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Cantonment / Family Housing: Summary Fact Sheet

In this Fact Sheet:

- Chapter 4 Overview
- Preferred Alternative A
- 18 Environmental Resource Areas Evaluated for Each Alternative
- Construction Impact Mitigation Measures
- 6 Environmental Resource Areas Impacted by the Preferred Alternative
- Alternatives B, C, and D



This document summarizes the Chapter 4 of the 2014 Draft SEIS. For more detailed information on the topics presented here, please refer to

the 2014 Draft SEIS, which is available for review at the Robert F. Kennedy Memorial Library, located in the University of Guam, and the Nieves M. Flores Memorial Library in Hagåtña. The 2014 Draft SEIS can also be viewed online and downloaded at the websites listed below.

Download the complete Draft SEIS and related documents at these websites:
JGPO: www.guambuildupeis.us
GovGuam: www.one.guam.gov



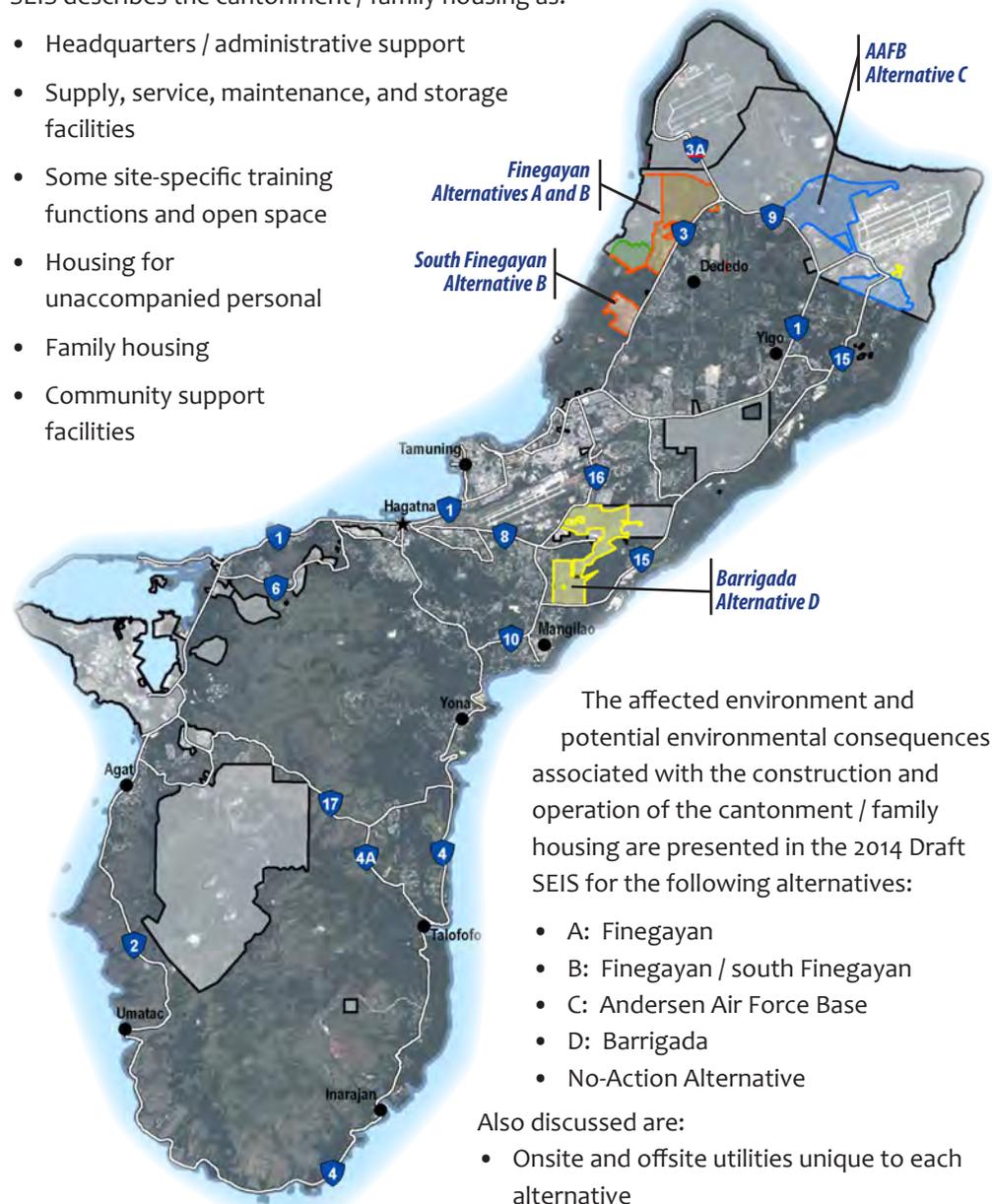
SHAPING THE FUTURE ... TOGETHER

SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT (SEIS) FOR A
**LIVE-FIRE TRAINING RANGE COMPLEX (LFTRC) AND MAIN CANTONMENT
AND FAMILY HOUSING LOCATION ON GUAM**

Chapter 4: Cantonment / Family Housing Overview

Due to the 64% reduction in the estimated number of Marines relocating to Guam, the 2014 Draft SEIS includes a revised cantonment / family housing component. Consistent with the 2010 Final EIS, the 2014 Draft SEIS describes the cantonment / family housing as:

- Headquarters / administrative support
- Supply, service, maintenance, and storage facilities
- Some site-specific training functions and open space
- Housing for unaccompanied personal
- Family housing
- Community support facilities



The affected environment and potential environmental consequences associated with the construction and operation of the cantonment / family housing are presented in the 2014 Draft SEIS for the following alternatives:

- A: Finegayan
- B: Finegayan / south Finegayan
- C: Andersen Air Force Base
- D: Barrigada
- No-Action Alternative

Also discussed are:

- Onsite and offsite utilities unique to each alternative
- Offsite utilities common to all alternatives
- Expansion / realignment of 2 Department of Defense (DOD) schools



Cantonment / Family Housing: Summary Fact Sheet

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Alternative A: Finegayan: Preferred Alternative

According to the Council on Environmental Quality (CEQ), the Department of the Navy (DON) preferred alternative is the one that the agency believes fulfills its statutory mission and responsibilities, giving consideration to economic, environmental, technical and other factors.

