CHAPTER 10. LAND AND SUBMERGED LAND USE

10.1 INTRODUCTION

This section relies on the Volume 2 affected environment description of land and submerged land ownership and management for both civilian and Department of Defense (DoD) property. Submerged lands refer to areas in coastal waters extending from the Guam coastline into the ocean 3 nautical miles (nm) (5.6 kilometers) [km]), that is the limit of territorial jurisdiction. The focus of Chapter 10 is to address the land ownership and land use impacts associated with the related actions including large-scale utility projects and roadways. The methodology for impact analysis is as described in Volume 2.

Many of the related actions occur on non-DoD land in conjunction with existing Government of Guam (GovGuam) utilities and roadways. Collocation provides opportunities for maximum land use efficiency. Associated linear facilities such as transmission or distribution lines would be required. The potential impacts are described by alternatives and components, and the chapter concludes with identification and discussion of mitigation measures that apply to significant impacts.

The region of influence for land use is land and ocean in the Territory of Guam within 3 nm (5.6 km) off shore.

10.2 ENVIRONMENTAL CONSEQUENCES

10.2.1 Approach to Analysis

There are two components to the land use analysis: 1) land/submerged lands ownership and management, and 2) land/submerged land use. There are different criteria for assessing potential impacts under these two categories. Short-term impacts would be related to facility construction activities that would be located within the project footprint or on previously disturbed lands. No construction staging area has been designated away from the project site. These construction activities would have minimal and localized impacts on land use. All impacts related to land ownership and use are assumed to occur during the long-term operational phase of the proposed action as the changed conditions would alter the development and use of the current site and its vicinity.

The potential indirect impacts that would be due to changes in land ownership and use are addressed under other specific resource categories such as traffic, noise, natural resources and recreation. Incompatibility with adjacent land uses to the extent that public health and safety is impacted is addressed under public health and safety and noise resource sections. Federal actions on federal lands are not subject to local zoning or land management regulations; however, consistency with surrounding non-federal land uses is an important consideration in land use planning. Coastal Zone Management Act consistency determination assessment is being prepared for all Guam proposed actions and the correspondence will be included in the Final EIS/OEIS appendices.

Impacts for assessing impacts to land use differ slightly for the utilities and the roadways. The roadway analysis is subject to FHWA regulations.

10.2.1.1 Land Ownership/Management

Utilities

The impact assessment methodology for land/submerged land ownership and management is not dictated

by regulatory authority or permit requirements. There is flexibility in the methodology and assumptions are made. The basic premise is that a release of federal lands/submerged lands to GovGuam or individuals has beneficial impacts on the new landowners. Conversely, the taking of land by the federal government may be considered an adverse impact on the entities that are losing ownership or control of their property. Taking property in this discussion refers to a situation where the property owner is legally required to sell property to the federal government. There may be some owners who are interested in selling or lease land to the federal government and would perceive the federal acquisition or lease of their property as a beneficial impact. Other owners who do not want to sell their property (or relocate) are likely to consider the forced sale or relocation as an adverse impact even though they are properly compensated. This situation is considered a significant adverse impact on the individual landowner. Until the land negotiations are complete, the impact analysis assumes a significant impact on the individual landowner. There are exceptions to this significant impact for minor rights-of-way and easements for utilities. Mitigation for the taking of property that is not acceptable to the land owner may be a long-term lease agreement instead of purchase where the property returns to the owner on termination of the lease.

The comments received during the scoping period did not support an increase in federal land on island and the increase is considered an adverse impact. The impacts of the proposed island-wide increase in federal land are being addressed in the Land Acquisition Impact Study portion of the Socioeconomic Impact Assessment Study that is being developed and will be available as part of the Final EIS/OEIS.

No indirect impacts are associated with changes in land ownership, except for those that would be discussed under other resource categories. For example, changes in land ownership may impact potential tax revenue to GovGuam.

The test for significance of the potential land ownership/management for utilities is based on the type of land acquisition. New land for industrial plants is considered a significant adverse impact because of the quantity of land required. Land ownership impacts due to proposed linear facilities is dependent on site-specific conditions, such as the availability of existing easements and utility corridors, location, land use, and quantity of land affected. Expansion of an existing utility corridor requiring modification of existing easements would be a less-than-significant impact. A new corridor through existing land uses that would require relocation may be considered a significant impact. A new corridor through undeveloped land may be considered a mitigable, significant impact.

Off Base Roadways

Impacts on land ownership, social, economic, right-of-way (ROW) acquisition, and relocation as a result of the proposed roadway improvement projects are addressed in the socioeconomics and general services chapter of this volume.

10.2.1.2 Land Use

Utilities

There are three criteria that are applied for assessing impacts on land and submerged land use:

- Consistency with Farmland Protection Policy Act (FPPA) of 1981 (not applicable to submerged lands).
- Consistency with current or documented planned land and submerged land use. Land use consistency includes impacts on access policies and loss of open space.
- Restrictions on access.

