

CHAPTER 17.

SOCIOECONOMICS AND GENERAL SERVICES

17.1 INTRODUCTION

This chapter discusses the potential environmental consequences associated with implementing the alternatives within the region of influence for each resource. For a description of the affected environment for all resources, refer to the respective chapter of Volume 2. The locations described in Volume 2 include the region of influence for the utilities and roadway projects, and the chapters are presented in the same order as the resource areas contained Volume 6.

Socioeconomic impacts would be islandwide in nature with little difference in effects among the various alternatives. Therefore, the summary of impacts presented below covers all of the alternatives except the no-action alternative, which is treated separately in Section 17.2.2.6.

17.2 ENVIRONMENTAL CONSEQUENCES

17.2.1 Methodology

Refer to corresponding section of Volume 2.

Analysis of impacts for Volume 6 is limited to the construction component, due to insufficient information about operational configurations.

No distinction is made among alternatives, as the critical input variable – construction cost – is not available for different alternatives. All calculations in this chapter are based on single construction cost estimates for each Related Action provided by Joint Guam Program Office as of May 2009.

17.2.1.1 Determination of Significance

Refer to corresponding section of Volume 2.

The Federal Council on Environmental Quality's guidelines for determining significance states, "significance cannot be avoided by terming an action temporary or by breaking it down into small component parts" (Code of Federal Regulations Title 40 Sec 1508.27(b)(7)). Compared to the Marine Relocation action discussed in Volume 2, the individual utility and roadway proposals discussed in this Volume are relatively "small component parts." However, because Volume 7 provides an assessment of significance for all the combined parts of the military relocation (the "aggregate action"), any finding in this chapter that the power, water, wastewater, solid waste, or roadways alone would have no impact (or a less than significant impact) does not avoid the possibility that the larger impact from the aggregate action would be significant.

17.2.1.2 Issues Identified During Scoping

Refer to corresponding section of Volume 2 for general discussion.

Most scoping comments focused on the specifics of utility ownership and operation (whether there would be joint use or independent Department of Defense [DoD] facilities), choice of technology, resistance to storms, and other logistical questions that have been previously addressed in the description and justification for the various alternatives.

There was also attention to the question of impacts on civilian ratepayers from the various utility alternatives, especially the rate differences dependent on whether the utilities would be strictly for DoD operations or provide any benefit to the civilian population. Also, several comments predicted adverse social reactions if certain roads and facilities “outside the fence” are designated military-only.

17.2.1.3 Guam Road Network Projects

Methodology used in assessing impacts to socioeconomic and general services as a result of the proposed roadway improvements follows Federal Highway Administration (FHWA) Guidance for Preparing and Processing Environmental and Section 4(f) Documents. This socioeconomic analysis has been conducted to study the impacts from the proposed roadway improvements that are collectively referred to as the Guam Road Network (GRN).

17.2.2 Utilities

17.2.2.1 Population Impacts

Refer to the corresponding section of Volume 2 for introductory statements.

Project Related Population

Approach to Analysis

Table 17.2-1 provides assumptions made in conducting analysis for the construction phase and the source of or rationale for those assumptions.

Table 17.2-1. Construction Component Assumptions for Project Related Population Impacts

<i>Assumption</i>	<i>Assumed Value</i>	<i>Source/Rationale</i>
Average number of dependents for in-migrating direct, on-site, construction jobs	0.20 - 0.35	Estimate based on contractor interviews (Appendix F SIAS)
Average number of dependents for in-migrating direct from purchases jobs	0.95 - 1.0	U.S. Census national data on persons per jobs (U.S. Census Bureau 2000) and GDoL interviews (Appendix F SIAS)
Average number of dependents for in-migrating indirect/induced jobs	0.95 - 1.0	U.S. Census national data on persons per jobs (U.S. Census Bureau 2000) and GDoL interviews (Appendix F SIAS)

Legend: GDoL = Guam Department of Labor; SIAS = Socioeconomic Impact Assessment Study; U.S. = United States.

Table 17.2-2 indicates a 2012 peak-year impact of about 4,580 additional people.

Table 17.2-2. Population Increase related to Utilities

	2010	2011	2012	2013	2014
Total Impact	993	2,463	4,580	3,525	2,066

Figure 17.2-1 shows the projected total population for the baseline trend (projected future without the proposed action) plus the total combined impact of the proposed action. The chart shows the population rising to about 190,000 in 2012. The 2012 figure represents a 2.5 percent (%) increase over the baseline trend. This meets the criteria used in this analysis for a significant impact, although population increases are considered to be inherently mixed (both beneficial and adverse), because population growth fuels economic expansion but sudden growth also strains government services and the social fabric.

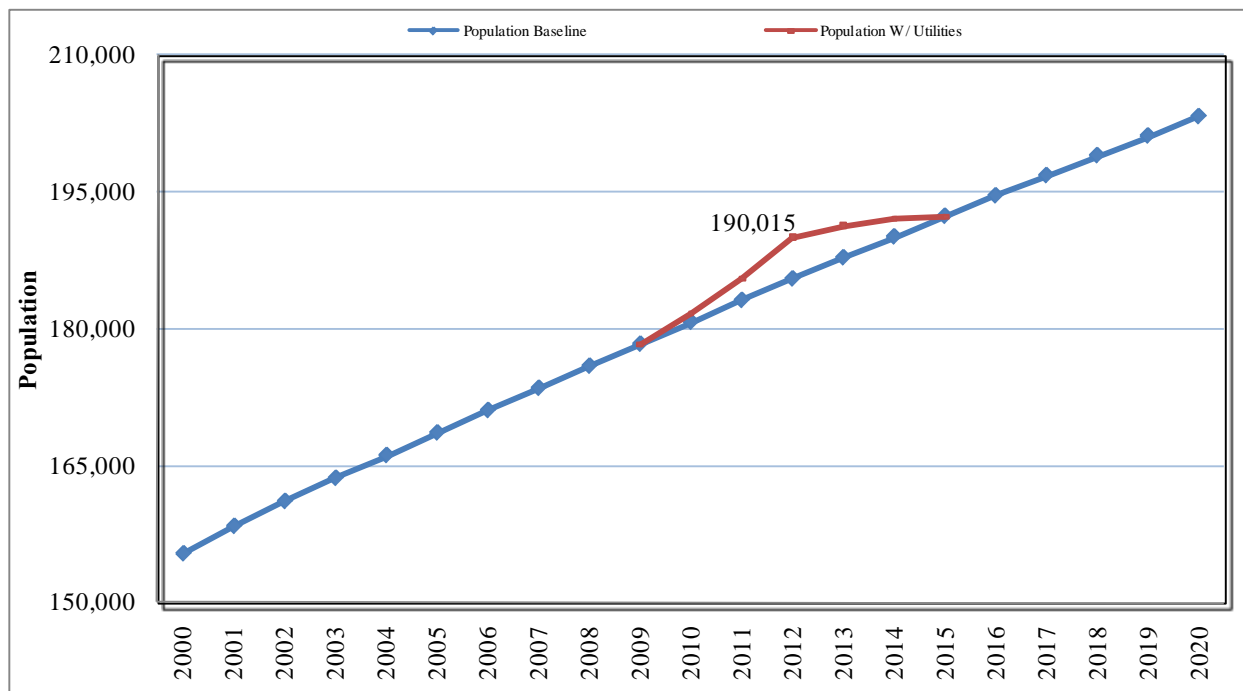


Figure 17.2-1. Population With and Without Utilities

Demographic Characteristics

Refer to the corresponding section of Volume 2.

Household Characteristics

Refer to the corresponding section of Volume 2.

17.2.2.2 Economic Impacts

Employment and Income

Refer to the corresponding section of Volume 2 for introductory statements, approach to analysis (including data sources), and impact analysis.

Civilian Labor Force Demand

Table 17.2-3 shows a civilian labor force demand for 3,333 workers in the peak year of 2012.

Table 17.2-3. Civilian Labor Force Demand (Full-Time Equivalent Jobs), Utilities

	2010	2011	2012	2013	2014
Total Impact	732	1,794	3,333	2,599	1,539

Figure 17.2-2 shows the projected total labor force demand for the baseline trend (projected future without the proposed action) plus the total combined impact of the proposed action. The chart shows the labor force demand rising to 60,940 in 2012, a 5.8% increase over the baseline trend. By the criteria used for this analysis, the impact is considered significant and beneficial.

