



# GUAM CEDS

Guam Comprehensive Economic Development Strategy

**2020-2025**

Made Possible by:

U.S. Department of Commerce

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the Guam Economic Development Authority



*Aturidåd Inadilånton Ikunumihan Guahan*

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GEDA CEDS Committee and Contributors
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# MESSAGE FROM THE OFFICE OF THE GOVERNOR

UFISINAN I MAGA'HÅGA  
OFFICE OF THE GOVERNOR



LOURDES A. LEON GUERRERO  
MAGA'HÅGA • GOVERNOR



JOSHUA F. TENORIO  
SIGUNDO MAGA'LĀHI • LIEUTENANT GOVERNOR

*Håfa Adai!*

The economic growth and prosperity for our island and its people is of utmost importance to the Leon Guerrero Tenorio Administration. Achieving sustainable economic growth and a resilient economy requires a comprehensive and community-driven approach that incorporates the thoughts and ideas of our people. Through the efforts of the Guam Economic Development Authority (GEDA), it is with great pleasure that we present the Guam Comprehensive Economic Development Strategy (CEDS).

This innovative strategy-driven report was generated through a collaborative effort of Guam's CEDS Committee members, government of Guam agencies, municipal and corporate leaders, private business owners, non-profit organizations, and community interest groups that shared a common goal of positive and sustainable economic development for Guam and its people.

An in-depth overview and analysis of opportunities and challenges that affect our island's overall economic growth was conducted and, in this process, obstacles that exist in expanding our island's economy were identified. The Guam CEDS identifies capital improvement projects and other programs that are designed to build capacity and guide the economic growth and prosperity of our island.

Our economy continues to be driven by tourism, government, private sector, and military construction. We believe that this report continues to reinforce the strength of these industries. Additionally, it has been our goal to expand and diversify Guam's economy to protect against the potential volatility of these economic sectors through the inclusion of agriculture and aquaculture projects and programs that will lead our island toward a more sustainable and resilient economy.

Our economy is a top priority of the Leon Guerrero Tenorio Administration and through the leadership of the GEDA, this plan reflects current, ongoing, and future projects and programs that we believe will make our economy stronger and more resilient for the future.

*Si Yu'os Ma'āse!*

*Lourdes A. Leon Guerrero*

Lourdes A. Leon Guerrero  
Maga'hågan Guåhan  
Governor of Guam

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## MESSAGE FROM THE GEDA CEO



**MELANIE MENDIOLA**  
Chief Executive Officer/Administrator  
*Ge'helo' Eksekutibū Ofisiåt*

Bueñas yan Håfa Adai!

The mission of the Guam Economic Development Authority is to develop a sound and sustainable economy through innovative programs that preserve and promote local culture, economic opportunities, and quality of life. In order to accomplish this mission, Governor Lourdes Leon Guerrero, her advisors, the Board of Directors of the Guam Economic Development Authority and CEDS Committee Members, have put together this document outlining the state of our island's economy and more importantly, our immense potential for a thriving future.

It is through this document that we have articulated plans to diversify our economy which is currently highly concentrated in tourism and defense sectors. The projects herein examine the viability of new industries including the telecommunications industry, aquaculture, in addition to reviving our agricultural industry. These projects are meant to enhance the lives of the people of Guam through increased industry diversity, the promotion of economic resiliency, and greater job opportunities for the current and future population of our small island.

We are happy to present this working document to the U.S. Economic Development Administration. We call it a working document because we believe the content within will continue to evolve as our island grows and we plan to continue to populate it as the island's economic portfolio becomes increasingly complex. We are grateful for the support of the U.S. Economic Development Administration and for the trust of the Office of the Governor in compiling this document on behalf of the people of Guam.

Si Yu'us Maase,

  
Melanie Mendiola



# INTRODUCTION

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## ABSTRACT

The Comprehensive Economic Development Strategy (CEDS) Report is a strategy-driven plan for regional economic development. A CEDS Report is the result of a regionally owned planning process designed to build capacity and guide the economic prosperity and resiliency of an area or region. It is a key component in establishing and maintaining a robust economic ecosystem by helping to build regional capacity (through hard and soft infrastructure) that contributes to individual, firm, and community success. The CEDS Report provides a vehicle for individuals, organizations, local governments, institutes of learning, and private industry to engage in a meaningful conversation and discuss what capacity building efforts would best serve the economic development of the region. Project recommendations include the promotion of economic stability, diversification, and regional competitiveness. It also identified infrastructure needs that may be eligible for Economic Development Administration (EDA) funding.

This report was prepared by the Guam Economic Development Authority (GEDA). GEDA serves as the oversight of the CEDS Committee for this project. The CEDS Committee functioned as the advisors of planning throughout the process and were responsible for developing and updating the CEDS. In addition, assistance and cooperation was received from the Government of Guam and private sector partners.

## MISSION STATEMENT

To support economic development plans and initiatives aimed at promoting regional competitiveness, a more diversified economy, preservation of culture and the local environment for the long-term economic sustainability for the people of Guam.

## EXECUTIVE SUMMARY

The 2019 CEDS Report is a planning document paving a path forward for Guam over the next five years. This planning tool is used by jurisdictions around the United States (U.S.) as a foundation for sustainable economic development that will help expand our local industries and the required infrastructure for Guam's long-term growth and sustainability.

This CEDS Report is a collaborative effort that reflects a concerted effort to coordinate economic development strategies throughout the island.

The EDA of the U.S. Department of Commerce (DOC) awarded funding to the Government of Guam to develop a 2019 CEDS for Guam to include capacity building to utilize industry cluster analysis as an economic development tool. There are six inter-related parts of this project:

- 1** Economic goals and objectives
- 2** Economic assets
- 3** Economic trend and outlook
- 4** Strategies for lead economic sectors
- 5** Economic development challenges
- 6** Strategic development projects



## INTRODUCTION

The CEDS Report focuses on goals and objectives that prioritize the following:

- Developing Infrastructure
- Developing Economic Diversification by Establishing Viable Industries
- Promoting Potential New Industries
- Expanding Workforce Development Opportunities
- Fostering Cultural and Sustainable Management of Natural Resources

Public participation was sought through workshops, focus groups, and public informational meetings throughout the government and the community. A forum was held on August 27, 2018, that was attended by a diverse group of public, private, and community representatives. A panel of selected individuals from government agencies and private sector partners participated in and addressed questions regarding their experiences and views about Guam's economic future. Breakout sessions were held to obtain participant feedback on specific sectors of the island. The feedback provided was essential in forming an understanding of Guam's economic development toward supporting social, environmental, and economic goals.

Key economic drivers for Guam as a whole were identified. Tourism remains the dominant economic engine with one out of every three jobs directly or indirectly related to the tourism industry. Opportunities for diversification exist in the expansion of economic sectors such as :

- Agriculture (Farming)
- Aquaculture
- Architecture and Engineering
- Construction
- Economic Opportunity Zones
- Federal and Military Base Operations
- Financial Institutions
- Green Technology
- Health Care
- Telecommunication
- Tourism
- Transportation and Distribution

Throughout the development of this CEDS Report, meetings were held with stakeholders to identify physical infrastructure needs, propose projects to address these needs, and identify alternative sources of funding and/or matching funds for projects.

In conclusion, comprehensive input was received and recommended projects were reviewed, analyzed and rated to meet the criteria for funding and consideration by the CEDS Committee.



# INTRODUCTION

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This CEDS report focuses on goals and objectives that prioritize the following:



## DEVELOPING INFRASTRUCTURE

**Objective:** To improve and develop new infrastructure to support existing and future economic development growth opportunities.

**Implementation plan:** Coordinate with government entities and actively participate in the development of agency master plans.



## DEVELOPING ECONOMIC DIVERSIFICATION BY ESTABLISHING VIABLE INDUSTRIES

**Objective:** To develop specific projects and programs aimed at developing new industries to support job creation and economic diversification within Guam's municipalities.

**Implementation plan:** Continued collaboration with stakeholders to exchange best practices and lessons learned in economic diversification with a focus on addressing ways to expand institutional capacity and the understanding of how economic diversification can be integrated to develop sustainable new industries.

Develop and embrace a circular economy in Guam to increase gross state product, increase labor, and reduce waste by promoting sustainable practices through circular-type initiatives.



## PROMOTING POTENTIAL NEW INDUSTRIES

**Objective:** To capitalize on opportunities that promote new industries that will expand market segments within Guam's economy.

**Implementation plan:** A general overview of all potential industries will be conducted based on cost-benefits and return on investment.



## EXPANDING WORKFORCE DEVELOPMENT OPPORTUNITIES

**Objective:** To develop a more skilled labor workforce by investing in workforce education and training opportunities.

**Implementation plan:** Identify projects and programs that encourage building a future skilled-trades workforce to meet fluctuating demands.



## FOSTERING CULTURAL AND SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES

**Objective:** To build resiliency in sustainable management of the island's culture and natural resources.

**Implementation plan:** Collaborate with public and private sector entities to develop programs and initiatives that encourage and promote greater understanding about the importance of the preservation of culture and other natural resources unique to the island.

### STRATEGIC DIRECTION

With the concept of developing economies in mind, the CEDS will be updated on an annual basis for the inclusion of new projects. Approval of the final CEDS will afford public and private entities with the opportunity to apply for federal grant funding for assistance in public works and planning projects related to economic development. Lead agencies will be identified as it pertains to the project purpose and function. GEDA will provide technical assistance to these entities in the packaging of grant proposals.

### THE CEDS PROCESS

This CEDS is a planning vehicle developed to leverage planning resources available for: sustainable economic development, expansion of local industries, and the necessary infrastructure to support Guam's long-term growth and sustainability.

Industry clusters are identified that directly impact the island's state of the economy and summarizes past and present economic activities for the island supported with the most current data available.

The CEDS includes an in-depth overview and analyses of certain challenges and present economic conditions affecting the island's overall economic growth. In this process, we identified specific obstacles that exist in transforming Guam's economy and outlined opportunities for future economic development.

Focusing on our goals and objectives, The CEDS Committee outlined developmental projects, programs and initiatives through an inventory listing based on priority ranking. The inventory listing addresses industry specific SWOT analyses for implementation and strategic action planning efforts.

With respect to infrastructure capacity building, Guam's directional priorities are influenced by the ability to obtain implementation resources through federal grants, loans, bonds, revenue allocation, and other annual budgetary processes.

The implementation of projects that are not incorporated into short and long term planning efforts are addressed in the respective industry strategy components outlined in the latter sections of this plan.

### CEDS COMMITTEE

The CEDS process involves strategic planning efforts led by the CEDS Committee. This Committee is the planning group responsible for guiding the development of goals and objectives outlined in the CEDS. The Committee members include:

- Public Officials
- Village Mayors
- Municipal Planning Councils
- Private Sector Industry Experts
- Representatives from Institutions of Higher Education

A full listing of the CEDS Committee members can be found on page 139.

## LIST OF ABBREVIATIONS

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<b>AI</b>	Artificial Intelligence	<b>GHRA</b>	Guam Hotel and Restaurant Association
<b>AJC</b>	American Job Center	<b>GHS</b>	Guam Homeland Security
<b>BSP</b>	Bureau of Statistics and Plans	<b>GHURA</b>	Guam Housing and Urban Renewal Authority
<b>CAHAT</b>	Community Affordable Housing Action Trust	<b>GIAA</b>	Guam International Airport Authority
<b>CCU</b>	Consolidated Commission on Utilities	<b>GMH</b>	Guam Memorial Hospital
<b>CDFI</b>	Community Development Financial Institutions Fund	<b>GMTC</b>	Guam Marianas Training Center
<b>CEDS</b>	Comprehensive Economic Development Strategy	<b>GPA</b>	Guam Power Authority
<b>CIP</b>	Capital Improvement Projects	<b>GSWA</b>	Guam Solid Waste Authority
<b>CNA</b>	Certified Nursing Assistant	<b>GTA</b>	Guam Trades Academy
<b>CNMI</b>	Commonwealth of the Northern Mariana Islands	<b>GTIP</b>	Guam Transportation Improvement Plan
<b>CY</b>	Calendar Year	<b>GTP</b>	Guam Transportation Program
<b>DHS</b>	Department of Homeland Security	<b>GVB</b>	Guam Visitors Bureau
<b>DOAg</b>	Guam Department of Agriculture	<b>GWA</b>	Guam Waterworks Authority
<b>DOC</b>	Department of Commerce	<b>HCV</b>	Housing Choice Vouchers
<b>DoD</b>	Department of Defense	<b>HRN</b>	Haul Road Network
<b>DOI</b>	Department of the Interior	<b>HRRA</b>	Hagåtña Restoration and Redevelopment Authority
<b>DPW</b>	Department of Public Works	<b>HUD</b>	Department of Housing and Urban Development
<b>DRT</b>	Department of Revenue and Taxation	<b>IOT</b>	Internet of Things
<b>EAP</b>	English Adventure Program	<b>ITA</b>	International Trade Administration
<b>EDA</b>	Economic Development Administration	<b>LIC</b>	Low Income Communities
<b>ELI</b>	English Language Institute	<b>MALS</b>	Marine Aviation Logistic Squadron
<b>ESL</b>	English as a Second Language	<b>NASS</b>	National Agriculture Statistics Service
<b>FAA</b>	Federal Aviation Administration	<b>NavFac</b>	Naval Facilities Engineering Command
<b>FCAG</b>	Farmers Cooperative Association of Guam	<b>NCTS</b>	Naval Computer and Telecommunication Station
<b>FDIC</b>	Federal Deposit Insurance Corporation	<b>NDAA</b>	National Defense Authorization Act
<b>FEMA</b>	Federal Emergency Management Agency	<b>NSAC</b>	National Sustainable Agriculture Coalition
<b>FHWA</b>	Federal Highway Administration	<b>OBRA</b>	Omnibus Budget Reconciliation Act
<b>FIT</b>	Free Independent Travelers	<b>PAG</b>	Port Authority of Guam
<b>FSM</b>	Federated States of Micronesia	<b>PUC</b>	Public Utilities Commission
<b>FSS</b>	Family Self Sufficiency	<b>QCF</b>	Qualified Opportunity Fund
<b>FTA</b>	Federal Transit Administration	<b>ROSS</b>	Resident Opportunity and Self Sufficiency
<b>FTHO</b>	First Time Homeowner	<b>SARE</b>	Sustainable Agriculture Research and Extension
<b>FY</b>	Fiscal Year	<b>SBA</b>	Small Business Administration
<b>GBM</b>	Guam Business Magazine	<b>STEM</b>	Science, Technology, Engineering, and Mathematics
<b>GBNE</b>	Guam Board of Nurse Examiners	<b>TCJA</b>	Tax Cuts and Jobs Act
<b>GCA</b>	Guam Contractors Association	<b>TEU</b>	Twenty-foot equivalent Unit
<b>GCC</b>	Guam Community College	<b>TSA</b>	Transportation Security Administration
<b>GDOL</b>	Guam Department of Labor	<b>U.S.</b>	United States
<b>GDP</b>	Gross Domestic Product	<b>UOG</b>	University of Guam
<b>GEDA</b>	Guam Economic Development Authority	<b>USCIS</b>	U.S. Citizenship and Immigration Service
<b>GHC</b>	Guam Housing Corporation	<b>USEPA</b>	U.S. Environmental Protection Agency



Figure 1.1

As the westernmost territory of the U.S., the island of Guam is positioned to expand its development options as significant geopolitical and economic events take place. An increased presence of U.S. defense forces and assets in Guam due to regional and global security concerns have driven part of the economic opportunities that lie ahead. With respect to other areas of prospect, the changing dynamics of the tourism industry continues to offer high investment yield for the local economy. In addition, development strategies crafted in this plan focus on ways to diversify the island economy.

## GEOGRAPHY

Guam's status as an unincorporated territory of the U.S. and the largest southernmost island in the Mariana Islands Archipelago make the island economy unique. Guam's strategic geographic location puts it in close proximity to dynamic

markets making it America's "Gateway to Asia". As seen in Figure 1.1, Guam is located 1,620 miles southeast of Tokyo, 3,800 miles west-southwest of Honolulu, 2,000 miles southeast of Seoul, 1,600 miles east of Manila and 2,100 miles east-southeast of Hong Kong. Within a 2,500 mile radius of the island is access to over two billion people.

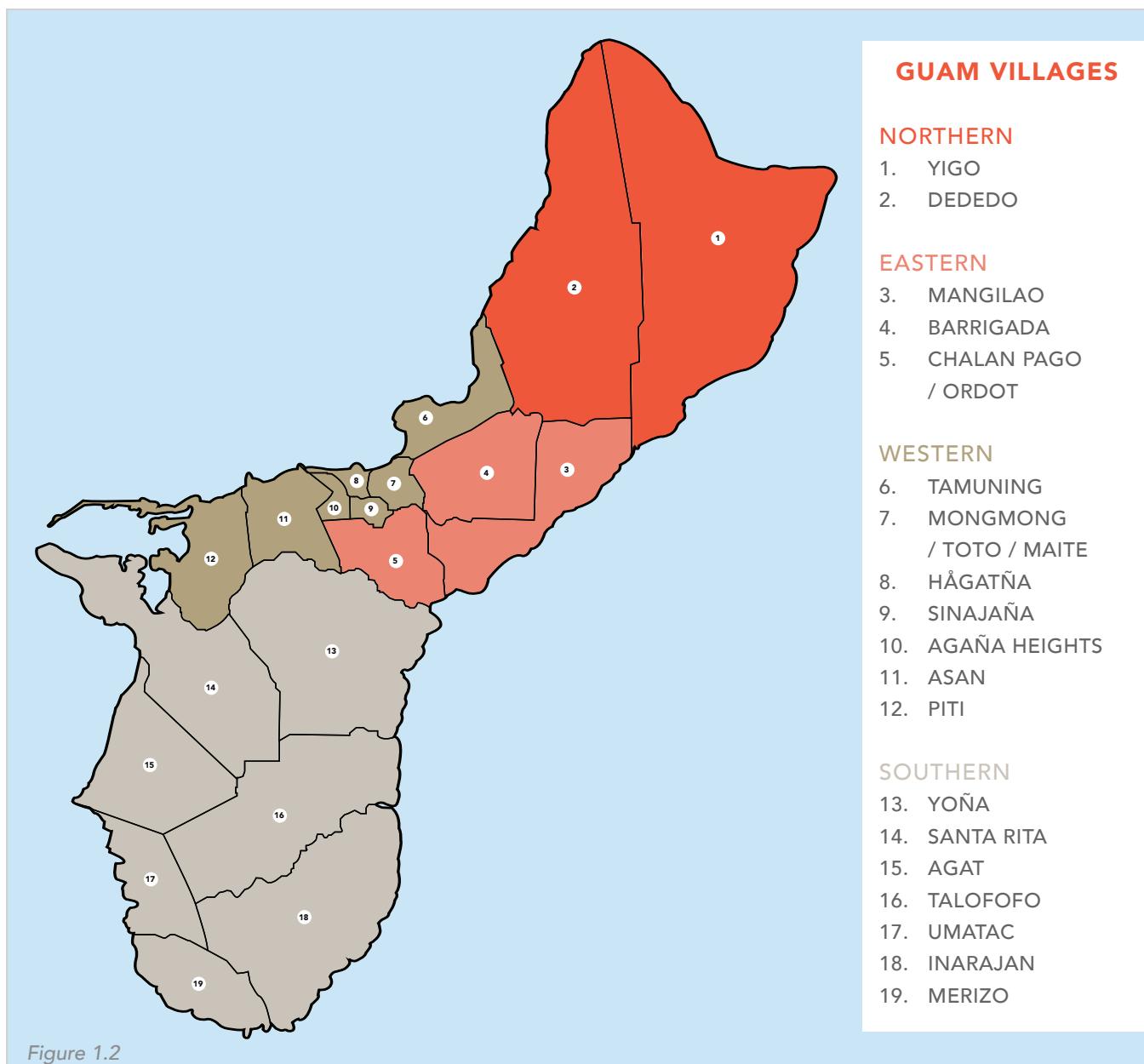
The island's land area is 209 square miles and spans about 30 miles long and 4 to 12 miles wide. The island is divided into 19 municipalities, called villages, as seen in Figure 1.2. Guam has a tropical wet climate ranging in temperatures from approximately 70°F to 90°F with mean annual temperature at 81.5°F. Annual precipitation averages 91 inches equating to 56.7 gallons. The hottest months tend to be around May and June with the most rainfall exhibited in months July through October.

# GUAM'S ECONOMIC ASSETS

## NATURAL RESOURCES

Guam is endowed with a tropical climate and miles of beaches that overlook fringing reefs, natural forests, and marine life that have become the main recreational attraction for tourism and military operations. The island of Guam was formed by an uplift of undersea volcanoes and is surrounded by coral reefs near the shore and consists of two distinct areas of approximate equal size. The northern region of Guam is a high coralline limestone plateau rising 850 feet above sea level. It contains the northern water lens, which is the main source of fresh water on the island.

The southern region of Guam is mountainous with elevations of 700 to 1,200 feet above sea level. Apra Harbor, one of the largest protected deep-water harbors in the pacific region, is located on the western side of the island. The Marianas Trench is located 210 miles southwest of the island and places Guam in direct path to occasional seismic activity including both earthquakes and tsunamis. In 1993, Guam experienced an earthquake of 8.1 magnitude creating a minor tsunami. Since then, no recent earthquakes or tsunamis have caused significant damage to Guam.



## POPULATION

Guam has become a home to individuals from the Asia-Pacific region. In 2010, Guam's indigenous CHamoru people made up approximately 37% of the population. According to a 2017 Compact Impact Analysis published by the Department of the Interior (DOI), Guam remains the primary destination of choice for regional migrants resulting in an increase in the number of nationals from the Philippines, Japan, China, and South Korea. High regional migration from the FSM and CNMI continues to add to this population growth.

While the impact of such in-migration has resulted in greater socio-economic diversity, Guam has experienced significant social changes that directly impact the standard of living and quality of life. In 2019, the DOI granted Guam \$16.8 million in Compact Impact funding to defray costs associated with the increased demands placed on the government of Guam provided to Compact of Free Association migrants.

According to the Guam Bureau of Statistics and Plans (BSP), Guam's population in 2018 is approximately 165,178. This represents a 4% increase from the last 2010 Census. Based on historical trends, Guam's population is expected to increase at a slower rate each year. The U.S. Census released projected growth rates that have served as the basis for population growth in the future.

The expected release date for an updated economic census will be October 2019. In Table 1.1 you will find a breakdown of Guam's ethnic fabric.

**TABLE 1.1 : GUAM'S ETHNIC FABRIC**

ETHNIC ORIGIN/RACE	2010	2020
<b>Pacific Islanders</b>		
Carolinian	242	256
Chamorro	59,381	62,721
Chuukese	11,230	11,862
Kosrean	425	449
Marshallese	315	333
Palauan	2,563	2,707
Pohnpeian	2,248	2,374
Yapese	1,263	1,334
Other Native or Pacific Islander	915	966
<b>TOTAL PACIFIC ISLANDERS</b>	<b>78,582</b>	<b>83,002</b>
<b>Asians</b>		
Chinese	2,368	2,501
Filipino	41,944	44,303
Japanese	2,368	2,501
Korean	3,437	3,630
Taiwanese	249	263
Vietnamese	337	356
Other Asian	678	716
<b>TOTAL ASIANS</b>	<b>51,381</b>	<b>54,270</b>
<b>Other Ethnic Origins/Races</b>		
Black or African American	1,540	1,627
Hispanic or Latino	1,201	1,269
White	11,321	11,958
Other Ethnic Origin or Race	404	427
<b>TOTAL OTHERS</b>	<b>14,466</b>	<b>15,281</b>
2 or more Ethnic Origins/Races	14,929	15,769
Native Hawaiian & Other Pacific Islander & Other Groups	11,656	12,312
Chamorro & Other Groups	9,717	10,264
Asian & Other Groups	8,574	9,056
One Ethnic Origin or Race	144,429	152,553
<b>TOTAL:</b>	<b>159,358</b>	<b>168,322</b>

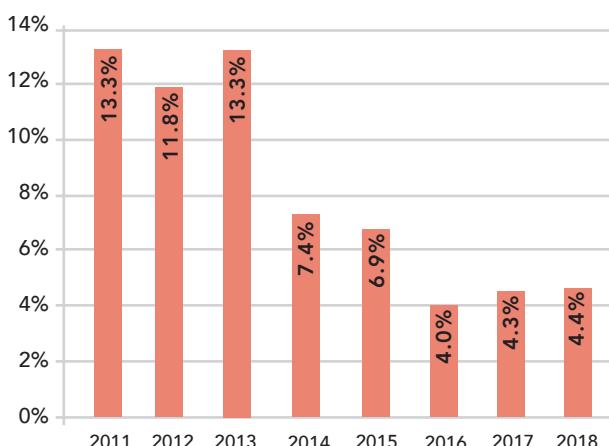
*Source: Guam of Bureau Statistics & Plans, 2017 Guam Statistical Yearbook*

# GUAM'S ECONOMIC ASSETS

## LABOR

The Guam Department of Labor (GDOL) reported the average unemployment rate for 2018 at 4.4%, a 0.1% increase of 4.3% from the previous year. Guam's total number of persons unemployed was 3,100. Table 1.2 shows the unemployment percentages in Guam between FY'11 through FY'18.

**TABLE 1.2 : GUAM UNEMPLOYMENT RATE FISCAL YEARS 2011-2018**

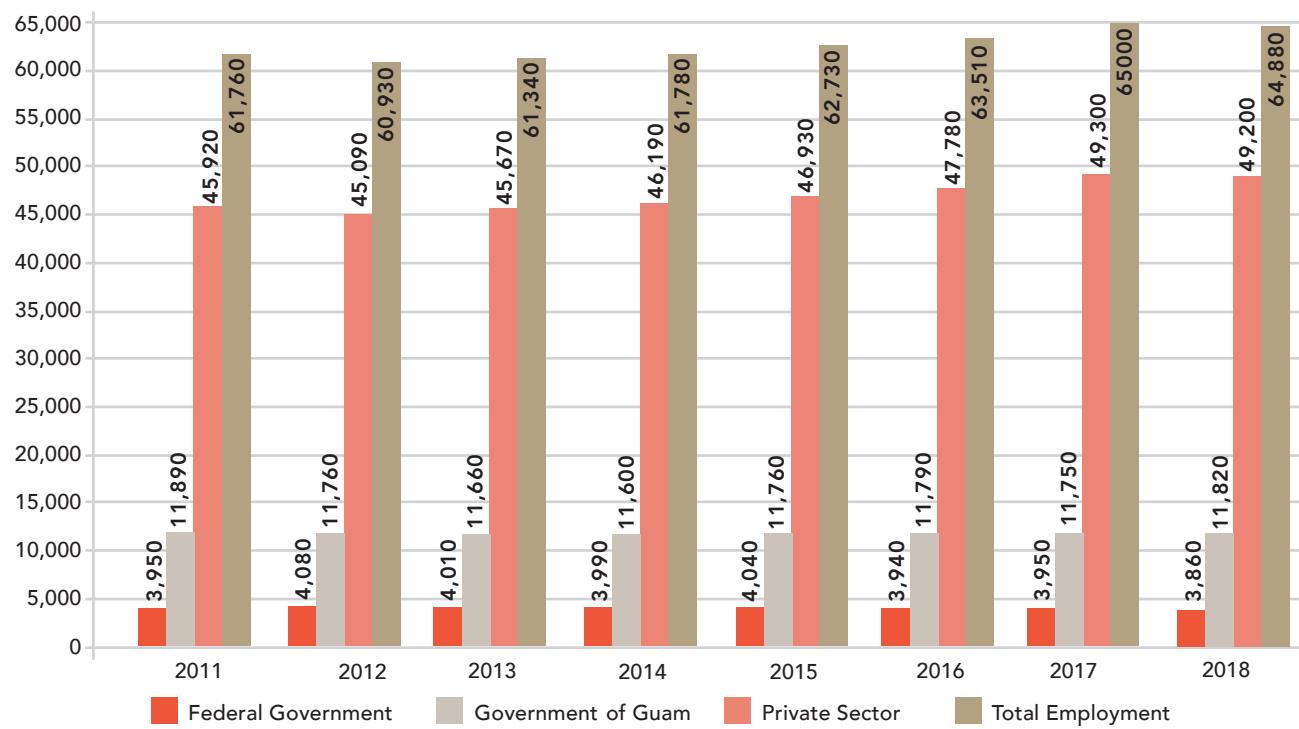


Source: Guam Department of Labor, 2018 Unemployment Situation Summary

A detailed presentation of Guam's employment pool is presented in the GDOL Current Employment Statistical Report, as seen in Table 1.3. Figures from 2018 reflect a slight decline in the number jobs from the previous year. Payroll employment 65,000 jobs in 2017 to 64,880 jobs in 2018. During this period, Guam's workforce in the following economic sectors were as follows: 29.5% were in Services (including 10.3% in Hotel and Other Lodging/Accommodations); 20.5% in Retail Trade; 10% in Construction; 6.8% in Transport and Public Utilities; 4% in Financial, Insurance and Real Estate; 3.5% in Wholesale Trade; 2.1% in Manufacturing; and 1% in Agriculture. Private sector employers provided 76.7% of the jobs, 5.9% by the federal government, and 17.4% by the Government of Guam. By gender, employees were 54% male and 46% female.

During the period between 2017 and 2018, private-sector average hourly earnings increased from \$13.72 to \$14.08 per hour, and average

**TABLE 1.3 : GUAM EMPLOYMENT RATE FISCAL YEARS 2011-2018**



Source: Guam Department of Labor, Current Employment Reports 2010-2018 Summary Economic Indicators Report (March)

weekly hours paid increased from 36.3 to 37.0 resulting in an increase in the average weekly earnings figure from \$497.95 to \$520.76.

Alien foreign labor is permitted to work in Guam through the U.S. Visa program. In the past, the U.S. H-2B program allowed employers to bring skilled foreign workers into the U.S. to Guam to fill temporary jobs in sectors excluding agriculture. Guam relied on the Philippines as the main source for its H-2B workers such as cement masons, carpenters, ironworkers, heavy equipment operators and electricians. In 2015, the U.S. Citizenship and Immigration Service (USCIS) declared the denial of H-2B visa petitions resulting in negative impacts across all industries. Despite this fact, there have been heavy lobbying efforts by the government of Guam and other stakeholders. A provision in the FY'18 National Defense Authorization Act (NDAA) Public Law 115-91, authorized \$354.6 million for military construction projects and authorized H-2B worker approval for construction projects related to the military relocation to Guam, with a cap of 4,000. The FY'19 NDAA, lifted Guam's cap until 2020.

### EDUCATION AND TRAINING PROGRAMS

Guam maintains a steadfast public education system rooted in the development of productive citizens. The system has a pipeline of schools so that students are able to transition from primary to secondary and post-secondary education on island. Guam's educational institutions are dedicated to providing quality education by offering training and education services to local residents as well as residents within the Micronesian region. Over the past decade, Guam has established educational programs that have afforded Guam a competitive advantage in the Asia-Pacific Region. To be discussed are the education, training, and certification programs available on Guam.

**Government of Guam** – GDOL's American Job Center (AJC) serves as the central facility for employment, training, educational services and program information and resources. Community members can visit GDOL to inquire about specific training and certification of skills based on their needs.

**University of Guam (UOG)** - The UOG is an accredited institution offering interactive courses both on campus and online providing a wide range of undergraduate and graduate degree programs and professional development certifications. Degree program areas include accounting, business administration, computer applications, design and composition, government, health care and medical, industrial skills, language and arts, law and legal, personal development, technology, and writing and publishing. Most recently a four year Bachelors of Science in engineering degree was added to the degree program offerings at the University.

**Guam Community College (GCC)** - The GCC is an accredited institution offering courses for career and technical workforce development through vocational secondary and post secondary programs, continuing education, apprenticeship programs, community education, and specialized craft industry training. GCC has established joint programs serving the Micronesian and International communities such as English as a Second Language (ESL) and programs offered by the National Institute for Automotive Service Excellence.

**Guam Trades Academy (GTA)** - The GTA offers training and certifications in specialized trades such as carpentry, construction, electrical technicians, electronic systems, heavy equipment, management, plumbing, safety technology, and welding.

## GUAM'S ECONOMIC ASSETS

Guam Marianas Training Center (GMTC) - The GMTC is a private institution offering courses in computer literacy, accounting, bookkeeping, paralegal, and office technology. GMTC is the only private institution given the authority by the Guam Board of Nurse Examiners (GBNE) in accordance to the provisions of the Omnibus Budget Reconciliation Act (OBRA) and P.L. 24-20 to offer Certified Nursing Assistant (CNA) classes.

### WORKFORCE DEVELOPMENT

Table 1.4 identifies the types of apprenticeship on-the-job training provided by GCC with collaboration from other educational institutions, private employers as well as organizations that offer specialized trade classroom instruction and hands-on training. In 2017, GCC reported a total of 439 apprentices in the private sector, 43 with the Guam Contractors Association (GCA), and 22 with the Guam Hotel and Restaurant Association (GHRA).

### PORTS OF ENTRY

Guam's economy has seen tremendous growth with tourism and military build-up activities at the forefront, affording the island with two sustained revenue sources. As a small domestic economy, Guam is accessible from two ports of entry; the Port Authority of Guam (PAG) and the Guam International Airport Authority (GIAA).

**Port Authority of Guam** - Located in the village of Piti, the island's only commercial seaport, the Jose D. Leon Guerrero Commercial Port, is managed by the PAG. The PAG handles approximately two million tons of cargo a year and remains a vital



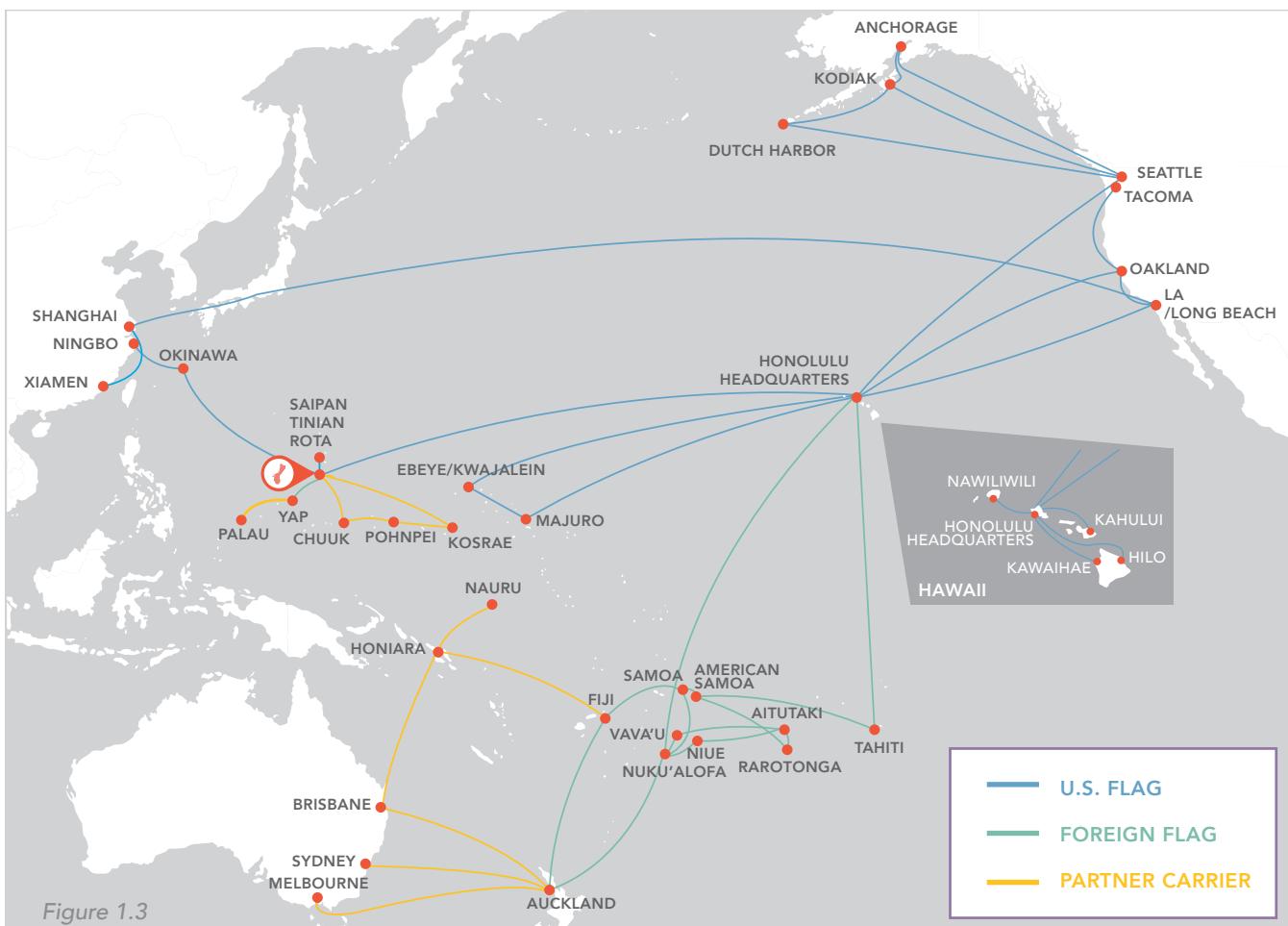
**TABLE 1.4 : SKILL TRAINING PROGRAMS BY ORGANIZATION AND TRADE**

APPRENTICESHIP PROGRAMS		MALE	FEMALE	TOTAL
Private Sector		280	132	412
Guam Hotel & Restaurant Association		13	9	22
Accounting Technician	15			Internetworking
Automobile Body Repairer	2			Technician
Automobile Mechanic	16			IT Generalist
Biomedical Technician	3			Line Installer Repairer
Cable Splicer	1			Machinist, Marine Engine
Carpenter	10			Machinist, Outside
Cement Mason	6			Maintenance Mechanic
Chief of Party	5			Maintenance Repairer
Childcare Dev. Specialist	10			Building
Coach Operator	3			Manager, Retail Store
Computer Operator	1			Office Manager /
Const. Equip. Mechanic	4			Admin. Serv.
Correction Officer	22			Operating Engineer
Customer Service Rep.	73			Painter, Shipyard
Diesel Mechanic	16			Paralegal
Drafter, Architectural	1			Pipefitter (Ship & Boat)
Drafter, Civil	3			Plumber
Electrician	12			Police Officer I
Electrician, (Ship & Boat)	5			Purchasing Agent
Electronic Systems				Refrigeration Mechanic
Technician	5			Rigger, (Ship & Boat)
Electronics Technician	1			Surveyor Assistant
Field Engineer	5			Instrument
Field Engineer Drafter, Civil	2			Telecomm Technician
Field Service Engineer	3			Truck Driver, Heavy
Financial Management	2			Water Treatment
Geospatial Specialist	7			Plant Operator
Graphic Designer	2			Waste Water Treatment
Information Management	1			Plant Operator
Inspector, Quality Assurance	1			Welder
				Welder, Combination
				Welder Fitter

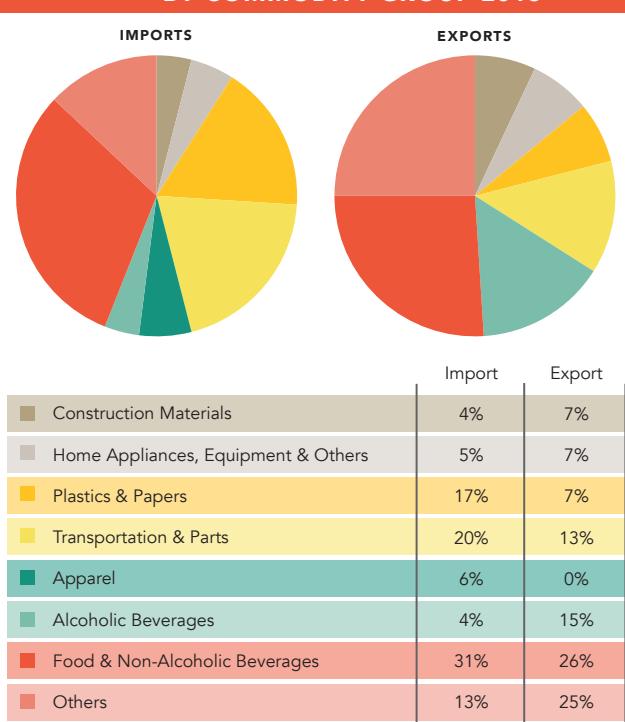
**Source:** Guam Community College, 2018 Apprenticeship Program by Trade Report (January-March)

contributor to the island's economic trade activity. PAG plays a critical role in servicing Guam and is the primary seaport and transshipment hub for the Western Pacific Region delivering cargo to more than half million people in the region, as seen in Figure 1.3.

