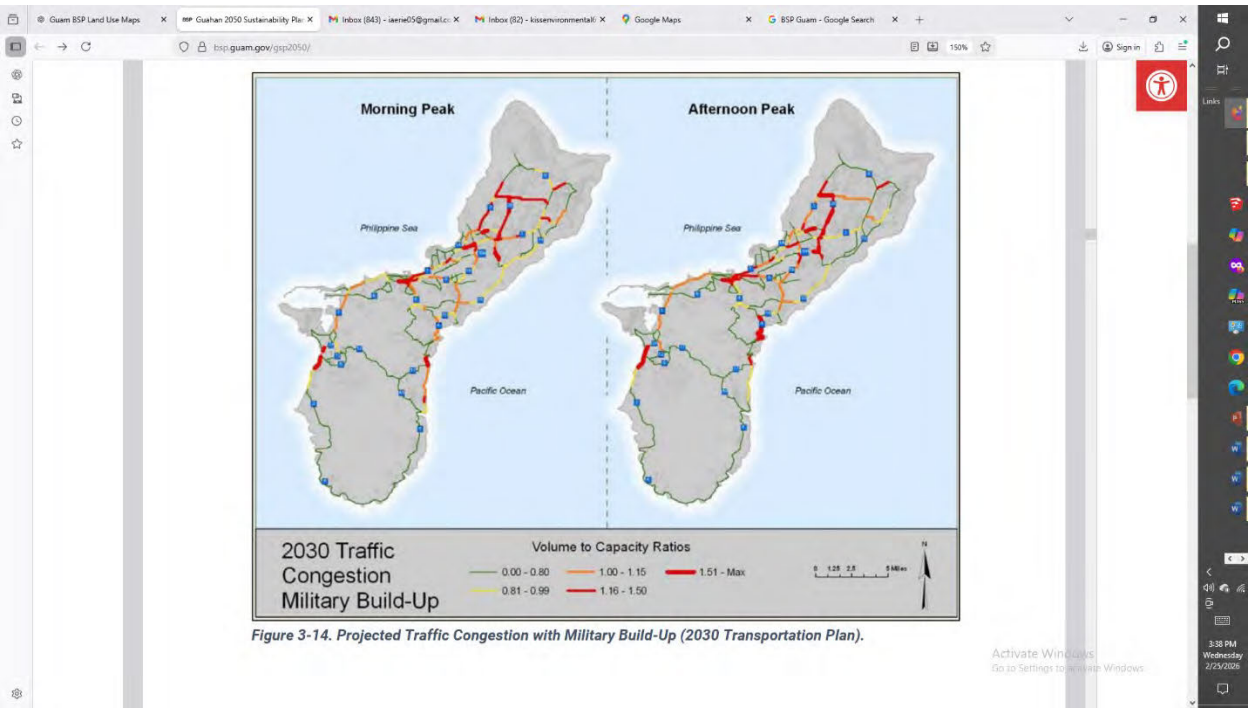

Figure 3-14. Projected Traffic Congestion with Military Build-Up (2030 Transportation Plan).

Flagged with red congestion during peak hours. Planned traffic lights have not been installed. The impact of condemning land where farms, schools and homes occur is an immediate red flag issue. Condemning land for road

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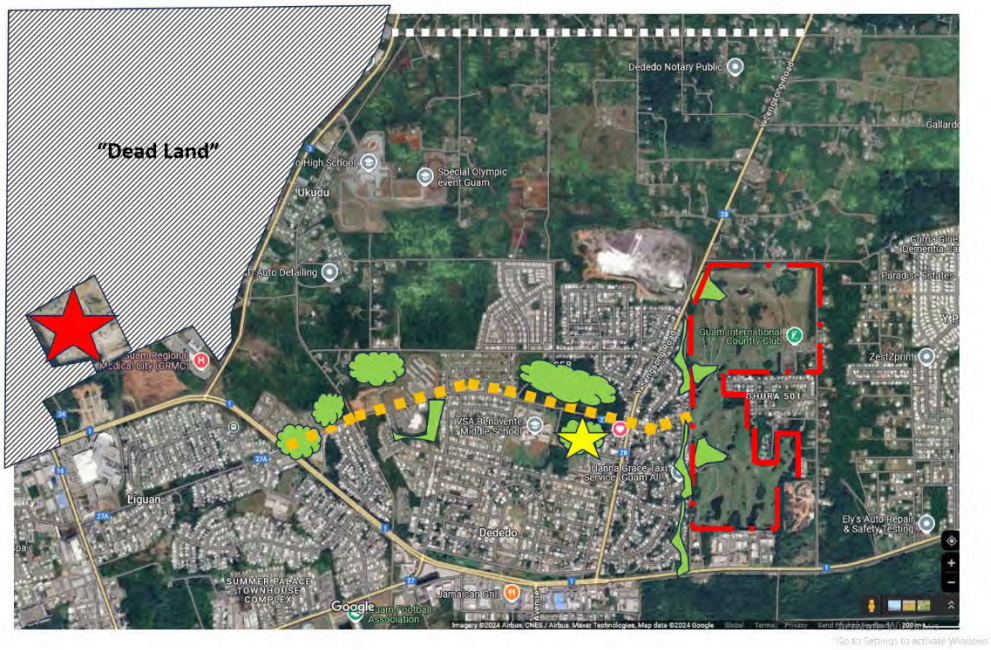
improvements that will set back key quality of life components of the Dededo urban core is our concern.

Graphic Map of the area of concern. **Hold Up**



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Key Features: 3 mile loop of West Santa Monica, Y Sengsong and MCD. 1/3 of the loop is already shaded by some mixed forest and remarkable native limestone forest fragments and reforestation projects.

What would be an immediate improvement pilot, the roads already have accessible maintained sidewalks and a possibility of bike lanes on the Loop. On the north South Y Sengsong, if not widened sidewalks, bike lanes and limestone forest easement should be added.

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Dededo No 6 – The most flawed actual proposed Land Use plan & the one with immediate implementation possibilities. This would be seen as a win by the ignored people of Dededo.

Figure 3-7 page 3 -27 – Parks and Open Space Corridor

Before I comment on the above I want to thank you for putting this graphic in the Plan.

Figure 3 -6

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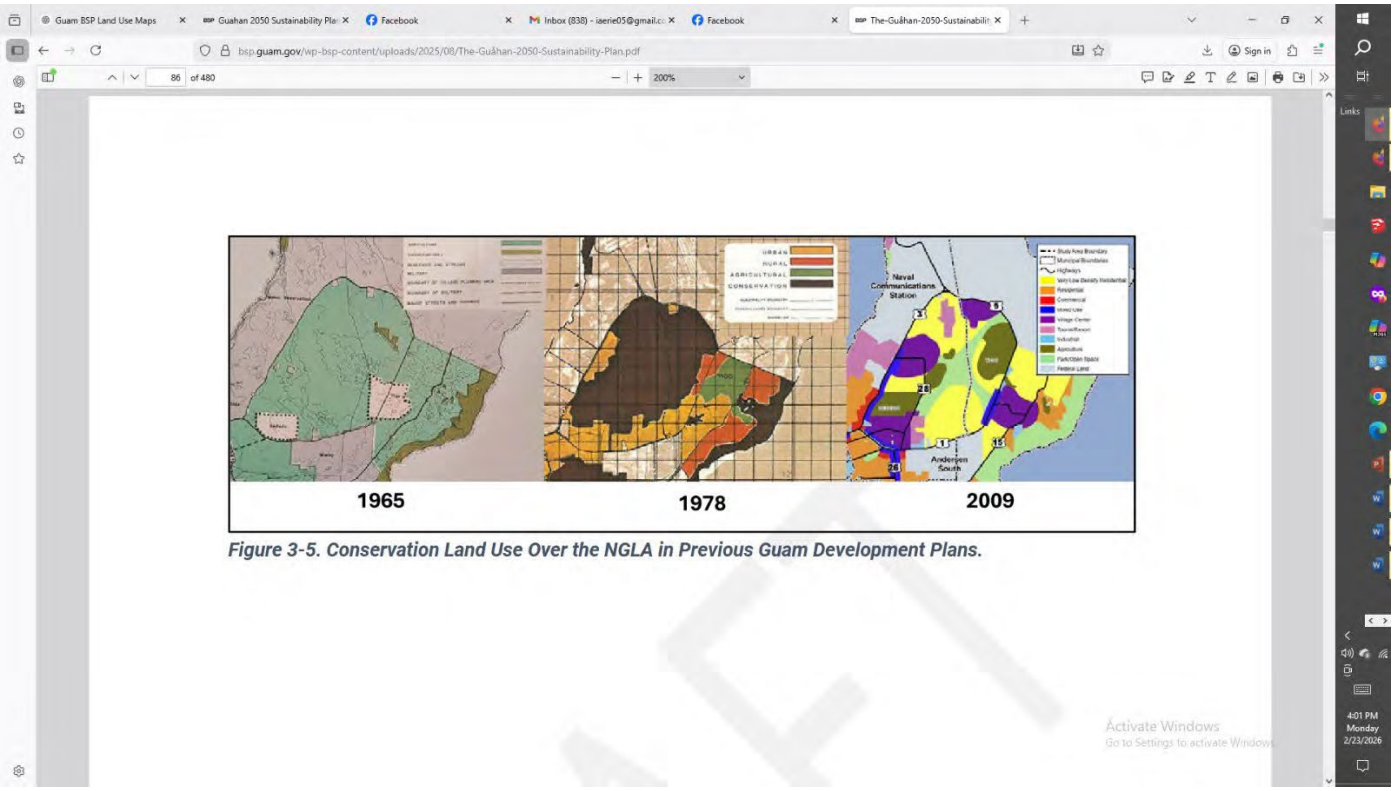

Figure 3-5. Conservation Land Use Over the NGLA in Previous Guam Development Plans.

I found the 2009 Land Use Map in 2023 and could not find any reference to the light green central diagonal splotch. At the time it very clearly acknowledges the importance of GICC to the green space zone running between Dededo and Yigo. Off screen it documents when 3,000 acres of housing was taken off the map for the Harmon Industrial Annex in 2016.

Back to **Figure 3 – 7** - as a schematic proposal in this Plan, it is very disappointing and again evidence that the people of Dededo are not heard.

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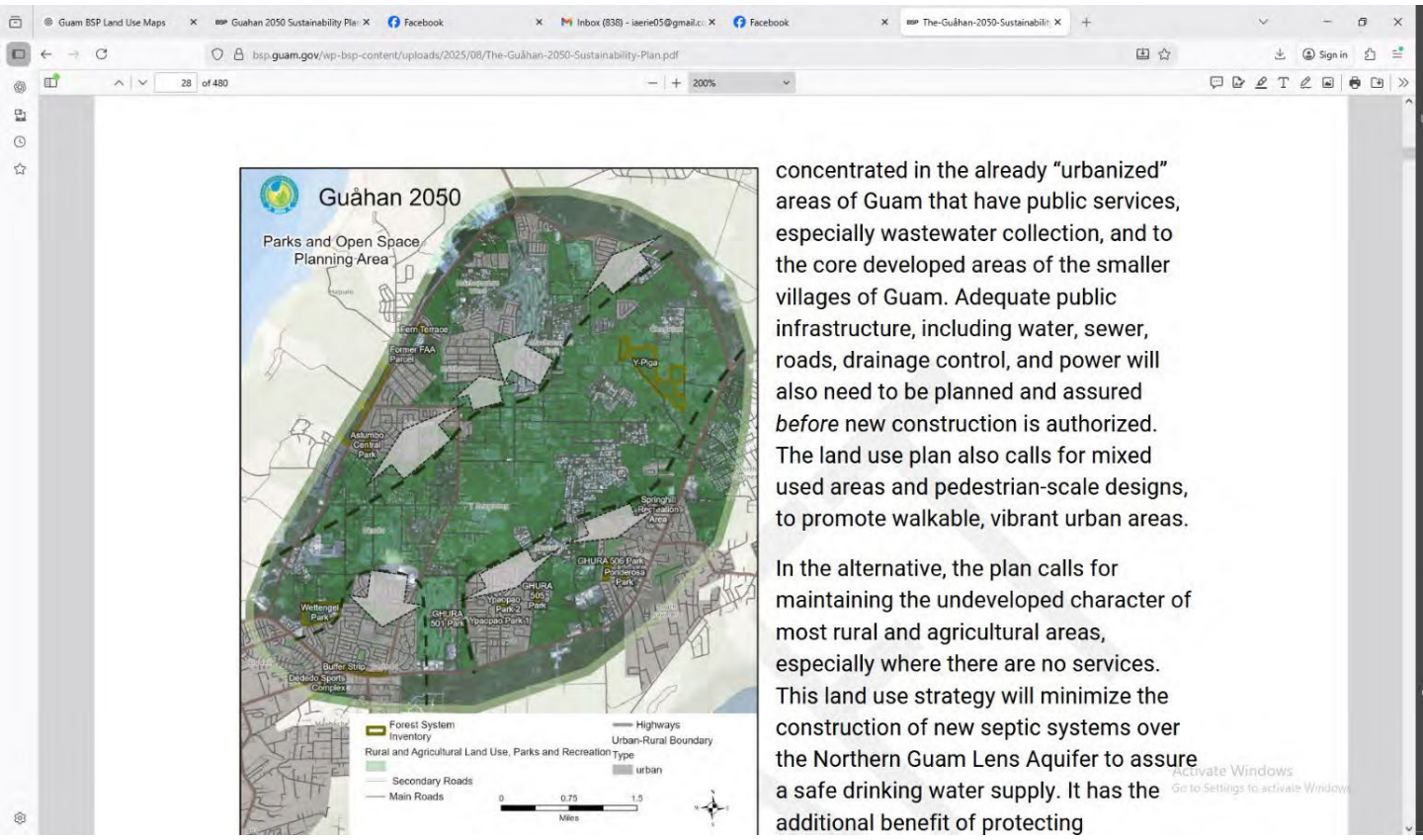

On the upside this area could be an immediate Land Use win for Dededo in 3 Phases.

Phase 1A -3 mile Loop Land Use – 2026 win for the plan

The 3 mile loop Land Use of few remaining public and private parcels would be solidified.

Graphic Map – Hold up

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- Areas of mixed and limestone forest fragments would be a Mayor, school, agency, commercial, non profit and resident priority, supported by small planting Grants and Guam Forestry native plant nursery and experts.
- Rubbish removal road sections have already been staked by entities, Mayor's Office, Food Coop, Rotaract, Kurason I Sengsong and ???. The community could be asked to adopt the entire route in additional sections. Fortunately dumped cars are not a problem as they are to the north of the Loop.

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- Nice artistic signage celebrating the loop experience
- Again, sidewalks and a continuous bike path. Perhaps set aside Sunday mornings for car free use. Loop traffic on one lane one way.

Phase 1 -B – Fix the previously mentioned MCD eye blight from the Dos Amantes to the GRMC intersection. Both sides. Same strategy as above but would require CCU agreement to improve their properties and easements. 3 Commercial Sites would need to agree to improve their landscaping and curb appeal in a native plant Land Use mandate. Department of Public Works would need to take responsibility at public road curb cuts to MCD. I would recommend a professional civic Landscape design firm take the curb appeal up a notch. Why wouldn't CCU and the large commercial property entities agree to underwrite the landscape design as a demonstration of civic pride.

Phase 2 A– longer process, make a meaningful leadership driven agreement with CLTC to identify the land use of what is ½ the central area of this plan. Make a master plan and begin the 20 year infrastructure upgrade to accommodate homes, farms and accessible public green space.

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Is it too late for the failure of the GICC Legislation to be reversed? Speaker Blas?

Phase 2 B - Bisect North South indicating Ysengsong Rd and that it's future is further improvements. The improvements would generate an additional Land Use revision along the Road and areas not covered in Phase 2 A.

Dededo No 8 – Correction to the Land Use Plan – Dededo Central Urban Core – Impact immediate Land Use corrections indicating current trends would win back some trust. In particular the West Santa Monica/ MCD Intersection is residential and the Food Coop – why a Land Use change? Large green spaces are mislabeled. The Green Belt diagonal is not clear. The KIS Community Center and Limestone Forest Restoration Project is labeled as housing. "Green" large utility easements should be labeled as such, they cut a large swath through the map. On a graphic note, MCD, Route 3, Ysengsong,West Santa Monica, Hamburger Road and are not "popping".

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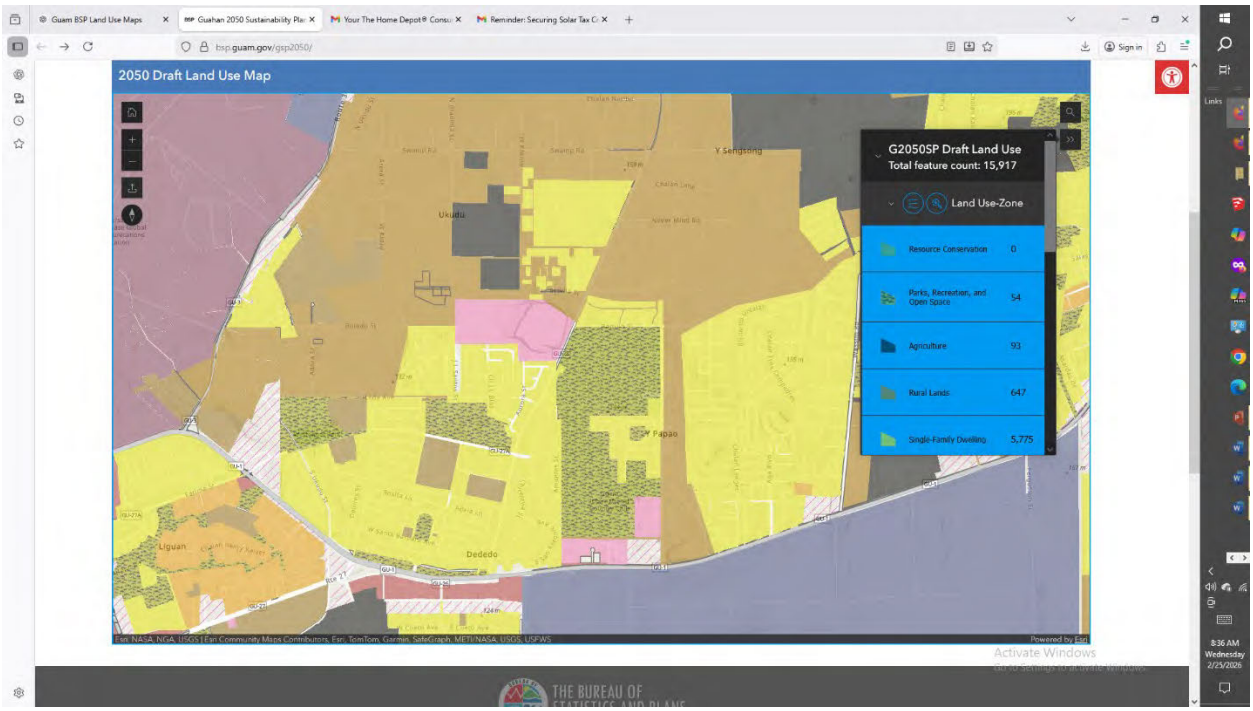

In closing:

At its core, for Dededo this is about people, forests, and water — and how wisely we spend public money. Dededo residents are asking for green space, rubbish removal, abandoned cars and dumped puppy free neighborhoods, to preserve their basic quality of life. The forests they are losing protect the aquifer that supplies 80% of Guam's drinking water. When land is cleared first and planned later, the cost of fixing roads, drainage, heat, and water quality falls on taxpayers and utility ratepayers. Protecting forest, recharge areas, and community spaces now is far cheaper than retrofitting bare land later.

If the 2050 Land Use Plan is meant to guide development, it must be in action today — because once Dededo's land

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and aquifer are compromised, there is no affordable way back.

On the leadership and implementation section, a comment on going forward. Guam Green Growth and the Center for Island Sustainability (G3 CIS) was neither asked by the Committee nor volunteered to present expert Plan land use testimony during the 2 years of GICC public hearings, despite the scale and impact of that legislation on the Plan we are reviewing today.

Dededo is being built first and planned later — and that puts our forests, our aquifer, and our children's future at risk.

If Guam is to remain a place people want to live in and visitors want to return to, we must care for our forests, our coastlines, and our open spaces — because once they are gone, they cannot be rebuilt.

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Regulatory Alignment Matrix: BESS Installation over the Northern Guam Lens Aquifer

Purpose: This document aligns key review questions and risk considerations for proposed Battery Energy Storage System (BESS) installations with applicable standards and guidance from IFC, NFPA 855, the U.S. Department of Defense (DoD), and the U.S. Environmental Protection Agency (EPA), with specific relevance to the Northern Guam Lens Aquifer.

Review Area	IFC Guidance	NFPA 855	DoD Criteria	EPA / Aquifer Protection
Site Selection & Land Use	Avoidance of high-risk environmental receptors, including sole-source aquifers	Requires evaluation of exposure risks to adjacent critical infrastructure	Mission assurance and protection of critical resources	Sole-source aquifer protection and recharge zone safeguarding
Fire & Thermal Runaway	Hazard identification and emergency planning	Thermal runaway separation, fire suppression, and containment requirements	Force protection and continuity of operations	Prevention of hazardous substance releases to groundwater
Containment & Runoff Control	Secondary containment and spill prevention	Chemical-resistant barriers and drainage controls	Infrastructure resilience standards	Stormwater and hazardous waste containment
Monitoring & Reporting	Environmental monitoring and disclosure	System monitoring and alarms	Operational risk monitoring	Groundwater monitoring and public reporting
Decommissioning & Liability	End-of-life management and remediation	Decommissioning planning	Long-term site stewardship	CERCLA liability and long-term cleanup responsibility

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Northern Guam Lens Aquifer Context (Why Standards Must Be Elevated Here)

- Groundwater supplies about 80% of Guam's drinking water; the NGLA is the primary source in northern Guam. [F1][F2][F3]
- The NGLA is designated as a Sole Source Aquifer under Section 1424(e) of the Safe Drinking Water Act; EPA documentation references Federal Register citation 43 FR 17888 (April 26, 1978). [F4][F5]
- The NGLA is a limestone/karst aquifer with high permeability and rapid recharge pathways; releases at the surface can migrate quickly via preferential flow. [F6][F7]
- Guam groundwater regulations identify the Northern Guam water lens as a principal source aquifer and emphasize protection for drinking-water use. [F8]

Implication for standards alignment: In a rapid-recharge limestone aquifer, the review must treat firewater/runoff containment, secondary containment integrity, and monitoring/well placement as mission-critical controls—not optional best practices.

