

CHAPTER 16.

SOCIOECONOMICS AND GENERAL SERVICES

16.1 INTRODUCTION

This chapter contains the discussion of the potential environmental consequences associated with the implementation of the alternatives within the region of influence (ROI) for socioeconomic resources. For a description of the affected environment for all resources, refer to the respective chapter of Volume 2 (Marine Corps Relocation – Guam). The locations described in that Volume include the ROI for the aircraft carrier berthing component of the proposed action (Apra Harbor), and the chapters are presented in the same order as the resource areas contained in this Volume.

Socioeconomic impacts would be islandwide in nature with little difference in effects among alternatives. Therefore, the summary of impacts presented below cover both of the action alternatives for aircraft carrier berthing; the no-action alternative is assessed separately in Section 16.2.4.

16.2 ENVIRONMENTAL CONSEQUENCES

16.2.1 Methodology

Refer to the corresponding section of Volume 2.

16.2.1.1 Determination of Significance

Refer to the corresponding section of Volume 2.

16.2.1.2 Issues Identified During Public Scoping Process

Refer to the corresponding section of Volume 2.

16.2.2 Alternative 1 Polaris Point (Preferred Alternative)

The proposed action covered in this Volume includes the following factors/assumptions for this socioeconomic analysis:

- The Navy would not transfer any permanent shoreside operational personnel or dependents to Guam for this action, nor would it transfer any federal civilian workers.
- Post-construction operational impacts flow from the increased number of aircraft carrier days in port (port-days).
- Under the proposed action for a transient aircraft carrier wharf, there would be a cumulative total of up to 63 visit days per year, up to 21 days per visit.
- Most of the impacts of the transient visits come from personal expenditures in the Guam economy (as opposed to expenditures made on base) by personnel while vessels are in port.
- A smaller source of impacts would be Navy expenditures made in the Guam economy to provide goods and services to the vessel while in port. These expenditures generally are more linked to the number of dockings than to the total in-port days. However, because that number is unavailable due to operational variability, it is assumed that expenditures would more than triple over existing Navy expenditures for carrier visits.
- The “direct operational jobs” discussed in this chapter are all in the private sector, flowing from the above types of direct expenditures.

16.2.2.1 Population Impacts

Project Related Population

There would be no direct population increases attributed to this action though there would be induced population increases as a result of this action. Refer to Volume 2 for additional information.

Approach to Analysis

Table 16.2-1 provides assumptions made in conducting analyses for the construction phase, as well as the source of, or rationale for, those assumptions.

Table 16.2-1. 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 Socioeconomic Impact Assessment Study (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 Guam Department of Labor (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).

Table 16.2-2 provides assumptions made in conducting analysis for the operation phase, as well as the source of, or rationale for, those assumptions.

Table 16.2-2. Operational 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 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).

Impacts

Table 16.2-3 indicates the peak construction total impact would peak at 1,478 people in 2012. By 2015 the increase would stabilize at 386 people, related to economic activity created by the spending of transient personnel.

Table 16.2-3. Estimated Population Increase Related to Navy Proposed Action

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Combined Total Impact	0	1,108	1,478	1,455	968	386	386	386	386	386	386

Notes: Population figures exclude existing Guam residents who obtain employment as a result of the proposed action. The amount of population from active-duty military personnel and dependents is also provided there for each year.

Figure 16.2-1 suggests population would slightly exceed the baseline trend by about 1% at the 2012 construction peak and by less than 1% thereafter.

This does not meet the 2% threshold for significance being used for this analysis.