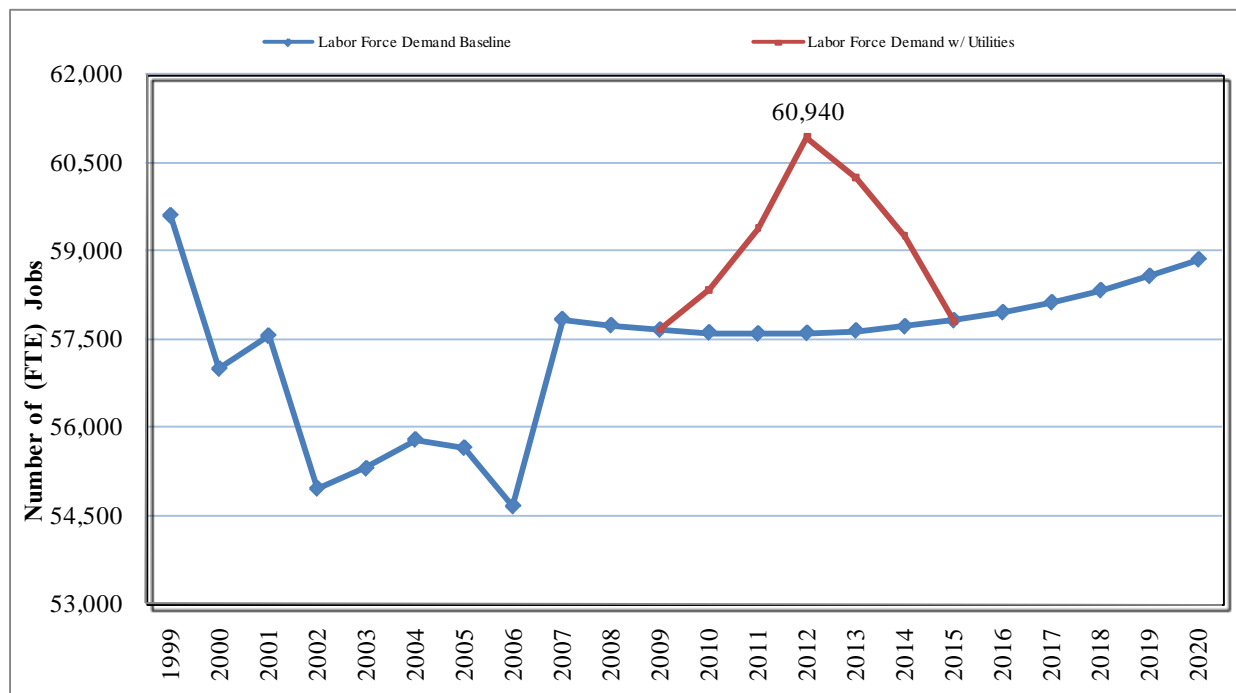


Figure 17.2-2. Civilian Labor Force Demand (Full-Time Equivalent Jobs) With and Without Utilities

Labor Source Supply

Table 17.2-4 shows the probable labor source supply for direct onsite military construction jobs.

Table 17.2-4. Estimated Origin of Workers Connected to Utilities Construction

	2010	2011	2012	2013	2014
TOTAL	413	1,013	1,884	1,471	871
GUAM	73	163	272	188	111
OFF-ISLAND	339	849	1,611	1,283	760
H-2B Workers	289	726	1,381	1,103	653
Philippines	245	617	1,174	938	555
Other	26	65	124	99	59
CONUS/HI/Japan	5	13	24	19	11
CNMI	9	23	42	33	20
Other U.S. Pacific Islands	36	88	164	128	76

Notes: Numbers may not add exactly due to rounding.

Legend: CNMI = Commonwealth of the Northern Mariana Islands; CONUS = Continental United States; HI = Hawaii; U.S. = United States.

Table 17.2-5 estimates the share of non-military construction direct and indirect jobs, going to Guam residents versus off-island workers.

Table 17.2-5. Estimated Numbers of On-Island Workers for Various Job Categories Other Than Direct On-Site Construction, Utilities

	2010	2011	2012	2013	2014
Guam Workers	50	99	166	140	92
Off-Island Workers	269	682	1,284	988	576

Civilian Labor Force Income

Table 17.2-6 below shows that labor force income from the proposed action increases by \$125 million at the 2012 peak.

Table 17.2-6. Impact on Civilian Labor Force Income (Millions of 2008 \$), Utilities

	2010	2011	2012	2013	2014
Total Impact	\$28	\$68	\$125	\$98	\$58

Figure 17.2-3 shows the projected total labor force income for the baseline trend (projected future without the proposed action) plus the total combined impact of the proposed action. The chart shows the labor force income rising to about \$1.69 billion in 2012. The 2012 figure represents an 8% increase over the baseline trend. This meets the criteria used in this analysis for a significant beneficial impact.

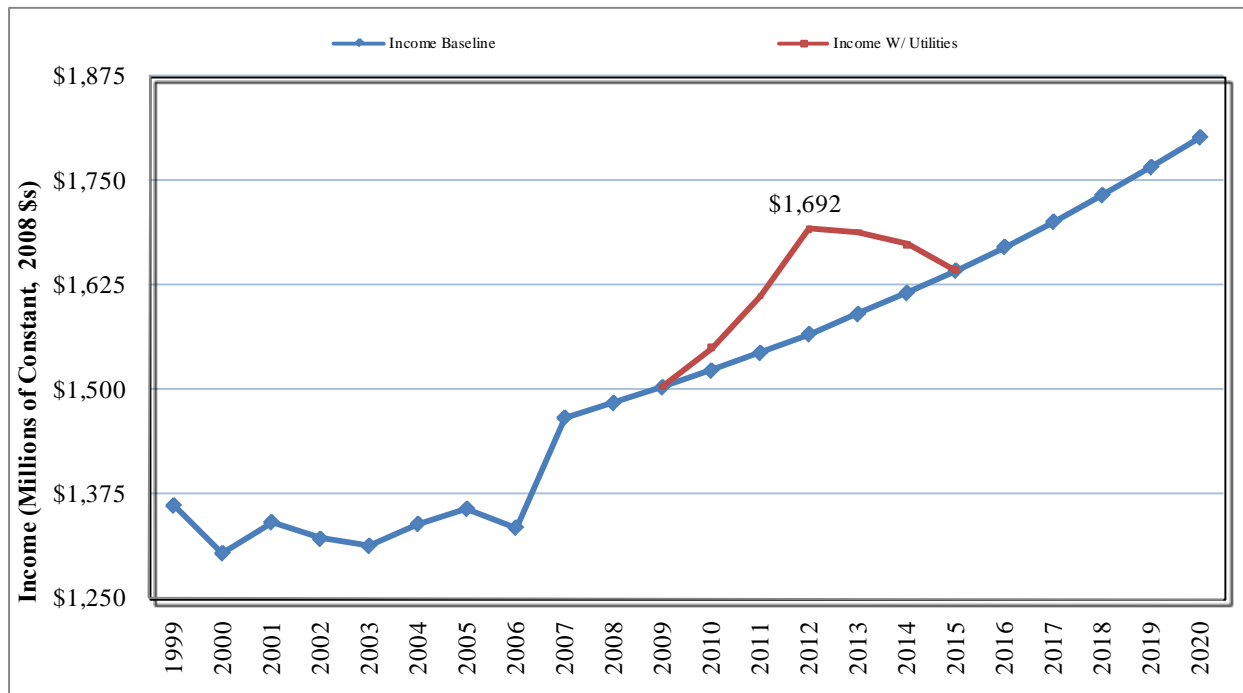


Figure 17.2-3. Civilian Labor Force Income (Millions of 2008 \$) With and Without Utilities

Figure 17.2-4 shows the projected total housing demand for the baseline trend (projected future without the proposed action) plus the total combined impact of the proposed action. The chart shows the housing demand rising to 66,088 in 2012. By the criteria used for this analysis, this is a less than significant impact for the utilities alone, except in conjunction with the aggregate action effects summarized in Volume 7.

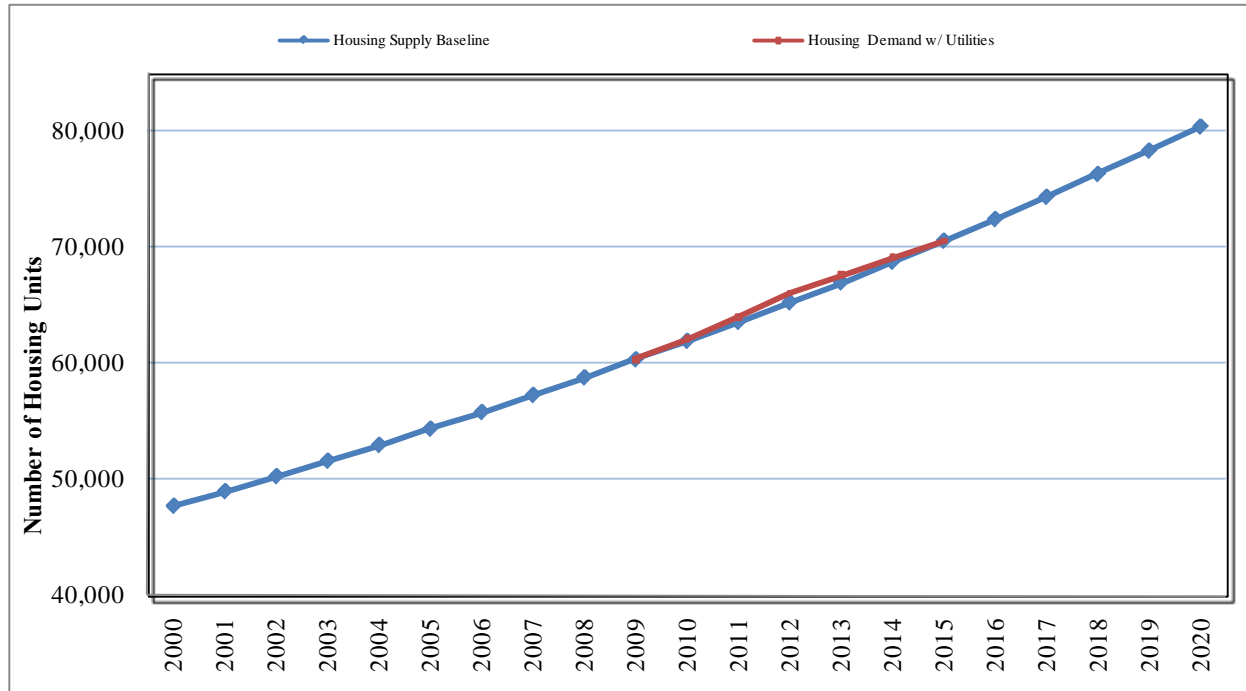


Figure 17.2-4. Housing Demand With and Without Utilities

Standard of Living

Refer to the corresponding section of Volume 2.