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Expanded Alignment Matrix (Key Requirements to Document in the Administrative Record)

Review Topic	International Fire Code (IFC)	NFPA 855	DoD (UFC / DoDI / Guidance)	EPA / SDWA / SSA	NGLA-Specific Proof to Require
Spill control & secondary containment	IFC Ch.12 spill control must contain spill from largest battery/vessel. [C1]	Basis for ESS hazard mitigation; referenced by IFC as source material. [N1][C2]	UFC/UFGS provide criteria for water systems and monitoring wells; require enforceable O&M. [D1][D2]	SSA review focuses on projects with potential to contaminate aquifer (federal assistance). [E1]	Design drawings showing impermeable pad/liner/curbing; containment volume calcs; chemical compatibility; no-infiltration zone specs.
Fire suppression & contaminated runoff	IFC requires hazard controls; local code adoption may specify drainage/containment. [C1]	Addresses separation, protection, emergency planning for ESS installations. [N1]	DoDI 4715.06 requires environmental compliance and pollution prevention hierarchy; DoD NEPA procedures for environmental review. [D3][D4]	EPA SSA review requires preventing contamination; SDWA framework applies. [E1][E2]	Runoff capture plan (valves, sumps, tanks), disposal pathway, PFAS-free agent specification where feasible, and drills with responders.
Groundwater monitoring network	IFC supports verification of hazard controls; monitoring driven by	Supports detection/ alarm systems	UFGS 33 51 39 provides requirements for monitoring well	SSA and groundwater protection programs	Monitoring wells placed upgradient/downgradient per modeled flow; baseline +

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	environmental permits. [C1]	for ESS. [N1]	installation/ testing. [D2]	emphasize vulnerability; Guam regs require protection of principal source aquifer. [E1][G1]	routine analytes (metals, fluoride compounds, etc.).
Project siting and alternatives analysis	IFC (as a code) ties to site hazard evaluation; local zoning overlays may apply.	NFPA 855 focuses on safety; informs acceptable separation and siting constraints. [N1]	DoD mission assurance and source-water protection guidance for installations operating drinking water systems. [D5]	SSA review triggered for federally assisted projects; encourages avoidance of contamination risk. [E1]	Alternatives outside recharge zones documented; comparative risk assessment; justification if remaining in aquifer review area.
Decommissioning, waste handling, and liability	IFC requires safe removal and hazard controls in decommissioning plans (via local adoption).	NFPA 855 includes operational and decommissioning safety expectations. [N1]	DoDI 4715.06 emphasizes compliance and pollution prevention; DoD standards for water/stormwater management overseas can be	EPA frameworks for protecting drinking-water sources and cleanup liability apply if releases occur.	Bond/insurance/escrow sized for worst-case aquifer remediation and alternative water supply; enforceable post-closure monitoring.

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analogous.
[D3][D6]

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Appendix: Risk Matrix (Template) for Standards-Based Review

This appendix supports alignment of code/standard requirements to quantified risk. Populate with site-specific data (UL 9540A, hazard analysis, hydrologic modeling, response capability).

Scenario	Relevant Standard Hook	Likelihood	Consequence	Record Evidence Needed
Spill/leak to ground	IFC spill control; Guam groundwater regs. [C1][G1]			Containment calcs; pad/liner specs; inspection logs; spill response plan.
Thermal runaway with runoff	NFPA 855 / IFC hazard controls. [N1][C1]			UL 9540A; suppression plan; runoff capture; disposal contracts; drills.
Typhoon breach + rainfall	Design basis + emergency plan; verify to Guam conditions.			Wind load design; anchoring; debris protection; post-event inspection protocol.
Monitoring detection failure	UFGS monitoring wells + alarm/monitoring.			Well network design; QA/QC; thresholds; notification SOPs; maintenance.

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References (for section citations)

1. [C1] 2024 International Fire Code (IFC), Chapter 12 (Energy Systems), spill control section 1207.6.2.1.
2. [C2] IFC notes material based on NFPA 855 (2023 ed.) within energy storage provisions.
3. [N1] NFPA 855 Standard Development page (overview of minimum ESS hazard mitigation requirements).
4. [D1] UFC 3-230-02 O&M: Water Supply Systems (DoD).
5. [D2] UFGS 33 51 39 Monitoring Wells (DoD).
6. [D3] DoDI 4715.06 Environmental Compliance and Pollution Prevention (DoD).
7. [D4] DoD NEPA Procedures (2025).
8. [D5] US Army Technical Guide – Source Water Assessment and Protection.
9. [D6] DoDM 4715.05 Vol. 3 Water Management (Overseas Environmental Baseline Guidance).
10. [E1] EPA – Sole Source Aquifer Project Review (SSA review process; updated July 15, 2025).
11. [E2] EPA Region 9 – SSA program background (archived snapshot).
12. [G1] Guam Administrative Rules (22 GAR) groundwater protections referencing Northern Guam water lens.
13. [F4] EPA Region 9 – Northern Guam SSA map (SDWA 1424(e); 43 FR 17888; 04/26/1978).
14. [F2] WERI/UOG – NGLA supplies ~80% of Guam potable water.

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1. Conference Abstract (150–200 words)

Preserving Guam's Cultural Landscapes: The Dededo Loop, Limestone Forests, and Community Stewardship

Northern Guam's limestone forests represent one of the island's most significant cultural and ecological landscapes. For centuries these forests supported traditional lifeways, protected the Northern Guam Lens Aquifer, and provided habitat for culturally important species such as the fanihi. Today, rapid land clearing and development pressures are transforming these landscapes at an unprecedented pace.

This presentation explores the concept of **biocultural preservation**—the idea that natural ecosystems, cultural identity, and community well-being are inseparable. Using the Dededo Limestone Forest Restoration Project and the emerging vision of the **Dededo Loop** green corridor, the presentation highlights how community organizations, volunteers, and youth are working together to restore forest fragments, protect aquifer recharge areas, and reconnect residents with Guam's environmental heritage.

Through programs such as Guam Service Learning and Kurason I Sengsong's youth leadership initiatives, students and volunteers are participating directly in conservation activities, transforming restoration sites into living classrooms and spaces of community stewardship.

The presentation proposes a broader preservation framework for Guam—one that recognizes forests, water resources, and cultural landscapes as critical components of the island's heritage and future resilience.

---

2. 15-Minute Presentation Outline

Slide 1 — Title

Preserving Guam's Cultural Landscapes
Dededo Loop • Limestone Forests • Community Stewardship

Presenter
Kurason I Sengsong (KIS)

Slide 2 — What is a Cultural Landscape?

- Places shaped by **nature and human history**
- Includes:
    - forests

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- water resources
- settlement patterns
- agriculture
- community gathering places

Guam's limestone forests are cultural landscapes.

Slide 3 — Northern Guam Before WWII

Key features:

- dense limestone forests
- coconut plantations
- fanihi populations estimated in the thousands
- intact aquifer recharge

Map and historical imagery.

Slide 4 — The Northern Guam Lens Aquifer

Explain connection between:

Forest → Soil → Karst → Aquifer

Forests protect:

- infiltration
- water quality
- groundwater recharge

Slide 5 — Landscape Change

Recent decades:

- rezoning of agricultural land
- forest clearing
- bare limestone surfaces
- fragmentation of habitat

Explain ecological consequences.

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Slide 6 — The Dededo Loop

Area bounded by:

- West Santa Monica
- Y Sengsong Road
- Marine Corps Drive

Assets include:

- schools
- parkways
- community garden
- limestone forest fragments
- public health facility

Opportunity for a **community greenbelt corridor**.

Slide 7 — KIS Dededo Limestone Forest Restoration Project (DLFRP)

Community restoration program including:

- invasive species removal
- native forest planting
- habitat restoration
- volunteer stewardship

Slide 8 — Youth and Community Engagement

Programs include:

- Guam Service Learning (GSL)
- student volunteer hours
- internships
- citizen forester training

Youth participation creates **wellness protective factors and environmental literacy**.

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Slide 9 — Volunteers and Stewardship

Volunteers come from:

- villages across Guam
- local schools
- University of Guam
- visiting volunteers from the US and Asia

Over **1,000 volunteer hours annually** supporting restoration.

Slide 10 — Toward Biocultural Preservation

Future preservation model:

Protect

- forests
- aquifer recharge
- wildlife habitat
- cultural landscapes

Through **community stewardship**.

Slide 11 — Vision for the Dededo Loop

A connected landscape including:

- forest restoration
- community gardens
- green parkways
- school partnerships
- environmental education

A living heritage corridor.

Slide 12 — Closing

Preserving Guam's future requires protecting:

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Forest
Water
Culture
Community

---

3. Opening Slide Script

“When we talk about preservation on Guam, we often think about historic buildings or archaeological sites. But some of our most important heritage resources are landscapes—forests, water, and the places where communities connect to the land.

Northern Guam’s limestone forests are not only ecological systems; they are cultural landscapes that sustain our aquifer, support wildlife, and shape the identity of our villages.

Today I want to share how community volunteers, youth service learning programs, and restoration projects in Dededo are working to preserve these landscapes for the future.”

---

4. Diagram for Slides

simple systems diagram

```
Limestone Forest
        ↓
Soil Formation & Root Networks
        ↓
Karst Infiltration
        ↓
Northern Guam Lens Aquifer
        ↓
Drinking Water for 70–80% of Guam
        ↓
Community Health & Resilience
```

Then add:

```
Community Stewardship
        ↓
Youth Service Learning
        ↓
Forest Restoration
        ↓
Long-term Cultural Landscape Preservation
```

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5. Handout for Conference Attendees (1 Page)

Title:

Preserving Guam's Cultural Landscapes

Sections:

Dededo Loop Vision
A community corridor connecting schools, parkways, and limestone forest fragments in northern Guam.

Community Restoration
The Dededo Limestone Forest Restoration Project restores native forest habitat and protects aquifer recharge areas.

Youth Engagement
Through Guam Service Learning and Kurason I Sengsong programs, students participate in hands-on environmental stewardship.

Volunteer Stewardship
Community volunteers contribute thousands of hours restoring and caring for forest landscapes.

Future Vision
Protecting Guam's forests and aquifer is essential to preserving the island's cultural and environmental heritage.

---

6. Environmental Heritage

Additional concept that preservation organizations globally are adopting:

"Environmental Heritage."

Meaning:

Heritage includes not only historic buildings but also **ecosystems that sustain cultural identity**.

For Guam that includes:

- limestone forests
- aquifer recharge lands
- traditional agroforestry landscapes.

This idea would likely resonate strongly with **Guam Preservation Trust**.

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Exemplary land use regulations for solar farms balance clean energy goals with aquifer protection, habitat conservation, community compatibility, and long-term land stewardship.

Given your work in Dededo and the Northern Limestone Plateau, I'll structure this in a way that speaks to karst aquifer regions, forest fragments, and large-scale industrial solar proposals.

I. Model Solar Land Use Framework (Best Practice Structure)

An exemplary ordinance has 7 core components:

1. Location Controls (Where Solar Can Go)
2. Overlay & Resource Protection Standards
3. Site Design Standards
4. Hydrology & Stormwater Protections
5. Ecological & Habitat Standards
6. Decommissioning & Financial Assurance
7. Community & Cumulative Impact Review

Below are real-world models worth studying.

II. Exemplary Jurisdictions & What They Do Right

US 1. New York – Office of Renewable Energy Siting (ORES)

Why it's exemplary:

1. Statewide siting standards
2. Mandatory visual buffers
3. Agricultural land protection
4. Pollinator-friendly groundcover
5. Decommissioning bonds required

Strong provisions:

1. 100–300 ft setbacks from residences
2. Required screening vegetation
3. Agricultural soil mitigation plans
4. Enironmental justice review
5. Mandatory decommissioning escrow

Takeaway: Clean energy must coexist with farmland and communities.

US 2. Vermont – Solar & Scenic Protection Model

Why it's exemplary:

1. Solar discouraged on forest land
2. Strong scenic review

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3. Small distributed generation preferred

Strong provisions:

1. Forest clearing triggers enhanced review
2. Preference for rooftops & brownfields
3. Habitat impact assessments
4. Wildlife corridor protections

Takeaway: Forest fragmentation matters.

US 3. Maryland – Agricultural Solar Guidelines

Why it's exemplary:

1. Solar allowed only if agricultural function continues
2. Mandatory soil restoration plans
3. Clear conversion limits

Takeaway: Solar is temporary — land must be restorable.

US 4. California – Desert & Habitat Conservation Planning

Why it's exemplary:

1. Large-scale habitat mitigation requirements
2. Biological surveys required
3. Mitigation ratios (2:1 or greater)
4. Wildlife movement corridor protections

Takeaway: Industrial solar must offset habitat loss.

III. Best Practice Regulatory Standards (Substantive Provisions)

Below is what a "gold standard" ordinance includes:

1 Location Restrictions

✓ Prohibited on:

1. Primary drinking water aquifer recharge zones
2. Karst terrain
3. Intact native forest >5 acres
4. Wildlife corridors
5. Class I agricultural soils
6. Flood recharge basins

✓ Preferred on:

1. Brownfields
2. Landfills

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3. Rooftops
4. Parking canopies
5. Disturbed industrial land

2 Setbacks & Buffers, with BESS set backs increase to 1,000 – 2,000 ft, 5 mile evacuation zone

100–500 ft residential setback
200 ft from wetlands
300 ft from public wells
50–100 ft vegetated perimeter buffer
Wildlife corridor offsets

3 Stormwater & Hydrology (Critical for Karst)

For limestone plateau regions like Northern Guam:

1. **Zero net increase in runoff**
2. **No soil compaction beyond defined PSI**
3. **Permeable access roads**
4. **No grading to exposed limestone bedrock**
5. **Mandatory infiltration modeling**
6. **Independent hydrogeologist review**

This is often missing in weaker ordinances.

4 Habitat & Forest Protection

1. No net loss of native canopy
2. Mandatory tree inventory
3. Replacement ratio 2:1 to 5:1
4. Protected species survey
5. Construction outside breeding season
6. Native pollinator understory required

5 Battery Energy Storage (BESS) Standards

Best practice requires:

1. NFPA 855 compliance
2. UL 9540A fire testing documentation
3. Minimum 100–300 ft setbacks
4. Fire water containment plan
5. Thermal runaway modeling
6. Secondary containment pads

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6 Decommissioning & Financial Security

Gold standard includes:

1. Full decommissioning cost estimate
2. 125% bond or escrow
3. Updated every 5 years
4. Removal to 3 ft below grade
5. Soil remediation requirement
6. Replanting obligation

7 Cumulative Impact Review

Advanced jurisdictions require:

1. **Regional habitat impact analysis**
2. **Aquifer recharge modeling**
3. **Traffic & road wear analysis**
4. **Property value impact study**
5. **Fiscal cost vs revenue assessment**

This is especially relevant in rapidly rezoned areas.

IV. Weak vs Strong Solar Ordinance

Weak	Strong
Treats solar as generic industrial use	Creates specific solar overlay standards
No habitat survey	Mandatory biological assessment
No aquifer review	Independent hydro review
No bond	Mandatory escrow
One project review only	Cumulative regional impact review
Clearing allowed without limits	Forest clearing caps

V. For Karst / Northern Aquifer Regions (Policy Language Example)

If writing model code for a limestone plateau:

“Utility-scale solar facilities shall be prohibited within designated primary aquifer recharge zones unless the applicant demonstrates, through independent hydrogeologic modeling, zero degradation to recharge rates and water quality.”

“Removal of native limestone forest canopy exceeding 1 acre shall require a mitigation ratio of 3:1 and off-site conservation easement dedication.”

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VI. What Truly Exemplary Solar Looks Like

The best systems:

1. Distributed
2. Rooftop-first
3. Parking canopy
4. Brownfield conversion
5. Agrivoltaics
6. No intact forest clearing
7. No aquifer compaction

VII. Strategic Question for Guam Context

For places like Dededo:

The central regulatory question is:

Is solar being used to:
decarbonize rooftops and disturbed land?
Or
justify conversion of intact aquifer recharge land?

That distinction is the entire policy debate.

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From Military Infrastructure to Community Landscapes in Dededo

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Phase 1 — Military Realignment Planning (2010–2012)

Key focus areas during the Environmental Impact Statement planning period:

• road capacity
• intersection upgrades
• defense access routes
• utility corridors
• construction logistics

Primary corridors affected:

- Marine Corps Drive
- Route 3
- Camp Blaz

These investments created the **transportation backbone for northern Guam**.

Phase 2 — What Was Missing

Most projects focused on **vehicle movement**, leaving gaps in:

• sidewalks
• bike lanes
• shade trees
• pedestrian crossings
• green buffers
• community access points.

Phase 3 — Opportunity for Dededo Today

The same corridors now offer opportunities to create **Complete Streets** that support:

• walking
• biking
• safe school access

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• shaded pedestrian routes
• aquifer protection landscapes.

Visual Diagram

```
2012 Military Infrastructure
        ↓
Road Widening
Intersection Upgrades
Utility Corridors
        ↓
2025 Community Opportunity
        ↓
Sidewalks
Bike Lanes
Tree Canopy
Green Infrastructure
```

Dededo Opportunity Corridors

Marine Corps Drive Corridor

Near
Micronesia Mall

Opportunity for:

• shaded sidewalks
• commercial pedestrian access
• transit connectivity.

Route 3 Corridor

Between Marine Corps Drive and Camp Blaz.

Opportunity for:

- bike commuting corridor
  roadside native tree canopy
  • gateway landscape to the Marine base.
- gateway landscapes to the Harmon Annex

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Upper Y Sengsong Corridor

Above West Santa Monica Avenue.

Opportunity for:

• school walking routes
• connection to Dededo Loop green corridor
• neighborhood parkway landscape.

“The infrastructure investments of the military realignment created the transportation backbone for northern Guam. The next step is to complete these corridors with sidewalks, bike lanes, and green landscapes that serve the Dededo community.”

“The Dededo Green Corridor Vision”

Connecting:

- schools
- parkways
- limestone forest fragments
- restoration sites
- community gardens.

This ties **transportation, preservation, and community health together**.

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The Loop – A Community Restoration of Limestone Forests to Protect Guam's Aquifer
A Community-Based Environmental Strategy for Dededo

Submitted by: Kurason I Sengsong (KIS)
Programs: Dededo Limestone Forest Restoration Project (DLFRP) & Guam Service Learning
Location: Dededo "Loop" — West Santa Monica Avenue, Y Sengsong Road, and Marine Corps Drive, East of the Loop additional properties are the Kaiser Subdivision Parkways and the Guam International Country Club.

Executive Overview

Northern Guam sits above the **Northern Guam Lens Aquifer**, which provides the majority of Guam's drinking water. The protection of this aquifer is closely tied to the health of the limestone forests and soil systems that historically covered the northern plateau.

The area commonly referred to as the **Dededo Loop**, bounded by West Santa Monica Avenue, Y Sengsong Road, and Marine Corps Drive, represents a significant opportunity to protect and restore remaining limestone forest fragments while strengthening community green space in Dededo.

This landscape is not an isolated environmental parcel. It is surrounded by major community institutions that directly serve the residents of northern Guam, including the Kaiser Subdivision 13-acre Parkway, Dededo Mayor's Parkway, neighborhood housing, a local food cooperative initiative, two elementary schools, one middle school, the Northern Guam Public Health Facility, and the Kurason I Sengsong Community Center and Dededo Limestone Forest Restoration Project.

Together, these institutions form the foundation for a community environmental corridor that integrates aquifer protection, green space, environmental education, and community health.

Community restoration initiatives such as the Dededo Limestone Forest Restoration Project (DLFRP) demonstrate how local stewardship can restore native limestone forest ecosystems through invasive species removal, native tree planting, soil regeneration, and youth service learning programs. These efforts not only rebuild ecological function but also provide educational and workforce development opportunities for Guam's youth.

Protecting and restoring the Dededo Loop landscape would provide multiple public benefits, including protection of groundwater recharge areas, preservation of wildlife habitat, increased community green space, outdoor education opportunities for nearby schools, and improved environmental resilience for the people of Dededo. Recognizing the Dededo Loop as a community greenbelt and aquifer protection landscape would support the long-term goals of the 2050 Guåhan Land Use Plan by integrating environmental stewardship with community infrastructure and public health.

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This proposal invites collaboration among government agencies, community organizations, schools, and residents to ensure that the Dededo Loop continues to serve as a vital environmental asset for northern Guam. Additional property to the east of Y Sengsong complete the entire conservation potential: Kaiser Subdivision Parkways and the Guam International Country Club leased from the CHamoru Land Trust.

Three Environmental Priorities

1. Prevent Bare Land Desertification on the Northern Limestone Plateau

Limestone landscapes are particularly vulnerable to degradation when vegetation and soil layers are removed.

Bare limestone landscapes experience:

- loss of soil structure
- reduced water infiltration
- increased erosion
- extreme surface heat
- reduced ecological recovery potential

Restoring forest cover rebuilds soil layers and restores ecological function.

2. Protect Forests as Natural Water Infrastructure

Forests growing above limestone aquifers act as natural water infrastructure.

Forest ecosystems provide:

- groundwater recharge
- soil filtration of pollutants
- organic soil formation
- long-term aquifer protection

Maintaining forest cover above the Northern Guam Lens Aquifer helps protect Guam's drinking water supply.

3. Transform Degraded Land into Community Stewardship Landscapes

Across Guam and globally, undeveloped land often becomes dumping sites for debris and construction waste.

Community-led restoration transforms degraded land into:

- native forest habitat
- aquifer protection zones
- environmental education areas

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- community stewardship landscapes

Programs such as KSI Guam Service Learning engage students and volunteers in restoration and long-term stewardship.

Community Restoration Model

The DLFRP demonstrates a scalable community restoration model based on:

- invasive species removal
- native limestone forest planting
- soil regeneration through forest succession
- citizen forester training
- youth service learning participation

This approach restores ecological function while building local environmental stewardship capacity.

Dededo Loop Conservation Opportunity

The Dededo Loop contains remaining forest fragments that provide important ecological functions:

- aquifer recharge
- wildlife habitat
- community green space
- environmental education opportunities

Protecting and restoring this area would support the goals of the 2050 Guåhan Land Use Plan, which calls for sustainable land management and environmental protection.

Benefits to the People of Guam

Protecting and restoring limestone forests above the aquifer provides multiple public benefits:

- protection of drinking water resources
- preservation of native wildlife habitat
- climate resilience through ecosystem restoration
- youth education and workforce development
- community stewardship of natural resources

Recommended Next Steps

Recognize the Dededo Loop as a priority conservation landscape.

Support community restoration initiatives such as the DLFRP.

Integrate limestone forest protection into land use planning and aquifer protection strategies.

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Encourage partnerships between community organizations, government agencies, and educational institutions.

CLOSING STATEMENT

The restoration and protection of Guam's limestone forests is essential to safeguarding the island's water resources, biodiversity, and cultural landscape. Community-led initiatives such as the Dededo Limestone Forest Restoration Project demonstrate how local stewardship can support long-term environmental sustainability for the people of Guam.

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1. Conference Abstract (150–200 words)

Preserving Guam's Cultural Landscapes: The Dededo Loop, Limestone Forests, and Community Stewardship

Northern Guam's limestone forests represent one of the island's most significant cultural and ecological landscapes. For centuries these forests supported traditional lifeways, protected the Northern Guam Lens Aquifer, and provided habitat for culturally important species such as the fanihi. Today, rapid land clearing and development pressures are transforming these landscapes at an unprecedented pace.

This presentation explores the concept of **biocultural preservation**—the idea that natural ecosystems, cultural identity, and community well-being are inseparable. Using the Dededo Limestone Forest Restoration Project and the emerging vision of the **Dededo Loop** green corridor, the presentation highlights how community organizations, volunteers, and youth are working together to restore forest fragments, protect aquifer recharge areas, and reconnect residents with Guam's environmental heritage.