Land Use Criterion 1: FPPA

The FPPA (Public Law 97-98, 7 USC 4201 and 7 CFR 658) is intended for federal agencies to: 1) identify and take into account the potential adverse effects of federal programs on the preservation of farmland land; and 2) consider alternative actions, as appropriate, that could lessen such adverse effects; and assure that such federal programs, to the extent practicable, are compatible with state, unit of local government, and private programs and policies to protect farmland. The FPPA addresses prime and important farmlands. Actions that are not consistent with this FPPA are considered to have an adverse impact and determination of significance is a qualitative assessment of the value of the farmland affected. DoD lands on Guam are not currently used or planned for agricultural use and there would be no FPPA impact associated with changes in DoD land use within the property boundary. The non-DoD lands proposed for acquisition could potentially be used for farming and the potential impacts are assessed

Land Use Criterion 2: Consistency with Current or Documented Planned Land Use

Land use plans are intended to guide future development. Potential adverse land use impacts would result from a proposed land use that is incompatible with the existing land use or planned land use or if vacant (i.e., no modern manmade structures) land and open space is developed. It is possible for land uses to be inconsistent, but not necessarily incompatible. For example, residential development next to a park is inconsistent, but compatible, while an industrial facility proposed within a residential area would likely be incompatible and inconsistent. Potential adverse impacts would also result if there are incompatible changes in use within submerged lands. Changes in access policies may result from changes in land use and adverse impacts would result if the access became more restrictive to the public.

The test for impact significance is less rigorous for existing DoD land and submerged land, where limited land availability may result in less than ideal land use changes. Federal actions on federal lands/submerged lands are subject to Base Command approval, but are not required to conform with State/Territory land use plans or policies. The proposed action alternatives of this EIS/OEIS have been developed in consultation with Base Command planners. As a result, there would be no anticipated significant impact to land use within DoD parcel boundaries. Land use changes on existing DoD land could be the basis for significant impacts to other resources (such as visual resources, noise, traffic, recreation, cultural and biological resources) within and beyond DoD land boundaries. Impacts to these resources and others are addressed in other resource chapters of this EIS/OEIS.

Proposed land uses on newly acquired lands would have an adverse impact if they are not consistent with the existing or proposed land use at that site. Similarly, a change in use within non-DoD submerged land could have an adverse impact. The test for significance is the degree of incompatibility and is qualitative. For example, proposed military housing would be consistent with existing or planned civilian residential communities and there would be no adverse impact to land use. A proposed industrial facility in an area that is designated for public park would be a significant adverse impact, while the same facility in an area designated for heavy commercial land use would have no significant adverse impact.

While a proposed land use under the action alternatives may be consistent with existing land use, there is potential for adverse impacts due to changes in land use intensity. For example, a training range that is used once per month may have an adverse impact if it were to be used daily. Potential adverse impacts associated with changes in land use intensity such as increases in marine traffic (Chapter 14), noise (Chapter 6), and unexploded ordnance (Chapter 18) are addressed under other resource area discussions of this EIS/OEIS. No significance criterion is established for land use intensity impacts. Noise from airfields or training may be a land use constraint and is discussed.

Land Use Criterion 3: Restrictions on Access

Additional restrictions on public access due to changes in land use on federally-controlled lands/submerged lands would be a potential adverse impact. For example an increase in the setback distance from Navy ships for security purposes may restrict access to a SCUBA site. The test for significance is subjective and based on geographic area affected, the schedule or timing of the access restrictions (permanent or occasional), and the population affected.

Physical access restrictions can result if land acquisition by the federal government results in a pocket or island of non-federal land. This would be an adverse impact on the landowner(s) of the pocket of land. The significance of the impact is based on the extent to which the non-federal land is bordered by military land. Significant adverse impacts result when the private property is surrounded by military property because there would be access restrictions and other potential land use limitations to the private property. Similarly, pockets of civilian land use within a DoD installation is an adverse impact on military land use.

Roadways

Land use impacts as a result of the proposed roadway improvement projects are assessed following Federal Highway Administration Guidance for Preparing and Processing Environmental and Section 4(f) Documents (T 6640.8A). Land use impacts would involve project effects that would be inconsistent with the comprehensive development plans adopted for the area and other plans used in the development of the transportation plan.

Impacts to land use as a result of roadway improvements could be classified into short-term impacts and long-term impacts. Short-term impacts would occur during the peak construction period (2014) and would include disruption of current use activities such as access road blockage, temporary closure of public or private facilities, and business disruption. This type of impact would cease at the completion of construction activities. Long-term impacts (post-construction up to future year 2030) would involve changes in land use patterns, population density, and growth rate. Proposed projects that are inconsistent with applicable plans and policies are considered to cause an adverse long-term impact to land use as well.

10.2.1.3 Issues Identified During Public Scoping Process

Many of the scoping issues regarding land use overlap with other resource areas, such as noise and recreation, and are discussed under those sections. As part of the analysis, concerns related to land use that were mentioned by the public, including regulatory stakeholders, during the public scoping meetings were addressed. None of the land use issues were specific to utilities or roadways. The following are public, including regulatory agency, preferences:

- No increases of federal land ownership (although some landowners were interested to sell).
- No re-acquisition of lands that have been or are in the process of being released by the federal government.

- Retention of current public rights-of-way.

10.2.2 Power

10.2.2.1 Interim Alternative 1 (Preferred Alternative)

Interim Alternative 1 would recondition existing combustion turbines and upgrade T&D systems and would not require new construction or enlargement of the existing footprint of the facility. This work would be undertaken by the GPA on its existing permitted facilities. Reconditioning would be made to existing permitted facilities at the Marbo, Yigo, Dededo No. 1, and Macheche combustion turbines. These combustion turbines are not currently being used up to permit limits. T&D system upgrades would be on existing above ground and underground transmission lines. This alternative supports Main Cantonment Alternatives 1 and 2 and Main Cantonment Alternatives 3 and 8 would require additional upgrades to the T&D system

Construction

All impacts related to land ownership and use are assumed to occur during the long-term operational phase of the proposed action as the changed conditions would alter the development and use of the current site and its vicinity.