Unemployment

Refer to the corresponding section of Volume 2.

Housing

Refer to the corresponding section of Volume 2 for introductory statements and approach to analysis (including data sources).

Civilian Housing Demand

Table 17.2-7 indicates that the impact of the proposed action would result in a demand for 822 new units in the peak year of 2012.

Table 17.2-7. Demand for New Civilian Housing Units, Utilities

	2010	2011	2012	2013	2014
Total Impact	181	446	822	622	363

Housing Supply

The housing market would be able to accommodate the demand if it did not occur simultaneously with other and larger aspects of the aggregate action.

Utility Rates - Power

Potential effects on ratepayers are unknown at this time and would depend in large part on agreements reached between the Department of the Navy and Guam Power Authority (GPA). The current Customer Agreement that was originally adopted in 1992, has since been updated, and is scheduled to end in 2012.

This agreement would likely need to be renegotiated. The outcome of the negotiations would determine, among other factors, the rates the DoD would pay for the interim demand provided by the reconditioned generating systems owned by the GPA. The systems are expected to be more expensive to operate than the average of the current GPA generating systems that are currently used. However, it is expected that these systems would primarily be used for peaking power and reliability reserve; thus, limiting the cost increases from operations. There would be additional capital expenses to upgrade transmission and distribution systems and install some of those upgrades underground for improved reliability.

Utility Rates - Water

New DoD water facilities are likely to be operated separately from the system operated by Guam Waterworks Authority (GWA). Hence, no impacts to Guam ratepayers are expected from use by DoD facilities. However, current water customers, civilian military workers, induced civilian growth, and other direct and indirect workers related to the proposed action would be affected because GWA requirements would involve major capital improvements. These projects would be expected to require rate increases because GWA's current financial condition does not appear to be able to fund such projects.

Utility Rates – Wastewater

GWA has been working under two federal waivers to the Clean Water Act. The waivers have relieved GWA from having to conduct secondary sewage treatment. As of October 2009, the United States (U.S.) Environmental Protection Agency has denied the renewal of these waivers (GWA may appeal the ruling). Without the waivers GWA would be required to upgrade existing facilities to conduct secondary treatment. Upgrading the facilities would be costly and drive wastewater rates higher. In the future, if the waiver denial is not revised, Guam ratepayers should expect higher wastewater rates. The proposed action would upgrade the Northern District Wastewater Treatment Plant (NDWWTP) primary treatment capacity in the near term and provide for secondary treatment in the medium term. The financing arrangements would likely be through an SPE, who would obtain financing through Japan's Joint Bank for International Cooperation. It is expected that the DoD would pay for these upgrades to the primary treatment capabilities of the NDWWTP through hook up and other user fees. The SPE would also design, construct, and operate the NDWWTP for a fee, which would be used to repay the Joint Bank for International Cooperation loan. There would also be the potential of an SPE arrangement to facilitate the secondary capability for this plant. Under this scenario, the expected rate increases should be similar with or without the proposed action and could be less due to an expanded customer base over which to spread the impact.

There would also be impacts to the GWA wastewater systems that are not used by DoD but that would have to service the added civilian populations from the construction workforce and induced civilian growth. These systems need maintenance and upgrades, and the added populations would exacerbate the urgency and size of the maintenance and upgrade items. This issue would likely put upward pressure on wastewater rates for all current and future customers.

Utility Rates – Solid Waste

Population increases as a result of the proposed action would increase the level of solid waste service that would need to be provided along with the total cost of providing services. The increased costs, though, would be spread over a larger group of ratepayers. It is possible that, as the level of service increases the services would become more efficiently operated and rates for individuals would decline. It is more likely; however, that rates would have little changes as a result of the proposed action.

Local Government Revenues

Refer to the corresponding section of Volume 2 for introductory statements and approach to analysis (including data sources).

Table 17.2-8, Table 17.2-9, and Table 17.2-10, show that the impact of the proposed action would add \$12.27 million to the Gross Receipts Tax (GRT), \$3.1 million to the corporate income tax revenue, and \$15 million to the personal income tax revenue in the 2012 peak.

Table 17.2-8. Impact on Gross Receipts Tax Revenue (1,000s of 2008 \$s), Utilities

	2010	2011	2012	2013	2014
GRT	\$2,692	\$6,604	\$12,278	\$9,583	\$5,674

Table 17.2-9. Impact on Corporate Income Taxes Revenue (1,000s of 2008 \$s), Utilities

	2010	2011	2012	2013	2014
Corporate Income	\$686	\$1,684	\$3,131	\$2,444	\$1,447

Table 17.2-10. Impact on Personal Income Taxes Revenue (1,000s of 2008 \$s), Utilities

	2010	2011	2012	2013	2014
Personal Income	\$3,306	\$8,103	\$15,049	\$11,734	\$6,948

Figure 17.2-5 shows the projected total GRT for the baseline trend (projected future without the proposed action) plus the total combined impact of the proposed action. The chart shows the GRT rising to \$179 million at the 2012 construction peak, a 7% increase over the baseline trend. This meets the criteria used in this analysis for a beneficial significant impact.

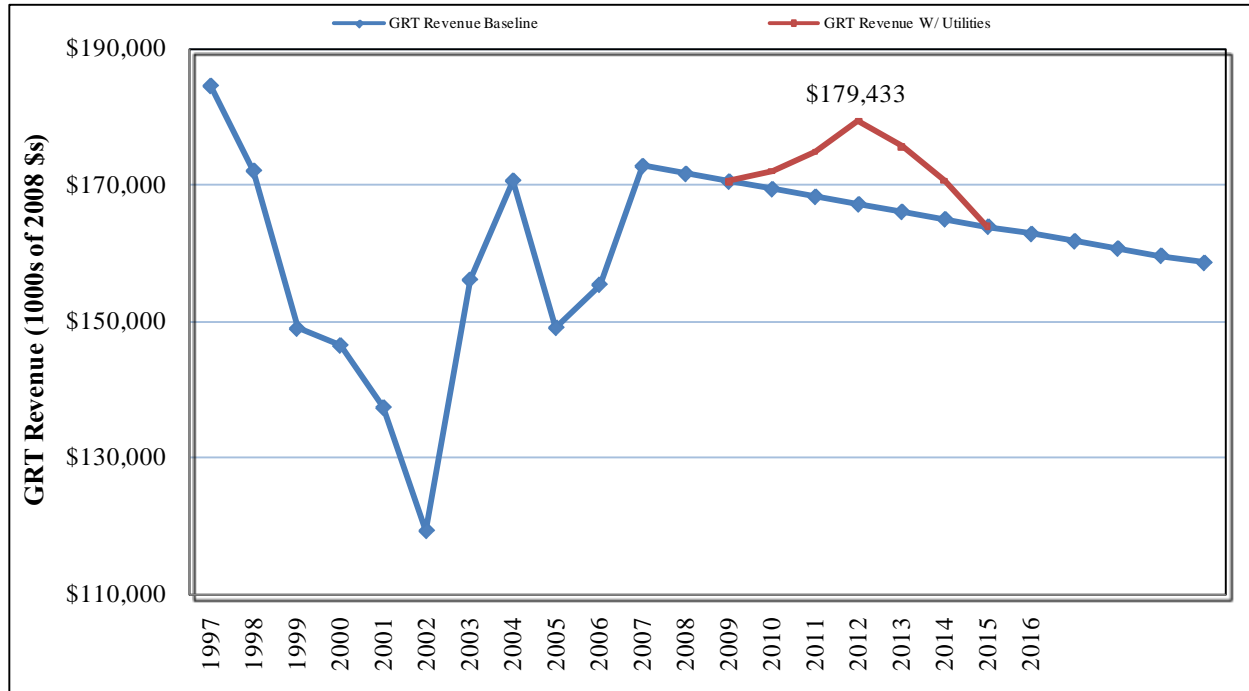


Figure 17.2-5. Gross Receipts Tax Revenue With and Without Utilities

Figure 17.2-6 shows the projected total income tax revenue – corporate and personal income taxes – for the baseline trend plus the total combined impact of the proposed action. The chart shows the income tax revenue rising to \$259 million in 2012, an 8% increase over the baseline trend. This meets the criteria used in this analysis for a beneficial significant impact.