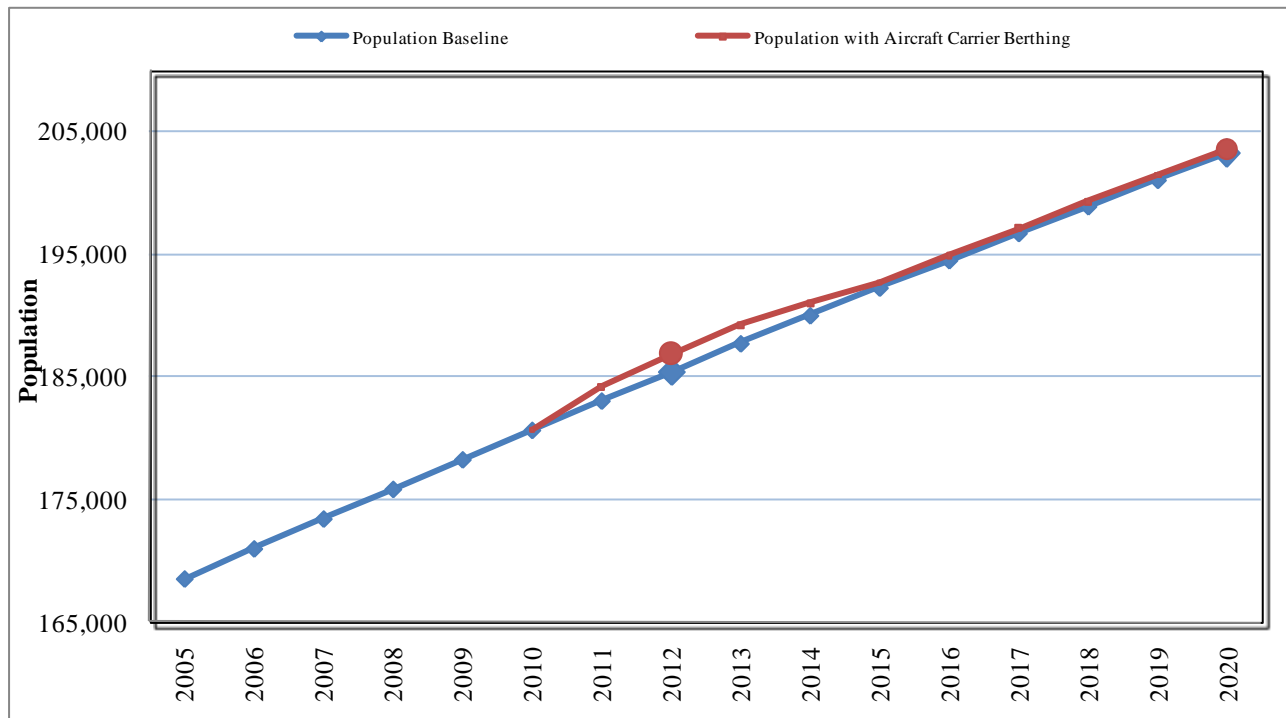


Figure 16.2-1. Population With and Without Proposed Action

Demographic Characteristics

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

Household Characteristics

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

16.2.2.2 Economic Impacts

Employment and Income

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

Civilian Labor Force Demand - Impacts

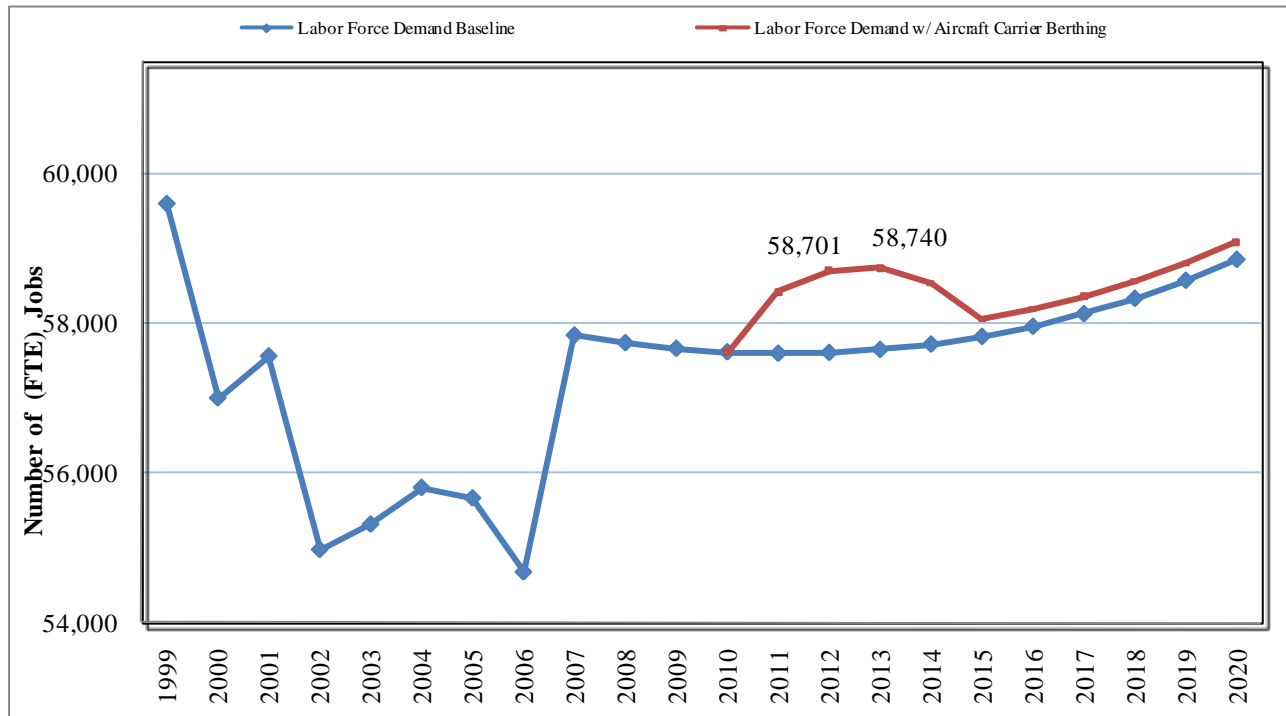
Table 16.2-4 shows a combined total civilian labor force demand for 1,094 full-time equivalent (FTE) workers in the peak construction years of 2012 and 2013, declining to a stable figure of 232 from 2015 on after construction ceases.