Approximately 90% of the total volume of goods and supplies crucial to supporting the island's activity is received directly through the PAG. Most of Guam's exports are goods transshipped to Hong Kong, the Federated States of Micronesia (FSM),



**TABLE 1.5 : GUAM IMPORTS & EXPORTS BY COMMODITY GROUP 2018**



Sources: Bureau of Statistics & Plans, 2018 Guam Import Data (2<sup>nd</sup> Quarter), 2018 Guam Export Data (2<sup>nd</sup> Quarter)

Japan, and the Republic of the Marshall Islands (RMI). As of the 2<sup>nd</sup> quarter of 2018, Guam's total exports were valued at \$15.5 million. Table 1.5 provides a summary of both imports and exports by percentage of commodity grouping.

As of the 2<sup>nd</sup> quarter of 2018, the total amount of goods imported into our island was valued at \$91.6 million. Top import partners include the U.S. followed by Singapore, Italy, South Korea, France, Japan, and China.

**Guam International Airport Authority** - The island's second port of entry is located in the village of Tamuning. GIAA is the island's primary airport serving both passengers and cargo needs between Guam and the U.S.

GIAA data included a 4.8% rise of enplanements in FY'16 reaching a historical high of 1.8 million passengers. This trend continued in subsequent

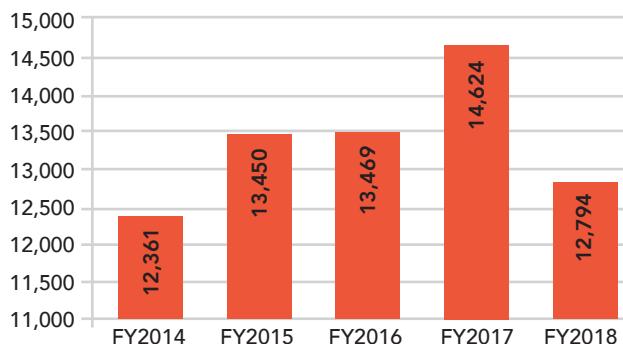
## GUAM'S ECONOMIC ASSETS



fiscal years with a report of 1.9 million in FY'17 and a revenue of 1.8 million in FY'18. Signatory airline activity amounted to about 1.8 million enplanements and accounted for the outbound traffic through the GIAA. Non-signatory activity, mainly charter, general aviation operators, and drop-ins equating to roughly 13,485 passengers in FY'18 and 26,275 in FY'17. Over 93.6% of the Authority's passenger base is comprised of Origin/Destination (O/D) passengers; primarily from key markets of Japan, South Korea, Taiwan and China. GIAA houses 14 passenger carriers, three cargo operators and two chartered aircrafts servicing Guam and Micronesia.

In June 2018, the total amount of imports by sea was \$35,334,017 and \$12,351,366 for imports by air. Table 1.6 provides cargo data for FY'14 through FY'18.

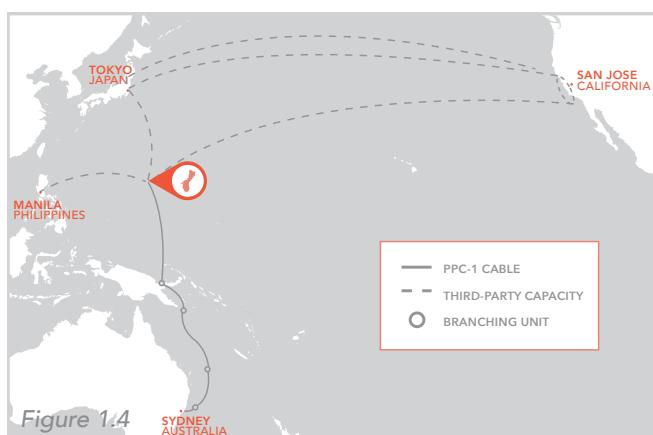
**TABLE 1.6 : GIAA CARGO IN METRIC TONS  
FISCAL YEARS 2014-2018**



Sources: Guam International Airport Authority, 2018 Citizen Centric Report

## TRANS-PACIFIC TELECOMMUNICATIONS

The potential to serve as a hub and communication gateway to Asia and the Western Pacific exists. In 1964, Guam initiated the Trans-Pacific cable system linking the island with Japan, Hawaii, and the continental U.S. These cable systems now span across China, Australia, Philippines and Palau. Guam has diversified and advanced in telecommunications capabilities establishing it to be a communication gateway for Trans-Pacific telecommunications. The island is fixed with broadband coverage offering one of the most extensive telecom infrastructures in the Asia Pacific region and most areas in the U.S. Guam is home to 14 separate submarine cables that service any one of the three-cable landing stations located in Tumon Bay, Tanguisson and Piti that establishes interconnections to alternate routes and cable diversity. Figure 1.4 indicates telecommunication cable routes within the Trans-Pacific cable system.



## REAL ESTATE

The housing affordability and availability crisis is affecting residents, not only in Guam but throughout the region. In rural, suburban and urban areas, island leaders are working to provide residents with adequate housing notwithstanding the overwhelming costs through local and federal programs. While Guam's housing organizations work diligently to push more affordable housing communities, another issue at stake, is the great shortage of skilled workers who were previously the primary H-2B visa holders.

Since the actions of the USCIS started to take shape in 2015, square footage construction costs rose from \$120 per square foot to well over \$200 per square foot, an increase of approximately 67%. This increase, coupled with the fluctuating cost of importing building materials have deterred many commercial and residential property owners from investing in their property assets. Job sites visited by the GDOL displayed a large number of home and commercial facilities under construction without adequate manpower allocation for months at a time. Small contractors have reported being forced to spread laborers over multiple jobs resulting in hundreds of dollars in penalties daily for violating contractually set completion schedules.

### GUAM HOUSING CORPORATION (GHC)

The Guam Housing Corporation was established for the purpose of providing mortgage financing for first time homeowners in the low to moderate income range, who may otherwise not be able to obtain financing. There are specific classes of homeowners that other lenders, non-profit housing corporations, and/or U.S. Department of Housing and Urban Development (HUD) cannot assist thereby necessitating the need for the GHC to offer other options. These are as follows:

- The island's homeless families
- Land Trust Applicants
- Alternative Building Systems
- FTHO that have not been accepted by lenders

#### Moderate Cost Housing:

- Lada Gardens, Dededo: 125 apartment units (2, 3 and 4 Bedrooms; Low – Moderate income families)
- Guma As Atdas, Yigo: 24 apartment units (2 and 3 Bedrooms; Low-Moderate-income families)

#### HOME BUILDING PROGRAMS, (RESIDENTIAL):

- GHC - FTHO Assistance program: FTHO provided a grant up to \$10,000 or 4% of the purchase price and closing costs. Total

purchase cost and closing cost cannot exceed \$300,000. Currently, there are 10 participating financial institutions.

- Regular Loan Program: Residential mortgage lending program is designed to assist families and individuals who are first time homeowners and are unable to obtain financing for purchase or construction through conventional lending institutions.
- 6% Loan Program: Low interest rate residential mortgage loan program is designed to assist families and individuals who are FTHO and are unable to obtain financing from conventional mortgage lending institutions.
- Community Affordable Housing Action Trust (CAHAT): An interest free second mortgage is designed as a down payment assistance program for first time homeowners for families and individuals who lack the down payment resources to purchase or construct a typhoon resistant home.
- Rural Housing Loan Program: Designed to provide loans to assist eligible persons who will live in rural areas with an opportunity to own a home that would provide a decent, safe, and sanitary living environment for its occupants. Construction of dwelling on CHamoru Land Trust property is also eligible (Dededo properties are ineligible under this program).
- Native American/CHamoru Land Trust Recipients Only: Preliminary Qualification w/ GHC.

### GUAM HOUSING AND URBAN RENEWAL AUTHORITY (GHURA)

The Guam Housing and Urban Renewal Authority (GHURA) provides assistance to low and moderate-income renters and assists homeowners to acquire suitable housing. GHURA administers funds received by Guam through the U.S. Department of Housing and Urban Development's (HUD's) various funding programs. These include:

## GUAM'S ECONOMIC ASSETS

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- The Family Self-Sufficiency program (FSS) is an employment and savings incentive program for HUD-assisted families that have Section-8 Housing Choice Vouchers (HCV), or who live in Public Housing. Its intent is to assist participating families access needed resources from within the community.
- The Resident Opportunity and Self Sufficiency (ROSS) is designed to assist elderly individuals with disabilities living in GHURA's public housing units by linking them with services available in the community. Service Coordinators work directly with the individuals to link them with services available within the community.
- Summer Towers, a \$100 million four-tower development is currently under construction and is expected to house 260 luxury condominium units in Tamuning. Two of the four towers were completed in 2018 and the third and fourth towers are expected to be completed in late 2019.
- Tumon Bay Mall, a 200,000 square-feet, two-story building has completed Phase I exterior work, while Phase II interior work is delayed due to the unavailability of construction workers.

Several new private sector projects that are in the planning stage include:

### COMMERCIAL REAL ESTATE DEVELOPMENT

In the civilian commercial sector, a number of private investors are awaiting resolution to the labor crisis before full implementation of projects. Although many of these projects are categorized as "shovel ready" developers have held back on the start of construction due to uncertainty stemming from the labor supply. These include:

- The Tsubaki Hotel, a 26-story 340-room five-star hotel, constructed by P.H.R. Micronesia, Ken Corp. cost approximately \$164 million, is being built adjacent to the Hotel Nikko Guam in Tumon. Construction is scheduled for completion in 2020.

- Blue Ocean Investments is planning to build an approximately \$70 million 300-room hotel adjacent to Tumon Sands Plaza. Ground breaking is expected in 2020.
- Citta di Mare, a 500-room hotel, approximately a \$133 million four-tower hotel, located behind the Acanta Mall in Tumon, is expected to break ground in 2020.
- Villa Del Mar LLC plans to build a 50-unit housing off the Kanada-Toto Loop in Barrigada for low-income families as well as homeless veterans on Guam.

- Guam EB-5 Hotel Developers LLC is planning to develop a \$421 million, two-tower commercial facility with a total of 590 rooms at the Guam Greyhound Raceway Park in Tamuning.
- A proposed Guam International Airport Hotel is an 11-story, 246-room project in Tamuning across the Airport.
- The first three levels of the building will house airport-grade public amenities, including retail facilities and a lounge area, and the top eight floors will house 246 hotel rooms. The project estimated cost is \$50 million. Ground breaking is expected in 2020.

Guam real estate development has occurred at a guarded pace with the demand for units remaining tentative at best. Building permits indicate that interest has been exhibited by smaller, less capital sourced entities with the focus directed at satellite business centers and small-scale home improvements that serve a few geographic development districts. However, it must be noted that the potential success of these commercial centers is directly correlated with the amount of tourism and military driven activity that would support economic expansion in the project's locale. Thus, the rate of risk continues to promote uncertainty among investors.

### REAL ESTATE ACTIVITY

According to an article in the Guam Business Magazine (January 2019) by Siska S. Hutapea, President of Cornerstone Valuation Guam Inc., upward pressure on price, limited supply, limited labor, skyrocketing construction cost and the looming housing affordability crisis are among the key issues that will still be hanging as we enter 2019. Also looming for the real estate investor is the doubling in real property tax for improvements of \$1 million or more. GBM also noted that in 2018 there were 11 commercial building sales and one industrial property sold.

The apartment market reflects only three sales this year, after 14 sales in 2017. Occupancy is high at most apartment projects and rents are increasing. Of the 512 units/houses available for rent at the Guam Association of Realtors Multiple Listing service, more than 75% are listed at \$1,900 per month.

Residential real estate sector sales volume has steadily grown an average of 12% since 2013. The average annual growth is a substantial 22% in condominium sales volume with 10% on single family dwelling; Guam real estate sales volume by year showed phenomenal growth pushed by growing demand and lack of inventory/additional supply. Average annual growth in median price reflects 3.9% since 2013 for the residential sector. Although the H-2B worker issue is partly resolved with the granting of hundreds of applications, the labor issue is far from being resolved given many of the H-2B applications are tied to projects for the military relocation plans.

The Guam residential market is now categorized as seriously unaffordable, up from last year at moderately unaffordable. The anticipated increase in interest rates is projected to not bode well for home buyers.

As seen in Table 1.7, Real estate sale volume over the past five years show a rising sales trend between 2013 and 2017 with a moderate decline in sales during 2018. Top 20 real estate transactions in Table 1.8 provide an indication of the affordability index rating for the Island.

**TABLE 1.7 : GUAM REAL ESTATE SALES VOLUME BY YEAR 2013-2018 (in millions)**

<b>YEAR</b>	<b>SALES</b>
2013	270
2014	278.1
2015	324.7
2016	560.2
2017	522.5
2018	416.2

*Sources:* Cornerstone Valuation Guam, Inc. (database through November 2018);  
Guam Business Magazine 2019 (January/February issue)

## GUAM'S ECONOMIC ASSETS



TABLE 1.8 : GUAM 2018 TOP 20 REAL ESTATE TRANSACTIONS 2018

PROPERTY	MUNICIPALITY	LAND AREA (sm)	TRANSACTION DATE	INDICATED PRICE
Tuman Oceanfront Land	Tamuning	12,882	12/3/2018	\$13,000,000
Wyndham Garden Hotel	Tamuning	10,084	7/11/2018	\$6,500,000
Tumon Beachside Land	Tamuning	8,072	1/10/2018	\$6,256,800
Tanguisson Road Land	Dededo	126,964	7/9/2018	\$5,967,308
Happy Landing Road Land	Tamuning	9,144	10/10/2018	\$5,300,000
Tanguisson Road Land	Dededo	112,780	6/22/2018	\$4,821,345
Route 3 Land	Dededo	43,492	2/8/2018	\$4,200,000
Royal Garden Phase II Land	Tamuning	24,279	2/26/2018	\$3,200,000
Former Chen's Furniture Building	Tamuning	9,429	5/22/2018	\$3,200,000
Former MidPac Warehouse	Tamuning	4,900	9/24/2018	\$2,200,000
Route 1 Tamuning Land	Tamuning	4,492	1/8/2018	\$2,100,000
Casa La Rai Townhouse	Tamuning	1,551	8/8/2018	\$2,100,000
Former Epicure Building	Hagåtña	2,279	7/31/2018	\$2,000,000
Pan Am Building	Hagåtña	910	7/27/2018	\$1,500,000
Nippo Property	Yigo	31,436	9/5/2018	\$1,460,000
Tamuning SFD	Tamuning	1,183	1/26/2018	\$1,414,000
Route 10 Land	Ordot-Chalan Pago	20,167	7/18/2018	\$1,413,692
Former Island Ridge Apartment	Tamuning	1,695	4/4/2018	\$1,400,000
Tamuning Farenholt SFD	Tamuning	1,341	6/22/2018	\$1,350,000
Pick-A-Nail Tamuning Land	Tamuning	2,691	3/12/2018	\$1,320,000

**Source:** Cornerstone Valuation Guam, Inc. (database through November 2018); Guam Business Magazine 2019 (January/February issue)

The economy's expansion is expected to be driven by escalating tourist arrivals, increased visitor expenditures, and a rebound in construction. The likelihood of increased construction activity is supported by high dollar amounts of building permits and Department of Defense (DoD) construction contracts associated with preparation for the Marine Corps relocation from Okinawa; a sizeable backlog of appropriated and bond funded projects in the public and military sectors; and anticipated easing restrictions on foreign worker importation which should reduce labor capacity constraints.

Downside risks to the favorable outlook are present. Easing international tensions with North Korea and others within the region may impact the tourism industry and the overall economy. Airline seat capacity constraints to Japan are also expected to dampen short-term growth prospects.

Further delays affecting a myriad of construction projects could materially alter the forecast. However, recent U.S. Federal income tax reform will have both positive and negative effects on Guam's economy despite the fact that tax revenues are expected to be lower than previous collection levels in FY'17 and FY'18 thus constraining government expenditures throughout the local economy.

Guam is looking to new industries for economic growth and development. These industries include space, cannabis, data centers, agriculture, and aquaculture.

**Guam Spaceport** - The establishment of new spaceport launch site company has selected Guam as an ideal location for services by Virgin Orbit. Due to Guam's remote location and proximity to the equator, launching from the island is expected to provide Virgin Orbit an optional launching point. As the GIAA awaits the necessary clearances from the Federal

Aviation Administration (FAA), the U.S. Air Force supports using Guam's Andersen Air Force Base to host launches and other exercises association with Virgin Orbit's "LaunchOne." This new partnership with Virgin Orbit may lay the groundwork to generate a new space industry in Guam as well as potentially spur new STEM (science, technology, engineering, and mathematics) education opportunities for our youth.

**Recreational Marijuana** - The Guam Cannabis Industry Act of 2019, Public Law 35-5, legalizes the possession and use of marijuana for people 21 and older in the interest of enhancing revenue for public purposes with the creation of a new industry, enhancing individual freedom, and promoting the efficient use of law enforcement resources. A Cannabis Control Board was assembled to create rules and regulations for the issuance, renewal, suspension, denial or revocation of registered cannabis establishments; of which are subject to the Legislature's approval. Passage of the P.L. 35-5 will create a new industry for Guam and will provide greater and safer access for medicinal cannabis consumers.

### GUAM GROSS DOMESTIC PRODUCT

Guam continues to see an increase in exports services and consumer spending. In November 2018, the Bureau of Economic Analysis released Guam's 2017 GDP. Guam's real GDP estimates reflect an increase of 0.2% after increasing 0.3% in 2016.

Economists predicts that GDP projections for 2019 "will see zero to slightly negative growth." Part of the slow down stems from several factors with the tourism market performance and the military build-up stall and re-alignment as the key contributors. Added to this is the shortage of skilled labor required to keep construction activity moving forward particularly in the private sector

## ECONOMIC TREND AND OUTLOOK

and military installations as well. Other analysts are reserving projections until the full impact of the Tax Cuts and Jobs Act becomes clear. The logic here would be stronger consumer and business spending due to the middle-class and business tax cuts with military expenditure in the local economy possibly contributing toward slight growth in GDP.

The growth of Guam's economy will continue to stall in the short-term if labor supply issues related to the H-2B visa restrictions are unresolved. Hedging in the business investment and residential construction sectors have contributed to the sluggish performance of the island economy in recent years. Table 2.1 demonstrates positive but slight growth in GDP within the past five years.

There may be an inability of the local and mainland developers to break ground on large commercial and residential projects that could potentially generate between \$1 billion to \$1.5 billion in infrastructure outlay.

In summary, with inflation kept in check combined with low unemployment rates and increased federal spending, the down-side indicators such as the flat consumer and business spending, lower tourism revenues and the skilled labor shortage could result in a somewhat non-progressive economy that may be hampered in the effort to grow and

diversify in the near term. Specific components of the island's GDP accounts over the past five years (2013-2017) are indicated in Table 2.2.

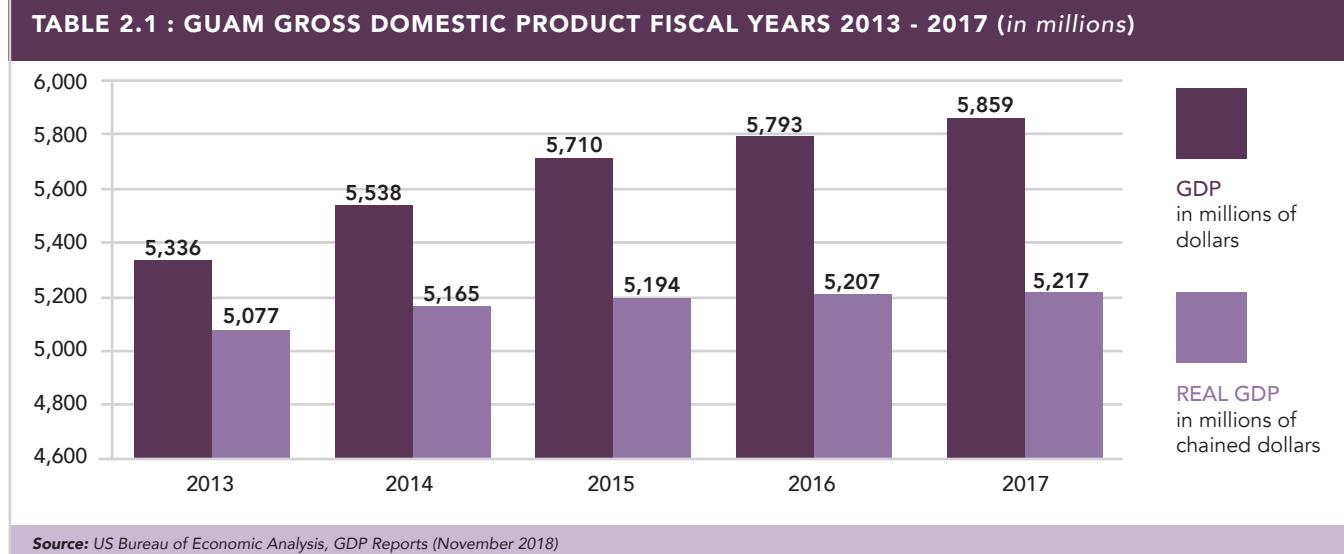
### TOURISM

Visitor arrivals for FY'18 have resulted in the islands 2<sup>nd</sup> highest arrivals for a fiscal year welcoming 1,525,219 according to the Guam Visitors Bureau (GVB) figures. This will mark the 3<sup>rd</sup> consecutive year GVB reported visitor arrivals exceeding 1.5 million. As the numbers of visitor arrivals have increased, hotel occupancy and room rates have correspondingly risen. Annual average hotel occupancy rates reported on a calendar year basis have increased to 86.5% in 2018, up from 84.2% in 2017 and 83.4% in 2016.

Every month in 2018 had an occupancy rate above 80%. Average daily room rates for 2018 reached \$205.25 increasing each year from 2013, when rates were \$164.29 as detailed in GVB reports from STR Global.

FY'18 arrivals were down -2.2% from FY'17. Despite recent decreases in the Japan market, the high level of annual visitor arrivals is noteworthy, particularly given the fact that drastic reduction in Japan arrivals occurred due to the nuclear conflict between the U.S. and North Korea. GVB

TABLE 2.1 : GUAM GROSS DOMESTIC PRODUCT FISCAL YEARS 2013 - 2017 (in millions)



Source: US Bureau of Economic Analysis, GDP Reports (November 2018)

## ECONOMIC TREND AND OUTLOOK

**TABLE 2.2: GUAM GDP COMPONENTS FISCAL YEARS 2013 - 2017**

	2013	2014	2015	2016	2017
GROSS DOMESTIC PRODUCT ( <i>in millions</i> )	5,336	5,538	5,710	5,793	5,859
PERSONAL CONSUMPTION EXPENDITURES	3,146	3,194	3,181	3,256	3,380
Goods	1,709	1,717	1,664	1,704	1,782
Durable Goods	616	596	586	607	640
Nondurable Goods	1,093	1,120	1,078	1,097	1,142
Services	2,307	2,417	2,487	2,587	2,628
Net Foreign Travel	-871	-940	-969	-1,036	-1,030
PRIVATE FIXED INVESTMENT	1,224	1,308	1,242	1,184	1,179
GOVERNMENT CONSUMPTION EXPENDITURES & GROSS INVESTMENT	3,120	3,261	3,281	3,208	3,187
Federal	1,890	1,965	2,011	1,987	1,905
Territorial	1,230	1,269	1,270	1,221	1,282
<b>GOODS &amp; SERVICES</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
NET EXPORTS OF GOODS & SERVICES ( <i>in millions</i> )	-2,153	-2,225	-1,994	-1,854	-1,887
EXPORTS	1,053	1,058	1,048	1,123	1,128
Goods	177	112	73	82	92
Services	876	946	975	1,041	1,036
NET IMPORTS OF GOODS & SERVICES ( <i>in millions</i> )					
IMPORTS	3,206	3,283	3,042	2,976	3,015
Goods	2,512	2,558	2,331	2,285	2,324
Services	694	725	711	691	690

*Source:* Bureau of Economic Analysis, 2017 Guam Gross Domestic Product Report (November 2018)

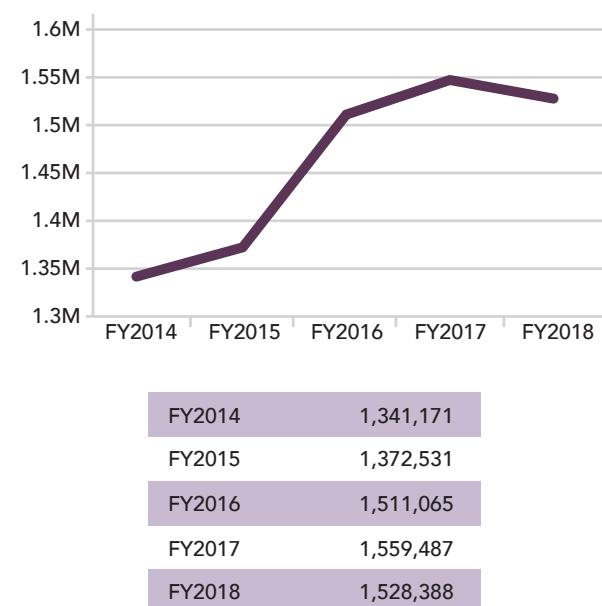
confirmed that there had been thousands of visitor cancellations; mostly within the key Japanese package tours and school group market segments.

Table 2.3 provides the trend of visitor arrivals from 2014-2018.

The Commonwealth of the Northern Mariana Islands (CNMI) has experienced similar market changes with South Korean arrivals increasing and Japan arrivals declining, although their decline in Japanese travelers was much less severe than Guam's.

Tourism industry prospects for 2018 and beyond remain strong. The increasing diversification in origin of visitors by country has more than offset the decrease of the Japan sector. In 2018 Japan arrivals declined -9.2% while South Korea arrivals increased 9%. For the first full year, South Korea exceeded arrivals from Japan. Japan arrivals in

**TABLE 2.3 : GUAM VISITOR ARRIVALS FISCAL YEARS 2014-2018**



*Source:* Guam Visitors Bureau, FY18 Guam Visitor Arrival Reports

## ECONOMIC TREND AND OUTLOOK

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2018 represented only 36% of total visitor arrivals. The Japan sector has experienced a number of events, which have reduced market presence, including a reduction in the number of flights to Guam which GVB plans to offset by promoting the increase in number of charter flights and expanded marketing initiatives including social media targeting independent travelers, as the market has experienced a growth in more Free Independent Travelers (FIT) in addition to the regular travel agency booked package tours.

Guam and the CNMI are in a unique position to entice visitors from South East Asian countries to improve our export posture and further diversify our visitor market mix. Citizens of Malaysia and Singapore are able to travel to Guam without obtaining a U.S. Visa.

Working closely with our airline partners who provide service to both regions, GVB is actively seeking travel agents in the respective countries. Financial investments into new markets are essential to the long-term sustainability of Guam's visitor industry.

In response to the decreasing air seat capacity available to Guam, the development of an airline incentive program has become a top priority for GVB. In partnership with GIAA, GVB provides two incentive programs, the "Air Service Support Program" and the "Charter Flight Incentive Program." Since their inception, the programs have helped to minimize the impact of the decline in air service from our major source markets. Through these programs and partnerships with the travel trade community, Guam has welcomed record visitor arrivals year over year with a more dynamic and diverse market mix.

Concerns of political, security, and law enforcement issues have stalled the permitting of future China visa waivers for Guam. Despite this, the GVB is actively pursuing Chinese visitors who are current

holders of U.S. Visas. The Department of Homeland Security (DHS) is responsible for administering a Visa Waiver program enabling citizens or nationals of participating countries with the privilege of traveling to the U.S. Visa-free within 90 days for either business or tourism purposes. Two million U.S. visas, now valid for 10 years, have been issued to Chinese citizens.

Russian visitor arrivals have rebounded, increasing 36.6% to 4,584 in 2018 compared to the previous year. For Russian oil producers, the price of the benchmark crude in rubles is close to a record thanks to a weaker currency. Oil exports are a significant source of Russia's foreign exchange thus further opening a market that offers greater potential. According to July 2017 preliminary figures from DOC, International Trade Administration (ITA), National Travel and Tourism Office; Guam remains ninth in a ranking of U.S. ports of entry of non-resident arrivals.

The Asia-Pacific region is expected to produce a 47% increase in visitors by 2021. Japan, the largest Asian market and second-largest overseas market, is forecasted to have a small increase in visitor volume in 2021 compared to previous years. Conversely, high growth rates and large growth volumes are expected for China, India, South Korea and Taiwan.

Similarly, these four countries are expected to have among the largest total visitor volume growth of any country between 2015 to 2021. More importantly, from a global overview China should become the top overseas origin market and third overall behind Mexico or Canada by the end of 2021. India is expected to produce 847,000 additional visitors (+72%), and South Korea should produce an additional 758,000 visitors (+43%).

GVB has identified destination management projects and programs that will enhance our visitor

experience and improve the quality of life for our residents. Table 2.4 lists funded improvement projects that GVB will be completing in the coming years.

## CONSTRUCTION

Guam's construction industry currently accounts for about 10% of Guam's economy in terms of civilian employment. It is also a strong leading indicator of other economic activities to come including employment. As the industry is subject to large cyclical variation, activity changes can have a measurable effect on the economy.

To forecast future construction activity, the dollar amount of building permits issued provide an excellent tracker for the civilian sector and U.S. military construction contracts awarded for the defense sector.

Construction employment increased from roughly 5,450 in 2017 to 5,800 in 2018 due to several factors. These include completion of major projects, reductions due to lower military construction appropriations, delays in contracting due to procurement protest issues and environmental site work, and reductions due to the non-renewal and repatriation of the majority of foreign workers employed under H-2B visas. Construction as expected, continues to fluctuate due to workforce constraints.

There are several compelling reasons why construction activity and employment is likely to increase in the upcoming years. These include a backlog of projects with appropriations or other financing to be contracted and a large number of projects already contracted with a great deal of work remaining. NavFac Pacific current contract amounts adjusted by percent completed are estimated at \$495 million as of 2018 on DoD multi-year projects.

Most of Guam's H-2B foreign workers in construction, which accounted for about 17% of the industry's labor force, were repatriated in 2016 and 2017. However, most temporary

**TABLE 2.4 : GVB INFRASTRUCTURE IMPROVEMENT PROJECTS**

### INFRASTRUCTURE MAINTENANCE & IMPROVEMENTS

Tumon Redevelopment Plans were never fully completed:

Flooding  
Wastewater/Water

Deterioration of hardscape:

Sidewalks and road surfaces not being restored by utility agencies & telecom companies  
Pavement shoving, surface degradation, loose pavers

Traffic management plan needed and adjustments made:

Pedestrian Safety  
Revitalize crosswalks & signage  
Traffic Flow & Signal lights  
Emergency Evacuation

### STREETSCAPE IMPROVEMENTS

Upgrade, repair or replace broken benches & bollards

Sidewalk repair, maintenance & widening

Repair or replace paver bricks

Murals at retaining walls

Improved signage (street & buildings)

Demolishing or refurbishing of abandoned buildings

Streetlight repairs (underway)

New bus shelters (underway)

### LANDSCAPING & PARK IMPROVEMENTS

Improvement of scenic areas:

Inarajan Pool  
Cetti Bay Overlook  
Talofofo Bay Overlook  
Mount Lam Lam

Tumon Beach Improvements:

Matapang & Ypao Beach facilities  
Beach lighting improvement  
Beach erosion

Current Tumon program is good, but can be upgraded:

Maintenance of empty private lots  
Ongoing maintenance of landscaped areas  
Maintenance of Route 14B (Ypao Road)

### OTHER IMPROVEMENTS

Signage: Currently under review for enforcement & revision

Handbilling: Currently enforced with Lt. Governor's office

Graffiti: Current Program is working

Visitor Safety & Security: Needs constant attention

Lighting: Additional lighting needed from Westin to Gun Beach

### BUSINESS IMPROVEMENT DISTRICT

Create an association of property owners along San Vitores Boulevard

Non-Profit organization driven by private sector  
Begin with large property owners who want to see improvements

Advocacy for tourism district improvements

Identification of needed improvement projects  
Build membership- dues & assessments with real results  
Create nexus for a more comprehensive BID with CC&R's

*Source: Guam Visitors Bureau, Infrastructure Improvements*

## ECONOMIC TREND AND OUTLOOK

visas were not renewed due to more stringent application of the approval policy. Note: There are currently over 1,400 H-2B Visas approved to date. The issue is that they are tied to multiple relocation efforts.

Efforts to exempt non-buildup projects from this tightened policy in the U.S. Congress in the NDAA were not successful in FY'18. DoD projects received an exemption to the temporary criteria which will permit H-2B workers to again be recruited for buildup and related projects.

The lawsuit by GCA and local businesses recently provided some relief to the non-military projects when a District Court of Guam preliminary injunction prohibited the Federal government from continuing its current practice of denying nearly every request for temporary workers until the merits of the case can be decided. The order also nullified the earlier visa denials. The order does not grant class status to the lawsuit. The motion for class certification is pending. The NDAA also provides the USCIS with flexibility in applying the H-2B visa program in Guam for military and civilian projects directly related to or associated with the Marine relocation. These provisions provide confidence that construction employment will increase measurably for FY'19 and beyond.

As previously mentioned, in the civilian sector, a number of private investors are anxiously awaiting resolution to the labor crisis before full implementation begins. Although many of these projects are categorized as "shovel ready" developers have held back on the start of construction due to uncertainty stemming from labor supply. Table 2.5 lists the building permits issued by the Department of Public Works (DPW).

**TABLE 2.5 : ISSUED BUSINESS BUILDING PERMITS FISCAL YEARS 2018-2019**

### 2018 NEW PRIVATE BUSINESS INVESTMENTS

DESCRIPTION COST	LOCATION	PROJECT
Construct 2 Story Concrete Office Building	Dededo	\$1,200,000
Construct 3 level parking structure & access road	Tumon	\$4,885,000
Renovate building for proposed Science Is Fun & Awesome (SIFA) Charter School	Barrigada	\$775,000
Construction of New Commercial Building for Offices	Tamuning	\$1,195,000
Construct I learn Academy Charter School	Dededo	\$10,458,360
Proposed (50) dwelling units; 3-4 bedroom units, (6) 2-story apartment bldg.	MTM	\$9,968,888
Construct Jollibee Restaurant	Dededo	\$2,000,000
Construct 16 unit apartment	Tamuning	\$2,095,200
Renovation for Payless Supermarket	Maite	\$3,679,085
Construct a Cultural Center	Dededo	\$299,600
Renovation for Science Is Fun & Awesome (SIFA) Academy Administrative Bldg. & Daycare	Barrigada	\$144,500
Proposed Commercial Building for Store	Dededo	\$1,260,000
Construct 4 plex apartment	Barrigada	\$697,080

### 2018 EXISTING PRIVATE BUSINESS INVESTMENTS

DESCRIPTION COST	LOCATION	PROJECT
Tenant Improvement ABC #506 Store	Tumon	\$1,052,484
Tenant Improvement to existing GTA retail & office building	Tamuning	\$1,325,571
Renovation of Old Marina Bay Hotel	Hagatna	\$493,800
Hotel Renovation - 4th Floor Southwing Guestroom	Tamuning	\$904,595
Hotel Renovation - tour lounge front desk at main hotel	Yona	\$882,199
Hotel Renovation - Rooms, Northwing 2nd & 3rd floor	Yona	\$2,841,243
Proposed New Customer Service Building - Triple J	Tamuning	\$2,900,000

### 2019 NEW PRIVATE BUSINESS INVESTMENTS

DESCRIPTION COST	LOCATION	PROJECT
Construct 2 Commercial, 1 Story Buildings	Mangilao	\$1,135,680
Improvement for Red Lobster Restaurant	Tumon	\$1,453,950

### 2019 EXISTING PRIVATE BUSINESS INVESTMENTS

DESCRIPTION COST	LOCATION	PROJECT
Interior Renovation & Upgrade to K-Plaza Hotel. 2nd-3rd floor	Tamuning	\$1,773,419

### 2019 EXISTING PRIVATE BUSINESS INVESTMENTS

DESCRIPTION COST	LOCATION	PROJECT
Construct 500 Room, 13-18 Story Hotel	Tumon	130,000,000

*Source: Department of Public Works, 2018 Building Permits*

### MILITARY BUILD-UP

**U.S. Marine Corps Relocation** - The first wave of Marines relocating from Okinawa to Guam has been delayed and are now expected to begin arriving in Guam by around 2025. Work in preparation for the Marine Corps relocation is well under way. The progress is documented in the Interagency Coordination Group of Inspectors General for Guam Realignment.

The initial version was to prohibit the firing range development, however, this has changed to instead call for a delay in the construction and pre-construction work until all legal concerns surrounding the development and activities have been resolved. A lawsuit was filed in the CNMI District Court July 27, 2016 by the Tinian Women's Association; Guardians of Gani; Paganwatch and Center for Biological Diversity, vs. U.S. Department of the Navy; Ray Maybus, Secretary of the Navy; DoD; and Ashton Carter, Secretary of Defense. The Plaintiffs request that the court vacate and set aside the 2010 and 2015 Records of Decision regarding the relocation of Marines from Okinawa to the Mariana Islands, and issue any appropriate injunctive and other relief.

The Department of Justice petitioned the U.S. District Court for the CNMI to dismiss the plaintiffs' complaint with prejudice. CNMI District Court Chief Judge Ramona Manglona dismissed most of the arguments in October 2017. The case now hinges on the issue of whether or not the Navy failed to evaluate, in a single Environmental Impact Statement, the impacts of stationing U.S. Marines in Guam and the full range of training in the CNMI required by those Marines.

Presently, there is a genuine concern regarding the impact of the proposed military expansion in Guam's existing infrastructure. As more information

is released relative to the (military) build-up, the anxiety of the general public continues to rise over the island's ability to meet the demands of a 30% increase in population. Recent surveys indicate that 92% of the local population agrees that the build-up will be favorable for Guam. Conversely, 82% of the population also believes that our current infrastructure planning efforts will not be able to support the growth.

Absent any court order, the buildup activities are scheduled to proceed. If the Court does not dismiss the case and determines there is merit to the claims, relief could be granted short of setting aside the 2010 and 2015 Records of Decision in a manner that may not affect the Guam relocation activity.

### CAPITAL INVESTMENT AND INFRASTRUCTURE

An indicator of the anticipated annual federal construction activity is derived from the NDAA appropriations. For the Government of Guam, since most of the major construction projects are bond or grant-funded, a leading indicator of future construction is the availability of funds generated through bond issuance and approved federal grant applications.

#### GUAM INTERNATIONAL AIRPORT AUTHORITY (GIAA): AIRPORT DEVELOPMENT

A total of \$167 million in public bond funding has been allocated to 22 capital improvement projects that are now in various stages of completion. This investment would benefit the local job market providing employment and growth in the island's construction industry over the next five to seven years.

In 2017, the GIAA launched its Vision Hulo' campaign in capital improvement projects to help boost services and operation for the airport. The projects are set to increase the airport's passenger

## ECONOMIC TREND AND OUTLOOK

capacity, which already annually serves 3.7 million departing and transiting passengers. The projects include the relocation of bulky baggage screenings, additional security lanes, the expansion of parking spaces, and more. A \$127.8 million international arrivals corridor, the largest build component in the project, is the airport's newest and highest priority capital improvement project. The 3<sup>rd</sup> level corridor will place the airport in compliance with federal regulations recommended by the U.S. Transportation Security Administration (TSA) in 2005.

In response to the 9/11 disaster event, TSA urged the separation arriving international passengers with departing passenger thereby allowing GIAA to remove temporary barriers and reclaim full use of the concourse.