Operation

Under Interim Alternative 1, the land use footprint of generation and substation facilities would not extend beyond existing property boundaries. FPPA is not applicable because no farmland would be potentially impacted. No new uses in submerged lands are proposed. No acquisition of non-federal land is proposed, and no additional restrictions would be placed on public access. No construction would occur at these generation facilities. Some of the overhead transmission lines would require upgrading, with some remaining overhead and others being changed from overhead to underground. All of the transmission lines would follow current routings and would not negatively impact land ownership or use. The lines being converted from overhead to underground would potentially impact land use in a beneficial manner by eliminating overhead lines impact to surface land use. Some substations would require upgrades, which would occur on the current facilities without requiring expansion of their footprints. Therefore, there would be no adverse impacts and a potentially beneficial impact to land use.

Interim Alternative 1 would result in no impacts to land ownership or use.

Potential Mitigation Measures

As no significant impacts to land/submerged land ownership, management, or use were identified under Interim Alternative 1, no mitigation is necessary or proposed.

10.2.2.2 Interim Alternative 2

Interim Alternative 2 is a combination of reconditioning of existing permitted GPA facilities, an increase in operational hours for existing combustion turbines, and upgrades to existing T&D systems. Interim Alternative 2 would not require new construction or enlargement of the existing footprint of the facility. Reconditioning would be performed on the existing permitted GPA facilities at the Marbo, Yigo, and Dededo combustion turbines. This alternative supports Main Cantonment Alternatives 1 and 2 and Main Cantonment Alternatives 3 and 8 would require additional upgrades to the T&D system. No construction outside of the existing facility footprint would occur; therefore, there would be no construction impacts to land use.

Construction

All impacts related to land ownership and use are assumed to occur during the long-term operational phase of the proposed action as the changed conditions would alter the development and use of the current site and its vicinity.

Operation

Under Interim Alternative 2, the land use footprint of generation and substation facilities would not extend beyond existing property boundaries. FPPA is not applicable because no farmland would be potentially impacted. No new uses in submerged lands are proposed. No acquisition of non-federal land is proposed, and no additional restrictions would be placed on public access. Some of the overhead transmission lines would be upgraded, with some remaining overhead and others being changed from overhead to underground. All of the transmission lines would follow current routings and would not negatively impact land use. The lines being converted from overhead to underground would potentially impact land use in a beneficial manner by eliminating overhead lines impact to surface land use. Some substations would require upgrades, which would occur on the current facilities without requiring expansion of their footprints.

Interim Alternative 2 would result in no impacts to land ownership or use.

Potential Mitigation Measures

As no significant impacts to land/submerged land ownership, management, or use were identified under Interim Alternative 2, no mitigation is necessary or proposed.

10.2.2.3 Interim Alternative 3

Interim Alternative 3 is a combination of reconditioning existing GPA permitted facilities at Marbo, Yigo, and Dededo and upgrades to the DoD power plant at Orote. Upgrades would be made to existing T&D systems. The proposed reconditioning to the existing power generation facilities at Marbo, Yigo, and Dededo would not require new construction or enlargement of the existing footprint of the facility. For the Orote power plant, upgrades would include a new fuel storage facility to facilitate longer run times between refueling. This would disturb approximately 1 acre (4,047 square m) of DoD land. This alternative supports Main Cantonment Alternatives 1 and 2 and Main Cantonment Alternatives 3 and 8 would require additional upgrades to the T&D system.

Construction

All impacts related to land ownership and use are assumed to occur during the long-term operational phase of the proposed action as the changed conditions would alter the development and use of the current site and its vicinity.

Operation

Under Interim Alternative 3, the proposed reconditioning to facilities at Marbo, Yigo, and Dededo include overhauls of the existing generating systems that would not include new construction or enlargement of the existing footprint of the facility. No adverse land use impact is anticipated. FPPA is not applicable because no farmland would be potentially impacted. No new uses in submerged lands are proposed. No acquisition of non-federal land is proposed, and no additional access restrictions would be imposed on the public. The upgrades to the DoD generating facility at Orote would require construction of a new fuel storage tank but within the current facility boundary and would not impact land use. Some of the overhead transmission lines would require upgrading, with some remaining overhead and others being

changed from overhead to underground. All of the transmission lines would follow current routings and would not negatively impact land use. The lines being converted from overhead to underground would potentially impact land use in a beneficial manner by eliminating overhead lines impact to surface land use. Some substations would require upgrades, which would occur on the current facilities without requiring expansion of their footprints.

Interim Alternative 3 would result in no impacts to land ownership or use.

Potential Mitigation Measures

As no significant impacts to land/submerged land ownership, management, or use were identified under Interim Alternative 3, no mitigation is necessary or proposed.

10.2.2.4 Summary of Impacts

Table 10.2-1 summarizes the potential impacts of each interim alternative. A text summary is provided below.

Table 10.2-1. Summary of Potential Land and Submerged Land Use Impacts-Power

Potentially Impact	*Interim Alternative 1**	*Interim Alternative 2*	*Interim Alternative 3*
Land Ownership			
Land	NI	NI	NI
Submerged Land	NI	NI	NI
Land Use			
1. FFPA	NI	NI	NI
2. Consistency with existing or proposed land use			
DoD land	NI	NI	NI
DoD submerged lands	NI	NI	NI
Non-DoD land	NI	NI	NI
Non-DoD submerged lands	NI	NI	NI
3. Public Access	NI	NI	NI

Legend: NI = No Impact. *Preferred Alternative.