Table 16.2-4. Impact on Civilian Labor Force Demand (Full-Time Equivalent Jobs)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Combined Total Impact	0	822	1,094	1,093	820	232	232	232	232	232	232

Notes: Demand is in terms of FTE jobs. Portion assumed to be filled by Guam residents is not subtracted from these figures.

Figure 16.2-2 shows estimated labor force demand with and without the proposed action. During the peak years of 2012-2013, labor force demand is about 2% above the baseline trend. After construction, labor force demand is only 0.5% above where it would be without the proposed action.



Note: In this analysis, a 2% increase over baseline trend at the construction peak is considered sufficiently significant and beneficial to merit a calculation of the total value. In this and other following figures, where that 2% threshold is reached, the numbers shown at the 2012-2013 peak are the sums of the projected baseline trend – what would happen without the project – plus the estimated combined total impact from the foregoing table. This does not include the other military relocation projects.

Figure 16.2-2. Labor Force Demand (FTE Jobs) With and Without CVN Proposed Action

Civilian Labor Force Supply - Impacts

Table 16.2-5 shows the probable labor force supply for direct onsite military construction jobs.

Table 16.2-5. Estimated Origin of Workers Constructing Naval Facilities

	2010	2011	2012	2013	2014	2015	2016
TOTAL	0	460	613	613	460	0	0
GUAM	0	74	89	78	59	0	0
OFF-ISLAND	0	386	525	535	401	0	0
H-2B Workers	0	267	366	376	282	0	0
Philippines	0	227	311	320	240	0	0
Other	0	40	55	56	42	0	0
CONUS/HI/Japan	0	71	95	95	71	0	0
CNMI	0	9	12	12	9	0	0
Other Pacific Islands	0	38	51	51	38	0	0

Notes: Numbers may not add exactly due to rounding.

Table 16.2-6 estimates the share of non-military construction direct and indirect jobs, going to Guam residents versus off-island workers.

Table 16.2-6. Estimated Numbers of On-Island Workers for Various Job Categories Other Than Direct On-Site Construction

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Guam Workers	0	51	62	67	56	33	78	196	196	196	196
Off-Island Workers	0	310	419	412	304	198	154	36	36	36	36

Note: Demand is in terms of FTE jobs, and assumes one worker per FTE job.

Civilian Labor Force Income - Impacts

Civilian labor force income amounts apply to the additional labor force as a whole, rather than to the situation of individual workers. Table 16.2-7 shows that the peak figure for this analysis is \$38 million, falling back to \$9 million for the permanent operation stage from 2015 and beyond.

Table 16.2-7. Impact on Civilian Labor Force Income (Millions of 2008 \$s)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Combined Total Impact	\$0	\$28	\$38	\$38	\$28	\$9	\$9	\$9	\$9	\$9	\$9

Figure 16.2-3 adds the combined total impact figures to the baseline trend in order to show significant long-term positive effects on income. Labor force income is about 2% over the baseline trend at the construction peak and about 0.5% thereafter in the steady-state phase. The 2% figure meets the criterion used in this analysis for a beneficial significant impact.