Through programs such as Guam Service Learning and Kurason I Sengsong's youth leadership initiatives, students and volunteers are participating directly in conservation activities, transforming restoration sites into living classrooms and spaces of community stewardship.

The presentation proposes a broader preservation framework for Guam—one that recognizes forests, water resources, and cultural landscapes as critical components of the island's heritage and future resilience.

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2. 15-Minute Presentation Outline

Slide 1 — Title

Preserving Guam's Cultural Landscapes
Dededo Loop • Limestone Forests • Community Stewardship

Presenter
Kurason I Sengsong (KIS)

Slide 2 — What is a Cultural Landscape?

- Places shaped by **nature and human history**
- Includes:
    - forests

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- water resources
- settlement patterns
- agriculture
- community gathering places

Guam's limestone forests are cultural landscapes.

Slide 3 — Northern Guam Before WWII

Key features:

- dense limestone forests
- coconut plantations
- fanihi populations estimated in the thousands
- intact aquifer recharge

Map and historical imagery.

Slide 4 — The Northern Guam Lens Aquifer

Explain connection between:

Forest → Soil → Karst → Aquifer

Forests protect:

- infiltration
- water quality
- groundwater recharge

Slide 5 — Landscape Change

Recent decades:

- rezoning of agricultural land
- forest clearing
- bare limestone surfaces
- fragmentation of habitat

Explain ecological consequences.

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Slide 6 — The Dededo Loop

Area bounded by:

- West Santa Monica
- Y Sengsong Road
- Marine Corps Drive

Assets include:

- schools
- parkways
- community garden
- limestone forest fragments
- public health facility

Opportunity for a **community greenbelt corridor**.

Slide 7 — KIS Dededo Limestone Forest Restoration Project (DLFRP)

Community restoration program including:

- invasive species removal
- native forest planting
- habitat restoration
- volunteer stewardship

Slide 8 — Youth and Community Engagement

Programs include:

- Guam Service Learning (GSL)
- student volunteer hours
- internships
- citizen forester training

Youth participation creates **wellness protective factors and environmental literacy**.

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Slide 9 — Volunteers and Stewardship

Volunteers come from:

- villages across Guam
- local schools
- University of Guam
- visiting volunteers from the US and Asia

Over **1,000 volunteer hours annually** supporting restoration.

Slide 10 — Toward Biocultural Preservation

Future preservation model:

Protect

- forests
- aquifer recharge
- wildlife habitat
- cultural landscapes

Through **community stewardship**.

Slide 11 — Vision for the Dededo Loop

A connected landscape including:

- forest restoration
- community gardens
- green parkways
- school partnerships
- environmental education

A living heritage corridor.

Slide 12 — Closing

Preserving Guam's future requires protecting:

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Forest
Water
Culture
Community

---

3. Opening Slide Script

“When we talk about preservation on Guam, we often think about historic buildings or archaeological sites. But some of our most important heritage resources are landscapes—forests, water, and the places where communities connect to the land.

Northern Guam’s limestone forests are not only ecological systems; they are cultural landscapes that sustain our aquifer, support wildlife, and shape the identity of our villages.

Today I want to share how community volunteers, youth service learning programs, and restoration projects in Dededo are working to preserve these landscapes for the future.”

---

4. Diagram for Slides

simple systems diagram

```
Limestone Forest
        ↓
Soil Formation & Root Networks
        ↓
Karst Infiltration
        ↓
Northern Guam Lens Aquifer
        ↓
Drinking Water for 70–80% of Guam
        ↓
Community Health & Resilience
```

Then add:

```
Community Stewardship
        ↓
Youth Service Learning
        ↓
Forest Restoration
        ↓
Long-term Cultural Landscape Preservation
```

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5. Handout for Conference Attendees (1 Page)

Title:

Preserving Guam's Cultural Landscapes

Sections:

Dededo Loop Vision
A community corridor connecting schools, parkways, and limestone forest fragments in northern Guam.

Community Restoration
The Dededo Limestone Forest Restoration Project restores native forest habitat and protects aquifer recharge areas.

Youth Engagement
Through Guam Service Learning and Kurason I Sengsong programs, students participate in hands-on environmental stewardship.

Volunteer Stewardship
Community volunteers contribute thousands of hours restoring and caring for forest landscapes.

Future Vision
Protecting Guam's forests and aquifer is essential to preserving the island's cultural and environmental heritage.

---

6. Environmental Heritage

Additional concept that preservation organizations globally are adopting:

"Environmental Heritage."

Meaning:

Heritage includes not only historic buildings but also **ecosystems that sustain cultural identity**.

For Guam that includes:

- limestone forests
- aquifer recharge lands
- traditional agroforestry landscapes.

This idea would likely resonate strongly with **Guam Preservation Trust**.

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Exemplary land use regulations for solar farms balance clean energy goals with aquifer protection, habitat conservation, community compatibility, and long-term land stewardship.

Given your work in Dededo and the Northern Limestone Plateau, I'll structure this in a way that speaks to karst aquifer regions, forest fragments, and large-scale industrial solar proposals.

I. Model Solar Land Use Framework (Best Practice Structure)

An exemplary ordinance has 7 core components:

1. Location Controls (Where Solar Can Go)
2. Overlay & Resource Protection Standards
3. Site Design Standards
4. Hydrology & Stormwater Protections
5. Ecological & Habitat Standards
6. Decommissioning & Financial Assurance
7. Community & Cumulative Impact Review

Below are real-world models worth studying.

II. Exemplary Jurisdictions & What They Do Right

US 1. New York – Office of Renewable Energy Siting (ORES)

Why it's exemplary:

1. Statewide siting standards
2. Mandatory visual buffers
3. Agricultural land protection
4. Pollinator-friendly groundcover
5. Decommissioning bonds required

Strong provisions:

1. 100–300 ft setbacks from residences
2. Required screening vegetation
3. Agricultural soil mitigation plans
4. Enironmental justice review
5. Mandatory decommissioning escrow

Takeaway: Clean energy must coexist with farmland and communities.

US 2. Vermont – Solar & Scenic Protection Model

Why it's exemplary:

1. Solar discouraged on forest land
2. Strong scenic review

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3. Small distributed generation preferred

Strong provisions:

1. Forest clearing triggers enhanced review
2. Preference for rooftops & brownfields
3. Habitat impact assessments
4. Wildlife corridor protections

Takeaway: Forest fragmentation matters.

US 3. Maryland – Agricultural Solar Guidelines

Why it's exemplary:

1. Solar allowed only if agricultural function continues
2. Mandatory soil restoration plans
3. Clear conversion limits

Takeaway: Solar is temporary — land must be restorable.

US 4. California – Desert & Habitat Conservation Planning

Why it's exemplary:

1. Large-scale habitat mitigation requirements
2. Biological surveys required
3. Mitigation ratios (2:1 or greater)
4. Wildlife movement corridor protections

Takeaway: Industrial solar must offset habitat loss.

III. Best Practice Regulatory Standards (Substantive Provisions)

Below is what a "gold standard" ordinance includes:

1 Location Restrictions

✓ Prohibited on:

1. Primary drinking water aquifer recharge zones
2. Karst terrain
3. Intact native forest >5 acres
4. Wildlife corridors
5. Class I agricultural soils
6. Flood recharge basins

✓ Preferred on:

1. Brownfields
2. Landfills

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3. Rooftops
4. Parking canopies
5. Disturbed industrial land

2 Setbacks & Buffers, with BESS set backs increase to 1,000 – 2,000 ft, 5 mile evacuation zone

100–500 ft residential setback
200 ft from wetlands
300 ft from public wells
50–100 ft vegetated perimeter buffer
Wildlife corridor offsets

3 Stormwater & Hydrology (Critical for Karst)

For limestone plateau regions like Northern Guam:

1. **Zero net increase in runoff**
2. **No soil compaction beyond defined PSI**
3. **Permeable access roads**
4. **No grading to exposed limestone bedrock**
5. **Mandatory infiltration modeling**
6. **Independent hydrogeologist review**

This is often missing in weaker ordinances.

4 Habitat & Forest Protection

1. No net loss of native canopy
2. Mandatory tree inventory
3. Replacement ratio 2:1 to 5:1
4. Protected species survey
5. Construction outside breeding season
6. Native pollinator understory required

5 Battery Energy Storage (BESS) Standards

Best practice requires:

1. NFPA 855 compliance
2. UL 9540A fire testing documentation
3. Minimum 100–300 ft setbacks
4. Fire water containment plan
5. Thermal runaway modeling
6. Secondary containment pads

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6 Decommissioning & Financial Security

Gold standard includes:

1. Full decommissioning cost estimate
2. 125% bond or escrow
3. Updated every 5 years
4. Removal to 3 ft below grade
5. Soil remediation requirement
6. Replanting obligation

7 Cumulative Impact Review

Advanced jurisdictions require:

1. **Regional habitat impact analysis**
2. **Aquifer recharge modeling**
3. **Traffic & road wear analysis**
4. **Property value impact study**
5. **Fiscal cost vs revenue assessment**

This is especially relevant in rapidly rezoned areas.

IV. Weak vs Strong Solar Ordinance

Weak	Strong
Treats solar as generic industrial use	Creates specific solar overlay standards
No habitat survey	Mandatory biological assessment
No aquifer review	Independent hydro review
No bond	Mandatory escrow
One project review only	Cumulative regional impact review
Clearing allowed without limits	Forest clearing caps

V. For Karst / Northern Aquifer Regions (Policy Language Example)

If writing model code for a limestone plateau:

“Utility-scale solar facilities shall be prohibited within designated primary aquifer recharge zones unless the applicant demonstrates, through independent hydrogeologic modeling, zero degradation to recharge rates and water quality.”

“Removal of native limestone forest canopy exceeding 1 acre shall require a mitigation ratio of 3:1 and off-site conservation easement dedication.”

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VI. What Truly Exemplary Solar Looks Like

The best systems:

1. Distributed
2. Rooftop-first
3. Parking canopy
4. Brownfield conversion
5. Agrivoltaics
6. No intact forest clearing
7. No aquifer compaction

VII. Strategic Question for Guam Context

For places like Dededo:

The central regulatory question is:

Is solar being used to:
decarbonize rooftops and disturbed land?
Or
justify conversion of intact aquifer recharge land?

That distinction is the entire policy debate.

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From Military Infrastructure to Community Landscapes in Dededo

---

Phase 1 — Military Realignment Planning (2010–2012)

Key focus areas during the Environmental Impact Statement planning period:

• road capacity
• intersection upgrades
• defense access routes
• utility corridors
• construction logistics

Primary corridors affected:

- Marine Corps Drive
- Route 3
- Camp Blaz

These investments created the **transportation backbone for northern Guam**.

Phase 2 — What Was Missing

Most projects focused on **vehicle movement**, leaving gaps in:

• sidewalks
• bike lanes
• shade trees
• pedestrian crossings
• green buffers
• community access points.

Phase 3 — Opportunity for Dededo Today

The same corridors now offer opportunities to create **Complete Streets** that support:

• walking
• biking
• safe school access

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• shaded pedestrian routes
• aquifer protection landscapes.

Visual Diagram

```
2012 Military Infrastructure
        ↓
Road Widening
Intersection Upgrades
Utility Corridors
        ↓
2025 Community Opportunity
        ↓
Sidewalks
Bike Lanes
Tree Canopy
Green Infrastructure
```

Dededo Opportunity Corridors

Marine Corps Drive Corridor

Near
Micronesia Mall

Opportunity for:

• shaded sidewalks
• commercial pedestrian access
• transit connectivity.

Route 3 Corridor

Between Marine Corps Drive and Camp Blaz.

Opportunity for:

- bike commuting corridor
  roadside native tree canopy
  • gateway landscape to the Marine base.
- gateway landscapes to the Harmon Annex

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Upper Y Sengsong Corridor

Above West Santa Monica Avenue.

Opportunity for:

• school walking routes
• connection to Dededo Loop green corridor
• neighborhood parkway landscape.

“The infrastructure investments of the military realignment created the transportation backbone for northern Guam. The next step is to complete these corridors with sidewalks, bike lanes, and green landscapes that serve the Dededo community.”

“The Dededo Green Corridor Vision”

Connecting:

- schools
- parkways
- limestone forest fragments
- restoration sites
- community gardens.

This ties **transportation, preservation, and community health together**.

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The Loop – A Community Restoration of Limestone Forests to Protect Guam's Aquifer
A Community-Based Environmental Strategy for Dededo

Submitted by: Kurason I Sengsong (KIS)
Programs: Dededo Limestone Forest Restoration Project (DLFRP) & Guam Service Learning
Location: Dededo "Loop" — West Santa Monica Avenue, Y Sengsong Road, and Marine Corps Drive, East of the Loop additional properties are the Kaiser Subdivision Parkways and the Guam International Country Club.

Executive Overview

Northern Guam sits above the **Northern Guam Lens Aquifer**, which provides the majority of Guam's drinking water. The protection of this aquifer is closely tied to the health of the limestone forests and soil systems that historically covered the northern plateau.

The area commonly referred to as the **Dededo Loop**, bounded by West Santa Monica Avenue, Y Sengsong Road, and Marine Corps Drive, represents a significant opportunity to protect and restore remaining limestone forest fragments while strengthening community green space in Dededo.

This landscape is not an isolated environmental parcel. It is surrounded by major community institutions that directly serve the residents of northern Guam, including the Kaiser Subdivision 13-acre Parkway, Dededo Mayor's Parkway, neighborhood housing, a local food cooperative initiative, two elementary schools, one middle school, the Northern Guam Public Health Facility, and the Kurason I Sengsong Community Center and Dededo Limestone Forest Restoration Project.

Together, these institutions form the foundation for a community environmental corridor that integrates aquifer protection, green space, environmental education, and community health.

Community restoration initiatives such as the Dededo Limestone Forest Restoration Project (DLFRP) demonstrate how local stewardship can restore native limestone forest ecosystems through invasive species removal, native tree planting, soil regeneration, and youth service learning programs. These efforts not only rebuild ecological function but also provide educational and workforce development opportunities for Guam's youth.

Protecting and restoring the Dededo Loop landscape would provide multiple public benefits, including protection of groundwater recharge areas, preservation of wildlife habitat, increased community green space, outdoor education opportunities for nearby schools, and improved environmental resilience for the people of Dededo. Recognizing the Dededo Loop as a community greenbelt and aquifer protection landscape would support the long-term goals of the 2050 Guåhan Land Use Plan by integrating environmental stewardship with community infrastructure and public health.

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This proposal invites collaboration among government agencies, community organizations, schools, and residents to ensure that the Dededo Loop continues to serve as a vital environmental asset for northern Guam. Additional property to the east of Y Sengsong complete the entire conservation potential: Kaiser Subdivision Parkways and the Guam International Country Club leased from the CHamoru Land Trust.

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Bare limestone landscapes experience:

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Restoring forest cover rebuilds soil layers and restores ecological function.

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Maintaining forest cover above the Northern Guam Lens Aquifer helps protect Guam's drinking water supply.

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- community stewardship landscapes

Programs such as KSI Guam Service Learning engage students and volunteers in restoration and long-term stewardship.

Community Restoration Model

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Dededo Loop Conservation Opportunity

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- aquifer recharge
- wildlife habitat
- community green space
- environmental education opportunities

Protecting and restoring this area would support the goals of the 2050 Guåhan Land Use Plan, which calls for sustainable land management and environmental protection.

Benefits to the People of Guam

Protecting and restoring limestone forests above the aquifer provides multiple public benefits:

- protection of drinking water resources
- preservation of native wildlife habitat
- climate resilience through ecosystem restoration
- youth education and workforce development
- community stewardship of natural resources

Recommended Next Steps

Recognize the Dededo Loop as a priority conservation landscape.

Support community restoration initiatives such as the DLFRP.

Integrate limestone forest protection into land use planning and aquifer protection strategies.

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Encourage partnerships between community organizations, government agencies, and educational institutions.

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Part 2 Dededo Land for cultural and environmental conservation

Barbara Burkhardt <[redacted]> Wed, Mar 11, 2026 at 12:56 PM
To: gsp2050@bsp.guam.gov

Part 2, since 2024 we have been quietly advocating for the Dededo "Loop". 3mile/ 5k mayor's and residential developed core north of MCD. Some trades could be accomplished of the conserved public land to higher density residential development within the Loop. Just saying. The funds could go into a limestone forest fragment conservation trust. Dreaming.

I have attached notes for the cultural and environmental conservation of this area.

In other Land Use Legislation I have seen in Hawaii, Puerto Rico and the US, this area would be a conservation district. Both cultural and native landscape. I think you guys have the bull cart route that goes east through GICC and cuts north through the middle of Sagan Tinanom. We need to capture the storytelling of the mananko who remember post WW2 and residents as late as the early 2000's who remember the fanihi.

1. Goal is October 2027, might happen October 2026. The Loop described as a 5k route on a Google Map. Most of the 5k route along MCD will be on the parallel Mayor's Limestone Forest Parkway. We hope to have event native tree planting up to 6, at the 3 schools up, Public Health, GHURA corner at MCD and WSM, Food coop (hope they replace the invasive MCD vitex by joining the Loop Limestone Forest Proud effort) . I haven't calculated the existing shade on the route but it's about 1/2. Sidewalks are already 100% of the route, a marked bike path would be a plus sooner than later. The Guam Bike Association would be behind that. Many civic groups already have cleanup signs for portions of the 3 mile perimeter. With publicity and visibility of the Loop I think we could get more participation.



2. Our Dream sketch for the West Santa Monica Parkway ending at or through GICC. I have splotches identified on both sides of the GICC west fence. It is actually the access road for the GWA pumping stations The stations protrude inside the property and are set aside parcels to GWA Most are heavy with vegetation, look native to us without access. We envision West Santa Monica dead end at the GICC property with the after 3 pm to dusk access of the existing golf cart paths, that Van Shelly mentioned yesterday.

Note: I show Guam FAP Wettengel forest/ field. It's listed. Nothing else is listed.



3. Map of major storm water basins. We have 5 along the 3k route. There are also shallow overflow basins not listed, that show up as green rectangles within the residential Loop residential areas. When you drive by them you think they are vacant lots, some have large mango and duk duk trees with native undergrowth.

GBHWC PEACE is looking at a program where the major basins would be given to cultural civic associations to maintain and grow food crops including trees. The lot numbers are available and numerous. DLM can help with all of these.

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Environmental Heritage.pdf
269K

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1. Goal is October 2027, might happen October 2026. The Loop described as a 5k route on a Google Map. Most of the 5k route along MCD will be on the parallel Mayor's Limestone Forest Parkway. We hope to have event native tree planting up to 6, at the 3 schools up, Public Health, GHURA corner at MCD and WSM, Food coop (hope they replace the invasive MCD vitex by joining the Loop Limestone Forest Proud effort) . I haven't calculated the existing shade on the route but it's about 1/2. Sidewalks are already 100% of the route, a marked bike path would be a plus sooner than later. The Guam Bike Association would be behind that. Many civic groups already have cleanup signs for portions of the 3 mile perimeter. With publicity and visibility of the Loop I think we could get more participation.



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Environmental Heritage.pdf
269K

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1. Conference Abstract (150–200 words)

Preserving Guam's Cultural Landscapes: The Dededo Loop, Limestone Forests, and Community Stewardship

Northern Guam's limestone forests represent one of the island's most significant cultural and ecological landscapes. For centuries these forests supported traditional lifeways, protected the Northern Guam Lens Aquifer, and provided habitat for culturally important species such as the fanihi. Today, rapid land clearing and development pressures are transforming these landscapes at an unprecedented pace.

This presentation explores the concept of **biocultural preservation**—the idea that natural ecosystems, cultural identity, and community well-being are inseparable. Using the Dededo Limestone Forest Restoration Project and the emerging vision of the **Dededo Loop** green corridor, the presentation highlights how community organizations, volunteers, and youth are working together to restore forest fragments, protect aquifer recharge areas, and reconnect residents with Guam's environmental heritage.

Through programs such as Guam Service Learning and Kurason I Sengsong's youth leadership initiatives, students and volunteers are participating directly in conservation activities, transforming restoration sites into living classrooms and spaces of community stewardship.

The presentation proposes a broader preservation framework for Guam—one that recognizes forests, water resources, and cultural landscapes as critical components of the island's heritage and future resilience.

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2. 15-Minute Presentation Outline

Slide 1 — Title

Preserving Guam's Cultural Landscapes
Dededo Loop • Limestone Forests • Community Stewardship

Presenter
Kurason I Sengsong (KIS)

Slide 2 — What is a Cultural Landscape?

- Places shaped by **nature and human history**
- Includes:
    - forests

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- water resources
- settlement patterns
- agriculture
- community gathering places

Guam's limestone forests are cultural landscapes.

Slide 3 — Northern Guam Before WWII

Key features:

- dense limestone forests
- coconut plantations
- fanihi populations estimated in the thousands
- intact aquifer recharge

Map and historical imagery.

Slide 4 — The Northern Guam Lens Aquifer

Explain connection between:

Forest → Soil → Karst → Aquifer

Forests protect:

- infiltration
- water quality
- groundwater recharge

Slide 5 — Landscape Change

Recent decades:

- rezoning of agricultural land
- forest clearing
- bare limestone surfaces
- fragmentation of habitat

Explain ecological consequences.

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Slide 6 — The Dededo Loop

Area bounded by:

- West Santa Monica
- Y Sengsong Road
- Marine Corps Drive

Assets include:

- schools
- parkways
- community garden
- limestone forest fragments
- public health facility

Opportunity for a **community greenbelt corridor**.

Slide 7 — KIS Dededo Limestone Forest Restoration Project (DLFRP)

Community restoration program including:

- invasive species removal
- native forest planting
- habitat restoration
- volunteer stewardship

Slide 8 — Youth and Community Engagement

Programs include:

- Guam Service Learning (GSL)
- student volunteer hours
- internships
- citizen forester training

Youth participation creates **wellness protective factors and environmental literacy**.

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Slide 9 — Volunteers and Stewardship

Volunteers come from:

- villages across Guam
- local schools
- University of Guam
- visiting volunteers from the US and Asia

Over **1,000 volunteer hours annually** supporting restoration.

Slide 10 — Toward Biocultural Preservation

Future preservation model:

Protect

- forests
- aquifer recharge
- wildlife habitat
- cultural landscapes

Through **community stewardship**.

Slide 11 — Vision for the Dededo Loop

A connected landscape including:

- forest restoration
- community gardens
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A living heritage corridor.

Slide 12 — Closing

Preserving Guam's future requires protecting:

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Forest
Water
Culture
Community

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3. Opening Slide Script (Strong Introduction)

“When we talk about preservation on Guam, we often think about historic buildings or archaeological sites. But some of our most important heritage resources are landscapes—forests, water, and the places where communities connect to the land.

Northern Guam’s limestone forests are not only ecological systems; they are cultural landscapes that sustain our aquifer, support wildlife, and shape the identity of our villages.

Today I want to share how community volunteers, youth service learning programs, and restoration projects in Dededo are working to preserve these landscapes for the future.”

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simple systems diagram

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5. Handout for Conference Attendees (1 Page)

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Sections:

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A community corridor connecting schools, parkways, and limestone forest fragments in northern Guam.

Community Restoration
The Dededo Limestone Forest Restoration Project restores native forest habitat and protects aquifer recharge areas.