The interim alternatives would have no impact on land or submerged land ownership or use.

10.2.3 Potable Water

10.2.3.1 Basic Alternative 1 (Preferred Alternative)

Basic Alternative 1 would consist of installation of up to 22 new potable water supply wells at Andersen Air Force Base (AFB), rehabilitation of existing wells, interconnection with the GWA water system, and associated T&D systems. A new 5 MG (19 ML) water storage tank would be constructed at ground level at Finegayan. Alternative 1 combines a number of water resource development options staged over 5 years, from 2010 to 2015. These options include new water supply wells, rehabilitation of existing wells, and interconnection with Guam Waterworks Authority (GWA). Alternative 1 would affect the north (water supply wells), and central (rehabilitation of Navy Regional Medical Center [NRMC] well).

Construction

All impacts related to land ownership and use are assumed to occur during the long-term operational phase of the proposed action as the changed conditions would alter the development and use of the current site and its vicinity.

Operation

Under Basic Alternative 1, no acquisition or long-term leasing of non-DoD land and no submerged land uses are proposed. No impact on land and submerged lands ownership would occur. Additional public access restrictions would not be imposed. No land use impacts to farmlands were identified.

At Andersen AFB, up to 22 new water wells including one contingency well would be installed. The wells are planned in clusters and are consistent with adjacent land uses. A 1,000-foot (ft) (305-meter [m]) wellhead protection arc is generated at each well that constrains land use within the arc. This constraint would not result in an adverse land use impact because the areas are vacant with no other planned land uses at or adjacent to the sites. The existing wells that are proposed for use or rehabilitation are also on DoD land, and no impact to land ownership or use was identified.

A new grade-level storage tank is proposed on NCTS Finegayan. The facilities would be sited in conjunction with the large scale development proposals of the proposed actions described in Volumes 2 and 5. They would be sited to be consistent with the proposed land uses. No adverse impacts to land use are anticipated. Transmission and distribution lines would be to be sited on DoD land or within existing right of ways along roads. This does not represent a change in land ownership or use.

Basic Alternative 1 would result in no impacts to land ownership or use.

Potential Mitigation Measures

As no significant impacts to land/submerged land ownership, management, or use were identified under Basic Alternative 1, no mitigation is necessary or proposed.

10.2.3.2 Basic Alternative 2

Basic Alternative 2 would consist of installation of up to 20 new potable water supply wells at Andersen AFB, up to 11 new potable water supply wells at Barrigada, rehabilitation of existing wells, interconnection with the GWA water system, associated transmission and distribution systems upgrades. Additionally, new 3.6 MG (13.6 ML) and 1 MG (3.8 ML) water storage tanks would be constructed at ground level at Finegayan and Barrigada, respectively.

Construction

All impacts related to land ownership and use are assumed to occur during the long-term operational phase of the proposed action as the changed conditions would alter the development and use of the current site and its vicinity.

Operation

No adverse land use impact is anticipated. FPPA is not applicable because no farmland would be potentially impacted. No new uses in submerged lands are proposed. No acquisition of non-federal land is proposed, and no additional access restrictions would be imposed on the public. The proposed new wells and storage facilities are on federally-controlled land. No land acquisition would be required. The areas proposed for development are vacant with no other planned land uses at or adjacent to the proposed facility sites. The upgrades to existing transmission lines would not require additional easements.

Basic Alternative 2 would result in no impacts to land or submerged land ownership or use.

Potential Mitigation Measures

As no impacts to land/submerged land ownership or use were identified for Basic Alternative 2, no mitigation is proposed.

10.2.3.3 Summary of Impacts

Table 10.2-2 summarizes the potential impacts of each basic alternative. A text summary is provided below.

Table 10.2-2. Summary of Potential Land and Submerged Land Use Impacts- Potable Water

Potentially Impact	*Basic Alternative 1**	*Basic Alternative 2*
Land Ownership		
Land	NI	NI
Submerged Land	NI	NI
Land Use		
1.FPPA	NI	NI
2.Consistency with existing or proposed land use		
DoD land	NI	NI
DoD submerged lands	NI	NI
Non-DoD land	NI	NI
Non-DoD submerged lands	NI	NI
3.Public Access	NI	NI

Legend: NI = No Impact. *Preferred Alternative.

The action alternatives are all on DoD land in vacant areas with no conflicting land uses identified at or adjacent to the project components. No land or submerged land ownership or use impacts were identified. No impacts to land use would occur.

10.2.4 Wastewater

10.2.4.1 Basic Alternative 1a (Preferred Alternative) and 1b

Basic Alternative 1 (Alternative 1a supports Main Cantonment Alternatives 1 and 2; and Alternative 1b supports Main Cantonment Alternatives 3 and 8) combines upgrade to the existing primary treatment facilities and expansion to secondary treatment at the Northern District Wastewater Treatment Plant (NDWWTP). The difference between Alternatives 1a and 1b is a requirement for a new sewer line from Barrigada housing to NDWWTP for Alternative 1b.

Construction

All impacts related to land ownership and use are assumed to occur during the long-term operational phase of the proposed action as the changed conditions would alter the development and use of the current site and its vicinity.