### PORT AUTHORITY OF GUAM (PAG): SEAPORT DEVELOPMENT

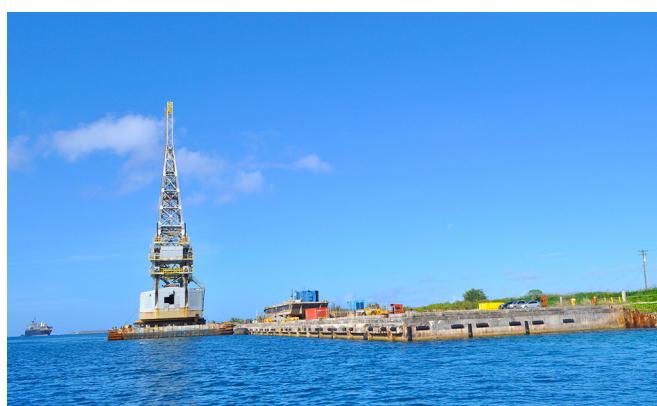
The primary objective of the PAG is to modernize and transform the port into a first class facility that minimizes delivery delay to customers. To this end, PAG has increased capacity through investment in infrastructure development. In light of the community's organic growth and the impending military buildup, PAG will continue to play a critical part in promoting economic growth and opportunities for the maritime related industries in Guam.

In 2017, the 34<sup>th</sup> Guam Legislature passed Bill 157-34, which authorized the PAG to seek bond financing to fund six capital improvement projects that were deemed a priority due to its critical importance and impact to PAG operations, personnel, and tenants. In addition, the Bill allowed for the refinancing of existing PAG loans. The Bill was later enacted as Public Law 34-70.

In 2018, Guam completed the sale of its 2018 Port Revenue Bonds. The PAG's planning, marketing, and presentation of its bond funded capital

improvement projects and debt service payoff to potential investors resulted in an all in True Interest Cost (TIC) of 4.5%, lower than the legislative mandate requirement. The net effect the PAG initiative provided a cost savings of over \$20 million for the port.

Through full mobilization of its gantry equipment and new pier-side construction and repair, PAG anticipates expanding its service capacity in the areas of containerized cargo, break bulk and dry bulk loading and off-loading, fuel, fish passenger liner services and other cargo related logistics.



### Bond and Tiger Grant Financed Capital Improvements

Using proceeds from the 2018 revenue bond, PAG is scheduled to procure construction and other port facilities repair and renovation services to include:

- H-Wharf and Wharf Access Road  
*TIGER VIII Grant \$10 million*
- Golf Pier Repair and Upgrade  
*Bond Funded \$72.5 million*

Hotel Wharf upgrade and improvements will include infrastructure to accommodate berthing space for passenger cruise ships, research and self-sustaining vessels, scrap metal export, vehicle off-loading facility and dock-side commercial and fishing activities.

The repair of the Golf Pier will upgrade walking surfaces to graphite material to meet the United States Coast Guard (USCG) standards. The repair

will also install catwalks to mooring dolphins and replace piling and concrete bulkheads.

The benefits derived from the PAG's CIP investments will mitigate the negative safety, space and operational impacts that currently exist.

Organized vessel mix and enhanced operations will occur in the main cargo waterfront an area that is expected to play a crucial part in leveraging economic benefits for both the civilian and U.S. military (DoD) sector.

PAG enhanced capacity targets will enable the port to sustain its current tonnage volume while increasing or optimizing the utilization of limited wharf and cargo space.

As a public corporation, PAG assigns all of its profit to the upgrading of equipment and facilities for the continued improvement of the island's seaport.

### PAG: 2019 Targeted Logistics Capacity

- 1800 20-foot Equivalent Units (TEU's)
- 7400 TEU Yard Capacity Stacked (5 High)
- 24/7 Operating Manpower (2 shifts)
- 100,000-150,000 Containerized Units per year
- \$2.5 million Revenue Tons Annually (Container and Break-bulk)
- 250-300 Vessel Calls Annually

FY'18 data indicated that the PAG could potentially meet if not exceed growth targets within the next five years. If efforts to increase operating capacities continue over the next three years, the PAG will be well positioned to enjoy positive growth and financial sufficiency in the long term.

### GUAM POWER AUTHORITY (GPA): ELECTRICITY PRODUCTION; TRANSMISSION AND DISTRIBUTION

Established in 1968 as a public corporation, Guam Power Authority (GPA) is operating as an enterprise fund of the Government of Guam. The GPA governing board is the Consolidated Commission on Utilities (CCU), which consists of five elected commissioners, and the Guam Public Utilities Commission (PUC) regulates the agency's rates. GPA employs 512 employees and services just over 49,000 customers.

Partly as a result of the 2015 explosion at the Piti Cabras Plant that rendered two large production units inoperable and the need to integrate existing systems with renewable power sources, GPA started to explore the feasibility of constructing a new 180 megawatt plant in Dededo, Guam.



The new plant site offers the advantage of easy linking to numerous underground lines traversing the area. Moreover, the proximity of the site with respect to the large power users (Dededo, AAFB, Tumon and Tamuning) offered great advantages in delivery efficiencies and operating costs. The construction of the new Dededo plant will enable GPA to retire Cabras Units 1 and 2 and is expected to generate up to 180 megawatts in addition to the planned expansion of solar photovoltaic farms.

One interesting feature of the new plant design is the GPA's ability to use recycled wastewater to cool its plant system thus providing lower cost of power to consumers while reducing operating cost

## ECONOMIC TREND AND OUTLOOK

for the agency. Several other factors contribute to the new plant site advantages including protection from storm surges, tsunamis, rising sea level and other climate change impact. During the span of the 2020-2025 CEDS, GPA is moving forward with groundwork for the new Dededo plant.

The CCU approved GPA's proposal however, several issues remain under consideration including property re-zoning and environmental concerns from contiguous property owners and developers located within the 500 feet radius of the site.

GPA through the CCU, is allocating \$53.7 million that will minimize disruption in power production and delivery throughout the island grid system. In addition, it will also prepare the northern system infrastructure to incorporate demand for services that stem from the construction of new military facilities in the area. Although most of the current CIP's are designed to attain certain reliability standards, they will also allow GPA to meet growing demand from the civilian sector that has been typically increasing in the northern and central regions of the island.

### GUAM WATERWORKS AUTHORITY (GWA): WATER AND WASTEWATER SERVICES

In 1997, P.L. 23-119 established the Guam Waterworks Authority (GWA) to be a semi-autonomous, self-supporting agency. Several years later, P.L. 26-76 created an elected, non-partisan CCU to oversee the operations of GWA and GPA. The five-member commission assumed policy responsibility of the two utilities from the Guam Legislature.

GWA owns and operates an extensive network of facilities that provides water and wastewater service to the majority of island residents. It maintains over 200 water facilities, which include water sources (wells and springs), reservoirs and piping, and treatment plants and booster pumping stations. The complete water system consists of over 400 miles of distribution pipelines.



Wastewater system service is also provided by GWA, consisting of seven wastewater basins, including over 300 miles of collection system and lines, 77 wastewater pumps, and seven wastewater treatment plants.

In 2017, GWA's customer base included 38,000 residential, 2,789 commercial, 424 Federal and Government of Guam, 366 agriculture customers, and 20 irrigation customers.

**GWA Capital Improvement Plan (CIP): Status of Bond Projects -** The CIP is GWA's five-year blueprint for creating, maintaining, renewing, and replacing the crucial infrastructure that will support Guam's sustainable and continued growth. This CIP covers a five-year period to account primarily for consent decree projects that have a start time outside of a five-year period from 2015 but which required funding appropriation from the 2015 and anticipated 2018 bond issuances as reflected in theTable 2.6.

**TABLE 2.6 : GWA CIP FUND SOURCE ALLOCATION  
FISCAL YEARS 2016 - 2020 (in millions)**

ACTIVITY	2016	2017	2018	2019	2020	TOTAL
Water Production	44.42	36.49	55.52	28.25	10	174.67
Wastewater	12.34	63.18	12.25	0	0	87.77
Engineering	3.91	3.15	2.92	0	0	9.98
Miscellaneous	3.2	4.04	1.2	1.2	0	9.65
<b>TOTAL</b>	<b>63.87</b>	<b>106.86</b>	<b>71.89</b>	<b>25.45</b>	<b>10</b>	<b>282.07</b>

*Source: Guam Waterworks Authority, Capital Improvement Plan 2016-2020*

**GWA Bond Sourced and Other Funded CIP's -** GWA acquired \$316 million in capital construction funding from the Series 2010, 2013, 2016 and 2018 Revenue Bonds to plan, design, and construct capital projects needed to comply with U.S. Environmental Protection Agency (USEPA) stipulations and court orders. Table 2.7 identifies the sources of the agency's funding since 2010.

FUND SOURCE	2016	2017	2018	2019	2020	TOTAL
2010 Bond Series	5.1	0	0	0	0	5.1
2013 Bond Series	11.92	0.39	0	0	0	12.31
2016 Bond Series	34.15	63.99	23.38	0	0	121.52
2018 Bond Series	-	-	29	28.25	10	67.21
State Revolving Fund	3.48	17	8	0	0	28.47
System Dev. Charge	3.3	6	0.5	0	0	9.8
Grants	0.95	0	0	0	0	0.95
Internally Funded CIP	5	19.5	11	1.2	0	36.71
<b>TOTAL</b>	<b>63.87</b>	<b>106.86</b>	<b>71.89</b>	<b>25.45</b>	<b>10</b>	<b>282.07</b>

**Source:** Guam Waterworks Authority, Capital Improvement Plan 2016-2020

**GWA Carryover Projects and the Fund Balance -** Due to the nature of capital projects, the life of a project may span across fiscal years. As funds are received, they are accumulated in the appropriate capital fund and expended as projects progress. When the funds are not spent in one year, they are kept in the fund balance to be used in the future, often referred to as carryover.

As GWA reevaluates the annual CIP program, carryover projects may be reassigned into areas of contractual obligation, and ongoing projects may be re-allocated to the following year schedule to ensure full project funding and financial viability. As an implementation option, some CIP line items may be consolidated to achieve the same end.

In order to address current operating issues, GWA is allocating millions of dollars to improve water delivery, wastewater collection and treatment

and replacement of service lines. As this effort continues over the next five years GWA will expand its operating capacity in a manner that will afford new customers better infrastructure thereby meeting growth targets from the military, tourism and the residential sectors.

### GUAM SOLID WASTE AUTHORITY (GSWA): SOLID WASTE MANAGEMENT

The Guam Solid Waste Authority (GSWA) is a public agency, created by Guam Public Law 31-20. The agency is a self-funded operation whose mission is to help its customers dispose of their trash in an environmentally safe and regulated manner. Each week, GSWA employees collect curbside trash from approximately 17,000 GSWA customers.

A plan developed by the federally appointed receiver Gershman, Brickner and Bratton, Inc. (GBB), USEPA and Guam EPA, provides for the legally-required 30 year post-closure care of Guam's Ordot landfill. Such care includes monitoring groundwater, leachate collection and control, methane gas collection and control, and financial assurance that the money will be available to carry out these activities.

Leachate found to be leaking out of the Ordot Dump and polluting the Lonfit River, is now being captured and diverted to a wastewater treatment facility for proper treatment.

From 2015 to 2016, 8 million gallons of leachate has been directed away from the Lonfit River to the wastewater treatment plant. The environmental closure of the landfill also captures harmful methane gas, a greenhouse gas that contributes to climate change. From 2015 through 2016, about 12,539 metric tons of methane has been captured and properly disposed, rather than escaping into the atmosphere.

Based on recent events, an order of a partial end to an 11 year-receivership between GSWA and Gershman, Brickner, and Bratton was granted to the Government of Guam agency.

## ECONOMIC TREND AND OUTLOOK

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With this court-ordered receivership coming to an end, GSWA was approved of a \$30M bond borrowing issuance to start the construction of a new trash cell at the Layon Landfill. Public Law 35-21 allows the government of Guam to undertake the necessary financial measures to construct Cell 3, which furthers the goal to ending the federal receivership completely.

**Construction of the New Layon Landfill** - The Layon Landfill is a high-tech 20-acre environmentally sound and highly controlled landfill for non-hazardous municipal solid waste. It was built with an engineered liner and a leachate collection and removal system that protect human health and the environment. With a capacity in excess of 15.8 million cubic yards, the Layon Landfill will service the island of Guam for more than 50 years. A component of the proposed Layon Landfill Cell 3 (Phase II) development will include a newly constructed access road, a new cell for municipal solid waste disposal, and a new leachate storage tank.

The construction will include removal of existing pavement, construction of a new storm water pond, and construction of a new access road. The site work includes grading, asphalt and concrete work, underground utilities, and incidental site work.

The Layon Landfill uses the most current technology in its design, operation and construction. The landfill's double liner system has a leak detection system that exceeds both Guam and federal requirements for environmental protection. The liners protect the groundwater from leachate infiltration and potential migration of landfill gases. The landfill is monitored on a quarterly basis for groundwater quality.

The landfill is also monitored for landfill gas production, and a landfill gas collection and removal system has been included in the design. When landfill gas quantities exceed the regulatory thresholds, the collection system will be installed.

The landfill gas may be flared or used as a fuel source, depending on quality and quantity of the gas that is generated.

### DEPARTMENT OF PUBLIC WORKS (DPW): PUBLIC HIGHWAYS

The existing transportation network in Guam includes roadways, bridges, transit, sidewalks, other bicycle and pedestrian facilities, harbors, and airports. DPW maintains a roadway network with 155 miles of federal-aid highways and 860 miles of other roadways.

In addition to roadways, DPW maintains 36 bridges throughout the island. The most recent Federal Highway Administration (FHWA) bridge inspection program indicated that eight bridges are in immediate need of repair or replacement. Many existing roadways require maintenance, such as repaving, signage, pavement markings, or lighting.

The condition of existing roadways varies from acceptable (with no major safety or geometric concerns) to poor (minor safety issues, geometric issues, or pavement disrepair) and unacceptable (major alignment, safety, or pavement repair issues).

**2030 Guam Transportation Program (GTP)** - The 2030 GTP was prepared as a comprehensive, holistic, and integrated long-term strategy to improve transportation infrastructure and operations throughout Guam. DPW and the Department of Administration, Division of Public Transportation Services as well as the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have partnered to prepare the plan.

The plan addresses Guam's anticipated multimodal transportation needs including roadways, bicycle path, pedestrian and transit facilities. The GTP includes forecasts for population, employment, and traffic growth through the year 2030 including impacts associated with the proposed U.S. DoD

multiple services build up. Sustainable financing and project implementation recommendations are also included in the plan.

The vision statement for the DPW and the GTP is "to provide a safe, efficient and sustainable transportation system for our residents, visitors and military personnel that will support economic diversification, resource conservation and an exceptional quality of life."

The GTP outlines specific goals and objectives to support this vision based on existing transportation, land use and economic conditions. The GTP goals identified through the public and agency coordination effort include the following:

- Safety
- Integrated transportation and land use
- Accessibility, mobility, and intermodal connectivity
- System and services efficiency
- Environmental and resource conservation
- Economic diversification and vitality

**Highway Needs Assessment** - The program of multimodal improvements recommended in the GTP is designed to meet the long-term, multimodal transportation needs of Guam. The priority of DPW is to maintain, preserve, and enhance Guam's existing transportation system.

To do so, the first priority projects will include bridge replacements, geometric road improvements, pavement repair, intersection improvements, and traffic signal enhancements.

Congestion-related improvements will also be required to maintain reasonable levels of service on the roads during peak hours and throughout the day. Improvements to enhance multimodal transportation options are also included, such as transit, bicycle, and pedestrian facilities. Performance measures were developed to evaluate and prioritize alternative improvements.

These measures will be used to aid in the selection of projects for inclusion in the GTP.

A variety of roadway improvements is needed island-wide to meet present and future congestion. These are categorized as Rehabilitation Improvements, Haul Road Network (HRN) and Tier I and Tier II Congestion Related Improvements. Detailed information of such projects along with implementation schedules is provided in the 2030 Guam Transportation Plan.

**Guam Transportation Improvement Plan (GTIP)** - In February 2016, DPW developed the Transportation Improvement Program (GTIP) for the FY'16-FY'19. The GTIP was prepared in accordance with the requirements of the Fixing America's Surface Transportation (FAST) Act, in order to provide a list of transportation improvement projects for implementation.

Projects identified in the GTIP FY'16-FY'19 were selected to address safety issues, pavement and bridge conditions and provide traffic operational improvements. Funding for Guam transportation projects will come from several sources, but largely from the Federal Territorial Highway Program (THP). The GTIP for FY'20-FY'23 is expected to be completed by the end of FY'19.

A summary of the funds available to DPW for transportation projects during the course of this CEDS is discussed in Table 2.8.

**TABLE 2.8 : DPW AVAILABLE FUNDS  
FISCAL YEARS 2016-2019**

FISCAL YEAR	FUNDING SOURCE	AMOUNT
2016	Section 1934 Funds	\$687,764
2016	Territorial Highway Program	\$23,379,142
2017	Territorial Highway Program	\$15,926,400
2017	Grant Anticipation Revenue Vehicles (GARVEE)	\$47,600,476
2018	Territorial Highway Program	\$15,926,400
2019	Territorial Highway Program	\$15,926,400

*Source: Guam Transportation Improvement Plan FY2016 - FY2019*

## ECONOMIC TREND AND OUTLOOK

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### GHS: DISASTER AND HAZARD MITIGATION

In light of Guam's seismically active zone and typhoon belt location, the island's most effective form of disaster mitigation has been the adoption and implementation of a strict building code.

The building code is far stricter than most, if not all, U.S. cities. The code mandates structural designs that minimize the destructive effects of both earthquakes and typhoons. An emergency response plan is updated annually by the GHS Office of Civil Defense to best utilize the Government's limited resources in mitigating, preparing for, responding to, and recovering from the various emergencies and disasters affecting the island and its residents. While the adoption of a stringent building code has reduced the loss of life and property from natural disasters, the code has also significantly increased construction costs.

Generally, sources of funding for disaster and hazard mitigation activities in Guam can be separated into two categories – Federal sources and Government of Guam sources. Most hazard mitigation activities are funded with federal sources, primarily from the DHS Federal Emergency Management Agency (FEMA).

### Government of Guam Funding

By law, the Guam Legislature is authorized to expend up to \$250,000 from general fund appropriations for Government of Guam

agencies on emergency activities, including those resulting from natural disasters.

Sources to augment authorized emergency funding come from the General Fund. Autonomous agencies such as GEDA, GPA, GWA, etc. generate revenue that can be applied to disaster or hazard mitigation as authorized by respective governing boards.

### Federal Funding Sources

U.S. Department of Homeland Security, FEMA - Provides funding for rebuilding efforts and relief to the territory during a state of emergency declared by the Governor. FEMA offers assistance to address long-term hazard mitigation, public assistance to repair, replace or restore property, flood mitigation program and port security grants.

U.S. Department of Commerce, Economic Development Administration (EDA) – Public Works and Economic Development Facilities Grants for building and facilities, technical assistance and planning grants to the government and colleges or universities, and economic adjustment assistance grants to address job losses and halt long-term economic deterioration are provided.

Small Business Administration (SBA) - The Disaster Division of the SBA provides direct, guaranteed, and insured loans to assist homeowners and businesses suffering economic injury as a result of a disaster declared by the President, the SBA, or the Secretary of Agriculture. Funds under this loan program may be provided to pay liabilities that the business could have paid if the disaster had not occurred. Working capital can also be provided to allow a business to operate until conditions return to normal. The maximum loan amount

is \$1.5 million and is based on need. A repayment period of up to 30 years may be granted.

**U.S. Department of Housing and Urban Development** – Provides HUD Community Development Block Grant or CDBG formula based funding to Guam as well as Section 108 Loans for economic revitalization, and disaster recovery that funds gaps in other federal or local assistance programs.

**U.S. Department of the Interior** – Compact Impact Aid, covenant grants for mitigation, funding for earthquake damage and loss, monitoring activities and seismic fault zone studies

**U.S. Department of Transportation** – Provides funding for the repair and reconstruction of federal highways and roads on federal lands.

**U.S. Environmental Protection Agency (EPA)** – Provides funds to support the development and protection of wetlands.

Emergency relief funding has been available to Guam residents after federal and local authorities complete damage assessments. Determination is made with regard to the extent of damages and where and how families and businesses qualify to receive such assistance.

In the recent passage of tropical storm Mangkhut (September 2018) Guam's high number of Compact of Free Association residents living in Guam were impacted adversely when federal assistance could not be afforded to families that sustained damage to homes, food supplies and other property. As such, costs of relief were borne by the Government of Guam with partial subsidy from the FAS government.

FEMA and other disaster relief agencies must incorporate new policy recommendations that will address this application of current laws and mandates. The Compact Impact allocation does not specifically address this issue and FAS governments must establish internal policies and programs to assist their citizens. These unplanned expenditures bear a tremendous negative effect on the annual operating funds that Government of Guam has at its disposal.

# STRATEGIES FOR LEAD ECONOMIC SECTORS

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## AGRICULTURE

In the 2018 Employment Report published by the GDOL, a total of 320 jobs were reported within the agricultural sector. Although there were 800 farmers noted as registered with DoAg leading to 2018, during the filing period of crop loss (10 working days) from September 17 - October 1, 2018 a total of 91 farmers filed a damage assessment claim resulting from the recent Typhoon Mangkhut. A total of 232.5 acres affected from Typhoon Mangkhut was valued at \$269,678. The affected crops include banana, yard long bean, bittermelon, cucumber, watermelon, peach, okra, corn, winged beans, squash, pumpkin, hot peppers, eggplant, kangkong, radish, sweet potato, and taro. Compensation for such losses is based on production schedules and expenditure receipts for crops destroyed by Typhoon Mangkhut.



The National Agriculture Statistics Service (NASS) is currently conducting the next portion of the 2017 Agricultural Census from January through May 2019. The last known published census took place in Guam in 2007. This census is a defined methodology providing a comprehensive assessment of Guam's agricultural capacity by identifying data such as the total number agricultural producers, land resources, production expenses and detailed information regarding agricultural products and characteristics.

In 2010, the Farmers Cooperative Association of Guam (FCAG) launched their first market in Dededo providing local agricultural producers with an opportunity to sell produce. Since then, a new farmer's market has been constructed to further promote the sell of locally grown agricultural products. FCAG regularly holds membership drives encouraging all qualified commercial agricultural producers complete a new membership package.

Despite cultivation efforts from our local agricultural producers, Guam's consumer base has relied heavily on imported food items for consumption. According to the 2018 Guam Import Data, Guam received a total of \$12 million for food and beverage imports. Locally grown produce has historically been perceived to be more expensive than imported bulk purchases of food items.

The U.S. Department of Agriculture (USDA) provides Federal Programs to assist U.S. territories in Agricultural Development. The National Sustainable Agriculture Coalition (NSAC) remains one of the biggest advocates for the development and implementation of federal programs for American farmers and ranchers. Programs provided by USDA vary widely depending territory's location.

The USDA collects and publishes reports that analyze program use and implementation in the territories, however, there remains a gap of data collection within territorial governments that lack both funding and capacity to compile data themselves.



## STRATEGIES FOR LEAD ECONOMIC SECTORS

NSAC's program evaluations findings on Sustainable Agriculture Research and Extension (SARE) reflect the most available data pertaining to the territories. SARE is known to be a grass roots program available to farmers, ranchers, researchers and educators.

Guam ranked the highest among territories having received a total of 43 grants in a span of 30 years; American Samoa received 36 grants and the CNMI received 24 grants.

Further, Western SARE reported Guam's total grant funding to be \$1.5 million over the past 30 years for research and education led projects. In the past, the USDA provided more than \$25 million in funding across all 50 states for the 365 Farm to School Grant Program. The Farm to School Grant Program is an example of one mechanism designed to increase the availability of fresh, local foods by supporting a range of activities such as training, planning, creating new and healthy menu items across school systems.

Additionally, the USDA developed the Specialty Crop Block Grant Program to increase competitiveness for specialty crops. The USDA defines specialty crops as "fruits, vegetables, tree nuts, dried fruits horticulture and nursery crops".

There are many opportunities available to agricultural producers; including establishing a lease land between landowners and agricultural producers to accommodate and identify unique pathways for sustained future in agricultural production.

Applying SWOT analysis to the potential growth for the Agriculture industry indicates the following results in Figure 3.1:

**FIGURE 3.1 : AGRICULTURE SWOT ANALYSIS**

STRENGTHS	
Tropical weather	Land use
WEAKNESSES	
Lack of updated statistical database	Agricultural producers are unable to meet market demand
Seasonal growth of agricultural produce	Frequent zone change approvals without agricultural impact analysis
Low income elasticity	
OPPORTUNITIES	
Federally funded opportunities	Specialty block grant program
Government funded loan opportunities	Commercial village kitchens
Land owner and farmer land lease	
THREATS	
Tropical storms	Flooding
Typhoons	Rising utility costs
Invasive species	Weak protections for critical agriculture lands

### AQUACULTURE AND FISHERIES

Guam's tropical climate is conducive to the rapid growth of many cultured species. According to the Center for Tropical and Subtropical Aquaculture, Guam produced a total of 111 tonnes of seafood in 2012. These species include freshwater prawn, marine shrimp, eel, tilapia, carp, catfish, milkfish, mangrove crab, mullet and ornamental carp.

The Guam Aquaculture Growers Association was established to form a cooperative to increase sales and lobby for less stringent processes when applying for power and water to support aquaculture activities. Guam's aquaculture and fisheries consists of small-scale fisherman. The construction for a new \$6 million fishermen's co-operative commenced in mid-2017. The National Marine Fisheries Service science center worked closely with the Guam Fisherman's Association to further examine the species of fish brought in by fishermen.

## STRATEGIES FOR LEAD ECONOMIC SECTORS

Annual catch rates rose steadily from 2011 but declined in 2016. As of 2016, the total annual weight of fish transshipped was 1,313,459 kilograms, where tuna totals contributed 1,254,474 kilograms and non-tuna accounted for 58,985 kilograms. Tuna Transshipment Industry shows that total tuna transshipped dropped from 2,016.6 metric tons in 2011 to 1,313.6 metric tons in 2016.

The last recorded sampling completed by the Guam Commercial Fisheries Bio sampling program took place in 2009. These exercises of sampling collections from commercial catches provide an in-depth life study on species DNA and voucher specimens for the Fish Barcode of life. Guam indicated a small commercial size sampling. In the past, the Guam Fishermen's Cooperative Association was successful in participation efforts. However, the continuation for this program has been subject to the availability of funds.

Conservation measures have since been imposed on the Fishermen to ensure sustainability efforts. The Fisherman's Co-op continues to face challenges brought on by federal regulations, the Marine Preserves, the Military Range Complex that restricts access to a large fishing area in the south, and the closing of Ylig Bridge that prevents access to eastern waters. The new approval of the Marine Firing Range in Ritidian will further challenge fishing access to the local fishermen.

Guam's only hatchery facility was built over 35 years ago and is housed by UOG. This facility is in dire need for a significant amount of renovations and new infrastructure in order to meet the demands of this growing industry. The investment of the culture of species depends on a robust hatchery's infrastructure.

In the past, UOG's hatchery has explored various species for aquaculture purposes. The hatchery has long studied the specific pathogen free shrimp (*Litopenaeus vannamei*), tilapia

(*Oreochromis niloticus* and *Oreochromis aureus*), and coralgrouper (*Plectropomus areolatus*).



DoAg confirms the importation of supplies and materials including feed and brood stock (immatures/fries) for tilapia as well as shrimp are imported to Guam, due to high costs of production and market prices than that of imports from the Philippines and Taiwan.

Applying SWOT analysis to the potential growth for the Aquaculture and Fisheries industries indicate the following results in Figure 3.2:

**FIGURE 3.2 : AQUACULTURE & FISHERIES SWOT ANALYSIS**

STRENGTHS	
Rapid growth of cultured species	Clean ocean
Research capacity	Water & ample natural resources
Guam's geographic location	High health status of stock
WEAKNESSES	
Complex permit issues	Lack of capacity to handle an increasing local supply of fish
High overheads costs	Inconsistent catch quality
OPPORTUNITIES	
Growing population Strong local demand Global market for high health & premium quality products Island food security	
THREATS	
Tropical storms Typhoons Flooding Coastal erosion Continued increasing regulations	

## STRATEGIES FOR LEAD ECONOMIC SECTORS

### ARCHITECTURAL AND ENGINEERING

Due to our location, Guam is limited in its resource base for expansion initiatives in architectural and engineering fields. To help bridge this gap, UOG has established a four-year engineering program that would help meet the growing demands of professional engineers on the island.

In 2018, UOG signed a \$5.4 million contract for the construction of the School of Engineering building. This will provide students with three new classrooms, three laboratories and the possibility of a full engineering program. Other civil engineering initiatives include courses offered by GCC preparing students with skills required in analyzing construction sites, designing and properly assessing potential construction projects.

In addition to this, other educational opportunities in the science, technology, engineering and math (STEM) field have been explored providing primary and secondary students STEM program curriculum. This initiative demonstrates great opportunities for college preparation and entrance into an occupational workforce.

According to the DOC, employment figures have reflected tremendous increase in STEM related occupations. In 2018, the GDOL reported employment in architecture and engineering occupations to be 940. Guam has significant potential to provide resources required to adapt to new trends and promote professional services to expand the island's architectural and engineering workforce.

Applying SWOT analysis to the growth potential for the architectural and engineering sector of the economy conveyed the following results Figure 3.3:

**FIGURE 3.3 : ARCHITECTURAL & ENGINEERING SWOT ANALYSIS**

#### STRENGTHS

- Growth in educational programs
- Training opportunities available

#### WEAKNESSES

- Lack of training programs
- Limited professional services

#### OPPORTUNITIES

- Collaborative partnerships
- Growing demand for professional services
- Educational scholarships available for students

#### THREATS

- Stagnant construction industry
- Shortage of funding for educational programs

### CONSTRUCTION

Over the next decade, Guam anticipates a steady rise in the demand for construction services. This forecast is based on current and projected amounts of local and federal government contractual awards combined with private sector investment in real property recorded by the building permit authority at DPW.

From this review, it is apparent that Guam is in the early stage of an economic surge, one that is fueled by the high dollar amount of building projects (CIP's) programmed over the next five years. Both government and the private sector view potential earnings in this industry at record highs specifically in the areas of government tax revenues, retail and wholesale receipts for construction materials and supplies, metal sales and fabrication, bulk cargo transport (inter-island and regional) and quarry production. Other construction related businesses will benefit from the growth potential particularly

# STRATEGIES FOR LEAD ECONOMIC SECTORS

those establishments that provide on-island contractual services for materials and supplies.

Table 3.1 provides a summary of Guam capital improvements scheduled for construction for near term to midterm projects leading into 2023. The projects enumerated in these tables are funded through a combination of local appropriations, bonds, federal appropriations, and special fund allocations by DoD. It is important to note however, that this summary is not all inclusive of other on-going projects, those with building permits acquired but without full funding.

**TABLE 3.1 : SUMAMRY OF CIP PROJECTS  
2017-2023**

PROJECT	PROJECT COST
<b>Department of Public Works</b>	
On-Going Projects	<b>\$70M</b>
Planning and Design	<b>\$108M</b>
<b>Guam Power Authority</b>	
Engineering Capital Improvement Projects	<b>\$56.3M</b>
<b>Guam Waterworks Authority</b>	
2016-2020 Capital Improvement Plan	<b>\$282.1M</b>
<b>Guam International Airport Authority</b>	
Capital Improvement Projects	<b>\$210M</b>
<b>Guam Economic Development Authority</b>	
Hot Bond Projects	<b>\$8M</b>
<b>Port Authority of Guam</b>	
Capital Improvement Projects	<b>\$8M</b>
<b>Department of Defense</b>	
NDAA Build-Up Projects (2019)	<b>\$377M</b>

**Note:** A detailed description can be found on Strategic Development Projects

Applying SWOT analysis to the growth potential for the construction sector of the economy conveyed the following results Figure 3.4:

**FIGURE 3.4 : CONSTRUCTION SWOT ANALYSIS**

## STRENGTHS

High potential for unprecedented market growth  
CIP's are funded and build ready  
Infrastructure support system available  
Locally based procurement with secured banking services

## WEAKNESSES

Government bureaucracy  
Higher cost of equipment, supplies and materials  
H-2B program requirement  
Development of skilled labor

## OPPORTUNITIES

Tax benefits for locally licensed companies  
Maximize Return on Investment  
U.S. military and local government planned expenditure  
IRS designed "Opportunity Zones" program

## THREATS

Political tension in Asia-Pacific region  
Occasional disruption from tropical storms  
Entry of new market competitors  
Inability to procure adequate labor  
Transportation costs

## ECONOMIC OPPORTUNITY ZONES

The latest federal government effort to encourage investment in low-income census tracts was prompted by the federal tax bill known as The Tax Cuts and Jobs Act (TCJA) enacted in December 2017. This bill allowed for each state and territory Governor the opportunity to designate no more than 25% of low-income census tracts as Opportunity Zones.

In April 2018, the Governor of Guam identified 25 Qualified Opportunity Zones for Guam for both the Low Income Communities (LIC) and Non-LIC Contiguous tracts represented in Figure 3.5. Further, the U.S. Department of Treasury certified these nominations for eligible census tracts. The TCJA serves as a critical tool to promote job creation and long-term investment for economically distressed communities, under certain conditions, to be eligible for preferential tax treatment.

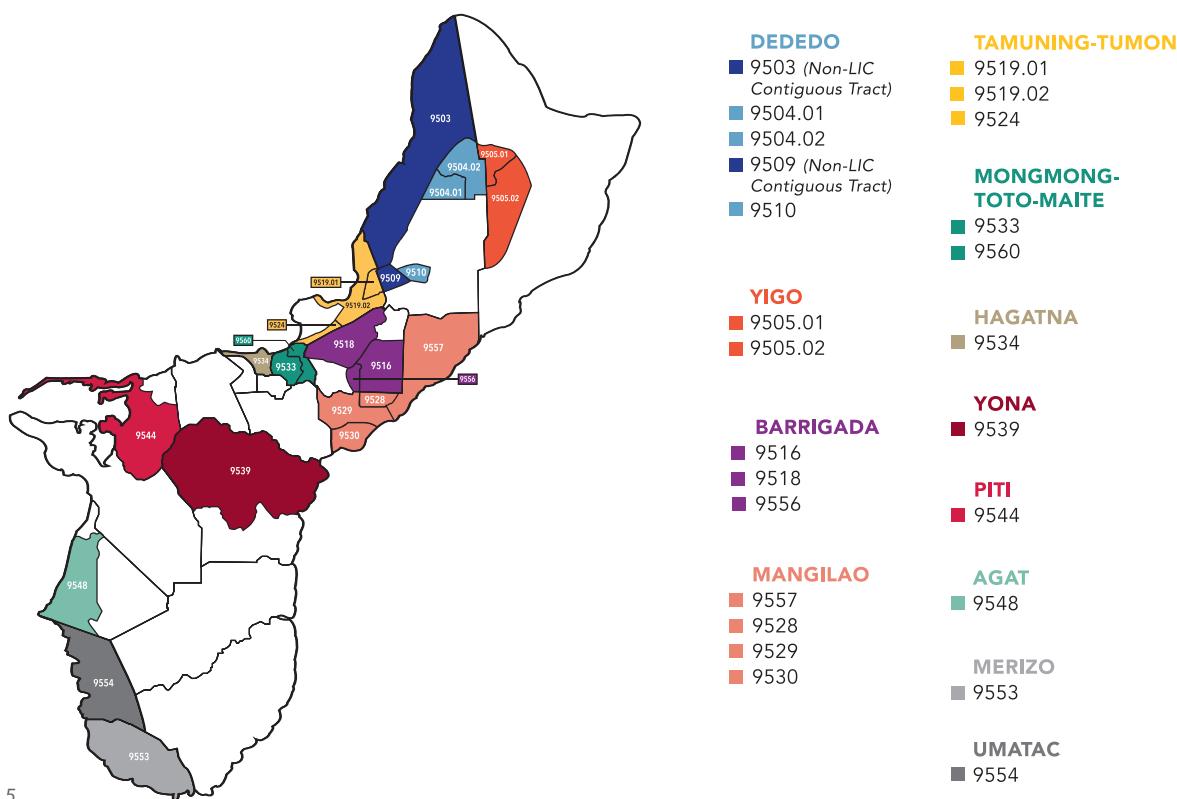
## STRATEGIES FOR LEAD ECONOMIC SECTORS

Investments can be made by individual taxpayers who become self-certified through a Qualified Opportunity Fund (QOF) in these zones, which will be afforded a deferment in part or whole or an overall elimination of federal taxes on capital gains. The QOF becomes the vehicle for potential partnerships in investment within Qualified Opportunity Zones. Eligible recipients can take advantage of these tax incentives by simply investing in a QOF.

Opportunity Zones don't operate through a tax credit program; instead, Opportunity Zone designation and investment are governed through two Internal Revenue Code sections. This removes any limitation on the number of Opportunity Funds that can exist, making them more the product of an entirely new IRS rule that changes the tax treatment of capital gains than the subject of a more traditionally structured tax credit program (fundraise).

The U.S. Internal Revenue Service supports the Community Development Financial Institutions Fund (CDFI) providing guidance for benefits on Qualified Opportunity Zones under IRC 1400Z-2. The affirmative steps are discussed in greater detail in 26 CFR Part I of the Department of Treasury, Internal Revenue Service Federal Registrar.

Respective village Mayors and Municipal Planning Councils identified as Economic Opportunity Zones were engaged by the GEDA Business Development division. GEDA provided assistance by educating the Mayors and the Councils of the intent of Opportunity Zones and the potential for economic activities in their villages. The outcome was the creation of specific types of development listing(s) that were either being considered or accepted by the village representative as approved type of developments in their community.



# STRATEGIES FOR LEAD ECONOMIC SECTORS

Applying SWOT analysis to the growth potential for the economic opportunity zones sector of the economy conveyed the following results Figure 3.6:

FIGURE 3.6 : ECONOMIC OPPORTUNITY ZONES SWOT ANALYSIS	
STRENGTHS	
Encourages small, minority owned, new business venture	Location specific benefits
Public and private revenue generation	Deferment on capital gains tax with available tax discounts
Repatriation of local and U.S. companies	Increase investment and jobs in low-income areas
	Self-certifying program
WEAKNESSES	
Program is new and limited to a five year tax recovery time-frame	Real estate development and transactions are minimal (Soft Market)
Impact on local tax revenues (Corporate and Income Taxes)	Small market base economy
Not all low-income areas identified are enticing for investments	Short window to maximize investor tax benefits
OPPORTUNITIES	
Positive revenue and GDP generator	Create new industries, for and attract investors to Guam
Job and revenue creation	Complements small business development policies and programs
Invite new money to Guam by way of capital gains	Business retention
THREATS	
Federal policy instability and interference	Challenges to compete with other opportunity zone areas throughout the U.S. and U.S. Territories
Lack of urgency by the market to bring investors to Guam	Challenges to attract U.S. investors with U.S. capital gains
Lack of urgency to resolve H-2B Visa restrictions	

## FEDERAL AND MILITARY BASE OPERATIONS

As discussed in earlier sections of this CEDS, substantial resources have been and will continue to be allocated to the operations of U.S. military bases in Guam. Annual appropriations provided in NDAA serves as the financial platform on which base operations are funded to benefit Guam's economy.

In recent world events, recognition of Guam's strategic military value have increased and also could result in increased military presence in Guam, bolstering the military's contribution to Guam's economy.

The U.S. government has options to relocate military fleets, equipment, and personnel from time to time to either increase or decrease the U.S. military presence in Guam. Although the local government cannot predict whether or when such adjustments may occur the military presence in Guam is generally expected to increase.

Some advantages to Guam's strategic position include:

- The only substantial military facilities on U.S. soil in the Western Pacific.
- Closer location to potential flashpoints of conflicts in Asia.
- Air Force, Navy and Marine Corps, Coast Guard, National Guard and Reserve facilities and personnel.
- Deep-water harbor with 17,000 linear feet of wharf space with ability to handle three million pounds of ordnance (net explosive weight).
- Significant airfield capability including dual, two mile long runways with contingency, mobilization and surge capable civilian airfields in Guam and CNMI.
- Guam has repair capabilities for surface vessels, submarines, aircraft and combat equipment.

