

# Guam Construction Capacity Assessment

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## EXECUTIVE SUMMARY

The purpose of this report is to provide to the Naval Facilities Engineering Command Pacific (NAVFAC PAC) Guam Program Management Office (GPMO) with an update to the 2010 Near-Term and Long-Term Capacity Models report. The 2010 report modeled the anticipated construction impact resulting from the relocation of U.S. Marines from Okinawa to Guam under the Defense Policy Review Initiative (DPRI).

We find that the vast majority of the recommendations made in the 2010 report have been realized. This report will exhibit increases to the capacity of Guam in the areas of workforce, utilities, and logistics necessary to support the military buildup. We find that suitable actions have been undertaken in earnest and enable planned DPRI-related and non DPRI-related DoD as well as and private/municipal construction activities through 2030. Figure 1 below reflects planned construction costs with associated resource demand capacities.

While the 2010 report and subsequent recommendations were premised upon construction activities ramping up sooner and being executed on an accelerated timeline relative to the current plan, we consider the recommended actions to remain valid and necessary. For the purposes of computing resource demands, constant FY12 \$s were used. DoD planned construction activities from 2018–2030 are expected to peak at \$939M (in FY12 \$s) in 2022. Factoring in the private/municipal construction activities (Guarin, 2019), the peak construction on Guam during the DPRI build-up is projected to be \$1.3B.

In the 2010 report, utilities (specifically water and wastewater) were deemed constraining factors. Improvements to the Northern District Wastewater Treatment Plant (NDWWTP) along with water transfer agreements between DoD and Guam Water Authority (GWA) have mitigated these concerns and support planned construction at its peak in 2022. Further, the power generation capacity is assessed to be adequate to meet planned construction activities – however, a watchful eye must be kept on the 180MW replacement plant for Cabras 1 & 2, as they are nearing the end of their service lives nearly simultaneously with activation of the planned replacement plant.

The combination of a \$50M DoD-funded Maritime Administration (MARAD) grant, along with Port Authority of Guam (PAG) and bond-funded projects addressed pressing port capacity issues. However, the port remains a potential constraint. While the port's three 50-gage gantry cranes are adequate for current throughput, a fourth crane (currently in the process of being procured) is necessary to reasonably meet peak demand in 2022.

While the 2010 report did not assess the rolling stock (trucks/trailers) necessary to haul construction material from the port to the construction sites, it has been flagged as a potential risk area. Premised upon all current trucks/trailers on Guam being at full utilization, an initial estimate of ~185 more rolling stock will be required at the peak of construction to adequately move construction material from the port to various sites.

The Haul Road Network (HRN)- the routes intended to be used to haul construction material from the port and quarries to the various construction sites- has undergone significant upgrades because of aggressive investments by the Guam Department of Public Works (DPW) and Defense Access Roads (DAR). The HRN generally supports the planned construction activities with several relatively minor projects remaining to be completed.

Workforce capacity, relative to the 2010 report, was assessed in a different manner than the 2010 model given the abbreviated timeframe allowed for this report. This report re-affirms that Guam lacks an adequate organic labor pool to support the construction effort, and as such must rely on off-island non-immigrant labor to meet the demand. Hence, H-2B visa workers are needed. The 2019 National Defense Authorization Act (NDAA-19) eliminated the cap on H-2B visas for workers who will perform construction, repairs,

renovations, or facility services that are directly connected to, or associated with, the military realignment occurring on Guam and the CNMI. Associated activities, for example, include health care work at a facility that jointly serves members of the Armed Forces, dependents, and civilians on Guam or in the CNMI.

This relaxation of policy regarding H-2B visa workers supports an adequate workforce to meet construction capacity; however, there remain potential implementation issues that may impact the efficiency of H-2B visas issuance that must be addressed to close the loop on the workforce capacity.

The 2010 Capacity report determined workforce housing, primarily meant for alien/H-2B visa workers, to be adequate. This assessment was based upon in-depth plans developed by construction companies and other organizations. Those plans were shelved when the construction did not materialize as expected, and current workforce housing capacity rests at 1,286. There is adequate capacity in terms of appropriately zoned available land to meet the peak demand, but the time-phasing of construction companies being awarded work and then embarking upon permitting and constructing workforce housing requires additional analysis. A DoD strategic communications plan aimed at the construction industry is suggested to instill confidence that the DPRI program is moving forward on the current schedule and to also encourage the industry to make necessary up-front investments to support the workforce.

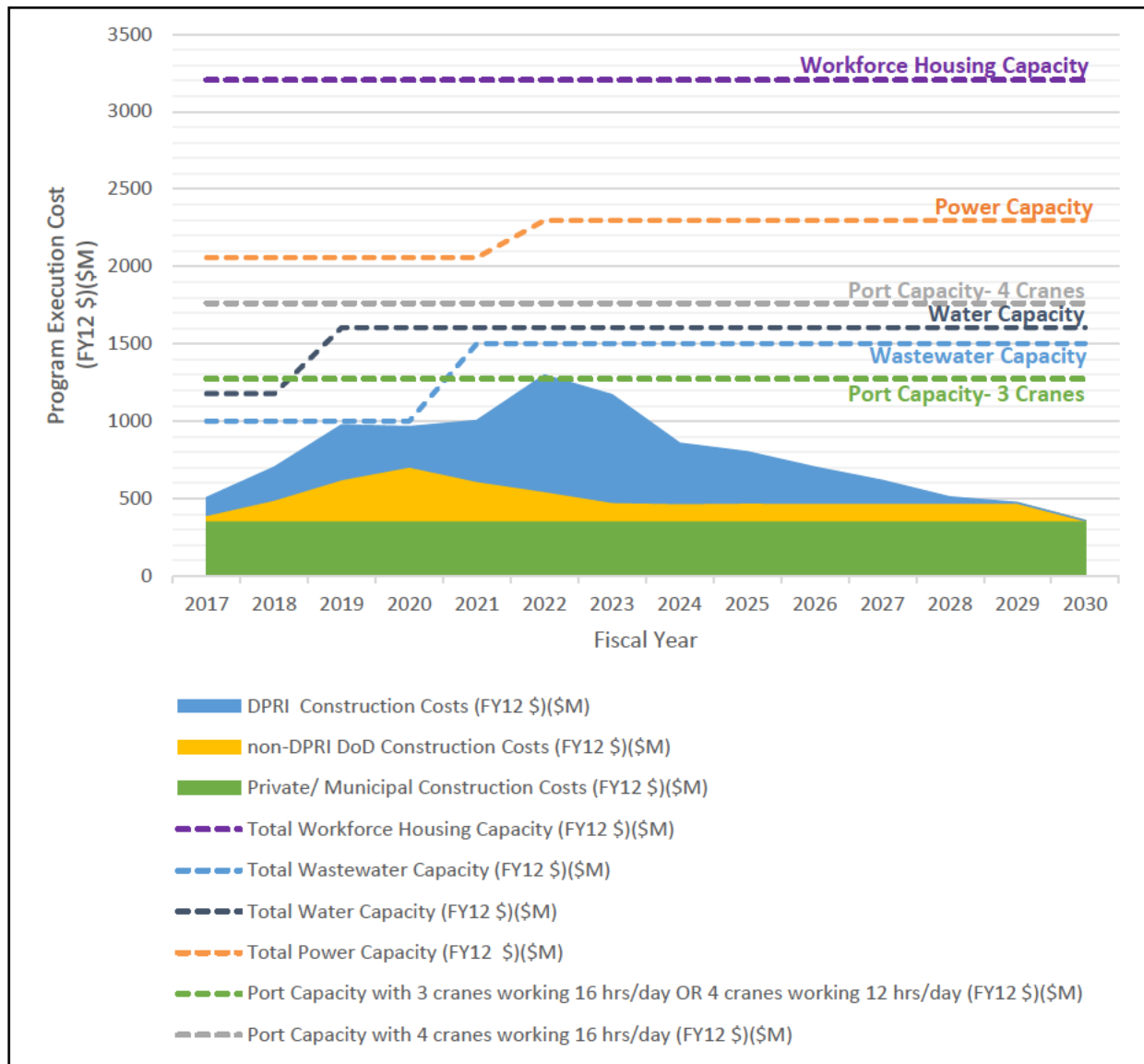


Figure 1. Program Execution Capacities Summary, 2017-2030.

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## 1. General Analysis

### 1.1. Introduction

The purpose of this report is to provide the Naval Facilities Engineering Command Pacific (NAVFAC PAC) Guam Program Management Office (GPMO) with an update to the 2010 Near-Term and Long-Term Capacity Models report. The 2010 report modeled the construction impact resulting from the relocation of U.S. Marines from Okinawa to Guam under the Defense Policy Review Initiative (DPRI).

The overall demand for construction services on Guam is forecasted to grow based on current and projected amounts of local and federal government contractual awards combined with private sector investment in real property. These investments have been recorded by the building permit authority at the Department of Public Works. Figure 1.1 below provides an illustrative summary of Guam capital improvements scheduled for construction for near term to midterm projects leading into 2023 (GEDA, 2018). The projects enumerated in these tables are funded through a combination of local appropriations, bonds, federal appropriations, and special fund allocations by the U.S. Department of Defense. It is important to note, however, that this summary is not all-inclusive of other ongoing projects or those with acquired building permits but without full funding.

COMPANY/AGENCY	PROJECT DESCRIPTION	PROJECT COST
	On-Going / Planning & Design	\$172.0M
Department of Public Works	Highway Priority Projects (2020 - 2023)	\$45.0M
Guam Power Authority	Power System Upgrade & Expansion (2018 - 2019)	\$11.0M
Guam Waterworks Authority	Water Production & Distribution (2018 - 2020)	\$111.0.0M
Guam International Airport Authority	Facilities Modernization & Upgrades	\$183.0M
Guam Economic Development Authority	Hot Bond Projects (2018)	\$5.0M
Port Authority of Guam	Container Yard, Dock, & Wharf Repairs	\$86.0M
Department of Defense Military Build Up	NDAA Build-Up Projects (2019)	\$307.0.0M
Private Investments	Commercial Facilities (2017 - 2023)	\$935.0M
	<b>TOTAL:</b>	<b>\$1.8B</b>

Figure 1.1. Private/Municipal Projects, 2017-2023.

Source: GEDA, 2018

### 1.2. Changes in conditions since 2010

The vast majority of the recommendations made in the 2010 report have been realized. This report will detail increases to the capacity of Guam in the areas of workforce, utilities, and logistics necessary to support the military buildup. We find that suitable actions have been undertaken in earnest and enable planned DPRI-related and non DPRI-related DoD as well as and private/municipal construction activities through 2030.

### 1.3. Key Assumptions

- The construction industry will be pro-active the in recruitment of necessary workforce, to include H-2B workers, as well as the build-out of workforce housing
- Data regarding construction costs (DPRI and non-DPRI DoD) were derived from the July 2019 Rainbow Chart and the May 2019 Integrated Master Schedule, which assumes Construction Cost 88.5% of Program Amount or Actual, excludes CNMI, OEA, DAR & FAA, and includes Housing, FSRM/MMRP Projections. Construction costs in Figure 1.3 below are in Then-Year \$s
- Private/Municipal construction costs were assumed to be \$359M in FY12 \$s (Guarin, 2019) and converted to Then Years \$s for inclusion in Figure 1.3 below
- Workforce population estimates were calculated assuming 5.5 workers per \$M of construction

This calculation was derived from Table ES-1 of the 2014 Socioeconomic Impact Assessment Study (Naval Facilities Engineering Command Pacific, 2014). It is assumed that total planned construction costs were known and used to calculate the required workforce

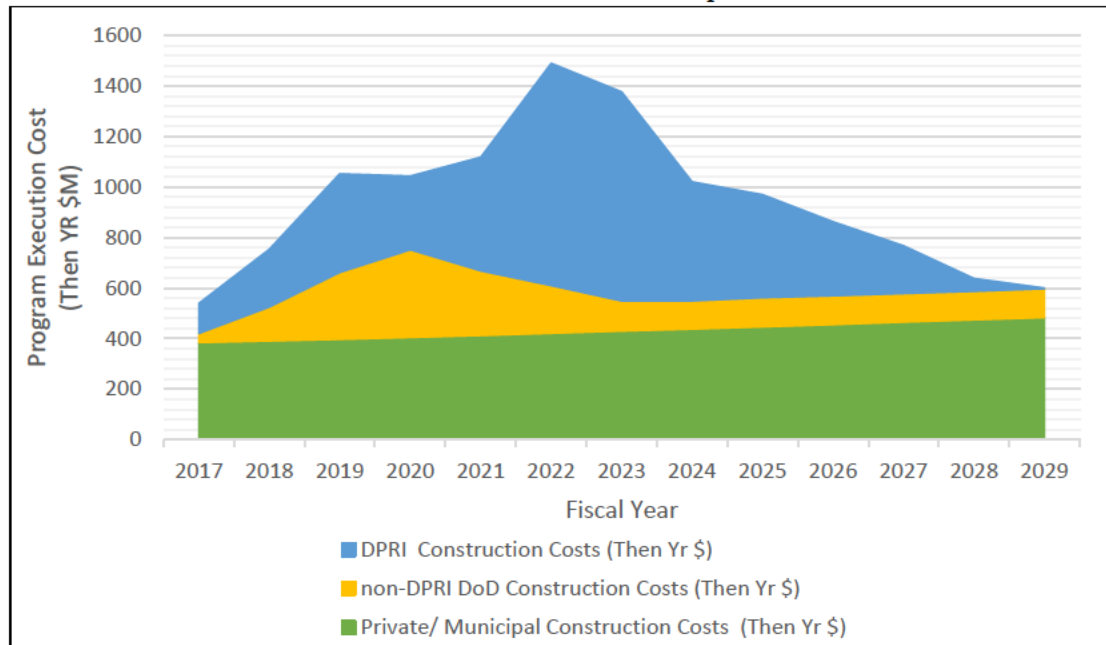


Figure 1.3. WIP Chart (Then Year \$s).

**1.4. Assessment Methodologies**

- The Guam Construction Capacity Assessment (GCCA) team assembled by the MacDonald-Bedford | MBP Joint Venture, with support from Booz Allen Hamilton (BAH), is comprised of a carefully selected cadre of planners, engineers, strategists, analysts, and technicians with a broad background in studies and assessments
- The GCCA team was divided into three principal focus groups: 1) Workforce Analysis, 2) Utilities, and 3) Supply & Infrastructure. Each focus group included an individual who was a long-term resident of Guam, and each group considered socio-economic impacts as well as planned development in their assessments. The focus groups were staffed with individuals who have extensive experience, local knowledge in Guam, and prior coordination with local authorities
- To accomplish the task of validating the 2010 study, the team met with key federal and municipal officials and managers and undertook an in-depth exploration of the various available studies, news articles, press releases, master plans, and project lists that could best inform the update
- The Long-Term Capacity Model developed during the 2010 study was assessed by the team and found to be sound in terms of determining excess capacity relative to planned construction; however, given the resources and duration of this assessment, the model was not fully employed to assess capacities during this effort and Rough order of Magnitude (ROM) estimates are therefore provided

**2. Workforce Analysis**

**BLUF**

This report re-affirms that Guam lacks an adequate organic labor pool to support the construction effort, and as such must rely on off-island non-immigrant labor to meet the demand. Hence, H-2B visa workers

are needed. The 2019 National Defense Authorization Act (NDAA-19) eliminated the cap on H-2B visas for workers who will perform construction, repairs, renovations, or facility services that are directly connected to, or associated with, the military realignment occurring on Guam and the CNMI.

This relaxation of policy regarding H-2B visa workers supports an adequate workforce to meet construction capacity; however, there remain potential implementation issues that may impact the efficiency of H-2B visa issuance. These implementation issues must be addressed to close the loop on the adequacy of the workforce capacity.

Private construction has seen a decline based upon the number of permits and construction loans being issued. This could be due to workers being attracted to projects that pay higher wages (e.g., federal projects which are required to pay Davis-Bacon rates). A perception of negative effects on commercial and private construction could pose a risk and should be managed appropriately.

The 2010 Capacity report determined workforce housing, primarily meant for alien/H-2B visa workers, to be adequate. This assessment was based upon in-depth plans developed by construction companies and other organizations. Those plans were shelved when the construction did not materialize as expected, and current workforce housing capacity rests at 1,286. There is adequate capacity in terms of appropriately zoned available land to meet the peak demand, but the time-phasing of construction companies being awarded work and then embarking upon permitting and constructing workforce housing requires additional analysis. A DoD strategic communications plan aimed at the construction industry is suggested to instill confidence that the DPRI program is moving forward on the current schedule and to also encourage the industry to make necessary up-front investments to support the workforce.

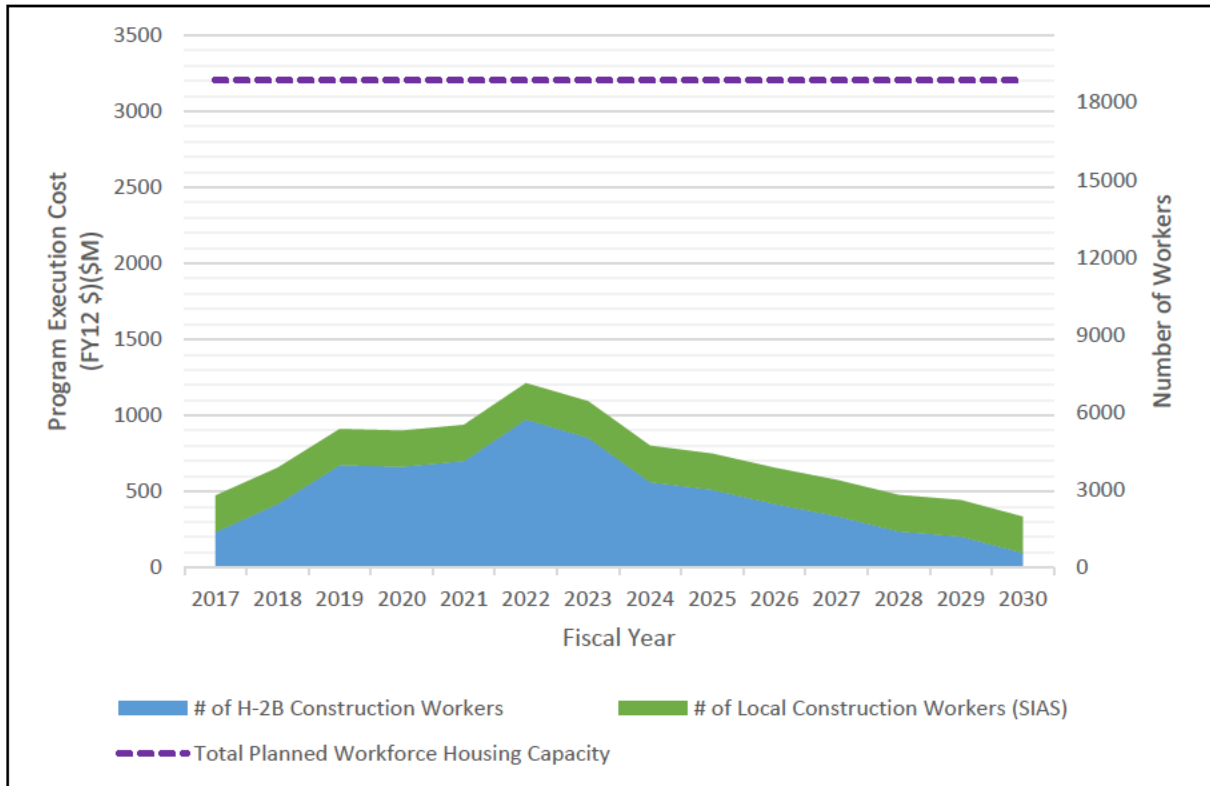


Figure 2. Workforce Chart.



## **2.1. Introduction**

The workforce areas analyzed in this section include workforce population, housing, and support services. This section will review the labor pool, housing, and other ancillary needs that must be addressed to support the buildup of the workforce in an efficient and compliant manner.

### **2.1.1. Current State**

The local Department of Labor personnel and the contractors interviewed expressed that previous issues with obtaining H-2B visas have intimidated many contractors and discouraged them from participating in the process (Massey, 2019). This is changing with larger contractors on current military construction contracts but remains a perceived obstacle. In the past, contractors were aggressive in providing workforce housing to meet the demands of the Department of Defense but that stopped when the 2007 buildup did not occur as initially planned (see Section 2.2.2).

The Department of Labor (DoL) is one agency that processes H-2B applications. Although the fees collected from the applications adequately fund the appropriate number of employees currently, it is anticipated that six additional employees will need to be hired. These hired should be front-loaded through funding and training prior to the anticipated surge of applications, as full new-hire training takes 12-18 months. The process will, again, be self-sustaining though collected revenue once 2,500 workers are processed (Massey, 2019).

Topasna (2019) is updating the Government of Guam's 10-year short-term and long-term report regarding the military realignment. The report will include regulatory agency personnel shortfalls, fiscal revenue streams, projected incremental revenues, and fiscal impact analysis.

### **2.1.2. Key Assumptions**

- Hiring local laborers is a priority over obtaining H-2B visas to bring workers from outside of Guam. H-2B visa holders are temporary hires (Massey, 2019)
- Applications for workforce H-2B visas for projects directly connected to or associated with the military realignment will continue to be approved at 100%
- H-2B workforce housing is a standard contractual requirement for contractors and subcontractors, similar to cited specifications for J-001B Finegayan Utilities and Site Improvements, Phase 1; applicable Federal and Government of Guam laws and requirements for workforce housing will be followed (Pacific Program-Design Management Services JV, 2010)
- H-2Bs can increase and decrease with demand based on project workforce requirements and the construction schedule (Mamczarz and Leon Guerrero, 2019)
- Land adjacent to military construction projects may be used for temporary storage, laydown areas, field offices, and workforce housing if available and stipulated on the contract (Peredo, 2019)
- Apartments or homes can be utilized for temporary workforce housing of 2 to 5 people with a Department of Public Health and Social Services dormitory permit (Oriondo, 2019)
- Temporary workforce housing can be erected in M-2 zones upon Department of Land Management Land Use Commission approval (Taitano, 2019)
- Safety and security, housing, food, medical services, and transportation are workforce stipulations on DPRI contracts. These stipulations do not apply for contracts not directly connected to or associated with military realignment (Guarin, 2019)

## **2.2. Changes since 2010**

### **2.2.1. Workforce Population**

Local labor availability on Guam is currently limited but is anticipated to be adequately augmented by non-immigrant workers as discussed in section 2.2.1.2 below. The 2010 report did not assess workforce capacity, only workforce housing.

#### **2.2.1.1. Local Labor Availability**

Several programs have been put in place to train the local workforce in construction trades based on industry input. According to the Department of Labor, the five main construction industry skills that are unfilled by the Guam local workforce are predominately outside work (Massey, 2019). These five trades are carpentry, cement masonry, reinforcing metal work, heavy equipment operation, and electrical work. These trades currently make up most of the skills held by imported workers through the H-2B visa program as discussed in Section 2.2.1.2 below.

#### **2.2.1.2. Limitations on the Use of Foreign Workers**

There was a limitation on the use of foreign workers starting in 2015 after a mass denial of H-2B petitions by the USCIS. However, current policy allows for unlimited H-2B workers to be brought to Guam for work directly related to the military expansion.

The H-2B visa process is costly and time consuming. The Department of Labor estimates visa application costs to be approximately \$40,000 per 20 foreign workers for non-listed countries like the Philippines. This includes all costs related to the H-2B process to include local bonding requirements, attorney fees, registration fees, required local employment advertising federal filing fees, airfare, etc. Additionally, the process requires companies to provide adequate workforce housing when they utilize five or more foreign workers.

There are two changes to both the cap requirement on the number of H-2B workers and the temporary need requirement for work related to the military realignment on Guam that remove limitations on the use of foreign workers. See Appendix C for the policy memorandum that provides guidance regarding the filing and adjudication of H-2B non-immigrant petitions that fall under section 1045 of the NDAA for FY 2019. This NDAA exemption is not applicable to local government and private sector construction projects that are not directly associated with the military buildup.

The first change is an exemption to the national H-2B visa temporary labor requirement through 2023 in Guam and the Commonwealth of the Northern Mariana Islands (CNMI) (Massey, 2019). This exemption is active until 2023 but is anticipated to be extended while there is a continued DoD need. All 938 current H-2B visa holders on Guam as of May 2019 are utilizing this exemption.

The second change is to the previous 4,000 cap of non-immigrant workers with H-2B visas exempt from the temporary need requirement. Although the 2018 NDAA contained 4000 temporary need exempt slots, that limitation was repealed in the 2019 NDAA and no longer exists (Massey, 2019).

The determination that a project meets the criteria of being “directly associated with the military re-alignment on Guam” has been given broad interpretation in practice - hotel construction and renovation to accommodate military visitors are examples of current justifications that have been approved (Massey, 2019). The flow chart below (Figure 2.2.1.2) shows the approval process for this exemption; see Appendix D for the Request for DoD confirmation of Connection/Association to Guam Military Realignment letter format.

Although policy has removed any general limitations on the use of foreign workers, the Philippines was removed from a list of vetted countries for H-2B workers into the United States as of January 2019. If a worker is from a country not on the pre-approved list, the application process requires contractors and subcontractors to apply for each H-2B worker by name to allow vetting of individuals for approval to work on Guam.