Cantonment Alternative A: Finegayan

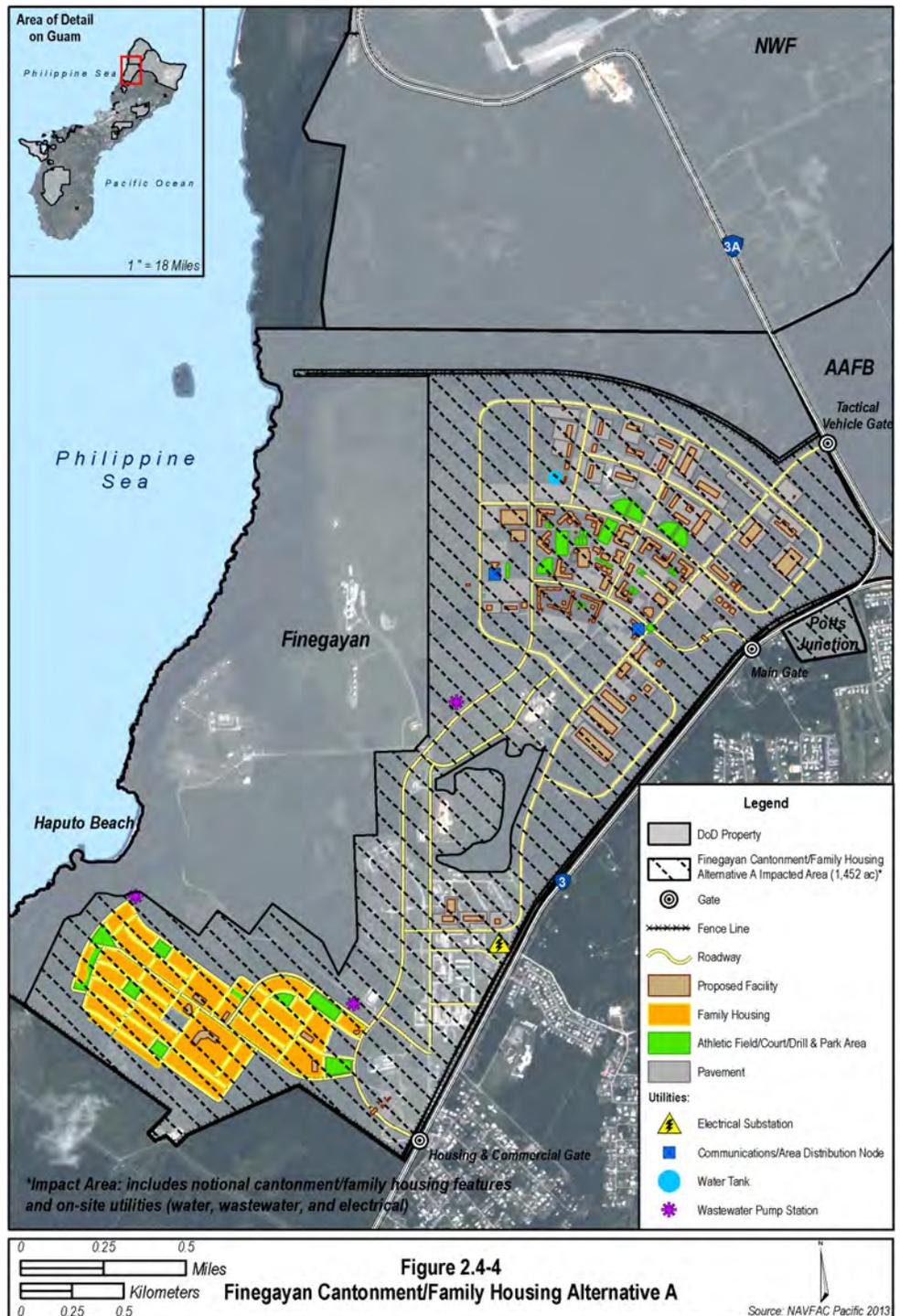
Alternative A meets DOD mission requirements with the least impact to the 18 Environmental Resource Areas evaluated for the 2014 Draft SEIS. The study area consists of approximately 1,452 acres on a single adjoining parcel of federally-owned land. No additional land would need to be acquired by the DOD.

Utilities and Infrastructure: The proposed action includes on-site utilities to support the cantonment / family housing and LFTRC facilities, off-site utilities to connect proposed facilities to existing infrastructure, installation of connecting information technology / communication (IT/COMM) lines, and an upgrade of existing off-site infrastructure where necessary.

The 2014 Draft SEIS calls for the modification of two existing off-site school facilities:

- Expansion to the Department of Defense Education Activity (DODEA) High School located at the Naval Hospital site in Central Guam; and
- Depending on the chosen alternative, Anderson Middle School located at Anderson Air Force Base (AAFB) will either be expanded or repurposed to an elementary and middle school.

Upgrades would include new structures, open space, and parking.



18 Environmental Resource Areas Evaluated for Impacts in Each Alternative

1. Geological and Soil Resources
2. Water Resources
3. Air Quality
4. Noise
5. Airspace
6. Land / Submerged Land Use
7. Recreational Resources
8. Terrestrial Biological Resources
9. Marine Biological Resources
10. Cultural Resources
11. Visual Resources
12. Ground Transportation
13. Marine Transportation
14. Utilities
15. Socioeconomic and General Services
16. Hazardous Materials and Waste
17. Public Health and Safety
18. Environmental Justice and the Protection of Children

6 Significant to Moderate Environmental Resource Area Impacts of Preferred Alternative A

The four sites that met initial operational and mission requirements were evaluated against the set of 18 Environmental Resource Areas to determine potential environmental and socioeconomic impacts. In cases where impacts are significant, mitigations have been proposed. Impacts to the environment from both short-term construction and long-term operations have been evaluated for each alternative in the 2014 Draft SEIS.