The U.S. Air Force hosts a rotating presence of bomber, tanker and fighter aircraft, and permanently stationed RQ-4 Global Hawk unmanned aerial reconnaissance assets in addition to a variety of aircraft and contingency response training events.

In Guam, the U.S. Navy is a home port for nuclear fast attack submarines; the USS Oklahoma City, the USS Chicago, the USS Topeka, and the USS Key West.

Procurement contracts awarded vary in areas from telecommunications, construction related activities and materials, and contracting for professional services. Congressional authorizations for appropriations for military construction and family housing projects are provided in Table 3.2.

TABLE 3.2 : DEPARTMENT OF DEFENSE  
NDAA PROJECTS FISCAL YEARS 2015 - 2019

YEAR	TOTAL AUTHORIZATION (in thousands)
2015	\$162,451
2016	\$232,568
2017	\$248,658
2018	\$354,654
2019	\$377,211

Source: House Armed Services Committee  
FY'15 - FY'19 National Defense Authorization Acts

# STRATEGIES FOR LEAD ECONOMIC SECTORS

The 2015 Record of Decision identified the final locations for additional base facilities to accommodate the Marines. The NDAA for federal FY'15 authorized \$162 million for military construction in Guam, subject to the satisfaction of certain requirements, and set the maximum cost of moving the Marines from Japan to Guam at \$8.6 billion, of which \$3.1 billion of the cost will be provided by Japan, and the remaining cost to be provided by the U.S.

The NDAA in FY'18 included approximately \$354.6 million for military construction in Guam. These projects consisted of Aircraft Maintenance Hangar No. 2, Corrosion Control Hangar, Marine Aviation Logistic Squadron (MALS) Facilities, Navy Commercial Tie-In Hardening, Water Well Field, Construct Truck Load and Unload Facility, Reserve Medical Training Facility, and the Replacement of Andersen Housing Phase 2.

Applying SWOT analysis to the growth potential for the federal and military buildup sector of the economy conveyed the following results Figure 3.7:

**FIGURE 3.7 : FEDERAL AND MILITARY BUILDUP SWOT ANALYSIS**

## STRENGTHS

- High potential for unprecedented market growth
- Projects funding through NDAA
- Infrastructure support system available
- Nationally based procurement

## WEAKNESSES

- Federal bureaucracy with regulatory compliance
- Fixed cost contracts with caps
- Availability of skilled labor
- Challenging procurement guidelines

## OPPORTUNITIES

- Tax benefits for Guam licensed companies
- Maximize ROI
- U.S. military and local government appropriated funding
- IRS designated "Opportunity Zones" program
- Excellent mid and long term prospects
- Use of prime local contractors still non-existent

## THREATS

- Political uncertainty and tension in Asia-Pacific region
- Entry of new market competitors
- Inability to procure adequate labor

## FINANCIAL INSTITUTIONS

Guam provides local and foreign investors a degree of security and continuity as a location to do business, especially due to Guam being on US soil. Investors consider this an important factor when contemplating new business start-up or expansion. This is essential in Guam's bid to attract foreign and mainland investment and most especially to Asian entrepreneurs who wish to protect their investment while taking part in the American economic system and legal infrastructure.

The system of U.S. State and Federal banking regulations, known as the dual banking system, allows both state (i.e. territories) and federal governments to charter and regulate banks.

Federal regulators include the Federal Reserve that regulates banks and bank holding companies, and the Office of the Comptroller of the Currency that charters and regulates national banks. In addition, the Federal Deposit Insurance Corporation (FDIC) serves as the insurer of both national and state-chartered banks. National and territorial banks are automatically members of the Federal Reserve and must be insured by the FDIC.

There are two state banks, two Guam chartered commercial banks, one Guam chartered savings and loan association, two foreign banks, two off-shore lending facilities and 11 finance companies that are licensed in Guam. The combined total assets of all financial institutions for 2017 are \$3.7 billion. In the Table 3.3 you will find Guam's total assets by financial institution type.

**TABLE 3.3 : FINANCIAL INSTITUTION ASSETS 2014 - 2017**

ASSETS BY BANK TYPE (in thousands)	2014	2015	2016	2017
National & State Banks	\$1,513,812	\$1,409,423	\$1,554,156	\$1,570,881
Guam Domiciled Commercial Banks	\$1,622,865	\$1,893,650	\$2,261,409	\$1,749,729
Foreign Banks	\$154,111	\$163,029	\$154,111	\$139,888
Savings & Loans Banks	\$124,304	\$126,351	\$133,051	\$141,222
Off-Shore Lending Facilities	\$380	\$380	\$380	\$380
Finance Companies	\$128,288	\$122,960	\$137,322	\$129,148
<b>TOTAL</b>	<b>\$3,543,760</b>	<b>\$3,715,793</b>	<b>\$4,240,429</b>	<b>\$3,731,248</b>

*Source:* Department of Revenue & Taxation,  
2014 - 2017 Banking Commissioner's Annual Report

# STRATEGIES FOR LEAD ECONOMIC SECTORS

Applying SWOT analysis to the growth potential for the financial institution sector of the economy conveyed the following results Figure 3.8:

FIGURE 3.8 : FINANCIAL INSTITUTION SWOT ANALYSIS	
<b>STRENGTHS</b>	
U.S. Territory mirroring federal banking and taxation laws	
Support infrastructure including global connectivity	
Growth potential in dollar transactions and deposits	
Location in Micronesia and in the Pacific	
<b>WEAKNESSES</b>	
Government bureaucracy with regulatory compliance	
Small consumer market, small domestic economy	
Economy vulnerable to external factors and shock	
Limited capital for large borrowers	
<b>OPPORTUNITIES</b>	
Tax benefits for Guam licensed companies	
U.S. military and private sector growth	
IRS designated "Opportunity Zones" program	
Growing domestic market	
<b>THREATS</b>	
Political instability and tension in Asia-Pacific region	
Entry of new market competitors	
Over-reliance on tourism, military and local government sector	
Cyber security	

## GREEN TECHNOLOGY

A circular economy seeks to rebuild financial, manufactured, human, social or natural capital. This ensures enhanced flows of goods and services. In a circular economy, economic activity builds and rebuilds overall system health. The concept recognizes the importance of the economy needing to work effectively at all scales – for large and small businesses, for organizations and individuals, globally and locally.

Transitioning to a circular economy does not only amount to adjustments aimed at reducing the negative impacts of the linear economy. Rather, it represents a systemic shift that builds long-term resilience, generates business and economic opportunities, and provides environmental and societal benefits.

Looking beyond the current take-make-waste extractive industrial model, a circular economy aims to redefine growth, focusing on positive society-wide benefits. It entails gradually decoupling economic activity from the consumption of finite resources and designing waste out of the system. Underpinned by a transition to renewable energy sources, the circular model builds economic, natural, and social capital. It is based on three principles:

- Design out waste and pollution
- Keep products and materials in use
- Regenerate natural systems

An assessment of potential circular economy enterprises on Guam would be ideal and provide more information on how to move forward.

Applying SWOT analysis to the growth potential for the green technology sector of the economy conveyed the following results Figure 3.9:

FIGURE 3.9 : GREEN TECHNOLOGY SWOT ANALYSIS	
<b>STRENGTHS</b>	
Promote and encourage research, development and implementation of green technology throughout Guam industries	
New production and market opportunities with wide-ranging environmental benefits	
Potential to expand green technology concepts throughout the Micronesian region with similar environmental challenges	
<b>WEAKNESSES</b>	
Capitalization costs and start-up initiatives	
Prevailing wage requirements, higher than other neighboring islands	
Ready access to technological requirements, i.e., equipment, methods, funding	
<b>OPPORTUNITIES</b>	
Minimized competition, broad market base	
Retrofitting business and residential infrastructure to implement technology	
Job creation, new field of opportunity	
Government friendly programs for tax abatement, deferment (Qualifying Certificate Program, GEDA)	
<b>THREATS</b>	
Level of community interest and support	
Inadequate government financial assistance and support	
Lower cost of similar Pacific-rim sourced commodities	

## STRATEGIES FOR LEAD ECONOMIC SECTORS

### HEALTHCARE

The Guam Memorial Hospital (GMH) is the island's only public hospital that provides treatment to all individuals who seek medical care. The hospital has 161 acute care beds and 40 beds at its long-term care Skilled Nursing Unit (SNU) facility. In 2015, the Guam Regional Medical City (GRMC) opened its private hospital that offers services for specialized health care with a total of 125 beds. Aside from public and private services offered by GMH and GRMC, the U.S. Naval Hospital primarily services the military sector in Guam. According to the Guam Medical Association, there are a total of 124 Doctors and 91 Medical Clinics.

As the demand for quality health care rises, Guam is attempting to improve the existing healthcare system. In order to ensure the well-being of Guam's residents, it is vital for the government to determine the future state of healthcare. For example, research indicates that one of the increasing demands of service lie in the elderly care. In 2018, there were a total of 33,016 Senior Citizens ranging from the ages of 55 and over living in Guam. It is shown that there is a need for additional healthcare options for Senior Citizens and residents island wide.

Listed below are the Senior Care options that focus mainly on elderly care:

**St. Dominic's Senior Care Home:** A private and non-profit Senior Care Home that provides unit and skilled nursing services designed to care for insured patients unable to care for themselves (bedridden or disabled).

**Guma Trankilidat:** Guam Housing and Urban Authority's (GHURA) federally funded program that provides a single home unit and assistance to seniors of ages 62 and older.

Aside from the residents that live in the senior care centers indicated above; data shows that there are an estimated 800 seniors that live independently. This data shows that with the additional aging

population, the development of assisted living facilities may be a viable pursuit. These types of facilities are designed for individuals who want to live independently but need additional help such as access to meals, housekeeping and recreational activities. Assisted living is also designed for patients (with low to medium care priorities) who need extra care by trained individuals to assist with medication management and other care.

A potential partnership between pertinent Government of Guam agencies can foster the creation of a feasibility study to determine what actions will be needed to support the growing healthcare demands. It is critical to decide if additional facilities such as a new hospital or urgent care are suitable for the further development of Guam's health care system.

Applying SWOT analysis to the growth potential for the healthcare sector of the economy conveyed the following results Figure 3.10:

**FIGURE 3.10 : HEALTHCARE SWOT ANALYSIS**

STRENGTHS	
Community of Doctors is adequate to support academic initiatives	Support Infrastructure Present Market Demand Institutional Resources
WEAKNESSES	
No existing professional programs locally	Venture has no feasibility study or business plan to support claims
Limited resources- Professional and Technical Expertise	Capital-Intensive Industry
Small Economy	
OPPORTUNITIES	
Easier and increased access to quality, specialized healthcare services	Availability of a larger pool of physicians with the most current medical knowledge
Reduction in expenses associated with going off-island for medical diagnosis and treatment	Regional collaboration, Technology Exchange
Opportunities for small businesses	Career and employment opportunities
THREATS	
Lack of financing interest or grants for such funding	Guam Memorial Hospital Authority issues
Tendency of local government to interfere and over-regulate	

# STRATEGIES FOR LEAD ECONOMIC SECTORS

## TELECOMMUNICATION

Guam has built a robust and dynamic telecommunications sector. The island is equipped with 3G, 4G and 5G broadband coverage and is considered to be the most technologically connected among the surrounding islands in the Pacific.

Guam's telecom market remains competitive with three major companies providing fixed lines and mobile services to meet the needs of the Guam community. Mobile broadband has rapidly grown since the launch of the HSPA and LTE services. Several minor companies provide services to corporate customers. The U.S. Naval Computer and Telecommunications Station (NCTS) provides Guam with multispectral connectivity in NetOps and Information Assurance to Navy, Joint, and Coalition forces in Guam as well as the Western Pacific and Indian Oceans.

This next generation of ultra-high speed connectivity would allow Guam's telecommunications to become the hub for communication links in the region and throughout Asia. It would also shepherd in new markets and bridge the gaps in the medical field by providing telemedicine opportunities.

This added service, presents a plethora of opportunities for the development of training and apprenticeship programs focusing on the education of more advanced technological developments such as Artificial Intelligence (AI), Big Data, and the Internet of Things (IoT).

In 2018, the GCC announced its latest initiative that will prepare high school students for work in the telecoms sector. GCC has partnered multiple stakeholders including the Guam Department of Education, the Guam Chamber of Commerce and the island's telecom companies to help cultivate and build a skilled workforce. Additionally, GCC provides a secondary Career and Technical Education (CTE) Telecommunications program as a post secondary associates degree in computer science.

With the advancement of technologies on the rise, Guam will need a skilled, dynamic workforce

equipped to support such exponential growth.

Applying SWOT analysis to the growth potential for the telecommunications sector of the economy conveyed the following results Figure 3.11:

**FIGURE 3.11 : TELECOMMUNICATIONS SWOT ANALYSIS**

### STRENGTHS

- Advanced quality & reliability
- Transpacific telecommunications hub
- Advanced fiber optic

### WEAKNESSES

- Equipment shortages
- Lack of skilled technical workforce
- Unable to keep up with technological advances within the U.S.

### OPPORTUNITIES

- Potential Military Market Base
- Data-driven growth & efficiency
- Big data technologies

### THREATS

- Cyber Security
- Foreign custodians of networks
- Global growth of mobile connectivity

## TOURISM

With tourism as the primary pillar stimulating Guam's economy, it accounts for 17.7% of the island's total gross domestic product and generates \$1.4 billion annually representing 60% of Guam's annual business revenue. According to GVB, the tourism industry employs over 18,000 residents or 31% of non-federal employment. The impact of tourism and its accompanying tax dollars is of paramount importance to every resident.

GVB is a nonprofit membership corporation with a mission to efficiently and effectively promote Guam as a safe and satisfying destination for visitors and to derive maximum benefits for the people of Guam.

The Guam Tourism 2020 Plan developed by GVB to achieve a paradigm shift that would help Guam

## STRATEGIES FOR LEAD ECONOMIC SECTORS

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capitalize on its potential to become a world-class, first-tier resort destination of choice. To accomplish this, GVB defined eight core objectives:

- 1. Improve Quality and Yield.** Upgrade public areas and existing resorts, incentivize private reinvestment, add five-star facilities, improve training and service, improve dining quality, establish a business improvement district with covenants, conditions and restrictions and enforced standards, and improve Guam's image over time.
- 2. Grow arrivals and diversify.** Increase Chinese tourist numbers with or without visa waiver. Reach 2 million arrivals. Maintain a Japan market mix of at least 55% - 60%; grow smaller markets; add new markets.
- 3. Add High-End Hotel Rooms, Incentivize Reinvestment.** Add 1,600 rooms by 2020 to accommodate goal pax. Focus on high-end hotels. Incentivize existing properties to reinvest.
- 4. Focus on Meetings, Incentives, Conferences, and Exhibitions (MICE).** Aggressively pursue conference business to fill the slower periods as well as school groups and other targeted groups.
- 5. Promote the CHamoru Culture and Unique Multi-cultural Diversity.** The only unique competitive differentiator. Make CHamoru music, dance, art, language, culture, and values ever-present. Promote Guam's unique multicultural, Spanish and American influences.
- 6. Extend Average Length of Stay.** Communicate Guam activities and encourage agents to create longer stay packages. Achieve a 33% increase in spending by extending the length of stay from three days to four days.
- 7. Promote Our Unique Attractions.** Professionally market our numerous tourist attractions and events. Encourage the development of new attractions and activities.
- 8. Extend Tourism Beyond Tumon.** Extend the visitors' district to Hagåtña. Grow tourism

in Guam's villages. Support local farmers and fisherman and locally made products.

**Ecotourism** - Complimentary to the island's culture and historical preservation efforts, Guam is endowed with an abundance of natural resources. Visitors travel to Guam to participate in social activities and environmental sustainability efforts. Although ecotourism is still a growing portion of the island's economy, Guam continues to find ways to promote the ecotourism experience. In the past year, the island has seen more Free Independent Traveler (FIT) tourists. With this, it is imperative that Guam provides an educational awareness in sustainability practices to maintain Guam's ecosystem. Local partnerships among hotels, public and private sector businesses provide a means of providing educational awareness information to visitors and the public as a whole. One example of collaboration efforts is the partnership between the Outrigger Resort of Guam and Underwater World in a Global Conservation Initiative. This effort aids in generating awareness and information sharing to visitors about the island's coral reefs.

Ecotourism can also strengthen education tourism's role in Guam. For example, the island's reef and marine life can enhance academic work in environmental studies while Guam's historical sites can positively affect history studies. Field research opportunities as an educational component have become increasingly popular, and Guam provides the perfect setting for such.

**Education Tourism** - One of the fastest growing areas of the travel and tourism sector. The U.S. has seen a steady increase in the number of international students, growing by 1.5% last year. This trend is expected to continue as more international students choose to widen their academic horizons. According to the Guam Tourism 2020 Plan, there is an opportunity for Guam when it comes to education tourism such as in the areas of English language, environmental studies, and exam preparation or testing.

China, South Korea, and Japan were among the top places of origin of international students in the

## STRATEGIES FOR LEAD ECONOMIC SECTORS

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U.S. These three countries were also the primary markets responsible for Guam reaching 1.5 million visitors last year, with 2018 arrival numbers marking the best year in tourism history. This highlights Guam's ability to attract markets that can fuel the island's education tourism industry, especially considering Guam's strategic location will appeal to other countries in East Asia and the Pacific. With the island already recognized for its leisure activities, food and beverage, and shopping, the addition of educational activities at UOG, which serves as the regional center for higher education, will emphasize Guam's desirability as a travel destination.

UOG has several programs that facilitate education tourism. The English Language Institute (ELI) provides English language instruction to international students who wish to enroll in English-speaking universities. Similarly, the English Adventure Program (EAP) is an up to four-week program that provides students from international universities the opportunity to improve English skills while enjoying a variety of exciting activities that Guam has to offer. The number of participants as part of this program has grown tremendously by more than 2,000% since the program started in 2008, demonstrating the demand for international exchange programs with Guam. UOG also has student exchange programs throughout the academic year.

**Heritage Tourism** - Hagåtña has been the capital of Guam since the Spanish-American War of 1898 when the U.S. captured Hagåtña from the Spanish. The result of WWII left many of Hagåtña's historical sites and the city itself damaged. However, there are still a number of historical monuments and remains that can be viewed, including sections of buildings left from the time of Spanish rule, as well as pre-Spanish stone pillars. The devastation of the city, at once was the most populated village prior to World War II, is now the area that serves primarily as a center for government and private businesses.

Guam Public Law 24-110, known as the Hagåtña Restoration and Redevelopment Act created the

autonomous agency, the Hagåtña Restoration and Redevelopment Authority (HRRA), a public corporation was established to carry out the purposes of the legislation and to re-establish Hagåtña as the capital city of Guam, and the governmental, cultural, and the commercial heart of the island supported by vibrant residential mixed-use areas. Market forces evidenced through private organizations such as the Guam Chamber of Commerce has made it a priority in recent years to redevelop the capital as a counterpoint to the tourist attraction of Tumon.

Under P.L. 24-110, the Guam Legislature cited the fundamental purpose of redevelopment is to expand the supply of low and moderate income housing, employment opportunities for the jobless, underemployed, and low-income employees, and to provide an environment for the social, economic, and psychological growth and well being of all citizens. The Hagåtña revitalization project is intended to transform Guam's capital city to a cultural destination for residents, visitors, and tourists. It is designed to integrate economic zoning and urban planning concepts that will provide incentives to entice businesses to locate or relocate to Hagåtña.

Applying SWOT analysis to the growth potential for the tourism sector of the economy conveyed the following results Figure 3.12:

### TRANSPORTATION AND DISTRIBUTION

Guam in the present decade has made progress in the effort to upgrade its seaport and airport terminal facilities. In response to steady increase in passenger and cargo volume, Guam's air and sea terminals have invested well over \$200 million in the past five years to improve services.

To enhance this sector, market studies and projections are needed to determine how global and regional technological trends in shipping and airline transport will shape the economic opportunities in the region and throughout the Pacific Rim. Investment capital from both local and foreign entrepreneurs is required with government

# STRATEGIES FOR LEAD ECONOMIC SECTORS

**FIGURE 3.12 : TOURISM SWOT ANALYSIS**

STRENGTHS
Proximity to major Asian countries International hotel presence International shopping opportunities
WEAKNESSES
Service level needs improvement Inadequate public & private infrastructure High operating & utility costs
OPPORTUNITIES
Improve product quality & add high quality hotels & dining options Develop regional tourism Develop educational tourism Imrpove public & private infrastructure
THREATS
Natural disasters/typhoons Overwhelming capital improvement requirements Disruptive world events Increased global competition

incentives to offset the cost of doing business. Part of this initiative will require programs to assist small business with start-up and maintenance costs.

With cargo tonnage nearing 2.0 to 2.3 million revenue tons per year (PAG) and passenger arrivals hovering at 1.5 million annually (GIAA), operations may experience issues in efficiency if planned CIP's are delayed.

In addition to the tax incentive programs as well as local loan and guarantee programs offered by GEDA, assistance from the U.S. Small Business Administration, HUD and Department of Commerce, EDA is available. Technical assistance and various forms financial aid including loans, loan guarantees, tax credits as well as other investment incentives can be provided.

The short-term goals in transportation industry development include:

- Inventory and allocate private and public lands for light and heavy industry use;
- Implement airport (GIAA) and seaport (PAG)

funded capital improvements particularly those directly related to passenger and air/surface cargo movement;

- Seek exclusion from the Jones Act and other restrictive U.S. federal cabotage laws;
- Identify and upgrade public roadways that serve as major throughways for cargo vehicles and equipment;
- Identify market potential with specific focus on high volume transshipment cargo for an analysis of the environmental factors or conditions that are relevant to Guam's prospects for economic development is used to enumerate the challenges that are applicable to Guam.

Applying SWOT analysis to the growth potential for the transportation and distribution sector of the economy conveyed the following results Figure 3.13:

**FIGURE 3.13 : TRANSPORTATION & DISTRIBUTION SWOT ANALYSIS**

STRENGTHS
Geographic proximity to Asia & Pacific Island nations U.S. western-most territory with legal structure Ability to educate, mobilize, and maintain workforce Infrastructure support system available Existing market with growth potential Federal a& local financial assistance
WEAKNESSES
Higher cost of equipment, supplies and materials World oil prices Compliance with federal aviation & or shipping laws
OPPORTUNITIES
Expand into the Asia-Pacific and or Micronesia markets Capitalize on U.S. military build-up
THREATS
Political tension, U.S. and North Korea, China Occasional disruption from tropical storms Entry of new market competitors

## ECONOMIC DEVELOPMENT CHALLENGES

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An analysis of the environmental factors or conditions that are relevant to Guam's prospects for economic development is used to enumerate the challenges that are applicable to Guam.

Some characteristics of the Guam economy are:

- Small domestic economy that is relatively open;
- Economic diversification is inadequate;
- Not overly endowed with natural resources
- Multicultural society with differing values and norms
- Unincorporated U.S. territory
- Competitiveness in the Asia-Pacific region

Guam's smallness can be measured in several ways. First is in terms of its small population, which is estimated to be around 167,800 people and, consequently, a small labor force of around 71,060, of which 67,960 (57.9%) are employed and 3,100 (4.4%) are unemployed based on the unemployment report in March 2018 (Guam Bureau of Labor Statistics). During stronger economic periods when labor demand exceeds the available labor force, Guam has supplemented its local labor force with those from the U.S., neighboring islands that are freely associated with the U.S., and the use of foreign workers.

The island's economy suggests benefits from attracting more resources, including foreign investments, which supplement its limited productive resources and also balance out the island's high imports. This characteristic of Guam, especially its implication for the lack of economies of scale, points to the absence of mass production of many products but suggests opportunities for niche markets and for small business participation.

Although the government sector (a combination of U.S. Federal government agencies and local government agencies) continue to make up a

significant share of the economy (54% of Gross Island Product in 2016, U.S. Department of Commerce-Bureau of Economic Analysis), the economy has made a notable shift toward a larger role of the private sector, including small businesses.

Recent employment estimates show that 75.3% of jobs are provided by private businesses, 18.5% by the local government and 6.2% by the U.S. Federal government.

Because of the instability and unpredictability of Guam's tourism and government sectors, more attention and resources need to be directed to the retail, services, and the agricultural sector. The opportunity to diversify into a number of areas including health, education, telecommunications, transportation, local production etc., increases exponentially with the present level of anticipated expenditures by the military and government. The more realistic option appears to be on the import side of trade where a search for ways to produce goods and services locally to reduce the current dependence on imported supply offers more promise.

Several important factors would be used when evaluating new industries:

- Use of indigenous resources, human capital and local materials;
- Use of green technology;
- High productivity and value-added activity;
- Capitalize on new technology;
- Provide import reduction and replacement;
- Threat to the environment, culture or business climate

Applying SWOT analysis to the economic development challenges of Guam conveyed the following results in Figure 4.1:

# ECONOMIC DEVELOPMENT CHALLENGES

**FIGURE 4.1 : ECONOMIC DEVELOPMENT CHALLENGES SWOT ANALYSIS**

## STRENGTHS

- Geographic location within Asia-Pacific Region
- Ethnic Blend (Multi-lingual population)
- Leading Economy in Micronesia
- Infrastructure
- Financial and Banking Laws (U.S. Mirrored)
- Economic and Physical Capacities
- Transportation and Transshipment Network
- Economic Opportunity Zones
- Heavy Defense Industry Presence
- Hardened Superstructure
- Natural Aquifer Capacity
- Training and Education Facilities
- Base for Micronesia Operations
- Deep Water Port Facilities
- Global and Regional Connectivity

## WEAKNESSES

- Small, Open Economy
- Domestic Market Demand Limited
- Limited Skilled and Specialized Labor
- Constraining Federal Policies
- Absence of Immigration Control  
(Under U.S. Federal Immigration Laws and Policies)
- Dependence on Import Good
- Fragile Environment
- Political Status
- Need to Diversify Industries and Overall Economy
- Domestic Production

## OPPORTUNITIES

- Excellent Mid and Long Term Growth Potential
- Domestic Production/Expansion in Agriculture, Fisheries, Aquaculture, Light Manufacturing, and Cottage Industries
- Technology Industries
- Expanding Transportation and Distribution
- Expanding Defense Activities
- Growth in Tourism Market
- Strengthening and Expanding Infrastructure
- Ecotourism

## THREATS

- Periodic Storm Threats
- H-2B Labor Issues
- Geo-political Forces in the Region
- Global Warming and Other Environmental Factors
- Management of Limited Resources
- Protection of the Environment

## SKILLED AND PROFESSIONAL LABOR

### The H2-B Dilemma

Guam has had a long history of necessity for a temporary skilled workforce, particularly throughout the re-building phase of a U.S territory that sustained near total infrastructure damage after World War II.

Today, Guam is on the cusp of an extended period of unprecedented growth with the movement of Marines from Okinawa to Guam, topped by the continued growth in tourism industry. The need for a scalable and reliable construction workforce is also vital to the expansion of infrastructure needed to build capacity for these as well as other emerging local industries.

Like the continental U.S., Guam faces challenges in hiring and retaining qualified skilled workers, most specifically in the construction trades. Based on pipeline or appropriated infrastructure funding, it is estimated that in the next three to five years, about 4,000 additional skilled workers will be needed to meet workforce demands. Without the supply of these skilled workers, it would be an insurmountable challenge to complete both the U.S. planned military (DOD) and local civilian projects.

Although skills training and apprenticeship programs have been available for decades, U.S. workers in the jurisdiction tend to gravitate toward higher-level construction occupations (i.e., electricians, plumbers, equipment operators), shying away from the more physically demanding structural occupations such as carpenters, cement masons and ironworkers.

Historically, Guam has seen a decline in the local skilled workforce as locals migrate to mainland for job opportunities, often to highly unionized areas, which offer better pay and benefits. This presents a challenge in the retention of skilled trade workers as Guam lacks an unemployment

## ECONOMIC DEVELOPMENT CHALLENGES

insurance system or union shops that offer benefit packages to help tide over skilled construction workers between jobs.

In December 2015, the USCIS started denying H-2B petitions, which had for the past 30 years, been routinely approved at a rate of about 95%. In FY'17, the island has experienced a 0% approval rate for all H-2B petitions across the board and across all industries, regardless of the employer's need, occupation, or situation. This sudden shift to a policy of "wholesale H-2B denial" has drastically affected Guam's ability to address military construction projects, public infrastructure programs and private sector development.

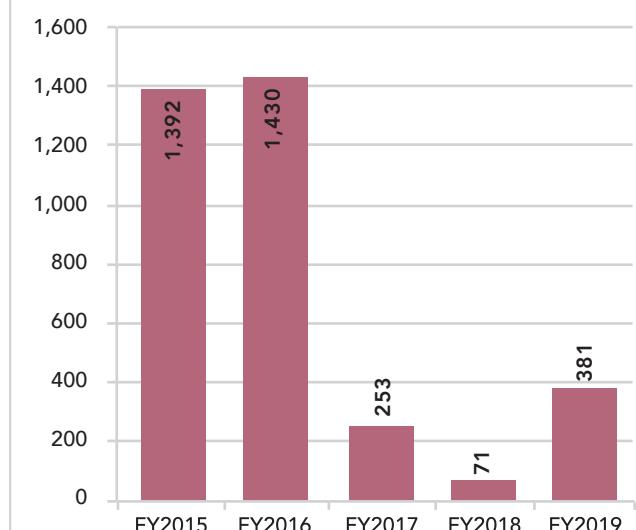
Guam's local contractors and other industry employers experienced adverse economic impact to their businesses as a result of the seemingly arbitrary action by the USCIS. Little to no economic growth outcome has harmed island residents in a time when the GDP was projected to grow. Many H-2B employers report that their businesses would need to downsize or remain status quo if H-2B workers are not available. They explain that foreign workers are essential to meet the demand swings of volatile island economy. Since the cyclical nature of this demand is typical of Guam's economy, the ability to recruit foreign workers offered greater flexibility to the local businessman.

In Guam and other non-continental U.S. jurisdictions, H-2B visa requirements are considered costly and onerous for any company. This is particularly true for small and medium-sized businesses that rely heavily on H-2B visas. Despite the complex requirements and 30 years of compliance in Guam's case, the USCIS initiated full denial of all H-2B petitions since December 2015 irrespective of employers' differing needs or unique industry situation. Statistically, it was noted that USCIS adjudicators unilaterally rejected all Guam-based petitions.

As of March 2019, new federal policy is in place to lessen the restriction of the USCIS H-2B processing for military related construction projects. This development involves approval by the Office of the Admiral, NavFac Guam, for certain civilian projects that have impact on the proposed Marine Relocation Plan and thus, would be exempt from the "normal" USCIS restrictive review, pursuant to NDAA of 2018.

Table 4.1 shows the amount of Guam H-2B Workers approved from FY'15 through FY'19.

**TABLE 4.1 : GUAM H-2B WORKERS  
FISCAL YEARS 2015-2019**



**Source:** Department of Labor, Alien Labor Processing & Certification Division  
H-2B Quarterly Reports

The NDAA of FY'18 authorized \$354.6 million for Guam military construction projects and allows up to 4,000 skilled foreign workers under the H-2B program per year to support military buildup projects. The law provided USCIS with flexibility in applying the H-2B visa program in Guam, and it permits up to 4,000 H-2B visas per year to be approved for military and civilian projects "directly related to, or associated with," the Marine relocation. The FY'19 NDAA lifted the 4,000 cap.

In this CEDS report, certain challenges and present economic conditions were analyzed to see what obstacles exist in transforming Guam's economy with opportunities for future economic

## ECONOMIC DEVELOPMENT CHALLENGES

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development highlighted to see the direction the Guam's economy could take. If anything is clear in this analysis, it is the fact that the island business and community leaders need to play an active role in addressing the challenges that lie ahead forging clear and realistic programs and policies to achieve the desired economic development outcome.

# STRATEGIC DEVELOPMENT PROJECTS

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The 2019 Comprehensive Economic Development Strategy can be realized through the implementation of a series of specific projects. These projects are intended to address the core development goals to meet both near and longer-term objectives for Guam's economy evaluated against EDA Investment policy guidelines and against Guam's needs.

Strategic Development Projects are categorized into two sections:

- 1. CAPACITY BUILDING  
CAPITAL IMPROVEMENT PROJECTS**
- 2. INDUSTRY DEVELOPMENT  
CAPITAL IMPROVEMENT PROJECTS**

## **CAPACITY BUILDING CAPITAL IMPROVEMENT PROJECTS**

In this next section, you will find an inventory of Guam's capacity building CIP's by geographic region followed by their project summaries. Project information was extrapolated from various Government of Guam agency master plans and various published reports.

### **DEPARTMENT OF PUBLIC WORKS**

- Highway Construction On-Going Projects
- Construction Planning and Design Projects
- High Priority Projects with Available Funding

### **GUAM POWER AUTHORITY**

### **GUAM WATERWORKS AUTHORITY**

### **GUAM INTERNATIONAL AIRPORT AUTHORITY**

### **PORT AUTHORITY OF GUAM**

### **GUAM ECONOMIC DEVELOPMENT AUTHORITY - HOT BOND PROJECTS**

### **DEPARTMENT OF DEFENSE - NDAA PROJECTS**

### **PRIVATE SECTOR INVESTMENTS**

## STRATEGIC DEVELOPMENT PROJECTS

**TABLE 5.1.1 : DEPARTMENT OF PUBLIC WORKS  
HIGHWAY CONSTRUCTION ON-GOING PROJECTS**

PROJECT	PROJECT COST	START DATE	STATUS
Route 3 Widening Route 28 Chalan Karefa	\$44,300,000	Feb 2018	
Route 3A Pavement Restoration	\$700,000	Mar 2018	
Route 1/8 Intersection Improvements & Agana Bridges Replacement (Design-Build)	\$16,400,000	Oct 2011	
Resurfacing Route 1 (Asan-Piti and Yigo-Dededo); Route 8 (Barrigada and Mongmong Toto Maite); Route 8/Canada-Toto Loop Road Intersection Improvements	\$8,400,000	Jun 2018	
2017 Island-wide Bridge Inspections	TBD	Nov 2017	
Route 1 Pavement Marking Improvements East Agana to Route 16 (Maintenance)	\$30,950	Feb 2018	
Village Road Pavement Restoration (Maintenance)	\$494,385	Dec 2017	\$494,385 reflects cost for Striping I Cost: Base Prep-TBD / Paving: TBD
<b>TOTAL :</b>	<b>\$70,325,335</b>		

**Source:** Guam Transportation Program, 2019 Ongoing Projects (March)

**TABLE 5.1.2 : DEPARTMENT OF PUBLIC WORKS  
HIGHWAY CONSTRUCTION PLANNING AND DESIGN PROJECTS**

PROJECT	PROJECT COST	START DATE	STATUS
Ajayan Bridge Replacement	\$3,000,000	FY 2018	Design Completed
Aplacho Bridge Replacement	\$3,000,000	FY 2019	Design Completed
Route 10A, Route 1- GIA/Tiyan Intersection	\$13,500,000	TBD	Design in Progress
Traffic Signal Upgrade, Islandwide	\$3,400,000	TBD	Design Completed
Route 14B, Ypao Road	\$14,000,000	TBD	Design Completed
Route 33 Planning Study	TBD	N/A	Planning Study in Progress
Route 5 Improvements from Route 2A to Naval Magazine	\$13,600,000	FY 2019	Design Completed
Route 17, Phase 2B	\$19,500,000	TBD	Design in Progress
Tiyan Parkway, Phase 2	\$21,000,000	TBD	Design in Progress
Route 14 Improvements- Route 1 to Archbishop Felixberto Flores Circle	\$11,500,000	FY 2019	Design in Progress
Route 20 Tiyan Parkway Structure Demolition, Phase 2	\$1,100,000	TBD	Planning
Route 1/8 Memorial	\$1,000,000	TBD	Planning
Route 10 Safety Improvements (Route 4 to Route 8/16)	\$3,100,000	FY 2019	Design in Progress
Ylig Memorial	TBD	TBD	Design Completed
Route 1 Pavement Markings Restoration, Juan Jacinto Drive to Gayinero Road (Maintenance)	TBD	TBD	Planning in Progress
Route 10 Pavement Markings Restoration, Tri-Intersection to Route 4 (Maintenance)	TBD	TBD	Planning in Progress
Route 8 Pavement Markings Restoration, Route 1 to Tri-Intersection (Maintenance)	TBD	TBD	Planning in Progress
Route 4 Pavement Markings Restoration, Route 1 to Pago Bay Bridge (Maintenance)	TBD	TBD	Planning in Progress
Islandwide Raised Medians Painting, Route 1 (Route 8 to Macy's Entrance), Route 16 (Route 1 to Tri-Intersection, Route 4 (Route 10 to Route 1), Route 8 (Route 1 to Tri-Intersection) Maintenance	\$46,000	TBD	Planning in Progress
Signing System Upgrade, Islandwide	TBD	TBD	Planning in Progress
Hagatna Test Bed	\$517,000	FY 2019	Design Completed
<b>TOTAL :</b>	<b>\$108,263,000</b>		

**Source:** Guam Transportation Program, 2019 Planning & Design Projects (March)

# STRATEGIC DEVELOPMENT PROJECTS

**TABLE 5.2 : GUAM POWER AUTHORITY  
CAPITAL IMPROVEMENT PROJECTS**

PROJECT	PROJECT COST	PROJECT MILESTONE	STATUS
Distribution System Improvements	\$1M	Planned Start Design: 4/2/16 Planned Finished Design: 11/30/17 Planned Start Construction: 3/1/18	<ul style="list-style-type: none"> <li>Completion of Regular Studies</li> <li>Training of Milsoft Windmill and creation of maintenance</li> <li>Installation of Fault Circuit Indicators</li> </ul>
Tumon Bay Lateral Underground Conversion	\$6.6M	Planned Start Design: 7/1/13 Planned Finished Design: 7/1/14	<ul style="list-style-type: none"> <li>Pending completion of Procurement Process</li> <li>Bid Opening</li> <li>Awarding of Project</li> </ul>
Line Reclosing and Load Profiling	\$1.2M	Planned Start Construction: 3/1/11 Actual Completion Date: 6/1/11 Planned Finish Construction: 6/1/13	<ul style="list-style-type: none"> <li>Installation of Line Reclosures</li> </ul>
Distribution System Improvements II	\$240,000	Planned Start Construction: 4/1/15 Actual Completion Date: 4/1/16 Planned Finish Construction: 9/1/16	<ul style="list-style-type: none"> <li>Installation of Capacitor Banks and Fault Indicators</li> <li>Ordering of additional reclosers, controllers, and transceivers to close out project</li> </ul>
Fire Protection Upgrades at Power Plants	\$3.8M	Update design and specs: 4/30/19 Rebid: 6/28/19 Construction: 3/31/20	<ul style="list-style-type: none"> <li>Update the design drawings and specifications</li> <li>Rebid project</li> <li>Construction</li> </ul>
GPA-GWA Multi-Purpose Facility (Fadian)	\$35M	Completion: 6/20/2018	<ul style="list-style-type: none"> <li>Delivery of Equipment completed</li> </ul>
Facilities Physical Security	\$1.4M	Bid the project: 3/29/19   Design and construction : 12/31/19	<ul style="list-style-type: none"> <li>Bid the Project</li> <li>Design and Construction</li> </ul>
Remote Start Capability of Generation Peaking Units	\$350,000	Project Bid: 3/29/19 Design & Installation: 7/31/19	<ul style="list-style-type: none"> <li>Project bid and vendor selection</li> <li>Construction/installation and testing</li> </ul>
Generator Protection Upgrade with Fault Recorders	\$580,000	Construction: 12/31/19	<ul style="list-style-type: none"> <li>Update existing generator protection relays</li> <li>Connect GPS clock to Tenjo Vista Units 1 to 6 generator</li> </ul>
Piti 115 kV GIS Major Maintenance	\$2.6M	Design: 12/12/16   Construction: 5/30/19	<ul style="list-style-type: none"> <li>Completion of maintenance work and cage ladder and walkway for crane</li> <li>Closeout of project as per schedule</li> </ul>
Substation Major Refurbishment- Power Transformer	\$540,000	Construction: 12/31/18	<ul style="list-style-type: none"> <li>Coordinate final reclassification of charges associated with completed work with Finance and T &amp;D Divisions in preparation to close out job order</li> </ul>
Agat Shoreline Pole Restoration Project	\$384,000	Planning Start Design: 4/22/16   Planned Finished Design: 5/30/18 Planned Start Construction: 3/1/18	<ul style="list-style-type: none"> <li>Prepare requisition for construction services</li> <li>Advertise bid to public</li> </ul>
System Protection Improvement & Capacitor Bank Controllers	\$1.3M	Construction: 12/31/19	<ul style="list-style-type: none"> <li>Finalization of scope of work</li> <li>Purchase and installation of SEL-387</li> </ul>
Dededo Substation Capacitor Bank	\$165,000	Design: 5/15/18   Construction: 12/31/18	<ul style="list-style-type: none"> <li>Rescoping additional funding for project</li> </ul>
Network Communications- Fiber to Fadian Complex	\$1.1M	Phase 1/2: 5/3/17   Phase 2/2: 12/31/19	<ul style="list-style-type: none"> <li>Integrated Design Plan Approval</li> <li>Start of Construction</li> </ul>
<b>TOTAL :</b>		<b>\$56.3M</b>	