Youth Engagement
Through Guam Service Learning and Kurason I Sengsong programs, students participate in hands-on environmental stewardship.

Volunteer Stewardship
Community volunteers contribute thousands of hours restoring and caring for forest landscapes.

Future Vision
Protecting Guam's forests and aquifer is essential to preserving the island's cultural and environmental heritage.

---

6. Environmental Heritage

Additional concept that preservation organizations globally are adopting:

"Environmental Heritage."

Meaning:

Heritage includes not only historic buildings but also **ecosystems that sustain cultural identity**.

For Guam that includes:

- limestone forests
- aquifer recharge lands
- traditional agroforestry landscapes.

This idea would likely resonate strongly with **Guam Preservation Trust**.

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Re:

Lola Leon Guerrero, BSP <lolalg@bsp.guam.gov> Mon, Mar 23, 2026 at 8:43 AM
To: Barbara Burkhardt [redacted]>
Cc: [redacted], 2050 Guahan Sustainability Plan <gsp2050@bsp.guam.gov>

Hafa Adai Barabara,

I acknowledge receipt of your email containing the NCD meeting minutes.

On Sat, Mar 21, 2026 at 5:57 AM Barbara Burkhardt <[redacted]> wrote:

> Lola,
>
> NCD will have their group meeting on Monday March 23. Kurason I Sengsogn serves on 2 committees, Fruits and Vegetables and Physical Activity Action Team.
>
> I included the stormwater basin Fruit & Plan overlay in my previous comments.
>
> I am attaching the recent meeting minutes of the Physical Activity Action Team.
>
> Objective 2 - Walk to Wellness Program was active and in the news before COVID. They are coming back strong with a previous pilot program in 2 villages.
>
> Objective 3 - is close to my heart and interest, Physical Activity Urban Master Plan. I believe BSP has the mapping tools to create the existing overlay and problem areas already identified. Parks, Sidewalks & Bike Lanes - Village centric plans.
>
> We are looking a a small slot in the presentation schedule to emphasize existing village assets like the Dededo "Loop", for walkability.
>
> Louise Muna is the chair of the Physical Activity Action Team and I am encouraging her to reach out to BSP and include existing and future planning in their Guahan 2050 Land Use Plan comments.
>
> Best Regards,
> Barbara Burkhardt

--
Si Yu'os Ma'åse',

Lola Leon Guerrero
Director - Bureau of Statistics & Plans
PO Box 2950
Hagåtña, Guam 96910
Office: 671.472.4201/2/3
Direct: 671.475.9661
Fax: 671.477-1812
lolalg@bsp.guam.gov
www.BSP.Guam.Gov

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NCD PA Meeting Minutes.docx
18K

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PHYSICAL ACTIVITY ACTION TEAM
NON-COMMUNICABLE DISEASE CONSORTIUM
March 4, 2026, Meeting Minutes

Physical Activity Action Team Members: Jenelyn Abinales, Mark Acosta, Marie Benito, Juanita Blaz, Grace Bordallo, Louise Borja, Mark Calvo, Esther Camacho, Carlina Charfauros, Zachary Charoenset, Jaevynn Cruz, Alice Cuenca, Paciano Gumataotao, Keith Horinouchi, Chima Mbakwem, Nicole Monforte, Abraham Mora, Nicole Palomo, Richard Richards, Reina Santos, Karl Sotto, Darlene Taitano, John Ray Taitano, Jasmin Tanglao, Renee Veksler

Attendance: Louise Borja, Danelynn Albert, Reina Santos, Mark Acosta, Grace Bordallo, Renee Veksler, Marie Benito, John Taitano, Bob Barber (would like to be added to team roster)

Welcome: Louise asked Grace to update the team on NCD consortium funding and requirements. Next working meeting is scheduled for Monday, March 23, 2026, from 8:45am-3:45pm at the Micronesian Ballroom, Hilton Resort. The plan is to create a culturally appropriate media plan for all the risk factors and objectives.

Review of Objectives:
Objective 1 discussion - Guam Physical Activity Resource Directory – Louise and John (Include slide of resource map & directory for 3/23 mtg.)

- Louise shared a sample activity resource map created by Zach Charoenset.
- John will set up a meeting with GVB
- Renee suggested including drone video footage of group/individual activities in the directory to encourage PA opportunities.
- Push all timelines out one year forward
- Need to get all activity input from all organizations and mayors to submit to GVB to populate directory

Objective 2 discussion – Walk to Wellness Program - Mark Acosta & Bob Barber (create letter to MCOG to request presentation for May 6, 10am council meeting)

- Mark reports that Walk to Wellness program needs updating
- Bob reports that before COVID, there were village groups that gathered to walk, measure & report progress. Prize incentives were given to a person with most steps achieved
- Processes need to be revisited. People may now be able to document their process by photographing their journey

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- Louise suggested the creation of an app for participants to join and record progress
- Identify mile walks in each village. Peer groups can motivate each other
- Push 2025 timelines to 2026-2027

Objective 3 discussion – Physical Activity Urban Master Plan - Louise for Mark Calvo

- Guam Physical Activity Urban Master Plan
- Locate an existing plan (if one exists), incorporate PA plan in the master plan
- Meet w/ Sen. Tony Ada, chair for committee on Land, Environment, Housing, Agricultural, Parks and Infrastructure.
- Timelines still acceptable
- Village streets Master Plan incorporation of Physical Activity paths

Objective 4 discussion – Worksite Wellness Program - Renee Veksler

- Grace updated the team on the update of the Worksite Wellness program's lack of funding and implementation not meeting requirements of the full policy
- EO must be revisited and simplified and specifically stated. Reina will share the guidelines and EO on chat
- Agencies needed to be reached – Gov's office (Rikki Orsini and/or Art SA), and DOA
- Push action step 1 to Jan'27
- Separate School Wellness program. Classified as two separate objectives

Objective 5 discussion – School Wellness Program - Renee Veksler

- School Wellness program (Elementary Schools), there is no PA in the curriculum
- Review & Revamp policies regarding PA
- Project indicator – when all students have the same access to physical activity in the elementary school system
- Align the PA action team with the school's PTO
- Need to meet with the GDOE board

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Conservation project location and description follow up

Barbara Burkhardt <[redacted]> Thu, Feb 26, 2026 at 5:29 PM
To: Edwin Reyes <edwin.reyes@bsp.guam.gov>
Cc: Lola Leon Guerrero <lolalg@bsp.guam.gov>, Matthew Santos <matthew.santos@bsp.guam.gov>, April Trinidad <april.trinidad@bsp.guam.gov>, Guam Coastal Management Program <gcmp@bsp.guam.gov>, Admin MCCA <admin@mccalliance.org>, Juanita Blaz <KISsenvironmental671@gmail.com>, Van Shelly <[redacted]>

Part 2, since 2024 we have been quietly advocating for the Dededo "Loop". 3mile/ 5k mayor's and residential developed core north of MCD. Some trades could be accomplished of the conserved public land to higher density residential development within the Loop. Just saying. The funds could go into a limestone forest fragment conservation trust. Dreaming.

In other Land Use Legislation I have seen in Hawaii, Puerto Rico and the US, this area would be a conservation district. Both cultural and native landscape. I think you guys have the bull cart route that goes east through GICC and cuts north through the middle of Sagan Tinanom. We need to capture the storytelling of the mananko who remember post WW2 and residents as late as the early 2000's who remember the fanihi.

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Doc. No. 38GL-26-2651.*

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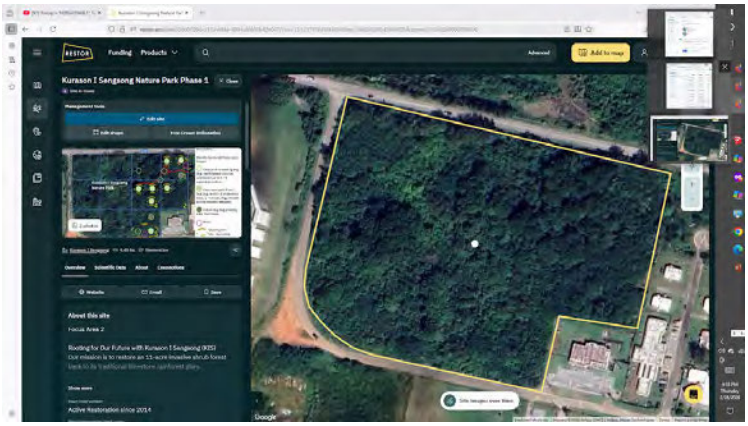
On Thu, Feb 26, 2026 at 4:47 PM Barbara Burkhardt <[redacted]> wrote:

Edwin, the Director of DLM has offered to provide lot numbers on the West Santa Monica Parkway sites we do not have formal agreements on. Below are the properties with letters of Agreement from the Mayor's Office and GHURA, as I have posted on Restor.org. This international site has led to some Grant opportunities for us. I use Regrid to find lot information, when I don't have immediate access to lot information. One cool feature is that there is a button below the image that gives a reply of up to 20 years of satellite images. There is also some land coverage calculations, above and below ground carbon calcs. All useful for some Grants. We have short listed on a couple, no funding yet. Some are notifying later in the year of 2026.

You might need to register on Restor to view sites. I uploaded these sites in 2024? It's been awhile.

I have copied MCCA as they sublet from us at KIS now, a resilience hub on Guam and an advocate for the neighborhood.

1. Sagan Tinamon - 11 acres, I can pull up the site number later this weekend. This "Project" has site information populated
https://restor.eco/sites/8d607894-d17d-444e-9394-46650b42e047/?lat=13.5218160000000001&lng=144.842916&zoom=19



2. Kurason I Sengsong Community Center and Community Garden 1.3 acres/ The image is dated and Pre Mawar. We have significantly increased the Agroforest on kart in the Community Gardens.
https://restor.eco/sites/e33a9fda-ece9-4f3a-8e1c-d226cbb3d90f/?lat=13.521488&lng=144.844692&zoom=19

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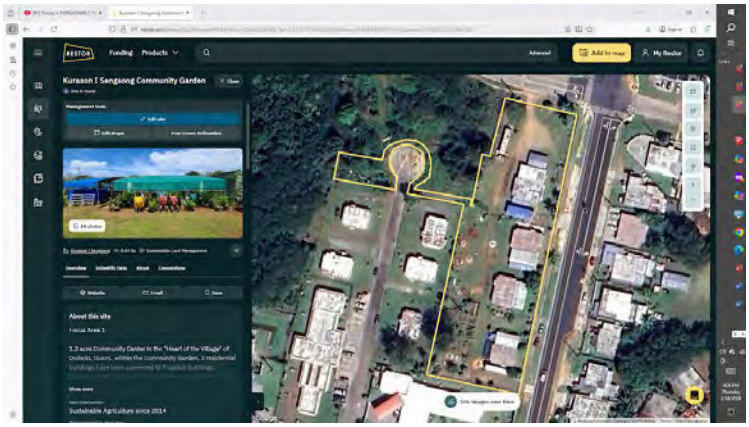
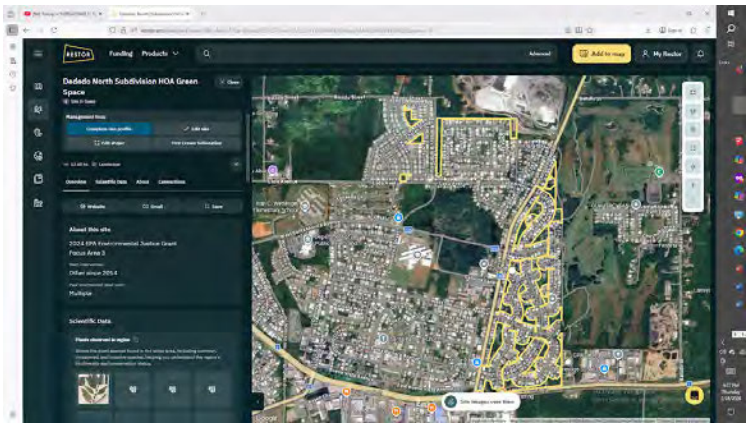


3. Kaiser Subdivision Parkways, we work on the one directly across from KIS right now, a couple times a year. The HOA went into default decades ago. The property is under the Dededo Mayor now. Guam EPA has stormwater drainage plans on file. There are 2 stewards of this area with backyards abutting the parkway. The South Parcel next to MCD is ripe for a native plant upgrade.
https://restor.eco/sites/eaa1beac-6f8c-4ea1-880a-1cdce3387587/?lat=13.521648202321764&lng=144.84397004232838&zoom=16



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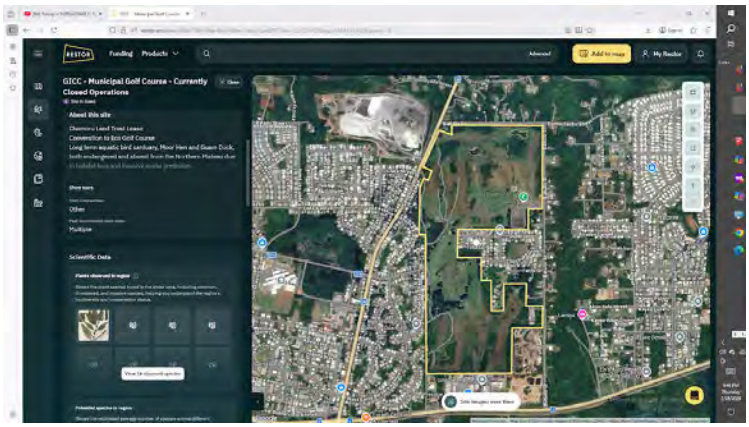
https://restor.eco/sites/b93a7169-f84e-4bc6-96e4-9a0cb7ca4d97/?lat=13.5235675&lng=144.8515365&zoom=16



On Thu, Feb 26, 2026 at 2:38 PM Edwin Reyes <edwin.reyes@bsp.guam.gov> wrote:

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Doc. No. 38GL-26-2651.*

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Edwin Reyes
Administrator
Guam Coastal Management Program
Bureau of Statistics and Plans
P.O. Box 2950
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671-475-9672
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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Conservation project location and description follow up

Barbara Burkhardt [redacted] > Thu, Feb 26, 2026 at 6:03 PM
To: Edwin Reyes <edwin.reyes@bsp.guam.gov>
Cc: Lola Leon Guerrero <lolalg@bsp.guam.gov>, Matthew Santos <matthew.santos@bsp.guam.gov>, April Trinidad <april.trinidad@bsp.guam.gov>, Guam Coastal Management Program <gcmp@bsp.guam.gov>, Juanita Blaz <KISsenvironmental671@gmail.com>, Admin MCCA <admin@mccalliance.org>, [redacted] >

5. U o G Drone Corp surveyed this area post Typhoon Mawar. We also have a survey from June 2025.

On Thu, Feb 26, 2026 at 6:01 PM Barbara Burkhardt <[redacted]> wrote:

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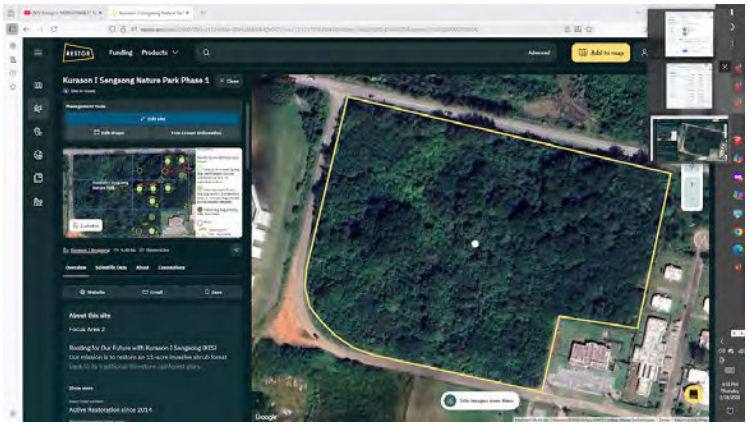
To: Edwin Reyes <edwin.reyes@bsp.guam.gov>
Cc: Lola Leon Guerrero <lolalg@bsp.guam.gov>, Matthew Santos <matthew.santos@bsp.guam.gov>, April Trinidad <april.trinidad@bsp.guam.gov>, Guam Coastal Management Program <gcmp@bsp.guam.gov>, Juanita Blaz <KISsenvironmental671@gmail.com>, Admin MCCA <admin@mccalliance.org>

Edwin, the Director of DLM has offered to provide lot numbers on the West Santa Monica Parkway sites we do not have formal agreements on. Below are the properties with letters of Agreement from the Mayor's Office and GHURA, as I have posted on Restor.org. This international site has led to some Grant opportunities for us. I use Regrid to find lot information, when I don't have immediate access to lot information. One cool feature is that there is a button below the image that gives a reply of up to 20 years of satellite images. There is also some land coverage calculations, above and below ground carbon calcs. All useful for some Grants. We have short listed on a couple, no funding yet. Some are notifying later in the year of 2026.

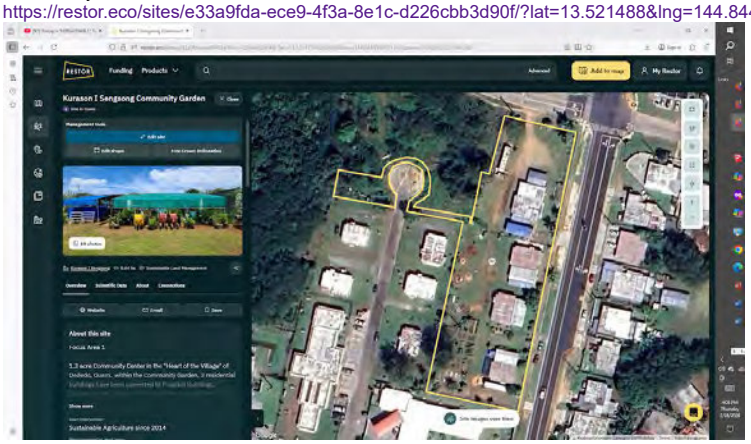
You might need to register on Restor to view sites. I uploaded these sites in 2024? It's been awhile.

I have copied MCCA as they sublet from us at KIS now, a resilience hub on Guam and an advocate for the neighborhood.

1. Sagan Tinamon - 11 acres, I can pull up the site number later this weekend. This "Project" has site information populated
https://restor.eco/sites/8d607894-d17d-444e-9394-46650b42e047/?lat=13.521816000000001&lng=144.842916&zoom=19



2. Kurason I Sengsong Community Center and Community Garden 1.3 acres/ The image is dated and Pre Mawar. We have significantly increased the Agroforest on kart in the Community Gardens.
https://restor.eco/sites/e33a9fda-ece9-4f3a-8e1c-d226cbb3d90f/?lat=13.521488&lng=144.844692&zoom=19



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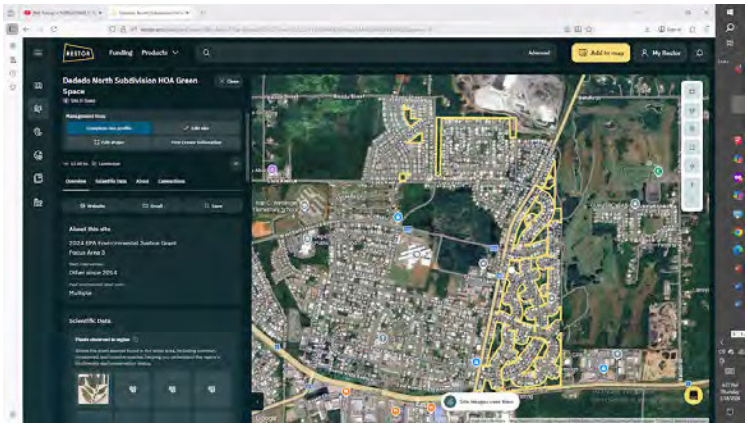

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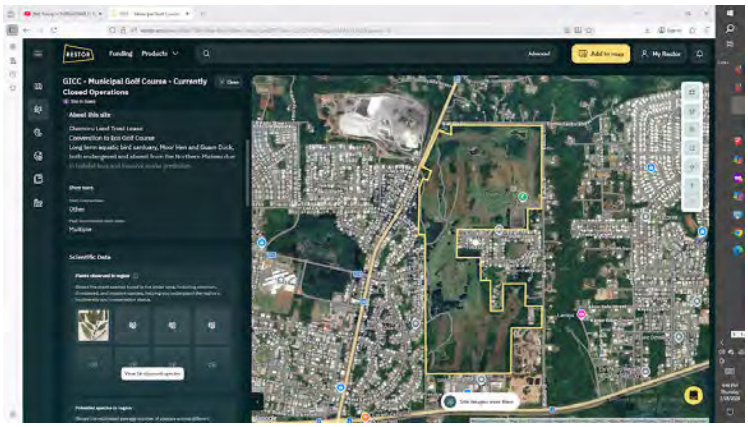

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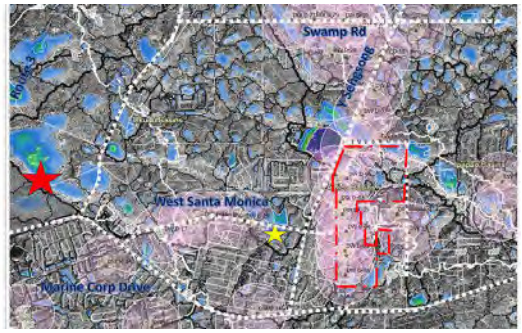
Barbara Burkhardt [redacted] > Fri, Feb 27, 2026 at 7:19 AM
To: Edwin Reyes <edwin.reyes@bsp.guam.gov>
Cc: Lola Leon Guerrero <lolalg@bsp.guam.gov>, Matthew Santos <matthew.santos@bsp.guam.gov>, April Trinidad <april.trinidad@bsp.guam.gov>, Guam Coastal Management Program <gcmp@bsp.guam.gov>, Admin MCCA <admin@mccalliance.org>, Juanita Blaz <KISsenvironmental671@gmail.com>, Van Shelly <[redacted]>

Using Regrid.com this morning I have the following parcel information. I have reached my daily lookup of 25 parcels - free access.

Following up on yesterday's email. It's no wonder the GICC GWA pumping stations have a robust recharge with all the stormwater basins directly on top and adjacent to the pumping stations. GICC also provides nearly half of the recharge/ pumping area. All of these current green areas on Google Maps, the 11 acre and 40 acre Basins that we would like to see designated as Limestone Forest Conservation areas, the Kaiser Parkways and the large shallow basin on Ysengsong.

This is the WEIR pumping / recharge map. The stormwater basins track to the large green spaces on google maps and nearby pumping stations. Large pink circular clouds along West Santa Monica and both sides of the GICC west property line.



1. Kurason I Sengsong Community Center and Community Garden is part of GHURA M05 L10114-NEW-3-R2

We understand the following stormwater basins, listed under Guam EPA as permitted and to be maintained, are Government of Guam under the stewardship of the Dededo Mayor's Office. Stewardship may be the wrong legislated designation.

2. Sagan Tinamon is M05 L10114-NEW-2. An overflow shallow stormwater basin. from the deeper collection basin across the street already on the Land use map as green space.

3. Large grassy stormwater basin across the street from Kaiser at Y sengsong & West San Atonio. It's clearly graded 3' deep North south.