Operation

Under Basic Alternative 1a and 1b, the land use footprint of the NDWWTP would not extend beyond existing property boundary. Basic Alternative 1a requires a new gravity sewer from Finegayan to the NDWWTP. This new sewer would require acquisition of a utility easement on non-federal land, but would have minimal impact on land use as the sewer would be underground. Interim Alternative 1b requires an additional new sewer line with two pump stations from Barrigada housing to the NDWWTP. This new sewer would require acquisition of a utility easement on non-federal land. The utility easement acquisitions are assumed to be an adverse impact to the landowner, as described in the approach to analysis.

FPPA is not applicable because no farmland would be potentially impacted. No new uses in submerged

lands are proposed. No impacts on existing public access policies are anticipated.

The new sewer line under Basic Alternative 1b impacts on land use are potentially adverse because they may constrain future land use, but the impacts would be less than significant because the facility would be underground and can be accommodated in land use planning. The less than significant impact is counter balanced by the construction of new infrastructure that could potentially be used by future development. The alignment would be selected to have minimal land use/ownership impact. No new uses in submerged lands are proposed.

Basic Alternatives 1a and 1b would result in less than significant impacts to land use because of the acquisition of new utility easements on non-federal land. For Basic Alternative 1b, an additional force main sewer line with two pump stations would be constructed from Barrigada to the existing sewer system serving the NDWWTP. The routes for the new sewer lines would require additional utility easements, but the lines would be underground and the pump stations would only utilize a small area.

Potential Mitigation Measures

Less than significant impacts to land/submerged land ownership, management, or use were identified under Basic Alternative 1, no mitigation is proposed. It is assumed that acquiring utility easements for the new sewer lines would be performed by Guam Water Authority and that the cost would be reflected in hook-up fees.

10.2.4.2 Summary of Impacts

Table 10.2-3 summarizes the potential impacts of each interim alternative. A text summary is provided below.

Table 10.2-3. Summary of Potential Land and Submerged Land Use Impacts- Wastewater

Potentially Impact	*Basic Alternative 1a*	*Basic Alternative 1b*
Land Ownership		
Land	LSI	LSI
Submerged Land	NI	NI
Land Use		
1.FPPA	NI	NI
2.Consistency with existing or proposed land use:		
DoD land	NI	NI
DoD submerged lands	NI	NI
Non-DoD land	LSI	LSI
Non-DoD submerged lands	NI	NI
3.Public Access	NI	NI

Legend: FPPA = Farmland Protection Policy Act;
LSI = Less Than Significant Impact, and, NI = No Impact. *Preferred Alternative.

The land use impacts identified are all less than significant, and there are no impacts to submerged land ownership or use. Less than significant impacts on land ownership and use are associated with use of non-DoD land for new underground sewer lines. The impacts are less than significant because the alignment would avoid conflicting land uses and can be included in plans for future land development. The impact on land ownership is less than significant because it is likely the routing would be along public roads and the utility easements would be negotiated instead of a purchase for the land to accommodate an underground line. An analysis of long-term alternatives was not developed because the alternatives are not ready for project-specific analysis.

10.2.5 Solid Waste

10.2.5.1 Basic Alternative 1 (Preferred Alternative)

The Preferred Alternative for solid waste would be the continued use of Navy Landfill at Apra Harbor until Layon Landfill is opened, which is scheduled for July 2011.

Construction

Under Basic Alternative 1, no construction would occur; therefore, there would be no construction impacts to land use.

Operation

Under Basic Alternative 1, no land acquisition or long-term leasing would occur. FPPA is not applicable because no farmland would be potentially impacted. No new uses in submerged lands are proposed. No land acquisition or long-term leasing is proposed, and no additional public access restrictions would be imposed. Therefore, Interim Alternative 1 would result in no impacts to land ownership or use.

Potential Mitigation Measures

As no significant impacts to land/submerged land ownership, management, or use were identified under Basic Alternative 1, no mitigation is necessary or proposed.

10.2.5.2 Summary of Impacts

Table 10.2.4 summarizes the potential impact of the Preferred Alternative. A text summary is provided below.

Table 10.2-4. Summary of Potential Solid Waste Impacts

Potentially Impact	*Basic Alternative 1**
Land Ownership	
Land	NI
Submerged Land	NI
Land Use	
1.FPPA	NI
2.Consistency with existing or proposed land use:	
DoD land	NI
DoD submerged lands	NI
Non-DoD land	NI
Non-DoD submerged lands	NI
3.Public access	NI

Legend: FPPA = Farmland Protection Policy Act.
NI = No Impact. *Preferred Alternative.

Since there is no construction involved in the alternative for solid waste, there are no impacts to land use or submerged lands.

10.2.6 Off Base Roadways

The *North and Central Guam Land Use Plan*, prepared by the Bureau of Statistics and Plans, GovGuam, has accounted for the DoD facility expansion and organic (natural) growth within the island of Guam over the next 20 years. Growth in the military sector would impact private-sector economic and residential growth and development. As part of the *North and Central Guam Land Use Plan* development, the public

has been involved in identifying potential policies and changes needed to address future growth. The draft vision statement from the first round of public meetings states that "Guam is a sustainable tropical paradise that is safe, walkable, family and community-oriented, and protective of natural resources."