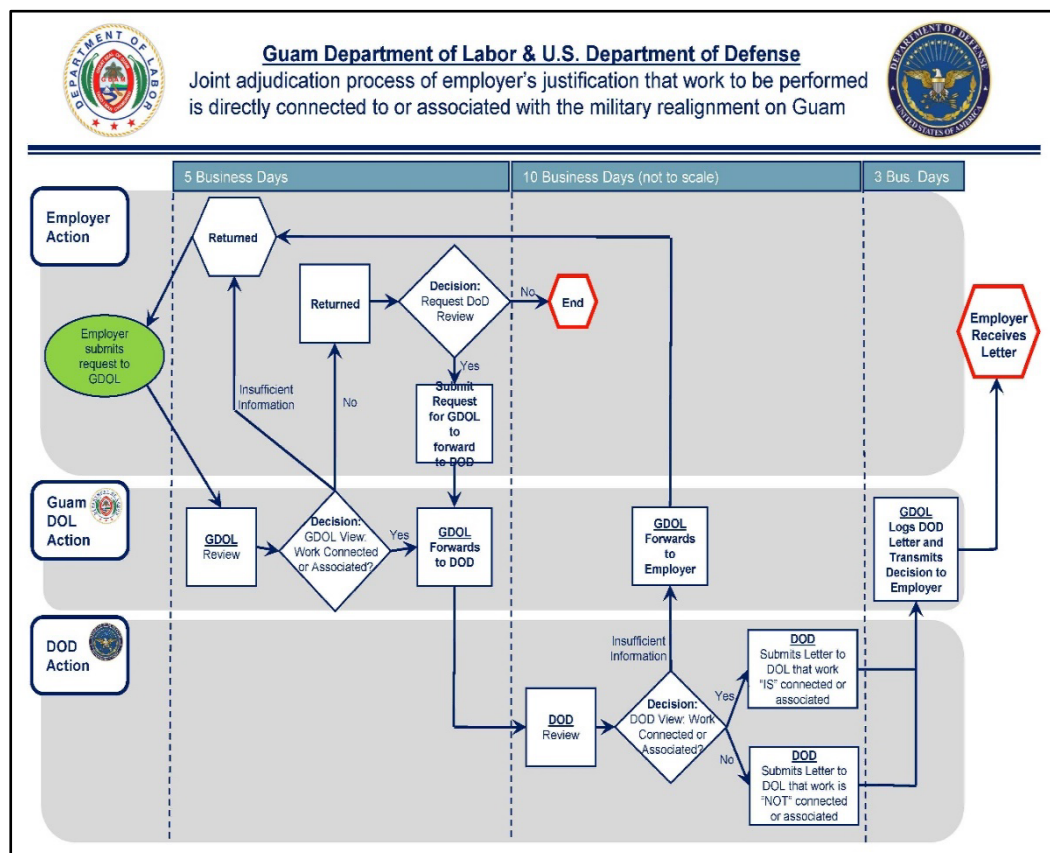


Figure 2.2.1.2. Guam DOL & U.S. DoD Joint Adjudication Process Flow.

Source: [https://dol.guam.gov/wp-content/uploads/GDOL\\_DOD\\_Decision\\_Process\\_for\\_H2B.jpg](https://dol.guam.gov/wp-content/uploads/GDOL_DOD_Decision_Process_for_H2B.jpg)

### 2.2.2. Workforce Housing

The main workforce challenge in meeting anticipated construction industry growth is workforce housing. This has changed since the 2010 assessment when workforce housing was anticipated to be readily available. In anticipation of the 2007 buildup there was a large amount of workforce housing planned (see Section 2.2.4 for current workforce housing locations).

When the buildup was delayed, construction contractor confidence in the DPRI program fell. There is a recognition that housing is a necessity, but a reticence to move forward shy of an actual award for work (Bathan and Guerrero, 2019). It is recommended that

GPMO/CMCC/USMC embark on a strategic communications campaign to re-instill confidence in the contractors that work is coming and there is a need to sequence the building of workforce housing to meet demand for work. Time-phasing of RFP, proposal submission, award, work start, worker recruitment, and workforce housing construction needs to be part of the buildup planning.

### 2.2.3. Workforce Support Services

NAVFAC specifications require that transportation and medical services be provided for all foreign workers supporting DoD projects on Guam (see example reference J-001B). These stipulations only apply to the DoD-supporting workforce and are not required for private and/or municipal workers.

### 2.2.4. Workforce Education and Training

Guam Community College (GCC) School of Trades and Professional Services, Trades Academy (TA), and the University of Guam are responding to current industry needs. The schools aim to develop competent workers to further their positions in local society. While Guam is making a concerted effort, there does not exist adequate population nor trained organic labor to meet the growing construction demands of the build-up.

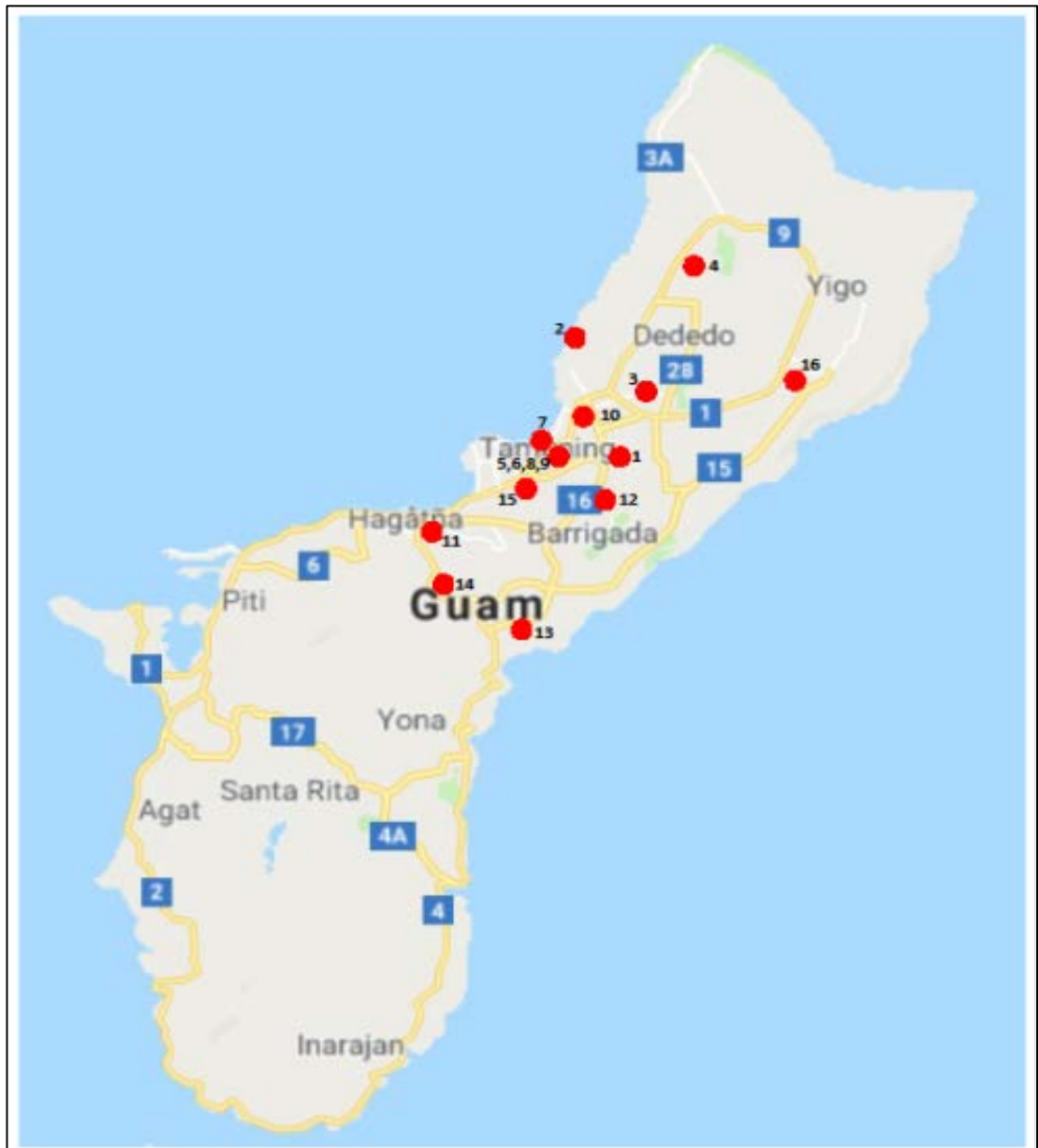
### 2.2.5. Workforce Housing and Support Services: Locations

Temporary workforce housing requires a dormitory permit from the Department of Public Health and Social Services (DPHSS). As of May 2019, a total of 938 H-2B workers from the Philippines were on Guam. Table 2.2.4 below shows a total of 1,286 permitted dormitories that are slated for military and or associated construction. A total of 18,868 dormitories can be permitted by specific contractors if needed based on housing planned by the contractors plus housing previously included in masterplans where the land is still available for development. From discussions with contractors, the level of preparation to house H-2B workers is dependent on the risk each construction company is willing to take in leaning forward for anticipated future work.

MAP SITE	COMPANY NAME	TYPE OF CONSTRUCTION	LOCATION	WITH DORM PERMIT	WITHOUT DORM PERMIT	TOTAL PLANNED
1	Orion Construction Corporation Guam	Military	Barrigada	50		50
2	Core Tech International, Ukudu	Military & Associated	Dededo	692	1308	2000
3	Smithbridge Guam, Inc.	Associated	Dededo	5		5
4	5M Construction Corp.	Military & Associated	Dededo	12		12
5	5M Construction Corp.	Military & Associated	Harmon Industrial Park	25		25
6	Reliable Builders, Inc.	Military	Harmon Industrial Park	153		153
7	Black Construction (Leasing Younex Barracks)	Military & Associated	Harmon Industrial Park	126	274	400
8	Korando Corp.	Military	Harmon	21		21
9	Modern Konstrak	Associated	Harmon	18		18

10	Modern International, Inc.	Military	Harmon	40	40
11	Citi Development & Construction, Inc.	Military	Maite	20	20
12	Asian Construction Development Corp.	Associated	Mangilao	34	34
13	Asian Construction Development Corp.	Associated	Mangilao	5	5
14	Bascon Corporation	For Proposed Military & Associated	Ordot	40	40
15	Reliable Builders, Inc.	Military	Tamuning	37	37
16	Northern Construction	Military	Yigo	8	8
<b>Total Housing Capacity</b>				<b>1286</b>	<b>1582</b>
				<b>2868</b>	

Table 2.2.4. Workforce Housing Capacity as of May 2019.



(Table 2.2.4. continued) Workforce Housing Capacity as of May 2019.

## **2.3. Capacity Forecast**

### **2.3.1. Risks**

The reticence of contractors based on their past experiences with delayed award contracts may hamper their ability to provide timely workforce housing for the large anticipated influx of H-2B visa holders onto Guam. This risk can be mitigated through specific added requirements in construction RFPs to provide workforce housing plans and a strategic communications plan.

The Ukudu facility owned by Core-Tech includes workforce housing with maximum occupancy of 2,000 planned by Core-Tech and a total of 18,000 previously included in the Masterplan. Core-Tech's CEO, Bathan (2019), stated Core-Tech is willing to lease part of the workforce housing not in use to other contractors to meet the demands of the DoD military construction.

Apartments are currently being utilized for the H-2B workforce, resulting in the displacing of local tenants. This provides the opportunity for construction of additional local housing utilizing the H-2B visa exemptions because the H-2B workers are in direct support of the military buildup.

### **2.3.2. Key Recommendations**

- Ensure specifications similar to the J-001B Finegayan Utilities and Site Improvements, Phase 1 regarding workforce housing are included in DoD construction solicitations
- Consider including specifications for temporary contractor space requirements near/adjacent worksite to include storage/laydown areas in solicitations
- Consider the time-phasing to support necessary staffing/buildup unique to Guam
- Develop strategic communications to ensure the construction industry has confidence in the DPRI buildup schedule and makes necessary preparations to support program milestones

## **3. Utility Capacity Analysis**

### **BLUF**

In the 2010 report, utilities (specifically water and wastewater) were deemed constraining factors; however, that determination also served to stimulate the Guam Water Authority to implement a wide range of water/wastewater capital improvement projects. These projects, currently under construction across the island, are intended to address the critical improvements needed through 2028.

Improvements to the Northern District Wastewater Treatment Plant (NDWWTP) along with water transfer agreements between DoD and Guam Water Authority (GWA) have mitigated these previous concerns and support planned construction at its peak in 2022. Further, the power generation capacity is assessed to be adequate to meet planned construction activities. Guam Power Authority (GPA) now has about 420MW of generation capacity after the 2015 fire destroyed Cabras 3 & 4. GPA also has 25MW of renewable generation which in total provides 166MW reserve capacity to service a peak 7MW buildup load through 2028. One hundred eighty megawatts of new capacity is planned to be online by 2021 to replace end-of-service-life plants Cabras 1 & 2. A 34.5KV underground electrical transmission line from Harmon Station to the future Naval Communications Telecommunication Station (NCTS) Finegayan Substation and from the future NCTS Finegayan Substation to the Anderson Air Force Base Main Station complete the balance of projects to ensure capacity for the peak construction period and beyond. That said, a watchful eye must be kept on the progress of the 180MW replacement plant for Cabras 1 & 2, as they are nearing the end of their service lives nearly

simultaneously with their replacement plant coming online.

### 3.1. Introduction

#### 3.1.1. Current State: Potable Water and Wastewater

Since the original 2010 Capacity model was published, the Guam Water Authority has implemented a wide range of water and wastewater capital improvement projects across the island to address the critical improvements needed. The initial 2010 study projected a significantly higher requirement for both water and wastewater which have now been diminished due to the reduced number of Marines and dependents being relocated from Okinawa, as well as an extended (nearly doubled) construction period. As such, capacity improvements, both completed and ongoing, more than meet the demand at the planned peak construction year of 2022.

##### 3.1.1.1. Potable Water

The key finding in this revised analysis indicates that the potable water demand can be met from existing aquifers and the DoD transmission loop that currently exists in northern Guam until 2021, when expected transfers will then exceed 1.6MGD. The One Guam pilot project is the operation of the DoD Tumon Maui Well by GWA, which was rehabilitated in preparation for the military buildup. The facility became operational in July 2016 and is currently providing up to 1.3MGD of supply to the GWA system. Post-2021, operation of this well, combined with water sharing agreements between GWA and DoD, will meet expected demand, decrease the need for additional wells planned for Andersen AFB, and allow for reduced pumping from nearby GWA wells with higher salinity. Figure 3.1.1.1 reflects demand versus capacity for potable water and demonstrates clear capacity to meet peak construction requirements.

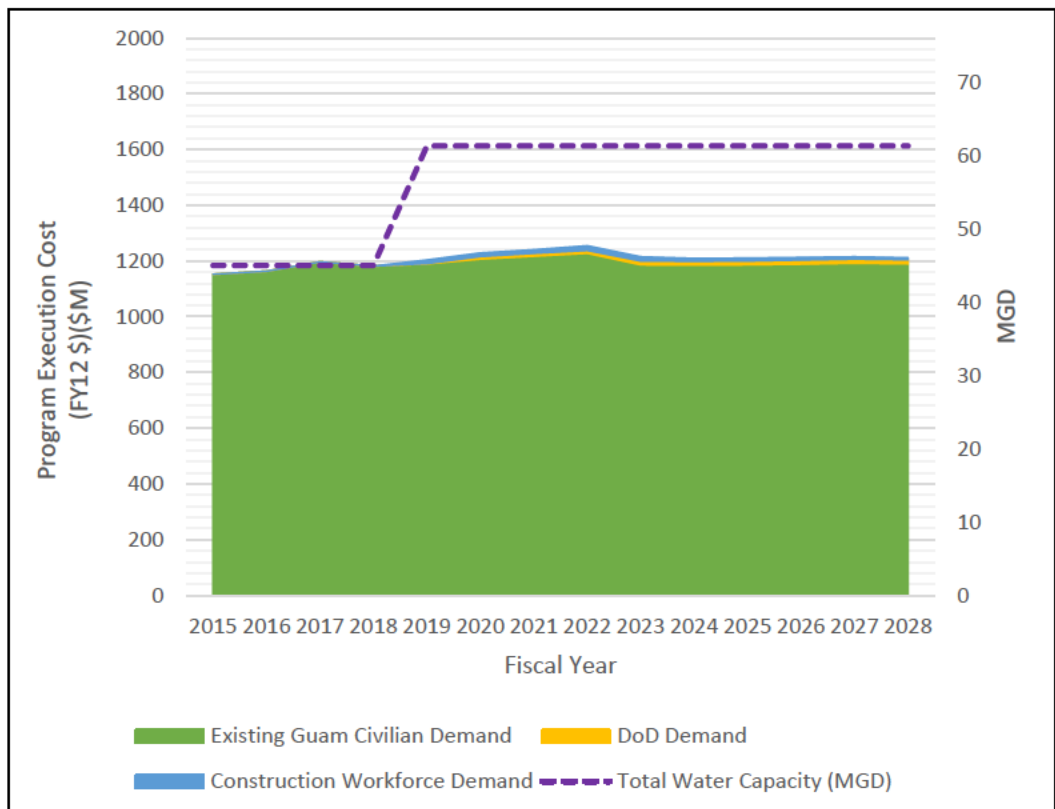


Figure 3.1.1.1. Water Capacity.

**3.1.1.2. Wastewater**

The 2010 Long-Term Capacity Model highlighted a capacity shortfall of the Northern District Wastewater Treatment Plant (NDWWTP). This finding stimulated a joint effort with DoD and GWA to upgrade the NDWWTP treatment systems and refurbish the GWA interceptor sewer from AAFB to NDWWTP to meet anticipated wastewater demand at peak construction. The increase from 6MGD to 9MGD meets the demand but does pose risk if any schedule slippage occurs. This would and will require mitigation measures such as pump trucks to handle any increased flow not within capacity.

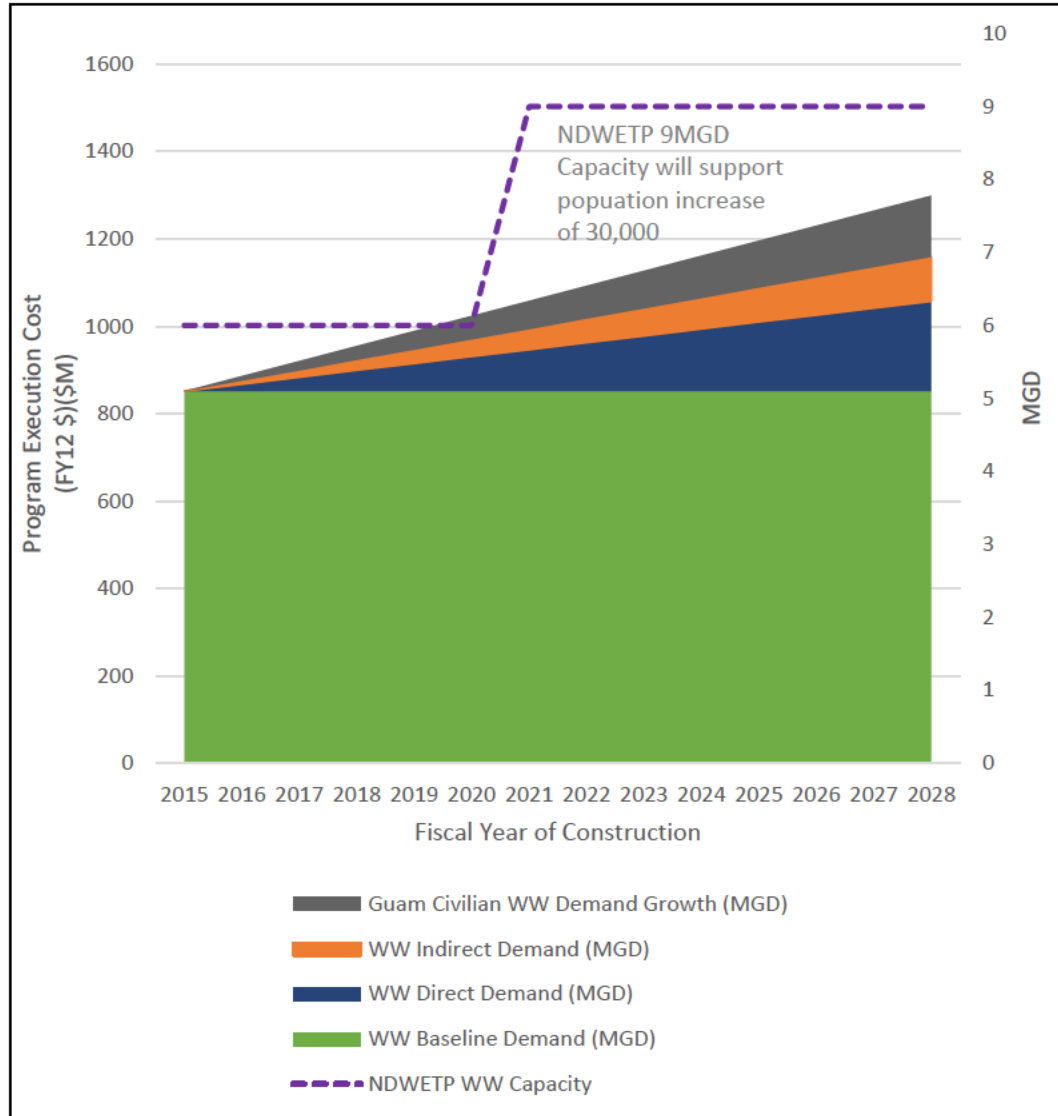


Figure 3.1.1.2. Wastewater Capacity.

**3.1.2. Current State: Power**

At the time of the 2010 Long-Term Capacity Model, GPA had 500MW of generation capacity which provided 1.5x excess capacity. That model forecasted an incremental demand of 7MW from the off-island population in 2013, which was insignificant relative to existing capacity. Today, GPA’s generation capacity is 420MW due to a 2015 fire which destroyed Cabras 3 & 4. In 2018, GPA’s peak demand was 254MW, well within needed capacity. Given GPA’s 166MW reserve capacity, there is sufficient power generation capacity to supply anticipated military buildup demands from transient construction population increases through 2023.



Additionally, the power capacity is also adequate to supply the long-term steady-state demand associated with military buildup. At maximum workforce peak in 2022 and a consumption factor of 0.75KW/PN, this equates to a total demand of approximately 7MW and is well within the generation capability of the GPA.

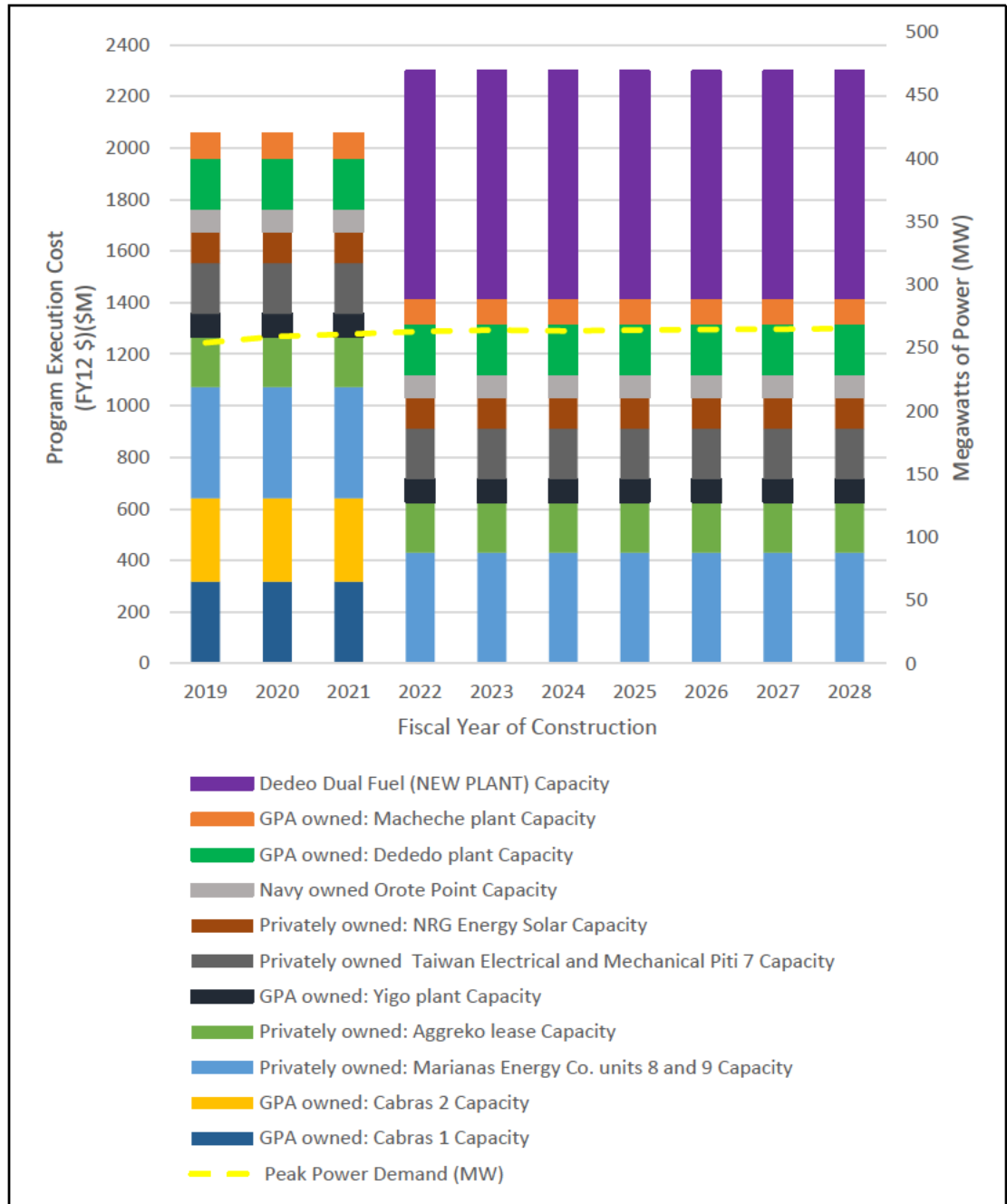


Figure 3.1.2. Power Capacity.

### 3.2. Capacity Changes since 2010

#### 3.2.1. Water and Waste-Water

Four critical projects were recommended and are now completed or under construction:

- Upgrade the Northern District WWTP treatment systems
- Refurbish the GWA interceptor sewer from Andersen AFB to Northern District WWTP
- Update and expand the NGLA monitoring well network

### 3.2.1.1. Wastewater Systems

This section outlines the impact of the military relocation on GWA wastewater systems. A discussion of specific impacts is presented first, followed by details of DoD-generated flow estimates.