Alternative A Finegayan is found to have the fewest impacts overall. However, there are expected to be significant to moderate impacts to the following six environmental resource areas, which are discussed in more detail on the following pages:

1. Terrestrial and marine biological resources
2. Water resources
3. Cultural resources
4. Utilities
5. Socioeconomics and general services
6. Environmental justice and the protection of children



Construction Impact Mitigation Measures

During the construction phase for each alternative, the following best management practices (BMPs) and potential mitigation measures may be implemented to avoid, reduce, and mitigate potential direct and long-term impacts of the proposed construction activities:

- Hazard Analysis and Critical Control Point (HACCP) Plan
- Biosecurity Outreach and Education
- Contractor Education Program
- DON Guam Landscaping Guidelines
- Contractor Plans and Specifications

Final mitigation measures will be presented in the ROD (record of decision) after resource agency consultations are completed.

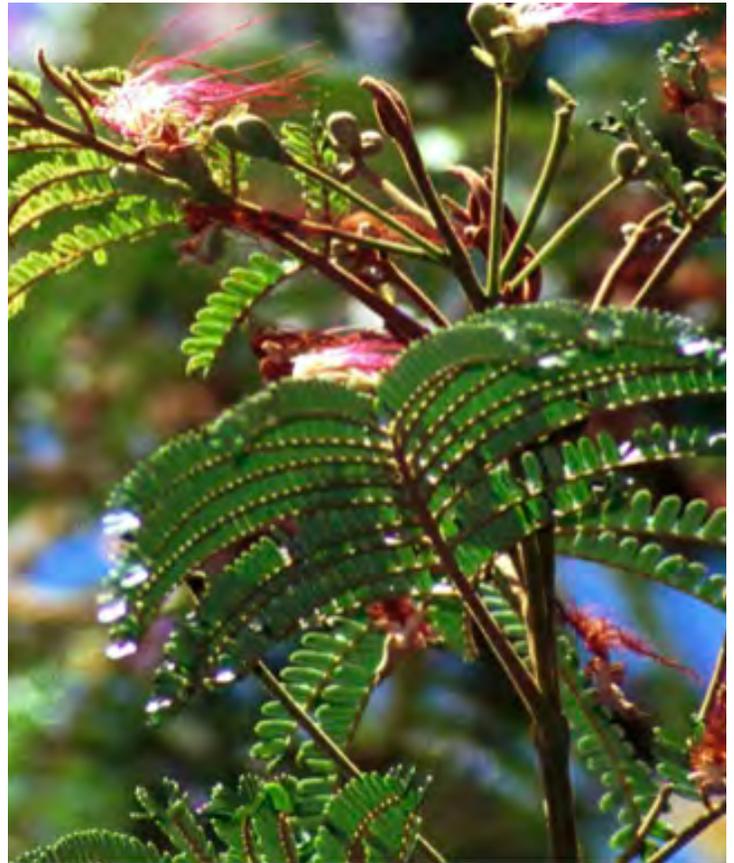
1. Impacts to Terrestrial and Marine Biological Resources

Impacts to Vegetation: Construction of the housing facilities would result in a significant but mitigable impact to the vegetation due to the development of 1,020 acres of limestone forest.

- **Mitigation:** Forest enhancement, ungulate management (which would consist of exclusion fencing and active control), non-native and invasive vegetation removal, and area habitat planting.

Impacts to Conservation Areas: Construction would result in significant but mitigable impacts to conservation areas due to the conversion of Overlay Refuge lands into a developed area. Cantonment operations would result in significant impacts to the Haputo Ecological Resource Area (ERA) due to increased usage by military and civilian personnel.

- **Mitigation:** Designate Naval Magazine (NAVMAG) Ecological Reserve Area (ERA), expand of Orote Peninsula ERA. Introduce fencing, educational signage, educational materials regarding area biological resources, and monitoring of visitor use.



Limestone Forest Impact Mitigation

To mitigate significant construction phase impacts to the limestone forest, that encompasses both the Alternative A and B project areas, the DON proposes to implement forest enhancements on a minimum of 1,020 acres of limestone forest. Enhancements would include but are not limited to the following:

- Ungulate (hooved animal) management consisting of exclusion fencing and active control with the goal of eradication within the fenced areas
- Non-native, invasive vegetation removal
- Propagation, planting, and establishment of dominant and rare species that are characteristic of the areas habitats

These enhancements are anticipated to improve the overall habitat quality for native flora and fauna. Long-term, direct impacts to populations of native wildlife species within the project areas would not be significant. These species are abundant in surrounding areas and could repopulate portions of suitable habitat within the affected areas after construction.