**Source:** Guam Power Authority, Compliance Report, 2018 Capital Improvements Projects (October - December) \*Approved Budget

## STRATEGIC DEVELOPMENT PROJECTS

**TABLE 5.3.1 : GUAM WATERWORKS AUTHORITY  
SUMMARY OF CAPITAL IMPROVEMENT PROJECTS**

PROJECT	2016	2017	2018	2019	2020	TOTAL
Miscellaneous	\$3.2M	\$4M	\$1.2M	\$1.2M	\$0	\$9.6M
Potable Water	\$44.4M	\$36.4M	\$55.5M	\$28.2M	\$10M	\$174.6M
Wastewater	\$12.3M	\$63.1M	\$12.2M	\$0	\$0	\$87.7M
Electrical Engineering	\$3.9M	\$3.1M	\$2.9M	\$0	\$0	\$9.9M
<b>TOTAL :</b>	<b>\$63.8M</b>	<b>\$106.8M</b>	<b>\$71.8M</b>	<b>\$29.4M</b>	<b>\$10M</b>	<b>\$282.1M</b>

**TABLE 5.3.2 : GUAM WATERWORKS AUTHORITY  
MISCELLANEOUS CAPITAL IMPROVEMENT PROJECT DETAILS (in millions)**

MISCELLANEOUS PROJECTS	2016	2017	2018	2019	2020	TOTAL
Laboratory Modernization	\$0	\$0	\$0	\$0	\$0	\$0
Land Survey	\$1,893	\$0	\$0	\$0	\$0	\$1,893
General Plant Improvements / Water	\$1,057	\$3,295	\$1,000	\$1,000	\$0	\$6,352
Information Technology Integration Improvements	\$250	\$750	\$200	\$200	\$0	\$1,400
<b>MISCELLANEOUS PROJECTS TOTAL :</b>	<b>\$3,200</b>	<b>\$4,045</b>	<b>\$1,200</b>	<b>\$1,200</b>	<b>\$0</b>	<b>\$9,645</b>

**Source:** Guam Waterworks Authority, 2016 - 2020 Capital Improvement Plan

## STRATEGIC DEVELOPMENT PROJECTS

**TABLE 5.3.3 : GUAM WATERWORKS AUTHORITY  
POTABLE WATER CAPITAL IMPROVEMENT PROJECT DETAILS (in millions)**

POTABLE WATER PROJECTS	2016	2017	2018	2019	2020	TOTAL
Ground Water Disinfection	\$0	\$0	\$0	\$0	\$0	\$0
Santa Rita Springs Booster Pump Rehab Phase II	\$0	\$0	\$0	\$0	\$0	\$0
"A" Series Well Transmission Line	\$0	\$0	\$0	\$0	\$0	\$0
Water Booster Pump Station	\$2,536	\$3,000	\$1,000	\$0	\$0	\$6,536
Meter Replacement Program	\$520	\$2,000	\$2,000	\$0	\$0	\$4,520
Barrigada Tank Repair/Replacement	\$1,052	\$400	\$0	\$4,000	\$0	\$5,452
Leak Detection	\$81	\$1,100	\$100	\$0	\$0	\$1,281
Potable Water System Planning	\$439	\$2,000	\$400	\$0	\$0	\$2,839
Implement Ground Water Rule	\$0	\$0	\$0	\$0	\$0	\$0
Brigade II (Ugum Lift) BPS Upgrade	\$1,445	\$0	\$0	\$0	\$0	\$1,445
Deep Well Rehabilitation	\$2,250	\$3,000	\$350	\$0	\$0	\$5,600
New Deep Wells at Down Hard	\$2,186	\$0	\$1,100	\$0	\$0	\$3,286
Rehabilitation of Asan Springs	\$1,157	\$0	\$0	\$0	\$0	\$1,157
Master Meters	\$10	\$3,616	\$0	\$0	\$0	\$3,626
Ugum Water Treatment Plant Intake	\$522	\$500	\$0	\$0	\$0	\$1,022
Water Wells	\$6,756	\$2,660	\$500	\$1,000	\$0	\$10,916
Water Distribution System Pipe Replacement & Upgrades	\$2,333	\$10,260	\$3,300	\$5,000	\$0	\$20,893
Pressure Zone Realignment / Development 2005 Improvements	\$569	\$572	\$0	\$0	\$0	\$1,141
Central Water Distribution System 2005 Improvements	\$75	\$0	\$0	\$0	\$0	\$75
Mechanical/Electrical Equipment	\$102	\$0	\$0	\$0	\$0	\$102
Water Reservoir Internal/External	\$646	\$0	\$0	\$0	\$0	\$646
Water Reservoir Internal/External	\$800	\$0	\$0	\$0	\$0	\$800
Water System Reservoirs 2005 Improvements	\$8,485	\$4,472	\$38,178	\$18,250	\$10,000	\$79,385
Distribution System Upgrade	\$0	\$0	\$0	\$0	\$0	\$0
Ugum Water Treatment Plant Reservoir	\$90	\$0	\$5,000	\$0	\$0	\$5,090
Water Audit Program & Water Loss Control Plan	\$1,022	\$0	\$0	\$0	\$0	\$1,022
Production Plan / Reduce Navy Purchases	\$0	\$0	\$0	\$0	\$0	\$0
Hydraulic Assessment of Tanks	\$0	\$0	\$0	\$0	\$0	\$0
Agana Heights & Chaot Tanks	\$4,221	\$0	\$0	\$0	\$0	\$4,221
Tank Major Repair Yigo #1, Mangilao #2, Astumbo #1	\$125	\$0	\$500	\$0	\$0	\$625
Tank Replacement Piti & Hyundai	\$5,000	\$2,410	\$2,590	\$0	\$0	\$10,000
Assessment/Replacement of Malojloj Elevated & Yigo Elevated	\$0	\$0	\$0	\$0	\$0	\$0
Public Water System Asset Inventory/ Condition Assessment	\$0	\$0	\$0	\$0	\$0	\$0
Public Water System GIS & Mapping	\$0	\$0	\$0	\$0	\$0	\$0
Fire Hydrant Replacement Program	\$2,000	\$500	\$500	\$0	\$0	\$3,000
<b>POTABLE WATER PROJECTS TOTAL :</b>	<b>\$44,422</b>	<b>\$36,490</b>	<b>\$55,518</b>	<b>\$28,250</b>	<b>\$10,000</b>	<b>\$174,679</b>

**Source:** Guam Waterworks Authority, 2016 - 2020 Capital Improvement Plant

## STRATEGIC DEVELOPMENT PROJECTS

**TABLE 5.3.4 : GUAM WATERWORKS AUTHORITY  
WASTEWATER CAPITAL IMPROVEMENT PROJECT DETAILS (in millions)**

WASTEWATER PROJECTS	2016	2017	2018	2019	2020	TOTAL
Wastewater System Planning	\$308	\$0	\$1,000	\$0	\$0	\$1,308
Lift station upgrades	\$1,055	\$5,050	\$1,500	\$0	\$0	\$7,605
Moratorium	\$0	\$0	\$0	\$0	\$0	\$0
Wastewater Collection System Repl/ Rehabilitation	\$2,950	\$13,920	\$8,600	\$0	\$0	\$25,470
Facilities Plan/Design/interim for Baza Gardens STP Impr.	\$0	\$0	\$0	\$0	\$0	\$0
Facilities Plan/Design/interim for Agat-Santa Rita STP Impr.	\$0	\$0	\$0	\$0	\$0	\$0
WWTP Priority 1 Upgrades	\$1,300	\$0	\$0	\$0	\$0	\$1,300
Baza Gardens STP Replacement	\$3,101	\$18,290	\$1,146	\$0	\$0	\$22,537
Facilities Plan/Design/Interim for Umatac-Merizo STP Impr.	\$277	\$0	\$0	\$0	\$0	\$277
Agat/ Santa Rita STP Replacement	\$0	\$2,936	\$0	\$0	\$0	\$2,936
Northern District WWTP Primary Treatment Upgrades	\$0	\$0	\$0	\$0	\$0	\$0
Bio Solids Management Plan	\$0	\$0	\$0	\$0	\$0	\$0
Agana WWTP Interim Measures	\$827	\$0	\$0	\$0	\$0	\$827
I&I SSES Southern	\$0	\$0	\$0	\$0	\$0	\$0
I&I SSES Central	\$0	\$0	\$0	\$0	\$0	\$0
I&I SSES Northern	\$355	\$0	\$0	\$0	\$0	\$355
Umatac Merizo STP Replacement	\$943	\$21,300	\$0	\$0	\$0	\$22,243
Wastewater Facility Back Up Power	\$220	\$0	\$0	\$0	\$0	\$220
Wastewater Sewer System Expansion	\$0	\$1,683	\$0	\$0	\$0	\$1,683
Northern District WWTP Secondary Treatment Upgrades	\$1,000	\$0	\$0	\$0	\$0	\$1,000
<b>WASTEWATER PROJECTS TOTAL :</b>	<b>\$12,336</b>	<b>\$63,179</b>	<b>\$12,246</b>	<b>\$0</b>	<b>\$0</b>	<b>\$87,760</b>

**TABLE 5.3.5 : GUAM WATERWORKS AUTHORITY  
ELECTRICAL CAPITAL IMPROVEMENT PROJECT DETAILS (in millions)**

ELECTRICAL PROJECTS	2016	2017	2018	2019	2020	TOTAL
SCADA Pilot Project	\$0	\$0	\$0	\$0	\$0	\$0
Wastewater Pumping Station Electrical Upgrade	\$620	\$0	\$0	\$0	\$0	\$620
Electrical Upgrade - Water Wells	\$0	\$150	\$96	\$0	\$0	\$246
Electrical Upgrade - Water Booster	\$325	\$0	\$0	\$0	\$0	\$325
Electrical Upgrade -Water Booster	\$199	\$0	\$150	\$0	\$0	\$349
Electrical Upgrade - Other Water	\$89	\$0	\$100	\$0	\$0	\$189
SCADA Improvements – Phase 2	\$0	\$500	\$43	\$0	\$0	\$543
SCADA Improvements – Phase 3	\$1,178	\$0	\$25	\$0	\$0	\$1,203
SCADA Improvements – Phase 4	\$1,500	\$2,500	\$2,500	\$0	\$0	\$6,500
<b>ELECTRICAL PROJECTS TOTAL :</b>	<b>\$3,911</b>	<b>\$3,150</b>	<b>\$2,914</b>	<b>\$0</b>	<b>\$0</b>	<b>\$9,975</b>

**Source:** Guam Waterworks Authority, 2016 - 2020 Capital Improvement Plant

## STRATEGIC DEVELOPMENT PROJECTS

**TABLE 5.4 : GUAM INTERNATIONAL AIRPORT AUTHORITY  
CAPITAL IMPROVEMENT PROJECTS**

PROJECT	IMPACT AREA	PROJECT COST	START DATE	COMPLETION DATE
Int'l Arrivals Corridor w/blg. Seismic Upgrades	GIAA	\$124,464,176	N/A	TBD
Security Screening Checkpoint Improvements	GIAA	\$2,000,000	N/A	TBD
3rd Floor Corridor Moving Walkways	GIAA	\$2,000,000	N/A	TBD
Noise Mitigation Program 65 DNL and Higher Phase	GIAA	\$2,200,000	N/A	TBD
Miscellaneous Airport Improvements Phases 5	GIAA	\$784,530	N/A	TBD
Wildlife Management Assessment	GIAA	\$110,000	N/A	TBD
Safety Management System	GIAA	\$180,000	N/A	TBD
ARFF Facility-Design/Construction Phase 1/2	GIAA	\$23,454,620	N/A	TBD
Apron Rehabilitation Design	GIAA	\$2,002,112	N/A	TBD
Rehabilitation Runway 6L Design	GIAA	\$833,334	N/A	TBD
Hold Bag Screening Relocation	GIAA	\$30,529,355	N/A	TBD
Parking Expansion	GIAA	\$2,359,793	N/A	TBD
Upgrade Airport IT & FMS	GIAA	\$1,389,118	N/A	TBD
Art Program	GIAA	\$639,000	N/A	TBD
Impr. Leasehold Facilities (GSE, Tech,VQ1,HC-5)	GIAA	\$2,971,312	N/A	TBD
Tiyan Land Acquisition & Redevelopment	GIAA	\$725,604	N/A	TBD
Facilities Fire Alarm/Suppression System	GIAA	\$3,223,301	N/A	TBD
Upgrades to Public Restroom- Final Phase	GIAA	\$2,976,436	N/A	TBD
Maintenance Equipment	GIAA	\$101,625	N/A	TBD
Airport Facilities Upgrades, Phased	GIAA	\$5,371,711	N/A	TBD
Replace Roofing Systems	GIAA	\$2,509,934	N/A	TBD
<b>TOTAL :</b>		<b>\$210,825,961</b>		

*Source: Guam International Airport Authority, 2019 Capital Improvement Projects (January)*

## STRATEGIC DEVELOPMENT PROJECTS

**TABLE 5.5 : PORT AUTHORITY OF GUAM CAPITAL IMPROVEMENT PROJECTS**

PROJECT	PROJECT COST	START DATE	COMPLETION DATE	STATUS
Marine SLE Project, Wharf Repairs	\$4,541,635	January 05, 2015	May 17, 2016	Project Completed. Contractor disputing change order no. 6. Pending status on Contractor and PAG Management.
Container Yard Asphalt, Concrete Pavement and Fire Hydrant Valve Repairs	\$2,770,380	September 04, 2018	July 2019	As of 5/10/19 Korando Constr. % of work- 67%   Korando was granted a time extension of 86 days
A/E Design Consulting Services	–	September 30, 2016	September 29, 2018 w/ 1 year option to extend from PAG	NC Macario continue construction management of task order no.3 and 4   Amount: IDIQ Contract   Construction Management will end 5/19 for both task order
Container Yard Trench Drain Repair	\$456,759	November 26, 2018	May 26, 2019	AYM requested for 90 days time extension and granted by the Port. New contract completion is on 8/2019
Supply and Install 4 ea. 4oft. Pole with LED Light and 12 Ea. 20ft. Alum. Pole with solar light at Port various location	\$336,561	September 10, 2018	May 31, 2019	As of 5/10/19, Awaiting Close-out documents
Design Build to Supply and Install New 8,000 Gals. Double Wall Fuel Tank with Fuel dispenser and Complete Appurtenances	\$272,110	July 16, 2018	January 4, 2019	As of 4/22/19, Propacific Corp. completed the projects Awaiting close out documents
Harbor of Refuge Pump Station and Installation of Waste Water Injector Pump	–	TBD	TBD	Awaits MOU approval from Attorney General and Governor Amount: TBD
Harbor of Refuge Installation of Mooring Blocks	–	TBD	TBD	Awaits MOU approval from Attorney General and Governor Amount: TBD
Repair of Mobil Pipeline Concrete Pipe Support and Repainting of All Fuel Pipeline Gate Valves, Flanges, Bolts and Nuts	\$50,325	September 24, 2018	January 31, 2019	Contractor will submit final close-out documents under review by PAG Engineering for final payment
Rehabilitation of H-Wharf and Access Road	–	TBD	TBD	Meeting and Environmental assessment by WSP and Designer is on-going as of 3/22/19   Amount: TBD
Golf Pier Repair	–	TBD	TBD	As of 4/22/2019 PAG Procurement issued an Intent to Award to N.C. Macario and Assoc. A/E for the above RFP   Amount: TBD
EQMR & Warehouse   Building and Relocation of PAG Water Line	–	TBD	TBD	As of 4/22/2019 PAG Procurement issued an Intent to Award to N.C. Macario and Assoc. A/E for the above RFP   Amount: TBD
New Administration Building Construction	–	TBD	TBD	Awaits PAG Procurement for advertisement of A/E Professional Services   Amount: TBD
Repainting CMU Wall, Gate Booth 1,2 and 3 and Container Yard Barbed Wire Replacement	–	TBD	TBD	PAG Procurement awaits issuance of Intent to Award Amount: TBD
Modification of Primary Feeder Line of Pump House Building to Secondary Feeder Line Panel	–	TBD	TBD	Project completed on 5/4/19 Awaiting close-out documents
Remove and Replace Thermoplastic Paint in Cont. Yard Area U,V and W	–	TBD	TBD	PAG Procurement awaits issuance of Intent to Award Amount: TBD
Refurbishment and Hardening of Load Center Buildings 1,2,3, and 4	–	TBD	TBD	PAG Procurement compiling bid documents for advertisement Amount: TBD
<b>TOTAL :</b>	<b>\$8,427,770</b>			

**Source:** Source: Port Authority of Guam, 2019 Regular Board Meeting Minutes (May); 2019 Capital Improvement Projects (5/10/19)

**TABLE 5.6 : GUAM ECONOMIC DEVELOPMENT AUTHORITY HOT BOND PROJECTS**

PROJECT	IMPACT AREA	PROJECT COST	START DATE	COMPLETION DATE
Guam and Chamorro Educational Facility (GCEF) Project Administration	Hagatna	\$2,237,835		TBD
Tumon Crosswalk	Tumon	\$539,588		MAR 2019
Supplemental Funding for Projects under the Hagatna Master Plan	Hagatna	\$1,039,076		TBD
Palacio	Hagatna	\$5,000,000		TBD
<b>TOTAL :</b>		<b>\$8,816,499</b>		

**Source:** Guam Economic Development Authority, 2019 Hot Bond Program Executive Dashboard (April)

## STRATEGIC DEVELOPMENT PROJECTS

**TABLE 5.7.1 : DEPARTMENT OF DEFENSE  
NATIONAL DEFENSE AUTHORIZATION ACT (NDAA) PROJECT SUMMARY**

FISCAL YEAR	MILITARY BRANCH	AGREEMENT AUTHORIZED	TOTAL AUTHORIZED
FY 2019	AIR FORCE NAVY	\$9,800,000 \$367,411,000	\$377,211,000
FY 2018	AIR FORCE RESERVES NAVY	\$29,100,000 \$325,554,000	\$354,654,000
FY 2017	AIR FORCE NAVY	\$80,658,000 \$168,000,000	\$248,658,000
FY 2016	AIR FORCE NAVY	\$50,800,000 \$181,768,000	\$232,568,000
FY 2015	AIR FORCE NAVY	\$111,800,000 \$50,651,000	\$162,451,000

*Source:* House Armed Services Committee, FY'15 - FY'19 National Defense Authorization Acts

**TABLE 5.7.2 : DEPARTMENT OF DEFENSE: NATIONAL DEFENSE AUTHORIZATION ACT (NDAA) PROJECTS  
FISCAL YEARS 2018-2019**

MILITARY BRANCH	FY2019 NDAA PROJECTS	AMOUNT APPROPRIATED
AIR FORCE	Hayman Munitions Storage Igloos MSA 2	\$9,800,000
	<b>TOTAL:</b>	<b>\$9,800,000</b>
NAVY	ACE Gym & Dining Earth Covered Magazines Machine Gun Range Ordnance Ops Unaccompanied Enlisted Housing X-Ray Wharf Improvements (Berth 2) Replace Anderson Housing	\$27,910,000 \$52,270,000 \$70,000,000 \$22,020,000 \$36,170,000 \$75,600,000 \$83,441,000
	<b>TOTAL:</b>	<b>\$367,411,000</b>
	<b>GRAND TOTAL:</b>	<b>\$377,211,000</b>

MILITARY BRANCH	FY2018 NDAA PROJECTS	AMOUNT APPROPRIATED
AIR FORCE	Reserve Medical Training Facility Construct Truck Load & Unload Facility	\$5,200,000 \$23,900,000
	<b>TOTAL:</b>	<b>\$29,100,000</b>
NAVY	Aircraft Maintenance Hangar #2 Corrosion Control Hangar MALS Facility Navy-Commercial Tie-In Hardening Water Well Field Replace Andersen Housing Phase II	\$75,233,000 \$66,747,000 \$49,431,000 \$37,180,000 \$56,088,000 \$40,875,000
	<b>TOTAL:</b>	<b>\$325,554,000</b>
	<b>GRAND TOTAL:</b>	<b>\$354,654,000</b>

*Source:* House Armed Services Committee, FY'15 - FY'19 National Defense Authorization Acts

## STRATEGIC DEVELOPMENT PROJECTS

**TABLE 5.7.3 : DEPARTMENT OF DEFENSE: NATIONAL DEFENSE AUTHORIZATION ACT (NDAA) PROJECTS  
FISCAL YEARS 2015-2017**

MILITARY BRANCH	FY2017 NDAA PROJECTS	AMOUNT APPROPRIATED
AIR FORCE	Munitions Storage Igloos, Phase 2 Satellite Communications C4I Facility Block 40 Maintenance Hangar	\$35,300,000 \$14,200,000 \$31,158,000
	<b>TOTAL:</b>	<b>\$80,658,000</b>
NAVY	Hardening of Guam POL Infrastructure Power Upgrade – Harmon Replace Andersen Housing Phase I	\$26,975,000 \$62,210,000 \$78,815,000
	<b>TOTAL:</b>	<b>\$168,000,000</b>
	<b>GRAND TOTAL:</b>	<b>\$248,658,000</b>
MILITARY BRANCH	FY2016 NDAA PROJECTS	AMOUNT APPROPRIATED
AIR FORCE	APR - Dispersed Maint Spares & SE Storage Facilities APR - Installation Control Center APR - South Ramp Utilities Phase 2 PRTC - Roads	\$19,000,000 \$22,200,000 \$7,100,000 \$2,500,000
	<b>TOTAL:</b>	<b>\$50,800,000</b>
NAVY	Live-Fire Training Range Complex (NW Field) Municipal Solid Waste Landfill Closure Sanitary Sewer System Recapitalization	\$125,677,000 \$10,777,000 \$45,314,000
	<b>TOTAL:</b>	<b>\$181,768,000</b>
	<b>GRAND TOTAL:</b>	<b>\$232,568,000</b>
MILITARY BRANCH	FY2015 NDAA PROJECTS	AMOUNT APPROPRIATED
AIR FORCE	Guam Strike Fuel Maintenance Hangar, Increment 2 PAR Low Observable / Corrosion Control Composite Repair Shop Combat Command Infrastructure Facility Red Horse Logistics Facility Satellite Fire Station	\$64,000,000 \$34,400,000 \$3,750,000 \$3,150,000 \$6,500,000
	<b>TOTAL:</b>	<b>\$111,800,000</b>
NAVY	North Ramp GSE Shops North Ramp MWSS Facilities	\$21,880,000 \$28,771,000
	<b>TOTAL:</b>	<b>\$50,651,000</b>
	<b>GRAND TOTAL:</b>	<b>\$162,451,000</b>

**Source:** House Armed Services Committee, FY'15 - FY'19 National Defense Authorization Acts

# STRATEGIC DEVELOPMENT PROJECTS

## INDUSTRY DEVELOPMENT CAPITAL IMPROVEMENT PROJECTS

In this section, you will find an inventory of proposed Industry Development CIP's followed by a brief summary prepared by various Government of Guam agencies for the U.S. Department of Commerce, Economic Development Administration funding consideration.

### PROJECT KEYS

#### PROJECT TITLE

As identified by the stakeholders

#### LEAD INDUSTRY SECTOR

As identified by project description

#### ECONOMIC GOALS & OBJECTIVES

Goals and objectives identified by the EDA for use of project inclusion in this CEDS



Developing Infrastructure



Developing economic diversification by establishing viable industries



Promoting potential new industries



Expanding workforce development opportunities



Fostering cultural and sustainable management of natural resources

#### ESTIMATED COST



Total opportunity cost



Integrated use of other funds

#### JOB CREATION



25 Jobs or less to be created



50+ Jobs to be created



100+ Jobs to be created



250+ Jobs to be created

#### PRIORITY LEVEL

HIGH PRIORITY

MEDIUM PRIORITY

LOW PRIORITY

#### TYPE OF PROJECT



Construction



Non-construction

## **HIGH PRIORITY INDUSTRY DEVELOPMENT PROJECTS**

- H1** Agricultural Export Market Development
- H2** Aquaculture Hub: Regional Center Development
- H3** Assessment of a Potential Circular Economy in Guam
- H4** Consolidated Survey Center
- H5** Construction of a New Hatchery Facility
- H6** Construction of New Wharf and Land Reclamation
- H7** Construction of the Sinajana Marketplace
- H8** Cruise Ship Feasibility Study
- H9** Develop an Agricultural Strategic Plan
- H10** Drainage Improvements, E.T. Calvo Memorial Industrial Park
- H11** Drainage Improvements, Harmon Industrial Park

- H12** Education Tourism
- H13** Guam Commercial Kitchens
- H14** Guam Domestic Fisheries Program
- H15** Guam Fisherman's Cooperative Association Marina Authority
- H16** Hagåtña Riverwalk Esplanade
- H17** Marina Development
- H18** Multi-Agency Aquaculture Education Program
- H19** Relocation of Electrical Power Distribution and Transmission Systems Underground at GEDA Industrial Parks
- H20** Resource Innovation and Solutions Network Incubator Implementation Project
- H21** UOG Capital Improvement for Health Care Education and Employment Opportunities

## **MEDIUM PRIORITY INDUSTRY DEVELOPMENT PROJECTS**

- M1** Agricultural Access and Distribution Programs
- M2** Guam's Children Museum Feasibility Study
- M3** Hagåtña Central Park Enhancements
- M4** Hagåtña Governor Manuel F.L. Guerrero Administrative Complex
- M5** Hagåtña Land Resources Building
- M6** Hagåtña Paseo Multi-Purpose Sports and Entertainment Venue
- M7** Hagåtña Proa Pavilion Canoe House
- M8** Hagåtña River Channelization

- M9** Hagåtña Riverwalk Esplanade Central Park Pond
- M10** Hagåtña Transit Circulator and Trolley System
- M11** Multi- Purpose Community Stadium Feasibility Study
- M12** New Public Hospital Facility Feasibility Study
- M13** Piti Waterfront Feasibility Study
- M14** Regional Software Support Center
- M15** Renovation of the Building for Culinary Arts Program
- M16** Solar Powered Data Center Feasibility Study
- M17** Telecom Industry Training Program
- M18** Value Added Kitchen Community

## **LOW PRIORITY INDUSTRY DEVELOPMENT PROJECTS**

- L1** Construction of a Chalan Pago-Ordot Mayor's Complex
- L2** Construction of a Chalan Pago-Ordot Multipurpose Center
- L3** Construction of a Chalan Pago-Ordot Municipal Open Market
- L4** Construction of a Concrete Pavilion, Bathrooms, and Basketball Court in the Village of Mongmong-Toto-Maite
- L5** General Aviation Industrial Park Feasibility Study
- L6** Hagåtña Gateways and Wayfinding Signs

- L7** Hagåtña Heritage Trail Enhancements
- L8** Hagåtña O'Brien Drive Right Lane Expansion
- L9** Hagåtña Palacio Restoration
- L10** Hagåtña Paseo and Central Park Parking Garages
- L11** Hagåtña Pedestrian Overpass
- L12** Hagåtña River Channelization and Watershed Feasibility Study
- L13** Hagåtña Solar Powered Parking Meters
- L14** Hagåtña Soledad Avenue Access Road Extension
- L15** Hagåtña Streetscape Enhancements
- L16** Pago Bay Shoreline Park

# STRATEGIC DEVELOPMENT PROJECTS

<b>PROJECT TITLE</b>
<b>AGRICULTURAL EXPORT MARKET DEVELOPMENT</b>
<b>LEAD INDUSTRY SECTOR</b>
<b>AGRICULTURE</b>
<b>ECONOMIC GOALS &amp; OBJECTIVES</b>
<b>ESTIMATED COST</b>
\$300,000 \$
<b>JOB CREATION</b>
<b>PRIORITY LEVEL</b>
<b>HIGH PRIORITY</b>
<b>TYPE OF PROJECT</b>

## H1 PROJECT TITLE

Agricultural Export Market Development

### PROJECT DESCRIPTION/STATEMENT

The past 25 years have seen the development and use of heat based treatment technologies to satisfy quarantine requirements and allow trade in certain fruits between countries. The development of Hawaii's papaya and floriculture export industries was a direct by-product of the outward freight capacity created by tourist arrivals. Guam has the opportunity to break into a new market of agriculture exportation, if tourists were allowed to return to their countries with local produce as gifts. Since Guam is infested with the melon fruit fly, some sort of treatment will be necessary to clear importing country quarantine regulations and concerns. Vapor heat treatment machines can organically treat local produce, without use of

chemicals or radiation. In addition to Hawaii, heat treatment equipment is being used to export fruits from the Philippines, Fiji, Samoa, New Caledonia, Tonga, Vanuatu and the Cook Islands.

### OBJECTIVES

Acquisition of a high temperature forced air or vapor heat treatment unit (HTFA or VHT) would allow Guam to work with the USDA and foreign governments to develop mechanisms so that such markets can be opened. This would provide Guam's farmers with access to the readily available tourist market and spur development of later bulk shipping markets to neighboring countries. The role of the DoAg is to encourage the process and nurture market growth. It is expected that the USDA would have to be involved in bilateral quarantine agreement negotiations with the target countries.

It is estimated that at least \$300,000 would need to be set aside to begin start up work on such a project. In addition to space and equipment, pest risk analyses would need to be contracted from experts familiar with their preparation.

### ANTICIPATED IMPACTS AND BENEFITS

By initiating the development of an agricultural export market, available to Guam's farmers, this project would increase Guam's economic self-sufficiency by diversification and by taking advantage of an untapped marketing opportunity to departing tourists. This would improve the experiences of tourists in Guam, thus helping the tourism industry. A collateral benefit would be to increase the availability of home grown produce for Guam's consumers.

**ESTIMATED COST:** \$300,000

**JOB CREATION:** 1-25

**PRIORITY LEVEL:** High

**TYPE OF PROJECT:** Non-Construction



## H2 PROJECT TITLE

Aquaculture Hub: Regional Center Development

### PROJECT DESCRIPTION/STATEMENT

Guam's tropical climate and natural resources lends itself greatly to the production of aquaculture species. UOG has invested millions of dollars to maintain and operate a world-class hatchery in Fadian, Mangilao with the ability to provide local farmers with unlimited supply of catfish, milkfish, tilapia and prawn fingerlings as well as other aquaculture species in high demand. From a consumption standpoint, Guam continues to import shrimp and other fish products from foreign suppliers. Millions of dollars are expended annually to supply hotels, restaurants and other food institutions with aquaculture products normally brought in from the Philippines, Korea, Japan, China and other Pacific and Asian suppliers.

Guam's aquaculture and fisheries industries operate mostly on a small-scale subsistence basis and consist of roughly 100 farmers; the main species produced are tilapia, freshwater shrimp, catfish and milkfish. In order to evaluate the long-term future of Guam's aquaculture industry, efforts need to be taken to determine the next best steps regarding the expansion into large-scale commercial fisheries, hatcheries, and other marine activities in Guam. More resources and policy direction would be directed to aquaculture and fisheries production scheme of UOG and the Fadian Hatchery. The project would involve a technical and programmatic assessment of how operations could be expanded to encourage more local production of the commodities mentioned.

### OBJECTIVES

The Government of Guam plans to further develop the existing interest in aquaculture activities by conducting a feasibility study to determine ways to expand Guam's aquaculture market by ways of technical assistance and partnership with regional areas that have an existing aquaculture industry. This study will also support the efforts of the recently empanel Guam Aquaculture Task Force that was created to address the increasing demands for on-island aquaculture.

### ANTICIPATED IMPACTS AND BENEFITS

The assessment of Guam being a regional hub for Aquaculture can diversify the island's economy and create additional jobs. This assessment will establish partnerships with worldwide industries for food safety, training and increase the capacity for research, education, market and sales.

**ESTIMATED COST:** \$200,000

**JOB CREATION:** Feasibility Study

**PRIORITY LEVEL:** High

**TYPE OF PROJECT:** Non-Construction

# STRATEGIC DEVELOPMENT PROJECTS

<b>PROJECT TITLE</b>
<b>ASSESSMENT OF A POTENTIAL CIRCULAR ECONOMY IN GUAM</b>
<b>LEAD INDUSTRY SECTOR</b>
<b>GREEN TECHNOLOGY</b>
<b>ECONOMIC GOALS &amp; OBJECTIVES</b>

<b>ESTIMATED COST</b>
\$200,000 
<b>JOB CREATION</b>

<b>PRIORITY LEVEL</b>
<b>HIGH PRIORITY</b>
<b>TYPE OF PROJECT</b>


## H3 PROJECT TITLE

Assessment of a Potential Circular Economy in Guam

### PROJECT DESCRIPTION/STATEMENT

Conduct an assessment on the potential economic impact of the implementation circular economy initiatives in Guam and the region. It is anticipated that circular economy will increase the GDP and generate numerous jobs. The assessment will also look to identify and quantify the gross maximum economic impact of waste diversion options for the currently recycled and additionally recoverable tons of plastic, glass, paper and metals in the Guam municipal waste stream. By conducting this assessment, we will be able to determine the gross maximum total economic impact and the amount of waste being diverted from the Layon Landfill each year.

The project will cultivate public-private partnerships who will contribute to turning trash into new products, Guam will be able to drive the circular economy while stimulating local economic development. Through the application of circular economy principals to materials in Guam's waste stream - we have the opportunity to create economic impacts to gross state product and create real disposable labor income.

### OBJECTIVES

Conducting this assessment will determine the gross maximum total economic impact and the amount of waste being diverted from the Layon Landfill each year.

### ANTICIPATED IMPACTS AND BENEFITS

It is anticipated that circular economy will increase the Gross State Product and generate numerous jobs.

**ESTIMATED COST:** \$200,000

**JOB CREATION:** 20

**PRIORITY LEVEL:** High

**TYPE OF PROJECT:** Non-Construction

<b>PROJECT TITLE</b>
<b>CONSOLIDATED SURVEY CENTER</b>
<b>LEAD INDUSTRY SECTOR</b>
<b>TELECOMMUNICATION</b>
<b>ECONOMIC GOALS &amp; OBJECTIVES</b>

<b>ESTIMATED COST</b>
\$500,000 
<b>JOB CREATION</b>

<b>PRIORITY LEVEL</b>
<b>HIGH PRIORITY</b>
<b>TYPE OF PROJECT</b>


## H4 PROJECT TITLE

Consolidated Survey Center

### PROJECT DESCRIPTION/STATEMENT

The UOG Consolidated Survey Center will serve as a comprehensive technical assistance center that will provide assistance to key local government agencies who regularly collect data for the purpose of reporting, evaluation, and support of technical assistance studies in Guam.

### OBJECTIVES

To assist in the modernization of the Guam State Data Center and the Government of Guam data collection efforts. The Consolidated Survey Center will establish agreements and provide technical assistance for collecting and reporting data, that require enhanced capacity to keep data current, and readily to support policy development and planning at all levels.

The Consolidated Survey Center will provide technical assistance to the Guam State Data Center and to other data generating and reporting entities. This technical assistance can include assistance in automating the data collection efforts by various entities in order that they can transmit electronically their data to the Guam State Data Center in real time.

It also includes assistance in the development and design of web sites that hosts all data products produced by Government of Guam.

### ANTICIPATED IMPACTS AND BENEFITS

A modernized State Data Center will ensure more current and reliable data sets and regular reports that the community and the public can readily access. Jobs will be created through leveraged trained capacity from UOG.

**ESTIMATED COST:** \$500,000

**JOB CREATION:** 14

**PRIORITY LEVEL:** High

**TYPE OF PROJECT:** Construction

# STRATEGIC DEVELOPMENT PROJECTS



## H5 PROJECT TITLE

Construction of a New Wharf and Land Reclamation

### PROJECT DESCRIPTION/STATEMENT

The Base Realignment and Closure (BRAC) decision of '95 resulted in the closure of the former Naval Ship Repair Facility, which was to have been transferred to the Government of Guam, thereby increasing wharf space by 3,251 linear feet. Navy has since decided to retain the lands, wharves and buildings associated with this facility due to the strategic value of Guam. In addition, the Navy has decided to dredge the inner Apra Harbor to accommodate additional vessels in 2006. This proposal is intended to create new wharf space at the PAG to replace those wharves that will not be returned under BRAC. The additional wharf space will be available for Navy use.

### OBJECTIVES

Construction of new wharf space totaling 2,900 lineal feet and 3,000 lineal feet of reclaimed land at PAG.

### ANTICIPATED IMPACTS AND BENEFITS

Upon completion of the project, congestion at PAG would be alleviated; room for additional economic activity would be created. New wharf construction, especially in the proposed area which is characterized by deep water draft will also provide the U.S. Navy with the opportunity to utilize wharf facilities that can accommodate larger military vessels, such as aircraft carriers that cannot enter the inner harbor even after Navy's dredging project is completed.

**ESTIMATED COST:** \$35 million

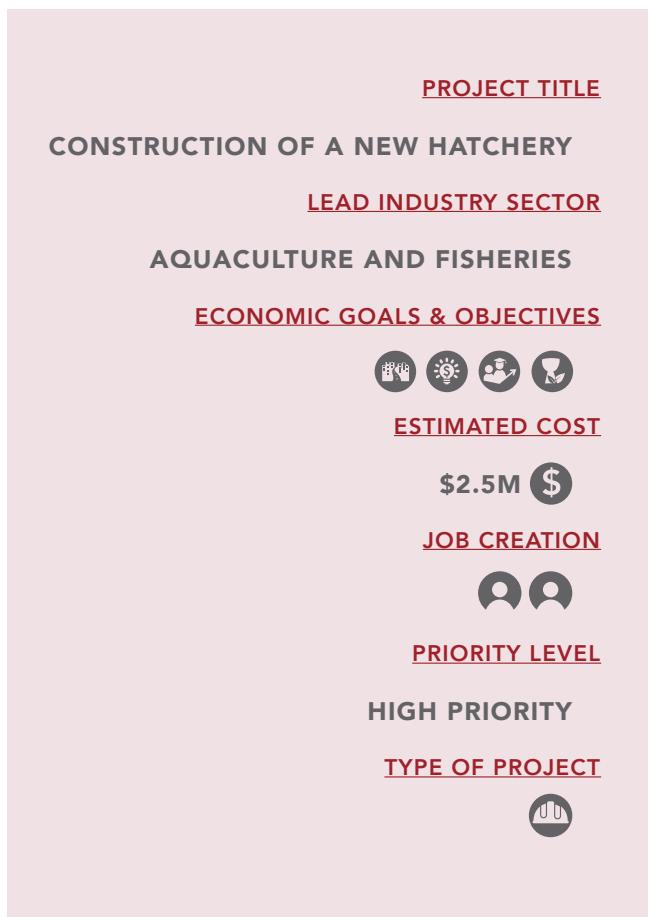
### INTEGRATED USE OF OTHER FUNDS

PAG is developing architectural and engineering plans under a grant from the EDA, for the construction of new wharf space totaling 2,900 lineal feet of sheet piles with tie-rods anchored to sheet pile dead-men, and 3,000 lineal feet of reclaimed land at PAG.