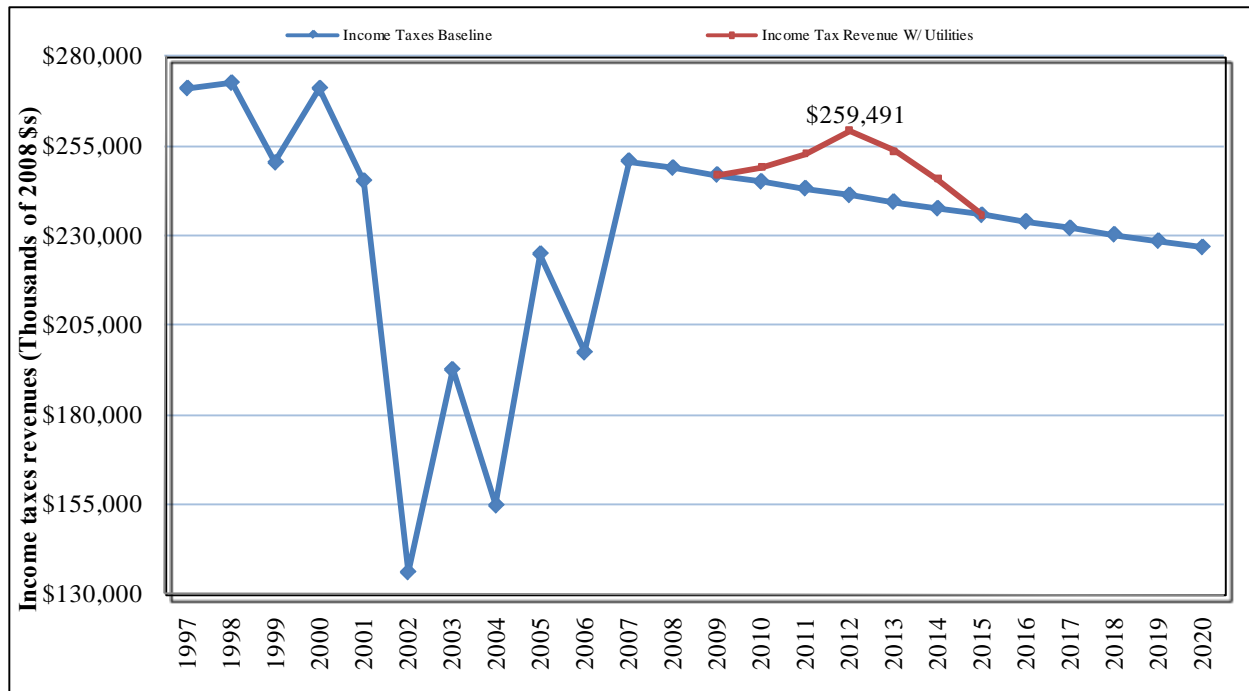


Figure 17.2-6. Income Taxes Revenue (Combined) With and Without Utilities

Gross Island Product

Refer to the corresponding section of Volume 2 for introductory statements and approach to analysis (including data sources).

Table 17.2-11 shows the impact would add a peak amount of \$83 million to the Gross Island Product (GIP) in 2012.

Table 17.2-11. Impact on Gross Island Product (Millions of 2008 \$), Utilities

	2010	2011	2012	2013	2014
Total Impact	\$18	\$45	\$83	\$65	\$38

Figure 17.2-7 shows the projected total GIP for the baseline trend (projected future without the proposed action) plus the total combined impact of the proposed action. The chart shows the GIP rising to just over \$5 billion in 2012. The 2012 impact on GIP of \$83 million represents a 2% increase over the baseline trend. This is a significant beneficial impact.

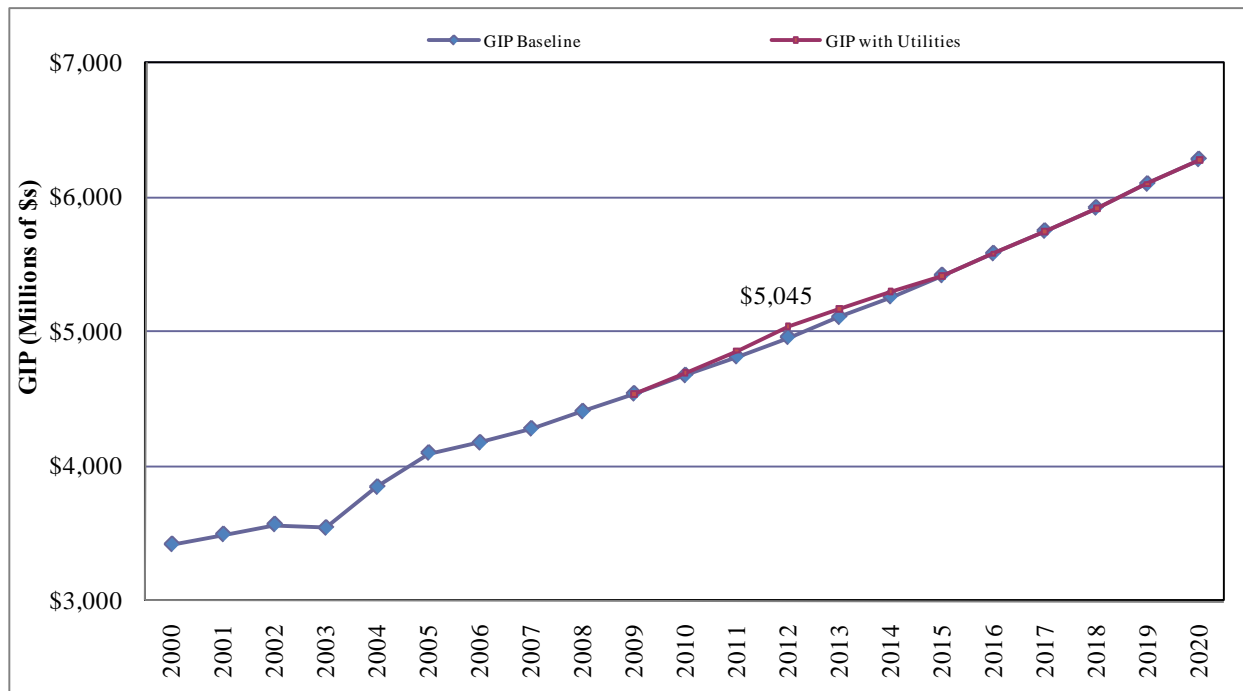


Figure 17.2-7. Gross Island Product (Millions of 2008 \$) With and Without Utilities

17.2.2.3 Public Service Impacts

Refer to the corresponding section of Volume 2 for introductory statements, approach to analysis (including data sources), and qualitative impact analysis. Some public service impacts associated with utilities alternatives are expected to be significant.

Public Education

Table 17.2-12 shows the estimated number of key full time equivalent (FTE) professional staff required due to utilities projects. The peak requirement in 2012, stemming from construction direct and indirect impacts, is about 2% greater than baseline staffing levels for all the agencies listed below. By the criteria used for this analysis, this would be considered a significant (adverse) impact.

Table 17.2-12. Additional Public Education Key Professionals Required, Utilities

	2010	2011	2012	2013	2014
GPSS Elementary Schools	4.5	11	20	15	9
GPSS Middle Schools	2	5	9	7	4
GPSS High Schools	2	5	8	6	4
GCC	0	1	2	2	1
UoG	1	2	4	3	2

Legend: GCC = Guam Community College; GPSS = Guam Public School System; UoG = University of Guam.

Public Health and Human Services

Further discussion on public health implications can be found in Volume 6, Chapter 19, “Public Health and Safety.”

Table 17.2-13 shows the estimated number of key FTE professional staff required due to the action. The peak requirement in 2012 is about 3% greater than reported baseline staffing levels for each agency listed in Table 17.2-13. By the criteria used for this analysis, this would be considered a significant (adverse) impact.

Table 17.2-13. Additional Public Health and Human Service Key Professionals Required, Utilities

	2010	2011	2012	2013	2014
GMHA Physicians	0.4	1	2	1	1
GMHA Nurses, Allied Health Professionals	2	5	10	8	5
GDPHSS Bureau of Primary Care Medical Providers and Nursing Staff	0.2	1	1	1	1
GDPHSS CDC Prevention Specialists	0.2	0.5	0.9	0.7	0.4
GDPHSS BFHNS Nursing Personnel	0.1	0.3	0.6	0.5	0.3
GDMHSA Mental Health Professionals	1	2	3	3	2
GDISID Social Workers and Counselors	0.1	0.2	0.4	0.3	0.2

Legend: BFHNS = Bureau of Family Health and Nursing Services; CDC = Communicable Disease Control; GDISID = Guam Department of Integrated Services for Individuals with Disabilities; GDMHSA = Guam Department of Mental Health and Substance Abuse; GDPHSS = Guam Department of Public Health and Social Services; GMHA = Guam Memorial Hospital Authority.

Public Safety Services

Further discussion on public safety implications can be found in Volume 6, Chapter 19, “Public Health and Safety.”

Table 17.2-14 shows the estimated number of key FTE professional staff required due to the action. The peak requirement in 2014, when the full effects of the action are added to ongoing construction, is about 2% greater than reported baseline staffing levels. By the criteria used for this analysis, this would be considered a significant (adverse) impact.

Other Selected General Services

Table 17.2-15 shows the estimated number of key FTE professional staff required due to the proposed action. The peak requirement in 2012 is about 2% greater than reported baseline staffing levels for each agency listed in Table 17.2-15. By the criteria used for this analysis, this would be considered a significant (adverse) impact.

Table 17.2-14. Additional Public Safety Key Professionals Required, Utilities

	2010	2011	2012	2013	2014
GPD Sworn Police Officers	2	4	8	6	4
GFD Uniformed Fire Personnel	1	3	6	5	3
GDoC Custody and Security Personnel	1	2	4	3	2
GDYA Youth Service Professionals	0.4	1	2	1	1

Legend: GDoC = Guam Department of Corrections; GDYA = Guam Department of Youth Affairs; GFD = Guam Fire Department; GPD = Guam Police Department.