2. Impacts to Water Resources

Impacts to Groundwater: Cantonment operations for Alternative A would bring long-term significant impacts to annual groundwater production. An increase to 1.7 million gallons withdrawn per day would cause localized impact to the Northern Guam Lens Aquifer (NGLA). Through Alternative A, stormwater runoff protection measures will be provided that would also serve to protect groundwater quality. By adhering to General Permit and BMP regulations, a reduction in stormwater pollutant loading potential to the underlying groundwater sub-basins of the NGLA should occur. Under this alternative, an environmental and hydrogeological assessment will be performed to ensure adverse effects will not result, including but not limited to:

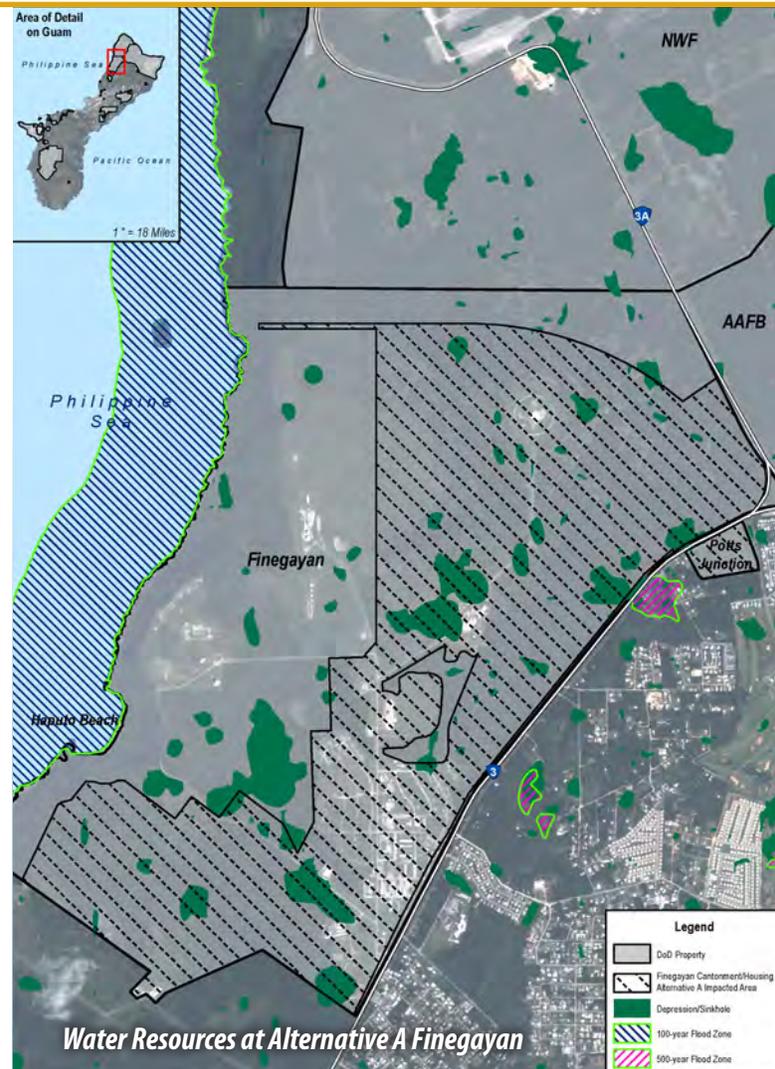
- Displacement of ground water
- Interference with well production
- Significant changes to groundwater recharge
- Flooding
- Threat of any pollutant to groundwater

Construction activities associated with Alternative A would result in less than significant short-term impacts to groundwater. Much of the activity would take place near the coast line during the construction of the family housing component located on Haputo Beach.

Impacts to Nearshore Water: The projected increase in wastewater flow during construction and operation would result in direct significant impacts to Nearshore Water until Northern District Wastewater Treatment Plant (WWTP) upgrades are completed.