**JOB CREATION:** 73

**PRIORITY LEVEL:** High

**TYPE OF PROJECT:** Construction



## H6 PROJECT TITLE

Construction of a New Hatchery

### PROJECT DESCRIPTION/STATEMENT

The Guam Aquaculture Development and Training Center (GADTC) is the largest and oldest aquaculture center in the Western Pacific. Located within the center is UOG's Fadian Hatchery. This bio-secure facility produces high-health (Specific Pathogen Free) shrimp post larvae and brood stock, improved strains of tilapia fry and Claris catfish fry.

With the high demand for pathogen-free shrimp throughout Asia, Guam has an opportunity to develop its first real export produce. However, in order to create a facility capable of launching an aquaculture industry, the hatchery is in dire need of infrastructure improvements.

With the recent creation of the Guam Aquaculture Task Force, UOG is working with GEDA to put out a request for proposal in search of investors that have available funding and expertise to convert the hatchery into an export driven facility.

Additionally, depending on the composition of the public private partnership, there may also be an opportunity to set up a secondary teaching facility or satellite facilities.

### OBJECTIVES

The development of a new hatchery facility will become the center for aquaculture and fishery related training programs and activities such as the production of marketable quantity of pathogen-free shrimp for export.

### ANTICIPATED IMPACTS AND BENEFITS

The construction of UOG's hatchery will provide opportunities to expand Guam's aquaculture industry by creating the islands first real export produce of pathogen-free shrimp and creating additional jobs that will expand economic growth and diversification.

**ESTIMATED COST:** \$2, 500,000

**JOB CREATION:** 25-50

**PRIORITY LEVEL:** High

**TYPE OF PROJECT:** Construction

# STRATEGIC DEVELOPMENT PROJECTS

<u>PROJECT TITLE</u>
<b>CONSTRUCTION OF SINAJANA MARKETPLACE (FARMERS MARKET)</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>AGRICULTURE</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>
<u>ESTIMATED COST</u>
<b>\$175,000 - \$200,000</b>
<u>JOB CREATION</u>
<u>PRIORITY LEVEL</u>
<b>HIGH PRIORITY</b>
<u>TYPE OF PROJECT</u>

## H7 PROJECT TITLE

Construction of the Sinajana Marketplace (Farmers Market)

### PROJECT DESCRIPTION/STATEMENT

The municipality of Sinajana is based on the premise of its traditions, history, health, and building its community through programs that effect change and modern conveniences to the lives of our residents and to those who visit us every day.

Developing a farmer's market is a critical component in rebuilding local food economies and will provide periods of intense retail sales with low fixed costs. These profitable market operations are amongst the many tools available of achieving economic financial objectives, where goods and services can be bought, sold and

traded. The project will give local residents and our community a push-start in business, and exposure to current and future entrepreneurs.

### OBJECTIVES

The key goal to the project is to develop a Farmer's Market within our community and install 35 permanent overhead metal frame stalls in the parking lot of the Sinajana Community Center Complex.

The construction of a small stage and additional staircase by the hill along Chalan Guma Yu'us will be available to vendors and the community to access the outdoor open shelter concession.

The Sinajana Marketplace will provide local residents with access to fresh, locally produced fruit, vegetables, plants, fish, baked goods, and much more.

### ANTICIPATED IMPACTS AND BENEFITS

The Farmer's Market will provide opportunities for small businesses to market and sell their products.

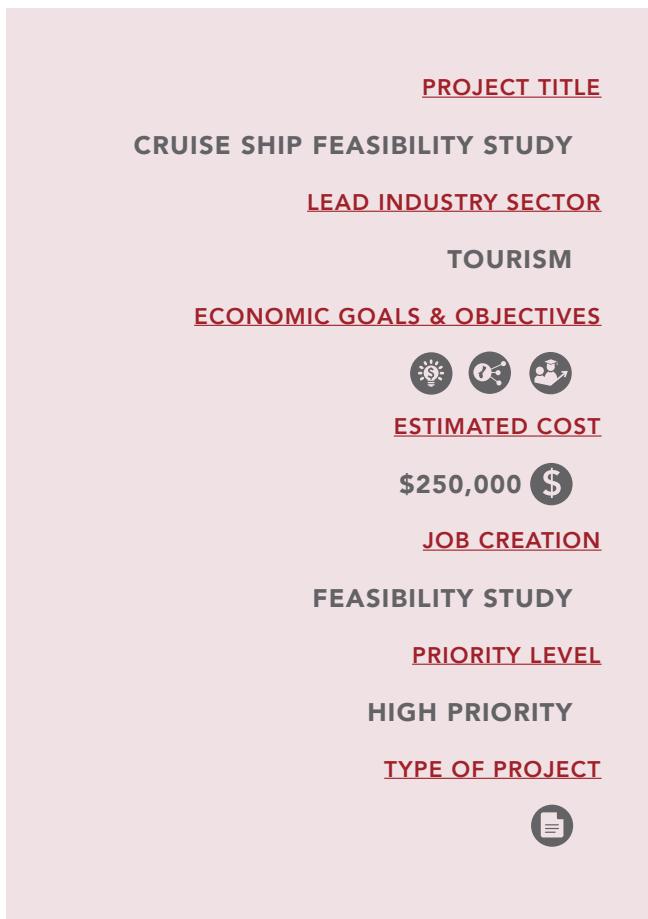
Products distributed and sold within the local community, profits stay within the local economy. Being able to market directly to the consumer gives businesses income opportunities without the added costs of shipping, storage and inventory control. This will lead to economic development and job creation.

**ESTIMATED COST:** \$175,000 - \$200,000

**JOB CREATION:** 3-4

**PRIORITY LEVEL:** High

**TYPE OF PROJECT:** Construction



## H8 PROJECT TITLE

Cruise Ship Feasibility Study

## PROJECT DESCRIPTION/STATEMENT

While Carnival Cruise Line has announced that it would be offering a voyage in the region with a stop in Guam, PATA has studied and outlined a path to establish a home port vessel in Guam and outlined a conceptual strategy.

It is estimated that one hundred (100) direct jobs and seventy (70) indirect jobs would be created with a small cruise ship home ported on the island of Guam. This also would require the building or providing space for a passenger terminal, and transportation to and from the airport. Local distribution companies would provide supplies while in port, as well as cleaning and maintenance services for the cruise ship.

Additionally, home-porting a single cruise ship would bring 50,000 cruise passengers a year as opposed to the 2,000-3,000 passengers we currently receive. The fruition of this project could potentially introduce \$51 million into the local economy and \$778,634 in GRT and payroll taxes into the Government of Guam tax base.

## OBJECTIVES

Conduct an assessment of the opportunity, undertake the “proof of concept” strategy laid out by the PATA study (2016) and lay out an action calendar involving key stakeholders.

## ANTICIPATED IMPACTS AND BENEFITS

The fruition of this project could potentially introduce \$51 million into the local economy and \$778,634 in GRT and payroll taxes into the Government of Guam tax base.

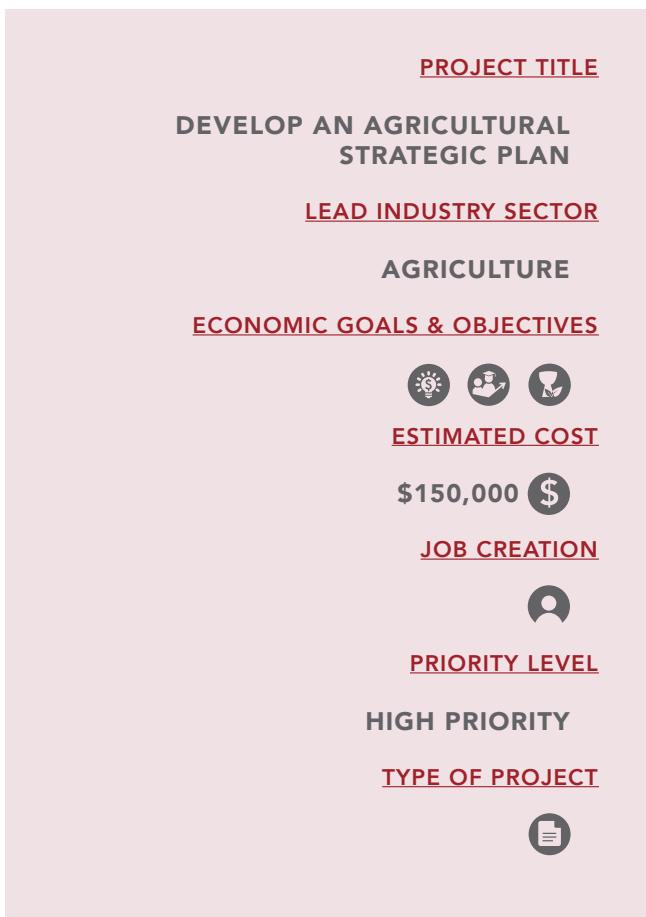
**ESTIMATED COST:** \$250,000

**JOB CREATION:** Feasibility study

**PRIORITY LEVEL:** High

**TYPE OF PROJECT:** Non-Construction

# STRATEGIC DEVELOPMENT PROJECTS



## H9 PROJECT TITLE

Develop an Agricultural Strategic Plan

### PROJECT DESCRIPTION/STATEMENT

An agricultural strategic plan will lay out action steps addressing agricultural production, environmental impact factors, supply market and demand, policy infrastructure, and additional amenities that come from coordinated, strategic input. Collaboration efforts between farmers, policy makers, industry experts and key stakeholders are critical in order to develop a strategic plan viable for Guam.

### OBJECTIVES

Work with key stakeholders to develop an agricultural strategic plan that will layout necessary steps for the success of this industry.

### ANTICIPATED IMPACTS AND BENEFITS

The development of solutions to address agriculture production, environmental impact factors, market supply/demand, policy infrastructure, and additional amenities.

**ESTIMATED COST:** \$150,000

**JOB CREATION:** 1-25

**PRIORITY LEVEL:** High

**TYPE OF PROJECT:** Non-Construction



## H10 PROJECT TITLE

Drainage Improvements,  
E.T. Calvo Memorial Industrial Park

### PROJECT DESCRIPTION/STATEMENT

The E. T. Calvo Memorial Park is one of three industrial parks on island and is located just off Marine Drive and behind the ITC Building in Tamuning. The property is owned by the Government of Guam and was subsequently leased to the GEDA for 99 years (1969-2068) for management under its Industrial Parks Program. There are 28 lots within the industrial park which have been sublet to various entities in both the private and public sectors for light to moderate industrial/commercial type uses, and continues to employ over 600 people annually.

Over the years, and particularly during the recent typhoons, the property including the roadway easements for traffic circulation within the industrial park have been subjected to flooding caused by heavy rains and storm water runoff coming from as far north as the airport area. This situation has caused not just health and safety hazards in the past, but caused certain disruptions to businesses and their customers within the area. Runoff from Marine Drive, adjacent areas, the ITC parking lot, plus additional drainage from a rectangular concrete channel which runs behind the Tamuning Post Office all terminate at the low point of the industrial park. This area is a vacant lot containing about one acre and has served as an informal ponding basin and infiltration system for storm water runoff for the entire park. It is becoming obvious that the current drainage system in the park area is inadequate for the volume of storm water runoff coming into the park area. The immediate concern is that any excess runoff will cause continual flooding in the area and will even overflow onto the adjacent properties, which may cause unwanted liability issues for the Government of Guam and GEDA in particular.

GEDA received approval to use \$66,000 under the Guam Coastal Management Program to prepare a storm water management plan of the area to determine the best course of action for containment and disposal of storm water.

The E. T. Calvo Storm Water Management Plan prepared in 2005, proposed the following:

Placing a catch basin at both the opening in the median and at the edge of the right of way near the inlet of the concrete trench which would eliminate more than 12 acres of tributary area and 40% of the associated storm water runoff. The catch basins would connect to the municipal storm system via underground 24" storm drain pipes.

## STRATEGIC DEVELOPMENT PROJECTS

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A wet pond located at the 40 feet right of way located at the base of the cliff, south of Block 4 could handle approximately 10 acres of the contributing runoff generated by the airport area and the cliff. Assuming a depth of 12 feet, the wet pond would require an area around 9,300 square feet.

Construct infiltration trenches within the ITC parking lot to address the remaining runoff of approximately 11 acres. The area of infiltration trenches required is approximately 10,000 square feet and can be accomplished without having to replace the entire parking lot.

Although any of the three suggested improvements will improve storm water management, the plan recommended implementation of all three improvements simultaneously.

With the completion of both projects, GEDA can proceed develop storm water infrastructure which will allow development of the vacant property. Ultimately, these improvements to the industrial park will assist GEDA in its efforts to entice new development of new industries for the island of Guam.

### OBJECTIVES

The project will require design and construction of an appropriate storm water drainage system for the entire E.T. Calvo Memorial Park.

The scope of services will generally include an update to the 2005 plan to determine if the recommended approach to resolving storm water issues is still valid and feasible. In particular, the amount of runoff to be managed needs to be reconfirmed as improvements in the vicinity of the industrial park may have increased the amount of runoff in the park. In addition, the ability of the Marine Drive storm water system to accommodate additional flows will need to be assessed given development that has occurred in the service area

over the years. If the approach is still feasible, contractor(s) will be solicited in compliance with procurement law to provide labor, materials and equipment enabling the design of improvements and preparation of construction specifications and bid documents, analyze and advise on construction contractor selection and perform project management.

### ANTICIPATED IMPACTS AND BENEFITS

Drainage improvements will help develop potential new industries and continue the generation of jobs, gross sales, and GRT.

**ESTIMATED COST:** \$3 million

### INTEGRATED USE OF OTHER FUNDS

Local Match: GEDA Revenues

**JOB CREATION:** 1-25

**PRIORITY LEVEL:** High

**TYPE OF PROJECT:** Construction

<b>PROJECT TITLE</b>
<b>DRAINAGE IMPROVEMENTS HARMON INDUSTRIAL PARK</b>
<b>LEAD INDUSTRY SECTOR</b>
<b>CONSTRUCTION</b>
<b>ECONOMIC GOALS &amp; OBJECTIVES</b>

<b>ESTIMATED COST</b>
<b>\$500K: PHASE 1      \$ \$ TBD : PHASE 2</b>
<b>JOB CREATION</b>

<b>PRIORITY LEVEL</b>
<b>HIGH PRIORITY</b>
<b>TYPE OF PROJECT</b>


## H11 PROJECT TITLE

Drainage Improvement, Harmon Industrial Park

### PROJECT DESCRIPTION/STATEMENT

The Harmon Industrial Park is one of three industrial parks on-island and is located just off Marine Drive in Upper Tumon. The property is owned by the Government of Guam and was subsequently leased to GEDA for 99 years (1969-2068) for management under its Industrial Parks Program. There are seven lots within the industrial park which have been sublet to various entities in both the private and public sectors for light to moderate industrial/commercial type uses, and continues to employ over 130 people annually.

Over the years, and particularly during the recent typhoons, the property including the roadway

easements for traffic circulation within the industrial park have been subjected to flooding caused by heavy rains and storm water runoff coming from as far north as the former Harmon flea market. This situation has caused not just health and safety hazards in the past, but caused certain disruptions to businesses and their customers within the area. Runoff from Marine Drive, adjacent areas such as Genghis Khan Furniture, Citizens Bank Building, plus additional drainage from adjacent businesses all terminate at this low point of the industrial park. This area is subleased to one of GEDA's tenants for use as the Harmon Business Center and contains an area of about 2,068 square meters and has served as an informal ponding basin and infiltration system for storm water runoff for the entire park. It is becoming obvious that the current drainage system in the park area is inadequate for the volume of storm water runoff coming into the park area.

With the completion of this project, all the necessary improvements to the park's storm water infrastructure, which has been inadequate for quite some time, now would finally come to fruition. Ultimately, these improvements to the industrial park will assist GEDA in its efforts to entice new development of new industries for the island of Guam.

### OBJECTIVES

The project requires a 2 phased approach:

**Phase 1** involves the preparation of a storm water management plan that will assess the extent to which on-site and off-site land uses contribute to the amount of storm water that needs to be managed and the identification and analysis of alternatives for the management of non-point source storm water runoff at the industrial park. Phase 1 also involves the design of improvements, preparation of construction specifications and

## STRATEGIC DEVELOPMENT PROJECTS

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bid documents, and analysis and advice on construction contractor selection.

**Phase 2** involves actual construction and construction management based upon the design prepared under Phase 1. Construction contractor costs will include mobilization, permitting, construction, preparation of as-builts and closeout while a construction manager will be needed to ensure construction is compliant with drawings and any special regulatory agency requirements.

### ANTICIPATED IMPACTS AND BENEFITS

Drainage improvements will help develop potential new industries and continue the generation of jobs, gross sales, and GRT.

### ESTIMATED COST

**Phase 1:** \$500,000

**Phase 2:** TBD

### INTEGRATED USE OF OTHER FUNDS

Local Match: GEDA Revenues

**JOB CREATION:** 1-25

**PRIORITY LEVEL:** High

**TYPE OF PROJECT:** Construction

<u>PROJECT TITLE</u>
<b>EDUCATION TOURISM THE UOG CAPITAL IMPROVEMENT FOR EDUCATION TOURISM</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>HEALTH CARE</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>

<u>ESTIMATED COST</u>
<b>\$56M</b>
<u>JOB CREATION</u>

<u>PRIORITY LEVEL</u>
<b>HIGH PRIORITY</b>
<u>TYPE OF PROJECT</u>


## H12 PROJECT TITLE

Education Tourism (The UOG Capital Improvement for Education Tourism)

### PROJECT DESCRIPTION/STATEMENT

The UOG Capital Improvement for Education Tourism Project would ensure that UOG has the facilities necessary to accommodate a greater number of students as part of international exchange programs, therefore increasing UOG's capabilities to foster education tourism in Guam. Through the building of an International Dormitory, UOG's housing capacity would increase by 300, including amenities such as: controlled access; a fitness center; common and lounge area; card operated laundry; a small computer lab; a mini-mart; chaperone rooms; a study room; an office; a storage room; a large "porte cochere" to accommodate bus drop; multipurpose rooms; and a backup generator. The International Dormitory

would ensure UOG is able to compete with other universities' housing facilities in terms of both accommodation size and features. Additionally, new classroom facilities would address accommodations on the educational side. Currently, all classrooms on the UOG Campus are fully utilized during the fall and spring semester. Without dedicated classrooms that can accommodate for short-term exchange programs, UOG is limited in the number of schools they are able to host throughout the year. For example, considering short term programs such as the English Adventure Program are the most popular, the number of students that can participate throughout the year is limited because the program requires classrooms of its own. With an additional classroom facility on campus, UOG will be able to expand its international program offerings.

### OBJECTIVES

While UOG has several programs in place that can help promote education tourism, limited facilities hinder the University's ability to expand its international exchange offerings. In terms of housing, UOG's Residence Halls can only accommodate 207 students, with maximum capacity typically reached before international students can be accommodated. This prevents the University from being able to host a greater number of exchange students throughout the year and from accommodating visiting school groups. UOG's dormitories are also extremely out-of-date: the last renovation on the dormitories occurred nearly 20 years ago. This lack of upgrade on the dormitories adds to Guam's inability to compete in the education tourism industry, especially considering other universities have world-class facilities to offer. When it comes to programs catered to visiting school groups, UOG's lack of classroom space also has a negative impact. Without dedicated classrooms for international or exchange programs, UOG currently cannot

## STRATEGIC DEVELOPMENT PROJECTS

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guarantee it will be able to host additional students on campus. Thus, UOG needs additional facilities to adequately support the growth of education tourism in Guam, as UOG's current state greatly limits the possibilities of education tourism. This proposal will diversify Guam's visitor market mix to include a greater number of students by expanding Guam's opportunity for education tourism.

### **ANTICIPATED IMPACTS AND BENEFITS**

There is capacity to increase Guam's education tourism by ensuring UOG has the resources necessary to run the programs that would attract visitors for education tourism.

### **ESTIMATED COST**

\$56 million:

\$48 million for construction of building

\$2 million for furniture and fixtures

\$6 million for new classrooms based on the estimate of the new School of Engineering Building

**JOB CREATION:** 50+

**PRIORITY LEVEL:** High

**TYPE OF PROJECT:** Construction

<u>PROJECT TITLE</u>
<b>GUAM COMMERCIAL KITCHENS COTTAGE INDUSTRIES</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>AGRICULTURE</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>

<u>ESTIMATED COST</u>
<b>\$75,000: STRATEGY 1</b> 
<b>\$1.6M: STRATEGY 2</b> 
<u>JOB CREATION</u>
<u>FEASIBILITY STUDY</u>
<u>PRIORITY LEVEL</u>
<b>HIGH PRIORITY</b>
<u>TYPE OF PROJECT</u>


## H13 PROJECT TITLE

Guam Commercial Kitchens (GCK) Cottage Industries

## PROJECT DESCRIPTION/STATEMENT

The proposed GCK strategy addresses several problems affecting food and agricultural microbusinesses and small-scale manufacturing in Guam. Meeting the demand for locally produced food is increasing and is not being met due to the lack of available processing facilities. Interests in village festivals promote locally grown and processed food and the growing trend of knowing your food sources and origin. The proposed GCK strategy focuses on the development of a locally based food system and the assets necessary to support it will lead to a healthier community and economic growth. The GCK builds on expanding the market for locally grown food and non-food products. Local agricultural growers and producers

will have the ability to process and market locally produced food, contribute to Guam's Product Seal Program with their value-added products, develop new food markets and retain Guam's agricultural dollars in the local economy.

The opportunity for food entrepreneurs to evolve from a start-up interest to a sustainable small-scale business venture needs both infrastructure and the supportive food and related agricultural and manufacturing policies. The features of the GCK propose a commercial shared-use kitchen design that provides the foundation for food entrepreneurs to change from a home-based kitchen to a food company. Entrepreneurs will have the tools and access to technical support to test and develop new food and non-food products that will lead to new business growth and job creation.

The proposed Guam Commercial Kitchens consists of the following strategies:

### Strategy 1: GCK Food System Feasibility Study.

Part I. Assesses the commercial kitchen need requirements and related start-up and expansion building specifications that may include options for design-build and or retrofitting of existing facilities and or partnerships with both government and non-government organizations.

Part II. Other GCK feasibility subparts focus on the identification of the core services and supportive business structures supporting food and non-food micro-businesses and small-scale manufacturers. The study includes assessing existing and new market opportunities for GCK products and food and non-food laboratory requirements for a services and facilities.

Part III. Establish the GCK policies and process for managing the facility.

### Strategy 2: Food Pantry Initiative.

The Food Pantry component addresses the GCK product

## STRATEGIC DEVELOPMENT PROJECTS

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distribution for farmers to channel surplus farm commodities for GCK processing and then delivery. The initiative includes the development of innovative food systems development marketing campaigns targeting institutional markets and other food distribution programs.

The GCK will be a licensed, food processing, catering, and meal preparation/research facility. The facility will be designed to allow expansionary elements to support local farmers, caterers, entrepreneurs, and small-scale food processors to engage in appropriate wet and dry food processing.

### OBJECTIVES

A feasibility study phase assesses preliminary building options, square footage for the proposed GCK and natural products, kitchen and processing equipment for small-scale manufacturing and recommended rental rates for the various users. Other feature of the GCK strategy includes augmenting other supportive product development and design services. The recent and growing interest in developing and promoting natural products like medicinal herbs requires a local diagnostic laboratory that can conduct analytical testing services to assist both food and non-food entrepreneurs address their product quality needs and to provide product assurances that meet local and federal regulations for food and non-food products.

### ANTICIPATED IMPACTS AND BENEFITS

The features of the GCK propose a commercial shared-use kitchen design that provides the foundation for food entrepreneurs to change from a home-based kitchen to a food company. Entrepreneurs will have the tools and access to technical support to test and develop new food and non-food products that will lead to new business growth and job creation.

### ESTIMATED COST

**Strategy 1:** \$75,000 @ \$25,000 per subpart

**Strategy 2:** \$1.6 million

*includes the following subparts:*

Request for Qualifications for Architectural Services to develop the GCK Preliminary Architectural Report (PAR) estimated costs to be \$40,000. A special survey conducted by the GCK Planning Workgroup is estimated at \$5,000.

**JOB CREATION:** Feasibility Study

**PRIORITY LEVEL:** High

**TYPE OF PROJECT:** Non-Construction

<b>PROJECT TITLE</b>
<b>GUAM DOMESTIC FISHERIES PROGRAM</b>
<b>LEAD INDUSTRY SECTOR</b>
<b>AQUACULTURE AND FISHERIES</b>
<b>ECONOMIC GOALS &amp; OBJECTIVES</b>

<b>ESTIMATED COST</b>
\$200,000 
<b>JOB CREATION</b>

<b>FEASIBILITY STUDY</b>
<b>PRIORITY LEVEL</b>
<b>HIGH PRIORITY</b>
<b>TYPE OF PROJECT</b>


## H14 PROJECT TITLE

Guam Domestic Fisheries Program  
(Inclusive of Aquaculture and Domestic Ocean Fisheries)

## PROJECT DESCRIPTION/STATEMENT

Guam's domestic ocean fisheries consist of a few hundred small-scale fishermen operating personal trolling and bottom fishing boats. The Guam Fisherman's Cooperative Association (GFCA) coordinated the maiden efforts of this industry and grosses approximately \$1.5 million annually. A key issue for Guam fisheries identified by the Western Pacific Regional Fisheries Management Council is that there are no domestic purse seine operators. Guam's aquaculture fisheries operate mostly on a small-scale basis and consist of roughly 100 farmers, with less than 25 farmers comprising the most of the \$300,000 to \$750,000

in gross annual sales. The main species farmed are tilapia, freshwater shrimp, catfish and milkfish. This proposal will also identify assistance needs of the industry; facilitate needed financing of projects; coordinate outreach to remote farmers and fishermen; assist in compliance with federal environmental regulations.

## OBJECTIVES

Diversify the Guam economy and create jobs uncorrelated with tourism and military spending.

## ANTICIPATED IMPACTS AND BENEFITS

There is capacity for increase of Guam's ocean fisheries. The opportunity for the development of a Guam longline fleet, the further development and increased capacity of GFCA are a few possibilities.

This industry is underutilized and Guam relies heavily on imported seafood. There is also much room for development in Guam's aquaculture industry. Farmers can take advantage of technical advice and business expertise provided by the development of this program. The low cost of entry into this industry makes this a viable opportunity.

**ESTIMATED COST:** \$200,000

**JOB CREATION:** Feasibility Study

**PRIORITY LEVEL:** High

**TYPE OF PROJECT:** Non-Construction

# STRATEGIC DEVELOPMENT PROJECTS



## OBJECTIVES

Provide public-private partnership to manage the marinas.

## ANTICIPATED IMPACTS AND BENEFITS

Revitalize the Agat Marina and expand the Greg D. Perez Marina in Hagåtña to withhold major typhoons.

**ESTIMATED COST** \$7.5 million

**JOB CREATION:** 1-25

**PRIORITY LEVEL:** High

**TYPE OF PROJECT:** Construction

## H15 PROJECT TITLE

Guam Fisherman's Cooperative Association  
Marina Authority

## PROJECT DESCRIPTION/STATEMENT

To revitalize the Agat Marina and expand the Greg D. Perez Marina in Hågatña under a public-private partnership. Each marina will have a council (community-based oversight) to manage the marinas along with the GFCA Board of Directors.

Both the Agat Marina and the Hågatña Marina have suffered numerous typhoons and years of neglect. The conditions are hazardous and the main concern is that the next major typhoon will not only destroy the docks but a large majority of the vessels as well.



## H16 PROJECT TITLE

Hagåtña Riverwalk Esplanade (Marine Corps to Chalan Santo Papa Juan Pablo Dos)

### PROJECT DESCRIPTION/STATEMENT

The Hagåtña Master Plan identified a concept to re-establish portions of the historic river corridor and develops a vibrant Riverwalk Esplanade with development opportunities. The planned Riverwalk Esplanade will become a vibrant and active live-work-play destination that merges Hagåtña's natural beauty with its cultural heritage.

### OBJECTIVES

The key goal of this project is to construct a new Riverwalk Esplanade on both sides of the Hagåtña River. This 3,000 linear feet pedestrian-oriented Riverwalk will begin at Marine Corps Drive and end at Central Park to the south. The entrance

from Marine Corps Drive will be enhanced with an iconic triple-arch entry sign 15 feet in height, with district kiosks and wayfinding signs throughout the esplanade. The Riverwalk will be defined by rows and groupings of Royal Palms, along with groupings of shade trees and landscaped planter areas. This trail will require a new pedestrian bridge across the river, connecting the east and west sides of the Riverwalk Esplanade.

### ANTICIPATED IMPACTS AND BENEFITS

The Riverwalk Esplanade will complement existing facilities in the area and enhance the pedestrian experience in downtown Hagåtña. The project will establish a vibrant Riverwalk Esplanade that will have a positive economic impact for the capital city of Hagåtña.

**ESTIMATED COST:** \$6.5 million

**JOB CREATION:** 1-25

**PRIORITY LEVEL:** High

**TYPE OF PROJECT:** Construction

# STRATEGIC DEVELOPMENT PROJECTS



## H17 PROJECT TITLE

Marina Development

### PROJECT DESCRIPTION/STATEMENT

With Guam's current economic difficulties, there is a need to enhance economic opportunities within its fisheries industry through the expansion of marina facilities. The current facility is inadequate and is unable to withstand typhoon conditions. The construction of typhoon-proof docks and additional boat slips and services will enable Guam's marine tourism activities and its local boating and fishing industry to expand, flourish and prosper. The project has two (2) phases. Phase I: HHRA, in conjunction with the GFCA, would issue a Request for Proposals to contract the services of an architectural and engineering (A/E) firm to prepare the design for the marina and facility, prepare the Environmental Impact

Statement (EIS), secure all federal and local permits, and serve as contract/construction manager during the construction phase of the project. Phase II: Construction of the 150-boat-slip marina and shore-line facility.

### OBJECTIVES

To design and construct a 150-boat-slip marina and shore-line facility to promote marine industry, stimulate job growth through the revitalization of Guam's capital city of Hågatña, and to promote long-term economic benefits that will advance Guam's efforts to diversify its economy and stimulate growth.

### ANTICIPATED IMPACTS AND BENEFITS

The project will create additional jobs. In addition, the economy will realize \$25 million in annual revenue from tourism activities within the marina, alleviate over-crowding and provide for an opportunity for larger scale domestic commercial fishery, not to mention, global exposure as a marine activity destination.

**ESTIMATED COST:** \$4.5 million

**JOB CREATION:** 50 +

**PRIORITY LEVEL:** High

**TYPE OF PROJECT:** Construction

<b>PROJECT TITLE</b>	
<b>MULTI-AGENCY AQUACULTURE EDUCATION PROGRAM</b>	
<b>LEAD INDUSTRY SECTOR</b>	
<b>AQUACULTURE AND FISHERIES</b>	
<b>ECONOMIC GOALS &amp; OBJECTIVES</b>	
	
<b>ESTIMATED COST</b>	
\$250,000 PHASE 1	
\$1M PHASE 2	
<b>JOB CREATION</b>	
	
<b>PRIORITY LEVEL</b>	
HIGH PRIORITY	
<b>TYPE OF PROJECT</b>	
	

## H18 PROJECT TITLE

Multi Agency Aquaculture Education Program

### PROJECT DESCRIPTION/STATEMENT

As the Aquaculture industry continues to expand throughout the world, the need to promote such industry is significantly important for Islands like Guam. One initiative that can address this growth is by creating an Aquaculture curriculum in the Secondary School Level. Similar to the culinary arts and restaurant program in high schools in Guam, this aquaculture program can prepare the youth to pursue careers in this particular industry if one decides college is not an option after graduation. This program can be designed for students to enjoy outdoor assignments and education linked to hands-on projects such as fish husbandry and hatchery maintenance. With Guam's commitment to advance the growth of local farming,

aquaculture, and fishing; this program can benefit our economy by providing jobs, improving revenue and eliminating the need to import.

### OBJECTIVES

The objective of this feasibility study is to determine the factors needed to create a Multi Agency Aquaculture Education Program at a Secondary School Level. Conducting this study will allow stakeholders to assess the interest/demands that this upcoming industry will attract if such program shall exist. If the findings from this feasibility study show a positive impact for the youth in high schools, the implementation of a pilot program between GCC, Department of Agriculture, GEDA and the Department of Education can be conducted at the Guam Southern High School in Santa Rita.

### ANTICIPATED IMPACTS AND BENEFITS

Incorporating a Multi Agency Aquaculture Education Program can promote hands-on learning with additional skills such as problem solving, teamwork, and leadership. Creating this new program can allow students to expand their knowledge in aquaculture and learn ways to develop a solid work ethic and necessary skills for future employment.

### ESTIMATED COST:

**Phase 1:** \$250,000 (Feasibility Study)

**Phase 2:** \$1 million (Implementation)

### JOB CREATION:

**Phase 1:** Feasibility Study

**Phase 2:** 1 – 25 Jobs

### PRIORITY LEVEL:

High

### TYPE OF PROJECT:

Construction and Non-Construction

# STRATEGIC DEVELOPMENT PROJECTS

<u>PROJECT TITLE</u>
<b>RELOCATION OF ELECTRICAL POWER DISTRIBUTION AND TRANSMISSION SYSTEMS UNDERGROUND AT GEDA INDUSTRIAL PARKS</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>CONSTRUCTION</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>

<u>ESTIMATED COST</u>
<b>\$14M \$</b>
<u>JOB CREATION</u>

<u>PRIORITY LEVEL</u>
<b>HIGH PRIORITY</b>
<u>TYPE OF PROJECT</u>


## H19 PROJECT TITLE

Relocation of Electrical Power Distribution and Transmission Systems Underground at GEDA Industrial Parks

### PROJECT DESCRIPTION/STATEMENT

Since the establishment of GEDA's Industrial Parks Program back in 1969, the Authority has maintained and administered a long-term lease of approximately 76 total acres of Guam property for industrial and commercial type development. These properties are situated at three different locations on-island at the E. T. Calvo Memorial Industrial Park in Tamuning, the Harmon Industrial Park in upper Tumon, and the Cabras Industrial Park located in Piti.

Over the years, and particularly in light of the recent super typhoons which devastated our island of Guam, GEDA has looked at ways to

improve and protect the utility systems at its industrial parks from further exposure to typhoons and the continuous deterioration from the effects of our local climate. In some cases, these aging utility systems have even approached capacity limitations. While we understand that a project of this scope and magnitude would require extensive planning and resources, in the interim, the Authority would like to pursue mitigation efforts to protect the electrical power systems at these industrial parks and to improve the capabilities of the system to handle current and future development in these parks. Often times, during the recovery and repair period after natural disasters such as typhoons, the situation has caused economic hardship and disruption to the businesses located at these industrial parks. GEDA believes that the more practical and long-term solution in mitigating and/or hardening the current electrical power distribution and transmission systems is to relocate them underground.

In conjunction with this project, GEDA also needs to improve the storm water drainage system at Industrial Parks. With the approval and completion of both projects, the Authority can proceed forward with making the necessary improvements to the infrastructure and utility systems at these industrial parks, which have been needed for some time now. Ultimately, these improvements to the industrial parks will assist GEDA in its efforts to entice new development of new industries to the island of Guam.

### OBJECTIVES

This project will include design and construction of an underground electrical power distribution and transmission system at GEDA's three (3) Industrial Park sites. In general, the work includes the installation of manholes and hand holes complete and ready for installation of underground electrical transmission lines, installation of pad-mounted transformers, pad-mounted capacitor banks,

switch vaults, riser poles and streetlights. The selected contractor will be responsible for removal of overhead secondary lines and poles, service lines, existing service entrances, hardware, insulators, concrete pole foundations, guying anchors and incidental work. This project will also include conversion of all overhead line customers at the three (3) industrial parks. All materials and equipment shall be furnished by the contractor. Removal and/or relocation of cable television service and any other service lines other than electrical power lines shall be the responsibility of the service provider.

### **ANTICIPATED IMPACTS AND BENEFITS**

The necessary improvements to the infrastructure and utility systems at these properties can continue the generation of jobs, gross sales, and GRT for years.

### **ESTIMATED COST**

E. T. Calvo Industrial Park - \$5 Million

Harmon Industrial Park - \$4 Million

Cabras Industrial Park - \$5 Million

### **INTEGRATED USE OF OTHER FUNDS**

Local Match: GEDA Revenues

**JOB CREATION:** 1-25

**PRIORITY LEVEL:** High

**TYPE OF PROJECT:** Construction

# STRATEGIC DEVELOPMENT PROJECTS

<u>PROJECT TITLE</u>
<b>RESOURCE INNOVATION AND SOLUTIONS NETWORK INCUBATOR IMPLEMENTATION PROJECT</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>GREEN TECHNOLOGY</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>

<u>ESTIMATED COST</u>
<b>\$500,000</b>
<u>JOB CREATION</u>

<u>PRIORITY LEVEL</u>
<b>HIGH PRIORITY</b>
<u>TYPE OF PROJECT</u>


## H2O PROJECT TITLE

Resource Innovation and Solutions Network Incubator Implementation Project

### PROJECT DESCRIPTION/STATEMENT

Guam, the largest island in the Mariana Islands and Micronesia region is emerging in the new economy with strength in technology, bioscience research, and advanced business services. The vibrant local economy is attracting regional growth and the diverse population of the Guam region is likely to double by 2050. This trajectory suggests that the continuing increase in population, consumption and wealth will result in a decrease of finite resources, in particular- space. As the Guam landfill generates nearly several thousand tons of material annually, the regional benefit of this project will contribute to the efforts of diverting waste from the landfill by creating

new economic development opportunities and transforming waste into resources.

UOG, the territory of Guam, and their many collaborators across corporate, nonprofit, government, and education sectors aim to design, develop, and implement a Circular Economy Regional Innovation Strategy that will address the Guam area's solid waste challenges and economic development opportunities. The primary impact of the program will be to drive local innovation, support economic development, create next economy jobs and divert landfill waste toward a circular economy. The incubator will focus on accelerating the development of circular economy ventures throughout the Marianas and Micronesia region, including waste-to-resources and waste-to-energy companies. New and emerging circular economy ventures will develop sustainable and renewable technologies in the energy, water, transportation, built environment, and food sectors, among others to help create value and economic development opportunities from solid waste streams

### OBJECTIVES

This project will implement the missing component of this regional strategy: a circular economy incubator focused on innovation and solutions to resource efficiency and effectiveness challenges. The incubator will build on the extensive entrepreneurial ecosystem that has purposefully emerged in the Guam area over the past decade. It will launch circular economy entrepreneurs and ventures that will take advantage of new opportunities in the circular economy space, creating new ventures, jobs, and economic growth driven by innovation and entrepreneurship.

### ANTICIPATED IMPACTS AND BENEFITS

The primary impact of the program will be to drive local innovation, support economic development, create next economy jobs and divert landfill waste

toward a circular economy. The incubator will focus on accelerating the development of circular economy ventures throughout the Marianas and Micronesia region, including waste-to-resources and waste-to-energy companies. New and emerging circular economy ventures will develop sustainable and renewable technologies in the energy, water, transportation, built environment, and food sectors, among others to help create value and economic development opportunities from solid waste streams.