M05 B25 L22
M05 B25 L22

4. Kaiser Parkways - about 13 acres accumulated
South to North, East to West

M05 T112 B1-REM - abuts GWA/ GICC access road
M05 T112 B2 L33
M05 T112 B4 L47
M05 T112 B3 L39

M05 T112 B7 L1 - abuts GWA/ GICC access road
M05 T112 B6 LUNK92

M05 T112 B8 L55-PARK SITE
M05 T112 B8 L56-PARK SITE
M05 T112 B5 L56, this is the parcel we maintain a couple times a year with the steward that abut with their backyard

M05 T112 B10 L3, abuts GWA/ GICC access road
M05 T112 B10 L3, abuts GWA/ GICC access road
M05 T112 B9 LPARK

5. I don't think you need the information, GICC property - the 9 GWA rectangular pumping stations within the property have lot numbers.

6. At the corner of Ysengsong and MCD there is a small but deep stormwater basin with a fence.

7. The parcel abuting MCD across the street from 5. does not have a lot number and in my opinion should be landscaped with native plants and trees.

On Thu, Feb 26, 2026 at 2:38 PM Edwin Reyes <edwin.reyes@bsp.guam.gov> wrote:

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Conservation project location and description follow up

Barbara Burkhardt [redacted] Thu, Mar 5, 2026 at 9:51 AM
To: Edwin Reyes <edwin.reyes@bsp.guam.gov>
Cc: Juanita Blaz <[redacted]>, Lola Leon Guerrero <lolalg@bsp.guam.gov>, Matthew Santos <matthew.santos@bsp.guam.gov>, April Trinidad <april.trinidad@bsp.guam.gov>, Guam Coastal Management Program <gcmp@bsp.guam.gov>

Just wanted to touch base with you guys on the work of NCD (Guam Non Communicable Diesease Consortium aks promoting healthy lifestyles.) since 2018, they have started meeting again, revival since COVID and Typhoon Mawar. They have a couple of committe focus groups that ties in with our goals at Kurason I Sengsong. We serve on walkability and fruits & vegetables.

I have been asked to speak 15 minutes on the Dededo "Loop". I think they should be asked to comment if you haven't interviewed them yet.

"The Guam NCD Consortium is a collaborative partnership spearheaded by the Department of Public Health and Social Services (DPHSS) to combat the leading causes of death—cancer, diabetes, cardiovascular diseases, and chronic respiratory disease. Supported by the Secretariat of the Pacific Community, it develops strategic plans, drives preventative healthcare, and manages action teams like the Tobacco Control Action Team (TCAT")





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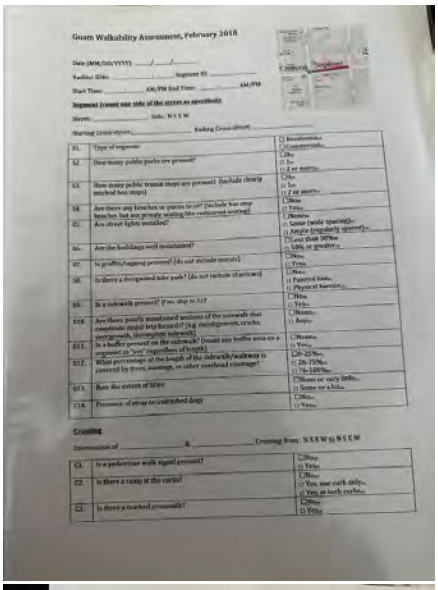

Guam Walkability Assessment, February 2018

envisioning the walkable city
the plan's six guiding objectives
6 guiding objectives



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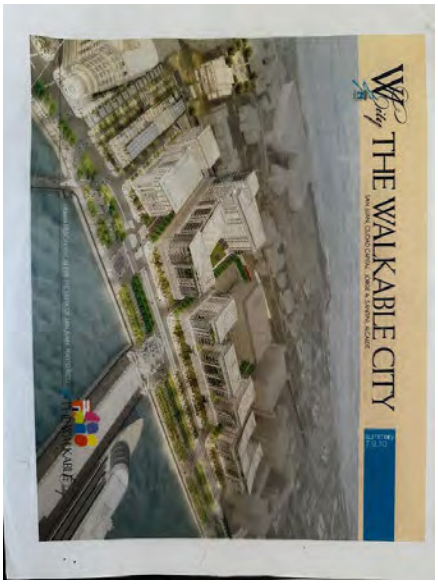

THE WALKABLE CITY

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https://v2021a.peaceguam.org/partnerships/non-communicable-disease-consortium

Sad

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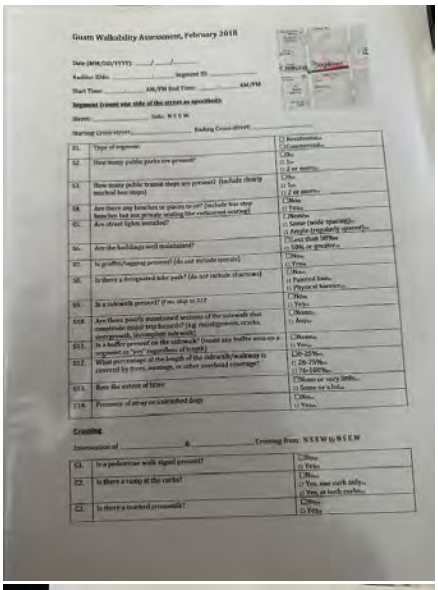

Guam Walkability Assessment, February 2018

Date (MM/DD/YYYY): ____/____/____

Auditor ID#s: _____ Segment ID: _____

Start Time: _____ AM/PM End Time: _____ AM/PM

Segment (count one side of the street as specified):

Street: _____ Side: N S E W

Starting Cross-street: _____ Ending Cross-street: _____

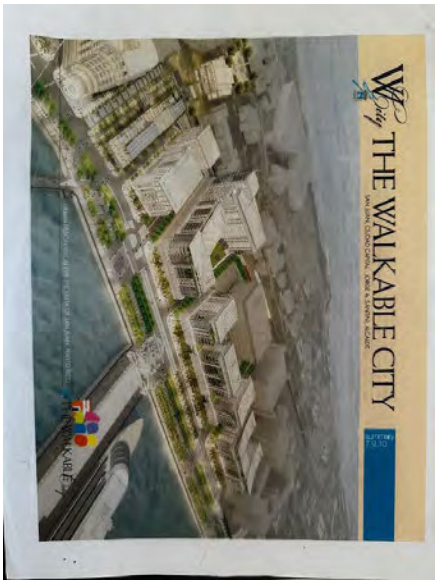
S1.	Type of segment:	☐ Residential ☐ Commercial
S2.	How many public parks are present?	☐ No ☐ Yes ☐ If yes: _____
S3.	How many public transit stops are present? (include clearly marked bus stops)	☐ No ☐ Yes ☐ If yes: _____
S4.	Are there any benches or places to sit? (include bus stop benches but not private seating like restaurant seating)	☐ None ☐ Yes
S5.	Are street lights installed?	☐ None ☐ Some (wide spacing) ☐ Ample (regularly spaced)
S6.	Are the buildings well maintained?	☐ Less than 50% ☐ 50% or greater
S7.	Is graffiti/tagging present? (do not include murals)	☐ No ☐ Yes
S8.	Is there a designated bike path? (do not include sharrows)	☐ No ☐ Yes, unpaved lanes ☐ Yes, physical barrier
S9.	Is a sidewalk present? If no, skip to S12	☐ No ☐ Yes
S10	Are there poorly maintained sections of the sidewalk that constitute major trip hazards? (eg. encroachment, cracks, overgrowth, incomplete sidewalk)	☐ None ☐ Some
S11.	Is a buffer present on the sidewalk? (count any buffer area on a segment as "yes" regardless of length)	☐ None ☐ Yes
S12.	What percentage of the length of the sidewalk/walkway is covered by trees, awnings, or other overhead coverage?	☐ 0-25% ☐ 26-75% ☐ 76-100%
S13.	Rate the extent of litter	☐ None or very little ☐ Some or a lot
S14.	Presence of stray or unleashed dogs	☐ No ☐ Yes

Crossing

Intersection of _____ & _____ Crossing from: N S E W to N S E W

C1.	Is a pedestrian walk signal present?	☐ No ☐ Yes
C2.	Is there a ramp at the curbs?	☐ No ☐ Yes, one curb only ☐ Yes, at both curbs
C3.	Is there a marked crosswalk?	☐ No ☐ Yes





On Thu, Feb 26, 2026 at 2:38 PM Edwin Reyes <edwin.reyes@bsp.guam.gov> wrote:

> Hafa Adai Barbara and Juanita,
>
> Thank you for your participation and input during last night's public hearing regarding the Guam 2050 Sustainability Plan draft.
>
> To ensure we accurately document the existing use and conditions of your community garden and native tree parkway initiative, could you please provide the following:
>
> The specific project location (lot numbers if you have them)

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A PDF map of the area
A description of current conservation measures

This information will help us address your concerns within the draft plan.

Best regards,

Edwin Reyes

Edwin Reyes
Administrator
Guam Coastal Management Program
Bureau of Statistics and Plans
P.O. Box 2950
Hagatna, Guam 96932
671-475-9672
www.BSP.Guam.Gov

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Conservation project location and description follow up

Kurason I Sengsong Island Girl Power <[redacted]> Sun, Mar 8, 2026 at 6:29 PM
To: Barbara Burkhardt [redacted]
Cc: Edwin Reyes <edwin.reyes@bsp.guam.gov>, Lola Leon Guerrero <lolalg@bsp.guam.gov>, Matthew Santos <matthew.santos@bsp.guam.gov>, April Trinidad <april.trinidad@bsp.guam.gov>, Guam Coastal Management Program <gcmp@bsp.guam.gov>

Hafa Adai

In addition to the beautiful patches of limestone forest in our testimonies....

Our Service Learning Campaign "Friends of the Parks" has been promoting for 12 years, walkable parks that already exist .... they were built in the 1960s and more recently. They are worth refurbishing and they are located in 10 of our villages. There are nearly 75 parks. Some were set up with sidewalks and recreational features after typhoon Pamela.

I would love to share what I know about these neighborhood parks. They are perfect for conservation, recreation and native habitat objectives. They are not officially part of govt park inventory and are not individually private owned.

Sending blessings to your team. Hope my comments are appropriately placed.

Blessings
Juanita C V Blaz
Kurason I Sengsong
DBA Guam Service Learning Website
671-688-4752

On Thu, Mar 5, 2026, 9:53 AM Barbara Burkhardt <[redacted]> wrote:
> https://v2021a.peaceguam.org/partnerships/non-communicable-disease-consortium
>
> Sad
>
> On Thu, Mar 5, 2026 at 9:51 AM Barbara Burkhardt [redacted]> wrote:
> > Just wanted to touch base with you guys on the work of NCD (Guam Non Communicable Diesease Consortium aks promoting healthy lifestyles.) since 2018, they have started meeting again, revival since COVID and Typhoon Mawar. They have a couple of committe focus groups that ties in with our goals at Kurason I Sengsong. We serve on walkability and fruits & vegetables.
> >
> > I have been asked to speak 15 minutes on the Dededo "Loop". I think they should be asked to comment if you haven't interviewed them yet.
> >
> > "The Guam NCD Consortium is a collaborative partnership spearheaded by the Department of Public Health and Social Services (DPHSS) to combat the leading causes of death—cancer, diabetes, cardiovascular diseases, and chronic respiratory disease. Supported by the Secretariat of the Pacific Community, it develops strategic plans, drives preventative healthcare, and manages action teams like the Tobacco Control Action Team (TCAT")

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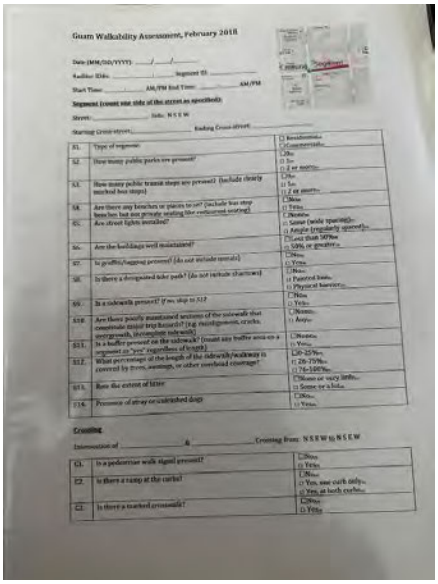

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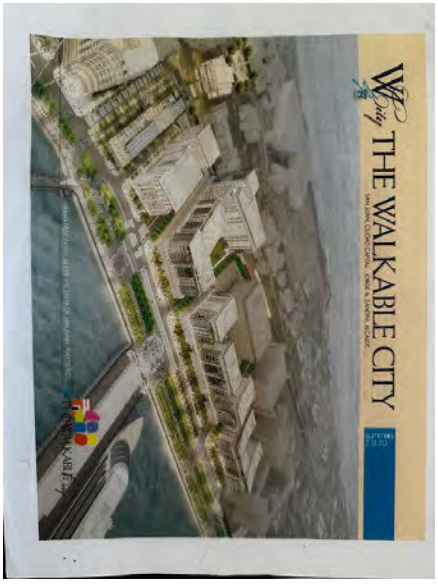

On Thu, Feb 26, 2026 at 2 38 PM Edwin Reyes edwin reyes@bsp guam gov wrote

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The specific project location (lot numbers if you have them)
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Edwin Reyes

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Re: Comments on Guahan 2050 Sustainability Plan

Barbara Burkhardt [redacted] Tue, Mar 10, 2026 at 9:36 AM
Cc: gsp2050@bsp.guam.gov, lolalg@bsp.guam.gov, matthew.santos@bsp.guam.gov

All, I have sent David Lotz some information on the Guam Forest Action Plan. It clearly lists the FAA plot. Not too many people know about it.

His other comments seem to indicate, as well as for me, the confusion about who owns parcels that are Guam native landmarks. All of our Federal and Local parcel confusion.

On Tue, Mar 10, 2026 at 8:04 AM David Lotz <[redacted]> wrote:

> Attached are my comments on only certain portions of the plan.
>
> Dave Lotz
> [redacted]

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Dededo Land for Urban Forest Conservation Part 1

Barbara Burkhardt <[redacted]> Wed, Mar 11, 2026 at 10:02 AM
To: gsp2050@bsp.guam.gov

In my testimony I call out for Land Use Conservation, areas directly adjacent to and influenced by civic environmental conservation through the non profit Kurason I Sengong/ Island Girl Power. The last GICC, is not advocated by KIS, but reforestation volunteers who remember the fanihi, 8 spot butterfly and moorhen on this property, consider it a mature limestone forest fragment not found in this part of Dededo.

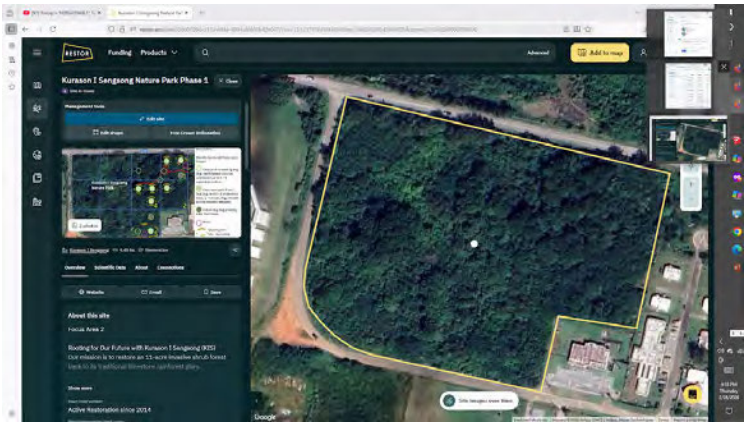
Below are the properties with letters of Agreement from the Mayor's Office and a subrecipient agreement from GHURA, as I have posted on Restor.eco. This international site has led to some Grant opportunities for us. I use Regrid to find lot information, when I don't have time to go to DLM. One cool feature is that there is a button below the image that gives a reply of up to 20 years of satellite images. There are also some land coverage calculations, above and below ground carbon calcs. All useful for some Grants. We have short listed on a couple, no funding yet. Some are notifying later in the year of 2026.

I uploaded these sites in 2024? It's been awhile.

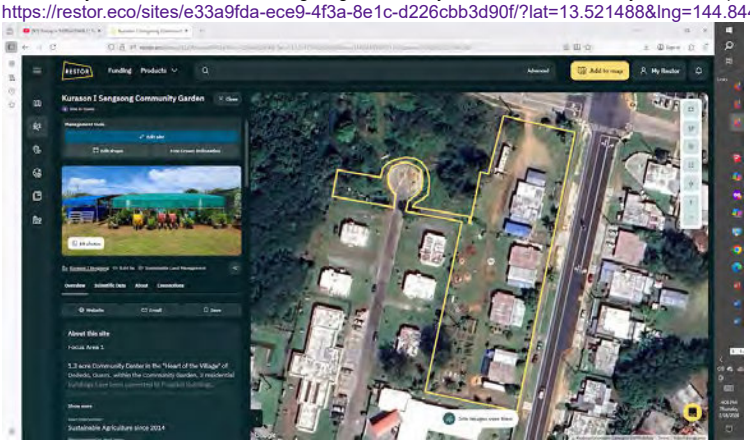
I have copied MCCA as they sublet from us at KIS now, a resilience hub on Guam and an advocate for the neighborhood.

1. Sagan Tinanom - 11 acres, This "Project" has site information populated.
Sagan Tinamon is M05 L10114-NEW-2. An overflow shallow stormwater basin. from the deeper collection basin across the street already on the Land use map as green space.

https://restor.eco/sites/8d607894-d17d-444e-9394-46650b42e047/?lat=13.521816000000001&lng=144.842916&zoom=19



2 Kurason I Sengsong Community Center and Community Garden 1 3 acres/ The image is dated and Pre Mawar We have significantly increased the Agroforest on karst in the Community Gardens. Kurason I Sengsong Community Center and Community Garden is part of GHURA M05 L10114-NEW-3-R2
https://restor.eco/sites/e33a9fda-ece9-4f3a-8e1c-d226cbb3d90f/?lat=13.521488&lng=144.844692&zoom=19



3. Kaiser Subdivision Parkways, we work on the one directly across from KIS right now, a couple times a year. The HOA went into default decades ago. The property is under the Dededo Mayor now. Guam EPA has stormwater drainage plans on file. There are 2 stewards of the area we support with backyards abutting the parkway. The South Parcel next to MCD is ripe for a native plant upgrade. It does not have a lot number.

Kaiser Parkways - about 13 acres in composite
South to North, East to West

M05 T112 B1-REM - abuts GWA/ GICC access road
M05 T112 B2 L33
M05 T112 B4 L47
M05 T112 B3 L39

M05 T112 B7 L1 - abuts GWA/ GICC access road
M05 T112 B6 LUNK92

M05 T112 B8 L55-PARK SITE
M05 T112 B8 L56-PARK SITE
M05 T112 B5 L56, this is the parcel we maintain a couple times a year with the steward that abut with their backyard

M05 T112 B10 L3, abuts GWA/ GICC access road

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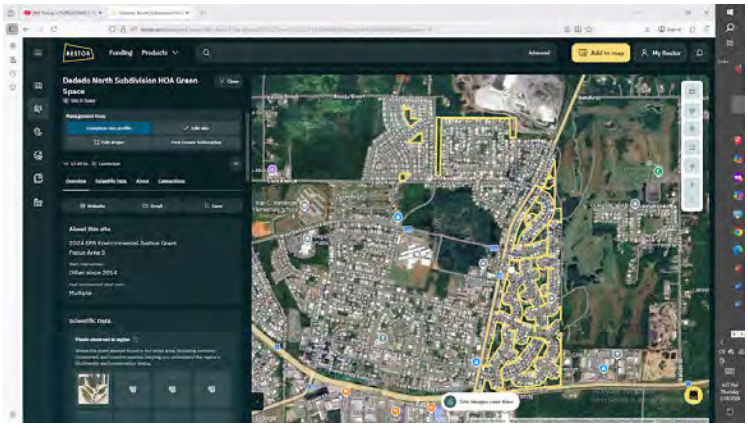
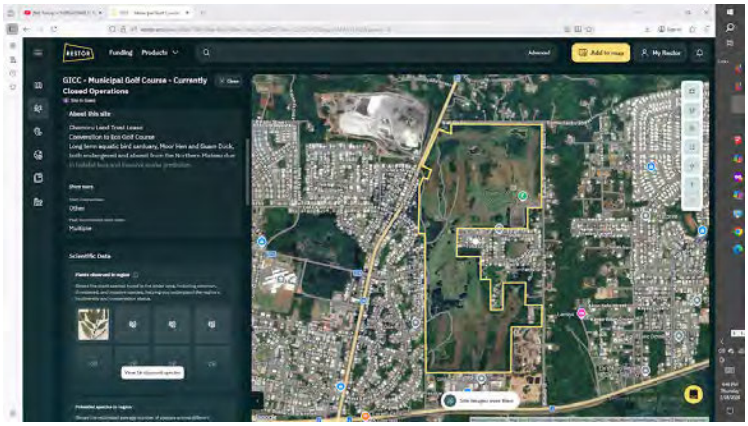
M05 T112 B10 L3, abuts GWA/ GICC access road
M05 T112 B9 LPARK
https://restor.eco/sites/eaa1beac-6f8c-4ea1-880a-1cdce3387587/?lat=13.521648202321764&lng=144.84397004232838&zoom=16



4. And I can't leave out our beloved GICC.

Within the CLTC property identified in the Plan are GWA parcels for 9 pumping stations.

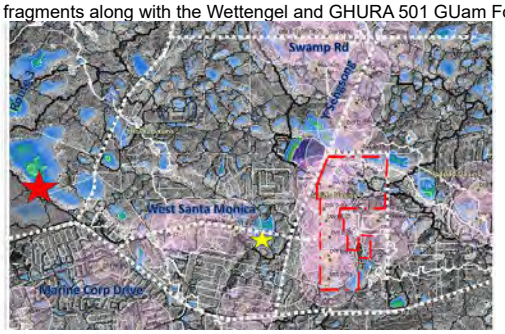
https://restor.eco/sites/b93a7169-f84e-4bc6-96e4-9a0cb7ca4d97/?lat=13.5235675&lng=144.8515365&zoom=16



5. This is the WEIR pumping/ recharge map of the overall area. It's no wonder the GICC GWA pumping stations have a robust recharge with all the stormwater basins directly on top of and adjacent to the pumping stations. GICC also provides nearly half of the recharge/ pumping area.

These stormwater basins plus the Y Sinsong and West Santa Monica Basins track to All of the current "green" areas associated on Google Maps. We would like to see all of these recharge areas conserved and amplified as Limestone Forest Fragments.

These fragments along with the Wettengel and GHURA 501 GUam Forest Action Plan Parcels would conserve a significant Limestone Forest Fragment.



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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Fwd: Guam between now and 2050

Lola Leon Guerrero, BSP <lolalg@bsp.guam.gov> Tue, May 19, 2026 at 10:46 AM
To: April Trinidad <april.trinidad@bsp.guam.gov>, Matthew Santos <matthew.santos@bsp.guam.gov>

Sharing this email with you. Wants BSP to focus on community planning.