#### 3.2.1.1.1. Impacts and Mitigation

Table 3.2.1.1.1 details the impacts to GWA wastewater systems anticipated as a result of the relocation. Issues and concerns associated with those impacts are presented, as well as proposed mitigation measures.

Impact	Issue	Concern	Mitigation
Increased wastewater flow through GWA interceptor sewer from Andersen AFB to Northern District WWTP during both construction and operations activities	CCTV data has shown the reinforced concrete pipeline to be in an advanced state of deterioration.	Increased wastewater flows have potential to accelerate pipeline deterioration.	The EACIP outlines the need for federal assistance to complete the refurbishment of the interceptor sewer between Andersen AFB and Northern District WWTP (value: \$28.8 to \$30.6 million). <sup>a</sup>
	System spills exceed spill rate norms for similar wastewater systems.	Increased wastewater flows could lead to additional spill frequency and/or volume.	
Increased effluent production from Northern District WWTP	Northern District WWTP is non-compliant with the 2013 NPDES permit. The CWA waiver from secondary treatment was denied by USEPA in 2011.	Additional wastewater flow to an already noncompliant treatment plant will have a significantly adverse impact on the environment. <sup>b</sup>	EACIP outlines the need for federal assistance to upgrade Northern District WWTP to secondary treatment (value: \$134.3 to \$139.6 million). <sup>a</sup>
Increased influent at Northern District WWTP	Long-term operational impacts.	Increased sludge production.	The Marine Corps will pay a system development charge and as a rate-paying customer contribute revenue to GWA for O&M.
		Increased power demands.	GWA will require additional personnel and O&M budget for an expanded facility.
		Increased requirements for operations personnel and training.	
		Depreciation, compliance, and facility maintenance costs.	GWA will require additional budget for an expanded facility. Increased revenue from DoD customer accounts will help offset costs.
Risks to existing assets during construction	Short-term construction impacts.	Increased industrial wastewater and FOG content.	BMPs such as an on-base program to control FOG and pretreatment of industrial wastewater with oil-water separators will be incorporated in facility design.
		Increased service outages.	BMPs such as coordination with GWA and permitting agencies, pre-construction utility location, constructing wastewater lines during low-flow periods, bypass pumping, and standby pump trucks will be utilized during construction.
		Increased wastewater spills.	
Increased influent at other island wastewater facilities	Hagåtña WWTP is non-compliant with the 2013 NPDES permit. Island-wide, wastewater facilities and collection systems have had operational issues requiring compliance actions.	Additional wastewater flow to noncompliant treatment plants will have a significantly adverse impact on the environment. <sup>b</sup>	Northern District WWTP will treat all direct wastewater flows from on-base facilities. Impacts from indirect wastewater flows generated by temporary construction workforce and civilian population increase outside of the Northern District wastewater service area are considered less than significant. <sup>b</sup> Compliance issues at Agat-Santa Rita WWTP, Baza Gardens WWTP, and Umatac Merizo WWTP will be addressed by 2018.
Increased operations costs at upgraded Northern District WWTP	A more complex plant will incur additional O&M costs.	Additional trained personnel are required to operate and maintain the plant.	The Marine Corps will pay a system development charge and as a rate-

Table 3.2.1.1.1. Issues, Impacts, and Mitigation- GWA Wastewater Assets.

Source: Brown and Caldwell prepared for Guam Waterworks Authority, April 10, 2018 Public Comment Draft

The significant impacts to wastewater systems associated with the military relocation result from increased flows into the collection system and through the Northern District WWTP. The EACIP identified that federal support is needed to address these impacts. The two EACIP recommended projects are discussed below.

### 3.2.1.1.2. Upgrade of Northern District WWTP to Secondary Treatment

All wastewater from the cantonment at Finegayan and additional family housing at Andersen AFB will be processed at the Northern District WWTP, which is not in compliance with the secondary treatment requirements for the current (2013) NPDES permit. Additional wastewater flow to an already noncompliant plant will have a significantly adverse impact to the environment due to increased effluent leaving the outfall in the Philippine Sea (SEIS, 2015). To mitigate the impacts, the DoD is contributing to the upgrade of the Northern District WWTP processes to both meet its total design capacity and provide secondary treatment. The upgraded plant is scheduled to be in operation by 2021.

### 3.2.1.1.3. GWA Interceptor Sewer Refurbishment

The existing GWA interceptor sewer line from Andersen AFB to the Northern District WWTP will convey wastewater generated by buildup activities. Closed-circuit television (CCTV) footage from 2014/2015 shows substantial deterioration and pipe wall corrosion of the reinforced concrete pipe. Repair is required prior to the addition of flows to prevent further damage, potential loss of service to both civilian and military facilities, and leakage into the underlying aquifer. To mitigate potential impacts, the DoD has proposed funding a cured-in-place pipe rehabilitation program. A phased approach is planned, with the northern half of the line completed by 2019 and the southern half by 2021.

## 3.2.2. Power

Under the SEIS 2015 proposed action, the demand for electrical power at the cantonment/family housing area would be reduced relative to the 2010 Final EIS and ROD from an estimated 20MW to approximately 5.7MW. This update anticipated that generation capacity for Guam and the CNMI Military Relocation (2012 Roadmap Adjustments) (SEIS, 2015), which at the time included Cabras 3 & 4, would be adequate and no power generation upgrades would be required. Additionally, to comply with Marine Corps sustainability goals, a portion of the power demand would be satisfied by power generated from renewable energy sources. These would include photovoltaic solar panels on rooftops and approximately 20 acres within the cantonment and/or family housing footprints proposed for ground-mounted photovoltaic panels. At a maximum workforce peak of approximately 9,000 workers in 2023 and at a consumption factor of 0.75KW/PN, this equates to a total demand of just over 7MW and is well within the generation capability of the GPA (see Table 3.2.2).

<b>Guam Power Plant Capacity Post 2010</b>	<b>MW</b>
GPA owned: Cabras 2	66
Privately owned: Marianas Energy Co. units 8 and 9,	88
Privately owned: Aggreko lease	40
GPA owned: Yigo plant	18
Privately owned: NRG Energy Solar	25
Privately owned Taiwan Electrical and Mechanical Piti 7	40
Navy owned Orote Point	18
Navy owned U.S. Naval Computer and Telecommunications Station	

GPA owned: Cabras 1	65
GPA owned: Dededo plant	40
GPA owned: Macheche plant	20
<b>Total</b>	<b>420</b>

**Table 3.2.2. Guam Power Plant Capacity Post 2010.**

### 3.2.2.1. Transmission

The SEIS (2015) recommended that some transmission line upgrades would be required for current transmission infrastructure to function properly. Additionally, it was noted that all cantonment/family housing alternatives would require construction of a new on-site substation. DON representatives coordinated with GPA to provide a basis for load flow analysis. Based on the load flow analysis performed by GPA, the existing 34.5kV transmission lines serving northern Guam would require upgrading. The 34.5kV transmission lines from Harmon Substation to AAFB Main Substation were upgraded by installing a new underground 34.5kV line through an FY17 project (P-102 Power Upgrade), thus addressing the issue.

### 3.2.2.2. Integrated Resource Plan

GPA filed its updated 2016 integrated resource plan (IRP) to the CCU and PUC. The IRP included the plan to install 180MW of dual-fired combined-cycle generation units, retirement of Cabras 1 & 2, expansion of a renewable energy portfolio, and installation of energy storage. The 180MW of new generation is planned to be commissioned by December 31, 2021. MEC 8 and 9 of 88MW of generation is to be converted to burn Ultra Low Sulfur Diesel (ULSD) within one year after the commission of the new combined-cycle generation. The PUC have approved GPA's generation plan in October 2016 and GPA hired a consulting engineer to assist with the engineering and procurement.

## 3.3. Other Utilities

### 3.3.1. Solid Waste

Disposal of solid and hazardous waste on Guam is managed by the Guam Solid Waste Authority (GSWA), a self-funded public agency. The new Layon Landfill is a high-tech, 20-acre, environmentally sound and highly controlled landfill for non-hazardous municipal solid waste. With a total capacity in excess of 15.8 million cubic yards, Layon Landfill is expected to be in service for the next 50 years. Solid waste capacity is not assessed to be an issue relative to the buildup.

## 3.4. Key Recommendations

Continued cooperation in water transfer agreements with the DoD should be maintained. Furthermore, well analysis of the Norther District DoD wells, in cooperation with GWA, should be continued to maintain adequate supply. The ongoing roadwork improvements related to the buildup afford the opportunity to inspect and upgrade underground utilities including water, wastewater, telecommunications, and power.

Although GPA has adequate capacity at present, Cabras 1 & 2 are nearing the end of their expected life-cycles, and as such close attention must be paid to the Dededo 180MW replacement plant project to ensure adequate reserve capacity is maintained.

#### 4. Infrastructure and Logistics Capacity Analysis

##### BLUF

The combination of a \$50M DoD-funded Maritime Administration (MARAD) grant and bond-funded projects have allowed the Port Authority of Guam (PAG) to address pressing port capacity issues, but the port remains a potential constraint. The port’s three 50-gage gantry cranes are adequate for current throughput, but a fourth crane (currently in the process of being procured) is necessary to reasonably meet peak demand in 2022.

While not specifically addressed in the 2010 report, this report did assess the rolling stock (trucks/trailers) necessary to haul construction material from the port to the construction sites, as it has been flagged as a potential risk area. Premised upon all current trucks/trailers on Guam being at full utilization, an initial estimate of ~185 more rolling stock will be required at the peak of construction to adequately move construction material from the port to various sites.

The Haul Road Network (HRN), which describes the routes intended to be used to haul construction material from the port and quarries to the various construction sites, has undergone significant upgrades because of aggressive Guam Department of Public Works (DPW) and Defense Access Roads (DAR) investments. The HRN generally supports the planned construction activities with several relatively minor projects remaining to be completed.

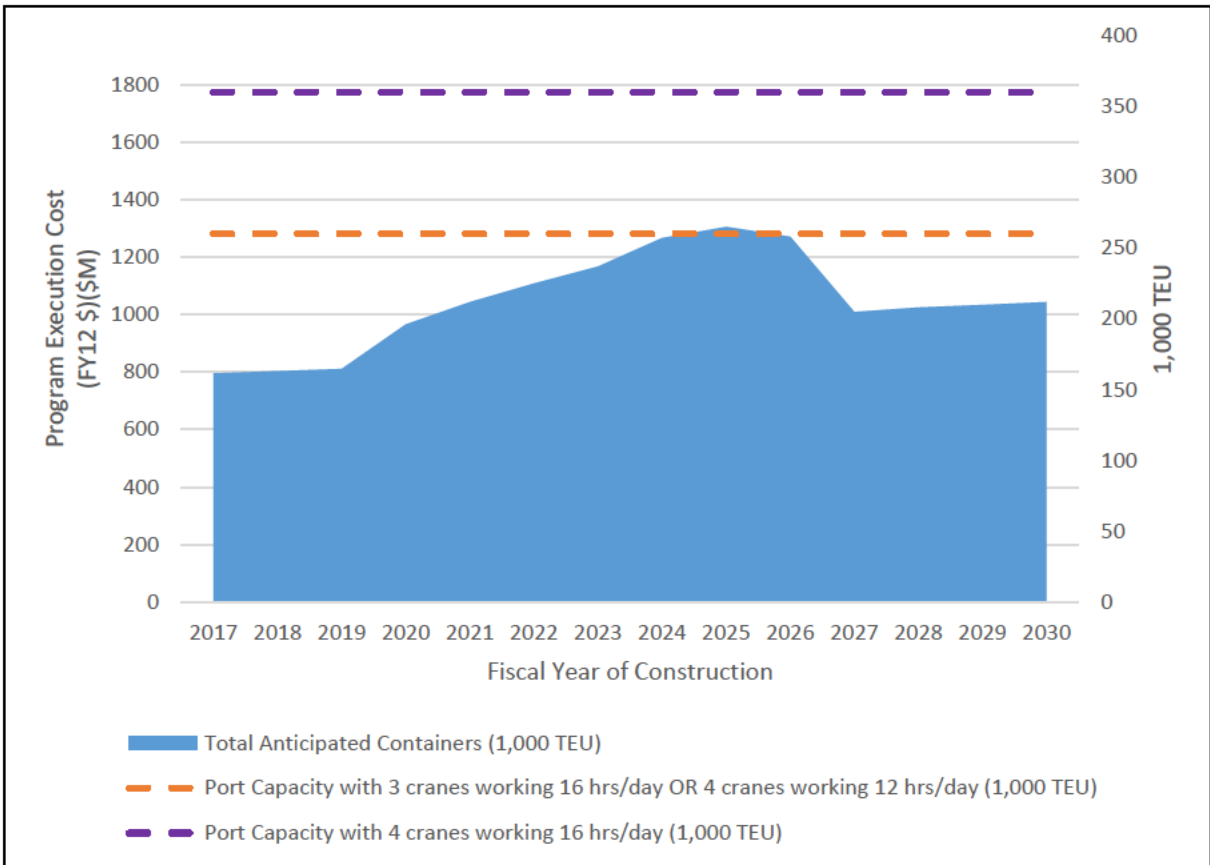


Figure 4. Port Capacity.

#### 4.1. Introduction

##### 4.1.1. Current State

The Port Authority of Guam (PAG) has completed numerous projects to correct virtually all the issues identified in the 2010 capabilities study. Gantry Crane capacity is adequate for today’s throughput but will be strained as construction ramps up.

The Guam Department of Public Works, in conjunction with the DoD, has invested heavily in the past 10 years to widen roads, replace bridges, improve pavement and reconfigure intersections. All of these upgrades have been geared towards supporting the construction traffic and improving traffic congestion.

#### **4.1.2. Key Assumptions**

- PAG will acquire a fourth gantry crane and have it operational by 2022
- PAG will hire/train enough skilled workforce to meet requirements for a minimum of 12-hour shifts to support the peak construction period
- Container (Twenty-foot Container Equivalent Units (TEU)) shipments in the peak year to support DPRI construction remains at 265,000, per PAG 2013 Master Plan

### **4.2. Changes since 2010**

#### **4.2.1. Port Capacity Model**

##### **4.2.1.1. Description of Existing Conditions**

The Jose D. Leon Guerrero Commercial Port of Guam (“port”) is currently owned, operated, and managed by the Port Authority of Guam (PAG), a legal public corporation and an autonomous agency of the Government of Guam. The PAG controls over 1,000 acres in the Apra Harbor area including the commercial port with six waterfront berths (F1 - F6), two fuel piers, a 500-foot long wharf, and marine industrial terminal (oil tank farm and cement silos).

These co-located facilities provide deep draft waterfront access and landside support services for container, breakbulk, fishing, and passenger vessels. The port is comprised of a breakbulk terminal, and a container terminal, three cargo handling berths, a cargo handling equipment area, 26.5 acres of cargo storage, and equipment maintenance and repair buildings.

The 2010 Capacity Analysis (NAVFAC, 2010) identified several shortcomings in the operations and infrastructure at the Port of Guam that could constrain the future Marine Corps construction projects. Some of those constraints included:

- Condition of the piers
- Crane capacity with three operating cranes
- Size and condition of the container yard
- Lighting in the container yard
- Quantity of material handling equipment (containers and break-bulk)
- Lack of a Terminal Operating System to track cargo
- Truck gate configuration
- Condition of Hotel Wharf

Except for repairing the Hotel Wharf, the PAG has addressed and completed improvements related to each of the items identified above. Projects to repair Golf Pier and Hotel Wharf are funded by a \$10M Tiger Grant and are currently in the planning phase.

#### **4.2.1.2. Capacity Analysis**

##### **4.2.1.2.1. Berths**

Berth analysis was conducted as a part of the PAG Master Plan Update (PAG, 2013) to ascertain the port's ability to accommodate the increased throughput as a function of the buildup and associated increased population. The results of the berth utilization analysis reveal that the current berth configuration is sufficient to handle full build-up of cargo in the peak construction year (2022), and a review of the assumptions and factors that went into the original analysis, supplemented by a site visit, support this finding.

##### **4.2.1.2.2. Cranes**

PAG has three operational ship-to-shore gantry cranes. The unconstrained crane capacity (4 cranes x 22 lifts/hr x 24 hrs x 52 weeks x 5 days/wk – down time and 2 holidays) for the cargo terminal (assumed four operational cranes) was found to be approximately 539,000 twenty-foot equivalency units (TEUs) per year (PAG, 2013). The peak demand during the buildup is expected to be 265,000 TEU's per year. The PAG currently only has three operational gantry cranes and is in process of procuring a fourth. Premised upon the fourth crane being procured and available by 2021 and the PAG hiring enough trained workforce to conduct crane offloading and associated operations, crane capacity is assessed as adequate for the peak demand in 2022.

##### **4.2.1.2.3. Breakbulk Storage**

Breakbulk cargo capacity analysis was performed based on the demand forecast of breakbulk cargo to support the buildup (PAG, 2013). The analysis identified that 96% of the then-storage area of 7.7 acres would be required during the peak construction period. A MARAD-funded project expanded the breakbulk storage area to 9 acres in 2016, thus reducing the utilization of the storage area to 82%. Breakbulk storage is assessed as adequate to support the peak construction period in 2022.

##### **4.2.1.2.4. Container Storage Yard**

Container yard operations were assessed during the PAG Master Plan Update (2013). It was determined that nearly 80% of the container storage yard would be utilized at the peak construction period in 2022. In 2015, a container yard expansion was completed, thus driving down the storage capacity utilization during the peak construction period in 2022. The storage container yard is assessed as adequate to support the buildup at the peak.

##### **4.2.1.2.5. Cargo Movement**

Cargo movement at the port was identified in the 2010 report as a potential constraint at the peak of construction due to insufficient material handling equipment. An assessment of the PAG Master Plan Update (PAG, 2013) along with the Port Modernization Brief to the GCA (PAG, 2019) reveals that most of the recommended additional equipment has been procured and adequately addresses the issue.

##### **4.2.1.2.6. Gate Operations**

Container truck gate operations at the port were assessed in the 2013 Master Plan to be adequate to support peak buildup requirements based upon a relocation of the gate and installation of a modern gate operating system. Both projects were completed –

gate operations are assessed as adequate to support peak construction activities in 2022.

**4.2.2. Roads/Intersections/Bridges**

**4.2.2.1. Description of Existing Conditions**

The Guam Department of Public Works, in conjunction with the DoD (DAR program), have completed significant roadway, intersection, and bridge improvements along the Haul Road Network (HRN) since the 2010 report that address the vast majority of the concerns identified. Intersections have been redesigned or reconfigured, roadways widened, pavement rehabilitated, and bridges replaced or repaired. Movement of construction materials will cause delays on isolated portions of the HRN, and the movement of trucks with construction materials will cause unavoidable damage to the pavement on the HRN. However, the improvements that have been completed to date and the remaining projects described in Table 4.2.2.1 below support the movement of construction material throughout the buildup to include the peak in 2022.

Project	Estimated Completion Date
Route 3 widening Route 28 Chalan Kareta	Jan-20
Route 1/8 Intersection Improvement and Agana Bridges Replacement	TBD, 95% complete
Resurface Route 1 (Asan, Piti, and Yigo), Route 8 (Barrigada and Mongmong Toto Maite); Route 8/Canada-Toto Loop Road and Intersection Improvements	Mar-19
Island-wide bridge inspections	Dec-19

**Table 4.2.2.1. Road Improvements - Completed and In-progress.**

**4.2.3. Airport**

Interviews with local construction contractors and GCA indicate most supplies and equipment are brought in by ship. Core-Tech’s CEO stated that they occasionally utilize air cargo when needed due to scheduling constraints, but that is rare because it is cost prohibitive (Bathan, 2019).

If capacity issues at the port affect construction schedules, contract liquidated damage may outweigh the cost of air shipment and make it more desirable as a logistics alternative.

Although airport capacity was not analyzed as part of the 2010 assessment, both Guam International Airport and Andersen AFB were contacted regarding current and excess capacity but were unresponsive. Below are pertinent questions regarding capacity that can be explored further if there is a desire for greater fidelity regarding airport capacity:

- What is the current average and highest number of aircraft departures and arrivals per day (passenger versus cargo)?
- What is the most aircraft departures and arrivals the airfield can currently support?
- Are there any major improvements slated within the next 10 years that will affect capacity



(both reduction because of construction, or increase with improvement completion)?

- What is the process for a commercial plane to utilize the airfield at Andersen AFB?
- Can construction contractors be utilized to bring in equipment/personnel?

#### **4.2.4. Supply and Other**

##### **4.2.4.1. Cement**

###### **4.2.4.1.1. Existing Conditions**

Cement is a critical component for building both the Marine Corps' cantonment area and family housing. With no existing source on the island, all cement is imported through the Port of Guam via 2 companies - Hanson Cement and Cementon.

Hanson Cement imports an average of about 3,600 tons/month and has a capacity of up to 250,000 tons per year. Cementon imports about 2,000 tons/month and has a maximum capacity of about 72,000 tons per year. Both have cement storage silos at Guam's port facility. Combined, these two firms are currently importing an average 5,600 tons of cement per month/67,200 tons per year.

###### **4.2.4.1.2. Capacity Analysis**

Based upon the current import of 67,200 tons of cement per year, it can be inferred that the current construction demand is being met. Combined, these two firms have a capacity of importing, storing, and distributing roughly 322,000 tons per year. This total capacity is approximately 4.8 times the current use, and as such it is assessed that the import, storage, and distribution of cement is adequate to meet the peak construction in 2022.

##### **4.2.4.2. Shipping Container Storage at Construction Sites**

While not addressed in the 2010 report, it is important to consider and analyze the storage and laydown areas needed to support the construction effort.

The traffic and transportation analysis in the 2015 SEIS worked from an assumption that in the peak year of construction there would be 81,972 truck trips from the port to the main cantonment area, 14,894 trips to the family housing area, and 11,954 trips to the training area.

Moving over 82,000 containers in the peak year equates to 1,577 containers per week or 316 containers per day. One trip moves one container. To calculate space requirements, 200 square foot (sf) per shipping container was multiplied by 2.5 to account for movement of trucks and vehicle handling equipment in the storage area. This establishes baseline requirements for unloading/loading containers, moving containers, and siting the shipping containers at the construction site.

Using the assumptions identified below, each of the construction sites will require a storage area at/near the specific construction site (cantonment, housing, training) as depicted in Table 4.2.4.2 below.

- One storage container has a footprint of 10 ft x 20 ft (200 sf)
- The total container storage area is 2.5 times the footprint of each container, thus allowing for movement of trucks and material handling equipment

- Each container requires full access until it is empty
- Empty containers can be stacked two-high
- Containers are moved off-site within 48 hours of becoming empty
- Each site is relatively flat with either a paved or gravel surface to provide effective drainage

Destination	Average Containers			Storage Space Requirement (sf)			
	Year	Week	Day	2 Days	3 days	4 Days	5 Days
<b>Main Cantonment</b>	81,972	1,577	316	316,000	474,000	632,000	790,000
<b>Family Housing</b>	14,894	287	58	58,000	87,000	116,000	145,000
<b>Training Area</b>	11,954	230	46	46,000	69,000	92,000	115,000

Table 4.2.4.2. Container Shipments from the Port to Construction Sites.

Each site will require equipment to off-load containers from their trailers upon delivery, move them to their sites while in use, marshal empty containers, and load empty containers on trucks returning to the port. Each site will require material handling equipment to off-load, move, and up-load storage containers, as well as perimeter fencing to secure the containers from pilferage. Section 4.2.4.4 provides an analysis of the number of MHE required at each construction site.

A suggested area for future analysis is a determination of an appropriate and suitable laydown/container storage areas at or near the three primary construction sites.

#### 4.2.4.3. Trucks and Trailers to Move Shipping Containers

Table 4.2.4.3 details the estimated number of containers need to move shipping containers from the port to each of the three construction sites. Based on the assumptions identified below, each truck and trailer can move two shipping containers per day.

- The existing fleet of trucks and trailers is fully engaged
- The one-way trip is 23 miles at average speed of 25 miles per hour (mph)
- There is a 30-minute up-load time at the port
- There is a 30-minute download time at construction site
- A 30-minute lunch break is provided for the driver
- The net round trip time averages 3 hours per truck
- The net effective trips per day is 2

The number of trucks required would be calculated as follows:

$$316 \text{ trips/day} / 2 \text{ trips/truck} = 158 \text{ trucks} / 0.95 \text{ operational rate} = \mathbf{167 \text{ trucks}}$$

Table 4.2.6.1 details the number of trucks and trailers required to move shipping containers to each of the three construction sites using several different operational rates for the truck-trailer combinations. The various operational readiness rates assume that some number of trucks or trailers are either not available due to preventive maintenance (e.g., change engine oil or change tires), or for vehicle repair. The estimated cost of a semi-tractor and

trailer combination is \$58,000 (cost of a used day-cab tractor @\$50,000 and a used flat-bed trailer @ \$8,000). Total estimated cost for the required semi-tractor and trailers to move containers to the construction sites ranges from \$12.8M to \$15.3M.

Destination	Containers per day	Vehicle Operational Readiness Rate			
		80%	85%	90%	95%
Main Cantonment	316	198	186	176	167
Family Housing	58	36	34	32	31
Training Area	46	29	27	26	24
<b>Total</b>	<b>420</b>	<b>263</b>	<b>247</b>	<b>233</b>	<b>221</b>

Table 4.2.6.1. Required Number of Trucks/Trailers to move Construction Materials

#### 4.2.4.4. Material Handling Equipment

Each construction site will require material handling equipment (MHE) to off-load and organize shipping containers. The following assumptions were used in determining the number of MHE required at each construction site:

- 1 MHE has an average download time of 10 minutes per container (6 containers/hour)
- 316 containers per day (Table 4.2.12); or 40 per hour (cantonment area)
- 58 containers per day = 7.25 per hour (housing area)
- 46 containers per day = 5.75 per hour (training area)
- $40 \text{ container/hr} / 6 \text{ containers/MHE-hr} = 6.67 \text{ MHE} = 7 \text{ MHE}$  (cantonment site)
- $7.25 \text{ container/hr} / 6 \text{ containers/MHE-hr} = 1.2 \text{ MHE} = 1 \text{ MHE}$  (housing area)
- $5.75 \text{ container/hr} / 6 \text{ containers/MHE-hr} = 0.95 \text{ MHE} = 1 \text{ MHE}$  (training area)

Based on the number of shipping containers projected to arrive at each site, the cantonment area should have seven MHE to manage arriving shipping containers; the housing area and training area sites should have one each. Other MHE will be required to download breakbulk cargo.