Direct operation phase impacts to nearshore waters under this alternative are significant but mitigable. Impacts such as contamination from off-site pollutants would be unlikely. Along with the buffer zones already required by the Haputo ERA Management Plan, the immense vegetation will provide sufficient buffering and protection from stormwater runoff. Therefore, it can be expected that no stormwater runoff and other pollutants will be discharged to nearshore waters.

Impacts to Potable Water: Cantonment operations would result in short-term local impacts to the sub basin within the NGLA but less significant impacts to the overall NGLA. Increased amounts of withdrawal from the NGLA could result in higher levels of chloride concentrations.



\$106.4 Million Appropriated for Water System Improvements on Guam

The DOD will implement water conservation measures and improvements to existing DOD water systems. Additionally, the DOD proposes to assist the Guam Waterworks Authority (GWA) with funding for WWTP upgrades, and in part develop an implementation plan to assist with public infrastructure improvements which are needed to sustain the alternative. \$106,400,000 has been appropriated for civilian water and wastewater improvements on Guam. Specific projects utilizing these funds will be coordinated with the OEA Economic Adjustment Committee (EAC).



Cantonment / Family Housing: Summary Fact Sheet

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3. Impacts to Utilities

Electrical Power: The estimated power demand increase from the proposed project could be handled by current Guam Power Authority (GPA) generating capacity. There would be no significant direct long-term impacts of the current power customers, with only potentially short-term power outages during construction of the expanded system.

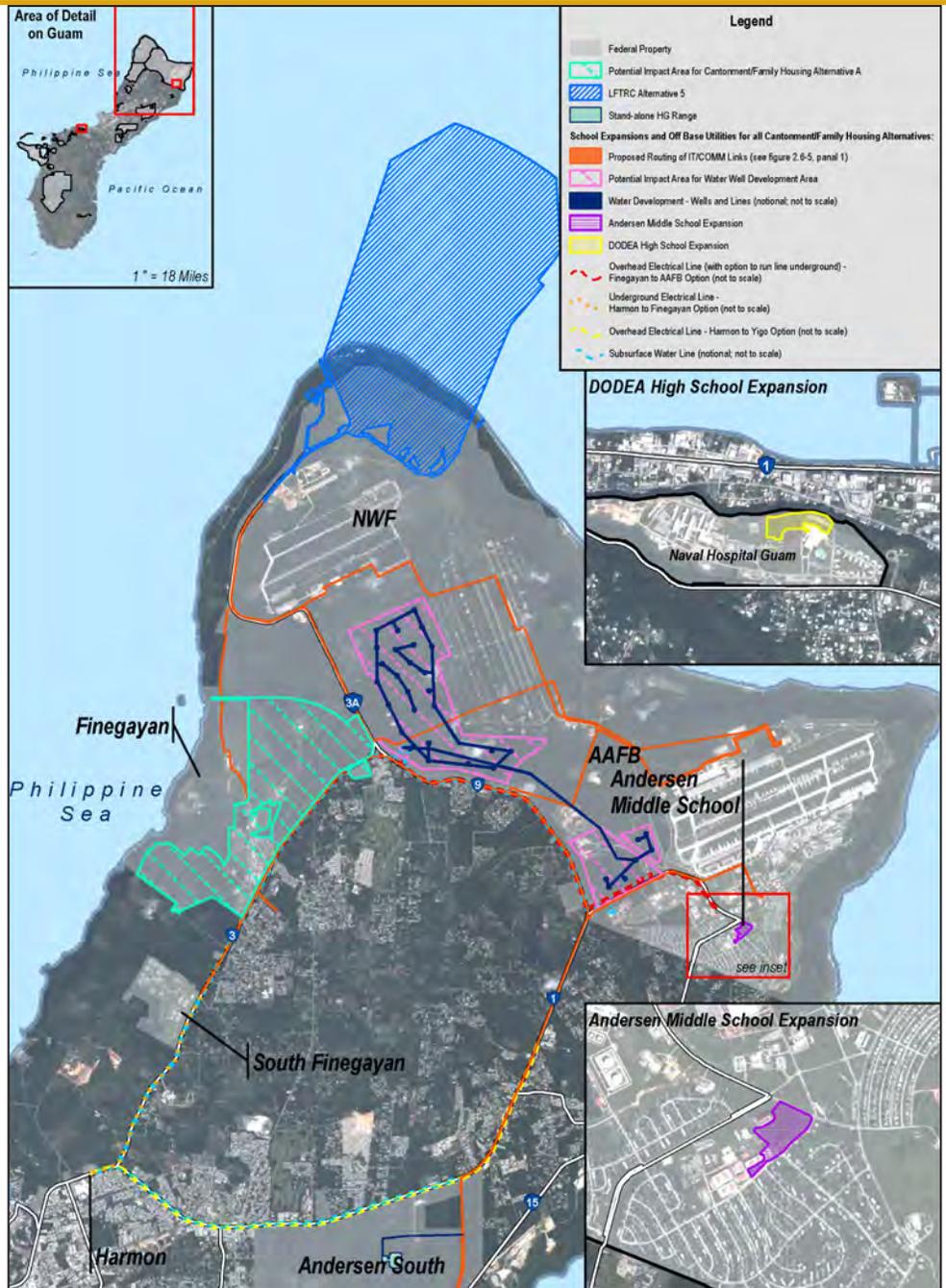
- **Mitigation:** By using temporary generators, the potential for these power outages would be minimal. Scheduled outage notices would be provided a minimum of 30 days in advance.