---------- Forwarded message ---------
From: **Daniel Swavely** [redacted]>
Date: Tue, May 5, 2026 at 6:23 PM
Subject: Guam between now and 2050
To: BSP Director - Lola Leon Guerrero <lolalg@bsp.guam.gov>

Hafa Adai Lola,

I applaud the BSP for undertaking a vision and plan for Guam between now and 2050. Land use planning is a vital component for managing growth and development. Accordingly, the stated goals of Sustainable Communities, Prosperous Economy, Thriving Environment, Vibrant Culture, and Village Sustainability are all on target.

As a 50-year practitioner in land use planning on Guam, I think DLM and GLUC do a good job today at protecting our longterm land use interests, albeit mostly in a reactive role to applications for proposed developments. In fact, an argument can be made that the land use component of Guam's overall community planning is the most efficient of all components. I say this because the current process guarantees:

1. Application Review Committee position statements, which ultimately become binding to a project's Notice of Action by GLUC. Such position statements address water, wastewater, power, traffic, environmental protection, cultural preservation and recreation matters, etc.
2. Three public hearings, assuring ample opportunities for input by neighbors, mayors and other concerned residents.
3. A Staff Report by the DLM Case Planner analyzing the merits of the application, public feedback and compliance with the law.
4. A fourth and final public hearing conducted by the Guam Land Use Commission where the applicant makes its case, public input is again invited and Commissioners personally interact with all parties before adjudicating the application.

For these reasons, I am unconvinced that a new land use planning process is necessary at this time. Any changes to our current land use planning process should make things more simple, not more complicated. Ideally, any new system would allow for a landowner to apply for and defend his own proposed changes, not hire a consultant. And, recall the previous I-Tanota' land use plan which was ultimately scrapped, largely because it created non-conforming property designations that triggered violations to existing mortgages, residential and otherwise.

I view land use planning as one subcomponent of community planning: however, it should not exist out-of-balance with other forces of community development such as the health, education and welfare components.

As such, pinning Guam's future sustainability on only land use planning overlooks the plethora of other maladies facing us today. Some examples are:

1. A GovGuam budget of $1.3 billion ($8,000 per resident) with an unsustainable expenditure of $1,000,000 per day for personnel alone.
2. A huge and growing affordability gap for housing.
3. A meth addiction problem that threatens both the CHamoru culture and everyone's safety.
4. Troubling high school dropout rates and subpar reading and math scores.
5. Severely understaffed Police, Corrections, and Health services, despite robust recruitment efforts.
6. Some 15,000 abandoned vehicles, most of which are parked over the aquifer and leaking oil and lubricants.
7. An estimated 400,000 used tires, all highly combustible.
8. An estimated 60,000 stray dogs.
9. Pockets of neglectful property maintenance that resemble a third world country.

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Only BSP, among all GovGuam agencies, has the mandate to tackle every aspect of community planning; and I'm asking that, under your leadership, the Bureau cast a much wider net than land use. In the mid-1970s John Gilliam and I, under the direction Governor Bordallo and Paul Souder, wrote the bill that established the Bureau of Planning. I had high expectations then, as I do now, for a super agency of sorts that could cross all barriers to identify problems and generate solutions so as to assure that Guam and all Guamanians reach their fullest potential.

Please accept all this in a constructive manner, as I fully intend it and, as such, I have not shared it with anyone else.

Respectfully,

Dan Swavely
[redacted]

--
Si Yu'os Ma'åse',

Lola Leon Guerrero
Director - Bureau of Statistics & Plans
PO Box 2950
Hagåtña, Guam 96910
Office: 671.472.4201/2/3
Direct: 671.475.9661
Fax: 671.477-1812
lolalg@bsp.guam.gov
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April Trinidad <april.trinidad@bsp.guam.gov>

Comments on Guahan 2050 Sustainability Plan

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Dave Lotz
[redacted]

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Guahan 2050 Sustainability Plan comments by Dave Lotz.docx
20K

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Because those are included in the sites that we provided the shape files for. **No, I'm just reflecting what I saw online**. I think that because of the size, some of the ones that are too small, you're not going to see them if it's not a dot. Let me pull it up. **But I'm also going to state, if that's a concern when looking at it on my computer, then a printed copy is not going to be any better. To me, a plan like this has to be a very usable document and not subject to those layout limitations**. It is difficult because there are some that don't show, like, it's going to show the greater one, but, you know, based on the scale, we're doing a whole map within a letter size. This **page 6-20**, right? **But I also want to say regarding historic sites, when you just list a National Register site on a map, that gives the wrong impression of what we consider important to our heritage, and we really should be listing every historic site that's considered eligible for the National Register**. Yes, I guess.

Now, I also think that the presentation he did was quite poor. You had real problems with the electronics, and I think to have a moderator not even out here is frankly insulting. I understand, sir, but you know, we couldn't afford it. **Well, then, I think you've got to go back and look at the scope and how the funding is, because if you're putting together a plan for 25 years, all these things have to be considered.** Yeah, the $600,000 we had was pretty much as much as we could get. **When you go on island for a firm, why didn't you go on island?** We had to go through the RFP process, and based on that RFP, we had to go with the most responsive proposal. So, it just so happened that the company that was contracted was the most responsive proposal. And where were they from? Well, actually, it's Linker, but they have on-island subcontractors, from MRD to CHA Consulting, they're here. But they were the prime, and then we had the UC Santa Barbara Coastal and Ocean Policy Center. **Anybody come out here from UC Santa Barbara? Yeah, multiple times.** It was Dr. Charles Lester during multiple engagement events.

Well, my offense on the few maps I looked at, it seemed like they're lacking information. I'm working on a list, but I will get it to you, I don't know, maybe Monday. But I'm just expressing my serious concerns, and the fact that from what I see, there are numerous errors that leads me to conclude there may be others I haven't even looked at. And I think it would be very poor to have an erroneous document go to the legislature. I've been involved with previous planning efforts on the island, and the proverbial, excuse the phrase, "shit doesn't hit the fan" until it gets to the legislature. So just be prepared, and I'm

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just suggesting that changes need to be made, so you've got a reliable document.

Matter of fact, when you look at the coastal area up there, from the former FAA area down to South Philigate, it's still showing as military lands, and it's no longer military. Is this in the thing, or is this on our land use map? Let me see. **It's right in the plan itself, page 1-12**. Okay, I have a hard copy of the plan, and so I'm going to, 1-12, I heard it's this one. Oh, but this doesn't have... Sir, are you talking about the one, 1.2.1? That small map? **I don't have my computer open at the moment, so I cannot reference it. Got it. Yes, this little one.** Yeah, but where? Oh, the gray shape. **Exactly. To me, quite bluntly, that's a serious error. I don't know how it could have gotten this far in your planning process.** Yes, I know. That's a reference from the 2009 land use plan map. So, it's not identified as military in our other maps. That's after, you know, it's been converted. **Then I think, quite frankly, you've got some flaws in what documents were cited and what sort of field research was done.**

Anyways, those are my blunt comments because I just think this is frankly not good. I can send this to you probably the first of the week, and if you want to resume the conversation at some time. Yeah, we can. But again, this is just a sampling. Nobody's paying me to look at this. You paid $600,000 for somebody to do this? No, sir, really, what was involved was, there was a survey on the Linker. The survey was done by MRD, Jay Merrill. There were actually two surveys that were done. There was a pre-survey prior to us actually working on this plan or getting the funding for it. And then we actually did a survey and there were 700 respondents that took part in the survey, and then we did the charrettes. I'm just going to say, sir, there was a lot of stakeholder engagement with the government agencies as well as the real estate companies, other stakeholders, the mayors, and there were also community stakeholders. But the information you're providing is good. We will take, if you can send the information, and then we will explore because we are there, just based on the enabling legislation. Now, if there is a need to extend the plan review, the comment process, because additional time is needed, that's something that could be explored.

And I think we should have done better citations on the locations for the historic sites where the address is restricted. So there were some that were intentionally taken out. I guess we should have put it in the approximate area, but you understand, like, with the ones that are restricted/not restricted, that's a whole debate in itself. **Guam Boonie Stompers went to the Pagan Archaeological site**

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last Saturday. Sure, it's a public site, it's public land, it's open to the public. As far as I talked to Jay Merrill about this, and yes, he did public surveys. I am not basically addressing what he did or how he did it as a result. I'm basically focusing on factual information on what's on our island that is either erroneous or is omitted. Yes, sir, we probably should have made a notation on that as well about the restricted/unrestricted location, you know, based off the National Historic Register. So, I acknowledge that that should have been better explained with the image or with the figure, which is the map. All this... there is federal government restriction on the sites. **They're overly concerned about looting, which I agree, and I have an extensive background locally and federally with cultural resources. The thing is, if people—there are some people on this island who either have or hopefully no longer are—if they know where these sites are, they don't look at the National Registers, they know the land, and they can go out there.** Yeah, but we're trying to at least honor the restrictions. **But if you don't locate it, there's a dilemma. If you don't locate it, then somebody's going to think I can put a hotel there.** Understood. I guess we could make it approximate and just not exact, but we used, you know, based off the ones where the Historic Register published the actual location.

Well, yeah, I know. I mean, I've dealt with this dilemma before, and I'm glad you have a good understanding of it, because it's better to educate people of what we have than to keep them ignorant, because once you educate people of our cultural resources and you work with them, then they become a community member that becomes an advocate for protecting them. Understood. **Unfortunately, we don't get that out of the Guam Historic Preservation Office.** Yeah, so, but yeah, the omission was intentional for most of those places. I guess we can make a footnote or add a table with all of the locations with the approximate area, like, say for Pagat**. Well, then there are others. I mentioned Cella Bay. I just chose examples. I'm not going to spend my time going through all your maps point by point. When I see a few obvious examples, to me, that's a red flag that there's a problem that I need to bring to your attention. And hopefully, you can take that and decide to take another look at it.**

Now, perhaps I might consider coming down and actually looking at these maps, but I will say the size of those maps in the book is extremely hard to differentiate. It might be preferable to have three maps: north, central, and south. I mean, for those ones, we do have maps on our GIS page. I can make a historic sites map for those other ones because they are sourcing some of these

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and they do get blurred out. **So if it's not at a scale where they're pronounced, it's going to be missing something, especially if it's, I mean, even trying to show an acre on a map, it's almost impossible. And it may be just the cartography techniques you're using, because another example is EPAN Beach and Talofofo Bay Beach. Those are not mapped very accurately. And I know when I looked at the map, that green figure, whatever's supposed to be, it's just hard to see, quite frankly.** Yeah, we have some village maps that are, if you go into the Land Use Map and you download village maps. **Are those in the plan itself?** They're on the website and they're like downloadable appendices. **Okay, well, thank you for. Can I view them and look at them?** Yeah, and one is a web map. The Land Use Map is a web map. But of course, all importantly, all these maps need to be consistent and compatible.

So, when there's another case where, page 5-62, you've got lands, and I think it's the only map that has land use designated for military, which I'm surprised, but it also includes all of Camp Blaz as an ecological reserve, and that's hardly an ecological reserve since the Navy basically removed all the natural forest and the cultural resources. So that's an oversight. I got you. For those areas that are on the conservation areas, that one was the U.S. Fish and Wildlife source. That's the data source for that one. N**ow, was that from what they were considering, the Overlay Wildlife Refuge?** Yes. **Okay, well, then, I have a comment that I will still maintain, because there needs to be a map that just shows the Overlay Wildlife Refuge. Now, unfortunately, the U.S. Fish and Wildlife Service, with their Overlay Wildlife Refuge, they're really not effectively protecting it. Well, I think we could criticize them for how viable is their Overlay Wildlife Refuge, because that refuge actually came out as a result of a federal court agreement, and I'm surprised nobody's taken that back to court to say that's supposed to be followed. I mean, I'm not going to court on that, but it's kind of like, that was an agreement to avoid critical habitat for many species, and then it's really, you know, when you destroy how many acres of Camp Blaz, then nobody says anything about it, especially the Fish and Wildlife Service. So it makes you wonder how serious they are about it. But anyways, if that's where it came from, you should ask the Fish and Wildlife Service, you know, why you still maintain this?** Yeah, show him a satellite view of Camp Blaz. **You know what it looks like**. Yeah, so if you actually go on our web page for the 2050, you look at the image, I intentionally put the image of the contrast between 2015 and 2025 to show the difference between that area. If you actually look at the north on the, when you go to the "About the Plan" page, you'll see an image that contrasts those two. **Yeah, I understand that, and I appreciate it. I'm just saying, when it comes to that one map I just cited, there are clearly questions of its validity.** We understand, but

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you know, we're utilizing the data. I guess we could put footnotes with regards to the actual application of that reserve. **I'm trying to give you some input to correct what I consider some serious flaws, because you know how things work on this island. This goes to the legislature and people like me will show up and just say this has some real serious problems, and I'm not giving you a threat. I'm just simply saying how the reality of things work here**. Yeah, but sir, you understand the difference between, like, some... so, U.S. Fish and Wildlife, it's an inaccurate representation of an actual reserve, right? But it's not our misrepresentation, and I think that we can maybe rectify this through some notes that some of these places have been developed, or notes, or put a table in for the map for the historic sites, citing the fact that we're not plotting them because their address or their location is restricted. **But these are not a matter of being in common. I could further discuss the historic sites with you, but going back to the overlay refuge, I think at least the map in this plan needs to accurately reflect ecological reserves from your point of view, and which I think would mean that realistically cannot be an ecological reserve. If you want to have a separate map of what was the original overlay wildlife refuge, then you could just put that in there and say, this is what the Fish and Wildlife Service has. Now, I don't know if that would be enough for the plan, but it seems to me at some point in time, it would be a good tactic to write back to the Fish and Wildlife Service and ask them how realistic this overlay refuge is.** Sure, we could do that separately. But to be frank, it may be a better solution to just leave the military out because the application of this plan is inconsequential to federal land, if that makes any sense.

Now, that I am inclined to agree with you, but also, when you talk federal lands, you're also talking to entities of the Department of Interior, the wildlife refuge, and the War in the Pacific Park. And I did make a note. I think you don't have the boundaries of the War in the Pacific Park, but then that becomes a policy issue to be resolved. Taking the military out, you know, it would be kind of nice for us to dictate to the military what their land should be used for. You know, how far that would go, that's a bit of a joke on my part, but you know what I mean. Yeah, if you were to drop out DOD lands, that would be very realistic. **As part of the Department of Interior, I think they're much more reasonable to work with, because basically, they can all just be labeled conservation and let it go with that.** Yeah, **and it also needs to be acknowledged that they're relocating after they put the firing range in right above it**. I know what you mean. **And then, when you begin to talk to the military, frankly, there's just too much going on because they chose 16 sites**

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around the island, I'm certain you're familiar with the Ballistic Missile Defense System, and even now, they're apparently on defense lands. There's going to be a spillover effect. Now, I'm pausing when I'm saying defense lands, because I don't know what that old NASA site/Department of State site is, who has control of that. I don't know that anymore. Would you happen to know? You mean that one really small square that's Ordot? Yeah, they have like a really small, it's not very big. **Yeah, that was satellite tracking for NASA and the space program, and then it became something with State Department communications, because they have a separate, independent communications system from other federal agencies. And now, if you look at the 16 sites for missile defense, I think it's being proposed for use of that.** Yeah, so the Dundan Road that goes out is actually an inholding area of the military, and then they have approximately... Let's see. **You might consider a separate map, but just to show the military bases and their terminologies, and also, at least to be up to date, identify the 16 areas that's public information for the missile defense side.** Yeah, so we do have a map. I maintain one that has land existing land use for the DOW. They call them ramp-purpose type at DOD. But yeah, I have all that stuff.

There's one other. Look at 6-9, page 6-9. The mapping shows lenses, ancestral lands, where a lot of it is under the airport. You've got a little area that's called the airport, but you know, with the runways and everything, that's quite extensive. What is this, two inches? Yeah, they need to make a reference to the fact that those were the disposals over to that. **And I understand that, you're going to, there's a confusion between agencies sometimes on this island of jurisdiction. So, one agency may show it under them, another may show it under them. That becomes a can of worms. But I'm just saying. Yeah, so, the area by the airport, it's rather.**.. No, no, we need to fix... we actually need to fix... they don't. Yeah, they don't. Well, you probably ought to look at that map. **Anyway, I will send you this probably Monday. If you want to engage further with me after then, I'm more than welcome to**. Mr. Lotz, if you're able to send the map stuff sooner or later, I could start working on that stuff. **Well, I haven't quite finished my review, and I've got other things I need to do between now and then.** Yeah, but if you get the, but yeah, for the ones that are, I mean, obviously what your statements are credible, and we'll make time to make those adjustments. **Okay, but I'm also saying it's an indication of other potential problems that basically somebody has to go through carefully and look at each one of these to see. And I might, I mean, and these went through agents. I would say I might come down and just sit with you at the table, go**

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through some of this in more detail. Sure. But we need to have it documented too, sir. So if you at least can have a brief summary or a statement for that comment, and then we can, you can elaborate on it while at our office, that'd be great. **Well, I'm working on this, but, you know, I don't really know if I have the health and time to go through each map meticulously, particularly, sometimes it's more meaningful to have a discussion and have somebody taking notes there.** Yeah, but the ancestral lands, we'll put it as the current owner. But we can make those adjustments, and they should have noted that many of those were Spanish Crown lands. **And the airport area?** No, some of the other places were Spanish Crown lands. And then there's JLC lands that were returned to the private property owners that are not recognized in there. **I suspect that little housing area has ancestral lands at the airport, but that's a sliver along the cliff line**. **I might just suggest you ask the airport for the map of what is their lands up there.** No, I actually have the cadaster, sir. I should have... **Good, good**. Yeah, so I can actually update that myself and just replace it with that accurate map. Well, **okay, I'll work on this.** I**'ll get it to you the first of next week**. We appreciate it. We can entertain it at some time thereafter. Yeah, appreciate your comments and your time, sir. **Okay, thank you. Have a nice day. You too. I appreciate your listening to me.** No problem. Thank you. Have a good day. Bye.

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Guahan 2050 Sustainability Plan

davelotz@ite.net <davelotz@ite.net> Thu, Mar 5, 2026 at 1:32 PM
To: gsp2050@bsp.guam.gov

Attempting to review this plan, I realize that you need more than 2 hearings and you really need working session with the people and some real visibility.

Attempting to do a brief review, I have noted numerous inaccuracies in the maps.

Dave Lotz

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April 24, 2026

Lola Leon Guerrero
Director, Bureau of Statistics & Plans
513 W. Marine Corps Drive
Ricardo J. Bordallo Governor's Complex
Hagåtña, Guam 96910

Submitted via email to gsp2050@bsp.guam.gov

Subject: Guåhan 2050 Sustainability Plan Public Comment

Håfa Adai Director Leon Guerrero:

Si Yu'os ma'åse' for extending the deadline for public comment on Guåhan 2050 Sustainability Plan Public Draft. I appreciate the time and effort it took to prepare the draft and commend the Bureau for coordinating with stakeholders to put forth a comprehensive plan.

I could not help but to feel disappointed to see that the plan did not address decolonization in a meaningful way. In fact, the only discussion of decolonization is in Chapter 6 which states, in part:

> For the G50SP, it is important to recognize how colonization and related land use changes has affected the ability to preserve and promote CHamoru identity and values tied to land use. … Today, the cultural context of land use in Guam is shaped by efforts to reclaim, protect, and revitalize CHamoru heritage within the framework of modern development and the political reality of Guam's status as an unincorporated territory of the United States. As with governance generally, land use planning and decisions occur with the complex context of U.S. sovereignty and Guam's limited self-governance as a U.S. territory. Many of the land use challenges facing Guam, addressed in this plan, are rooted in the significant (expanding) presence of the federal military on the island. Today and in the future, this may add another layer of complexity to implementing a plan for sustainable land use as federal interests may take precedence over local interests. Land thus remains a core issue in discussions about sovereignty, justice, and sustainability.

While P.L. 35-110 does not direct the Bureau to include plans specific to self-determination and decolonization, there really is no way to provide guidance "for the social, economic, infrastructure, supra structure, and physical sustainable development of Guam" without addressing how the plans would be impacted by Guam's limited self-governance and the United States's military and resource extraction agendas. The recent news about Bureau of Ocean Energy Management's decision to consider a 33-million acre area in addition to the 35 million acres it originally identified in its Request for Information and Interest regarding Outer Continental Shelf Minerals Leasing for the Commonwealth of the Northern Mariana Islands underscores the importance of self-determination and decolonization to any plan for sustainable development on Guam because that decision was made after numerous Guam and CNMI residents opposed deep sea mining in the Marianas.

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The U.S. Supreme Court's decision to review the Ninth Circuit's decision in *Prutehi Litekyan: Save Ritidian v. U.S. Dept. of Air Force* also underscores the importance of a meaningful discussion of self-determination and decolonization in a plan for sustainable development on Guam. The Ninth Circuit confirmed that the Air Force could be sued for its decision to conduct open burning and detonation operations on Guam's beaches and that it must comply with the National Environmental Policy Act, which was a major win for Guam and its ability to protect our people's health, our land, and our resources. SCOTUS could potentially overturn the Ninth Circuit's decision which would allow the Air Force to continue its pattern of poisoning our land and water and undermine the sustainable development goals set forth in the Guåhan 2050 Sustainability Plan.

I agree with the Bureau's statement that the military's significant and expanding presence on Guam "add[s] another layer of complexity to implementing a plan for sustainable land use as federal interests may take precedence over local interests" and urge the Bureau to present alternative plans for when (not if) federal interests conflict with local interests and undermine Guam's Sustainability Plan.

Si Yu'os ma'åse' for your consideration.

Sinseramente,
Elizabeth Santos
Sinajana Resident

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Guåhan 2050 Sustainability Plan Comment

Elizabeth Santos <ebsantos@hawaii.edu> Sat, Apr 25, 2026 at 11:45 PM
To: gsp2050@bsp.guam.gov

Håfa Adai,

Attached for your consideration are my comments regarding the Guåhan 2050 Sustainability Plan.

Si Yu'os ma'åse'!
--
Elizabeth B. Santos
J.D. Candidate, Class of 2027
William S. Richardson School of Law
University of Hawai‘i at Mānoa
ebsantos@hawaii.edu

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ESantos_Comment re Guahan 2050 Sustainability Plan.pdf
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GUAM ENVIRONMENTAL PROTECTION AGENCY • AHENSIAN PRUTEKSIÓN LINA'LA' GUÅHAN
LOURDES A. LEON GUERRERO • GOVERNOR OF GUAM | JOSHUA F. TENORIO • LIEUTENANT GOVERNOR OF GUAM
MICHELLE C. R. LASTIMOZA • ADMINISTRATOR

MEMORANDUM

TO: Bureau of Statistics and Plans (BSP); Sustainability Plan Implementation Task Force

FROM: Peter P. Bautista, Chief Engineer, Guam EPA; Administrator, Water Division, Guam EPA

DATE: April 29, 2026

SUBJECT: Comprehensive Position Statement and Regulatory Review: Guåhan 2050 Sustainability Plan (G50SP)

I. Position Statement

The Guam Environmental Protection Agency (GEPA) formally endorses the vision and thematic goals of the **Guåhan 2050 Sustainability Plan (G50SP)**. Our comprehensive review indicates that the G50SP serves as a critical policy bridge between high-level conservation and the technical enforcement mandates of the **Water Pollution Control Act** and the **Guam Environmental Protection Agency Act**.