A suggested area for future analysis would be to determine the quantity of required MHE available on Guam today and the cost to acquire additional MHE, as needed, to meet peak construction requirements.

APPENDICES

APPENDIX A- ACRONYMS/LEXICON

## Acronyms/Lexicon

AFB	Air Force Base
AM	Asset Management
APM	Adaptive Program Management
AWWA	American Water Works Association
BAH	Booz Allen Hamilton
BEQ	Bachelor Enlisted Quarters
BPSs	Booster Pump Stations
CCTV	Closed Circuit Television
CCU	Consolidated Commission on Utilities
CIP	Capital Improvement Program
CMMS	Civilian Military Coordination Council
CNMI	Commonwealth of the Northern Mariana Islands
CWA	Clean Water Act
DAR	Defense Access Road
DPW	Department of Public Works
DPRI	Defense Policy Review Initiative
EIS	Environmental Impact Statement
EMT	Emergency Medical Technician
EPA	Environmental Protection Agency
ESAL	Equivalent Single Axle Load
ESS	Energy Storage System
FY	Fiscal Year
GCCA	Guam Construction Capacity Assessment
GFD	Guam Fire Department
GOJ	Government of Japan
GovGuam	Government of Guam
GPA	Guam Power Authority
GPD	Gallons per Day
GPS	Global Positioning System
GSA	General Services Administration
GSWA	Guam Solid Waste Authority
GTP	Guam Transportation Program
GWA	Guam Waterworks Authority
HRN	Haul Road Network
HWWTWP	Hagatna Waste Water Treatment Plant
IWPS	Island Wide Power System
LEAC	Levelized Energy Adjustment Clause
LFTRC	Live-Fire Training Range Complex
LMSR	Large-Medium Speed Roll On/Roll Off
LOA	Length Overall
LOS	Level of Service
LPG	Liquid Petroleum Gas
MEB	Marine Expeditionary Brigade
MG	Million Gallons
MHE	Material Handling Equipment
MGD	Million Gallons per Day
MLD	Million Liters per Day
MILCON	Military Construction
MPC	Maximum Practical Capacity
NAVFAC Pacific	Naval Facilities Engineering Command Pacific
NAVHOSP	Naval Hospital

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NBGTS	Naval Base Guam Telecommunications Site
NCTS	Naval Computer and Telecommunications Station
NDAA	National Defense Authorization Act
NDWWTP	Northern District Wastewater Treatment Plant
NEM	Net Metering
NESHAP	National Emission Standard for Hazardous Air Pollutants
NPDES	National Pollutant Discharge Elimination System
NGLA	Northern Guam Lens Aquifer
NRW	Non-Revenue Water
OCR	Optical Character Reader
O&M	Operation & Maintenance
PAG	Port Authority of Guam
PUC	Public Utilities Commission
PM/CM	Preventive Maintenance/Corrective Maintenance
PMS	Pavement Management System
PRVs	Pressure Reducing Valves
PV	Photo Voltaic
RICEMACT	Reciprocating Internal Combustion Engine Maximum Achievable Control Technology
RFID	Radio Frequency Identification
RFO	Reserve Fuel Capacity
RFP	Request for Proposal
RO/RO	Roll On/Roll Off
ROD	Record of Decision
RSL	Remaining Service Life
SCADA	Supervisory Control and Data Acquisition
SDDC	Surface Deployment and Distribution Command
SDWA	Safe Drinking Water Act
SEIS	Supplemental Environmental Impact Statement
SIAS	Socioeconomic Impact Assessment Study
SPE	Special Project Entity
SPPC	South Pacific Petroleum Corporation
SSOs	Sanitary Sewer Overflows
SWTP	Surface Water Treatment Plan
TEA	Transportation Engineering Agency
TEU	Twenty-foot Equivalent Unit
TOS	Terminal Operating System
USEPA	United States Environmental Protection Agency
UFQ	Unaccounted-for Water
USDOJ	U.S. Department of Justice
ULSD	Ultra Low Sulfur Diesel
USMC	United States Marine Corps
V/C	Volume to Capacity
WFH&L	Workforce Housing & Logistics
WHPP	Wellhead Protection Plan
WRMP	Water Resources Master Plan
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant
WIP	Work in Progress

APPENDIX B- REFERENCES



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APPENDIX C – USCIS NDAA H-2B POLICY MEMORANDUM PM-602-0164

**USCIS NDAA H-2B Policy Memorandum PM-602-0164**

Source: <https://dol.guam.gov/wp-content/uploads/2019-NDAA-H-2B-Exemption-USCIS-PM-602-0164.pdf>

U.S. Department of Homeland Security  
U.S. Citizenship and Immigration Services  
Office of the Director (MS 2000)  
Washington, DC 20529-2000



U.S. Citizenship  
and Immigration  
Services

October 1, 2018

PM-602-0164

## Policy Memorandum

**SUBJECT:** Implementing the National Defense Authorization Act for Fiscal Year 2019 and the Exemption to the Temporary Need Requirement for H-2B Workers on Guam and in the Commonwealth of the Northern Mariana Islands

### Purpose

This policy memorandum (PM) provides guidance regarding the filing and adjudication of H-2B nonimmigrant petitions that fall under section 1045 of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2019 and supersedes the February 15, 2018 memorandum (PM-602-0156) that originally implemented section 1049 of the National Defense Authorization Act for FY 2018. This PM applies to certain H-2B petitions requesting start dates on or after August 13, 2018, and before December 31, 2023, for an otherwise qualified H-2B worker to perform certain service or labor on Guam or in the Commonwealth of the Northern Mariana Islands (CNMI) that is either (i) pursuant to any agreement entered into by a prime contractor or subcontractor calling for services or labor required for performance of a contract or subcontract for construction, repairs, renovations, or facility services that is directly connected to, or associated with, the military realignment occurring on Guam and the CNMI or (ii) as a health care worker at a facility that jointly serves members of the Armed Forces, dependents, and civilians on Guam or in the CNMI. Under the NDAA, an employer's need for these specific types of service or labor is not required to be temporary in nature if the employment start date is on or before December 30, 2023.

### Scope

This PM applies to all U.S. Citizenship and Immigration Services (USCIS) employees. This guidance goes into effect the date it is published.

### Authorities

[www.uscis.gov](http://www.uscis.gov)

APPENDIX D – LETTER FORMAT FOR REQUEST FOR CONFIRMATION OF  
CONNECTION/ASSOCIATION TO GUAM MILITARY REALIGNMENT

# Letter Format for Request for Confirmation of Connection/Association to Guam Military Realignment

Source: <https://dol.guam.gov/wp-content/uploads/DoD-H-2B-Letter-format-2019.pdf>

*(Submit on company letterhead)*

## Request for Confirmation of Connection/Association to Guam Military Realignment

Name of Employer: \_\_\_\_\_

Type of Contract or Project Name: \_\_\_\_\_

**Employer Request:** We are hereby requesting for a letter from Department of Defense officials on Guam to confirm that the contract, indicated on this submittal, is directly connected to or associated with the military realignment occurring on Guam. We intend to utilize H-2B workers for this activity and will seek exemption from temporary need requirements as allowed in the Section 1045 of the 2019 NDAA.

We believe that the contract, indicated above, is:

- Directly connected to Guam Military realignment construction work
- Associated with Guam Military realignment

INSTRUCTIONS: In your narrative, please explain:

1. What your business activity is (e.g. Construction, workforce housing, transportation)
2. Describe in detail, how your contract connects to construction, repairs, renovations or facility services for the military realignment
3. If your business activity connects to a specific construction project, please indicate the project name & number
4. If your contract connects through the SEIS, please reference the SEIS and clearly explain your rationale
5. If possible, please attach any corroborating documents that support your narrative (e.g. Notice of Awards, sub-contracts, business plans, workload forecasts)

Please provide a narrative as to how your contract is connected to the Guam Military realignment  
(An attachment may be included for additional space):

### **JUSTIFICATION NARRATIVE:**

I hereby certify that the information provided in this request, and any attachments thereto, are true and correct to the best of my knowledge.

Print Name: \_\_\_\_\_ Title: \_\_\_\_\_

Signature of Employer: \_\_\_\_\_ Date: \_\_\_\_\_

### **GUAM DOL REVIEW**

*The Guam Department of Labor has reviewed the employer narrative.*

- GDOL concurs with the employer and believes that the employer's contract is directly connected to or associated with the military realignment occurring on Guam
- GDOL does not concur with the employer and does not believe that the employer's contract is directly connected to or associated with the military realignment.
- GDOL is returning the employer's request due to insufficient information.

GDOL Signatory: \_\_\_\_\_ Name: \_\_\_\_\_ Date: \_\_\_\_\_

GDOL Tracking Number: NDAAREQ-\_\_\_\_\_

APPENDIX E – 2015 RECORD OF DECISION FOR THE FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR GUAM AND COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS MILITARY RELOCATION

**DEPARTMENT OF DEFENSE****Department of the Navy****Record of Decision for the Final Supplemental Environmental Impact Statement for Guam and Commonwealth of the Northern Mariana Islands Military Relocation****AGENCY:** Department of the Navy, Department of Defense**ACTION:** Record of Decision

**SUMMARY:** The Department of the Navy (DON), after carefully considering the environmental consequences of the proposed action, as well as strategic, operational, and training requirements, obligations under treaties and other international agreements, and cost, announces its decision to construct and operate a main base (cantonment area), a family housing area, a live-fire training range complex (LFTRC), and associated infrastructure on Guam to support the relocation of a substantially reduced number of Marines and dependents than previously analyzed in a 2010 Final Environmental Impact Statement (EIS) (*Guam and Commonwealth of the Northern Mariana Islands (CNMI) Military Relocation; Relocating Marines from Okinawa, Visiting Aircraft Carrier Berthing, and Army Air and Missile Defense Task Force*). The DON has selected the preferred alternative as identified in the 2015 Final Supplemental Environmental Impact Statement (SEIS), consisting of a cantonment at Naval Computer and Telecommunications Station Finegayan (Finegayan) and family housing at Andersen Air Force Base (AAFB) (Alternative E in the 2015 Final SEIS), and a LFTRC at AAFB–Northwest Field (NWF) (Alternative 5 in the 2015 Final SEIS). The LFTRC also includes a stand-alone hand grenade range at Andersen South. Under Alternatives E and 5, the DON will be able to meet current and future DON and Department of Defense (DoD) training and operational requirements.

This Record of Decision (ROD) documents why the DoD has chosen to implement the preferred alternatives as described in the 2015 Final SEIS. The ROD includes descriptions and discussions of the anticipated environmental impacts of the proposed action. It also includes descriptions and discussions of all related actions and their anticipated impacts.

The selected cantonment/family housing Alternative E comprises approximately 1,751 acres (709 hectares [ha]) of land (not including offsite utility corridor improvements which total approximately 150 acres [60 ha]) that are currently under the custody and control of the DoD. The selected LFTRC Alternative 5 at AAFB-NWF includes a construction footprint area of approximately 338 acres (137 ha) plus an additional 3,701 acres (1,498 ha) of land and submerged land for surface danger zones (SDZs). The entire LFTRC Alternative 5 construction footprint is currently under the custody and control of the federal government. Although the selected alternative does not require acquisition of non-federal land on Guam, access restrictions already established by the U.S. Fish and Wildlife Service (USFWS) at the Ritidian Unit of the Guam National Wildlife Refuge (NWR) (which is managed by the USFWS) may be adjusted to account for the establishment of the SDZs for the LFTRC once it is operational. In accordance with the provisions of section 2822 of the National Defense Authorization Act (NDAA) for the fiscal year (FY) 2015 (Pub. L. No. 113–291), the DON will pursue an agreement with the USFWS to establish and operate a SDZ associated with LFTRC Alternative 5 that will allow for the continued management of and access to the Ritidian Unit consistent with the purposes for which it was established.

This decision adopts all of the mitigation measures that were identified in the 2015 Final SEIS to avoid or minimize adverse environmental impacts from the preferred alternatives with the exception of proposed



mitigation to designate an Ecological Reserve Area (ERA) on Naval Munition Site (NAVMAG) and for the expansion of Orote Peninsula ERA. The ERA on NAVMAG and Orote Peninsula ERA expansion were proposed to mitigate for loss of native habitat from direct and indirect impacts of the preferred alternatives. To mitigate for loss of recovery habitat for the endangered Guam Micronesian kingfisher, the DON and the USFWS entered into a Memorandum of Agreement (MOA) on June 11, 2015, which commits the DON to designate approximately 5,234 acres under the custody and control of the DoD in northern Guam to a status that will provide durable habitat protection needed to support recovery habitat and land management for the survival and recovery of the species. This designation and management commitment, together with other MOA provisions, the conservation measures and best management practices identified in the Final SEIS, and the terms and conditions in July 31, 2015 Biological Opinion issued by the USFWS, adequately mitigate for impacts to recovery habitat for the Guam Micronesian kingfisher resulting from implementation of the selected alternatives. This ROD was prepared in accordance with Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA), 40 Code of Federal Regulations (CFR) §§ 1500–1508, and specifically, 40 CFR § 1505.2 (“Record of decision in cases requiring environmental impact statements”).

**FOR FURTHER INFORMATION CONTACT:** Director, Joint Guam Program Office Forward, P.O. Box 153246, Santa Rita, Guam 96915.

**SUPPLEMENTARY INFORMATION:** Pursuant to 42 United States Code (U.S.C.) §§ 4321 *et seq.* (section 101 *et seq.* of NEPA), the regulations of the CEQ that implement NEPA procedures (40 CFR §§1500–1508), and applicable DoD and DON environmental regulations and instructions that implement these laws and regulations, the DON announces its decision to construct and operate a cantonment, family housing, a LFTRC, and associated infrastructure on Guam to support the relocation of a reconfigured and substantially reduced U.S. Marine Corps force to Guam than originally was addressed in the 2010 Final ROD. This decision will enable the DON to: (1) ensure that the relocated Marines are organized, trained, and equipped as mandated by 10 U.S.C. § 5063; (2) satisfy individual live-fire training requirements as described in the 2015 Final SEIS; and (3) establish an operational Marine Corps presence on Guam in accordance with the April 27, 2012, joint statement issued by the U.S.-Japan Security Consultative Committee (hereinafter the “2012 Roadmap Adjustments”).

**BACKGROUND:** On September 30, 2010, the DON signed a ROD (75 Federal Register [FR] 60438) regarding the 2010 Final EIS for the *Guam and Commonwealth of the Northern Mariana Islands (CNMI) Military Relocation; Relocating Marines from Okinawa, Visiting Aircraft Carrier Berthing, and Army Air and Missile Defense Task Force*. The 2010 ROD documented, in pertinent part, the DON’s decision to implement the preferred alternatives identified for the main cantonment area, aviation, and waterfront operations to support relocation of approximately 8,600 Marines and approximately 9,000 dependents to Guam. The 2010 ROD deferred a decision on the specific site for a LFTRC pending completion of the section 106 consultation process under the National Historic Preservation Act (NHPA) (16 U.S.C. § 470 *et seq.*). In March 2011, subsequent to issuance of the 2010 ROD, the DoD executed the *Programmatic Agreement among the Department of Defense, the Advisory Council on Historic Preservation, the Guam State Historic Preservation Officer, and the Commonwealth of the Northern Mariana Islands State Historic Preservation Officer Regarding the Military relocation to the Islands of Guam and Timian* (2011 Programmatic Agreement [PA]). The 2011 PA was developed in consultation with the Guam and CNMI State Historic Preservation Offices (SHPO), the Advisory Council on Historic Preservation (ACHP), the National Park Service (NPS), other federal and Guam and CNMI agencies, and the public.

On February 7, 2011, the Undersecretary of the Navy sent a letter to the Governor of Guam reiterating the 4-pillars that would guide DoD's approach to the military buildup. The DON remains committed to the 4-pillars. Relative to the analysis in the 2015 Final SEIS, one of the pillars was a commitment to provide 24 hour a day, 7 days a week access to the Págat Village and Págat Cave historical sites, to include the existing trail. Having deferred a decision on the location for the LFTRC along Route 15, the DON subsequently applied a probabilistic methodology to more precisely model the size of the SDZ associated with the Multi-Purpose Machine Gun (MPMG) Range that will be part of the LFTRC. Application of this methodology reduced the size of the overall footprint and enabled the DON to reevaluate potential LFTRC locations on Guam, including those locations previously considered but not carried forward for detailed analysis. This reevaluation resulted in the identification of additional LFTRC preliminary alternatives. In light of this information, the DON initially elected to prepare a SEIS limited solely to the evaluation of potential impacts associated with the construction and operation of a LFTRC on Guam (hereinafter "LFTRC SEIS"). The DON issued a Notice of Intent (NOI) to prepare the LFTRC SEIS on February 9, 2012, (77 FR 6787), and held three public scoping meetings on Guam on March 17, 19, and 20, 2012.

On April 27, 2012, the U.S.-Japan Security Consultative Committee issued a joint statement announcing its decision to adjust the plans outlined in the May 2006 Roadmap for Realignment Implementation. In accordance with these 2012 Roadmap Adjustments, the DoD adopted a new force posture in the Pacific, providing for a materially smaller and reconfigured force on Guam. In conjunction with changes to the mix of personnel involved in the relocation, the force adjustments reduced the originally planned relocation of approximately 8,600 Marines with 9,000 dependents to a force of approximately 5,000 Marines with approximately 1,300 dependents. That decision prompted the DON's review of the actions previously planned for Guam and approved in the 2010 Final ROD. This review concluded that while some actions remained unchanged, others, such as the size and location of the cantonment and family housing areas, could significantly change as a result of the modified force. Therefore, the DON published a new NOI on October 11, 2012, (77 FR 61746), and amended the scope of the ongoing LFTRC SEIS to add those actions that materially changed as a result of the new force posture.

The proposed change in size and composition of the new force structure under the 2012 Roadmap Adjustments and the reconsideration of the LFTRC SDZ footprint did not affect all of the decisions made in the 2010 Final ROD. For example, the location of Aviation Combat Element facilities, the air embarkation facilities (Air Mobility Command Complex), the development of the North Gate and access road at AAFB, the wharf improvements at the Navy base at Apra Harbor, and the non-live fire and maneuver training ranges on Andersen South remain unaffected by the changes in force structure resulting from the 2012 Roadmap Adjustments. For those decisions not affected by the new force structure, the 2010 Final ROD stands as the final agency action. The 2015 Final SEIS and this ROD do not include the transient aircraft carrier berthing in Apra Harbor or the U.S. Army Air and Missile Defense Task Force deployment that were addressed in the 2010 Final EIS. The disposition of those projects is independent of the proposed action analyzed in the 2015 Final SEIS and in this ROD.

**PURPOSE AND NEED:** The overarching purpose of the proposed action is to meet international agreement and treaty requirements and to fulfill U.S. national security policy requirements to provide mutual defense, deter aggression, and dissuade coercion in the Western Pacific Region. From a global strategic perspective, the U.S. maintains military capabilities in the Western Pacific to support U.S. and regional security, economic, and political interests. The Guam Military Relocation proposes distinct, yet related actions to support this position.

The purpose and need for the proposed action evaluated in the 2015 Final SEIS is to (1) ensure that the relocated Marines are organized, trained, and equipped as mandated by 10 U.S.C. § 5063, (2) satisfy individual live-fire training requirements as described in the 2010 Final EIS, and (3) establish an operational Marine Corps presence on Guam and ensure consistency with the new force posture adopted by the DoD in accordance with the 2012 Roadmap Adjustments.

**PUBLIC INVOLVEMENT:** On October 11, 2012, the DON published a NOI (77 FR 61746) to prepare a SEIS to evaluate the potential environmental impacts of the construction and operations of a main base (cantonment), family housing, a LFTRC, and associated infrastructure on Guam to support the relocation of a substantially reduced number of Marines and dependents than previously analyzed in a 2010 EIS (*Guam and Commonwealth of the Northern Mariana Islands (CNMI) Military Relocation; Relocating Marines from Okinawa, Visiting Aircraft Carrier Berthing, and Army Air and Missile Defense Task Force*). This notice included a project description and scoping meeting dates and locations. In addition, a NOI/Notice of Scoping Meetings was distributed concurrently to federal, state, and local elected officials and government agencies, non-governmental organization representatives, and other entities interested in the SEIS. The DON held three public scoping meetings on Guam on November 8, 9, and 10, 2012, which were attended by a total of 241 people. During the 60-day scoping period that concluded on December 10, 2012, the DON received 398 comment letters, including 10 duplicate comments, 131 identical form letters from members of the Community Advocates of the Raceway, and 52 comments from Community Advocates of the Raceway that attached signed petitions (collectively totaling more than 13,000 signatures). All topics identified during the scoping period were considered in the development of the scope of the environmental impact analysis.

On April 18, 2014, the U.S. Environmental Protection Agency (EPA) published a Notice of Availability (NOA) for the Draft SEIS (79 FR 21917). Concurrently, DON published a NOA and a Notice of Public Meetings (79 FR 21907) and in Guam newspapers. The Draft SEIS was distributed for public and agency review. The DON's NOA identified locations (e.g., public libraries) where the Draft SEIS was available for review, the duration of the public review and comment period, the available options for submitting comments, and the time and location of three scheduled public information meetings and public hearings on Guam.

The DON held three open-house style meetings combined with three public hearings to both inform the public about the proposed action and identified impacts and to receive written and verbal feedback about the Draft SEIS from the public. Informational posters were displayed, fact sheets about the project (including one translated into Chamorro) were handed out, and subject matter experts were available during each open house to answer questions on the Draft SEIS. Consistent with the meeting announcements, the DON provided information and supported discussion of how compliance with NHPA will be accomplished through continued implementation of the 2011 PA. Comment forms, a stenographer, and a Chamorro language translator were available during the open house portion of each meeting to receive written and oral comments. Oral comments were recorded during the public hearing portion of each meeting, and transcripts of each hearing are included in the record. The public meetings/hearings took place on Guam on May 17, May 19, and May 20, 2014. Each meeting consisted of an open house, immediately followed by a public hearing.

The public comment period for the Draft SEIS was initially scheduled to last 60 days, with a published end date of June 16, 2014. In response to public comments, the DON extended the public comment period for the Draft SEIS by 15 days to July 1, 2014. The DON received a total of 906 unique comments during the public comment period covering a number of topics.

The EPA published a NOA for the Final SEIS on July 17, 2015 (80 FR 42491). The DON published a NOA for the July 2015 Final SEIS in local newspapers and posted it on the project website ([www.guambuildupseis.us](http://www.guambuildupseis.us)). The notice announced the availability of the 2015 Final SEIS and gave an overview of the proposed actions and potential environmental impacts as presented in the document. The DON distributed copies of the 2015 Final SEIS in the same manner as the Draft SEIS (i.e., distributed to libraries on Guam, regulatory agencies, elected officials, and individuals and groups who had requested copies). The DON also mailed post cards announcing the availability of the 2015 Final SEIS to those individuals requesting such notice.

**ALTERNATIVES CONSIDERED:** NEPA requires the identification, consideration, and analysis of alternatives that contribute to the goal of objective decision making. CEQ's implementing regulations require the decision maker to consider the environmental effects of the proposed action, including a no action alternative to the proposed action (40 CFR § 1502.14). As a result of the reduced acreage requirements for the cantonment and family housing facilities, as well as other factors such as the reconfigured SDZ footprint for the proposed LFTRC, public input, refined range designs and criteria, and a reassessment of operational requirements, conflicts, and opportunities, the DON considered a broad range of siting alternatives in the Draft SEIS. Some of these siting alternatives were not feasible under the conditions evaluated in the 2010 Final EIS but were reconsidered for the 2012 Roadmap Adjustments that launched the SEIS.

**Cantonment/Family Housing:** The DON analyzed five cantonment/family housing alternatives in the 2015 Final SEIS, all of which are located on land under the custody and control of the DoD.

- **Finegayan Cantonment/Family Housing (Alternative A):** Alternative A would be completely contained on existing federally owned land. This alternative would be bound on the north by AAFB-NWF, on the east by Route 3, and on the west by a cliff line (within federal property), the Haputo Ecological Reserve, and the Philippine Sea. The site also would be bound to the east by limited residential development and to the south by the Dos Amantes planned area, also known as the former Harmon Village (non-federal property). This alternative would comprise approximately 1,495 acres (605 ha) within one contiguous parcel of land, although the family housing area would be separated from the cantonment core by approximately 1.5 miles (2.4 kilometers [km]).
- **Finegayan Cantonment/South Finegayan Family Housing (Alternative B):** Alternative B would include approximately 1,450 acres (587 ha) of federally owned land. The cantonment area of this alternative would be in the same location as the proposed cantonment for Alternative A. The family housing area would be located at the South Finegayan site, approximately 1.0 mile (1.6 km) from the southern boundary of Finegayan. The portion of the South Finegayan parcel proposed for development of family housing would cover approximately 290 acres (117 ha).
- **AAFB Cantonment/Family Housing (Alternative C):** Alternative C would be located on AAFB, which is bound to the north and east by the Pacific Ocean, to the south by privately owned residential areas, and to the west by Route 9 and AAFB-NWF. Alternative C would utilize approximately 1,819 acres (736 ha) of federally owned land. The cantonment/family housing areas of Alternative C would not be contiguous, but both areas would be contained within the same installation fence line. The family housing area for Alternative C would be located at the current AAFB family housing area approximately 2 miles (3.2 km) southeast of the proposed cantonment area.