Table 17.2-15. Additional Key Professionals Required for Selected Other General Services, Utilities

	2010	2011	2012	2013	2014
GDPR Staffing	0.5	1.3	2.3	1.8	1.1
PLS Staffing	0.2	0.4	0.7	0.6	0.3
Judiciary Judges	0.0	0.1	0.2	0.1	0.1

Legend: GDPR = Guam Department of Parks and Recreation; PLS = Public Library System.

Growth Permitting and Regulatory Agencies

Table 17.2-16 shows the estimated number of key FTE professional staff required due to the action. The peak requirement for most agencies is only slightly above reported baseline staffing levels, but for a few agencies with very small baseline staff levels even a small number represents a fairly high percentage increase. For example, the Alien Labor Processing and Certification Division peak value of 2.3 is 46% greater than the baseline level (just five positions), and the peak Guam Department of Parks and Recreation - Historic Preservation Office, number of 1.3 is 19% greater than baseline. Although the percentages vary by agency, the overall assessment would be one of less than significant impacts for the utilities alone.

Table 17.2-16. Additional Growth Permitting Staff Required, Utilities

	2010	2011	2012	2013	2014
Guam DPW Permitting Staff	0.0	0.0	0.0	0.0	0.0
GDLM Permitting Staff	3.5	3.4	3.4	3.3	3.3
GEPA Permitting Staff	1.1	1.2	7.2	6.4	5.6
CMP Permitting Staff	1.4	1.4	1.7	1.3	1.1
GPA Permitting Staff	0.3	0.6	0.8	0.6	0.3
GWA Permitting Staff	0.6	2.8	2.1	1.4	0.3
GFD Permitting Staff	0.0	0.1	0.1	0.1	0.0
GDPHSS – DEH Permitting Staff	0.1	0.2	0.3	0.2	0.1
GDPR – HPO Permitting Staff*	1.6	1.3	1.0	0.7	0.5
GDoL – ALPCD Permitting Staff	1.0	1.5	2.3	0.0	0.0

Legend: ALPCD = Alien Labor Processing and Certification Division; CMP = Coastal Management Program; DEH = Division of Environmental Health; DPW = Department of Public Works; GDLM = Guam Department of Land Management; GDoL = Guam Department of Labor; GDPHSS = Guam Department of Public Health and Social Services; GDPR = Guam Department of Parks and Recreation; GEPA = Guam Environmental Protection Agency; GFD = Guam Fire Department; GPA = Guam Power Authority; GWA = Guam Waterworks Authority; HPO = Historic Preservation Office

* The Programmatic Agreement (further described in Volume 6, Chapter 14, Cultural Resources) helps the HPO with staffing issues by streamlining the Section 106 process. Because staffing requirements to meet federal regulations would be reduced by this agreement, freeing up current staff to work on non-federal projects, the staffing requirements noted in this table may not be as high.

17.2.2.4 Sociocultural Impacts

The sociocultural impacts associated with utilities alternatives are not expected to be significant, except as they contribute to the significant aggregate effects discussed in Volume 7.

17.2.2.5 Summary of Utilities Impacts

The economic activity from the proposed action would add about 4,580 residents to Guam's population at the 2012 construction peak for utilities work.

Including all the spin-off activity, the proposed action would provide jobs for about 3,330 civilian workers in 2012. Guam residents are estimated to capture about 270 of the direct onsite construction jobs for utilities at the 2012 peak, as well as approximately 170 spin-off jobs that year.

Civilian housing unit demand driven by the utilities work would peak at about 820 units in 2012.

Increased population related to the proposed action would place upward pressure on wastewater rates.

Although a more detailed fiscal impact assessment would be done by the Government of Guam (GovGuam) using output from this Environmental Impact Statement, preliminary estimates in this chapter suggest revenues from the three most important tax sources – gross receipts, corporate income, and personal income – would exceed \$30.4 million in 2012.

Guam's GIP, the total market value of all final goods and services produced in a given year, would increase by \$83 million (2008 dollars) at the 2012 construction peak due to utilities.

GovGuam's public service agencies would need to make small but significant staffing increases to service new population associated with roadways construction. Most of these agencies would need to expand their services and staff by more than 2%.

Sociocultural impacts of utility construction would be negligible.

Table 17.2-17 summarizes the potential impacts and bullets with the rationale.

17.2.2.6 No-Action Alternative

The assumed no-action alternative is that all parts of the aggregate action, not just the proposed action covered in this Volume, but also other components addressed in other Volumes do not occur. Therefore, the no-action conclusions given below are identical to those in Volume 2 for the Marine Corps relocation and/or Volume 7 for the aggregate action. The references below to substantial impacts with the proposed action would apply more to those Volumes than to this Volume 6 covering the Utilities action, because Utilities impacts alone sometimes would not attain significance.

Unlike physical resources, socioeconomic systems do not tend to remain completely at baseline conditions if a proposed action is not implemented. Economies and population levels change for other reasons as well. The various foregoing exhibits showing baseline trends for economic and demographic variables indicate long-term trends expected to continue without the proposed action, and Volume 7 lists a number of specific socioeconomic changes expected to occur independent of the proposed action. Furthermore, the announcement of the proposed action has already had socioeconomic consequences, such that a 2010 decision not to follow through on the military relocation would have short-term effects associated with a reversal of those existing consequences.

Table 17.2-17. Summary of Potential Socioeconomic Impacts-Utilities

<i>Impact Area</i>	<i>Utilities</i>
Population Impacts	<ul style="list-style-type: none"> • Beneficial impact due to economic expansion fueled by increased population. • Significant impacts due to strains placed on government services and the social fabric.
Economic Impacts	<ul style="list-style-type: none"> • Beneficial impacts due to provision of permanent jobs on Guam. • Beneficial impacts due to permanent infusion of income into the Guam economy. • Beneficial impacts due to increase in local government revenue. • Beneficial operational phase impacts due to permanent increased GIP strengthening the Guam economy. • Beneficial impacts due to increased military service contract opportunities for local Guam businesses. • Less than significant direct and indirect impact demand for civilian (private-market, excluding temporary construction workforce housing) housing units peaking at 822 units in 2012. • No impact to standard of living from the proposed action construction or operation. • No impact on tourism from the proposed action construction or operation.
Public Service Agencies	<ul style="list-style-type: none"> • Significant impacts due to difficulty in meeting fluctuating staffing requirements during and following the construction phase with an existing environment of staffing and budget shortfalls and recruitment complications. • Significant impact due to difficulty in recruiting and funding adequate staffing during operational phase. • Beneficial impact due to provision of additional jobs on Guam, if labor supply and funding is available during operational phase. • Less than significant construction-related impacts to growth permitting and regulatory agencies due to difficulty in meeting fluctuating staffing requirements with an existing environment of staffing and budget shortfalls and recruitment complications.
Sociocultural Impacts	<ul style="list-style-type: none"> • No impacts to crime and social order. • No impacts to Chamorro issues. • No impacts to community cohesion.
Utility Rate Payer	<p>LSI</p> <ul style="list-style-type: none"> • Effects on ratepayers would be dependent upon renegotiations of Customer Agreements and could be affected by more expensive system operations. It is also possible that rates for some utilities could decline due to the increased customer base. <p>SI</p> <ul style="list-style-type: none"> • There would be impacts to the GWA wastewater systems that are not used by DoD but would have to service the added civilian populations from the construction workforce and induced civilian growth. These systems are currently in need of maintenance and upgrades, and these added populations would exacerbate the urgency and size of the maintenance and upgrade items. This would likely put upward pressure on wastewater rates for all current and future customers.

Legend: BI = Beneficial impact; DoD = Department of Defense; GIP = Gross Island Product; GWA = Guam Waterworks Authority; LSI = Less than significant impact; NI = No impact; SI-M = Significant impact mitigable to less than significant.

Population/Economic Impacts

In the short term, a decision not to implement the proposed action would deflate any current speculative activity attributable the proposed action. Real estate values in particular would likely drop, hurting investors but increasing the affordability of housing. The contrast between the business community's expectations and a negative Record of Decision would likely produce a period of pessimism about Guam's economic future, especially if the current national and international economic crisis has not yet

abated. These effects, though, would be attributable to an unstable world economic landscape and poor decision making by investors – not to the proposed action.

Long term, the island's prospects would remain linked to international economic conditions and the health of its tourism industry. Conceivably, a smaller military profile might remove some barriers to growing the potential Chinese tourism market. Growth would resume, though probably with the same volatility experienced in recent decades.

Public Service Impacts

In the case of the no-action alternative, the specific agencies discussed earlier in this chapter would not face the listed pressures to expand professional staffing, and agencies involved in planning and regulating growth would not experience such a sharp increase in workload. Although this was not specifically covered in the foregoing analysis, it may also be noted that agencies that are required to implement major infrastructure developments, such as the ports and highways, would have substantially more time to implement long-term plans rather than having to achieve much of their objectives over the next few years.

However, at the broader level, the no-action alternative and the elimination of prospective long-term revenues expected from the proposed action still would leave GovGuam agencies in the difficult financial condition described in Volume 2, Section 16.22.11. At least for the foreseeable future, this would negatively impact the various service agencies because of budget cuts, and would probably represent the most important overall consequence for GovGuam.

Sociocultural Impacts

To the extent that Guam experiences job losses, crime rates may rise in the short term. The political attention given to some Chamorro issues would likely recede as the militarization of Guam is stabilized at something close to present levels. Military-civilian relations would likely remain at the current generally positive level.