GEPA's position is that the success of the G50SP depends on the immediate modernization of Guam's engineering standards—specifically the **Guam Stormwater Drainage Manual**—to move from traditional "gray" infrastructure to **Nature-Based Solutions (NBS)**. The Agency is prepared to utilize its full authority under **22 GAR Division 2** to ensure that "Sustainable Village" growth does not compromise the island's soil stability or the long-term potability of our groundwater resources.

II. Comprehensive Regulatory Cross-Reference & Findings

A. Water Resource & Aquifer Protection

- **Northern Guam Lens Aquifer (NGLA):** The G50SP prioritizes the NGLA as a critical resource. GEPA will enforce **10 GCA § 47108.1**, which mandates the creation of a **Groundwater Protection Zone (GPZ) map**. We will require that all high-density redevelopments proposed in the G50SP within this zone undergo rigorous hydrogeologic assessments to prevent the introduction of pollutants into the water lens.
- **Sinkhole Protection:** Under **22 GAR § 10107(f)**, sinkholes are protected "Waters of Guam". The G50SP's urban growth strategy must include updated manual criteria that prohibit direct discharge of untreated runoff into these features, requiring bio-

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retention pre-treatment.

B. Engineering Standards & Stormwater Management

- **Predictive Design:** Current regulations and the 2012 Stormwater Management criteria rely on historical data. GEPA recommends that the manual update integrate a **15-20% "Resilience Factor"** to account for increased storm intensity and **Sea-Level Rise (SLR)** projections through 2050, specifically for coastal outfall designs to prevent system backflow.
- **Nature-Based Solutions (NBS):** To achieve the "Thriving Environment" goal, GEPA will invert the design hierarchy. Developers must now technically justify the use of traditional concrete basins over NBS (bioswales, rain gardens, permeable pavement) during the One-Stop Permit Center review.

C. Accountability & Long-Term Maintenance

- **Life-Cycle Enforcement:** A critical gap exists in maintaining village-level green infrastructure. While **22 GAR § 10106(b)(7)** holds subsequent property owners responsible for permanent control measures, GEPA recommends the G50SP implement **Sustainability Maintenance Agreements** to ensure decentralized systems do not become pollution sources via neglect.
- **Government Compliance:** GEPA emphasizes that per **21 GCA § 66202.1**, all government, autonomous, and public entities are required to obtain the same clearing and grading permits as private citizens. This ensures that G50SP public works projects lead by example in environmental standard-setting.

III. Identified Issues and Strategic Opportunities

Category	Issue / Risk	Strategic Opportunity
Infrastructure	Aging wastewater systems may lack the capacity for the G50SP's high-density urban growth goals.	Use G50SP spatial data to target "Kabales" (comprehensive) sewer line upgrades in designated growth zones.
Permitting	Current building permits lapse after 3-12 months of cessation, which may hinder large-scale, multi-year sustainability projects.	Formalize the **One-Stop Permit Center** with a "Sustainability Track" for projects that exceed minimum environmental standards.

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Funding	Ongoing inspection and research costs for new "Green" technologies are high.	Leverage the **Water Protection Fund (22 GAR § 10109(g))** to finance R&D for coralline-specific bio-filtration systems.
Deterrence	Legacy fine structures ($1,000/day) are insufficient for modern industrial-scale violations.	Enforce the updated administrative penalty of up to **$10,000 per day** to ensure plan compliance is more economical than violation.

IV. Final Recommendations for the Implementation Roadmap

To fully integrate GEPA's technical standards into the G50SP, we request the following:

1. **Regulatory Synchronization:** Establish a task force to harmonize definitions of "clearing and grubbing" across **21 GCA (Building Law)** and **22 GAR (GEPA Regulations)** to eliminate jurisdictional confusion.
2. **GIS-Driven Permitting:** Require all drainage and erosion control plans to be submitted as georeferenced digital files to allow GEPA to conduct **Cumulative Impact Assessments** across entire watersheds, rather than site-by-site reviews.
3. **Establishment of Native Buffers:** Update manual criteria to mandate native vegetation in all "Sustainability Buffers" to maximize nutrient uptake and protect reef flats from sedimentation.

Thank you for the opportunity to review and provide comments and recommendations.

Respectfully,

Peter P. Bautista

Peter P. Bautista, P.E.
Chief Engineer, Guam EPA
Administrator, Water Division, Guam EPA
peter.bautista@epa.guam.gov | Phone: (671) 588-4702

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Fwd: GU50SP Review Comments and Recommendations

James E. Pangelinan <james.e.pangelinan@bsp.guam.gov> Fri, May 8, 2026 at 3:31 PM
To: April Trinidad <april.trinidad@bsp.guam.gov>
Cc: Matthew Santos <matthew.santos@bsp.guam.gov>, "Lola Leon Guerrero, BSP" <lolalg@bsp.guam.gov>, Edwin Reyes <edwin.reyes@bsp.guam.gov>, Guam Coastal Management Program <gcmp@bsp.guam.gov>, Peter Bautista <peter.bautista@epa.guam.gov>, Michelle Lastimoza <michelle.lastimoza@epa.guam.gov>, Glenn San Nicolas <glenn.sannicolas@epa.guam.gov>

Buenas, Chief Trinidad!

I would like to provide Guam Environmental Protection Agency's Chief Bautista's direct recommendations for the G50SP. Please let me know if there is anything else I can do to assist with the submittal process.

Thank you Chief!

James E. Pangelinan III
Planner
Guam Coastal Management Program
Bureau of Statistics and Plans
P.O. Box 2950
Hagatna, Guam 96932
www.bsp.guam.gov

---------- Forwarded message ---------
From: **Peter Bautista** <peter.bautista@epa.guam.gov>
Date: Fri, May 8, 2026 at 3:24 PM
Subject: GU50SP Review Comments and Recommendations
To: James E. Pangelinan <james.e.pangelinan@bsp.guam.gov>
Cc: Peter Bautista <peter.bautista@epa.guam.gov>, Michelle Lastimoza <michelle.lastimoza@epa.guam.gov>, Glenn San Nicolas <glenn.sannicolas@epa.guam.gov>

Hafa Adai James.

I am forwarding my review comments on the Guahan 20250 Sustainable Plan. Please forward the review comments to the responsible POC at the Bureau of PLanning and Statistics.

Thanks.

Peter B

PETER P. BAUTISTA, PE

Chief Engineer

Water Division, Guam Environmental Protection Agency

17-3304 Mariner Avenue, Tiyan,

Barrigada, Guam 96913

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Tel.: (671) 588-4702

Email: peter.bautista@epa.gum.gov
Website: http://epa.guam.gov

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MICHELLE C. R. LASTIMOZA • ADMINISTRATOR

Date: April 29, 2026

To: James Pangelinan, Bureau of Statistics and Plans (BSP), Sustainability Plan Implementation Task Force

From: Peter P. Bautista, Chief Engineer and Administrator of Water Division, Guam EPA

Subject: Integrated Recommendations for the 2026 Guam Stormwater Drainage Manual Update

I. Purpose and Position Statement

As Chief Engineer and Administrator of the Water Division, I am formalizing the following recommendations to synchronize the update of the **Guam Stormwater Drainage Manual** with the **Guåhan 2050 Sustainability Plan (G50SP)**.

The current 2010-era manual and Executive Order 2012-02 rely on historical data and "gray" infrastructure solutions that are insufficient to meet the G50SP goals for a "Thriving Environment" and village-level sustainability. Our objective is to pivot toward **Nature-Based Solutions (NBS)** and predictive engineering to protect the purity of wetlands, streams, and marine waters as mandated by current law.

II. Identified Issues and Regulatory Gaps

The following technical issues must be resolved in the manual update to ensure compliance with existing Guam Environmental Protection Agency (GEPA) regulations:

- **Maintenance of Sustainable Infrastructure:** Existing regulations require a maintenance program for all control structures and hold subsequent owners responsible for their upkeep. The updated manual must provide a standard legal framework for Village-level "Sustainability Maintenance Agreements" to prevent green infrastructure from becoming a source of pollution through neglect.
- **Buffer Zone Standardization:** Current regulations specify horizontal distances for cuts and fills based on height (e.g., 10 feet for cuts over 15 feet). However, to protect environmentally sensitive areas like the **Northern Guam Lens Aquifer**, the manual should expand these buffers based on soil erodibility factors and proximity to sinkholes.
- **Hydrologic Assessment Gaps:** While earth-moving activities are prohibited in sinkholes unless authorized by the Administrator , the manual lacks a standardized protocol for the "Environmental and Hydrogeologic Assessment" required to ensure these natural features are not polluted by urban runoff.

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- **Penalty Deterrence:** The G50SP implementation requires a credible deterrent for non-compliance. While older statutes cite minimal fines, the updated manual should explicitly reference the administrative penalty tier of up to **$10,000 per day per violation** to align with current GEPA enforcement powers.

III. Strategic Recommendations for the Drainage Manual

To leverage the opportunities identified in our regulatory review, the following updates are recommended:

A. Climate-Adaptive Engineering

- **Predictive IDF Curves:** Move beyond historical rainfall data to include a 15-20% "Resilience Factor" in design calculations to account for increased storm intensity projected by 2050.
- **Outfall Backflow Prevention:** Require all drainage outfalls in coastal "Sustainability Villages" to be designed for high-tide and 2-foot sea-level rise projections to prevent system failure during surge events.

B. Mandated Nature-Based Solutions (NBS)

- **Inverted Design Hierarchy:** Formally update the manual to require developers to technically prove NBS (e.g., bioswales, permeable pavements) are infeasible before traditional detention basins are permitted.
- **Native Vegetation standards:** Standardize the "Establishment of Vegetation" requirements to prioritize native species that maximize nutrient uptake to protect coral reefs from nonpoint source pollution.

C. Integrated Data and Permitting (Kabales)

- **GIS Submission Requirements:** Require all drainage plans to be submitted as georeferenced digital files compatible with the G50SP's Integrated Hazard and Spatial Data maps.
- **One-Stop Permit Center Coordination:** Utilize the existing application process to implement a "Sustainability Checklist" for all government and private projects.

IV. Strategic Opportunities

- **Water Protection Fund Leverage:** Utilize the fund established under 22 GAR § 10109(g) to finance research into advanced stormwater filtration technologies specifically for coralline soil environments.

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- **Environmental Impact Assessments (EIA):** Use existing authority to require sustainability modelling as part of the EIA for any project located in environmentally sensitive areas.

Thank you for the opportunity to review and provide comments and recommendations.

Respectfully,

Peter P. Bautista

Peter P. Bautista, P.E.
Chief Engineer, Guam EPA
Administrator, Water Division, Guam EPA
peter.bautista@epa.guam.gov | Phone: (671) 588-4702

cc: Michelle Lastimoza, Administrator, Guam EPA
Glenn San Nicolas, Acting Deputy Administrator, Guam EPA
Captain Elizabeth, Senior Scientist, EMAS Division, Guam EPA
Kristan Finley, Legal Counsel, Guam EPA
Johnny Abedania, WPC Section Supervisor/ Engineer
Susan Marquez, WR Section Supervisor/Engineer
Noni Amar, SDW Section Supervisor/ Engineer
Maricar Quezon, WPC Section Engineer III

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

75 Village Parks

Juanita Blaz <kissenvironmental671@gmail.com> Wed, Mar 11, 2026 at 4:40 PM
To: gsp2050@bsp.guam.gov

Hafa Adai

In addition to the beautiful patches of limestone forest in our testimonies....

Our Service Learning Campaign "Friends of the Parks" has been promoting for 12 years, walkable parks that already exist .... they were built in the 1960s and more recently. They are worth refurbishing and they are located in 10 of our villages. There are nearly 75 parks. Some were set up with sidewalks and recreational features after typhoon Pamela.

I would love to share what I know about these neighborhood parks. They are perfect for conservation, recreation and native habitat objectives. They are not officially part of govt park inventory and are not individually private owned.

Sending blessings to your team. Hope my comments are appropriately placed.

Blessings
Juanita C V Blaz
Kurason I Sengsong
DBA Guam Service Learning Website
[redacted]

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Guåhan 2050 Sustainability Plan Public Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name: Julian Janssen	Email: julian.guam@gmail.com
Village: Tamuning	Phone [redacted]
Name of Organization (type "self" if unaffiliated): self	

*Required

Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
1	2-14	4			Amend Policy IP-5 to read: "IP-5. Federal Consistency Review. GovGuam shall use the federal consistency review process to ensure federal actions are consistent with, in accordance with the Coastal Zone Management Act, the planning and development goals of the Guahan 2050 Sustainability Plan." This would make it clear that the intent is to incorporate policies of the Guahan 2050 Sustainability Plan into the Guam Coastal Zone Management Program, following the review and approval of NOAA.
2	2-14	After 4			Add new IP policy to read: "Land Use Regulation. GovGuam shall use the land use planning process, including approvals through the Land Use District process, Application Review Committee and Guam Land Use Commission, Guam Seashore Protection Commission, and Guam Natural Resources Board, to promote consistency of public and private land and resource use decisions with the planning and development goals of the Guahan 2050 Sustainability Plan." This would strengthen the position of GCMP in being able to use federal consistency, as it is clear that the planning and development goals would be implemented in non-federal projects. Enforceable policies and mechanisms are supposed to be generally applicable, legally binding policies.
3	3-75	2			Add "and green infrastructure" after "benches" in parenthetical phrase on Policy SC-18. This would recognize that not all transportation-related infrastructure are built from metal, concrete, etc.
4	3-75	5			Add clause ""incorporating low-impact development solutions as feasible" following "adequate parking facilities." This would recognize the desirability of adopting low-impact parking facilities, which allow more permeable surfaces, use of rain gardens or bioretention cells.
5	3-75 to 3-77				Add a new SC policy: "Transit Bus Stops. Bus stops should be upgraded to ensure ADA compliant accessibility, adequate signage, and pedestrian and transit rider safety."

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Guåhan 2050 Sustainability Plan Public Comment Form

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
					Bus stops are inadequately developed, with most having no signage at all, frequently no infrastructure at all. This hampers the ability of individuals with a disability or others with limited transportation to use the transit system.
6	3-75 to 3-77				Add a new SC policy: "Higher Speed Transit. The feasibility of incorporating various approaches to encourage higher speed transit and efficient round-trips should be explored. These may include use of bidirectional corridors, transit smart cards, investments in transit signal priority, bus priority lanes, or implementation of a yield-to-bus law." In addition to excessive headways in transit and circuitous routes, the average speed of transit on Guam makes transit less desirable than it otherwise could be. Additional buses reduce average wait time, but not reduce total time in transit to and from destinations.
7	3-75 to 3-77				Add a new SC policy: "Sponsored Rides for Public Beneficiaries Ride sponsorship by public agencies should be explored as a mechanism to offer free, paid transit rides for targeted low-income groups." Developing sponsored ridership arrangements can improve the predictability of revenue for the transit system, plus take the financial burden of riding on transit off of targeted low-income groups, such as GHURA clients, SNAP, work programs, or public health program beneficiaries.
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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Additional comments on GSP2050

'Michael J. Gawel' via 2050 Guahan Sustainability Plan <gsp2050@bsp.guam.gov> Sat, Apr 25, 2026 at 3:24 PM
Reply-To: "Michael J. Gawel" <mgawel@guam.net>
To: gsp2050@bsp.guam.gov, lolalg@bsp.guam.gov, matthew.santos@bsp.guam.gov
Cc: shelton@triton.uog.edu

GSP2050 Planning Team:
Please accept my following comments as additions to the lengthy corrections and comments I provided for the GSP2050 before its original deadline on March 11, 2026. Computer and power outage problems have prevented my submitting these sooner than today.
I was sorry to not have seen a session on GSP2050 at the Conference on Island Sustainability during this week.
The entire GSP2050 plan is very well done and comprehensive, considering the level of resources available to draft it. The policies provided, especially in Chapters 3 and 4, are very valuable if they will be implemented. However, I fear that they will remain as not implemented without sooner action on replacing the current sixty years old Zoning Code and zoning maps. We have lost too much of Guam's development, prosperity and quality of life values and potentials through the existing spot zoning, for so many decades, of individual lots by the Territorial Land Use Commission and Legislative spot zoning.
The resources that developed this draft plan should have prioritized the drafting and updating of Guam's Zoning Code and zoning maps and provided those products in a form for legislative action. If time and resources allow, this should be considered as a practical and urgent needed action.
Will the Guam Legislature actually approve the Plan this year in time for budgeting start up of implementation in FY 2027? Waiting for the legislative approval of this plan and then possible legal and regulatory review by a potentially established future Task Force will only lead to continued erosion of potential practical application of this plan's policies and loss of ability to rescue Guam from the problems of our continuing lack of land use planning results.

If timing and resources allow during draft improvement, I suggest obtaining new input from the UoG Center on Island Sustainability.
I also suggest adding some of the following:
1) Please include maps of existing and planned Photovoltaic Energy sites and discuss existing, planned and projected needs for these.
2) Please include maps and discussions of potential on-shore Ocean Thermal Energy Conversion and Sea Water Air Condition facilities
3) Please include maps and discussions of existing active and closed and potential quarry sites
4) Please consider and discuss anchored fish net/cage culture sites in deeper water,outside our shallow reefs (as successfully practiced commercially in Kona Hawaii)
Thanks for your continued work on the Plan and consideration of these and other inputs.
Michael Gawel

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Fwd: GSP2050

Lola Leon Guerrero, BSP <lolalg@bsp.guam.gov> Fri, May 22, 2026 at 3:34 PM
To: Matthew Santos <matthew.santos@bsp.guam.gov>, 2050 Guahan Sustainability Plan <gsp2050@bsp.guam.gov>

Hafa Adai!

Please see the forwarded email.

---------- Forwarded message ---------
From: **Michael J. Gawel** <mgawel@guam.net>
Date: Tue, Apr 21, 2026 at 8:50 PM
Subject: GSP2050
To: [redacted]
Cc: <lolalg@bsp.guam.gov>, <[redacted]>

Hi Romina,
The Guam Sustainability Plan 2050 Draft expresses some good policies and maps. But it needs public comments, especially on some of its included maps which appear to need corrections. BSP lists a deadline of April 25, 2026 for comments but they might allow more time if you and staff are able to advise with edits, if you haven't already commented..
The link for the Plan and comments is:
https://bsp.guam.gov/gsp2050/

Thanks, Mike

--
Si Yu'os Ma'åse',

Lola Leon Guerrero
Director - Bureau of Statistics & Plans
PO Box 2950
Hagåtña, Guam 96910
Office: 671.472.4201/2/3
Direct: 671.475.9661
Fax: 671.477-1812
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Michael Gawel Personal Comments on the Draft Guahan 2050 Sustainable Plan:

BSP Planners et al., I hope my following comments on the Draft Guahan Sustainability 2050 Plan will be seriously considered. I am sorry that more resources, funding and time were not allowed for the Plan development. I appreciate the challenging efforts and many valuable parts included in the draft Plan such as matching UN Sustainability Goals and providing the useable mapping products.

This draft does well to build on important predecessor Government of Guam planning efforts, such as the 1965 Territory of Guam Master Plan, 1978 Kabales Na Planu Para Guåhan, comprehensive land use plan, the I Tano'-Ta plan passed by law in the 1990s, and the North and Central Guam Land Use Plans (2009). While working in the Bureau of Planning on establishment of Guam's Coastal Management Program I was able to contribute to the 1978 Plan and while a planner in the Territorial Planning Council (TPC) I spent years on the development of I Tano'-Ta. Just as the G50SP prioritizes initial land use planning, the TPC did likewise, while coordinating other sectoral master plans like the Highway Master Plan, and water, wastewater, power and other plans.

Unfortunately, the 1966 zoning regulations and maps, which were valuable when established, still remain and have not been comprehensively replaced. When they were established, the amount of non-Agriculture zoning was appropriate and minimal, while most private lands were undeveloped and zoned Agriculture. But for the last sixty years, legislative and TLUC spot rezoning approvals have disrupted land use planning goals. Except for the I Tano'-Ta Plan, zoning laws were not updated by previous plans. Legislative action is required to make such changes. And although the I Tano'-Ta Plan was passed into law with support and understanding of Senators Marcel Camacho and the late Senators John Salas, Ben Pangelinan and Angel Santos and others, and was implemented for a month, its Implementation Plan was not funded. This funding cut was done when a newly elected senator (who was upset by requirements imposed on his residence in the Mainland) joined other large landowners who had opposed controls on their land uses.

I hoped that the draft GS50 plan would make a stronger statement than "Effective implementation **may** (my emphasis) require updates to relevant land use statutes and agency mandates to ensure alignment with the G50SP." The continuance of lot-by-lot unrelated zone change approvals should be stopped under the G50SP. The Implementation section notes "Existing authorities and plans will remain in effect to the extent that they do not conflict with the mandates of the G50SP." The plan should provide or require development of proposed draft

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legislation and a conceptual draft Implementation Plan to finally replace the old Zoning Code and TLUC, which is not required to follow ARC advice, and also to stop Legislative spot zoning.

As I noted at the recent Dededo public meeting on D50SP, depending on a phone survey, roundtable meetings (who was participating?) and only a few public input meetings is inadequate for such a plan. When we developed the I Tano'-Ta Plan, we held over 100 public input meetings with at least three progressively in each of the 19 villages. They were attended well by Municipal Planning Councils, Mayors and residents. We included many other regular meetings of business and development representatives and Government Agency representatives.

The funding and time limits for GS50 are not adequate and should be reconsidered. Whether the Guam Legislature would support this should be on the public's political agenda. Perhaps Public Law 35-110 could be amended to extend the Plan deadline and provide funds for additional resources to improve it. If our elected leaders do not take action to improve and implement the G50SP, they should be replaced by new leaders who understand and campaign to support comprehensive planning.

Another hot planning issue that should be added to the Plan is Deep Seabed Mining.

I also recommend that the "One Guam" policy incorporating military uses with off-Base uses and plans be emphasized more. Guam needs to continue joint use, development and planning with the Department of War for shared resources such as water, sewer, transportation, power, environment, etc. For example, our 1978 Kabales Na Planu Para Guåhan sought Ocean Thermal Energy Conversion as a clean economical source of power to be planned for the whole Island in the following decade. We still await that and probably only the Department of War could afford to fund the capital costs to implement that. Guam should not lose these shared responsibilities as when we lost the shared education system.

Some particular notes that can be quickly addressed in the Draft Plan follow.

Fig. 3.2 Show Guam Gov. and private ownerships of Isla Dano. And show National Park ownership of Asan and Agat Units.

Fig. 3-7, Correct spelling of area to "I-Papao"

Among toxics in 3.3.3.2, mention the sources of drinking water that are contaminated with trichloroethylene and how the Air Force failed to clean up the contamination and abandoned and transferred the contaminated water facilities to Guam Waterworks Authority

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In 3.3.4.3, 3.3.4.5 and 5.3.6, note how recent Guam law promotes more residential increases in non- sewered wastewater discharges over the Northern Aquifer adding toxics to public well sources although assuming new septic systems will cut rate of adding new toxics in half if built and individually maintained properly.

In 3.3.7.3, The Plan should mention the potential for Waste-to-Energy facilities and suggest location requirements for this. The dis-approved WTE facility planned for Santa Rita was located next to military housing with a school and church downwind. Such a possible risk to adjacent uses should be prevented in development approvals.