**ESTIMATED COST:** \$500,000

**JOB CREATION:** 50

**PRIORITY LEVEL:** High

**TYPE OF PROJECT:** Construction

# STRATEGIC DEVELOPMENT PROJECTS

<u>PROJECT TITLE</u>
<b>UOG CAPITAL IMPROVEMENT FOR HEALTHCARE EDUCATION AND EMPLOYMENT OPPORTUNITIES</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>HEALTHCARE</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>

<u>ESTIMATED COST</u>
<b>\$12M</b> 
<u>JOB CREATION</u>

<u>PRIORITY LEVEL</u>
<b>HIGH PRIORITY</b>
<u>TYPE OF PROJECT</u>


## H21 PROJECT TITLE

UOG Capital Improvement for Health Care Education and Employment Opportunities

### PROJECT DESCRIPTION/STATEMENT

The nursing program began in 1968 as a two-year associate in science degree (68 credits). The program was closed in 1988 to be replaced by the generic four-year bachelor's degree in nursing. The BSN program was granted a five-year initial professional accreditation by the National League for Nursing in 1996. Full reaccreditation was granted in 2002, 2010, and most recently in 2018 by the Accreditation Commission for Education in Nursing (ACEN). As the only BSN program on the island, and the only BSN program in the Micronesian region, the island's health care system relies on the UOG program to sustain the RN workforce. The island had one civilian

hospital, GMH until 2015, when a private hospital opened. The GMH is a government-owned and operated facility, with constant staffing shortages. The number of hospital beds was inadequate to meet the needs of the island's health care system. GMH is the only local government hospital is a 201 bed facility. At last survey, in 2016, GMH had 326 licensed nursing positions, with a vacancy of 74 nursing positions ----a 23% licensed nurse vacancy rate. The private hospital, the GRMC, opened in July 2015. GRMC reported, in 2018, a need for 80 to 100 nurses to operate the full capacity of 136 beds, necessitating the need to employ approximately 32 travel nurses in order to partially fill this need. Travel nurses are a higher expense than locally hired nurses. This vacancy rate when combined with that of GRMC, is overwhelming and represents over 160 open positions.

According to the Guam State Office on Aging (SOA), the elderly population is increasing, with 13.17% of Guam's total population age 60 or older in 2015 (21,301 seniors). Projections in Guam are for an increase in those 60 years and older to grow by 4.14% each year; with the number anticipated to rise to 25,646 or 15% of the population being seniors by 2020. The increasing elderly population will impact the health and social systems, which are in need of significant improvements to meet the increasing demand. According to the World Health Organization (WHO), sensory organ diseases and neuropsychiatric disorders (particularly dementia), are among the major causes of disease burden in the Western Pacific Region (which includes Guam and Micronesia). This burden affecting our region is increasing as the elderly population rises. The WHO notes that there is a lack of adequately trained health care workers. Social determinants of health such as education, income, and geography impact health outcomes for our elderly. Due to these circumstances, the region is facing a crisis given the critical shortages of health care workers, including nursing assistants, to care for the elderly.

in Guam and in the region, an area that has inadequate health care systems with high chronic disease burdens and is designated as rural and medically underserved. The current job vacancy rate (unfilled, available positions) for Certified Nursing Assistants (CNAs) in Guam is 45%. This is much greater than the U.S. national vacancy rate of 22%. There are limited nursing assistant training programs on island and UOG has developed a new Caregiver program, and a Nursing Assistant Training Program.

The School of Nursing and Health Sciences is located in the two-story Health Science Building, which is 34,000 square feet and has seven classrooms, a Computer Lab, Learning Resource Center, Health Science Fitness Room, Conference Room, and 16 faculty/staff offices. Two classrooms accommodate 25 students each, while the other five classrooms accommodate up to 45 students. All classrooms have multimedia equipment and wireless Internet access. The Computer Lab has 22 computers. The current Learning Resource Center has three rooms including a state of the art Simulation Lab with advanced simulated manikins; however we are limited with only eight hospital beds for student's to practice clinical skills.

The Nursing Program currently has 97 enrolled students. Our admissions into the program are capped at 35-37 students each year due to limitations in clinical site availability for training, faculty shortage in certain specialties, and space constraints in the current building. The program must plan for expansion to increase enrollment to meet the critical nursing shortage on the island. However, our current space limitation will hamper achievement of that goal.

### OBJECTIVES

Increase the diversity of training programs for the health care sector, resulting in improved health care for our islanders and increased job opportunities in

the health care industry.

### ANTICIPATED IMPACTS AND BENEFITS

This project will increase the number of lecture and laboratory rooms since the current building is at capacity with no room for expansion.

**ESTIMATED COST:** \$12,000,000

**JOB CREATION:** 160

Based on recent data, there are approximately 59 vacancies for Certified Nursing Assistants, and at least 160 Registered Nurse vacancies. This does not include the home-based caregivers needed to assist the growing numbers of elderly needing help. Agencies serving the elderly report over 650 families in need of a variety of services. Additionally there is a need for institutional settings such as Assisted Living Facilities and Long Term Care facilities. These health settings will required trained caregivers and nurses. By increasing our educational training capacity, the health care industry can grow to provide services that are lacking, and sorely needed in our community.

**PRIORITY LEVEL:** High

**TYPE OF PROJECT:** Construction

# STRATEGIC DEVELOPMENT PROJECTS

<u>PROJECT TITLE</u>
<b>AGRICULTURAL ACCESS AND DISTRIBUTION PROGRAMS</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>AGRICULTURE</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>

<u>ESTIMATED COST</u>
<b>\$250,000</b> 
<u>JOB CREATION</u>

<u>PRIORITY LEVEL</u>
<b>MEDIUM PRIORITY</b>
<u>TYPE OF PROJECT</u>


## M1 PROJECT TITLE

Agriculture Access and Distribution Programs

## PROJECT DESCRIPTION/STATEMENT

There is an ongoing need for farmers to be able to scale their production capability to meet the demand of large volume customers which include hospital facilities, educational organizations and correctional systems. With this proposed program, farmers can create partnerships with public and private schools and agencies such as DOE, UOG, the Department of Corrections (DOC) and the Department of Youth Affairs (DYA) to plan, design, and establish delivery and distribution systems that would supply local farm goods direct to these institutions thereby promoting the expansion of agricultural opportunities for Guam's agricultural industry, healthy living, and increased food security.

## OBJECTIVES

The proposed programs would fund a study to plan, design, and implement a supply chain management system for locally produced agriculture products that would increase the distribution channels and marketing network by which customers can access local goods that come directly from the islands farmers.

## ANTICIPATED IMPACTS AND BENEFITS

This assessment will support local farmers by opening doors to new customers thereby promoting healthy living and access to local goods that customers cannot grow on their own. This study will not only promote a healthier lifestyle but also will provide additional income and profit to farmers, create more jobs in this industry, and increase the food security of the island.

**ESTIMATED COST:** \$250,000

**JOB CREATION:** 1-25

**PRIORITY LEVEL:** Medium

**TYPE OF PROJECT:** Non-Construction

<u>PROJECT TITLE</u>
<b>GUAM'S CHILDREN MUSEUM FEASIBILITY STUDY</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>TOURISM</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>

<u>ESTIMATED COST</u>
<b>\$100,000 \$</b>
<u>JOB CREATION</u>
<u>FEASIBILITY STUDY</u>
<u>PRIORITY LEVEL</u>
<b>MEDIUM PRIORITY</b>
<u>TYPE OF PROJECT</u>


## M2 PROJECT TITLE

Guam's Children Museum Feasibility Study

### PROJECT DESCRIPTION/STATEMENT

The assessment of a children museum will determine the market support and cost benefits of such project. This new attraction can boost sectors such as Tourism, Education, and Labor Workforce Exploration for school age children.

In 2018, Guam welcomed a total of 285,717 visitors ranging from ages 17 and under. As for our local Education sector, Guam's SY 2017-2018 had a total of 29,582 student in the GDOE system and 4,089 in Private Schools Market. Should this project come to fruition, it will enhance Guam's tourism market base.

## OBJECTIVES

Determine the course of action to develop a children museum for the island of Guam by conducting a feasibility study

## ANTICIPATED IMPACTS AND BENEFITS

Constructing a children museum can potentially provide a new type of tourist attraction that will expand Guam's reputation as a family friendly travel destination. In addition to providing activities for tourist, this development can also allow our local communities to experience firsthand the history, culture and geography of Guam in a different setting. The theory behind such exhibits is that activity can be as educational as instruction, especially in early childhood. Most children's museums are nonprofit organizations, and many are run by volunteers or by very small professional staffs. In contrast with traditional museums that typically have a hands-off policy regarding exhibits, children's museums feature interactive exhibits that are designed to be manipulated by children.

**ESTIMATED COST:** \$100,000

**JOB CREATION:** Feasibility study

**PRIORITY LEVEL:** Medium

**TYPE OF PROJECT:** Non-Construction

# STRATEGIC DEVELOPMENT PROJECTS

<u>PROJECT TITLE</u>
<b>HAGATNA CENTRAL PARK ENHANCEMENTS</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>CONSTRUCTION</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>
<u>ESTIMATED COST</u>
<b>\$3.5M</b>
<u>JOB CREATION</u>
<u>PRIORITY LEVEL</u>
<b>MEDIUM PRIORITY</b>
<u>TYPE OF PROJECT</u>

## M3 PROJECT TITLE

Hagåtña Central Park Enhancements

### PROJECT DESCRIPTION/STATEMENT

The facilities at the Hagåtña Central Park are currently in below average condition and are underutilized, possibly attributed to the location or proximity to the Hagåtña River, which often floods. The Hagåtña Master Plan identifies an opportunity to enhance and expand recreational programs and facilities within Central Park to provide for the diverse recreational needs of the community. This park expansion consists of multiple recreational facilities, which will create a dynamic and versatile park when fully completed.

### OBJECTIVES

The key goal to this project is to add multi-use fields and sports courts to serve the residents

of Hagåtña. The specific planned recreational facilities as part of this project include:

- 3 Sand Volleyball Courts
- 2 Outdoor Basketball Courts
- Playground
- Multi-use Football/Soccer Field
- Multi-purpose Softball (2)/Soccer Field
- Baseball Field
- Walking Paths
- Concession Stand/Restrooms
- Outdoor Lighting
- Sirena Monument

### ANTICIPATED IMPACTS AND BENEFITS

Park improvements will address current flooding issues and will increase use of park facilities by residents. The community park will generate revenue from program fees and other paid attraction events such as cultural dance events.

**ESTIMATED COST:** \$3.5 million

**JOB CREATION:** 50-100

**PRIORITY LEVEL:** Medium

**TYPE OF PROJECT:** Construction



## M4 PROJECT TITLE

Hagåtña Governor Manuel F.L. Guerrero Administrative Complex

### PROJECT DESCRIPTION/STATEMENT

Historically, offices for the Governor, Legislature and Government of Guam agencies and departments have been located within the heart of Hagåtña and this project will consolidate agencies into a centralized complex within the Plaza de España, recreating the government center that Hagåtña once was. While several components of Government of Guam are located in Hagåtña today, they are not centralized. The Judiciary and Legislative branches of Government of Guam are located close to the center of Hagåtña, but the Office of the Governor and several administrative functions are located at Adelup. Additionally, many Government of Guam departments and

agencies currently lease office space in privately owned buildings in and outside of Hagåtña.

### OBJECTIVES

The key goal and objective of the Hagåtña Master Plan is to re-establish Hagåtña as the historic capital city and to consolidate the government offices and functions of all three levels (executive, legislative and judicial) of Guam's government. This project involves the construction of four government office buildings and associated parking improvements within and adjacent to the Plaza de España, centralizing government agencies and services within the Capital and Cultural District.

Four government office buildings are proposed within and adjacent to the Plaza de España with a combined square footage of 111,360 gross square feet. These offices will serve the Governor, Lieutenant Governor, offices for the Legislature, the Mayors Council of Guam, and other Government of Guam agencies. Additional parking (total 461 spaces) will be constructed to meet the increased demand within the government center and downtown.

Construction of these buildings and parking areas will require the demolition and relocation of the existing Guam Police Department building, and federal detention lockup facility on Aspinall Avenue. These buildings requiring relocation are one and two stories in height and total approximately 41,000 square feet in size. This project does not include costs related to the relocation of the Guam Police Department and detention lockup facilities.

As part of this project, Aspinall Avenue will be designed as a pedestrian protected access way between the governmental buildings. To accomplish this, retractable bollards will be installed on Chalan Santo Papa Juan Pablo Dos and O'Brien Drive to restrict this portion of Aspinall Avenue to pedestrian traffic only. The use of retractable bollards will allow for limited vehicular

## STRATEGIC DEVELOPMENT PROJECTS

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access for public safety vehicles for emergency access. This portion of Aspinall will be constructed with decorative paving to distinguish the unique function of this pedestrian space.

Planned streetscape improvements include street trees, shrubs/groundcover, 10' wide sidewalks (stamped concrete), benches, shade structures, bike racks, trash receptacles, and historic street lighting with customizable banners, street signs, gateways, interpretive panels, and district kiosks.

This project will be conducted in two phases.

**Phase 1:** Buildings 2, 3, and 4, and surface parking lots

**Phase 2 :** Building 1 and the parking garage

### ANTICIPATED IMPACTS AND BENEFITS

This project relocates the executive, legislative, and judicial branches of government to the Capital and Cultural District, increasing the efficiency and function of government and restoring Hagåtña as the historic capital city of Guam. This project will establish a uniform streetscape in the centralized area, enhancing the pedestrian experience consistent with planned streetscape improvements in this area.

### ESTIMATED COST:

**Phase 1:** \$44 million (Building Cost)

**Phase 2:** \$10 million (Parking Garage Cost)

**JOB CREATION:** 25-50

**PRIORITY LEVEL:** Medium

**TYPE OF PROJECT:** Construction



## M5 PROJECT TITLE

Hagåtña Land Resources Building

### PROJECT DESCRIPTION/STATEMENT

Hagåtña has served as the center of government for Guam throughout many parts of its history, including the Spanish colonial era, the American Naval Government era, and during World War II. While several components of Government of Guam are located in Hagåtña today, they are not centralized.

### OBJECTIVES

A key goal and objective of the Hagåtña Master Plan is to re-establish Hagåtña as the historic governmental capital and to consolidate the government offices and functions of Guam's government to a centralized area.

This project involves construction of a new

Land Resources Building to house additional Government of Guam agencies, including the Department of Land Management (DLM), Guam Environmental Protection Agency (GEPA), and Bureau of Statistics and Plans (BSP). Construction of this government office building in proximity to the government complex will add to the centralization of government agencies and services within the Capital and Cultural District.

This new five-story, 49,600 square-foot building will be constructed in central Hagåtña, near the northwest side of West O'Brien Drive and Padre Palomo Street. Conceptual plans for this building include a three-level parking garage with 121 parking spaces and 51 surface parking spaces, for a total of 172 parking spaces. This project will include refinement of the Hagåtña Master Plan concept, design and construction costs.

### ANTICIPATED IMPACTS AND BENEFITS

Relocates government agencies to centralized area, increasing the efficiency of governmental functions.

**ESTIMATED COST:** \$14 million

**JOB CREATION:** 25-75

**PRIORITY LEVEL:** Medium

**TYPE OF PROJECT:** Construction

# STRATEGIC DEVELOPMENT PROJECTS

<b>PROJECT TITLE</b>
<b>HAGATNA PASEO MULTI-PURPOSE SPORTS AND ENTERTAINMENT VENUE</b>
<b>LEAD INDUSTRY SECTOR</b>
<b>CONSTRUCTION</b>
<b>ECONOMIC GOALS &amp; OBJECTIVES</b>

<b>ESTIMATED COST</b>
<b>\$41M</b>
<b>JOB CREATION</b>

<b>PRIORITY LEVEL</b>
<b>MEDIUM PRIORITY</b>
<b>TYPE OF PROJECT</b>


## M6 PROJECT TITLE

Hagåtña Paseo Multi-Purpose Sports and Entertainment Venue

### PROJECT DESCRIPTION/STATEMENT

The Paseo Stadium serves not only Hagåtña, but also Guam's anchor institutions and defines the inter-connectedness of Guam's people in the diverse community. The reconstruction of the Paseo Stadium will contribute to the economic diversity by providing a new attraction segment to Guam's portfolio. The Paseo Stadium is an opportunity to engage all sectors of the island and regional community providing for a morale, welfare and recreational outlet and serves as link to the local, military and regional communities.

### OBJECTIVES

The key goal is to reconstruct an open-air, first tier multi-purpose sports facility and entertainment venue, on 22 acres of land, in conjunction with the Paseo de Susana Planned Development District. The facility would allow for events such as concerts, car shows, home shows, conventions and meetings; baseball and softball; football, soccer and rugby; basketball and lacrosse; track and field; tennis and volleyball; extreme sports; and other activities to occur. Also located in the complex would be meeting rooms, concessions and retail shops. The surrounding area would be developed to maintain the current walk and run activity and picnic grounds.

### ANTICIPATED IMPACTS AND BENEFITS

Paseo Stadium is the only public facility of its size in Guam and provides many unique features such as ocean frontage, location within the capital city, and providing a sense of place. Moreover, this facility has the capacity to support major regional and local outdoor events.

The benefits to reconstruction would create new, non-competitive, complimentary revenue streams; contribute to revitalization of Guam's capital city; serves as a new economic zone; provide for cultural preservation, promotion, and restoration of historical landmarks; helps to bring Guam's heritage to the masses of all ages and backgrounds; assists those who create, share, and yearn for the arts; and introduce new economic activity in Guam along with expanded economic growth in the areas of tourism and education for the island.

**ESTIMATED COST:** \$41 million

**JOB CREATION:** 1-50

**PRIORITY LEVEL:** Medium

**TYPE OF PROJECT:** Construction

<u>PROJECT TITLE</u>
<b>HAGATNA PROA PAVILION CANOE HOUSE</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>CONSTRUCTION</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>
<u>ESTIMATED COST</u>
<b>\$1.5M</b>
<u>JOB CREATION</u>
<u>PRIORITY LEVEL</u>
<b>MEDIUM PRIORITY</b>
<u>TYPE OF PROJECT</u>

## M7 PROJECT TITLE

Hagåtña Proa Pavillion Canoe House

## PROJECT DESCRIPTION/STATEMENT

The CHamoru culture has a long seafaring history on the island of Guam. The use of the proa has declined over time, but the proa is still acknowledged today in CHamoru culture and is used as a symbol for Guam. The existing shoreline does not have a large seafaring presence despite Hagåtña's seafaring culture. The shoreline at the Paseo de Susana peninsula is recognized for canoeing opportunities, or proas, which are designed with a narrow keel and wider top area, giving the boat speed and agility.

The boathouse/museum will showcase the traditional canoeing culture through education, recreation, and hands-on training. Recreational proas can be incorporated into the marina along

with canoeing lessons for residents or tourists who wish to experience this cultural activity.

## OBJECTIVES

The key goal of this project is to design and construction of a 1,000 square foot, single-story building for a proa pavilion canoe house, including areas to demonstrate historical proa construction techniques. The demonstration area will accommodate approximately six to ten, 40 feet canoes. The coastline adjacent to Hagåtña is frequently used for practice and racing of pros.

## ANTICIPATED IMPACTS AND BENEFITS

This project will support and expand this activity in a significant element of CHamoru culture and provide educational and recreational opportunities for visitors and residents.

**ESTIMATED COST:** \$1.5 million

**JOB CREATION:** 1-10

**PRIORITY LEVEL:** Medium

**TYPE OF PROJECT:** Construction

# STRATEGIC DEVELOPMENT PROJECTS

<u>PROJECT TITLE</u>
<b>HAGATNA RIVER CHANNELIZATION</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>CONSTRUCTION</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>
<u>ESTIMATED COST</u>
<b>\$35M</b>
<u>JOB CREATION</u>
<u>PRIORITY LEVEL</u>
<b>MEDIUM PRIORITY</b>
<u>TYPE OF PROJECT</u>

## M8 PROJECT TITLE

Hagåtña River Channelization

### PROJECT DESCRIPTION/STATEMENT

The Hagåtña River has had a significant historical presence in this area and once functioned as a central community-unifying element. The river corridor has been altered and much of the corridor is overgrown and inaccessible to residents and tourists to this area. The Hagåtña Master Plan identified a concept to re-establish portions of the historic river corridor and develop a vibrant and pedestrian focused Riverwalk Esplanade with future mixed-use development opportunities. This project will involve the main river channelization, providing for the Riverwalk Esplanade, which is provided for within a separate project sheet (Project Sheet 3D).

The planned Riverwalk Esplanade will become a vibrant and active live-work-play destination that merges Hagåtña's natural beauty with its cultural heritage.

### OBJECTIVES

The key goal of this project is to construct the channelization of approximately one mile of the Hagåtña River to re-establish the historic river course and reduce the floodplain and floodway to provide new pedestrian areas and development along the river corridor. The re-channelized river course will provide future building areas to support future mixed-use riverfront development. The Riverwalk Esplanade project is approximately 1,500 feet in length and 45-50 feet in width.

### ANTICIPATED IMPACTS AND BENEFITS

This project will provide for the channelization of the river, which will be improved as part of a related project. Establishment of a vibrant and active Riverwalk Esplanade will have a positive economic impact on the City of Hagåtña.

The Riverwalk Esplanade will complement existing facilities in the area and enhance the pedestrian experience in downtown Hagåtña.

**ESTIMATED COST:** \$35 million

**JOB CREATION:** 50-100

**PRIORITY LEVEL:** Medium

**TYPE OF PROJECT:** Construction

<p><b>PROJECT TITLE</b></p> <p><b>HAGATNA RIVERWALK ESPLANADE CENTRAL PARK POND</b></p> <p><b>LEAD INDUSTRY SECTOR</b></p> <p><b>CONSTRUCTION</b></p> <p><b>ECONOMIC GOALS &amp; OBJECTIVES</b></p> <p></p> <p><b>ESTIMATED COST</b></p> <p><b>\$4M</b> </p> <p><b>JOB CREATION</b></p> <p></p> <p><b>PRIORITY LEVEL</b></p> <p><b>MEDIUM PRIORITY</b></p> <p><b>TYPE OF PROJECT</b></p> <p></p>
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in this location will be comprised on a large pond area with an enhanced pedestrian boardwalk with lighting, bench seating and other amenities. An outdoor amphitheater will be constructed adjacent to the walkway at the terminus with the main Riverwalk Esplanade and a pedestrian bridge over the side channel to provide for pedestrian access to the main Riverwalk improvements to the east.

### ANTICIPATED IMPACTS AND BENEFITS

The project will establish a vibrant Riverwalk Esplanade will complement existing facilities in the area, enhance the pedestrian experience and have a positive economic impact for the city of Hagåtña.

**ESTIMATED COST:** \$4 million

**JOB CREATION:** 1-25

**PRIORITY LEVEL:** Medium

**TYPE OF PROJECT:** Construction

### M9 PROJECT TITLE

Hagåtña Riverwalk Esplanade Central Park Pond

#### PROJECT DESCRIPTION/STATEMENT

The Hagåtña Master Plan identified a concept to re-establish portions of the historic river corridor and a pedestrian focused Riverwalk Esplanade with future development opportunities. The planned Riverwalk Esplanade will be a vibrant and active live-work-play destination that merges Hagåtña's natural beauty with its cultural heritage. This project involves the extension of the main Riverwalk improvements to Central Park with a large pond area and brick paved walkway.

#### OBJECTIVES

The key goal to this project is to extend the Riverwalk improvements southeast connecting the esplanade to Central Park. The Riverwalk extension

# STRATEGIC DEVELOPMENT PROJECTS

<u>PROJECT TITLE</u>
<b>HAGATNA TRANSIT CIRCULATOR AND TROLLY SYSTEM</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>CONSTRUCTION</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>
<u>ESTIMATED COST</u>
<b>\$8M</b>
<u>JOB CREATION</u>
<u>PRIORITY LEVEL</u>
<b>MEDIUM PRIORITY</b>
<u>TYPE OF PROJECT</u>

## M10 PROJECT TITLE

Hagåtña Transit Circulator and Trolley System (Stations)

### PROJECT DESCRIPTION/STATEMENT

Public transit in Hagåtña is minimal and a citywide transportation system is nonexistent. The current bus system does not always have reliable service and does not serve some parts of Hagåtña. There is an inadequate amount of facilities for buses, both local and tour buses. Tour buses often drop off riders at undesignated bus stops and wait for them while the riders visit locations such as Plaza de España, Latte Stone Park, Dulce Nombre de Maria Cathedral Basilica, and CHamoru Village.

Implementing a local trolley system in Hagåtña would support enhanced transportation options for tourists, employees, and residents. This system would run on a continuous cycle with 12 stops

encompassing various locations in Hagåtña. This project includes the purchase of 10 trolley buses to allow for service at each stop approximately every 15 minutes during the day.

### OBJECTIVES

The key goal of this project is to construct three transit/trolley stations in the Government Center, CHamoru Village and Central Park/Pool areas. These stations will enable transportation between villages, tourist drop-off, and park-and-ride facilities. The transit stations will have a saw-tooth layout to accommodate multiple buses at the same time, without interrupting the flow of traffic. The stations will service both public transit buses and tour buses and the Hagåtña Trolley.

This project also includes a 3,200 sq. ft. maintenance facility to be located in the Central Park to provide for maintenance of the trolleys.

### ANTICIPATED IMPACTS AND BENEFITS

City of Hagåtña is a popular destination for visitors to Guam. Providing for a transit system will increase mobility for residents and visitors to the area. The project will increase pedestrian safety and address safety issues associated with buses parking in undesignated areas.

**ESTIMATED COST:** \$8 million

**JOB CREATION:** 25-75

**PRIORITY LEVEL:** Medium

**TYPE OF PROJECT:** Construction

<u>PROJECT TITLE</u>
<b>MULTI- PURPOSE COMMUNITY STADIUM COMPLEX</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>CONSTRUCTION</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>

<u>ESTIMATED COST</u>
<b>\$150,000 \$</b>
<u>JOB CREATION</u>
<u>FEASIBILITY STUDY</u>
<u>PRIORITY LEVEL</u>
<b>MEDIUM PRIORITY</b>
<u>TYPE OF PROJECT</u>


## M11 PROJECT TITLE

Multi- Purpose Community Stadium Complex

### PROJECT DESCRIPTION/STATEMENT

The demand for additional sports complexes in Guam has shown a great deal of interest throughout the years. It is proven in areas around the U.S. that economic benefits associated with various public facilities exist. In recent studies, several sports complexes had the ability to generate economic activity with the attraction of new visitors and communities. The need for sports complexes would not only attract new visitors but also support healthy activities for the local community.

Public Law 33-229 establishes the Guam Multi-Purpose Community Stadium Complex Commission (Commission). This law was introduced by Senator Mary Torres to create a

commission, administered by GEDA to spearhead an investigation and report findings necessary to develop such complex. Authorization was also passed to de-appropriate \$75,000 from Senator Torres' budget and to re-appropriate those funds to the GEDA to fund the Commission and its powers and responsibilities. With the lack of such facilities other than the Northern Sports Complex, the Commission to be created by P.L. 33-229 would oversee:

- The development of plans related to a Multi-Purpose Community Stadium Complex;
- Identify the preferable locations for the facility;
- Identify possible funding sources for the facility;
- Work with all pertinent stakeholders necessary to the creation of this plan;
- Obtain a feasibility study with regards to the building maintenance and economic impact;
- And any additional actions listed in the Article passed by Guam Legislature.

When P.L. 33-229 and the funding provided is acted upon by the GEDA, it will take the island one step closer to having the facilities to build additional capacity to attract tourists, provide sufficient space for not only international and local sporting events, but music and recreational events and fairs as well.

### OBJECTIVES

Conduct an assessment that will determine the economic impact and building maintenance of a potential Multi-Purpose Community Stadium Complex. Additional funds will also enrich the study by determining the need for a Multi Use Facility as a Tool for Workforce Development-sports management, physical education, personal training, etc.

## STRATEGIC DEVELOPMENT PROJECTS

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### ANTICIPATED IMPACTS AND BENEFITS

The proposal for a feasibility study can determine ways to attract additional visitors by providing sufficient space for international/local sporting events. This proposal will not only promote sports tourism but also support a healthy lifestyle for the local community.

**ESTIMATED COST:** \$150,000

### INTEGRATED USE OF OTHER FUNDING

**SOURCE:** \$75,000.00 was Deappropriate from Senator Mary Torres budget and Reappropriate to GEDA to fund the commission and its powers and responsibilities

**JOB CREATION:** Feasibility Study

**PRIORITY LEVEL:** Medium

**TYPE OF PROJECT:** Non-Construction

<b>PROJECT TITLE</b>
<b>NEW PUBLIC HOSPITAL FEASIBILITY STUDY</b>
<b>LEAD INDUSTRY SECTOR</b>
<b>HEALTH CARE</b>
<b>ECONOMIC GOALS &amp; OBJECTIVES</b>

<b>ESTIMATED COST</b>
<b>\$150,000 \$</b>
<b>JOB CREATION</b>
<b>FEASIBILITY STUDY</b>
<b>PRIORITY LEVEL</b>
<b>MEDIUM PRIORITY</b>
<b>TYPE OF PROJECT</b>


## M12 PROJECT TITLE

New Public Hospital Feasibility Study

### PROJECT DESCRIPTION/STATEMENT

GMH is the island's only public hospital that is mandated to provide care to all individuals seeking medical assistance. Aside from the additional services at GRMC and the U.S. Naval Hospital, the demand to provide sustainable healthcare to the entire community still exists. Due to the existing shortage of adequate, modern, and efficient hospital facilities in Guam the need for such facilities will become increasingly more urgent and serious.

A potential partnership between pertinent government of Guam agencies can foster the creation of a feasibility study to determine what actions will be needed to support the growing healthcare demands. It is critical to

decide if additional facilities such as a new public hospital or urgent care are suitable for the further development of Guam's healthcare system. This project recognizes the critical connection between our tourism industry and the availability of safe and modern hospital facilities to serve a local population of nearly 170,000 residents and more than 1 million visitors Guam welcomes every year. Moreover, this initiative may encourage further discussion among UOG, GCC, DOE, and the medical community of Guam aimed at supporting the development of educational tourism programs for a myriad of healthcare occupations.

### OBJECTIVES

Conduct an assessment that will determine the need for additional healthcare facilities that will support the growing population and shortfall of Guam's current healthcare system.

### ANTICIPATED IMPACTS AND BENEFITS

The proposal for a feasibility study can determine ways to provide the means necessary for the acquisition, construction and provision of hospital facilities to serve the general public and to make reasonably accessible to all the people of Guam.

**ESTIMATED COST:** \$150,000

**JOB CREATION:** Feasibility Study

**PRIORITY LEVEL:** Medium

**TYPE OF PROJECT:** Non-Construction

# STRATEGIC DEVELOPMENT PROJECTS

<u>PROJECT TITLE</u>
<b>PITI'S WATERFRONT FEASIBILITY STUDY</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>AQUACULTURE AND FISHERIES</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>

<u>ESTIMATED COST</u>
<b>\$200,000</b> 
<u>JOB CREATION</u>
<u>FEASIBILITY STUDY</u>
<u>PRIORITY LEVEL</u>
<b>MEDIUM PRIORITY</b>
<u>TYPE OF PROJECT</u>


## OBJECTIVES

To conduct a feasibility study that can determine the appropriate location for a waterfront development and to assess the environmental challenges and impacts associated with a development of this nature to the marine ecosystem, such as erosion and sea level rise.

## ANTICIPATED IMPACTS AND BENEFITS

The proposal for a waterfront in the village of Piti can provide facilities for a wide range of individuals and businesses. This proposal can accommodate events such as outdoor sports, dining, and shopping. These activities can bring together a variety of industries to generate revenue and additional economic benefits.

**ESTIMATED COST:** \$200,000

**JOB CREATION:** Feasibility Study

**PRIORITY LEVEL:** Medium

**TYPE OF PROJECT:** Non-Construction

## M13 PROJECT TITLE

Piti Waterfront Feasibility Study

## PROJECT DESCRIPTION/STATEMENT

The proposed feasibility study to determine the construction of a waterfront in the central village of Piti that can boost local/tourist attraction. The numerous ways to use a waterfront can provide economic benefits such as new restaurants, shopping centers and additional retails. Aside from revenue generating establishments, a waterfront can provide a location for local communities and visitors to have a place for recreational use and relaxation. However, due to the environmental concerns of a marine structure, a feasibility study is necessary to determine the location and proper maintenance to sustain the proposed facility.

<u>PROJECT TITLE</u>
<b>REGIONAL SOFTWARE SUPPORT CENTER</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>TELECOMMUNICATION</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>

<u>ESTIMATED COST</u>
<b>\$150,000</b> 
<u>JOB CREATION</u>
<b>FEASIBILITY STUDY</b>
<u>PRIORITY LEVEL</u>
<b>MEDIUM PRIORITY</b>
<u>TYPE OF PROJECT</u>


## OBJECTIVES

To assess the potential for this type of activity and to evaluate the benefits and costs for the development of such an industry.

## ANTICIPATED IMPACTS AND BENEFITS

Project would create 50 - 100 certified technicians.

**ESTIMATED COST:** \$150,000

**JOB CREATION:** Feasibility Study

**PRIORITY LEVEL:** Medium

**TYPE OF PROJECT:** Non-Construction

## M14 PROJECT TITLE

Regional Software Support Center

## PROJECT DESCRIPTION/STATEMENT

Interest has been raised by several U.S.-based software companies interested in exploring the possibility of using Guam as a hub for their software support and marketing activities. These companies have existing clients in Asia and would like to use Guam as a software support center for these clients. Guam needs to assess the potential for this type of activity. Feasibility study and cost-benefits analysis for the development of Guam as a center for software support for U.S.-based software companies doing business in Asia.

# STRATEGIC DEVELOPMENT PROJECTS

<u>PROJECT TITLE</u>
<b>RENOVATION OF THE BUILDING FOR CULINARY ARTS PROGRAM</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>CONSTRUCTION</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>
<u>ESTIMATED COST</u>
\$2.5M
<u>JOB CREATION</u>
<u>PRIORITY LEVEL</u>
<b>MEDIUM PRIORITY</b>
<u>TYPE OF PROJECT</u>

## M15 PROJECT TITLE

Renovation of the building for Culinary Arts Program

### PROJECT DESCRIPTION/STATEMENT

The GCC Associates of Arts in Culinary Arts Program is the only American Culinary Federation (AFC) accredited culinary program in the region and is the feeder for hotel and restaurant kitchen workers in Guam. GCC works collaboratively with the Micronesian Chef Association and the American Culinary Federation Guam Chapter for student job placement. The Culinary Arts program is a viable career pathway in the region – food preparation and serving-related occupations (e.g., chefs, head cooks, first-line supervisors of food preparation and serving workers, etc.) are ranked second in Guam's occupations and having the highest projected employment in Guam for 2014-2024 (Hire Guam, 2018).

During an AFC site visit, it was noted that the facility, the culinary kitchen laboratory (commercial kitchen), and equipment, have to be renovated and modernized to AFC standards. Once realized, program accreditation will be reaffirmed and enrollment and completers will increase; the Culinary Arts program will be recognized as the "Culinary Institute for Micronesia".

The investment made to this project will significantly increase Guam's workforce and is directly linked to several Strategies for Lead Economic Sectors. The project could incorporate (1) the use of local agricultural producers to provide fresh produce or seafood (Agriculture and Aquaculture and Fisheries) and (2) support local farmers and fisherman and locally made products (Extend Tourism Beyond Tumon, Tourism – Guam Tourism 2020 Plan).

### OBJECTIVES

Renovate the culinary kitchen laboratory (commercial kitchen), and equipment to modernized to AFC standards.

### ANTICIPATED IMPACTS AND BENEFITS

The investment made to this project will significantly increase Guam's workforce and is directly linked to several Strategies for Lead Economic Sectors. The project could incorporate (1) the use of local agricultural producers to provide fresh produce or seafood (Agriculture and Aquaculture and Fisheries) and (2) support local farmers and fisherman and locally made products (Extend Tourism Beyond Tumon, Tourism – Guam Tourism 2020 Plan).

**ESTIMATED COST:** \$2.5 million

**JOB CREATION:** 1-25

**PRIORITY LEVEL:** Medium

**TYPE OF PROJECT:** Construction

<u>PROJECT TITLE</u>
<b>SOLAR POWERED DATA CENTER FEASIBILITY STUDY</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>TELECOMMUNICATION</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>
  
<u>ESTIMATED COST</u>
<b>\$500,000</b> 
<u>JOB CREATION</u>
<b>FEASIBILITY STUDY</b>
<u>PRIORITY LEVEL</u>
<b>MEDIUM PRIORITY</b>
<u>TYPE OF PROJECT</u>


## M16 PROJECT TITLE

Solar Powered Data Center Feasibility Study

### PROJECT DESCRIPTION/STATEMENT

The proposed Solar Powered Data Center study will be used to centralize network equipment, for the purpose of collecting, storing, processing, distributing and allowing access to large amounts of data.

The data center will be used to improve communication between producers and users of the data and develop a coordinated flow of information between agencies more efficiently.

### OBJECTIVES

The purpose of this feasibility study is to identify whether the development of a data center in Guam is feasible. This assessment will also determine the appropriate location, required building space,

renewable energy options, and equipment system required for services of a local data center.

### ANTICIPATED IMPACTS AND BENEFITS

Electricity costs will be one of the largest components for the data center operations. Unlike remote areas with relatively cold temperatures that have access to high level fiber optic systems, Guam's renewable energy is increasingly becoming the lowest cost option for power supply and keeps residence and businesses protected from fluctuating energy rate increases.

A solar power purchase agreement will provide business owners the opportunity to go solar without any upfront costs or future maintenance of a photovoltaic system. Under a solar power purchase agreement the commercial building owner will only pay less per month on their monthly electric bill.

Business owners will also be able to afford renewable energy by taking advantage of the federal tax credits, grant programs and depreciation of the system.

**ESTIMATED COST:** \$500,00

**JOB CREATION:** Feasibility Study

**PRIORITY LEVEL:** Medium

**TYPE OF PROJECT:** Non-Construction

# STRATEGIC DEVELOPMENT PROJECTS

<u>PROJECT TITLE</u>
<b>TELECOM INDUSTRY TRAINING PROGRAM</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>TELECOMMUNICATION</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>

<u>ESTIMATED COST</u>
<b>\$205,000</b> 
<u>JOB CREATION</u>
<b>FEASIBILITY STUDY</b>
<u>PRIORITY LEVEL</u>
<b>MEDIUM PRIORITY</b>
<u>TYPE OF PROJECT</u>


## OBJECTIVES

Obtain a funding source to conduct a program development study that would identify the program training needs in the telecom industry and prescribe a step-by-step program to accommodate those needs, utilizing the training environment and facilities currently available at the local college institutions mentioned above.

## ANTICIPATED IMPACTS AND BENEFITS

Project would create 50 - 100 certified technicians.

**ESTIMATED COST:** \$205,000

**JOB CREATION:** Feasibility Study

**PRIORITY LEVEL:** Medium

**TYPE OF PROJECT:** Non-Construction

## M17 PROJECT TITLE

Telecom Industry Training Program

## PROJECT DESCRIPTION/STATEMENT

To insure Guamanians benefit from the development of the telecom industry as expected as a result of other proposed telecom projects, a training center would be established jointly at UOG and the GCC to accommodate the various levels of skills necessary to fulfill the needs of the IT and telecom industries that will develop in the immediate future. This proposal will obtain a request for proposal (RFP) for the services of a consultant to develop the program development study. Assess the UOG and GCC's contribution to providing technical assistance in this type of industry, conducting applied research, and disseminating program results.

<p><b>PROJECT TITLE</b></p> <p><b>VALUE ADDED COMMUNITY KITCHEN</b></p> <p><b>LEAD INDUSTRY SECTOR</b></p> <p><b>AGRICULTURE</b></p> <p><b>ECONOMIC GOALS &amp; OBJECTIVES</b></p> <p></p> <p><b>ESTIMATED COST</b></p> <p><b>\$17,550</b> </p> <p><b>JOB CREATION</b></p> <p></p> <p><b>PRIORITY LEVEL</b></p> <p><b>MEDIUM PRIORITY</b></p> <p><b>TYPE OF PROJECT</b></p> <p></p>
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## M18 PROJECT TITLE

Value Added Community Kitchen

### PROJECT DESCRIPTION/STATEMENT

Construct a Value Added Community Kitchen that will meet the specifications of the Department of Public Health Environmental Health Division that can be used by individuals (entrepreneurs) who need to make and package food products to sell. The potential entrepreneurs will schedule a time to use the kitchen to make their products. This kitchen can be constructed at the Amot Farm located on Swamp Road in the Municipality of Dededo.

### OBJECTIVES

Many packaged goods being sold in our stores and markets are imported. Guam has a wide range of agricultural products that can be harvested,

cooked/made and packaged for sale in our stores and markets. A few examples of these products are: Donne' Dinanche, Jams and Jelly, Pickled Eba, Papaya and Mango. This kitchen will allow residents from around our island of Guam to schedule their use. Each person will bring their ingredients needed to make and package their goods.