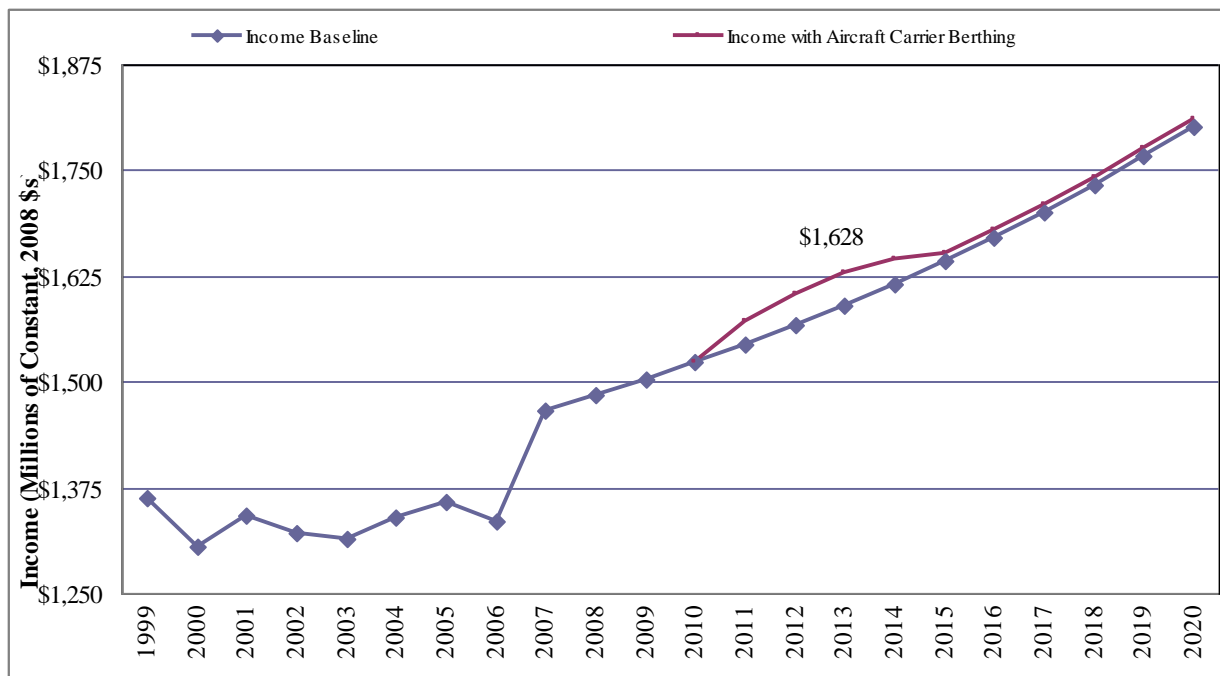


Figure 16.2-3. Labor Force Income (Millions of 2008 \$s) With and Without Proposed Action

Standard of Living - Impacts

Refer to the corresponding section of Volume 2 for a general discussion.

Unemployment - Impacts

Refer to the corresponding section of Volume 2 for a general discussion.

Housing

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

Impacts

Refer to the corresponding section of Volume 2 for a general discussion of housing supply.

Table indicates the combined total impact of the proposed action would be a demand for 286 new civilian housing units in the construction peak year of 2012, falling to 99 after construction ends/operation begins in 2015.

Table 16.2-8. Demand for New Civilian Housing Units

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Combined Total Impact	0	216	286	277	176	99	99	99	99	99	99

Figure 16.2-4 projects a baseline trend in housing supply based on historical rates of development. The proposed action would push housing demand over the baseline trend minimally and the impact would be considered less than significant.