The 2030 Guam Transportation Plan (GTP) presents a comprehensive, long-term strategy to improve transportation infrastructure and operations throughout Guam. GovGuam, through its DPW and Department of Administration, Division of Public Transportation Services, and Federal Highway Administration, as well as the Federal Transit Administration have partnered to prepare this plan. The plan addresses Guam's anticipated multimodal transportation needs, including roadway, bicycle, pedestrian, and transit facilities. The GTP includes forecasts for population, employment, and traffic growth through the year 2030, including impacts associated with the potential DoD multiple services buildup. Sustainable financing and project implementation recommendations are also included in the plan.

Different types of roadway improvements are being proposed, including pavement strengthening, intersection improvement, road widening, road rehabilitation, bridge replacement, road relocation, and military access point improvements. Temporary impacts to current uses of land along the vicinity of the construction sites would normally occur as a result of construction equipment blockage and traffic lane closures that are typical of any public works project. A Traffic Management Plan (TMP) would minimize these temporary impacts.

Long-term impacts would involve changes in land use patterns, population density, and growth rate that have not been approved or planned by the Guam Bureau of Statistics and Plans. Adverse impacts are determined by the magnitude and types of conversion that are not consistent with the approved land use patterns. When possible, engineering design would be performed to avoid the acquisition or long-term leasing of public facilities, such as parkland.

Of the six different types of roadway improvements being proposed, pavement strengthening, and bridge replacement would normally occur within the existing ROW; therefore, they would not result in any impacts to land use. Road widening, intersection improvements, new road, and road relocation would have the potential to result in impacts to land use if ROW acquisition is required. Since military access point improvements consistent with respective installation general plans or Regional shore infrastructure plans would occur within DoD lands, impacts to land use are not anticipated with these improvements.

10.2.6.1 Alternative 1

The roadway projects that would be implemented for Alternative 1 are listed in Table 2.5-3, with the exception of Guam Road Network (GRN) #38 (MAP), 39 (MAP), 41 (MAP), 47 (MAP), 48 (MAP), 49 (MAP), 49A (MAP), 63 (pavement strengthening), and 74 (pavement strengthening). As stated above, the proposed GRN projects are consistent with the *North and Central Guam Land Use Plan* and the *2030 Guam Transportation Plan*. The following subsections described impacts to land use during the peak construction period and the future year 2030 due to the proposed roadway construction.

Year 2014 (Peak Construction and Force flow)

North

Improvements within the North Region consist of pavement strengthening, road widening, military access point, and a new road. Land uses in this Region along the proposed GRN projects are comprised mostly of DoD land and low-density residential. Implementation of Alternative 1 would require the acquisition of approximately 144 acres (ac) (58 hectares [ha]) of land area. Approximately 22 ac (9 ha) of residential property and 13 ac (5 ha) of nonresidential property would be acquired with the relocation of

approximately four non-residential or business units. In addition, approximately 47 ac (19 ha) of military-owned land within the North Region would be acquired. More detailed information about ROW acquisition and relocation is presented in the Socioeconomics and General Services section of this report volume. This change of land use pattern has been addressed in the relevant planning documents. The impact from the required commercial and residential land conversion is considered significant, but could be mitigated to a less than significant level with the careful planning and, under unavoidable case, with the treatment of compensation measures.

The new two-lane Finegayan Connection that would run parallel to Routes 1 and 3 between the Route 1/ 16 intersection and South Finegayan is proposed to alleviate traffic on Routes 1 and 3, and the Route 1/3 intersection. Construction of this parallel road would require additional ROW north of Route 1 and west of Route 3, that is nearly vacant. According to the Draft North and Central GLUP, the area north of Route 1 and west of Route 3 has been designated as part of the Dos Amantes Planning Area, where hotel/resort and urban center would be the major land uses in the future. The proposed parallel road would support the future land uses planned under the Dos Amantes Planning Area; therefore, the proposed Finegayan Connection construction would be consistent with future uses of land.

Impacts to current uses of land from construction activities would be typical of a public works project. A TMP would be developed for implementation during construction activities. The impacts are not considered significant with incorporation of the TMP.

Central

Five intersection improvement and three road widening projects are proposed within the Central Region. Improvements are located along the major arterial running along the coastline and inland where major commercial and tourist activities are situated. To accommodate the construction, approximately 311 ac (126 ha) of land area would need to be acquired. Approximately 42 ac (17 ha) of residential property would be acquired, with approximately 51 residential units subject to relocation in the Region. Approximately 10 ac (4 ha) of nonresidential property would be acquired, with approximately seven nonresidential or business units subject to relocation. In addition, approximately 22 ac (9 ha) of military-owned land within the Central Region would be acquired. The impact from the required commercial and residential land conversion is considered significant, but could be mitigated to a less than significant level with the careful planning and, under unavoidable case, with the treatment of compensation measures.

Two existing parks along Route 1 would be affected by minor ROW acquisition to accommodate the proposed intersection improvements; however, no permanent closure of any public park or recreational facility would occur. In addition, the use of public parks for transportation projects would be considered a use of Section 4(f) resources. Impact on parkland is addressed in Chapter 11 and impact to Section 4(f) resources is addressed in Chapter 21 of Volume 6.

Although impacts to current uses of land from construction activities would be typical of a public works maintenance project, occasional disruption to business/commercial and tourist facilities could be expected. A TMP would be developed for implementation during construction activities. To further minimize the impacts to business/ commercial and tourist activities, close coordination with business owners and area residents would be required to keep them informed of the roadway improvement schedule. Construction schedules for the various proposed projects would be arranged to the extent practicable and economical so that no multiple projects would be under construction at the same time to avoid cumulative construction impacts.