This kitchen will also allow for other potential entrepreneurs who bake rosketi, empanada, and coconut candy, to use the kitchen to make and package their products. All users of this Value Added Community Kitchen must have their Health Certificate obtained at the Department of Public Health Environmental Health Division.

### ANTICIPATED IMPACTS AND BENEFITS

A Memorandum of Agreement will be signed between the Amot Farm operators and each entrepreneur (user) of the Value Added Community Kitchen. A percentage of their gross income will be paid to the Amot Farm operations for the use of the kitchen to cover overhead cost. Two employees will be needed to keep the kitchen in order and to maintain the schedule for use. Potential entrepreneurs will need staff that will help them to make their goods, package and deliver their goods to the stores and markets. Farmers using the kitchen will need additional help to maintain and harvest their produce needed to make their products. This project will allow job opportunities for many who are on government subsidies, such as the S.N..A.P. and cash assistance programs. The most important nutrition benefit is that these products are fresher. They are grown, picked and made in Guam.

**ESTIMATED COST:** \$17,550

**JOB CREATION:** 1-25

**PRIORITY LEVEL:** Medium

**TYPE OF PROJECT:** Construction

# STRATEGIC DEVELOPMENT PROJECTS

<u>PROJECT TITLE</u>
<b>CONSTRUCTION OF CHALAN PAGO-ORDOT MAYOR'S COMPLEX</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>CONSTRUCTION</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>

<u>ESTIMATED COST</u>
<b>\$1M \$</b>
<u>JOB CREATION</u>

<u>PRIORITY LEVEL</u>
<b>LOW PRIORITY</b>
<u>TYPE OF PROJECT</u>


## OBJECTIVES

Construct a complex that will accommodate the Mayors office, existing community center and new multi-purpose center.

## ANTICIPATED IMPACTS AND BENEFITS

Economic growth of our island through sponsored events such as festivals, fiestas, cultural performances, performing arts events, and sporting events locally and regionally.

**ESTIMATED COST:** \$1 million

**JOB CREATION:** 10

**PRIORITY LEVEL:** Low

**TYPE OF PROJECT:** Construction

## L1 PROJECT TITLE

Construction of Chalan Pago-Ordot Mayor's Complex

### PROJECT DESCRIPTION/STATEMENT

The development of a Mayor's Complex in Chalan Pago will provide a new home for the Mayor's Office, existing Community Center, and a new Multi-Purpose Center. This facility will allow the Mayor and their Municipal Planning Council (MPC) to maximize facility resources; enabling project promotions and the hosting of larger village events year around, which will directly impact the economic growth of our island through sponsored events such as festivals, fiestas, cultural performances, performing arts events, and sporting events locally and regionally.



## L2 PROJECT TITLE

Construction of Chalan Pago-Ordot Multipurpose Center

### PROJECT DESCRIPTION/STATEMENT

The multi-purpose facility will be used for various community events. One example is a Tier 1 Emergency Shelter. This infrastructure project will provide open training opportunities, job creation and promote the ongoing effort to provide a better quality of life for this community.

### OBJECTIVES

Construct a Multi-Purpose Center to provide a facility for various community events.

## ANTICIPATED IMPACTS AND BENEFITS

Provide open training opportunities, job creation and promote the ongoing effort to provide a better quality of life for this community.

**ESTIMATED COST:** \$4.7 million

**JOB CREATION:** 3-5

**PRIORITY LEVEL:** Low

**TYPE OF PROJECT:** Construction

# STRATEGIC DEVELOPMENT PROJECTS

<u>PROJECT TITLE</u>
<b>CONSTRUCTION OF CHALAN PAGO-ORDOT MUNICIPAL OPEN MARKET</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>CONSTRUCTION</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>

<u>ESTIMATED COST</u>
<b>\$800,000</b> 
<u>JOB CREATION</u>

<u>PRIORITY LEVEL</u>
<b>LOW PRIORITY</b>
<u>TYPE OF PROJECT</u>


## L3 PROJECT TITLE

Construction of Chalan Pago-Ordot Municipal Open Market

### PROJECT DESCRIPTION/STATEMENT

Developing a site for an “open market” along major roads has will provide the island with economic stimulus. Sites like the Dededo Market, the Mangilao Market, and Sagan Bisita in Agat, has provided small entrepreneurs with access to these municipal sites, to market and test the viability of their products. Given the limited “government” owned space along our two major roads, the ideal location for an open market in our village would be a small space along Route 4 and Gogue Drive and the Pago River Pavilion along Route 4, before entering Yona. Larger, undeveloped properties that are suited for an open market is available along Route 4 and Route 10 but, would require

funds to purchase these parcels from their current landowners to establish a larger municipal market in our villages. The identification of a viable area for our small businesses to market their products in our municipality is needed. This project will promote economic growth and development today and in the future. Like many of these open public markets, the Mayor’s Office can work collaboratively with other government agencies, to ensure that these vendors are licensed to sell their products, which is not currently being monitored or managed and would add to the Business Privilege Taxes collected.

### OBJECTIVES

Provide an open market for entrepreneurs to have access to municipal sites, to market and test the viability of their products.

### ANTICIPATED IMPACTS AND BENEFITS

Promote economic growth and development today and in the future. Like many of these open public markets, the Mayor’s Office can work collaboratively with other government agencies, to ensure that these vendors are licensed to sell their products, which is not currently being monitored or managed and would add to the Business Privilege Taxes collected.

**ESTIMATED COST:** \$800,000

**JOB CREATION:** 3

**PRIORITY LEVEL:** Low

**TYPE OF PROJECT:** Construction

<u>PROJECT TITLE</u>
<b>CONSTRUCTION OF A CONCRETE PAVILION, BATHROOMS, AND BASKETBALL COURT IN MONGMONG-TOTO-MAITE</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>CONSTRUCTION</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>
 
<u>ESTIMATED COST</u>
<b>\$280,000 </b>
<u>JOB CREATION</u>

<u>PRIORITY LEVEL</u>
<b>LOW PRIORITY</b>
<u>TYPE OF PROJECT</u>


## L4 PROJECT TITLE

Construction of a concrete pavilion, bathrooms and basketball court in the village of Mongmong-Toto-Maite

### PROJECT DESCRIPTION/STATEMENT

The construction of this facility will increase the promotion and awareness of physical fitness for residents of Mongmong-Toto-Maite by providing engaging activities such as zumba, dance classes, outdoor basketball and other community driven activities and events. Successful community partnerships are not stand-alone projects and add-on programs but are well integrated with providing services to all ages to creating defined goals. Research demonstrates that community partnerships improve school performance, strengthen families, build community support and increase student achievement and success.

## OBJECTIVES

This infrastructure will provide a home for community activities designed to benefit low and moderate-income persons and families whom face a wide range of issues. The infrastructure will not only improve youth-athletes experiences but provide a facility for all clubs, intramural, and recreational participants. Our goal is to maximize utilization of all community facilities in a way that can better serve the MTM population while also striving to provide venues that will be attractive destinations for community, athletic and entertainment events.

## ANTICIPATED IMPACTS AND BENEFITS

Increase the promotion and awareness of physical fitness for residents of Mongmong-Toto-Maite. Research demonstrates that community partnerships improve school performance, strengthen families, build community support and increase student achievement and success.

**ESTIMATED COST:** \$280,000

**JOB CREATION:** 3-5

**PRIORITY LEVEL:** Low

**TYPE OF PROJECT:** Construction

# STRATEGIC DEVELOPMENT PROJECTS

<u>PROJECT TITLE</u>
<b>GENERAL AVIATION INDUSTRIAL PARK FEASIBILITY STUDY</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>TRANSPORTATION AND DISTRIBUTION</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>

<u>ESTIMATED COST</u>
<b>\$150,000 </b>
<u>JOB CREATION</u>
<b>FEASIBILITY STUDY</b>
<u>PRIORITY LEVEL</u>
<b>LOW PRIORITY</b>
<u>TYPE OF PROJECT</u>


## L5 PROJECT TITLE

General Aviation Industrial Park Feasibility Study

### PROJECT DESCRIPTION/STATEMENT

The concept of a General Aviation Industrial Park originated over a decade ago when discussion emerged concerning the segregation of commercial flight activities at Tiyan. The FAA had completed a site study in the 1990's that pointed to the possibility of relocating the operations of small aircraft to an area outside of the A.B. Won Pat International Air Terminal, Guam's primary airfield for commercial airline companies.

The advantages of this concept was based primarily on safety factors whereby there would be little to no co-mingling of large aircraft infrastructure with those of the small plane operations. The Guam International Air Terminal could benefit from the segregation proposal for a number of logistical

reasons as well as safety and optimal use of runway and terminal related land and buildings. The Mangilao site was determined to be a potential site for a small aircraft airfield at the time, however, update of the original FAA site assessment report is highly recommended. Changing local economic and government policies over the years may or may not be supportive of the separation of aviation activities at Tiyan and a review of the prior findings and recommendations of the FAA report is deemed necessary before resource and funding matters are considered.

To conduct a General Aviation Industrial Park Feasibility Study that would consider the full environmental, social, financial and all other related impacts of a sustainable small aircraft support infrastructure in the east central location (Mangilao) of Guam.

### OBJECTIVES

Guam's location is within three to four hours from major Asia and Pacific cities. Many of today's travel and aviation enthusiasts from these cities are travelling via small aircraft (private small winged aircraft) to destinations of choice thereby avoiding typical delays and logistical difficulties that often plague commercial airline operations. With the growing affluence of the Asia and Pacific upper middle-class and resource-endowed families many of whom are associated with successful corporate ventures, small aircraft travel has become the transport mode of choice.

Discussions concerning this particular travel niche market indicate the following findings:

- Travel to the Guam and U.S. destinations by South Korean, Japanese, Chinese (Taiwan, Mainland China and Hong Kong) and the Philippines is expected to increase steadily in the next five to ten years (GVB Presentation at GEDA Economic Forum, September 2018).

- The U.S. Department of Commerce International Trade Administration's National Travel and Tourism Office (NTTO) announced that the U.S. welcomed nearly 77 million international visitors into the country, who collectively spent a record-setting \$251.4 billion experiencing the U.S. in 2017, a 2% increase when compared to 2016. Over the course of 2017, travel and tourism exports helped support more than 1.2 million American jobs across the U.S..
- Primary interests of the travellers in this niche market are shopping for American and other western goods, education, ecotourism, cultural exposure and leisure.

The completion of the feasibility project will allow local organization and private investors to determine the functionality aspects as well as the economic and environmental feasibilities of the proposed industrial park and the amenities that are required to sustain the park and its tenants.

Financial alternatives for construction and operations would also be considered.

### **ANTICIPATED IMPACTS AND BENEFITS**

The creation of industrial space for small aircraft support activities, new airfield for small aircraft, wholesale and retail outlet for industrial park tenants, and the creation of local manufacturing facilities for the benefit of the community and business establishments throughout the island.

**ESTIMATED COST:** \$150,000

**JOB CREATION:** Feasibility Study

**PRIORITY LEVEL:** Low

**TYPE OF PROJECT:** Non-Construction

# STRATEGIC DEVELOPMENT PROJECTS

<u>PROJECT TITLE</u>
<b>HAGATNA GATEWAYS AND WAYFINDING SIGNS</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>CONSTRUCTION</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>
<u>ESTIMATED COST</u>
<b>\$1M</b>
<u>JOB CREATION</u>
<u>PRIORITY LEVEL</u>
<b>LOW PRIORITY</b>
<u>TYPE OF PROJECT</u>

## L6 PROJECT TITLE

Hagåtña Gateways and Wayfinding Signs

### PROJECT DESCRIPTION/STATEMENT

Community signs are an important element to create a sense of place, help in navigation around the community and provide education regarding landmarks and unique areas of Hagåtña. The Hagåtña Design Guidelines establish a hierarchy of signs for identification, wayfinding and direction for residents and visitors to Hagåtña. The proposed signage has been uniformly designed and incorporates symbolic elements of CHamoru culture.

The gateway, district kiosk, barrio, interpretative panels and street signs for several districts (Capital and Cultural District and Riverwalk District) are included in separate district-focused projects and are not provided by this overall citywide way

finding sign project.

### OBJECTIVES

The key goal is to construct Major and Minor Gateways, District Kiosks, Barrio Signs, Interpretive Panels and Street Signs. These panels are large iconic elements planned at major and minor entryways into the city designed to create a sense of arrival and community identification.

- 3 - Major Gateways
- 3 - Minor Gateways
- 10 - District Kiosks
- 12 - Barrio signs
- 50 - Multilingual Interpretive Panels
- 62 - Street Signs

### ANTICIPATED IMPACTS AND BENEFITS

This project will enhance pedestrian navigation around Hagåtña establishing a sense of place, designating historical community areas and providing directional information to Hagåtña's many historical and cultural destinations.

**ESTIMATED COST:** \$1 million

**JOB CREATION:** 1-25

**PRIORITY LEVEL:** Low

**TYPE OF PROJECT:** Construction

<b><u>PROJECT TITLE</u></b>
<b>HAGATNA HERITAGE TRAIL ENHANCEMENTS</b>
<b><u>LEAD INDUSTRY SECTOR</u></b>
<b>CONSTRUCTION</b>
<b><u>ECONOMIC GOALS &amp; OBJECTIVES</u></b>

<b><u>ESTIMATED COST</u></b>

<b><u>JOB CREATION</u></b>

<b><u>PRIORITY LEVEL</u></b>
<b>LOW PRIORITY</b>
<b><u>TYPE OF PROJECT</u></b>


## L7 PROJECT TITLE

Hagåtña Heritage Trail Enhancements

### PROJECT DESCRIPTION/STATEMENT

The Heritage Trail currently exists throughout Hagåtña, highlighting some of Guam's prominent and historical landmarks. The current trail misses some key historic and cultural sites and this project would re-route the trail in several locations to connect all prominent sites. The rerouted Heritage Trail will provide a tour of notable monuments, parks, and features throughout the city. This project involves reconfiguration and realignment of the existing Heritage Trail, comprising approximately 10,000 linear feet of new trail, primarily in the Capital and Cultural District area.

Along with the trail realignment, the trail will also be enhanced with better wayfinding signage for direction and identification of the landmarks along

the way. The signs are meant to be educational tools to help visitors explore and learn about the historical and cultural sites on the Heritage Trail. These signs will be multi-lingual to accommodate both locals and tourists from other countries. In addition to the signs, renewable energy trail lighting will be installed in specific locations to reduce safety concerns at night.

This vital path will increase connectivity and add to the network of trails and pedestrian links. As the trail becomes improved, there is an opportunity for marketing the trail as a place for leisure, public education, tourism, and pedestrian traffic to and from cultural and historical destinations.

### OBJECTIVES

The key to this project will include design costs, trail improvements, landscaping, signage and renewable energy trail lighting using green technology. Trail segments south of Marine Corps Drive will follow existing and planned streetscape areas and therefore will only involve way finding and interpretative panels. The trail north of Marine Corps Drive on the Paseo de Susana peninsula will include a new trail with enhanced pedestrian amenities and is included as part of the Waterfront Trail project.

### ANTICIPATED IMPACTS AND BENEFITS

This project will enhance and augment the existing Heritage Trail, maintaining a significant community element, which celebrates the rich history and culture of Hagåtña.

**ESTIMATED COST:** \$3 million

**JOB CREATION:** 1-25

**PRIORITY LEVEL:** Low

**TYPE OF PROJECT:** Construction

# STRATEGIC DEVELOPMENT PROJECTS



The project also includes adding an 80-foot right of way to allow vehicles to turn right onto Route 4.

## ANTICIPATED IMPACTS AND BENEFITS

This will help minimize the traffic back-up heading towards Route 4 by providing better traffic flow for the right lane.

**ESTIMATED COST:** \$400,000

**JOB CREATION:** 1-25

**PRIORITY LEVEL:** Low

**TYPE OF PROJECT:** Construction

## L8 PROJECT TITLE

Hagåtña O'Brien Drive Right Lane Expansion

### PROJECT DESCRIPTION/STATEMENT

Currently O'Brien Drive West between Route 4 and Aspinall Avenue backs up and eventually stalls due to bottlenecks at Route 7 (Chalan Palasyu) and Route 4 (Chalan Kanton Tasi). These choke points restrict the flow of traffic and hinder emergency vehicle access and flow. Moreover, the access necessary to the Naval Hospital is currently compromised. By expanding and providing a right turn lane, continued traffic flow would occur.

### OBJECTIVES

The key goal to this project is to expand a 0.3-mile segment of the right lane of O'Brien Drive West from Aspinall Avenue to Route 4 by 11 feet.

<b>PROJECT TITLE</b>
<b>HAGATNA PALACIO RESTORATION</b>
<b>LEAD INDUSTRY SECTOR</b>
<b>CONSTRUCTION</b>
<b>ECONOMIC GOALS &amp; OBJECTIVES</b>

<b>ESTIMATED COST</b>
<b>\$5M</b> 
<b>JOB CREATION</b>

<b>PRIORITY LEVEL</b>
<b>LOW PRIORITY</b>
<b>TYPE OF PROJECT</b>


### L9 PROJECT TITLE

Hagåtña Palacio Restoration

#### PROJECT DESCRIPTION/STATEMENT

The Hagåtña Master Plan established a detailed concept to re-establish historic buildings and elements of the Plaza de España, which was the location of the Governor's Palace during the island's period of the Spanish occupation. This project involves the restoration of the two-story 12,000 square-foot replica of the historic Palacio within the Plaza de España. The historic Palacio, destroyed in 1944 during World War II, will be restored as it once stood, over 70 years ago.

This project will also construct an 8,000-square foot garden with bench seating and shade structure within the Plaza de España. A portion of the wall will replicate the historic three-arch iconic feature found throughout the downtown area.

Additionally, the design concept includes a tree lined cul-de-sac extension providing a formalized entrance to the Palacio, creating a sense of arrival and providing opportunities for visitor site seeing and appreciation of the historic building and revitalized Plaza de España. The cul-de sac extension will include Royal Palm trees on 20-foot centers and matching planned streetscape improvements in the Capital and Cultural District.

#### OBJECTIVES

The key goal is to construct and restore Palacio to become the centerpiece of the Plaza de España and to be used as a welcome center to educate residents and visitors of the Government Civic Center Complex. It will also include a small Hall of Governors museum and Hagåtña's history and redevelopment of the Government Civic Center Complex.

#### ANTICIPATED IMPACTS AND BENEFITS

This project will restore the historic Palacio and the site elements of the Plaza de España, reinforcing the history and culture of Hagåtña. The existing historical buildings on site will be preserved, incorporated into the project design and include a welcome center for visitors. The new garden will foster community interaction and education on native plants to the region. The garden will contribute to the revitalization of the Plaza de España as the historic open space in the capital city of Guam.

**ESTIMATED COST:** \$5 million

**JOB CREATION:** 1-50

**PRIORITY LEVEL:** Low

**TYPE OF PROJECT:** Construction

# STRATEGIC DEVELOPMENT PROJECTS

<u>PROJECT TITLE</u>
<b>HAGATNA PASEO AND CENTRAL PARK PARKING GARAGES</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>CONSTRUCTION</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>
 
<u>ESTIMATED COST</u>
<b>\$33M</b> 
<u>JOB CREATION</u>

<u>PRIORITY LEVEL</u>
<b>LOW PRIORITY</b>
<u>TYPE OF PROJECT</u>


## L10 PROJECT TITLE

Hagåtña Paseo and Central Park Parking Garages

### PROJECT DESCRIPTION/STATEMENT

The Hagåtña Master Plan identified a number of improvements to the Paseo de Susana peninsula to enhance and unify the many tourist and cultural attractions in the area. Existing destinations in the Paseo area include the Paseo Stadium, CHamoru Village, the Great Seal of Guam Park and Statue of Liberty. Planned future improvements to the area include a new stadium, Fort Rafael replica, and a proa pavilion canoe house. This area is one of the most heavily visited areas in Hagåtña by residents and tourists due to the many cultural and recreational attractions in this area.

The Master Plan also identifies new development and amenities at Central Park, including increased recreational facilities, an enhanced community

center, and connection to the Riverwalk. A new parking garage is also proposed to support this area.

### OBJECTIVES

The key goal is to accommodate existing parking demand and anticipated increases in the future. This project involves the construction of multi-level parking garages to serve these popular areas of Hagåtña. Each parking garage will be four levels and will replace the existing surface parking lots at both the Paseo and Central Park locations. Each new parking garage will be a total of 179,600 square feet in size (44,900 square feet per floor) and will accommodate 550 vehicles.

### ANTICIPATED IMPACTS AND BENEFITS

This project will provide necessary parking to address existing and planned uses within the Hagåtña. Proximate parking to CHamoru Village and Central Park will increase pedestrian safety for tourists and visitors to the areas. The public parking garages will generate revenues in the form of parking fees.

**ESTIMATED COST:** \$33 million

**JOB CREATION:** 1-25

**PRIORITY LEVEL:** Low

**TYPE OF PROJECT:** Construction

<u>PROJECT TITLE</u>
<b>HAGATNA PEDESTRIAN OVERPASS</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>CONSTRUCTION</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>

<u>ESTIMATED COST</u>
<b>\$1M \$</b>
<u>JOB CREATION</u>

<u>PRIORITY LEVEL</u>
<b>LOW PRIORITY</b>
<u>TYPE OF PROJECT</u>


## L11 PROJECT TITLE

Hagåtña Pedestrian Overpass (Marine Corps Drive)

### PROJECT DESCRIPTION/STATEMENT

Marine Corps Drive is the primary highway in Guam and within Hagåtña with a total length of 22 miles. This highway is six lanes in width through the central portion of Hagåtña and presents a significant pedestrian barrier between the activity centers on the north and south sides of the highway. The Hagåtña Master Plan identified an opportunity to improve pedestrian access across Marine Corps Drive and establish a safe and convenient pedestrian connection between the governmental center and downtown Hagåtña on the south side of the road and Paseo (including CHamoru Village) and Marina areas on the north side. This project will provide a vital connection

between CHamoru Village and Skinner Park.

### OBJECTIVES

The key goal is to construct a 150 feet bridge, designed with elements of the CHamoru architecture. The pedestrian bridge will stand 21 feet above Marine Corps Drive, creating an iconic community element and sense of arrival for visitors to Hagåtña. Glass walled elevators will be provided on both sides for accessibility and covered stairways and an upper walkway will protect pedestrians from the elements. The pedestrian bridge will contain signage identifying the City of Hagåtña and reinforce community identity.

This project includes refinement of the planning concept from the Hagåtña Master Plan, design, project phasing, and construction costs.

### ANTICIPATED IMPACTS AND BENEFITS

The construction of the pedestrian overpass will create a safe pedestrian connection over this primary highway through Hagåtña. The pedestrian overpass will provide a convenient pedestrian connection between the government center, CHamoru Village and the Paseo peninsula.

**ESTIMATED COST:** \$1 million

**JOB CREATION:** 1-25

**PRIORITY LEVEL:** Low

**TYPE OF PROJECT:** Construction

# STRATEGIC DEVELOPMENT PROJECTS

<u>PROJECT TITLE</u>
<b>HAGATNA RIVER CHANNELIZATION AND WATERSHED FEASIBILITY STUDY</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>TOURISM</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>

<u>ESTIMATED COST</u>
<b>\$1M</b> 
<u>JOB CREATION</u>

<u>FEASIBILITY STUDY</u>
<u>PRIORITY LEVEL</u>
<b>LOW PRIORITY</b>
<u>TYPE OF PROJECT</u>


## L12 PROJECT TITLE

Hagåtña River Channelization and Watershed Feasibility Study

### PROJECT DESCRIPTION/STATEMENT

The Hagåtña River once had a significant historical presence in this area and once functioned as a central community-unifying element. The river corridor has been altered and much of the corridor is overgrown and inaccessible to residents and tourists. The Hagåtña Master Plan identified a concept to re-establish portions of the historic river corridor and develops a vibrant and pedestrian-focused Riverwalk Esplanade with future mixed-use development opportunities.

This project is a Water Resources Authorization and Development Act (WRADA) requirement estimated at \$1.2 million for the feasibility study, with Government of Guam's share at 50%. This

comprehensive study will determine the overall project costs and recommended course of action in the Hagåtña watershed. The project will determine Government of Guam's share of design and construction cost with the U.S. Army Corp. of Engineers (USACE)-Honolulu District.

### OBJECTIVES

The key goal is to conduct a channelization and watershed feasibility study to determine the capabilities and re-establish the Hagåtña River corridor for the future development of the Riverwalk improvements.

### ANTICIPATED IMPACTS AND BENEFITS

Restoration of the historic river corridor will provide for future development opportunities including the Riverwalk esplanade and future mixed-use development areas. Re-establishment of portions to the river corridor will restore this area of cultural significance to the community.

**ESTIMATED COST:** \$1 million

**JOB CREATION:** Feasibility Study

**PRIORITY LEVEL:** Low

**TYPE OF PROJECT:** Non-Construction

<u>PROJECT TITLE</u>
<b>HAGATNA SOLAR POWERED PARKING METERS</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>CONSTRUCTION</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>

<u>ESTIMATED COST</u>
<b>\$430,000</b>
<u>JOB CREATION</u>

<u>PRIORITY LEVEL</u>
<b>LOW PRIORITY</b>
<u>TYPE OF PROJECT</u>


## L13 PROJECT TITLE

Hagåtña Solar Powered Parking Meters

### PROJECT DESCRIPTION/STATEMENT

An issue identified by the Hagåtña Master Plan is the impact of unregulated parking in the downtown area. Given the many attractions and destinations in the downtown area, parking has historically been an issue in terms of availability to residents and visitors. Many on-street parking areas are not properly striped, resulting in safety issues with parking occurring in travel lanes or areas where parking is not intended. To address this issue, this project involves the installation of solar powered self-pay parking kiosks in specified areas within the Capital and Cultural District. Installation of a solar powered parking kiosk system will reduce current parking issues in the government center area and provide needed revenue for parking

enforcement and other municipal services. The use of solar energy reduces energy usage and promotes sustainability within Hagåtña.

### OBJECTIVES

The key goal to this project is to install solar powered parking kiosks on the primary streets utilizing on-street parking in the downtown area. Solar parking meters utilize solar panels with back up batteries for power supply. Typical solar parking meters utilize wireless technology enabling the use of credit cards and the transmission of data, statistics and reports wirelessly.

These primary streets include portions of Aspinall Avenue, Murray Boulevard, Seaton Boulevard, Arch Bishop F.C. Flores, Martyr and Chalan Santo Papa Juan Pablo Dos. In total, these streets constitute 7,360 linear feet of street frontage. The Hagåtña Design Guidelines establish parking kiosks every 200 feet. Utilizing this standard, this project will construct 36 solar powered parking kiosks throughout the primary streets in the Capital and Cultural District to address current parking issues.

### ANTICIPATED IMPACTS AND BENEFITS

Installation of solar powered parking meters will address current unregulated parking in the Capital and Cultural District and provide revenue for parking enforcement and other municipal services.

**ESTIMATED COST:** \$430,000

**JOB CREATION:** 1-25

**PRIORITY LEVEL:** Low

**TYPE OF PROJECT:** Construction

# STRATEGIC DEVELOPMENT PROJECTS

<u>PROJECT TITLE</u>
<b>HAGATNA SOLEDAD AVENUE ACCESS ROAD EXTENSION</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>CONSTRUCTION</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>
<u>ESTIMATED COST</u>
<b>\$2M</b>
<u>JOB CREATION</u>
<u>PRIORITY LEVEL</u>
<b>LOW PRIORITY</b>
<u>TYPE OF PROJECT</u>

Soledad Avenue, Hagåtña.

## ANTICIPATED IMPACTS AND BENEFITS

Angled parking on Soledad Avenue will ease parking congestion and further buffer the sidewalk. Additional parking will eliminate current parking issues along this street and enhance the function of the street and reduce pedestrian/vehicular conflicts.

**ESTIMATED COST:** \$2 million

**JOB CREATION:** 1-25

**PRIORITY LEVEL:** Low

**TYPE OF PROJECT:** Construction

## L14 PROJECT TITLE

Hagåtña Soledad Avenue Access Road Extension

### PROJECT DESCRIPTION/STATEMENT

Marine Corps Drive follows the shoreline while it encircles the entire island. West Soledad Avenue runs parallel to and south of Marine Corps Drive for approximately one and a quarter miles from 9th Street to Route 4. Marine Corps Drive bring high volumes of people into Hagåtña from all around Guam, making it a pivotal connection.

Central medians and landscape buffers are used to break up the 150-foot right-of-way, making the width less daunting to pedestrians and cyclist who will utilize a two-way bike lane and wide sidewalks.

### OBJECTIVES

The key goal is to construct an access road extension and additional angled parking within

<u>PROJECT TITLE</u>
<b>HAGATNA STREETSCAPE ENHANCEMENTS</b>
<u>LEAD INDUSTRY SECTOR</u>
<b>CONSTRUCTION</b>
<u>ECONOMIC GOALS &amp; OBJECTIVES</u>

<u>ESTIMATED COST</u>
<b>\$13M</b>
<u>JOB CREATION</u>

<u>PRIORITY LEVEL</u>
<b>LOW PRIORITY</b>
<u>TYPE OF PROJECT</u>


## L15 PROJECT TITLE

Hagåtña Streetscape Enhancements

### PROJECT DESCRIPTION/STATEMENT

Streetscape enhancements improve the pedestrian experience and contribute to an overall positive community image and sense of place. These improvements will unify Hagåtña with street trees, historic streetlights, benches, gateway and way finding signs. This project supports pedestrian activity and accessibility along streets through enhanced pedestrian facilities that improve connectivity, safety and comfort.

### OBJECTIVES

The key goal to this project involves the construction and installation of pedestrian oriented street enhancements throughout Hagåtña in two (2) phases.

**Phase 1 Capital and Cultural District:** Enhance the streetscapes along approximately 21,500 lineal feet (4 miles) of enhanced streetscape in the Capital and Cultural District.

**Phase 2 Citywide:** Enhancing the streetscapes citywide outside of Hagåtña and involves approximately 99,940 linear feet (19 miles) of street frontage.

Hagåtña's two primary streets, Aspinall Avenue and Chalan Santo Papa Juan Pablo Dos link many historical and cultural locations and structures in the heart of Hagåtña, including the Guam Museum, Dulce Nombre de Maria Cathedral-Basilica, Guam Congress Building, and Plaza de España. These two primary streets in the Capital/Cultural District will be enhanced as primary pedestrian linkages through the governmental center and city.

Streetscape enhancements will also be completed on Murray Boulevard, Seaton Boulevard, Arch Bishop F.C. Flores, Route 4 and O'Brien Drive.

### ANTICIPATED IMPACTS AND BENEFITS

Streetscape enhancements will create a uniform and attractive pedestrian environment. Expanded sidewalks and street lighting will create safe environment for pedestrians and will improve connectivity, safety and comfort. Uniform streetscape will contribute to the overall pedestrian experience in the downtown area. Wayfinding signs will assist with navigation of downtown area and provide education/information on attractions within Hagåtña.

**ESTIMATED COST:** \$13 million

**JOB CREATION:** 1-10

**PRIORITY LEVEL:** Low

**TYPE OF PROJECT:** Construction

# STRATEGIC DEVELOPMENT PROJECTS

<b>PROJECT TITLE</b>
<b>PAGO BAY SHORELINE PARK</b>
<b>LEAD INDUSTRY SECTOR</b>
<b>CONSTRUCTION</b>
<b>ECONOMIC GOALS &amp; OBJECTIVES</b>

<b>ESTIMATED COST</b>
<b>\$2.7M</b> 
<b>JOB CREATION</b>

<b>PRIORITY LEVEL</b>
<b>LOW PRIORITY</b>
<b>TYPE OF PROJECT</b>


## L16 PROJECT TITLE

Pago Bay Shoreline Park

### PROJECT DESCRIPTION/STATEMENT

Shoreline erosion in Pago Bay remains to be a problem directly impacting what was once called the Frank Perez Beach Park in Pago Bay. Shoreline erosion negatively affects our island's growth, development, and the quality of life once enjoyed by residents of Chalan Pago-Ordot. Over the past decade, fishermen who fish for sustenance and some for local sale have consistently made complaints to the Mayor's office because they are finding it difficult to launch their boats, because of the shoreline erosion. And, for those who regularly picnic at the bay, which include the families of our fishermen and those who typically bring island visitors to picnic in Pago Bay, have routinely complained that there is no longer an

available pavilion or restrooms to support their large gatherings. The old pavilion and restrooms were removed more than a decade ago, because water had reached and engulfed these structures due to shoreline erosion.

Funding for the restoration of the shoreline and the prevention of future shoreline erosion would restore the economic opportunities that Pago Bay offers. That the construction of a new pavilion and restrooms at the park would restore the quality of life our residents, once enjoyed at this park. And, the creation of a boat ramp or launch area would allow fishermen and emergency response crews, a more centralized and direct access to the eastern shores of Guam. At present, emergency response crews are launching their water crafts from the southern villages of Guam, which adds to their travel time when responding to open ocean emergencies along the eastern shores of Guam.

### OBJECTIVES

Restoration of Pago Bay shoreline and construction of a new pavilion and restrooms.

### ANTICIPATED IMPACTS AND BENEFITS

Funding for the restoration of the shoreline and the prevention of future shoreline erosion would restore the economic opportunities that Pago Bay offers. That the construction of a new pavilion and restrooms at the park would restore the quality of life our residents, once enjoyed at this park. And, the creation of a boat ramp or launch area would allow fishermen and emergency response crews, a more centralized and direct access to the eastern shores of Guam.

**ESTIMATED COST:** \$2.7 million

**JOB CREATION:** 3

**PRIORITY LEVEL:** Low

**TYPE OF PROJECT:** Construction

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## GUAM MUNICIPAL DEVELOPMENT PROJECT NEEDS ASSESSMENT

	MUNICIPALITIES																		
	Agana Heights	Agat	Asan-Maina	Barrigada	Chalan Pago/Ordot	Dededo	Hagatna	Inarajan	Mangilao	Merizo	Mongmong/Toto/Maite	Piti	Santa Rita	Sinajana	Talofofo	Tamuning	Umatac	Yigo	Yona
AGRICULTURAL FARM	●	●		●	●	●							●					●	
AQUACULTURAL FARM									●										
BOARDWALK / PIER / BOAT RAMPS					●				●	●	●								
COASTAL / SHORELINE DEVELOPMENT & IMPROVEMENTS					●		●	●	●	●	●						●		
COMMERCIAL / BUSINESS ESTABLISHMENT		●				●	●	●	●	●	●	●	●	●	●	●	●		
COMMUNITY GARDEN	●													●					
COMMUNITY KITCHEN						●													
CULTURAL CENTERS FACILITIES								●										●	
EDUCATION FACILITIES																	●		
GYM / TYPHOON SHELTERS			●						●								●	●	
HISTORICAL SITES UPGRADES							●		●	●							●	●	
NATURE TRAILS								●	●										
PLAYGROUNDS / PARKS			●			●		●			●					●			
PRIMARY & SECONDARY ROADWAYS & BRIDGES	●	●	●		●											●	●	●	
PUBLIC RESTROOMS											●							●	
RECREATIONAL, COMMUNITY CENTERS & MULTI-PURPOSE CENTERS					●	●					●							●	
ROAD EXPANSION	●																		
SAFETY STATION FACILITIES													●					●	
SEAPORTS / MARINAS										●	●								
SIDEWALK EXPANSION	●																		
SPORTS FACILITIES				●						●	●					●	●	●	
SPORTS FIELDS	●		●	●	●	●			●	●						●	●	●	
STREET / FIELD LIGHTING				●						●									
UNDERGROUND POWER		●														●			●
TRAFFIC LIGHTS & CROSSWALKS									●										
WATER & WASTEWATER SYSTEMS	●	●				●							●	●				●	
YOUTH / SENIOR CENTER FACILITIES		●	●							●						●	●		

Source: GEDA 2018 Infrastructure Questionnaire, Mayors Council of Guam results

## APPENDICES

HAGATNA RESTORATION REDEVELOPMENT AUTHORITY NON-EDA PROJECTS					
PHASE	START DATE	PROJECT/TYPE	TYPE	PROJECT COST ESTIMATE	TYPE
1	FY'20	Hagatna River Channelization & Waterbed Feasibility Study	Single Phase Study	\$1,300,000	50% U.S. Army Corps of Engineers 50% GovGuam HRRA
1	FY'20	Underground Electric Lines	Phase 1	\$860,688	50% GPA
2	FY'21	Hagatna River Wetland & Watershed Restoration	Single Phase Project	\$740,124	U.S. Army Corps of Engineers GovGuam
2	FY'19	Community Center	Single Phase	\$12,843,230	HRRA
2	FY'20	Paseo Beautification	Single Phase	\$405,446	20% DCA
2	FY'22	Chalan Santo Papa Juan Pablo Dos Street Extension & Streetscape	Single Phase Project	\$1,376,461	HRRA GVB-TAF
2	FY'25	Paseo de Susana Planned Development District Phase 1	Phase 1: Land Reclamation	\$115,143,240	GWA rate surcharge PAG Public Private Partnerships
3	FY'28	Waterfront Trail Enhancement	2 Phases	\$9,581,726	DPR National Parks Service
3	FY'27	San Rafael Fort Replica	Single Phase Project	\$6,356,750	Guam Preservation Trust GVB-TAF
3	FY'25	Statue of Liberty Relocation	Single Phase Project	\$30,888	DPR GVB-TAF
4	FY'20	Agana Wastewater Treatment Plant Relocation	Single Phase Project	\$134,640,000	GPA CIP GWA Surcharge
4	FY'28	Gregorio D. Perez Marina Expansion	Single Phase Project	\$1,743,984	PAG Public & Private Partnerships
4	FY'28	Cruise Ship Dock	Single Phase Project	\$42,343,884	Public & Private Partnership

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### GUAM ECONOMIC DEVELOPMENT AUTHORITY

Melanie Mendiola*	CEO / Administrator	Guam Economic Development Authority
Jay Rojas*	CEO / Administrator (2015-2019)	Guam Economic Development Authority
Artemio Hernandez*	Deputy Administrator	Guam Economic Development Authority
Mana Silva Taijeron*	Deputy Administrator (2013-2018)	Guam Economic Development Authority
Natalia Faculo*	CED Assistant Manager (2016-2019)	Commerce and Economic Development Division
Henry Cruz*	CED Chief Economist, Consultant	Commerce and Economic Development Division
Raeann LeFever*	CED Specialist II	Commerce and Economic Development Division
Therese Ybarra*	CED Specialist I	Commerce and Economic Development Division
Christina D. Garcia	Public Finance Manager	Guam Economic Development Authority
Edward Camacho*	Business Development Manager	Business Development Division
Matthew Baza	Business & Economic Development Supervisor	Guam Economic Development Authority
Mary C. Camacho*	Industry Development Specialist III	Business Development Division
Tria L.G. Paulino*	Industry Development Specialist III	Business Development Division
Samuel Sotelo, Jr.*	Industry Development Specialist I	Business Development Division
Patrick Sherman	Industry Development Specialist II	Guam Economic Development Authority
Mark Mendiola*	Special Projects Coordinator (2015-2019)	Guam Economic Development Authority
Lawrence Toves*	Real Property Manager	Real Property Division
Michael Cruz	Project Director	Guam Economic Development Authority
David J. John	Chairman of the Board	Guam Economic Development Authority
E.J. Calvo	Chairman of the Board (2011–2019)	Guam Economic Development Authority
Ernesto V. Espaldon, Jr.	Vice-Chairman of the Board	Guam Economic Development Authority
George Chiu	Director of the Board	Guam Economic Development Authority
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Vicente S. Taitague*	Mayor of Talofofo	Mayor's Council of Guam
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Johnny A. Quinata*	Mayor of Umatac	Mayor's Council of Guam
Rudy M. Matanane*	Mayor of Yigo	Mayor's Council of Guam
Jesse M. Blas*	Mayor of Yona	Mayor's Council of Guam

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Pete Ridilla	Deputy Commanding Officer	OICC of the Marine Corps Marianas
Thweatt, Herbert*	Economic Development Representative	U.S. Department of Commerce Economic Development Administration

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