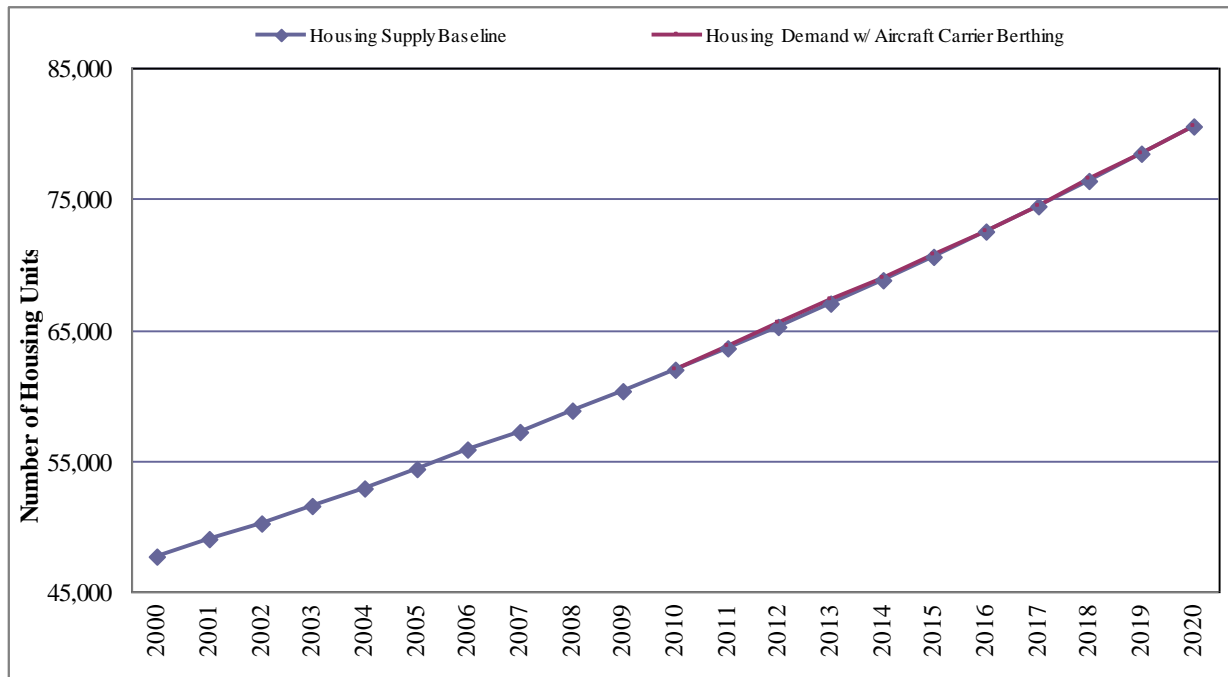


Figure 16.2-4. Civilian Housing Demand with Proposed Action and Housing Supply

Local Government Revenues

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

Note that this is not intended as a comprehensive estimate of all revenues, but only of primary ones. Tax revenue sources analyzed here include Gross Receipts Tax, Corporate Income Tax and Personal Income Tax.

Impacts

Table 16.2-9 shows the combined total impacts for each of the three primary revenue sources. Revenues from personal income taxes would be the highest of the revenue sources estimated, reaching \$4.5 million during the construction peak in 2012-2013 and falling to \$1 million after construction. Gross Receipts Tax would bring in about \$4 million per year from 2012 to 2013 and falling to \$680,000 after construction. Corporate income tax revenues would reach \$1 million in 2012-2013 and decline to \$173,000 after construction.

Table 16.2-9. Impact on Selected Tax Revenues (1,000s of 2008 \$s)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gross Receipts Tax	\$0	\$3,010	\$4,011	\$4,009	\$3,007	\$680	\$680	\$680	\$680	\$680	\$680
Corporate Income Tax	\$0	\$768	\$1,023	\$1,022	\$767	\$173	\$173	\$173	\$173	\$173	\$173
Personal Income Tax	\$0	\$3,400	\$4,526	\$4,519	\$3,390	\$1,061	\$1,061	\$1,061	\$1,061	\$1,061	\$1,061
Total	\$0	\$7,177	\$9,560	\$9,551	\$7,163	\$1,914	\$1,914	\$1,914	\$1,914	\$1,914	\$1,914

Figure 16.2-5 shows the projected total tax revenues from the three sources with and without the proposed action. The baseline trend for the Government of Guam (GovGuam) tax revenues is declining based on existing data from 1997-2007. The chart shows revenues above the baseline trend by about 2% at construction peak and less than 1% above trend thereafter. This meets the criterion used in this analysis for a beneficial significant impact (though the long-term operational impact alone does not).