Apra Harbor

Two intersection improvement projects are proposed within the Apra Harbor Region. No residential units are subject to relocation. Implementation of this alternative would not require acquisition or long-term leasing of nonresidential or military-owned property. No substantial impacts on commercial and residential land use conversion from the proposed improvement would occur. Impacts during the peak construction period within this geographic region would be similar to those described under the Central Region.

South

Two intersection improvement projects are proposed within the South Region. The improvement would occur within the existing ROW. No residential or nonresidential units would be relocated, and no lands would be acquired. No substantial impacts on commercial and residential land use conversion from the proposed improvement would occur. Impacts during the peak construction period within this geographic Region would be similar to those described under the North Region.

Potential Mitigation Measures

The GovGuam DPW would develop an outreach program to keep residents, businesses, and any service providers within the area informed, and to inform surrounding communities about the project construction schedule, relocation plans and assistance programs, traffic-impacted areas and the TMP, and other relevant project information.

Year 2030

North

The Draft North and Central GLUP has addressed the changes in future land use as a result of the proposed Guam and Commonwealth of the Northern Mariana Islands (CNMI) military relocation project, as well as other military facility expansions over the next 20 years. The proposed GRN improvement projects are intended to meet the projected traffic demand both under the proposed military expansion action and the no-action alternative (natural growth). The proposed GRN improvement projects are consistent with the Draft North and Central GLUP, that addresses the projected growth from the proposed military facility expansion on the island, and the 2030 GTP, that addresses the long-term strategy to improve transportation infrastructure and operations throughout Guam.

All construction activities of the proposed improvement within the North Region would have been completed by the year 2030. Since no farmland and parkland conversion to roadway use or the use of parkland are expected within this Region, no adverse impacts on land use or on farmland and parkland are anticipated.

Since no ocean use is situated within the vicinity of the proposed GRN projects, no impacts to submerged land via ocean use would occur.

Central

The proposed GRN improvement projects are consistent with the Draft North and Central GLUP, that addresses the projected growth from the proposed military facility expansion on the island, and the 2030 GTP, that addresses the long-term strategy to improve transportation infrastructure and operations throughout Guam.

All construction activities of the proposed improvement within the Central Region would have been completed by the year 2030. Since there would be no permanent closure of any parkland, no impacts to

parkland use over the long term would occur. The roadway improvement would help enhance access to park and recreational facilities within the Central Region. The long-term impact pertaining to parkland use is beneficial.

Since there would be no farmland conversion to roadway use, no adverse impacts on farmland are anticipated.

The proposed roadway improvement projects would be confined within the existing roadway corridor; therefore, no permanent impacts to submerged land use would occur.

Apra Harbor

The proposed GRN improvement projects are consistent with the Draft North and Central GLUP, that addresses the projected growth from the proposed military facility expansion on the island, and the 2030 GTP, that addresses the long-term strategy to improve transportation infrastructure and operations throughout Guam.

The construction activities of the proposed improvement within the Apra Harbor Region would have been completed by the year 2030.

No farmland conversion to roadway use or the use of parkland are expected within this region, therefore no adverse impacts on farmland and parkland are anticipated.

The proposed roadway improvement projects would be confined within the existing roadway corridor; therefore, no permanent impacts to submerged land use would occur.

South

The proposed GRN improvement projects are consistent with the Draft North and Central GLUP, that addresses the projected growth from the proposed military facility expansion on the island, and the 2030 GTP, that addresses the long-term strategy to improve transportation infrastructure and operations throughout Guam.

The construction activities of the proposed improvement within the South Region would have been completed by the year 2030.

No farmland conversion to roadway use or the use of parkland are expected within this region, therefore no adverse impacts on farmland and parkland are anticipated.

Because no ocean use is situated within the vicinity of the proposed GRN projects, no impacts to submerged land use would occur.

Potential Mitigation Measures

Because the proposed GRN improvement projects are consistent with the Draft North and Central GLUP and the 2030 GTP, no mitigation measures would be required.

Most roadway improvements would be undertaken within the existing ROW, with some ROW acquisition or long-term leasing that would result in conversion of residential, commercial, and open space uses to public facility (transportation) use. The proposed roadway improvements are intended to meet the projected traffic demand based upon the local land use plans. Land use conversion from the required ROW acquisition would be addressed through the relevant planning agencies of GovGuam. Compensation as a result of land use disruption or acquisition or long-term leasing is addressed in the Socioeconomic and General Services section of this document.

10.2.6.2 Alternative 2 (Preferred Alternative)

The roadway projects that would be implemented for Alternative 2 are listed in Table 2.5-3, with the exception of GRN #38A (MAP), 39A (MAP), 41A (MAP), 47 through 49A (MAP), 63 (pavement strengthening), and 74 (pavement strengthening). Peak construction and permanent impacts on land uses under Alternative 2 would be similar to those described under Alternative 1 because the same projects are proposed under this alternative with the only difference is the gate location for the MAP projects which have no impact on existing commercial or residential uses. Potential mitigation measures for Alternative 2 would be the same as those proposed for Alternative 1.

Potential Mitigation Measures

Same as those described under Alternative 1.