- **Barrigada Cantonment/Family Housing (Alternative D):** Alternative D would be located on the eastern side of Guam, with Route 15 bordering the site to the east and south, and Routes 16 and 10 to the west. The northern and southern sections of the Barrigada property are connected by a strip of open space that was the former Nimitz Golf Course. Alternative D would comprise approximately 1,194 acres (483 ha) of federally owned land. The cantonment and family housing areas would be located on one contiguous parcel of land. This is the environmentally preferred alternative for cantonment/family housing.
- **Finegayan Cantonment/AAFB Family Housing (Alternative E):** Alternative E, the preferred alternative in the 2015 Final SEIS, would consist of a combination of the main cantonment at Finegayan that was previously analyzed in the Draft SEIS under Alternatives A and B, and the family housing at AAFB that was analyzed in the Draft SEIS under Alternative C. Alternative E would comprise approximately 1,723 acres (697 ha) of federally owned land. The cantonment for this alternative would consist of 1,213 acres (491 ha) located at Finegayan. The family housing area for Alternative E would consist of 510 acres (206 ha) located at the current AAFB family housing area.

**Live-Fire Training Range Complex:** The DON analyzed five alternatives for the LFTRC in the 2015 Final SEIS. As identified in the Final SEIS, the location for the hand grenade range is common to all LFTRC alternatives and is located at Andersen South as identified in the Final SEIS. Working with the Federal Aviation Administration (FAA), establishment of Special Use Airspace (SUA) would be required for each alternative. Configuration of the SUA would be specific to each LFTRC alternative, the determination of which would be made with issuance of this ROD.

- **Route 15A (Alternative 1):** Alternative 1 would consist of approximately 3,762 acres (1,522 ha) and would require federal land acquisition of an estimated 872 acres (353 ha) of Chamorro Land Trust Commission, Guam Ancestral Lands Commission (GALC), and GovGuam lands. Direct physical disturbance would potentially occur on approximately 383 acres (155 ha) of this site for the construction of the individual ranges, range support building, parking areas, range towers, internal range access roads, a perimeter fence, and the realignment location of Route 15. Approximately 3,379 acres (1,367 ha) would include lands and submerged lands within the SDZ that would not be directly impacted as a result of construction or operation of the LFTRC. This includes approximately 574 acres (232 ha) of GovGuam land and 2,805 acres (1,135 ha) of the submerged lands of the Pacific Ocean.
- **NAVMAG (East/West) (Alternative 2):** Alternative 2 would consist of approximately 3,815 acres (1,544 ha) (not including the hand grenade range at Andersen South) and would require acquisition of approximately 1,894 acres (766 ha) of privately owned and GovGuam land. Direct physical disturbance would occur on approximately 382 acres (154 ha), including 275 acres (111 ha) for the construction of the individual ranges, range support building, internal range access roads, and a perimeter fence, plus approximately 107 acres (43 ha) to construct an external LFTRC access road from Route 4. The remaining approximately 3,433 acres (1,389 ha) would include 3,026 acres (1,225 ha) of lands within the SDZ and 407 acres (165 ha) of land surrounding the individual ranges that would not be directly affected by construction or operation of the LFTRC. Alternative 2 would be located in a single location on the non-federal land to the southeast of the NAVMAG. The ranges would be oriented to the west and the composite SDZ would extend over portions of the NAVMAG. Access to the ranges would be via a new access road from Dandan Road that would be constructed with the LFTRC.

Approximately 5 miles (8 km) of roads would be constructed to provide access between the individual ranges. This is the environmentally preferred alternative for the LFTRC.

- NAVMAG (North/South) (Alternative 3): Alternative 3 would comprise approximately 3,549 acres (1,436 ha) (not including the stand-alone hand grenade range at Andersen South) and would require acquisition of 252 acres (102 ha) of GovGuam and privately owned lands. Approximately 370 acres (150 ha) would be required for construction of the proposed range facilities, while 3,179 acres (1,286 ha) would be land within the SDZ that would not be directly affected by construction or operation of the LFTRC. The 370 acres (150 ha) that would be developed would include the areas for construction of the individual ranges, range support building, range access roads, munitions magazine relocation area, and a perimeter fence along the western edge of the LFTRC. An estimated 72 new concrete munitions storage magazines would be constructed at Orote Point to accommodate the transfer of munitions from the existing magazines that would be encumbered by the range SDZs. The existing magazines would be abandoned in place.
- NAVMAG (L-Shaped) (Alternative 4): Alternative 4 would consist of approximately 4,895 acres (1,981 ha) (not including the hand grenade range at Andersen South) and would require the acquisition of approximately 914 acres (370 ha) of privately owned and GovGuam land. Direct physical ground disturbance would occur on approximately 477 acres (193 ha), which would include approximately 356 acres (144 ha) for the construction of the individual ranges, range support building, internal range access roads, munitions magazine relocation area, and a perimeter fence along the western and southern edges of the LFTRC, and approximately 121 acres (49 ha) to construct an external LFTRC access road from Route 4 to the east/west facing ranges (see Figure 2.5-1). The remaining 4,418 acres (1,788 ha) would include 4,165 acres (1,686 ha) of land within the SDZ and 253 acres (102 ha) of land surrounding the individual ranges that would not be built up. An estimated 66 new concrete munitions storage magazines would be constructed at Orote Point to accommodate existing magazines that would be encumbered by the range SDZs. The existing magazines would be abandoned in place.

Alternative 4 would be divided between two locations: the MPMG Range and range maintenance facility would be located in the same locations identified in Alternative 3, and the other ranges would be located on adjacent non-federal property to the southeast of the NAVMAG (near the area of Alternative 2). Access to the MPMG Range and range maintenance building would be the same as described for Alternative 3. Approximately 1 mile (1.6 km) of new roadway would be required.

Access to the ranges located east of the NAVMAG would occur via a new access road from Route 4. The new access road would follow the existing road from Route 4 to the Dandan Communication Site and then would continue to the KD Rifle Range. Access between the ranges proposed in the southeastern portion of the LFTRC would be via approximately 3.0 miles (4.8 km) of new roads constructed as part of the LFTRC.

- AAFB-NWF (Alternative 5) (Preferred Alternative): Alternative 5 would consist of approximately 4,016 acres (1,625 ha) (not including the hand grenade range at Andersen South). Although Alternative 5 would not require acquisition of non-federal land, access restrictions already established by the USFWS at the Ritidian Unit of the Guam NWR would be adjusted to account for the establishment of the SDZs for the LFTRC. The Ritidian Unit of the Guam NWR is owned and managed by the USFWS. The DON would pursue an agreement with the USFWS in accordance with the provisions of section 2822 of the FY 2015 NDAA that would allow for

the continued management of the Ritidian Unit consistent with the purposes for which it was established and the operation of the SDZs associated with the LFTRC alternative at AAFB-NWF. The DON anticipates that access restrictions will be addressed in this agreement.

Construction of Alternative 5 would cause direct disturbance to approximately 315 acres (128 ha) of land, including 256 acres (104 ha) for the construction of the individual ranges, range support building, range towers, internal range access roads, a perimeter fence (all within federally controlled land at AAFB-NWF), and the potential relocation of the USFWS facilities within the Ritidian Unit of the Guam NWR that would be encumbered by the range SDZs. The remaining approximately 59 acres (24 ha) of disturbed area would be required for construction to improve existing roadways from the intersection of Routes 3, 3A, and 9 to the Ritidian Unit of the Guam NWR. Conclusion of the consultation under section 7 of the Endangered Species Act (ESA) excluded the proposed relocation of the USFWS facility and the improved access road to the Ritidian Unit of the Guam NWR. Any decisions ensuring continued access to the Ritidian Unit of the Guam NWR are dependent on the outcome of the negotiation of the agreement authorized by section 2822 of the FY 2015 NDAA. The remaining 3,701 acres (1,498 ha) in the overall Alternative 5 footprint would include additional lands and submerged lands under the exclusive custody and control of the DON and the USFWS within the SDZ that would not be affected by construction. This includes approximately 267 acres (108 ha) of the Ritidian Unit of the Guam NWR and 3,434 acres (1,390 ha) of the submerged lands of the Philippine Sea.

In compliance with CEQ's implementing regulations, the DON analyzed the potential environmental consequences of implementing each alternative (and each combination of a cantonment/family housing and a LFTRC alternative) with the same level of scrutiny. The 2015 Final SEIS evaluated all alternatives for potential direct, indirect, additive (associated with combinations of cantonment/family housing and LFTRC alternatives), and cumulative impacts.

**No-Action Alternative:** Under the No-Action Alternative, the DON would continue to implement the 2010 Final EIS and ROD. The decision to construct and operate the LFTRC would remain deferred, and the DON would establish a cantonment/family housing area for a larger force of approximately 8,600 Marines and approximately 9,000 dependents on federally controlled lands at Finegayan and South Finegayan by acquiring land known as the former FAA parcel. The No-Action Alternative is not a reasonable alternative because it would not meet the purpose and need for the proposed action as defined above. Foremost, it would be inconsistent with the new force posture adopted by the DoD in accordance with the 2012 Roadmap Adjustments that provides for a materially smaller relocated force on Guam. Furthermore, the No-Action Alternative would neither satisfy the training requirements for the relocated Marines as mandated by 10 U.S.C. § 5063 nor satisfy the individual live-fire training requirements as described in the 2010 Final EIS and ROD. Although the No-Action Alternative presumes the course of action identified in the 2010 ROD, for purposes of assessing the environmental impacts of the proposed alternatives in the 2015 SEIS, the DON compared the impacts of the proposed action to the baseline conditions identified in the 2010 Final EIS. The DON updated baseline conditions, as appropriate, based upon the availability of new information.

**ENVIRONMENTAL IMPACTS:** The DON prepared the 2015 Final SEIS to evaluate the potential environmental consequences of implementing each of the alternatives that were carried forward for analysis. Impacts were assessed for the following resource areas: geological and soil resources; water resources; air quality; noise; airspace; land and submerged land use; recreation; terrestrial biological resources; marine biological resources; cultural resources; visual resources; ground transportation; marine transportation; utilities; socioeconomics and general services; hazardous materials and waste; public

health and safety; and environmental justice/protection of children. The following discussion summarizes environmental impacts for the alternatives selected for implementation in this ROD (Alternative E and Alternative 5) and only addresses those resources that may result in significant impacts or significant but mitigable impacts. The significant impacts designation applies to impacts that may be significant, and either no mitigation measures were identified that could reduce the impact to a less than significant level or the impact may remain significant even with the application of mitigation measures. The significant but mitigable impacts designation applies when the impact on a resource may be significant without mitigation but may be reduced to a less than significant level with the application of identified mitigation measures. This section of the ROD summarizes the potential impacts, while associated mitigation measures are summarized in a later section.

The 2015 Final SEIS also evaluated additive impacts and cumulative effects. Additive impacts are those associated with a particular cantonment/family housing alternative being paired with a particular LFTRC alternative (e.g., the traffic generated between the cantonment and the LFTRC or the effects of installing information technology/communications [IT/COMM] infrastructure between a specific cantonment/family housing area, a LFTRC, and other DoD facilities on Guam). Cumulative effects are the potential impacts associated with implementing the proposed action in conjunction with those projects that remained final under the 2010 ROD and not subject to further analysis and other past, present, and reasonably foreseeable future projects on Guam.

#### **Significant Impacts of Cantonment/Family Housing Alternative E – Finegavan/AAFB**

##### **Water Resources**

###### **Construction Impacts**

*Groundwater:* The Guam Waterworks Authority's (GWA) interceptor sewer from AAFB to the Northern District Wastewater Treatment Plant (WWTP) is in a state of deterioration, and the number of spills from this system exceeds spill rate norms for similar wastewater systems. Increased wastewater flows associated with the construction/DoD workforce and induced civilian population growth during the construction phase of Alternative E will potentially accelerate deterioration and increase the rate of sewage spills, resulting in significant but mitigable indirect impacts to groundwater quality.

*Nearshore Waters:* Increased wastewater flows associated with induced civilian and construction/DoD workforce growth under Alternative E would result in a significant and unmitigable, indirect impact to nearshore waters from increased wastewater discharge from the Northern District WWTP outfall. The Northern District WWTP is non-compliant with the current (2013) National Pollutant Discharge Elimination System (NPDES) permit and increasing the wastewater discharge and corresponding increases in pollutants (e.g., orthophosphates, nitrate-nitrogen, and ammonia) from a non-compliant treatment plant would be a significant indirect impact during the period of noncompliance. WWTP upgrades are not anticipated to be completed until early in the operational phase of the proposed action. There would be an indirect and unmitigable significant impact to nearshore waters during construction until upgrades are complete.

###### **Operation Impacts**

*Groundwater:* Operation of the cantonment/family housing facilities under Alternative E would result in a significant but mitigable impact to groundwater in the form of a long-term increase in annual groundwater production (withdrawal) of 1.7 million gallons per day, which could result in a localized significant indirect impact to the Northern Guam Lens Aquifer (NGLA). In addition, the GWA interceptor sewer from AAFB to the Northern District WWTP is in a state of deterioration that requires refurbishment.



Increased wastewater flow from the proposed relocation would potentially accelerate this deterioration and increase the rate of sewage spills, resulting in a significant but mitigable indirect impact to groundwater quality from potential exposure to additional raw sewage.

*Nearshore Waters:* Operation of the cantonment and family housing facilities under Alternative E would result in a significant but mitigable impact to nearshore waters from increased wastewater discharge and corresponding pollutants as described above from the Northern District WWTP outfall. Increasing wastewater discharge from a non-compliant treatment plant would be a significant indirect impact during the period of non-compliance.

#### Terrestrial Biological Resources

##### Construction Impacts

*Vegetation:* Construction of the cantonment facilities under Alternative E would result in a significant but mitigable impact to vegetation as a result of the conversion of 780 acres (316 ha) of limestone forest to developed area. Construction of the family housing facilities under Alternative E would have a less than significant impact to this resource.

*Terrestrial Conservation Areas:* Construction of the cantonment facilities under Alternative E would result in a significant but mitigable impact to terrestrial conservation areas as a result of the conversion of 1,065 acres (431 ha) of Overlay Refuge lands to developed area.

*Special-Status Species – Endangered Species Act (ESA) (16 U.S.C. §§ 1531 et seq.) – Listed/Proposed Species:* Construction of the cantonment and family housing facilities under Alternative E would result in significant but mitigable impacts to special-status species (ESA-listed/proposed species) as a result of impacts to 719 acres (291 ha) of Mariana fruit bat recovery habitat, 719 acres (291 ha) of Mariana crow recovery habitat, 507 acres (205 ha) of Guam rail recovery habitat, 719 acres (291 ha) of Guam Micronesian kingfisher recovery habitat, and 648 acres (262 ha) of *Serianthes* recovery habitat conversion to developed area.

*Special-Status Species – Guam-Listed and Species of Greatest Conservation Need (SOGCN):* Impacts and mitigation associated with Guam-listed species that are also listed under the ESA would be the same as those described above. Impacts to other Guam-listed species from construction of the cantonment facilities under Alternative E would include significant but mitigable impacts to special-status species (Guam-listed and SOGCN) as a result of the loss of 765 acres (310 ha) of occupied moth skink and Pacific slender-toed gecko habitat.

##### Operation Impacts

*Terrestrial Conservation Areas:* Operation of the cantonment/family housing facilities under Alternative E would result in a significant but mitigable impact to terrestrial conservation areas as a result of potential increased usage by military and civilian personnel that could damage the vegetation of the Haputo Ecological Reserve Area (ERA).

*Special-Status Species – ESA-Listed/Proposed Species:* Operation of the cantonment/family housing facilities under Alternative E would result in significant but mitigable impacts to special-status species (ESA-listed/proposed species) as a result of impacts to Mariana fruit bat habitat from light, noise, and human activity.

## Marine Biological Resources

### Construction Impacts

Induced civilian and construction/DoD workforce growth under Alternative E would result in a significant, unmitigable, indirect impact to marine flora and invertebrates, fish, and Essential Fish Habitat (EFH) from increased wastewater discharge and corresponding increases in pollutants (e.g., orthophosphates, nitrate-nitrogen, and ammonia) from the Northern District WWTP outfall. The Northern District WWTP is non-compliant with the standards required by its current NPDES permit and increasing the wastewater discharge from a non-compliant treatment plant would be a significant, indirect impact. WWTP upgrades are not anticipated to be completed until early in the operational phase of the proposed action. There would be an indirect and unmitigable, significant impact to nearshore waters during construction until upgrades are complete.

### Operation Impacts

Operation of the cantonment and family housing facilities under Alternative E would result in a significant but mitigable impact to marine flora and invertebrates, fish, and EFH from increased wastewater discharge, as described above, from Northern District WWTP outfall. Increasing wastewater discharge from a non-compliant treatment plant would result in significant, indirect impacts during the period of non-compliance.

## Cultural Resources

### Construction Impacts

Construction of the cantonment/housing family housing facilities under Alternative E would result in significant but mitigable, potential, direct, adverse effects to 17 historic properties (16 National Register of Historic Places [NRHP]-eligible archaeological sites and 1 NRHP-eligible structure) and 14 buildings not fully evaluated for NRHP eligibility and effects. All potential effects to historic properties are subject to further review under the 2011 PA.

## Utilities

### Construction Impacts

*Wastewater:* Construction of the cantonment/family housing facilities under Alternative E would result in significant direct impacts during the period of non-compliance with the 2013 NPDES permit at the Northern District WWTP.

### Operation Impacts

*Potable Water (NGLA Impact):* Operation of the cantonment/family housing facilities under Alternative E would result in significant but mitigable, short-term, localized significant impacts to the affected basin within the NGLA but less than significant impacts to the overall NGLA. Increased withdrawal from the NGLA may result in higher levels of chloride concentrations. According to U.S. Geological Survey (USGS) modeling of the NGLA, the chloride concentration spikes could be a localized phenomenon.

*Wastewater:* Operation of the cantonment/family housing facilities under Alternative E would result in significant direct impacts during the period of non-compliance with the 2013 NPDES permit at the Northern District WWTP. Operation of the cantonment/family housing facilities would also generate additional wastewater flow from both AAFB family housing facilities and Finegayan cantonment that would use the existing GWA interceptor sewer system from AAFB to the Northern District WWTP. This interceptor sewer system is in a state of deterioration that requires rehabilitation. Increased flow

associated with Alternative E would accelerate this deterioration and could lead to failure of the sewer system. This would represent a significant but mitigable impact.

#### **Socioeconomics and General Services**

##### **Construction and Operation Impacts**

*Population Change:* The population change associated with the Marine Corps relocation would be considered significant during both the construction and operations phases (given that population change would exceed 2%). Between 2021 and 2023, the population would be 5.6% higher than it otherwise would have been without the proposed action. At a steady-state the difference would be 4.1%. However, the significant change would not be considered entirely negative. Impacts related to population change would be mixed, with some adverse and some beneficial outcomes associated with the increased demand for public services and sociocultural issues described below.

*Public Services:* During construction, all categories of public services agencies combined would require an estimated 185 additional employees, an increase of 3.6% over baseline staffing levels. This maximum increase in staffing levels would be temporary, lasting from approximately 2021 through 2023. During this two-year period, staffing requirements for many public service agencies would increase by more than 2%. Given existing deficiencies at many agencies, significant impacts were identified. However, over the longer term, Guam government (GovGuam) agencies would require an additional 66 staff (an increase of 1.3% over baseline levels), which would be less than significant. From a broad perspective, looking at the entire group of GovGuam public services agencies overall, impacts would be considered significant in the short-term and less than significant in the long term. While the total number of additional staff required during the relatively short construction phase may appear manageable (representing only a 3.6% increase over baseline staffing), other factors, including existing shortfalls in staffing and deficiencies in facilities and equipment were considered when determining significance. The population increase likely would not result in a significant sustained increase in demand on Guam's public services and permitting agencies, and the estimated increases in GovGuam tax revenues would likely compensate for any increased demand on public services that would occur. However, while additional tax revenues to GovGuam associated with the proposed action would compensate for additional costs that would be incurred and ample time should be available to plan for short-term staff increases, GovGuam agencies may still face challenges.

*Sociocultural Issues:* There is a potential for sociocultural impact associated with an increase in crime and social disorder, political and Chamorro issues, and community cohesion to occur, but the magnitude of the impacts are difficult to predict and could vary substantially based on policy and program choices yet to be made. For these reasons, and for the purposes of the 2015 Final SEIS, impacts to sociocultural issues are conservatively classified as significant but mitigable.

#### **Environmental Justice and Protection of Children**

##### **Construction and Operation Impacts**

*Socioeconomics and General Services:* Temporary population growth may stress some sectors of the Guam economy (e.g., housing, costs of goods and services). In the short-term (during construction), direct and indirect impacts to health services would be significant; during the steady-state period (operational phase), impacts to public health and human service agencies would be less than significant.

This impact would be felt more severely by low-income people, who often do not have resources to buffer hard economic times. However, there would also be some economic benefits as a result of increased employment opportunities. There would be adverse and disproportionate socioeconomic impacts in terms

of environmental justice on low-income populations; however, some of the socioeconomic impacts would be beneficial (e.g., economic opportunities).

**Public Health and Safety:** Since the number of public health and safety professionals required to maintain current levels of service at public health and safety agencies would increase by more than 2%, and because deficiencies currently exist in facilities and equipment at these agencies, there would be short-term, direct, and indirect significant impacts to public health agencies and significant, direct, and indirect impacts on public safety agencies, both in the short term (during construction) and during the steady-state period (during operation). Given that public health agencies that serve low-income and uninsured populations already have insufficient staffing levels, population increases would further strain these resources, causing a significant environmental justice impact.

#### **Significant Impacts of LFTRC Alternative 5 – AAFB-NWF**

##### **Geological and Soil Resources**

###### **Construction Impacts**

**Topography:** Construction of the LFTRC under Alternative 5 would result in a significant, direct, long-term impact to topography in the form of major changes to surface elevation from excavation and filling during construction.

##### **Land and Submerged Land Use**

###### **Operation Impacts**

**Public Access:** Although the land and submerged land use within the Ritidian Unit of the Guam NWR would remain as Conservation land use, there will be access restrictions to those lands within the SDZs while the ranges are in use. Such restrictions would be limited to the minimum SDZ area and time period required for the training on the LFTRC. Access to submerged lands adjacent to the Ritidian Unit under the custody and control of the DON would be similarly restricted.

##### **Recreational Resources**

###### **Operation Impacts**

Operation of the LFTRC under Alternative 5 would result in significant impacts as a result of intermittent loss of access (while the SDZ for the LFTRC is operational) to existing features or sites such as hiking trails, caves and other sites of interest within the Ritidian Unit of the Guam NWR. As discussed previously, access to areas within the Ritidian Unit of the Guam NWR will be addressed in the Refuge Agreement between the DON and the USFWS, pursuant to the FY 2015 NDAA and will ensure maximum, continued access. Some of these sites are currently open for access during normal refuge hours; access to others are currently restricted by the USFWS. Access to the areas within the largest of the range SDZs would be restricted during that range's operational periods. Recreational resources within that SDZ include a portion of existing hiking trails and caves with pictographs within the Ritidian Unit of the Guam NWR.

##### **Terrestrial Biological Resources**

###### **Construction Impacts**

**Vegetation:** Construction of the LFTRC under Alternative 5 would result in a significant but mitigable impact to vegetation as a result of the conversion of 219 acres (89 ha) of limestone forest to developed area.

*Terrestrial Conservation Areas:* Construction of the LFTRC under Alternative 5 would result in a significant but mitigable impact to terrestrial conservation areas as a result of the conversion of 298 acres (121 ha) of Overlay Refuge lands to developed area.

*Special-Status Species – ESA-Listed/Proposed Species and Critical Habitat:* Construction of the LFTRC under Alternative 5 would result in a significant but mitigable impact to special-status species as a result of impacts to 215 acres (87 ha) of Mariana fruit bat recovery habitat, 215 acres (87 ha) of Mariana crow recovery habitat, and 215 acres (87 ha) of Guam Micronesian kingfisher recovery habitat conversion to developed areas. The Mariana fruit bat may also be impacted by noise, human disturbance, and lighting during both construction and operation because they are present in the action area.

*Special-Status Species – Guam-Listed and SOGCN:* Impacts associated with Guam-listed species that are also federally listed would be the same as described above for those species. No additional Guam-listed species are known to occur in the project area for Alternative 5.

#### **Cultural Resources**

##### **Construction Impacts**

Construction of the LFTRC under Alternative 5 would result in significant but mitigable impacts. Twenty historic properties would be directly, adversely affected, and culturally important natural resources could be impacted by vegetation removal.

##### **Operation Impacts**

Operation of the LFTRC under Alternative 5 would result in significant impacts, which are not fully mitigable, due to restricted access to two NRHP-eligible archaeological sites. Significant but mitigable impacts would result from indirect, adverse effects to three NRHP-eligible archaeological sites as a result of substantial changes in the audible environment.

##### **Significant Additive Impacts of the Selected Alternatives**

For the purposes of the 2015 Final SEIS, additive impacts are those that would result specifically from the combination of a cantonment/family housing alternative with a LFTRC alternative. These project impacts were addressed in Chapter 6 of the 2015 Final SEIS. The additive impacts resulting from the selected combination of cantonment/family housing Alternative E and LFTRC Alternative 5 would yield additional, significant but mitigable impacts to two resource areas: cultural resources and ground transportation.

#### **Cultural Resources**

There would be significant but mitigable impacts as a result of potential adverse effects to six known historic properties from construction of IT/COMM lines. There would be no adverse effects from operation of IT/COMM lines once construction is complete.

#### **Ground Transportation**

There would be a slight increase in traffic on segments and intersections between the cantonment at Finegayan, the family housing at AAFB, and the LFTRC at AAFB-NWF. There would be potentially significant impact on eight segments in at least one direction and ten intersections for weekday a.m. and/or p.m. peak hours.

### **Significant Cumulative Impacts of the Selected Alternative**

The assessment of cumulative effects presented in Chapter 7 of the 2015 Final SEIS addressed the potential long-term impacts of recently completed, present, and reasonably foreseeable future projects in conjunction with the proposed action. The resources most likely to be adversely affected by these projects are terrestrial biological and cultural resources. This is largely due to the fact that most projects would result in ground disturbance and potential for removal or disturbance of habitat and cultural resources. The resource areas that benefit most from the projects evaluated for cumulative effects are ground transportation, utilities, socioeconomic and general services, public health and safety, and environmental justice/protection of children. This is because many of the evaluated projects are capital improvement projects designed to support the health and safety of the community, as discussed in the mitigation section below. A nearly equal number of projects having adverse and beneficial impacts were identified for geological and soil resources and water resources. Air quality, noise, airspace, land use, recreational resources, and marine transportation resource areas are impacted by fewer projects than other resource areas, either beneficially or adversely.