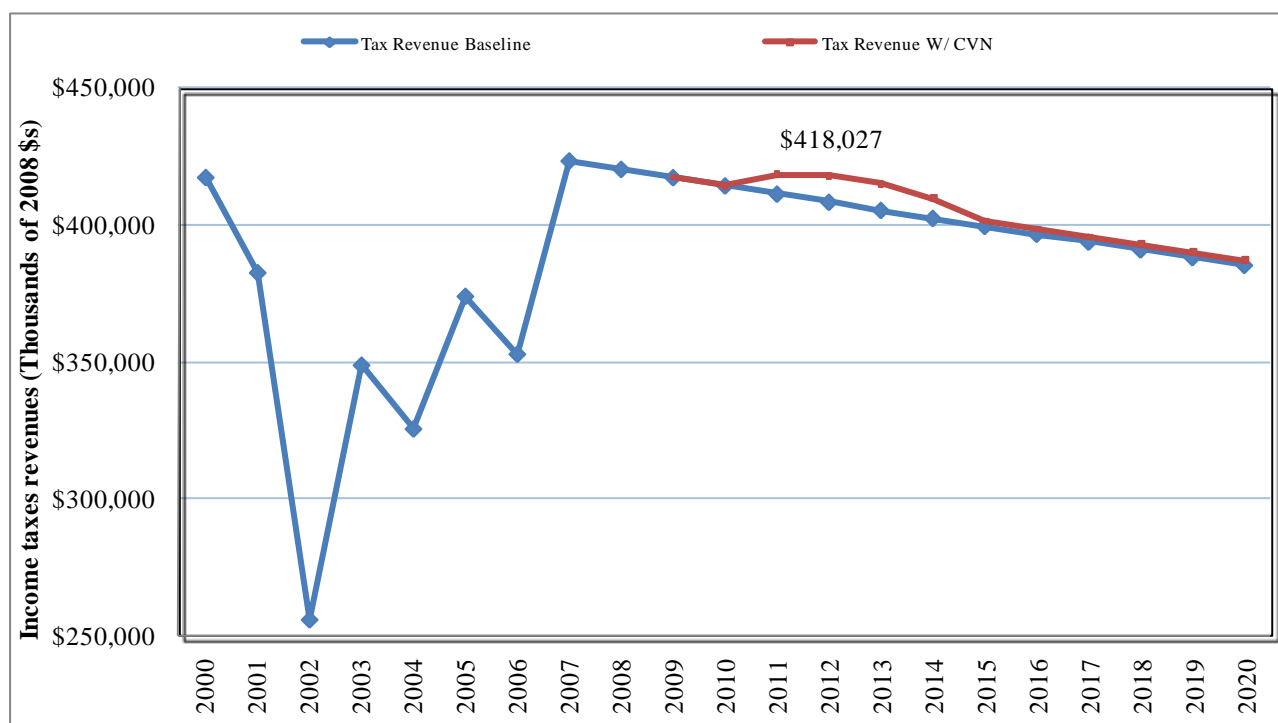


Figure 16.2-5. Gross Receipts Tax Revenue With and Without Proposed Action

Gross Island Product

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

Impacts

Table 16.2-10 shows that the combined impact of military activities alone would add a stable amount of \$13 million to the Gross Island Product (GIP) by 2015, when port calls increase and economic activity generated by transient personnel is taking place. During the construction phase, combined total impacts range between \$21 and \$28 million.

Table 16.2-10. Impact on Gross Island Product (Millions of 2008 \$s)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Combined Total Impact	\$0	\$21	\$28	\$28	\$21	\$13	\$13	\$13	\$13	\$13	\$13

Figure 16.2-6 shows the projected total GIP with and without the proposed action. The figure shows the GIP slightly (less than 1%) above the baseline trend during construction years. Beginning in 2015, when transient personnel presence increases, the GIP would remain less than 1% over the baseline trend. This is a beneficial impact but does not meet the 2% threshold for significance being used for this analysis.