Water: New DOD water facilities are likely to be operated separately from the system operated by GWA.

- **DOD Water System Improvements:** The DOD would implement enhanced water conservation measures to improve existing water systems. This will assist in reducing system leaks, adjust pumping rates, and will increase the use of surface water in northern Guam from the Fena Reservoir.

Wastewater: The Northern District WWTP is non-compliant with secondary treatment standards required by its permit. The projected increase in wastewater flow during construction and operation would result in direct significant impacts to Nearshore Water until upgrades are completed. The system would connect to the GWA collection system along Route 3 through a relief sewer.

- **Mitigation:** Recently, the Guam Legislature authorized GWA to finance improvements to its wastewater system with help from the DOD to locate funding,



**Preferred Alternatives for Cantonment / Family Housing and LFTRC
Showing Proposed Utility Locations**

Additionally, the FY2014 Consolidation Appropriations Act distributed \$106,400,000 for civilian water and wastewater improvements on Guam, and in part develop an implementation plan to assist with public infrastructure improvements which are needed to sustain the alternative. Specific projects utilizing these funds will be coordinated with the OEA Economic Adjustment Committee (EAC).

Solid Waste: Population increases will increase the need for solid waste services along with the total cost of providing services.

- Because increased costs will be spread over a larger group of ratepayers, rates will be little changed as a result of the proposed action.



4. Impacts to Cultural Resources

Historic Properties: Construction would have significant effects to 24 historic properties which are scheduled to be demolished and undetermined effects to 10 un-elevated buildings. These include three National Register of Historic Places (NRHP) eligible public quarters buildings within the Finegayan cantonment built in the 1950's and 60's. Vegetation removal in the limestone forest may result in impacts to culturally important natural resources. The operation of the cantonment / family housing facilities would result in potential indirect effects to one NRHP building at Haputo due to increased recreation use.

- **Mitigation:** Data recovery and enforcement of stipulations to identify and evaluate the historic properties and coordinate with the State Historic Preservation Office (SHPO), concurring parties, and knowledgeable traditional practitioners.

5. Impacts to Socioeconomics and General Services:

Population Growth: The projected population increase from the current 159,358, recorded by the U.S. Census, to approximately 175,436 by 2028 will create associated operation and construction phase impacts. Given that total population change would exceed 2% as result of the proposed Marine Corps relocation, the change would not necessarily result in a negative effect. Impacts to population would vary, with some adverse and beneficial effects.

- **Mitigation:** These changes are not necessarily negative and may have beneficial outcomes, such as increased tax revenues. Therefore no mitigation is proposed.

Public Services: During construction all public service agencies would require an estimated additional 130 employees which would create a 2.9% increase in baseline staff levels. This would be a short term effect lasting from 2021 to 2023. A total of 14 agencies would be significantly impacted by Guam's population increase.