In 3.3.7.6, Can the used oil microfinery wait to 2040 for implementation, when we are currently losing the ability to burn waste oil in the old Cabras power plants as they close this year?

In 3.8, We should rethink power supply plans to meet the sudden rapidly increasing demand from improved technology, A.I, and Department of War.

In 3.3.11, Can on-shore OTEC and Aquaculture project feasibility and possibility be noted for planning of Cabras area's old power plant removals?

Can OTEC be included in SC-35?

In 3.5.3.1 and 4.2.5, Can deep off-shore net culture of fishes, as privately successful off Kona Hawaii, be included as quite feasible for Guam if planning (GCMP?) reserves specific use sites and favorable permitting. Can 4.14 note Guam's advantages for native fish species and export and local markets?

In 5.1 I recommend some updating and rewriting about "Climate Change".

In 5.2.1 and SC-11 to SC-14, Reference could be made to the Tumon Development Plan from decades ago which required set-backs of structures from beach erosion sites, as was done at the Hyatt Hotel. But this was another good plan blocked by politics.

In 5.2.6, I recommend OTEC and shared Deep Seawater Air Conditioning be added.

In Figure 5-62, in Table 6.1 and Fig. 6.7, make sure that DOI's National Park Service subaerial and submerged reef units and the Ritidian National Wildlife Reserve and Guam National Wildlife Refuge Overlay are accurately covered and proposed changes at Ritidian noted.

In Figure 5-62, Anao Conservation Area is missing. Can the adjacent Tano, Tasi Yan Todu Conservation area be added, too? And can US National Natural Landmarks, as mapped by WERI or DOI, be added?

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Re: Michael Gawel Comments on Draft Guahan 2050 Sustainability Plan

Lola Leon Guerrero, BSP <lolalg@bsp.guam.gov> Wed, Mar 11, 2026 at 4:22 PM
To: "Michael J. Gawel" <mgawel@guam.net>
Cc: edwin.reyes@bsp.guam.gov, esther.taitegue@bsp.guam.gov, shelton@triton.uog.edu, sabina@senatorperez.org, barbara_alberti@nps.gov, 2050 Guahan Sustainability Plan <gsp2050@bsp.guam.gov>

Hafa Adai Mike,

I acknowledge receipt of your email with your comments. Please be apprised we have extended the comment period for the 2050 Guahan Sustainaiblity Plan to April 25, 2026.

Thank you.

On Wed, Mar 11, 2026 at 4:02 PM Michael J. Gawel <mgawel@guam.net> wrote:

> Please find attached my limited comments to the Draft Guahan 2050
> Sustainability Plan.
> Please contact me by email for any questions.
> Thank You,
> Mike Gawel

--
Si Yu'os Ma'åse',

Lola Leon Guerrero
Director - Bureau of Statistics & Plans
PO Box 2950
Hagåtña, Guam 96910
Office: 671.472.4201/2/3
Direct: 671.475.9661
Fax: 671.477-1812
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Mike Gawel comments on Guahan 2050 Plan.docx
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Senator Sabina Flores Perez

2050 GSP Public Comment Form

Håfa Adai,

I am submitting this comment in my capacity as an elected official regarding the 2050 Sustainability Plan. The goals of the Plan are holistic and effective, and I appreciate the effort to establish a long-term vision for Guam's future. However, I remain concerned that the process did not fully capture the broad range of concerns, experiences, and aspirations across our island community. Greater inclusiveness and broader public participation during the early stages of information gathering would strengthen the Plan and contribute to more effective long-term outcomes. I believe it is important to further engage the community on a larger scale before the Plan is finalized and re-drafted.

I also strongly recommend adding a dedicated section or chapter addressing the growing role and emerging challenges of Artificial Intelligence (AI) throughout the Government of Guam. As AI technologies become increasingly integrated into government systems, Guam will need thoughtful regulations and safeguards to address misinformation, inaccurate data, transparency, and the ethical use of AI in public decision-making, planning, and the judicial system. From a land-use and infrastructure perspective, this should also include consideration of data center development and the potential impacts on Guam's land, water, energy consumption, and environmental resources.

Additionally, I remain greatly concerned about the long-term effects of federal funding reductions and broader geopolitical instability on Guam's economy and cost of living. While these issues are briefly acknowledged in the draft Plan, I believe they warrant a more substantial and focused discussion. There are many external factors beyond Guam's direct control that may significantly affect our island's economic stability, public services, and long-term resilience. I recommend adding a section specifically addressing strategies for adapting to federal funding cuts, global economic volatility, supply chain disruptions, and geopolitical shocks.

Finally, I respectfully recommend that the Sustainability Plan be reviewed and updated on a three-year basis rather than every five years. Shorter review periods would allow the Plan to remain more flexible, responsive, and adaptive to rapidly changing conditions and emerging challenges that may require immediate recalibration.

Thank you for the opportunity to provide comments on this important matter. I look forward to continued collaboration and discussion as this process moves forward.

Si Yu'os ma'åse',

Sabina Flores Perez

Sabina Flores Perez
Senator, *I Mina'trentai Ocho Na Liheslaturan Guåhan*

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Guåhan 2050 Sustainability Plan Public Comment Form

Once complete email form to GSP2050@bsp.guam.gov

Name:* Sabina Flores Perez (Senator)	Email: office.senatorperez@guamlegislature.gov
Village:* Hagåtña	Phone #: (671)989-2968
Name of Organization (type "self" if unaffiliated): Guam Legislature	

*Required

Comment #	***Page #***	***Sec/Par.***	***Line***	***Fig/Table #***	***Comment/Recommended Changes***
1	1-3	Community Engagement			I recommend providing the public with the referenced "Appendix xx," to provide us with information on the subject matter experts, primary stakeholders, and focus groups who were involved in shaping the Sustainability Plan. This information is critical to transparency. I recall Sustainability Plan surveys were taken at BSP's Planner Symposiums; were these results also included in the development of this Plan? If so, that should be stated under Community Engagement. Overall, it seems as though increased and more widespread community engagement may be needed to ensure this Plan has captured a multitude of perspectives and opinions.
2	1-4	Regional Meetings			How were invitations for the regional meetings distributed to the public? BSP should provide this information, as well as exact numbers of residents who attended these meetings in each village.
3	1-10	Evolving Emphases and Differences			It is stated that 'some topics in 2022 received less attention in 2024/2025.' Can BSP clarify if anything changed in the ways surveys were structured within this timeframe or did the survey remain the same throughout the process? Can the evolution of answers be attributed to different demographics of survey takers in 2022 vs. 2024/2025?
4	1-11	Equity			I recommend amending the phrase "How can Guam sustain the military buildup…" to read: "How can Guam sustain land availability, ensure

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Comment #	*Page #*	*Sec/Par.*	*Line*	*Fig/Table #*	*Comment/Recommended Changes*
					infrastructure and housing needs are met, and protect CHamoru cultural sites and artifacts in spite of the military buildup?"
5	1-11	Social Cohesion			In reference to transit-accessible development, please add: "to ensure all residents- especially elders, individuals with disabilities, youth, and lower-income households…"
6	1-11 - 1-12	Social Cohesion			Instead of using the term "senior-friendly," use "accessible designs" instead.
7					
8	1-19 – 1-20	1.2.4 Cultural Heritage and Indigenous Connections			The G50SP needs to clarify that the military buildup and military construction is currently one of the biggest threats to cultural resources, including native flora and fauna. The Plan should also clarify that 'preservation-in-place' should be the main goal of protecting ancient remains, historic sites and cultural artifacts. Preservation-in-place provides us with a full picture of how our ancestors once lived. Once historic sites are disturbed and resources are removed, these immediate connections are severed and difficult to piece back together. Preservation-in-place should be a default practice by the Department of Defense (DoD), as cultural artifacts continue to be lost or broken in the process of military construction despite agreements meant to preserve them. The Plan should highlight the importance of the National Historic Preservation Act Section 106 process vs. relying on Programmatic Agreements for the protection of historic sites and cultural resources. However, BSP should request to be a 'consulting party' for Section 106 processes and all existing programmatic agreements.

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Guåhan 2050 Sustainability Plan Public Comment Form

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					In terms of connecting the community to our culture, the Plan should include a Public Access Plan that will be fully implemented for both cultural properties on and off DoD property.
9	1-20	1.2.4 Community Health & Well-Being			There is a need for additional sites for placement of junk/abandoned vehicles. The Plan should identify lots designated for the safe storage of junk/abandoned vehicles in ways that don't pose fire or contamination hazards. Designation of these lots should be aligned with GEPA and other safety regulations, preferably in an already-developed area. Enforcement would be needed to ensure that these vehicles are safely stored, with all of its dangerous contaminants and components removed and recycled/properly disposed of.
10	2-11	2.2 Coordination with the DoD			Other aspects of coordination with the DoD that will increase Guam's sustainability that should be included in this Plan: • Negotiation/Coordination for the assessment, cleanup, and return of unused federal lands to their original owners or to the Government of Guam (e.g. the CHamoru Land Trust Commission-CLTC) when original owners cannot be found. • Negotiation or opposition when the DoD aims to utilize or purchase private land for the development of military housing. No increase in DoD footprint and no further acquisition of lands by Department of War (DoW). • Negotiation to prevent further harm to ecologically and culturally sensitive lands caused by military construction. • Negotiation/coordination for Guam residents to be included within the Radiation Exposure Compensation Act (RECA).

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					• Negotiation/coordination for funding infrastructure development (e.g. energy, sewer/public wastewater systems, telecommunications) on CLTC land specifically for the development of housing. • Negotiation to increase funding for contamination mitigation and requiring the DoD to clean up Superfund sites or prohibit Open Detonation of munitions waste. • Negotiations for Guam to not be required to pay for Fena Lake water. I request that BSP works towards collaborating with the DoD to establish data sharing with GEPA, GWA, or WERI regarding potential contaminants in the Fena Reservoir. In previous years, it seemed as though the DoD shared no data regarding Fena Reservoir with local agencies. Although pg. 2-13 does have an objective that states "Coordinate proactively with the U.S. DoD to mitigate impacts," it may be helpful to list specific goals/plans such as the ones listed above.
11	2-12	2.3 Land Use & Sustainability for the Island and People	Last line of the first paragraph		Please clarify the use of the word "mitigation" in this context. What are we aiming to mitigate and what are 'mitigation investments' (later in the same section) referring to? There needs to be a full accounting of cumulative impacts by DoD, and we need to advocate for avoiding these impacts rather than mitigating them.
12	3-16	3.2.6	MU Mixed Use C/R-2	Table 3-3	MU Mixed Use: Hotels are mentioned in both R-2 Permitted Uses and under Conditional Uses. It would be best to keep "hotels" under Conditional Uses rather than Permitted Uses within mixed-use developments. The primary focus for

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					Mixed Use developments should be residential rather than tourist-affiliated. Therefore, removing hotels as a permitted use may be necessary. The Plan may also need to establish a list of businesses that are not allowed in mixed-use zones, known as commercial-use restrictions, such as: • bars, night-clubs, gas stations, liquor stores, vape stores, cannabis dispensaries, heavy manufacturing plants, and adult-oriented shops and entertainment establishments, and others in order to prevent a mix of uses unsuitable for residential use.
13	3-16 – 3-22	3.2.6		Table 3-3	Could BSP please highlight all the specific changes suggested for zoning (that differ from the current zoning law) in a different color? This will make it easier to compare suggested changes to current law.
14	3-20	3.2.6		Table 3-3	Under RL/Rural Lands, Conditional Uses, remove “golf courses” from #6. To perpetuate responsible and sustainable land-use, it is critical to discourage any further use of lands as ‘golf courses’ as they are a waste of green space and water. I respectfully request that BSP consider promoting policies to discourage the proliferation of recreation that harms the environment. How can we amend the law to promote this initiative? • #7: Extractive industry should not be allowed near any type of residential or agricultural area, as they lead to high rates of chronic illness, environmental degradation, noise impacts, and are overall unsuitable for community-living. These same comments apply to all other land-use designations, including A- Agriculture.

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15	3-23	3.3.1			**Add to:** • (Protecting the NGLA): Collaborate with the Guam Environmental Protection Agency to update rules and regulations regarding enforcing the construction of public sewers prior to development/construction, including requiring all/any developers to pay for sewage infrastructure. • (Sustainable Water and Wastewater Management): ○ Prioritize and incentivize businesses towards low-impact development vs. businesses that intensively consume resources at the detriment to the resident population. ○ Ensure GEPA develops regulations for water catchment systems and incentivize the addition of water catchment systems in homes and businesses.
16	3-34	3.3.3.2	Threats to Water Sources: after last paragraph		Add paragraphs that discuss: • Ensure funding for DPHSS Environmental Health branch to conduct islandwide testing of water stations at private businesses to ensure filtration systems are operating properly and to enforce contamination mitigation. • Develop policy to test/screen local and imported bottled water for contaminants and ban those which test positive for high levels of contaminants. (there is no international regulatory body for testing bottled water).
17	3-40	3.3.4.5			Although this suggestion is not a GWMP strategy, it could be added to the Plan:

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					• Density of septic systems needs to be regulated so that it does not impair water quality. This can include amending the existing law pertaining to parental and decedent lots. • Prevent harmful and illegal subdivisions that utilize septic systems through enforcement and monitoring.
18	3-47	3.3.5.3			GRTA is set to receive around 40 new buses for public transportation. This can be added to the updated Sustainability Plan. However, adequate maintenance of these buses must be established as a priority. Another idea for the Plan would be to discuss retrofitting these buses in the future to transition them from diesel to either electric or bio-fuel. Another aspect of GRTA that needs improvement is the condition of leased vehicles/vans from private businesses. Before any vehicle is purchased or leased from private companies, they need to be inspected to ensure that they are in good working order and comply with the terms of the lease.
19	3-47/48	3.3.5.4			At areas of high traffic, more crosswalks with street lights are needed to prevent pedestrian injury and fatalities. To improve accessibility, install crosswalk infrastructure with sounds such as those in Japan- for people who are visually impaired.
20	3-56	3.3.7.2			Another aspect of collaboration with the U.S. DoD should include encouraging waste reduction/diversion practices on-base. For example, collaborating with base authorities to enforce plastic bag bans and the existing Bottle Bill regulations. Without DoD collaboration, enactment of the bottle bill has been indefinitely delayed. This program should be re-enacted with base collaboration.

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21	3-59	3.3.7.6			The Islandwide Residential Waste Collection law (Public Law 38-39) has passed and is set to enact some time in 2027. Please update the Plan to reflect this change in law.
22	3-62	3.3.8.3	First paragraph		It should be mentioned that the Ukudu Power Plant is almost operational now in 2026.
23	3-65	3.3.9.1	Last paragraph		Precautions need to be taken to ensure that data centers do not proliferate to the extent that they negatively impact water resources or harm the environment. Land-use and siting for data centers must be cognizant of water-use, power generation capacity, and surrounding residential areas- to ensure the community is safe from any harm that data centers (such as those in the states) can cause. In fact, the newly constructed data center in Tamuning should be heavily monitored for years to come, to ensure it does not negatively impact the surrounding community. I recommend that this Plan discuss the potential negative impacts associated with data centers and the use of artificial intelligence, especially those impacts on the environment and infrastructure.
24	3-69	3.3.10			More must be done to ensure that fire suppressant (firefighting foam) used at the airport does not become a significant source of PFAS contamination, in regard to runoff and the protection of nearby water sources. Implement use of a PFAS-free firefighting foam as soon as practicable when it's available. The Plan should discuss plans to mitigate the run-off of contaminants like PFAS from the airport.
25	3-77	SC-32			Edit "disproportionally" to "disproportionate."
26	3-78	SC-35			Regarding land to avoid placing large solar arrays, please include:

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					• land near (within a certain distance of) watersheds/atop the Groundwater Protection Zone (GPZ), and • culturally significant sites with medium to high potential of having cultural artifacts &/or ancestral remains.
27	3-83	3.4.2			Recommend policies pertaining to blight buildings and areas.
28	3-92	SC-57			Address setback changes that can increase density while avoiding environmental impacts such as 'increasing the height restrictions for residential buildings in sewered areas only.'
29	3-104	Land Use Policy Implications, last paragraph		Suitability Guidelines for Submerged Cable Landings on Guam (2023)	Edit "Cham01rn Land Trust Commission" to CHamoru Land Trust Commission
30	3-117	Agriculture and Rural Lands Policy	Add to list		• Encourage youth farming initiatives: DOAG in collaboration with UOG CIS and non-profits such as Guahan Sustainable Culture and/or Guam Unique Merchandise & Art (GUMA) to promote farming & agriculture as a steady career path and/or economic driver. Encourage gardening or farming in public schools as an extracurricular or core class, if possible. • Improve policies or funding to combat the spread of invasive species. One option could be to prohibit the import of fertilizers or to subsidize/encourage the use of locally made compost & fertilizer. • Promote the use of community gardens for food distribution.
31	3-117/3-125	3.7.1/3.7.4		Hazard Risk Reduction & Disaster Safety	The Sustainability Plan should take into consideration all the already existing infrastructure near the coastline that may need to be moved inward if sea-levels continue to rise over the next decades, including roads & streetlights close to the coast in Merizo, Inalajan, Agat, Anigua, east Agana, etc., housing developments, cemeteries, & other infrastructure that may eventually be impacted by sea-level rise. Despite

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					having plans for coastal breaks and seawalls, etc., we should also have plans in place to move infrastructure inland, gradually & when needed. Priority for stormwater drainage and flood mitigation should be given to areas in the south that are prone to extreme flooding, due to recent incidents during extreme weather events.
32	3-135	3.7.6	Wildfire		If possible, DOAG & GFD could also conduct wildfire educational campaigns & fire prevention trainings with Guam's licensed hunters and during hunting derbies, since several fires are thought to occur as a hunting strategy.
33	4-16	4.3.6			Utilize Ko'ko's Island as a model for eco-tourism and conservation, with particular activities such as: • Enabling nature walks and conservation tours for small groups (tourists/locals) • Providing grants/assistance to groups like Friends of Island Dano for snake eradication • Camping trips for tourists and locals, with local guides from Malesso • Bird watching (ko'ko' bird) tours
34	4-23	4.6			Career-based educational opportunities and workforce development should start in middle school through high school. We should promote the construction of facilities related to trade, art, etc. in GDOE schools, or the conversion of already existing classrooms for such purposes.
35	4-24	4.6.1		4-5	19 is not an adequate sample size for this data graphic. I recommend that responses be broken down by village, number and percentage of respondents, and answers.

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					Throughout the Plan, each graph should list the number of respondents to each survey. Having context behind the provided data will give better insight into answers/the community's greatest concerns.
36					
37	5-7			Summary of Water Resources on GU: Recommendations	To "Land Use Planning," add: encourage the development of sewer infrastructure to replace septic systems in areas over the NGLA- with policies that require developers to install sewage infrastructure for new housing/commercial developments and/or provide funding for the broad installation of sewer systems throughout northern Guam. To the list, add: "Research the potential effects the proliferation of data centers could have on water resources throughout Guam."
38	5-55	5.4.4	Protecting Sensitive Terrestrial Habitats		Guam is biodiverse in its species and ecosystems, which include: - Limestone forests - Wetlands - Savannas - Mangrove - Coastal areas - Ravine/Riparian areas There is a huge impact on these terrestrial habitats due to development and deforestation, and more needs to be done to protect these unique native ecosystems, in terms of (1) removing invasive species, (2) successfully outplanting native tree species, and (3) protecting critically endangered plants and animals from development and the military buildup. We need an integrated ridge-to-reef conservation approach, with residents becoming stewards of sensitive terrestrial and marine habitats.

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					Even with federal laws in place, protection of native species has faltered. Therefore, more local measures are needed to protect species that fall through the cracks such as the mother Hayun Lagu tree.
39	6-12	6.2.2	Land Use & Cultural Heritage		After Guam Preservation Trust, please add a section that discusses the job of the State Historic Preservation Office in cultural preservation especially in regard to military & federal projects, reburials, and collaboration with the Cultural Repository. Please also add a section about the Cultural Repository. Programmatic Agreements between SHPO & federal partners could be explained in this added section as well. Or Programmatic Agreements can be explained in Section 6.2.5 on page 6-16 (the final paragraph). Please note that the Guam Preservation Trust is currently asking for responses to the Guam National Heritage Area Feasibility Study by the National Park Service: https://parkplanning.nps.gov/projectHome.cfm?projectId=124223
40	6-22	Following VC-23			Add: • Promote preservation-in-place as the main method of protecting ancestral remains and cultural artifacts across all agencies. • Prepare safe & secure public spaces (e.g. museums, set aside areas of a park) for displaying repatriated artifacts to be displayed. Prepare specific sites for the return and reburial of repatriated ancestral remains.

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41	6-24	6.3.2			Please clarify the following statement: "The land use [sustainability] plan also recognizes the current effort to site work toward potentially developing a new hospital and has assigned a property designation accordingly."
42	6-31	6.3.5:	"The plan also supported targeted investments in:"		Can the Plan include a targeted investment in designing and constructing an ADA-accessible park, including playgrounds that can accommodate children and adults with disabilities, as well as their mobility devices?
43	8-5	8.1.3	Short-term (2025-2030)		In the short-term, the Plan should include upgrading government software and IT systems so that they are interoperable, enabling multiple agencies to communicate/share certain data and information effectively, efficiently, and with little error or loss of data. In the long-term, the Plan should ensure efforts are geared towards relocating important infrastructure from the coast to avoid impacts of sea-level rise.
44	8-10	Implementation		Table 8-1	Please add the following agencies to the task force: OTECH, DOAG, GDOL, GEDA, GDOE
45	8-12	Public Services		Table 8-1	Add: "including improving ADA compliance and accessibility," to "Prioritize infrastructure investment in designated urban centers"
46	8-12	Natural Hazards		Table 8-1	Add Utilities like GPA & GWA to Partners (to help plan the relocation of critical infrastructure).
47	8-13	Tourism and Cultural Enterprise		Table 8-1	Add GEDA and GDOL as partners

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48					Please add a section or chapter to the Plan that includes "Lessons Learned from Typhoon Sinlaku" which can include: • Community preparations: ensuring all households know the dangers of running generators indoors through mass media and door-to-door (flyer) campaigns, prohibiting & preventing price gouging across the island, education regarding the potential for tsunamis (combatting myths), cutting down dangerous trees and foliage in advance, and clearing out stormwater drains or creating deeper drainage ditches, etc.; • Potential utility responses or infrastructure needed; • Potential improvements for emergency response; etc.

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Gmail

April Trinidad <april.trinidad@bsp.guam.gov>

Public Comment: Guahan 2050 Sustainability Plan

Office Senator Perez <office.senatorperez@guamlegislature.gov> Fri, May 22, 2026 at 4:01 PM
To: GSP2050@bsp.guam.gov
Cc: Senator Sabina Perez <senator.perez@guamlegislature.gov>

Hafa Adai,

Please see attached public comment from Senator Sabina Flores Perez on the Guahan 2050 Sustainability Plan.

Thank you, we appreciate the opportunity to participate in this initiative.

Please confirm receipt of this email.

Si Yu'os ma'ase,
- Office of Senator Perez

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