A brief summary of cumulative impacts to terrestrial biological resources and cultural resources is discussed below.

#### **Terrestrial Biological Resources**

The following are the general types of projects or activities that would result in cumulative impacts to terrestrial biological resources:

- Loss or conversion of native habitat would reduce the potential recovery and survival of ESA-listed species creating an adverse impact.
- Reductions and management activities (e.g., fencing, removal) of invasive species and/or feral ungulates or their access to habitat would have a beneficial impact.
- Projects involving ground disturbance (e.g., construction of housing or new and widened roadways) would contribute to an adverse cumulative effect. Projects that are renovations or improvements to existing facilities (e.g., resurfacing a roadway) within the existing facility footprint would have no impact on terrestrial biological resources.

The proposed action and recently completed projects, present projects, and reasonably foreseeable projects all have the potential to contribute to adverse cumulative effects to terrestrial biological resources. The primary impact from these projects would be the loss of native habitat and the increased potential for the spread of invasive species. Most of the projects require ground disturbance, and the assumption is that terrestrial biological resources would be affected. The terrestrial biological resource health on Guam would continue to decline, and threatened and endangered species would continue to be vulnerable to natural and anthropogenic stressors.

#### **Cultural Resources**

The following are the general types of projects that would result in cumulative impacts to cultural resources:

- Projects that result in adverse effects to historic properties can lead to a cumulative loss of the archaeological and built-historical record that could contribute to an adverse cumulative impact.
- Projects that affect culturally important natural resources can lead to an adverse cumulative impact.

- Projects that lead to reduced access to cultural sites can lead to an adverse cumulative impact.

Recently completed projects, present projects, and reasonably foreseeable projects all have the potential to contribute to adverse cumulative effects to cultural resources. The primary impact from these projects would be direct and indirect, adverse effects to historic properties, archaeological sites, and impacts to culturally important natural resources. Direct and indirect, adverse effects would contribute to the decline in preservation of cultural resources. Other factors unrelated to the project (e.g., vandalism and weathering) would continue to adversely impact cultural resources. Disturbance or destruction of cultural resources would further diminish the regional historic record, thus decreasing the potential of its overall research contribution. The loss of culturally important natural resources would reduce opportunities for important cultural practices. Reduced access to cultural sites, whether for cultural practices, recreation, tourism, or academic study would also diminish the cultural resources of Guam.

**MITIGATION MEASURES AND MONITORING:** The impact analyses described in the 2015 Final SEIS considered the influence of Best Management Practices (BMPs) as well as mitigation measures. BMPs are existing policies, practices, and measures that the DON will adopt to proactively reduce the environmental impacts of designated activities, functions, or processes. Although BMPs help to avoid, minimize, or reduce/eliminate impacts, they are distinguished from potential mitigation measures because they are (1) included in the proposed action, (2) ongoing, regularly occurring practices, or (3) not unique to the proposed action. In other words, the BMPs are proposed as part of the action (all alternatives) and are not targeted mitigation measures identified in response to the findings of the NEPA environmental review process. Specific BMPs that are included in the proposed action are described in section 2.8 of the 2015 Final SEIS.

Consistent with the CEQ Guidance, mitigation measures developed to address specific impacts identified in the 2015 Final SEIS analysis are described below. Mitigation measures will be monitored and tracked as required by applicable DON regulations and instructions. Implementation of mitigation measures will be subject to availability of funding. Implementation of ground transportation mitigation projects will be determined through the Defense Access Road Program.

#### **Mitigation Measures for Impacts Associated with the Cantonment/Family Housing Alternative E**

##### **Mitigation for Water Resources Impacts**

###### **Groundwater**

- Refurbishment of the GWA interceptor sewer system will mitigate significant impacts to groundwater resources during the construction phase of the proposed action. Section 2822(d) of the FY 2014 NDAA directed the Secretary of Defense to convene the Economic Adjustment Committee (EAC) established in Executive Order No. 127887 “to consider assistance, including assistance to support public infrastructure requirements, necessary to support the preferred alternative for the relocation of Marine Corps forces to Guam.” Section 2822(d) further requires the EAC to submit a report to congressional defense committees which includes an Implementation Plan that addresses public infrastructure requirements necessary to support the preferred alternative identified in the Final SEIS. The EAC Implementation Plan, which was coordinated with EAC federal agencies, includes detailed descriptions of work, costs, and schedules for completion of construction, improvements, and repairs to Guam public infrastructure affected by the realignment, including the refurbishment of the GWA interceptor sewer from AAFB to the Northern District WWTP, and expansion/rehabilitation of the NGLA monitoring network for sustainment of the NGLA. To support the Implementation Plan, EAC

assessed GWA water and wastewater systems that may be affected by the preferred alternative. The water and wastewater assessment recommended an updated and expanded NGLA monitoring well network and the refurbishment of the GWA interceptor sewer from AAFB to the Northern District WWTP. In addition to funds (\$106.4 million) previously appropriated to the Secretary of Defense under section 8102 of the FY 2014 Consolidated Appropriations Act (Pub. L. No. 113-76), DoD will seek additional funding (\$67.5 million) to complete the necessary Guam water and wastewater system upgrades identified in the EAC Implementation Plan that are estimated to be no more than \$173.9 million.

- The DoD will, as appropriate, implement enhanced water conservation measures for the proposed action, improve existing DoD potable water systems to reduce system leaks, adjust pumping rates at DoD wells, and increase the use of existing wells and/or surface water from Fena Reservoir to reduce withdrawals from the NGLA.
- The DoD will continue to support the Guam Water Resources Development Group (GWRDG) and support the USGS's recommendation to rehabilitate and expand the hydrologic data collection network and monitoring necessary to ensure sustainable management of NGLA.

#### Nearshore Waters

Upgrading the Northern District WWTP treatment systems (as required by the 2013 NPDES permit, the section 7 ESA consultation and the Magnuson-Stevens Fisheries Conservation Management Act [MSA] [16 U.S.C. § 1801-1891(d)] consultation with the National Marine Fisheries Service [NMFS]) will mitigate significant impacts to the wastewater system on Guam once the upgrades are completed. In addition, refurbishing the main GWA sewer lines from AAFB to the Northern District WWTP along Routes 3 and 9 will mitigate potential failure of the concrete reinforced sewer lines that are in a state of deterioration. The EAC Implementation Plan will include detailed descriptions of work, costs, and schedules for completion of construction, improvements, and repairs to Guam public infrastructure affected by the realignment, including improvements and upgrades to the Guam wastewater system. The water and wastewater assessment that EAC prepared to support the Implementation Plan recommended upgrades to the Northern District WWTP and the refurbishment of the GWA interceptor sewer from AAFB to the Northern District WWTP. In addition to funds (\$106.4 million) previously appropriated to the Secretary of Defense under section 8102 of the FY 2014 Consolidated Appropriations Act (Pub. L. No. 113-76); the DoD will seek additional funding (\$67.5 million) to complete the necessary Guam water and wastewater system upgrades identified in the EAC Implementation Plan. The costs are estimated to be no more than \$173.9 million.

#### **Mitigation for Terrestrial Biological Resources Impacts**

A general description of conservation measures and mitigations for terrestrial biological resources as included in the 2015 Final SEIS are provided below. As a result of completing ESA section 7 consultation with the USFWS, the DON received a final biological opinion (BO) on July 31, 2015. This BO contains detailed descriptions of the conservation measures, BMPs, additional mitigation in the form of reasonable and prudent measures, and associated terms and conditions for minimizing the anticipated incidental take of 30 Mariana fruit bats in the form of repeated harassment. The DON commits to all the conservation measures, BMPs, reasonable and prudent measures, and terms and conditions as expressed in the BO (section B, pages 36-46, and sections K & L, pages 156-159). These measures include:



Vegetation

- Forest enhancement on a minimum of 780 acres (316 ha) of limestone forest.

Terrestrial Conservation Areas

- Install fencing.
- Install informational/educational signage.
- Develop and distribute educational materials regarding sensitive biological resources.
- Conduct monitoring of visitor use at the Haputo ERA.

Special-Status Species – Federal ESA and Proposed

- Control and suppression of brown treesnakes.
- Implement forest enhancement mitigation identified for vegetation will also benefit these species.
- Install fencing, provide informational/educational signage and educational materials regarding sensitive biological resources, and monitor of visitor use at Haputo ERA.

Special-Status Species – Guam-Listed and Species of Greatest Conservation Need

- Implement the forest enhancement mitigation identified for vegetation will also benefit these species.

**Mitigation for Marine Biological Resources Impacts**

- Upgrade the Northern District WWTP treatment systems (as required by the 2013 NPDES permit, the section 7 ESA consultation and the MSA (16 U.S.C. §§ 1801–1891(d)) consultation with the NMFS) as described above will mitigate significant impacts to marine biological resources.
- Monitor stormwater BMP effectiveness and if practicable, design and implement additional processes to determine the fate of stormwater for the Finegayan Cantonment and AAFB-NWF LFTRC, to sensitive nearshore reefs such as the habitat areas of particular concern (HAPCs) at Haputo ERA and the Ritidian Unit of the Guam NWR.
- Provide guidelines for programs to minimize impacts from training, recreation, and fishing activities for Marine Corps personnel.
- Institute physical training awareness and operational guidance that identifies appropriate physical training areas and sensitive areas that are off-limits for such activities in coordination with installation and regional resource management plans.
- Coordinate updates to the Joint Region Marianas (JRM) Integrated Natural Resources Management Plan and installation fishing instructions to include increased awareness about destructive fishing methods for all DoD personnel deployed or permanently assigned to Guam and the CNMI for submerged lands beyond the custody and control of the DoD. The DON will also consider instituting a ban on all DoD personnel from using scuba for fishing and fishing for species of local concern such as humphead wrasse and green humphead parrotfish.

**Mitigation for Cultural Resources Impacts**

- Implement the 2011 PA. Mitigation processes include reviewing projects as they are developed to confirm the identification of historic properties and appropriate measures to avoid, minimize, and mitigate adverse effects. The 2011 PA requires consultation with the public and the PA Parties, which include Guam SHPO, ACHP, NPS, Guam Preservation Trust (GPT), and the Department of Chamorro Affairs (DCA). Potential impacts to culturally important natural resources will be addressed through requirements in the 2011 PA in coordination with knowledgeable traditional practitioners.

**Mitigation for Utilities Impacts****Wastewater**

- Potential mitigation measures during construction may include constructing sewers during low flow periods by-pass pumping and having pump trucks on stand-by.
- Upgrades to the Northern District WWTP treatment systems (as required by the 2013 NPDES permit), as described above, will mitigate significant impacts to the wastewater system on Guam. In addition, refurbishing the main GWA sewer lines from AAFB to the Northern District WWTP along Routes 3 and 9 will mitigate potential failure of the concrete reinforced sewer lines that are in a state of deterioration.

**Potable Water**

- The DoD will, as appropriate, implement enhanced water conservation measures for the proposed action, improve existing DoD water systems to reduce system leaks, adjust pumping rates at DoD wells, and increase the use of surface water in northern Guam from Fena Reservoir to reduce withdrawals from the NGLA.
- The DoD will continue to support the GWRDG and the USGS' recommendation to rehabilitate and expand the hydrologic data collection network and monitoring necessary to ensure sustainable management of NGLA.
- As discussed in groundwater mitigation, expansion/rehabilitation of the NGLA monitoring network for sustainment of the NGLA will mitigate significant impacts to potable water.

**Mitigation for Socioeconomics and General Services Impacts****Public Services**

- Although the DON has determined that Adaptive Program Management as described in the 2010 ROD is no longer required (see section 2.9.2 of the 2015 Final SEIS), the DoD will continue to work towards a charter as described in the 2010 ROD and support the efforts of the Civilian Military Coordination Council (CMCC) to develop recommendations, as appropriate, regarding adjustment of construction tempo and sequencing to directly influence workforce population levels and indirectly influence induced population growth before infrastructure capabilities are exceeded. Such support may include providing project-related employment and population forecasts, participating in the identification of shortfalls in Guam public services, and assisting in the identification of federal programs and funding sources that may help GovGuam to address shortfalls.

- The DoD will continue to support existing programs that contribute and/or donate excess equipment to local agencies.

#### Sociocultural Issues

- Conduct orientation briefs, in accordance with the 2011 PA, for all incoming DoD personnel, their families, and contractors regarding cultural sensitivity in the area. All DoD personnel and contractors working on Guam will receive annual briefings. The DoD will develop the briefing in consultation with the Guam SHPO and will provide Guam SHPO with a copy of the final briefing materials.
- The DoD will continue to support the efforts of the CMCC to develop recommendations, as appropriate, regarding adjustment of construction tempo and sequencing to directly influence workforce population levels and indirectly influence induced population growth to address sociocultural issues.
- Consistent with the 2011 PA, the DoD has developed a public access plan in coordination with the public and interested parties. The access plan provides a consistent process for regular public access and a point of contact to handle requests for access to cultural sites on DoD lands.
- In accordance with the 2011 PA, the \$12 million appropriated under the FY 2012 Consolidated Appropriations Act (Pub. L. No. 112-74) for a Guam Cultural Repository facility to mitigate cumulative impacts remains available. The appropriation provides funding for a repository for curation of archaeological collections on Guam and to serve as a source of information on Guam history and culture. Guam Cultural Repository is included in the EAC Implementation Plan, which addresses public infrastructure requirements necessary to support the preferred alternative. The EAC Implementation Plan will include detailed description of work, cost, and schedule for completion of construction of the Guam Cultural Repository. After the release of this ROD, the EAC Implementation Plan will be submitted to the congressional defense committees as part of a FY 2014 NDAA reporting requirement.

#### **Mitigation for Environmental Justice and Protection of Children Impacts**

##### Socioeconomics and General Services

- The DoD will consider the recommendations, if any, of the CMCC to adjust the construction tempo and sequencing if necessary to directly influence workforce population levels and indirectly influence induced population growth before infrastructure capabilities are exceeded.

##### Public Health and Safety

- The DoD will consider the recommendations, if any, of the CMCC to adjust the construction tempo and sequencing if necessary to directly influence workforce population levels and indirectly influence induced population growth before infrastructure capabilities are exceeded.
- The construction of a public health laboratory to alleviate some existing deficiencies in Guam's public health infrastructure, and bolster Guam's capability to meet public health demands brought about by project-related population growth and the rotational nature of the deployable units for training in the region by providing a facility that would help identify, treat, and control diseases of public health concern. The EAC Implementation Plan, which was coordinated with EAC federal agencies, will include detailed descriptions of work, costs, and schedules for completion of construction for a regional public health laboratory with bio-safety level 2 and 3 analytical

testing capability. The cost estimate for a regional public health laboratory with bio-safety level 2 and 3 is no more than \$32.2 million. In addition to funds (\$13 million) previously appropriated to the Secretary of Defense under section 8102 of the FY 2014 Consolidated Appropriations Act (Pub. L. No. 113-76), DoD will seek additional funding (\$19.2 million). After the release of this ROD, the EAC Implementation Plan will be submitted to the congressional defense committees as part of a FY 2014 NDAA reporting requirement.

#### **Mitigation Measures for Impacts Associated with LFTRC Alternative 5**

##### **Mitigation for Terrestrial Biological Resources Impacts**

A general description of conservation measures and mitigations for terrestrial resources as included in the 2015 Final SEIS are provided below. As a result of completing section 7 ESA consultation with the USFWS, the DON received a final BO on July 31, 2015. This BO contains detailed descriptions of the conservation measures, BMPs, additional mitigations in the form of reasonable and prudent measures, and associated terms and conditions for minimizing the anticipated incidental take of 30 Mariana fruit bats in the form of repeated harassment. The DON commits to all the conservation measures, BMPs, reasonable and prudent measures, and terms and conditions as expressed in the BO (section B, pages 36-46, and sections K & L, pages 156-159). These measures include:

##### **Vegetation**

- Forest enhancement on a minimum of 219 acres (89 ha) of limestone forest.

##### **Special-Status Species – ESA-Listed/Proposed Species and Critical Habitat**

- Implementing the forest enhancement identified for vegetation on a minimum of 219 acres (87 ha) of limestone forest vegetation will also benefit these species.
- Control and suppression of brown treesnakes.

##### **Mitigation for Cultural Resources Impacts**

- Implement the 2011 PA. Processes will include reviewing projects as they are developed to confirm the identification of historic properties and appropriate measures to avoid, minimize, and mitigate adverse effects. The 2011 PA requires consultation with the public and the PA Parties, which include the Guam SHPO, the ACHP, NPS, GPT, and the DCA.
- Section 5(c)(4) of the 2011 PA requires development of a Range Mitigation Plan (RMP) for the construction and operation of the LFTRC. The plan will stipulate mitigation measures such as data recovery for archaeological sites, development of public education and interpretive materials, and coordination with knowledgeable traditional practitioners for culturally important natural resources.
- Partial mitigation of significant impacts resulting from changes in use and reduced access will be accomplished through the RMP, which will identify and evaluate potentially appropriate noise-reducing measures. Access will be coordinated through the existing access plan and in consultation with the USFWS.

#### **Mitigation Measures for Additive Impacts: Combination of Alternative E and Alternative 5**

##### **Cultural Resources**

- Measures outlined in the 2011 PA will reduce additive impacts to a level below significance.

### **Ground Transportation**

To reduce impacts to less than significant levels on roadway segments, the following eight roadway widening projects are recommended for implementation when determined to be eligible through the Defense Access Roads program and when funding is available:

- Route 1, from Route 3 to Route 34
- Route 1, from Route 34 to Route 16
- Route 3, from Route 3A/9 to Finegayan Main Gate
- Route 3, from Finegayan Main Gate to Finegayan Residential Gate
- Route 3, from Finegayan Residential Gate to Route 28
- Route 3, from Route 28 to South Finegayan Main Gate
- Route 3, from South Finegayan Main Gate to Route 1
- Route 28, from Chalan Balako to Route 3

In addition, the DON acknowledges that to reduce impacts to less than significant levels on intersections, improvement projects are recommended at the following intersections:

- Route 3/3A/9
- Route 3/Royal Palm Drive
- Route 1/Route 3
- Route 1/Route 27
- Route 1/Route 26
- Route 16/Route 27
- Route 16/Route 10A
- Route 1/Route 14A
- Route 1/Route 10A

### **Mitigation Measures for Cumulative Impacts**

#### **Terrestrial Biological Resources**

- No additional mitigation is proposed for cumulative impacts to terrestrial biological resources. GovGuam reviews public, private, and commercial development proposals for potential impacts to terrestrial biological resources. The USFWS monitors GovGuam, private and commercial development proposals and periodically adjusts the acreage of available recovery habitat island-wide. This adjustment is used to determine the impact of federal development proposals that must comply with section 7 of the ESA and may result in mitigation for federal development proposals.
- The DON completed section 7 ESA consultation with the USFWS on July 31, 2015. This consultation included the potential cumulative direct and indirect effects of the proposed military relocation.

#### **Cultural Resources**

- Support Guam SHPO's update of the Guam Historic Preservation Plan.

- Update, beginning in 2017, the Guam Synthesis with information from DoD studies in concert with the Guam Historic Preservation Plan.
- Nominate two or more historic properties on DoD land per year for listing in the NRHP.
- In accordance with the 2011 PA, the \$12 million appropriated under the FY 2012 Consolidated Appropriations Act (Pub. L. No. 112-74) for a Guam Cultural Repository facility to mitigate cumulative impacts remains in place. The appropriation provides funding for a repository for curation of archaeological collections on Guam and to serve as a source of information on Guam history and culture. Guam Cultural Repository is included in the EAC Implementation Plan, which addresses public infrastructure requirements necessary to support the preferred alternative. The EAC Implementation Plan details description of work, cost, and schedule for completion of construction of the Guam Cultural Repository. After the release of this ROD, the EAC Implementation Plan will be submitted to the congressional defense committees as part of a reporting requirement.

## AGENCY COORDINATION AND CONSULTATION:

### Cooperating Agency Coordination

The following agencies participated in the preparation of this SEIS as Cooperating Agencies: U.S. Air Force, FAA, Federal Highway Administration, EPA Region 9, U.S. Department of Interior (DOI) – Office of Insular Affairs, and the U.S. Department of Agriculture. As defined in 40 CFR § 1508.5, a cooperating agency “means any federal agency other than a lead agency which has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal (or a reasonable alternative) for legislation or other major federal action significantly affecting the quality of the human environment.” A cooperating agency’s responsibilities include participation in the NEPA process as early as possible, participation in the scoping process, and, upon the lead agency’s request, development of information to be included in the EIS and staff support during EIS preparation (40 CFR § 1501.6). Under 40 CFR § 1501.6, federal agencies with jurisdiction by law shall be cooperating agencies if requested by the lead agency.

Each agency signed a letter of agreement indicating its willingness to be a cooperating agency, and agreed to specific roles and responsibilities for the lead and cooperating agencies (see the 2015 SEIS, Appendix C, *Agency Correspondence*). As the lead agency, the DON has met its obligations to the cooperating agencies, including routine and periodically frequent coordination throughout the SEIS process. The cooperating agencies have also fulfilled their obligations as stipulated in their agreement.

### Agency Consultations

#### **Endangered Species Act**

In accordance with section 7 of the ESA, the DON initiated and concluded formal consultation with the USFWS on the potential impacts of the proposed military relocation on eight listed species: the Mariana fruit bat (threatened), the Mariana crow (endangered and extirpated), the Guam rail (endangered and extirpated), the Guam Micronesian kingfisher (endangered and extirpated), the green sea turtle (threatened), the hawksbill sea turtle (endangered), the Hayun lagu (*Serianthes nelsonii* endangered), and the Mariana gray swiftlet (endangered). The consultation also included analysis of potential impacts to designated critical habitat for the fruit bat, crow, and kingfisher. The USFWS provided the DON its BO on July 31, 2015. This BO concurred in the DON determination that the proposed action would not likely adversely affect the Mariana gray swiftlet, the green sea turtle, and the hawksbill sea turtle. The BO

concluded that the proposed military relocation would adversely affect the Mariana fruit bat and the Hayun lagu, but not likely appreciably reduce the likelihood of both survival and recovery of the Mariana fruit bat, the Mariana crow, the Guam rail, the Guam Micronesian kingfisher, and the Hayun lagu. The BO also concluded that the proposed action would not adversely affect critical habitat for the fruit bat, crow, and kingfisher.

In accordance with section 9 of the ESA, the BO includes an incidental take statement for the Mariana fruit bat. The USFWS anticipates that the proposed action will potentially result in the repeated incidental take of up to 30 Mariana fruit bats at Andersen AFB and Finegayan in the form of harassment leading to injury from loud aircraft noise, operation of the LFTRC, construction noise, and other human disturbance. In response to this anticipated incidental take, the BO contains additional mitigations in the form of reasonable and prudent measures, and terms and conditions for minimizing the anticipated incidental take of 30 Mariana fruit bats in the form of repeated harassment. The DON commits to all the conservation measures, BMPs, reasonable and prudent measures, and terms and conditions as expressed in the BO (section B, pages 36-46, and sections K & L pages 156-159). The BO also provides conservation recommendations to further minimize or avoid adverse impacts to listed species. At this time, DON will not be implementing any of the conservation recommendations as additional mitigation.

The DON and the USFWS entered into a MOA in June 2015 to address Guam Micronesian kingfisher conservation goals on Guam. The MOA was negotiated during the ESA section 7 consultation and also informed DON's decision for the selected alternative. In the MOA, the DON agreed to designate approximately 5,234 acres (2,118 ha) of land under the custody and control of the DoD in northern Guam to a status that will provide durable habitat protection needed to support native habitat restoration and land management for the survival and recovery of the kingfisher. Consistent with the Joint Region Marianas Integrated Natural Resources Management Plan developed in accordance with section 101 of the Sikes Act, the DON agreed to actively restore native habitat and manage, in collaboration with the USFWS, the 5,234 acres (2,118 ha) to support the reintroduction and recovery of the kingfisher. These 5,234 acres (2,118 ha) have been identified by the USFWS as habitat for the kingfisher and are necessary to offset impacts of the proposed actions. The DON and USFWS recognize that the designation of the 5,234 acres (2,118 ha) may also provide a conservation benefit to other ESA-listed species with similar habitat requirements (e.g., Mariana crow, Mariana fruit bat). This MOA became in effect upon the signing of this ROD, and commitments made within the MOA will be carried out by the DON.

On December 10, 2014, pursuant to section 7 of the ESA, the DON requested informal consultation with NMFS Pacific Islands Regional Office regarding the effects of the proposed action on ESA-listed marine species: the threatened scalloped hammerhead shark and four species of threatened coral (*Acropora globiceps*, *Acropora retusa*, *Pavona diffluens*, and *Seriatopora aculeata*). Based on further consultation with NMFS, the DON determined that only three of these recently listed coral species could occur in the vicinity of the proposed action (*Acropora globiceps*, *Acropora retusa*, and *Seriatopora aculeata*), and accordingly, the DON requested informal consultation to address potential effects to these three recently listed species. The consultation was for two separate proposed action elements, which may have the potential to affect the scalloped hammerhead shark and the three species of threatened coral identified above, and include:

- The effects of the projected increase of effluent from the Northern District WWTP outfall, a GWA facility, and
- The effects of constructing the Amphibious Vehicle Laydown Area (AVLA) in Inner Apra Harbor.

The DON determined that the projected increase of effluent from the Northern District WWTP outfall may affect, but is not likely to adversely affect *Acropora globiceps*, *Acropora retusa*, and *Seriatopora aculeata*, and the scalloped hammerhead shark because the effects are insignificant.

The AVLA includes a vehicle ramp that is the only in-water project not completed from the original 2010 EIS and associated ESA section 7 consultation with NMFS. The DON determined that the AVLA project may affect, but is not likely to adversely affect the scalloped hammerhead shark because the effects are discountable.