The incentive for increased in-migration from the Freely Associated States of Micronesia would decrease, reducing sociocultural issues associated with assimilating that population. However, the current incentives for providing support to those populations, both on Guam and the Micronesian states, would also be lessened, with detrimental implications for both populations.

17.2.2.7 Utilities Proposed Mitigation Measures

A review of the above impacts shows that the proposed action has the potential to have primarily beneficial impacts or no impacts on Guam with the exception of population and public service agencies where the proposed action could have significant adverse impacts. Therefore, the mitigation measures identified below provide avenues to mitigate these adverse impacts while taking into account Guam's unique position as an isolated island economy.

Table 17.2-18 shows proposed mitigation measures related to power utilities.

Table 17.2-18. Proposed Mitigation Measures for Utilities

<i>Impact Area</i>	<i>Mitigation Measures</i>
Population	The DoD would decrease the rapid population increase associated with the operations phase by implementing force flow and adaptive program management. (See mitigation measures in General category).
Public Service Agencies	<p>Continue to support existing DoD programs that contribute and/or donate excess equipment to local agencies.</p> <p>The DoD would continue to participate in CMTF to address community health needs such as facilitating information sharing between military and civilian health agencies, including health service needs data and health services utilization rates.</p> <p>The DoD would coordinate with the Governor's Office of Community Affairs to facilitate volunteer opportunities at Guam public service agencies for military personnel and their dependents.</p> <p>The DoD would assist by leading a federal inter-agency effort to identify other federal programs and funding sources for GovGuam addressing the following:</p> <ol style="list-style-type: none"> a) Enhancement of GovGuam Tax Revenue Collection efficacy. For example, improved revenue could be used to enhance recruitment and retention of the GovGuam work force and contractual support; b) Examination of currently existing caps on benefits such as Medicaid and Medicare, the non-provision of benefits such as Supplemental Security Income benefits, and the appropriateness of these caps and limits for Guam; c) Increase of the number of Guam-based offices for the distribution of federal social service support, and support of the work of GovGuam public service agencies; d) Review and implementation of programs to assist the GovGuam's public agencies in adapting to peaks in service population growth; e) Provision of technical assistance for the development and implementation of a system of interpreters and translators available for the interpreting and translating needs of the GovGuam public service agencies, to facilitate timely and appropriate provision of services for the English as a Second Language service population; f) The development of AmeriCorps, Teach for America, National Health Service Corps programs, and other similar programs on Guam; g) Improving the grant-writing capabilities within GovGuam agencies to improve possibilities of attracting federal support programs; h) Support for the recruitment of professionals during the construction phases of the proposed action for GovGuam public agency positions; i) Support for the use of the Interagency Personnel Act to support identified GovGuam agency personnel requirements, and/or j) Provision to GovGuam of technical assistance for, and development and implementation of, comprehensive data collection systems focused on the following topics: <ol style="list-style-type: none"> 1. GovGuam public services provided to Freely Associated States of Micronesia citizens to facilitate GovGuam access to Compact Impact and other related funding; 2. GovGuam agency services provided to military individuals to facilitate GovGuam access of TRICARE and other related funding; 3. GovGuam public health agency patient information, records, and services accessed to facilitate appropriate care administered in a timely manner; and 4. GovGuam public agency billing systems to facilitate GovGuam collection of payment for services.

17.2.3 Roadway Projects

17.2.3.1 Alternative 1

North

Effects on Neighborhoods and Businesses

Community cohesion addresses the degree to which residents have senses of belonging to their neighborhood or experience attachment to community groups and institutions as a result of continued association over time. Possible community cohesion impacts of a project include effects on interactions among persons and social groups, whether certain people would be isolated from others, and the perceived impact on community quality of life.

Within the North Region, Alternative 1 would include roadway widening, pavement strengthening, and intersection improvement activities. Most of these roadway improvements would primarily occur within the existing right-of-way (ROW); therefore, they would not constitute any new physical or psychological barriers that would divide, disrupt, or isolate neighborhoods, individuals, or community focal points in the corridor. At certain locations, roadway improvements would require the acquisition of additional ROW that may result in effects on community cohesion.

Property Acquisition and Relocation

Table 17.2-19 summarizes ROW acquisitions and residential and non-residential relocations associated with the GRN projects. Federal and state laws require consistent and fair treatment of owners of the property to be acquired, including just compensation for their property. Uniform and equitable treatment of displaced persons or businesses is also required by these laws. For purposes of presenting a conservative analysis, properties or easements are assumed to be acquired permanently. During final engineering, it may be determined that some parcels can be leased during construction, avoiding permanent displacement impacts. In addition, the number of acquisitions and easements required could decrease during final design and engineering, as could the amount of land required from individual parcels. Estimates presented here are assumed to represent the “maximum potential adverse effect” and are based on preliminary engineering ROW documents.

Within the North Region, Alternative 1 would require the acquisition of approximately 82 acres (ac) (33 hectares [ha]) of land area. Approximately 22 ac (9 ha) of residential property would be acquired. As shown in Table 17.2-19, approximately 20 residential units would be subject to relocation in the region. Based on the 2000 U.S. Census Bureau data for the average persons per household for the North Region (4.26 persons per household), the estimated number of persons displaced would be 85.

In this region, the proposed GRN projects would require acquisition of approximately 13 ac (5 ha) of non-residential property and 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.

Businesses identified for possible acquisition in the North Region include a fast-food restaurant, a convenience/outdoor supply store, and two storage facilities. These businesses would be subjected to a primary field survey to determine their general characteristics. Full assessment of all affected residential and non-residential uses would be obtained prior to their acquisition to determine their specific characteristics and values.

Table 17.2-19. Summary of Right-of-Way Acquisitions and Estimated Residential and Non-residential Relocations

<i>Alternatives</i>	<i>Total Est. Land Area (acres)</i>	<i>Total Est. Residential Acquisition (acres)</i>	<i>Total Est. Business/ Non-Residential Acquisition (acres)</i>	<i>Total Est. Military Acquisition (acres)</i>	<i>Total Est. Residential Relocations (Units)</i>	<i>Total Est. Business/ Non-Residential Relocations (Units)</i>	<i>Total Estimated Residents*</i>
Alternative 1							
North Region	82	22	13	47	20	4	85
Central Region	74	42	10	22	51	7	184
Apra Harbor Region	16	16	0	0	0	0	0
South Region	0	0	0	0	0	0	0
Alternative 1 Totals	172	80	23	69	71	11	269
Alternative 2							
North Region	82	22	13	47	20	4	85
Central Region	74	42	10	22	51	7	184
Apra Harbor Region	16	16	0	0	0	0	0
South Region	0	0	0	0	0	0	0
Alternative 2 Totals	172	80	23	69	71	11	269
Alternative 3							
North Region	71	22	2	47	20	4	85
Central Region	84	42	20	22	51	7	184
Apra Harbor Region	16	16	0	0	0	0	0
South Region	0	0	0	0	0	0	0
Alternative 3 Totals	171	80	22	69	71	11	269
Alternative 8							
North Region	82	22	13	47	20	4	85
Central Region	75	42	10	23	51	7	184
Apra Harbor Region	16	16	0	0	0	0	0
South Region	0	0	0	0	0	0	0
Alternative 8 Totals	173	80	23	70	71	11	269

Note: * Estimate based on 2000 U.S. Census Bureau data for each region (North 4.26; Central 3.61 persons per household).

Source: Parsons.

Public Services and Facilities Impacts

No adverse effects on the public services and facilities identified within the GRN study area are anticipated.

Best Management Practices/Proposed Mitigation Measures

Relocation Assistance Program and Relocation Resources. All property acquisitions would be completed in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies of 1970 (Uniform Relocation Act) and Title VI of the Civil Rights Act of 1964. The Uniform Relocation Act requires that no person shall be displaced until adequate, decent, safe, and sanitary housing is made available. The acquisition and relocation program would be conducted in accordance with 49 Code of Federal Regulations Part 24, and relocation resources are available to all residential and business relocatees without discrimination. Information about project relocation assistance would be made

available during a public involvement process. Affected individuals would be contacted personally, and all benefits and services of the program would be made available to them.

No mitigation measures are required.

Central

Effects on Neighborhoods and Businesses

Within the Central Region, Alternative 1 would include roadway widening, roadway alignments, pavement strengthening, intersection improvements, or bridge replacements. Most of these roadway improvements would primarily occur within the existing ROW; therefore, they would not constitute any new physical or psychological barriers that would divide, disrupt, or isolate neighborhoods, individuals, or community focal points in the corridor. At certain locations, roadway improvements would require the acquisition of additional ROW that may result in community cohesion effects.

Property Acquisition and Relocation

Within the Central Region, Alternative 1 would require the acquisition of approximately 74 ac (30 ha) of land area. Approximately 42 ac (17 ha) of residential property would be acquired. As shown in Table 17.2-19, approximately 51 residential units would be subject to relocation in the region. The estimated number of persons displaced would be 184, based on the 2000 U.S. Census Bureau average persons per household for the Central Region (3.61 persons per household).

In this region, the proposed GRN projects would require acquisition of approximately 10 ac (4 ha) of non-residential property and the relocation of approximately seven non-residential or business units. In addition, approximately 22 ac (9 ha) of military-owned land within the Central Region would be acquired.

Businesses identified for possible acquisition include three fast-food restaurants, one office space, one gas station, and one rental car office. These businesses would be subjected to a primary field survey to determine their general characteristics. Full assessment of all affected residential and non-residential uses would be obtained prior to their acquisition to determine their specific characteristics and values.