- **Mitigation:** The projected population increase would not likely result in a significant impact on public services. Any increased demand of public services and permitting agencies would likely be compensated for by the estimated increase of GovGuam tax revenues resulting from the population increase. Potential mitigation measures would be to continue to support the efforts of the Civilian Military Coordination Council (CMCC) to help develop recommendations which would influence workforce population levels and population growth before public service capabilities are exceeded.

6. Impacts to Environmental Justice and the Protection of Children

Public Health and Safety: Temporary population growth may stress certain sectors of the Guam economy, and short term impacts to health services would be significant, particularly on low-income populations. However some benefits would occur due to increased employment opportunities. The number of public health and safety professionals required to maintain current levels of service would increase by more than 2%. When considering the current level of service, with the existing deficiencies in facilities, equipment, and staffing, there would be potential significant impacts to public health and safety agencies, and the low income populations they serve, during construction and beyond.



- **Mitigation:** The DOD plans to provide project-related employment and population forecasts to help identify shortfalls in Guam's public services, and assistance in identifying federal programs and funding sources that would help GovGuam to address shortfalls. \$13,000,000 has been appropriated for a regional public health laboratory by the FY2014 Consolidated Appropriations Act.

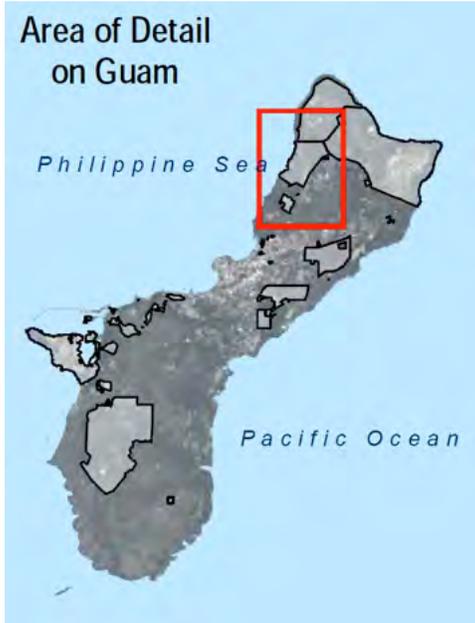


Cantonment / Family Housing: Summary Fact Sheet

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Alternatives B, C, and D

All alternatives were analyzed and evaluated to the same extent. The other alternatives all had plausible implementation for the cantonment/family housing, however, their benefits did not outweigh their impacts quite as much as Alternative A, according to the DON. The following is a brief overview of the other alternatives and their potential impacts. The potential impacts resulting from the implementation of the other four Alternatives are very similar to those of Alternative A. There are slight differences in the extent of impacts, as well as the clear difference in the proposed location.



Alternative B: Finegayan / South Finegayan

The current access route to Latte Stone Park would be restricted under this alternative. A possible mitigation of this would be the DOD working with the local community in providing an alternative access route to the park.

Alternative C: Andersen Air Force Base

The general public would be excluded from entering construction zones and training areas. The presence of UXO (unexploded ordinance) within the proposed area is unknown. Explosives Safety Submission (ESS) documentation would be prepared, outlining specific measures that would be implemented to ensure the safety of workers and the public from any potential hazards related to Munitions and Explosives of Concern (MEC) exposure. BMPs would be implemented to identify and remove potential MEC items prior to the initiation of ground-disturbing activities.

Alternative D: Barrigada

The temporary increase of construction-related vehicles on roads may cause delays in accessing recreational areas. Although the impacts of the alternative will not prohibit access to any recreational areas, it may cause an inconvenience to resource seekers. This impact is only related to the construction phase of the proposed alternative, and will not be significant during operation.

No-Action Alternative

Under the No-Action Alternative, the DON would continue to implement the September 2010 ROD, consisting of construction and operation of a cantonment area for approximately 8,600 Marines and approximately 9,000 dependents on DOD-governed lands at the proposed location of Alternative B - Finegayan and South Finegayan.

Download the complete Draft SEIS and related documents at these websites:

JGPO: www.guambuildupeis.us
GovGuam: www.one.guam.gov



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Definitions for terms and acronyms used in this and other related reports can be found in the Acronym Guide and Glossary at www.one.guam.gov.