Consultation with NMFS concluded with a letter of concurrence on May 18, 2015 (see Appendix F.5 of the 2015 Final SEIS). NMFS agreed with the DON conclusion that the proposed action is not likely to adversely affect the scalloped hammerhead shark or the ESA-listed corals.

NMFS also agreed that the proposed action would have no effect on critical habitat. In its letter of concurrence, NMFS provided five conservation recommendations that it deemed prudent.

#### **Magnuson-Stevens Fishery Conservation and Management Act**

In accordance with the MSA, the DON initiated informal consultation with the National Oceanic and Atmospheric Administration's NMFS Pacific Islands Regional Office in May 2014 to determine the potential effects of construction and operations of DON's proposed action on EFH. Under the MSA, federal agencies are required to consult with NMFS when their actions may adversely impacts EFH. NMFS determined that adverse effects to EFH would occur unless seven recommended conservation measures are implemented to avoid and minimize impacts to EFH. The DON plans to implement six of the seven identified conservations recommendations. The seventh conservation recommendation addressing development and implementation of the Adaptive Management Plan for the watershed will be considered by DON and as appropriate individual components of the conservation recommendation may be addressed in the INRMP. The DON does not plan to implement the majority of these conservation measures. The NMFS EFH effects determination letter of April 27, 2015, containing the complete list of recommendations and the DON's response to the determination letter are located in Vol. 2, Appendix F.5 for the 2015 Final SEIS.

#### **Coastal Zone Management Act**

The Coastal Zone Management Act (CZMA) coordination between Guam Bureau of Statistics and Plans and JRM has been completed. Pursuant to the CZMA, the DON assessed reasonably foreseeable direct and indirect effects of the proposed military relocation on Guam's defined coastal zone and resources and reviewed relevant management programs included within the Guam Coastal Management Program. The CZMA requires that federal activities that affect the coastal zone be undertaken in a manner that is consistent, to the maximum extent practicable, with the Guam Coastal Management Program's enforceable coastal policies (which include land use and environmental policies). The DON has integrated the CZMA and NEPA processes by incorporating where necessary the accepted Guam Coastal Management Program's conditions into the 2015 Final SEIS as BMPs, if they were not already addressed elsewhere as a BMP or as a mitigation measure. In accordance with provisions for phased determinations in 15 CFR § 930.36, the DON will continue to submit future project-specific determinations to the Guam Bureau of Statistics and Plans for review as design-level information becomes available.



**National Historic Preservation Act**

Pursuant to section 106 of the NHPA, the 2011 PA established a program alternative to govern the implementation of programs or complex project situations, particularly when potential effects to historic properties are not fully known in advance (36 CFR § 800.14(b)). The relocation action addressed in the 2010 ROD was just such a situation, given that numerous projects making up the relocation had not been defined enough to fully evaluate effects to historic properties, and a decision on the LFTRC was deferred. In order to address responsibilities under section 106 and related requirements for the relocation action, the DON consulted with the public, key agencies, and non-governmental organizations to develop a PA. These consultations resulted in execution of the 2011 PA. To ensure adequate consideration of historic preservation requirements for the relocation action, the 2011 PA was developed consistent with 36 CFR § 800.14(b)(3) as a program alternative to satisfy section 106 responsibilities, with explicit flexibility to address changes in the undertaking.

The 2011 PA includes procedures for consulting on the identification of historic properties as specific projects are developed. Data gathered during the in-fill studies conducted for the 2015 Final SEIS and information available in other previous cultural resource investigations will contribute to the review procedures in the 2011 PA. Under the 2011 PA, the DoD conducts annual reviews of proposed projects for the purpose of seeking information from the signatories, invited signatories, concurring parties, and the public regarding historic properties in project areas as part of the process for identifying historic properties and completing determinations of eligibility. Individual project reviews are conducted via a PA memo process for the purpose of soliciting additional comments regarding the DoD's determination of effect. If adverse effects are identified, DoD solicits input on its plan for resolving the adverse effects. When new information is received regarding the potential presence of historic properties, the 2011 PA outlines a process for consideration of supplemental identification measures. The 2011 PA also includes a detailed review process for avoiding, minimizing, and mitigating adverse effects specific to the construction and operation of a LFTRC on Guam, including preparation of a Training Ranges Review and Analysis (TRRA) and a RMP. Once the identification, evaluation, and determination of effect processes summarized above have been completed, the 2011 PA outlines general and project or area-specific mitigation measures. Mitigation is generally defined as taking specific steps designed to lessen the adverse effects of a DoD action on a historic property. Mitigation for adverse effects to archaeological sites includes preparation of a mitigation plan, which is submitted to the Guam SHPO for review. All mitigation work is documented in draft reports submitted to Guam SHPO for review prior to being finalized.

The DON has consulted with the parties to the 2011 PA and the public on the Draft TRRA. Consistent with the 2011 PA, the TRRA provided planning level information on potential direct and indirect effects to historic properties within areas that may be selected in the DON's ROD for the LFTRC, including the selected LFTRC alternative. The Draft TRRA includes information on the locations, orientations, and designs of each proposed LFTRC location. In addition to receipt of written comments, DON cultural resources professionals conducted three consultation sessions with the parties to the PA to discuss the analysis. The DON considered all comments in its preparation of the Final TRRA, which was published shortly after the 2015 Final SEIS. Comments and considerations developed during the Draft TRRA consultation process were incorporated in the 2015 Final SEIS and informed the Draft RMP, which is currently undergoing consultation with the PA Parties. The RMP will be finalized based on this ROD.

**National Wildlife Refuge System Administration Act**

The Ritidian Unit of the Guam NWR is managed by the USFWS and under its custody and control. As discussed above, under the authority provided in Section 2822 of the FY 2015 NDAA, the DON will pursue an agreement with the USFWS to establish and operate a surface danger zone that overlays portions of the Ritidian Unit. The agreement will allow for the continued management of the Ritidian Unit consistent with the purposes for which it was established.

**RESPONSES TO COMMENTS RECEIVED ON THE 2015 FINAL SEIS:** The DON reviewed and considered all comments that were received during the 30-day waiting period, initiated with publication of the 2015 Final SEIS NOA (80 FR 42491) on July 17, 2015. Two comment letters were received—one from the GPT containing 7 comments and the other from the EPA Region 9 containing 16 comments. No additional mitigation measures are required as a result of comments on the Final SEIS. Following is a summary of the comments received from the GPT and EPA, many of which were received on the Draft SEIS.

**GPT** – All of the comments received from the GPT are covered in the 2015 Final SEIS. Specific comments from GPT included:

- Continued strong opposition to any LFTRC location on Guam; supports providing input to the RMP;
- Observed that DoD has shown a “greater expression to show sensitivity towards cultural resources”;
- Concerned about limestone forest impacts and that impacts be mitigated in the RMP
- Advocates for public access to cultural sites and an agreement between DoI and DoD to mitigate access impacts;
- Recommends funding public education, outreach and awareness to address cultural resource impacts and loss;
- Agrees with 2015 Final SEIS mitigation to fund a cultural repository; and
- Looks forward to partnering with DoD to promote historic preservation and awareness in Guam.

The DON commits continued coordination and partnership with the GPT as a Concurring Party to the 2011 PA and the RMP to adequately address impacts associated cultural resource protection and mitigation. The DON will update GPT and other parties to the 2011 PA on DOI-DoD progress establishing Guam NWR Agreement in accordance with section 2822 of the 2015 NDAA and associated cultural resources management (including access), continued development of information on cultural resources in accordance with 2011 PA and RMP, and strive to secure authorization for construction of a Cultural Repository.

**EPA** – All of the comments received from EPA are covered in the 2015 Final SEIS. Specific comments from EPA included:


- Appreciates DoD support for the EAC Implementation Plan;
  - Appreciates DoD efforts to obtain funding for GWA wastewater system;
- Provided Recommendations for ROD;
  - Provide DoD funding for hydrologic data collection network improvements, monitoring for 10 years and to support the GWRDG;
  - Specify the stringency of DoD’s Range Environmental Vulnerability Assessment (REVA) and Operational Range Clearance Programs, the receptors to be evaluated and

**CONCLUSION:**

After careful consideration of the purpose and need for the proposed action, the analysis contained in the 2015 Final SEIS, and comments received on the Draft and Final SEIS from federal agencies, Guam agencies, non-governmental organizations and the public, mitigation and other factors discussed above, the DON has decided to proceed with implementation of the preferred alternatives as identified in the 2015 Final SEIS: Alternative E for the cantonment/family housing component and Alternative 5 for the LFTRC component of the proposed action, with mitigation as described in this ROD. The LFTRC also includes a stand-alone hand grenade range at Andersen South. In addition, the exact configuration of the SUA associated with this alternative is subject to ongoing actions between DoD and the FAA. The preferred alternatives best meet current and future military training requirements on Guam.

The proposed action and selected alternatives differ significantly from those analyzed in the 2010 Final EIS and addressed in the 2010 ROD in a number of important ways. In addition to the significantly reduced number of Marines and their dependents relocating to Guam, the proposed action selected in this ROD will be implemented at a more gradual pace over 13 years compared to 7 years for the original proposed action considered in the 2010 ROD thus avoiding short-term population and construction tempo peaks and associated environmental impacts. Construction of the cantonment at Fincgayan will impact approximately 850 fewer acres than was projected in 2010 and, unlike 2010, the cantonment, family housing and LFTRC construction will occur only on land currently under the custody and control of the DoD. The selected cantonment alternative maintains a natural buffer area between developed areas and nearby sensitive coastal resources and, by placing the family housing at AAFB, leverages the availability of an existing family housing area and supporting infrastructure at AAFB.

8/29/15  
Date

  
Steve Iselin  
Principal Deputy Assistant Secretary of the  
Navy (Energy, Installations and Environment)

APPENDIX F – OFFICE OF THE GOVERNOR OF GUAM: PUBLIC LAW 31-72 BILL 15-31

EDDIE BAZA CALVO  
Governor



RAY TENORIO  
Lieutenant Governor

*Office of the Governor of Guam*

May 26, 2011

31-11-565

Honorable Judith T. Won Pat, Ed.D.  
Speaker  
*I Mina' bentai Unu Na Liheslaturan Guahan*  
155 Hesler Street  
Hagåtña, Guam 96910

5/26/11  
11:30am  
*[Signature]*

Dear Madame Speaker:

Transmitted herewith is Bill No. 15-31 (COR) "AN ACT TO ADD NEW §§61309(d) OF ARTICLE 3, AND 61640 OF ARTICLE 6, ALL OF CHAPTER 61 OF TITLE 21, GUAM CODE ANNOTATED, RELATIVE TO ESTABLISHING A POLICY FOR THE APPROVAL OF WORKFORCE HOUSING FACILITIES FOR TEMPORARY WORKERS", which I signed into law on May 25, 2011 as Public Law 31-72.

*Senseramente,*

*[Signature]*  
EDDIE BAZA CALVO

2011 MAY 27 AM 9:55

Attachment: copy of Bill

565

**I MINA'TRENTAI UNU NA LIHESLATURAN GUÅHAN  
2011 (FIRST) Regular Session**

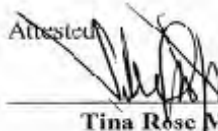
**CERTIFICATION OF PASSAGE OF AN ACT TO I MAGA'LAHEN GUÅHAN**

This is to certify that **Bill No. 15-31 (COR)**, "AN ACT TO *ADD NEW* §§61309(c) OF ARTICLE 3, AND 61640 OF ARTICLE 6, ALL OF CHAPTER 61 OF TITLE 21, GUAM CODE ANNOTATED, RELATIVE TO ESTABLISHING A POLICY FOR THE APPROVAL OF WORKFORCE HOUSING FACILITIES FOR TEMPORARY WORKERS", was on the 10<sup>th</sup> day of May, 2011, duly and regularly passed.



**Judith T. Won Pat, Ed.D.  
Speaker**

Attested



**Tina Rose Muña Barnes  
Legislative Secretary**

This Act was received by *I Maga'lahen Guåhan* this 20 day of May, 2011, at 1:25 o'clock P.M.



Assistant Staff Officer  
*Maga'lahi's Office*

APPROVED:



**EDWARD J.B. CALVO**  
*I Maga'lahen Guåhan*

Date: **MAY 25 2011**

Public Law No. 31-72

**IMINA'TRENTAI UNU NA LHUESLATURAN GUÁHAN  
2011 (FIRST) Regular Session**

**Bill No. 15-31 (COR)**

*As amended on the Floor.*

Introduced by:

- F. F. Blas, Jr.
- F. C. Ada
- V. Anthony Ada
- B. J.F. Cruz
- Chris M. Dierias
- Judith P. Guthertz, DPA
- Sam Mabini, Ph.D.
- T. R. Muña Barnes
- Adolpho B. Palacios, Sr.
- v. c. pangeliuan
- R. J. Respicio
- Dennis G. Rodriguez, Jr.
- M. Silva Tajeron
- Aline A. Yamashita, Ph.D.
- Judith T. Won Pat, Ed.D.

**AN ACT TO ADD NEW §§61309(c) OF ARTICLE 3, AND  
61640 OF ARTICLE 6, ALL OF CHAPTER 61 OF TITLE  
21, GUAM CODE ANNOTATED, RELATIVE TO ES-  
TABLISHING A POLICY FOR THE APPROVAL OF  
WORKFORCE HOUSING FACILITIES FOR TEMPO-  
RARY WORKERS.**

- 1 **BE IT ENACTED BY THE PEOPLE OF GUAM:**
- 2 **Section 1. Legislative Statement.** The Department of Defense has indi-
- 3 cated its intentions to significantly expand military activity on Guam and pursue a

1 construction program which is anticipated to create a need for an extraordinary  
2 number of foreign construction and support workers.

3 These workers will require new housing facilities and related infrastructure.  
4 *I Liheslaturan Guåhan* finds that in 1993 the Guam Land Use Commission  
5 (GLUC) had previously implemented guidelines for the development of workforce  
6 housing, including barracks type facilities on Guam.

7 Furthermore, the Guam Land Use Commission has recognized that the  
8 planned military build-up establishes the need to further define the manner and  
9 conditions under which such workforce facilities can be approved. *I Liheslatura*  
10 opines that Title 21, Guam Code Annotated, Chapter 61, Zoning Law, Article 3,  
11 creates appropriate zones and that §61309(a)(1) of Title 21, Guam Code Anno-  
12 tated, allows "Other uses which in the judgment of the Commission, as evidenced  
13 by a resolution in writing, are similar to those listed herein [for the M1 Zone].

14 Therefore, it is the position of *I Liheslaturan Guåhan* that for purposes of es-  
15 tablishing a clear policy for the approval of temporary workforce housing, *I Li-*  
16 *heslaturan Guåhan* establishes the following policy for implementation by the  
17 Guam Land Use Commission.

18 **Section 2.** A new §61309(c) is hereby *added* to Article 3 of Chapter 61,  
19 Title 21, Guam Code Annotated, to read:

20 **“(c) POLICY FOR WORKFORCE HOUSING FACILITIES**  
21 **FOR TEMPORARY WORKERS.**

22 The policy for the development of temporary workforce housing *shall*  
23 be as follows:

24 (1) The term *temporary workforce housing shall* be consistent with  
25 §26A101 (b) of Chapter 26A, Title 10, Guam Code Annotated, as follows:

26 [“(b) *Temporary workforce housing* means any enclosures of living  
27 spaces, reasonably contiguous, together with the land appertaining thereto.



1 established, operated or used as living quarters and, at a minimum, fifty-one  
2 percent (51%) of the residents are temporary workers, including, but *not* lim-  
3 ited to, facilities known by varying nomenclatures or designations as dormi-  
4 tories, hotels, motels, travel lodges, or tourist homes.”].

5 (2) The Guam Land Use Commission (GLUC) *shall* liberally inter-  
6 pret the term *temporary workforce housing* in order to ensure the protection  
7 of the public’s interests, safety and welfare.

8 (3) Temporary workforce housing is hereby established as an ap-  
9 proved conditional use under the M1 Light Industrial Zone pursuant to  
10 §61309, and the GLUC *shall not* approve any workforce housing develop-  
11 ment in any zoning area other than an M1 Zone.

12 (4) Applications for the development of temporary workforce hous-  
13 ing *shall* come before the GLUC as a “Conditional Use” subject to the re-  
14 view process of the Agency Review Committee, and *shall* be subject to spe-  
15 cific conditions of approval as established by the GLUC.

16 In addition to other conditions imposed by the GLUC, all temporary  
17 workforce housing conditions for approvals *shall* include the following  
18 minimum conditions:

19 (A) Unless specifically limited, approvals *shall* be for an ini-  
20 tial term of twenty-four (24) months, and thereafter *shall* be renewed  
21 annually. Renewals *shall* be on forms issued by the Chief Planner, and  
22 subject to inspection by the Chief Planner and a public hearing before  
23 the GLUC.

24 (B) The project must be served by an adequate sanitary sewer  
25 system.

1 (C) The project must have adequate fire flow indicated by a  
2 minimum six (6) inch diameter water line or other minimum water  
3 service conditions imposed by the Guam Waterworks Authority.

4 (D) The project must comply with all health and safety regu-  
5 lations of the government of Guam and the OSHA regulations, as ap-  
6 plicable.

7 (E) Each approved project *shall* include a substantial perime-  
8 ter fence which *shall* be at least of “chain link” quality and a mini-  
9 mum six (6) feet in height, and be subject to a complete landscape  
10 plan.

11 (F) The project must include a development plan indicating  
12 specific design parameters for sleeping, toilet and shower facilities,  
13 laundry services, food services, security, medical care, transportation  
14 services and recreation areas.”

15 **Section 3.** A new §61640 is hereby *added* to Part 3 of Article 6 of Chapter  
16 61, Title 21, Guam Code Annotated, to read:

17 “§61640. For any property rezoned to M1 within two (2) years of  
18 also applying for a conditional use for workforce housing, the property *shall*  
19 revert to the zone prior to the granting of the M1 zone when the approval for  
20 workforce housing expires, or a new application for continued M1 zone  
21 must be filed.”

22 **Section 4. Severability.** *If any provision of this law or its application to*  
23 *any person or circumstance is found to be invalid or contrary to law, such invalid-*  
24 *ity shall not affect other provisions or applications of this law which can be given*  
25 *effect without the invalid provisions or applications, and to this end the provisions*  
26 *of this law are severable.*

*E*

**I MINA' TRENTAI UNU NA LIHESLATURAN GUAHAN**

2011 (FIRST) Regular Session

Date: May 10, 2011

**VOTING SHEET**

ABill No. 15-31(COR)

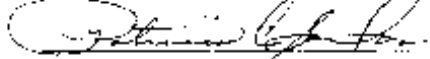
Resolution No. \_\_\_\_\_

Question: \_\_\_\_\_

NAME	YEAS	NAYS	NOT VOTING/ ABSTAINED	OUT DURING ROLL CALL	ABSENT
ADA, Thomas C.	✓				
ADA, V. Anthony	✓				
BLAS, Frank F., Jr.	✓				
CRUZ, Benjamin J. F.	✓				
DUENAS, Christopher M.	✓				
GUTHERTZ, Judith Paulette	✓				
MABINI, Sam	✓				
MUNA-BARNES, Tina Rose	✓				
PALACIOS, Adolpho Borja, Sr.	✓				
PANGELINAN, vicents (ben) cabrera	✓				
RESPICIO, Rory J.	✓				
RODRIGUEZ, Dennis G., Jr.	✓				
SILVA TAIJERON, Mana	✓				
WON PAT, Judith T.	✓				
YAMASHITA, Ailhe A.	✓				

TOTAL 15 0 \_\_\_\_\_

CERTIFIED TRUE AND CORRECT:

  
Clerk of the Legislature

\* 3 Passes = No vote  
EA = Excused Absence

I MINA'TRENTAI UNO NA LIHESLATURAN GUHA N  
2011 (FIRST) Regular Session

Bill No. 15-31 (COR)

Introduced by:

F. F. Blas, Jr.

2011 JAN -41 AM 9:40

AN ACT TO ESTABLISH A POLICY FOR THE  
APPROVAL OF WORKFORCE HOUSING  
FACILITIES FOR TEMPORARY WORKERS.

1           **BE IT ENACTED BY THE PEOPLE OF GUAM:**

2           **Section 1. Legislative Statement.** The Department of Defense has indicated

3 its intentions to significantly expand military activity on Guam and pursue a

4 construction program which is anticipated to create a need for an extraordinary number

5 of foreign construction and support workers.

6           These workers will require new housing facilities and related infrastructure. /

7 *Liheslaturan Guahan* finds that in 1993 the Guam Land Use Commission (GLUC) has

8 previously implemented guidelines for the development of workforce housing

9 including barracks type facilities on Guam.

10           Furthermore, the Guam Land Use Commission has recognized that the planned

11 military build-up establishes the need to further define the manner and conditions

12 under which such workforce facilities can be approved. / *Liheslatura* opines that Title

13 21 of the Guam Code Annotated, Chapter 61 Zoning Law, Article 3, creates

14 appropriate zones and that Title 21 of the Guam Code Annotated §61309(a)(11) allows

1 “Other uses which in the judgment of the Commission, as evidenced by a resolution in  
2 writing, are similar to those listed herein [for the M1 Zone].

3 Therefore, it is the position of *Likheslaturan Guåhan* that for purposes of  
4 establishing a clear policy for the approval of temporary workforce housing, *Likheslaturan Guåhan*  
5 establishes the following policy for implementation by the Guam  
6 Land Use Commission.

7 **Section 2. Adoption of Policy for Workforce Housing Facilities for**  
8 **Temporary Workers.**

9 **“POLICY FOR WORKFORCE HOUSING FACILITIES**  
10 **FOR TEMPORARY WORKERS.**

11 For purposes of this policy, the following terms are defined to mean:

12 1. The term, “*Temporary Workforce Housing*” shall include any  
13 structure, either existing or proposed, intended to be occupied for the residential  
14 housing of six (6) or more employees within a single residential unit, apartment,  
15 house or barrack.

16 2. The Guam Land Use Commission (GLUC) shall liberally interpret  
17 the term “*Temporary Workforce Housing*” in order to ensure the protection of  
18 the public’s interests, safety and welfare.

19 3. Temporary Workforce Housing is hereby established as an  
20 approved conditional use under the M1 Light Industrial Zone pursuant to  
21 §61309 and the GLUC shall not approve any workforce housing development in  
22 any zoning area other than an M1 Zone.

23 4. Applications for the development of Temporary Workforce  
24 Housing shall come before the GLUC as a “Conditional Use” subject to the  
25 review process of the Agency Review Committee and shall be subject to specific  
26 conditions of approval as established by the GLUC.

1           In addition to other conditions imposed by the GLUC, all Temporary Workforce  
2 Housing conditions all approvals shall include the following minimum conditions:

3           A. Unless specifically limited, approvals shall be for an initial term of  
4 Twenty-four (24) months and, thereafter shall be renewed annually. Renewals  
5 shall be on forms issued by the Chief Planner and subject to inspection by the  
6 Chief Planner and a public hearing before the GLUC.

7           B. The project must be served by an adequate sanitary sewer system.

8           C. The project must have adequate fire flow indicated by a minimum  
9 six inch diameter water line or other minimum water service conditions imposed  
10 by the Guam Waterworks Authority.

11           D. The project must comply with all health and safety regulations of  
12 the Government of Guam and the OSHA regulations, as applicable.

13           E. Each approved project shall include a substantial perimeter fence  
14 which shall be at least of "chain link" quality and a minimum six feet in height  
15 and be subject to a complete landscape plan.

16           F. The Project must include a development plan indicating specific  
17 design parameters for sleeping, toilet and shower facilities, laundry services,  
18 food services, security, medical care, transportation services and recreation  
19 areas."

20           **Section 3. Severability.**     *If any provision of this law or its application to*  
21 *any person or circumstance is found to be invalid or contrary to law, such invalidity*  
22 *shall not affect other provisions or applications of this law which can be given effect*  
23 *without the invalid provisions or applications, and to this end the provisions of this law*  
24 *are severable."*

APPENDIX G – J-100B FINEGAYAN UTILITIES AND SITE IMPROVEMENTS, PHASE 1

J-001B Pinegayan Utilities and Site Improvements, Phase 1  
Guam

WON 1147910

SECTION 01 30 00.05 20

ADMINISTRATIVE REQUIREMENTS FOR DESIGN-BUILD

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR §1910, et seq.	Occupational Health & Safety Standards
29 CFR 1910.142	Temporary Labor Camps
29 CFR 1926 §	Safety & Health Regulations for Construction

GUAM PUBLIC LAW

31-72	Policy For Workforce Housing Facilities For Temporary Workers
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GUAM CODE ANNOTATED (G.C.A.)

10 G.C.A. §§ 20-54	Environmental Health
10 G.C.A. §§ 55-79	Public Safety
10 G.C.A. §§ 84-96	Guam Public Health Act
10 G.C.A. §§ 21	Sanitary Permit
10 G.C.A. §§ 23, P.L 25-15	Eating and Drinking Establishments
10 G.C.A. §§ 24	Food Establishments
10 G.C.A. §§ 40	Guam Food, Drug and Cosmetic Act
16 G.C.A. §§ 1101, et seq.	VEHICLES
22 G.C.A. § 7	Guam Employment Service Law

GUAM ADMINISTRATIVE RULES AND REGULATIONS (G.A.R.)

25 G.A.R. § 6	Guam Board of Nurse Examiners
25 G.A.R. § 11	Guam Board of Medical Examiners
26 G.A.R. §§ 4401, et seq.	Health Certificate Regulations
26 G.A.R. §§ 6200, et seq.	Ambulance and Emergency Medical Technician



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## 1.2 SUBMITTALS

The use of a "G" following a submittal indicates that a Government approval action is required. Submit the following in accordance with Section 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES and Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES.