10.2.6.3 Alternative 3

The roadway projects that would be constructed under Alternative 3 are listed in Table 2.5-3, with the exception of GRN #38A (MAP), 39A (MAP), 41 (MAP), 49A (MAP), 19 (pavement strengthening), 31 (pavement strengthening), and 124 (new roadway). In general, the MAP and pavement strengthening projects would not cause significant impact to existing commercial or residential uses. Impacts on land use disruption from construction activities under Alternative 3 in 2014 during peak construction would be slightly less than Alternatives 1 and 2 because no new roadway (GRN#124) would be constructed under this alternative. However, there would be no new roadway to support the planned land-use development within the Dos Amantes Planning Area in the long-term.

Potential Mitigation Measures

Potential mitigation measures for Alternative 3 would be the same as those proposed for Alternative 1.

10.2.6.4 Alternative 8

The roadway projects that would be constructed under Alternative 8 are listed in Table 2.5-3, with the exception of GRN #38 (MAP), 39 (MAP), 41 (MAP), 47 through 49 (MAP), 63 (pavement strengthening), and 74 (pavement strengthening). In general, the MAP and pavement strengthening projects would not cause significant impact to existing commercial or residential uses. Therefore, impacts on land use disruption under Alternative 8 in 2014 during peak construction would be similar to those described under Alternative 1. This is because the same projects are proposed under this alternative, with the only difference being the gate location for GRN# 38A and GRN# 49A, which are MAP projects. Land use impacts over the long-term (year 2030) of Alternative 8 would be similar to Alternative 1.

Potential Mitigation Measures

Potential mitigation measures for Alternative 8 would be the same as those proposed for Alternative 1.

10.2.6.5 No-Action Alternative

2009

Under the no-action alternative, only some roadway improvements would be constructed to support normal growth within the island. Based on the 2030 GTP, without the military buildup project, it is anticipated that committed improvements that are currently programmed for funding in the Territorial Transportation Improvement Plan would be constructed. The types of projects currently funded include safety improvements, bridge replacements, roadway rehabilitation, and traffic improvements; therefore, the no-action alterative is consistent with the Territorial Transportation Improvement Plan and 2030 GTP.

Construction activities for the improvement projects would be typical of public works maintenance projects, as described under the proposed Alternatives 1, 2, 3, and 8. Because the no-action alternative would include no roadway improvement project in year 2009 (baseline year), construction impacts on land use under this alternative would be less than with all of the build alternatives described above.

2014

Construction activities for the improvement projects would be typical of public works maintenance projects, as described under the proposed Alternatives 1, 2, 3, and 8. Because the no-action alternative would include only 7 roadway improvement projects (compared to 49 for Alternatives 1 and 2, 50 for Alternative 3, and 50 for Alternative 8) to be constructed during the year 2014, construction impacts on land use under this alternative would be less than significant with all of the build alternatives described above. Under the No-Action Alternative, no parkland and farmland conversion would be required; the impacts to parkland and farmland uses would be less than significant.

2030

As discussed previously, roadway improvements have been proposed and documented in the 2030 GTP. The no-action alternative, in the long-term, is consistent with the Territorial Transportation Improvement Plan and 2030 GTP.

Individual roadway improvement projects would occur over time. A standard TMP shall be developed for implementation during construction activities. The TMP shall identify and provide alternate traffic detour routes, construction materials hauling routes, bus stops, transit routes and operation hours, pedestrian routes, and residential and commercial access routes to be used during the construction period.

Under the no-action alternative, the proposed 20 roadway improvements would be phased for construction over the period between 2014 and 2030. Construction activities of the improvement projects would be typical of public works maintenance projects as described under the proposed Alternatives 1, 2, 3, and 8. Because the number of roadway improvements projects under the no-action alternative (20) is significantly less than with Alternatives 1, 2, 3, and 8 (ranging from 49 to 50), and because it would be spread over a long period of time, impacts to the use of land from this ongoing improvement are not anticipated.

Potential Mitigation Measures

Because the proposed GRN improvement projects are consistent with the 2030 GTP, no mitigation measures would be required.

10.2.6.6 Summary of Impacts

Table 10.2-5 summarizes the potential impacts of each interim alternative. An analysis on long-term alternatives was not developed because the alternatives are not ready for project-specific analysis. A text summary is provided below.

Table 10.2-5. Summary of Potential Land and Submerged Land Use Impacts – Roadway Project

Potentially Impacted Resource	*Alternative 1*	*Alternative 2**	*Alternative 3*	*Alternative 8*
Consistency with Approved Plans and Policies	NI	NI	NI	NI
Current Use of Land Disruption	SI-M	SI-M	SI-M	SI-M
Commercial and residential land conversion	SI-M	SI-M	SI-M	SI-M
Ocean Use	NI	NI	NI	NI
Farmland Conversion	NI	NI	NI	NI
Parkland Conversion	LSI	LSI	LSI	LSI

*Legend: SI-M = Significant Impact Mitigable to Less Than Significant, LSI = Less Than Significant Impact, NI = No Impact, *Preferred Alternative.*

The Draft North and Central GLUP has addressed the changes in future land use as a result of the proposed Guam and CNMI military relocation project, as well as other military facility expansions over the next 20 years. The proposed GRN improvement projects are intended to meet the projected traffic demand both under the proposed military expansion action and the no-action alternative (natural growth). The proposed GRN improvement projects are consistent with the Draft North and Central GLUP, that addresses the projected growth from the proposed military facility expansion on the island, and the 2030 GTP, that addresses the long-term strategy to improve transportation infrastructure and operations throughout Guam.

Implementation of the proposed roadway improvements project under each alternative would require some residential, non-residential, and military land acquisition or long-term leasing for ROW use. Some of the residential and business properties would be subject to relocation.