Public Services and Facilities Impacts

No adverse effects on public services and facilities identified within the GRN study area are anticipated.

Best Management Practices/Proposed Mitigation Measures

Best Management Practices (BMPs) and mitigation measures would be similar to those described for the North Region.

Apra Harbor

Effects on Neighborhoods and Businesses

Within the Apra Harbor Region, roadway improvements under Alternative 1 would include pavement strengthening and intersection improvements. These roadway improvements would primarily occur within the existing ROW; therefore, they would not constitute any new physical or psychological barriers that would divide, disrupt, or isolate neighborhoods, individuals, or community focal points in the corridor.

Property Acquisition and Relocation

Within the Apra Harbor Region, Alternative 1 would require the acquisition of 16 ac (6 ha) of land area that is zoned for residential uses. As shown in Table 17.2-19, no residential units and/or residents would

be subject to relocation in this region. In this region, the proposed GRN projects would not require acquisition of non-residential or military-owned property, as shown in Table 17.2-19.

There would be no non-residential and/or business relocations in this region.

Public Services and Facilities Impacts

No public services and facilities identified within the GRN study area would be affected in this region.

Proposed Mitigation Measures

Mitigation measures would be similar to those described for the North Region.

South

Effects on Neighborhoods and Businesses

Within the South Region, roadway improvements under Alternative 1 would include pavement strengthening and intersection improvements. These improvement projects would primarily occur within the existing ROW; therefore, they would not constitute any new physical or psychological barriers that would divide, disrupt, or isolate neighborhoods, individuals, or community focal points in the corridor.

Property Acquisition and Relocation

As listed in Table 17.2-19, no residential or non-residential units would be relocated, and no lands would be acquired.

Public Services and Facilities Impacts

No public services and facilities identified within the GRN study area would be affected in this region.

Best Management Practices/Proposed Mitigation Measures

No BMPs or mitigation measures are required.

17.2.3.2 Alternative 2

North

Effects on Neighborhoods and Businesses

Under Alternative 2, impacts for this region would be identical to those of the North Region under Alternative 1.

Property Acquisition and Relocation

Property acquisition and relocation impacts would be the same as those under Alternative 1.

Public Services and Facilities Impacts

Impacts to public services and community facilities would be the same as those under Alternative 1.

Best Management Practices/Proposed Mitigation Measures

BMPs and mitigation measures would be similar to those described under Alternative 1.

Central

Effects on Neighborhoods and Businesses

Under Alternative 2, impacts for this region would be identical to those of the Central Region under Alternative 1.

Property Acquisition and Relocation

Property acquisition and relocation impacts would be the same as those under Alternative 1.

Public Services and Facilities Impacts

Impacts to public services and community facilities would be the same as those under Alternative 1.

Best Management Practices/Proposed Mitigation Measures

BMPs and mitigation measures would be similar to those described under Alternative 1.

Apra Harbor*Effects on Neighborhoods and Businesses*

Under Alternative 2, impacts for this region would be identical to those of the Apra Harbor Region under Alternative 1.

Property Acquisition and Relocation

Property acquisition and relocation impacts would be the same as those for the Apra Harbor Region under Alternative 1.

Public Services and Facilities Impacts

Impacts to public services and community facilities would be the same as those under Alternative 1.

Best Management Practices/Proposed Mitigation Measures

BMPs and mitigation measures would be similar to those described under Alternative 1.

South*Effects on Neighborhoods and Businesses*

Under Alternative 2, impacts for this region would be identical to those of the South Region under Alternative 1.

Property Acquisition and Relocation

Property acquisition and relocation impacts would be the same as those for the South Region under Alternative 1.

Public Services and Facilities Impacts

Impacts to public services and community facilities would be the same as those under Alternative 1.

Best Management Practices/Proposed Mitigation Measures

No BMPs or mitigation measures are required.

17.2.3.3 Alternative 3

North*Effects on Neighborhoods and Businesses*

Within the North Region, Alternative 3 would include roadway widening, pavement strengthening, and intersection improvement activities. Most of these roadway improvements would primarily occur within the existing ROW; therefore, they would not constitute any new physical or psychological barriers that would divide, disrupt, or isolate neighborhoods, individuals, or community focal points in the corridor. At

certain locations, roadway improvements would require the acquisition of additional ROW that may result in community cohesion effects.

Property Acquisition and Relocation

Within the North Region, Alternative 3 would require the acquisition of approximately 71 ac (29 ha) of land area. Approximately 22 ac (9 ha) of residential property would be acquired in this region. As shown in Table 17.2-19, approximately 47 residential units would be subject to relocation in the region. Based on the 2000 U.S. Census Bureau data for the average persons per household for the North Region (4.26 persons per household), the estimated number of persons displaced would be 85.

In this region, the proposed GRN projects would require the acquisition of approximately 2.0 ac (0.8 ha) of non-residential property and 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.

Businesses identified for possible acquisition in the North Region include one fast-food restaurant, one convenience/outdoor supply store, and two storage facilities. These businesses would be subjected to a primary field survey to determine their general characteristics. Full assessment of all affected residential and non-residential uses would be obtained prior to their acquisition to determine their specific characteristics and values.

Public Services and Facilities Impacts

No adverse effects on public services and facilities identified within the GRN study area are anticipated.

Best Management Practices/Proposed Mitigation Measures

BMPs and mitigation measures would be similar to those described under Alternative 1.

Central

Effects on Neighborhoods and Businesses

Within the Central Region, Alternative 3 would include roadway widening, roadway alignments, pavement strengthening, intersection improvements, or bridge replacements. Most of these roadway improvements would primarily occur within the existing ROW; therefore, they would not constitute any new physical or psychological barriers that would divide, disrupt, or isolate neighborhoods, individuals, or community focal points in the corridor. At certain locations, roadway improvements would require the acquisition of additional ROW that may result in community cohesion effects.

Property Acquisition and Relocation

Within the Central Region, Alternative 3 would require the acquisition of approximately 84 ac (34 ha) of land area. Approximately 42 ac (17 ha) of residential property would be acquired. As shown in Table 17.2-19, approximately 51 residential units would be subject to relocation in the region. The estimated number of persons displaced would be 184, based on the 2000 U.S. Census Bureau average persons per household for the Central Region (3.61 persons per household).

In this region, the proposed GRN projects would require acquisition of approximately 20 ac (8 ha) of non-residential property and the relocation of approximately seven non-residential or business units. In addition, approximately 22 ac (9 ha) of military-owned land within the Central Region would be acquired.

Businesses identified for possible acquisition include three fast-food restaurants, one office space, one gas station, and one rental car office. These businesses would be subjected to a primary field survey to

determine their general characteristics. Full assessment of all affected residential and non-residential uses would be obtained prior to their acquisition to determine their specific characteristics and values.

Public Services and Facilities Impacts

No adverse effects on public services and facilities identified within the GRN study area are anticipated.

Best Management Practices/Proposed Mitigation Measures

BMPs and mitigation measures would be similar to those described under Alternative 1.

Apra Harbor

Effects on Neighborhoods and Businesses

Under Alternative 3, impacts for this region would be identical to those of the Apra Harbor Region under Alternatives 1 and 2.

Property Acquisition and Relocation

Property acquisition and relocation impacts for this region would be the same as those for the Apra Harbor Region under Alternatives 1 and 2.

Public Services and Facilities Impacts

Impacts to public services and facilities would be the same as those under Alternatives 1 and 2.

Best Management Practices/Proposed Mitigation Measures

BMPs and mitigation measures would be similar to those described under Alternative 1.

South

Effects on Neighborhoods and Businesses

Under Alternative 3, impacts for this region would be identical to those of the South Region under Alternatives 1 and 2.

Property Acquisition and Relocation

Property acquisition and relocation impacts would be the same as those for the South Region under Alternatives 1 and 2.

Public Services and Facilities Impacts

Impacts to public services and facilities would be the same as those of Alternatives 1 and 2.

Best Management Practices/Proposed Mitigation Measures

No BMPs or mitigation measures are required.

17.2.3.4 Alternative 8

North

Effects on Neighborhoods and Businesses

Within the North Region, Alternative 8 would include roadway widening, pavement strengthening, and intersection improvement activities. Most of these roadway improvements would primarily occur within the existing ROW; therefore, they would not constitute any new physical or psychological barriers that would divide, disrupt, or isolate neighborhoods, individuals, or community focal points in the corridor. At

certain locations, roadway improvements would require the acquisition of additional ROW that may result in community cohesion effects.

Property Acquisition and Relocation

Within the North Region, Alternative 8 would require the acquisition of approximately 82 ac (33 ha) of land area. Approximately 22 ac (9 ha) of residential property would be acquired. As shown in Table 17.2-19, approximately 20 residential units would be subject to relocation in the region. Based on the 2000 U.S. Census Bureau data for the average persons per household for the North Region (4.26 persons per household), the estimated number of persons displaced would be 85.

In this region, the proposed GRN projects would require acquisition of approximately 13 ac (5 ha) of non-residential property and 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.

Businesses identified for possible acquisition in the North Region include one fast-food restaurant, one convenience/outdoor supply store, and two storage facilities. These businesses would be subjected to a primary field survey to determine their general characteristics. Full assessment of all affected residential and non-residential uses would be obtained prior to their acquisition to determine their specific characteristics and values.

Public Services and Facilities Impacts

No adverse effects on public services and facilities identified within the GRN study area are anticipated.