### SD-01 Preconstruction Submittals

Insurance; G  
Permits; G  
Licenses; G  
Pre-deployment medical screening; G  
Medical Contractual Agreement; G  
Medical Certification; G  
Housing List; G  
Housing Certification; G  
Background check; G  
Safety & security Certification; G

## 1.3 CONTRACTOR WORKFORCE HOUSING LOGISTICS AND MATERIAL MANAGEMENT REQUIREMENTS

a. For the purposes of this specification, the term, "temporary resident worker" means all workers except the following:

1. Permanent residents of Guam
2. Managers and supervisors (U.S. citizens or resident aliens)

b. For the purpose of this specification, the term, "worksites" means locations at Pinegayan, Naval Base.

c. For the purpose of this specification, the term, "peak hours" for traffic means 6:30 a.m. to 8:30 a.m. and 3:30 p.m. to 6:00 p.m.

d. Workforce Housing Logistics and Material Management (WHL&MM) Plan: The WHL&MM Plan shall address the requirements for Medical, Housing, Food, Material Management, Safety & Security, and Transportation set forth in this specification section. The WHL&MM Plan for each offeror, accepted at contract award, is enforceable and shall be implemented for the duration of the contract. Any substitutions shall be equal or better than as proposed and shall require prior Contracting Officer's approval. Maintain the WHL&MM Plan and submit any changes for Contracting Officer review within 30 calendar days of proposed implementation.

### 1.3.1 Medical

Assure that staffing, personnel assignment and other human resources practices result in development and maintenance of a healthy Contractor and Subcontractor workforce employed in the performance of this contract in

J-001B Finegayan Utilities and Site Improvements, Phase 1  
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accordance with all statutes and regulations of the U.S Federal Government or the GovGuam in effect on the date of award of this contract or thereafter promulgated by the aforementioned governmental authorities. Perform health care activities in accordance with 10 G.C.A. §§ 84 - 96 - Guam Public Health Act, 25 G.A.R. § 6 - Guam Board of Nurse Examiners, 25 G.A.R. § 11 - Guam Board of Medical Examiners, 26 G.A.R. §§ 4401, et seq., Health Certificate Regulations, and 26 G.A.R. §§ 6200, et seq., Ambulance and Emergency Medical Technician.

#### 1.3.1.1 Clinical Examinations

Perform worker pre-deployment physical condition and general health screening for all deployed workers prior to their departure for Guam. Screening shall include, within 3 months of departure for Guam, a chest x-ray (CXR), syphilis screening by RPR, HIV testing, documented tetanus vaccination within past 10 years, MMR vaccination (or documentation of positive titers for measles, mumps and rubella), influenza vaccination, varicella vaccination (or documentation of positive titers for varicella), blood pressure check, and a comprehensive dental exam, which is comprised of (1) a brief medical history to rule out any medical problems that may affect conventional dental treatment; (2) a visual intra-oral exam, including evaluation of caries, defective restorations (fillings) and appliances (both fixed and removable), oral cancer check (visual), and percussion of suspect teeth and Periodontal Screening and Recording (PSR) (No need for forensic exam - recording which teeth are missing or existing restorations); and (3) a radiographic evaluation including bitewing and pan-oral view. Ensure that each worker's health status prior to deployment to Guam for work on this Government contract is adequate for performance of the activities to which the worker will be assigned giving consideration to the climatic and other physical elements to be experienced on Guam. Any applicants that are found to have conditions inconsistent with the prospective future employment term on Guam will be promptly referred for medical advice and treatment and their employment status will be determined by the employer in accordance with their firm's hiring policies. Report applicants suspected of having tuberculosis on the basis of a CXR suggestive of tuberculosis or who have signs and symptoms suggestive of tuberculosis to their respective country's tuberculosis program office. Within two weeks of arrival on Guam, and prior to commencing work, workers shall receive a baseline CXR and clinical examination for signs and symptoms of tuberculosis. Report workers with findings suggestive of tuberculosis to the Guam Department of Health and Social Services for evaluation. These requirements shall not apply to managerial, specialized technical and administrative Contractor and Subcontractor workers and consultants visiting Guam for business purposes for periods of 14 calendar days or less. If these personnel plan on visiting Guam between 15-45 calendar days, they shall report to the Contractor's Medical Quality Control Manager (MQCM) for a check-up. Those that show symptoms of TB may be required to take a baseline CXR and/or clinical examination.

#### 1.3.1.2 Monitoring

a. Monitor the workers at the construction site and workforce housing facilities for incidences of fever, bloody sputum, pneumonia, influenza-like illness, rash illness, diarrhea, and other indicators that would raise the index of suspicion of an infectious disease etiology. Report the numbers of workers with these conditions to Guam Department of Public Health and Social Services every week. Additionally, report any conditions on the Official Guam Notifiable Disease List (Chapter 3, Title X, Guam Code Annotated) to Guam Department of Public Health and Social

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Services within the timeframe required by Guam Code.

b. Perform annual screening of workers in Guam to include, but not limited to, an annual tuberculosis screening exam with option for chest X-ray if screening is positive. Refer workers with positive screening and CXR results to the Guam Department of Public Health and Social Services for evaluation.

#### 1.3.1.3 Health and Medical Care

Each Contractor worker deployed to work on Guam for a period in excess of 14 calendar days shall be covered by either commercially purchased health and medical care insurance or a Contractor self-furnished health and medical facilities for the entire duration of the worker's or consultant's deployed assignment. For workers or consultants that are not deployed to the work site, the medical coverage shall commence within 45 calendar of arrival on Guam. The Contractor shall effect appropriate contractual agreements with its workers and/or workers' representatives that require such workers to accept the Contractor's insurance plan coverage and/or use of the Contractor furnished medical facilities. The minimum insurance plan coverage and/or medical facilities furnished by the Contractor shall be as follows:

a. Emergency Medical Care - initial emergency response treatment, stabilization, and transport of a sudden and unexpected medical condition (e.g. either severe injury or severe illness symptoms/signs). If immediate medical attention is not obtained, the symptoms could result in serious and/or permanent adverse medical outcomes. Examples include severe chest pains, difficulty in breathing, traumatic injury, convulsions, severe abdominal pains, etc. Any medical condition or diagnosis that anticipates either an extended acute care hospitalization or any critical care hospitalization will be evaluated as soon as possible by a competent medical authority for emergency civilian medical evacuation and transfer to an off-island regional referral hospital, if necessary.

b. Primary Health Care - services typically included represent the full spectrum of organizations which provide care services to the population of focus. The services shall include care for chronic diseases, preventive and screening services, and acute care delivery in the outpatient setting; as well as health promotion services delivered through an inter-professional team. NOTE: Termination medical surveillance physical exams are only required for workers enrolled in a periodic surveillance program due to: (1) documented hazardous exposures in the workplace or (2) if they are enrolled in an occupational medical surveillance program.

c. Prescription Drugs - drugs or medicines that require a doctor's signature to dispense and are approved by the U.S.F.D.A. for use in treating the sickness or injury for which they are prescribed.

#### 1.3.1.4 Medical Care at Worksites

Comply with U.S. Government Occupational Safety & Health Administration (OSHA) standards and requirements (29 CFR 1910, et seq. - Occupational Safety & Health Standards). Provide medical care at the worksites during all work operations in accordance with EM 385-1-1, Section 3 Medical and First-Aid Requirements. At least two employees on each shift shall be qualified to administer first-aid and CPR when a medical facility or physician is not accessible within five minutes of an injury to a group of two or more employees. Worksites for which fewer than 100 persons are

J-001B Finegayan Utilities and Site Improvements, Phase 1  
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employed (greatest number of employees on a shift), and where neither a first-aid station nor an infirmary is available, shall be provided with a first-aid kit complying with ANSI Z308.1. There shall be one first-aid kit for every 25 (or fewer) employees. Worksites for which more than 99 and fewer than 300 persons are employed (greatest number of employees on a shift), shall establish and equip, as directed by a Licensed Physician (LP), a first-aid station. Worksites for which 300 or more persons are employed (greatest number of employees on a shift), shall establish and equip, as directed by a LP, an infirmary. The type of facilities, equipment, and qualified personnel provided at the first-aid station and infirmary shall comply with EM 385-1-1.

#### 1.3.1.5 Medical Records

Maintain medical records in accordance with HIPAA and Privacy Act guidelines. The Contractor's MQCM shall meet with the Government of Guam's emergency management plan leadership team to ensure that the Contractor's plan is in accordance with the island's severe weather and mass casualty contingency plans.

#### 1.3.1.6 Medical Certification

The Contractor's MQCM shall certify that (1) each deployed worker had a pre-deployment physical condition, general health screening, and a post-arrival TB screening, and (2) each worker entered into a medical contractual agreement to accept the Contractor's insurance plan coverage and/or use of the Contractor furnished medical facilities. Submit a copy of the contractual agreement to the Contracting Officer with the following certifying statement:

"I hereby certify that (1) the deployed worker(s) identified in this submittal had a pre-deployment physical condition, general health screening, and a post-arrival TB screening, and (2) each worker has a contractual agreement to accept the Contractor's insurance plan coverage and/or use of the Contractor furnished medical facilities.

Certified by QC Manager \_\_\_\_\_, Date \_\_\_\_\_

Certified by Medical QC Manager \_\_\_\_\_, Date \_\_\_\_\_"

Clearly mark the envelope or container transmitting the medical screening submittal as containing "Personally Identifiable Information" (or PII) and that only those officials with a need to know may view this information.

#### 1.3.2 Housing

##### 1.3.2.1 "Temporary Resident Worker"

For the purpose of the housing requirements in this section only, the term, "temporary resident worker" means all workers except the following:

- a. Permanent residents of Guam
- b. Managers and supervisors (U.S. citizens or resident aliens)
- c. Employees that have established arrangements for housing on Guam that comply with GovGuam regulations. Evidence of such arrangements include, but are not limited to, valid rental/lease agreements, letters from property owners permitting appropriate and continuously available living arrangements, etc.

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1.3.2.2 Workforce Housing Facilities for "Temporary Resident Workers"

Provide workforce housing facilities for temporary resident workers with appropriate contractual board and lodging agreements with its workers and/or workers' representatives. Provide secure, adequate, clean, and healthy housing in accordance with Public Law 31-72, 29 CFR 1910.142 and all statutes and regulations of the U.S Federal Government or the GovGuam in effect on the date of award of this contract or thereafter promulgated by the aforementioned governmental authorities. Under no circumstances shall equipment, appliances, food or beverages, firearms, weapons or other substances controlled or prohibited under U.S. Federal Government or GovGuam laws, rules or regulations be permitted to be used, stored or temporarily occupy housing facilities furnished under this specification. Contractors, Subcontractors and their workers found to be in violation of the aforementioned prohibition will be prosecuted to the fullest extent of the law and serious or repeated violations may result in termination of this contract for default. This prohibition does not apply to moderate and responsible use of alcohol within resident housing facilities that is purchased at private expense and for personal consumption only. This prohibition also does not apply to moderately sized refrigerators within individual rooms/spaces which pose no health or safety issues and do not conflict with any existing GovGuam rules/regulations for the type of housing facilities/accommodations.

a. Validate that workers who will not be residing in the Contractor's workforce housing facilities have secured other housing arrangements and that the housing facilities comply with the GovGuam regulations relating to building codes, sanitation, health and safety. Ensure that the housing arrangements comply with the GovGuam regulations.

b. Obtain all permits, licenses or other authority required by the statutes and regulations of the U.S Federal Government or the GovGuam to operate or furnish facilities necessary for the safe and adequate housing of the Contractor's temporary resident workers employed in the performance of the work required by this contract.

c. Provide a worker bulletin board at the workforce housing facility at a location that is readily visible by all workers. Include on the bulletin board (as a minimum):

1. Hotline Poster, Appendix A
2. Hotline Poster(s), Appendix A, in the worker's native language(s)
3. Notice, in English and the worker's native language(s), stating the company's procedures for filing complaints for any housing arrangement issues concerning safety, sanitation, or meals. Procedure for complaints shall have an option for the worker to be anonymous.
4. Notice, in English and the worker's native language(s), stating the company's policies regarding a safe living environment free from violence, threats of violence, harassment, intimidation, and other disruptive behavior at the workforce housing facilities and the construction sites. Also include the company's policy in the event of conviction for offenses committed off base.

Telephone number, email address, and mailing address for Appendix A (e.g., the Government's POC) will be provided at the pre-construction meeting.

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#### 1.3.2.3 Quality Control Manager (QCM)

The Quality Control Manager (QCM) shall submit a Housing List to the Contracting Officer that contains the name and address of each worker performing under this contract. The list shall be organized to allow easy identification of (1) the contract or task order(s) that the worker is performing on, and (2) whether that worker is a temporary resident worker, permanent Guam resident, Manager/Supervisor (U.S. citizen or resident alien), or employee with established housing arrangements; and (3) whether the employee resides in the Contractor's workforce housing facilities. The QCM shall certify on the Housing List that the facilities each employee resides at comply with the GovGuam regulations. The Housing List shall also contain the following housing certification statement:

"I hereby certify that the worker(s) identified in this Housing List submittal are occupying a residence that complies with GovGuam regulations.

Certified by QC Manager \_\_\_\_\_, Date \_\_\_\_\_"

When a worker changes address, resubmit certification with the worker's new address.

Clearly mark the envelope or container transmitting the worker residence submittal as containing "Personally Identifiable Information" (or PII) and that only those officials with a need to know may view this information.

#### 1.3.3 Food, Material Management, Safety & Security, and Transportation

##### 1.3.3.1 Food

Provide adequate, clean, healthy food supply and dining services to the Contractor's and its Subcontractors' temporary resident workers, residing in the Contractor furnished workforce housing facilities, in accordance with all statutes and regulations of the U.S Federal Government or the GovGuam in effect on the date of award of this contract or thereafter promulgated by the aforementioned governmental authorities. Provide food and dining operations in accordance with the following:  
29 CFR §1910, et seq. - Occupational Health & Safety Standards,  
10 G.C.A. §§ 20-54 - Environmental Health, 10 G.C.A. §§ 55-79 - Public Safety, 10 G.C.A. §§ 84-96 - Guam Public Health Act, 10 G.C.A. §§ 21 - Sanitary Permit, 10 G.C.A. §§ 23, P.L 25-15 - Eating and Drinking Establishments, 10 G.C.A. §§ 24 - Food Establishments, 10 G.C.A. §§ 40 - Guam Food, Drug and Cosmetic Act, 22 G.C.A. § 7 - Guam Employment Service Law, 26 G.A.R. §§ 4401, et seq., Health Certificate Regulations, Guidebook: Rules & Regulation Pertaining to Eating and Drinking Establishments (GovGuam/DPHSS), and Guidebook: Rules & Regulations Pertaining to Retail Food Store Sanitation (GovGuam/DPHSS). To the extent practical and cost effective, consider providing temporary resident workers food and beverages that are consistent with the dietary practices and preferences commonly observed in the temporary resident workers home venues. Under no circumstances shall alcoholic beverages or other substances controlled or prohibited under U.S. Federal or GovGuam laws, rules or regulations be furnished. Contractors, subcontractors and their employees found to be in violation of the aforementioned prohibition will be prosecuted to the fullest extent of the law and serious or repeated violation may result in termination of this contract for default. This prohibition does not apply to moderate and responsible use of alcohol within temporary resident worker housing and/or dining facilities that is purchased at private expense and for personal consumption only. This prohibition also does not apply to

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moderately sized refrigerators within individual rooms/spaces which pose no health or safety issues and do not conflict with any existing GovGuam rules/regulations for the type of housing facilities/accommodations.

a. Provide dining facilities for its own and its Subcontractors' workforce consistent with the work schedules and nutritional needs of its employees. To the extent practical and cost effective, locate dining facility within, contiguous to or within reasonable walking distance from Contractor workforce housing facilities. At a minimum, furnish meals and make the dining facilities available to the temporary resident workers for pre-work (morning) and post-work (evening) meals. Extend or adjust meal service and dining facility operating hours to accommodate the work schedules including multiple work shifts or non-standard work shifts. Provide mid-workday meals to the worksite. During weekend, holiday or other Government directed non-workdays, furnish meals for the temporary resident workers in the same manner and of the same quality as for work days; except that, mid-day meals shall be served in the Contractor's dining facilities.

b. Ensure sufficient quantities of non-perishable food and water supplies are available to sustain the basic nutritional needs of its workforce during emergency events. For planning and acquisition purposes, assume normal supply chain operations will be unavailable for a period of five calendar days after an event. At the direction of Contracting Officer, the Contractor shall implement its emergency event plan.

#### 1.3.3.2 Material Management

Obtain from the Government of Guam the necessary permits for vehicles classified as Class 4, Class 6 to 13 and Class 5 with GVWR greater than 20,000 lbs. traveling on public roads. Schedule travel during off peak hours. Coordinate these vehicle movements at the worksites with the Contracting Officer. Provide the necessary safety and security requirements for the movement of the materials and equipment at the worksites and public roads.

a. Limit the movement of vehicles classified as Class 4, Class 6 to 13 and Class 5 with GVWR greater than 20,000 lbs. from the port to the following routes:

Northern portion of Guam: Route 11 to 1 to 8 to 16 to 27 to 1 and to 3.  
Route 11 to 1 to 8 to 16 to 27 to 1 and to 9.

Southern portion of Guam: Route 11 to 1.

b. Limit the movement of vehicles classified as Class 4, Class 6 to 13 and Class 5 with GVWR greater than 20,000 lbs. from the quarries to the following routes:

Northern portion of Gua Chalan Lujuna Road to Route 1 to 3.  
Chalan Lujuna Road to Route 1 to 9.

Southern portion of Guam: Chalan Lujuna Road to Route 1 to 27 to 16 to 8 to 1.

c. Ensure necessary vehicle and equipment inspection(s) and registration as well as operator licenses and permits are obtained and maintained current throughout the performance of this contract in accordance with all statutes, rules and regulations of the U.S Federal Government or the GovGuam as are in effect on the date of award of this contract or

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thereafter promulgated by the aforementioned governmental authorities. Provide appropriate training for all vehicle and equipment operators and their supervisory personnel with regards to vehicle/equipment operation and safety.

#### 1.3.3.3 Safety & Security

Ensure a safe living environment free from violence, threats of violence, harassment, intimidation, and other disruptive behavior at the workforce housing facilities and the construction sites. Ensure the employees are aware of the company's policy in the event of a conviction for offense(s) committed off base.

The QCM shall certify that a criminal background check was completed for each worker and none have any of the following disqualifiers:

- a. Previously barred from entry/access to any military installation or facility.
- b. Wanted by law enforcement authorities, regardless of offense/violation, (i.e., an "order to arrest" has been issued by a judge).
- c. Conviction of firearms or explosives violation.
- d. Incarcerated for 12 months or longer within the past three years, regardless of offense/violation.
- e. Conviction of espionage, sabotage, treason or terrorism, murder, sexual assault, armed assault/robbery, rape, child molestation, drug possession with intent to sell, or drug distribution.
- f. Name appears on any agency's "watch list" or "hit list" for criminal behavior or terrorist activity.

Include as a minimum:

- a. Employee's Name
- b. Date of Birth
- c. Country of Birth
- d. Name, address, and telephone number of agency that conducted criminal background check
- e. List of agencies (national police records, individual's home venue law enforcement records, Guam Police Department, etc.) that were contacted to conduct background check.

Submit the results of the background check to the Contracting Officer and a copy to the Guam Department of Labor with the following safety & security certification statement:

"I hereby certify that the worker(s) identified in this submittal had a criminal background check and none have any disqualifiers.

Certified by QC Manager \_\_\_\_\_, Date \_\_\_\_\_"

Clearly mark the envelope or container transmitting the background check



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submittal as containing "Personally Identifiable Information" (or PII) and that only those officials with a need to know may view this information.

Ensure all personnel receive and acknowledge receipt of a safety, and security briefing the content of which shall be consistent with inherent safety, security and anti-terrorism requirements of the project(s) to which the person will be assigned.

#### 1.3.3.4 Transportation

Provide safe, secure and adequate transportation services for temporary resident workers to and from temporary resident workforce housing facilities and worksites to accommodate work schedules including multiple work shifts or non-standard work shifts. Work performed hereunder shall comply in all respects with all statutes and regulations of the U.S Federal Government or the GovGuam in effect on the date of award of this contract or thereafter promulgated by the aforementioned governmental authorities.

a. Ensure basic transportation services are provided between temporary resident workforce housing facilities and worksites and available emergency shelter facilities during emergency events (man-made or natural disasters). Transportation during off-duty hours and to non-duty locations shall also comply with requirements in the next paragraph.

b. Ensure necessary vehicle and equipment inspection(s) and registration as well as operator licenses and permits are obtained and maintained current throughout the performance of this contract in accordance with all statutes, rules and regulations of the U.S Federal Government or the GovGuam as are in effect on the date of award of this contract or thereafter promulgated by the aforementioned governmental authorities. Provide appropriate training for all vehicle and equipment operators and their supervisory personnel with regards to vehicle/equipment operation, personnel transportation, prescribed worker transportation and safety. Perform transportation services in accordance with 29 CFR §1910, et seq. - Occupational Health & Safety Standards, 29 CFR 1926 § - Safety & Health Regulations for Construction, 10 G.C.A. §§ 55 -79 - Public Safety and 16 G.C.A. §§ 1101, et seq. - VEHICLES.

#### 1.4 MINIMUM INSURANCE REQUIREMENTS

Procure and maintain during the entire period of performance under this contract the following minimum insurance coverage:

- a. Comprehensive general liability: \$500,000 per occurrence
- b. Automobile liability: \$200,000 per person, \$500,000 per occurrence for bodily injury, \$20,000 per occurrence for property damage
- c. Workmen's compensation as required by Federal and State workers' compensation and occupational disease laws.
- d. Employer's liability coverage of \$100,000, except in States where workers compensation may not be written by private carriers,
- e. Others as required by the State.

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#### 1.5 CONTRACTOR PERSONNEL REQUIREMENTS

##### 1.5.1 Subcontractor Special Requirements

###### 1.5.1.1 Asbestos Containing Material

All contract requirements of PART 4, F20 SELECTIVE BUILDING DEMOLITION, assigned to the Private Qualified Person (PQP) shall be accomplished directly by a first tier subcontractor.

###### 1.5.1.2 HVAC TAB

All contract requirements of TAB work required by PART 4 D30, HVAC, shall be accomplished directly by a first tier subcontractor. No TAB work required by PART 4, D30, HVAC, shall be accomplished by a second tier subcontractor.

###### 1.5.1.3 Qualified Testing Organization

All contract requirements of work required to be performed by a Qualified Testing Organization in PART 4, D50 ELECTRICAL and G40 SITE ELECTRICAL UTILITIES, shall be accomplished directly by a first tier subcontractor. No work to be performed by a Qualified Testing Organization, required by PART 4, D50 and G40 shall be accomplished by a second tier subcontractor.

#### 1.6 SUPERVISION

Have at least one qualified supervisor capable of reading, writing, and conversing fluently in the English language on the job site during working hours. In addition, the Quality Control (QC) representative shall also have fluent English communication skills.

#### 1.7 AVAILABILITY OF CADD DRAWING FILES

After award and upon request by the Contractor completing the "LIMITED AUTHORIZATION FOR USE OF ELECTRONIC DATA" form, the electronic "Computer-Aided Drafting and Design (CADD)" drawing files will be made available to the Contractor for use in preparation of construction drawings and data related to the referenced contract subject to the following terms and conditions:

Data contained on these electronic files shall not be used for any purpose other than as a convenience in the preparation of construction drawings and data for the referenced project. Any other use or reuse shall be at the sole risk of the Contractor and without liability or legal exposure to the Government. The Contractor shall make no claim and waives to the fullest extent permitted by law, any claim or cause of action of any nature against the Government, its agents or sub consultants that may arise out of or in connection with the use of these electronic files. The Contractor shall, to the fullest extent permitted by law, indemnify and hold the Government harmless against all damages, liabilities or costs, including reasonable attorney's fees and defense costs, arising out of or resulting from the use of these electronic files.

These electronic CADD drawing files are not construction documents. Differences may exist between the CADD files and the corresponding DB RFP documents. The Government makes no representation regarding the accuracy or completeness of the electronic CADD files, nor does it make representation to the compatibility of these files with the Contractors

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hardware or software. In the event that a conflict arises between the DB RFP documents prepared by the Government and the furnished CADD files, the DB RFP documents shall govern. The Contractor is responsible for determining if any conflict exists. Use of these CADD files does not relieve the Contractor of duty to fully comply with the contract documents, including and without limitation, the need to check, confirm and coordinate the work of all contractors for the project.

If the Contractor uses, duplicates or modifies these electronic CADD files for use in producing construction drawings and data related to this contract, all previous indicia of ownership (seals, logos, signatures, initials and dates) shall be removed.

#### 1.8 ELECTRONIC MAIL (E-MAIL) ADDRESS

The Contractor shall establish and maintain electronic mail (e-mail) capability along with the capability to open various electronic attachments in Microsoft, Adobe Acrobat, and other similar formats. Within 10 days after contract award, the Contractor shall provide the Contracting Officer a single (only one) e-mail address for electronic communications from the Contracting Officer related to this contract including, but not limited to contract documents, invoice information, request for proposals, and other correspondence. The Contracting Officer may also use email to notify the Contractor of base access conditions when emergency conditions warrant, such as hurricanes, terrorist threats, etc. Multiple email address will not be allowed.

It is the Contractor's responsibility to make timely distribution of all Contracting Officer initiated e-mail with its own organization including field office(s). The Contractor shall promptly notify the Contracting Officer, in writing, of any changes to this email address.

#### 1.9 CLEANUP

Leave premises "broom clean." Clean interior and exterior glass surfaces exposed to view; remove temporary labels, stains and foreign substances; polish transparent and glossy surfaces; vacuum carpeted and soft surfaces. Clean equipment and fixtures to a sanitary condition. Clean or replace filters of operating equipment. Clean debris from roofs, gutters, downspouts and drainage systems. Sweep paved areas and rake clean landscaped areas. Remove waste and surplus materials, rubbish and construction facilities from the site.

#### PART 2 PRODUCTS

Not used.

#### PART 3 EXECUTION

Not used.

-- End of Section --

REDACTED: FOIA (b)(3), (b)(4), and (b)(5)

APPENDIX H- GUAM CONSTRUCTION CAPACITY ASSESSMENT: RISK REGISTER

REDACTED: FOIA (b)(5)

**APPENDIX I- STAKEHOLDER COMMENT MATRIX**