Proposed Mitigation Measures

Mitigation measures would be similar to those described under Alternative 1.

Central

Effects on Neighborhoods and Businesses

Within the Central Region, Alternative 8 would include roadway widening, roadway alignments, pavement strengthening, intersection improvements, or bridge replacements. Most of these roadway improvements would primarily occur within the existing ROW; therefore, they would not constitute any new physical or psychological barriers that would divide, disrupt, or isolate neighborhoods, individuals, or community focal points in the corridor. At certain locations, roadway improvements would require the acquisition of additional ROW that may result in community cohesion effects.

Property Acquisition and Relocation

Within the Central Region, Alternative 8 would require the acquisition of approximately 75 ac (30 ha) of land area. Approximately 42 ac (17 ha) of residential property would be acquired. As shown in Table 17.2-19, approximately 51 residential units would be subject to relocation in the region. The estimated number of persons displaced would be 184, based on the 2000 U.S. Census Bureau average persons per household for the Central Region (3.61 persons per household).

In this region, the proposed GRN projects would require approximately 10 ac (4 ha) of non-residential property and the relocation of approximately seven non-residential or business units. In addition, approximately 23 ac (9 ha) of military-owned land within the Central Region would be acquired.

Businesses identified for possible acquisition include three fast-food restaurants, one office space, one gas station, and one rental car office. These businesses would be subjected to a primary field survey to

determine their general characteristics. Full assessment of all affected residential and non-residential uses would be obtained prior to their acquisition to determine their specific characteristics and values.

Public Services and Facilities Impacts

No adverse effects on public services and facilities identified within the study area are anticipated.

Best Management Practices/Proposed Mitigation Measures

BMPs and mitigation measures would be similar to those described under Alternative 1.

Apra Harbor

Effects on Neighborhoods and Businesses

Under Alternative 8, impacts for this region would be identical to those of the Apra Harbor Region under Alternatives 1, 2, and 3.

Property Acquisition and Relocation

Property acquisition and relocation impacts for this region would be the same as those for the Apra Harbor Region under Alternatives 1, 2, and 3.

Public Services and Facilities Impacts

Impacts to public services and facilities would be the same as those under Alternatives 1, 2, and 3.

Best Management Practices/Proposed Mitigation Measures

BMPs and mitigation measures would be similar to those described under Alternative 1.

South

Effects on Neighborhoods and Businesses

Under Alternative 8, impacts for this region would be identical to those of the South Region under Alternatives 1, 2, and 3.

Property Acquisition and Relocation

Property acquisition and relocation impacts would be the same as those for the South Region under Alternatives 1, 2, and 3.

Public Services and Facilities Impacts

Impacts to public services and facilities would be the same as those under Alternatives 1, 2, and 3.

Best Management Practices/Proposed Mitigation Measures

No BMPs or mitigation measures are required.

17.2.3.5 No-Action Alternative

Existing (2009) (Pre-Project)

Under the no-action alternative, GRN projects would not be constructed. The no-action alternative would not result in GRN construction activities; therefore, there would be no potential for effects on neighborhoods and businesses.

Property acquisition for expanding ROWs for GRN projects would not be needed, and there are no GovGuam projects that would occur in 2009. The no-action alternative would result in no impacts from property acquisition and relocation.

2014 (Peak Construction)

Under the no-action alternative, only roadway projects needed for organic growth on Guam would be constructed. The no-action alternative would not result in construction activities; therefore, there would be no potential for effects on neighborhoods and businesses.

GRN projects associated with the military relocation would not be constructed. ROW acquisition associated with Year 2014 GovGuam planned projects would be limited to the four roadway capacity (road widening) projects to occur along Routes 10A, 27 extension, and the Tiyan Parkway, and three intersection projects associated with Routes 1 and 7 (Volume 6, Chapter 2). These four GovGuam projects are located in the Central Region. The no-action alternative may result in impacts from property acquisition and relocation associated with the GovGuam planned projects. Mitigation by GovGuam can be identified and implemented to reduce possible impacts to a less than significant level.

2030

Under the no-action alternative, only roadway projects needed for organic growth on Guam would be constructed. The no-action alternative would not result in construction activities; therefore, there would be no potential for effects on neighborhoods and businesses.

GRN projects associated with the military relocation would not be constructed. Property acquisition of potential contaminated sites would be limited. ROW acquisition associated with Year 2030 GovGuam planned projects would be limited to four road segment projects to occur along Routes 1, 2, 7A, 16, 25, and 26, and nine intersection projects associated with Routes 1, 4, and 16 (Volume, 6, Chapter 2). These 13 Year 2030 GovGuam projects are located in the Central Region. The no-action alternative may result in impacts from property acquisition and relocation. Mitigation by GovGuam can be identified and implemented to reduce possible impacts to a less than significant level.

17.2.3.6 Creation of Jobs and Economic Activity

Table 17.2-20 provides an estimate of the number of positions and level of economic activity created by the expenditure of construction funds for the no-action and the four build alternatives. Estimates are based in part on an input/output study of construction activity in Texas by the FHWA (Politano and Roadifer 1989). Funds created in economic output include the multiplier effect of direct construction being re-spent in service or other sectors of the economy. Economic activity generated by the proposed project is anticipated to benefit Guam and would also follow the labor and material markets for transportation-related construction.

With respect to job creation, FHWA found nationally in the early 1980s that a \$1 million investment in transportation construction would directly generate 10 onsite, full-time construction jobs (person years of employment [PYE]). This number has been adjusted to 5.3 PYE positions to reflect inflation through 2009. When offsite, construction-related and service-industry-related jobs and related increases in consumer demand (i.e., direct, indirect, and induced effects) are considered, the total number of full-time PYE positions created rises to approximately 10.6, adjusting for inflation, for each \$1 million of highway investment.

**Table 17.2-20. Impacts from Construction Investment in the Guam Road Network Projects
(in millions of 2009 dollars)**

Alternative	Construction Value *	Regional Economic Output	Total Earnings	Job Creation (Person Years of Employment)	
				Onsite	Total
Alternatives 1 and 2	\$1,669.13	\$2,900.76	\$768.39	9,000	18,000
Alternative 3	\$1,610.61	\$2,799.24	\$741.45	8,700	17,400
Alternative 8	\$1,627.34	\$2,828.32	\$749.15	8,800	17,600
No-Action Alternative	NA	NA	NA	NA	NA

Notes: * Construction impacts are based on preliminary estimates for construction value, which exclude right-of-way costs and include design, construction management, and agency costs.

Legend: NA = not applicable.

Sources: Parsons; Politano and Roadifer 1989 (Model adjusted to reflect inflation).

Compared with the no-action alternative, construction value for construction of either Alternatives 1 or 2 would total \$1,669.13 million, exclusive of ROW. Construction value, exclusive of ROW, for Alternatives 3 and 8 would total \$1,610.61 million and \$1,627.34 million, respectively. Construction expenditures for Alternatives 1 and 2 would generate approximately 9,000 onsite full-time construction positions (PYE). Alternatives 3 and 8 would generate approximately 8,700 and 8,800 onsite full-time construction positions (PYE), respectively. Approximately 17,400 to 18,000 total positions (PYE), including direct, indirect, and induced, as compared to the no-action alternative, would be generated by construction expenditures under the build alternatives (i.e., Alternatives 1, 2, 3, or 8).

The impact of this direct and indirect employment added to the regional economy would be positive.

Best Management Practices/Proposed Mitigation Measures

Because the impacts are beneficial, no BMPs or mitigation measures are proposed.

17.2.3.7 Summary of Impacts

Table 17.2-21 summarizes the potential impacts of each action alternative and the no-action alternative. A text summary is provided below.

**Table 17.2-21. Summary of Potential Roadway Project Impacts
to Socioeconomics and General Services**

Potentially Impacted Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 8	No-Action Alternative
Effects on Neighborhoods and Businesses	SI-M	SI-M	SI-M	SI-M	NI
Property Acquisition and Relocation	SI-M	SI-M	SI-M	SI-M	LSI
Public Services and Facilities Impacts	LSI	LSI	LSI	LSI	NI
Impacts from Construction Investment on Jobs and Economy	BI	BI	BI	BI	NI

Legend: BI = Beneficial impact; LSI = Less than significant impact; NI = No impact; SI = Significant impact; SI-M = Significant impact mitigable to less than significant.

Most of the roadway improvements would primarily occur within the existing ROW; therefore, they would not constitute any new physical or psychological barriers that would divide, disrupt, or isolate neighborhoods, individuals, or community focal points in the corridor. At certain locations, roadway

improvements would require the acquisition of additional ROW; however, these would primarily occur adjacent to the existing ROW. Therefore, community cohesion effects would be minimal.

Acquisition of residential, non-residential, and military property would be required. Residential and non-residential units would require relocation. Federal and state laws require consistent and fair treatment of owners of property to be acquired, including just compensation for their property. The Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended would be followed.

No adverse effects on public services and facilities are anticipated.

Economic activity generated by the proposed project is anticipated to benefit Guam through the generation of jobs, including onsite full-time construction positions (PYE) and direct, indirect, and induced total positions (PYE).

17.2.3.8 Summary of Proposed Mitigation Measures

No mitigation measures are required for roadway projects impacts to socioeconomics and general services.

Implementation of the adaptive program management and force flow mitigation measures could further reduce roadway projects impacts to socioeconomics and general services by lowering peak population levels during construction. See Volume 7 for a full description of these two mitigation measures.