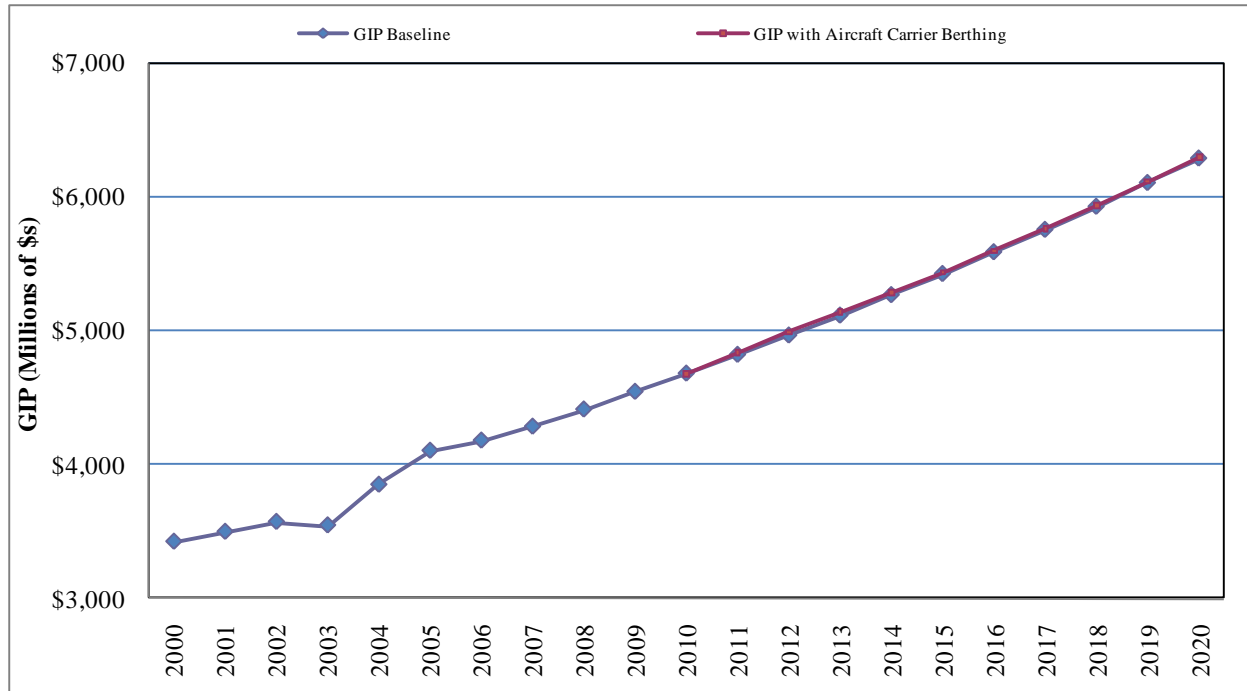


Figure 16.2-6. Gross Island Product (Millions of 2008 \$s) With and Without Proposed Action

Local Business Contracts

Refer to the corresponding section of Volume 2 for general discussion.

The Aircraft Carrier Berthing action in Apra Harbor would warrant less construction activity than the Marine Corps relocation; however, as noted therein, local businesses would still experience benefits. The operational phase for this Naval project would present far fewer opportunities than Marine Corps activities.

Tourism

Refer to the corresponding section of Volume 2 for a general discussion.

Almost all of the impacts described in Volume 2 for the Marine Corps relocation would be supplemented by the berthing of a Navy carrier at Apra Harbor, though the carrier alone, in the absence of any Marine Corps relocation, would have less impact in and of itself. Table 16.2-11 details the impacts that would be specifically generated by the berthing of a Navy carrier at Apra Harbor. The bolded impact is the only impact during the operation phase that would be a result of the Navy action only (and not the Marine Corps or Army actions).

Table 16.2-11. Topics for Tourism Impact Analysis (Aircraft Carrier Berthing)

<i>Construction</i>	<i>Operation</i>
Impacts on ocean-based tourism from environmental degradation.	Impacts on hotel revenues and occupancy taxes from timing of large-scale exercises.
	More airline and hotel business from military friends and family, R&R, military business travelers.
	Impacts on ocean-based tourism from greater competition between activities.

The four items above merit Navy-specific discussion below, although only one of them, impact on hotels from timing of large-scale exercises, was not also discussed in Volume 2.

Impacts on Ocean-Based Tourism within Apra Harbor: Because of rough waters outside the harbor and in many other parts of Guam's shoreline close to the main resort area of Tumon Bay, Apra Harbor is the single most popular site for both recreational divers and commercial (mainly tourist-oriented) diving operation. Economic impacts on ocean-based tourism within Apra Harbor correlate to degradation of the environment. Siltation from dredging already affects visibility and has diving business operators concerned about possible permanent coral loss. Disturbance from construction activities would be short-term and localized. Long-term operational effects on tourism would include force protection restrictions during carrier ingress and egress restricting diving and tourist operation. However, these economic impacts to tourism would be at least partially mitigated or compensated for by increased tourism from military personnel.

Increased Operation-Related Business and Leisure Travel: Tourism organizations and hoteliers were surveyed to collect data on this proposed action. These organizations stated that past carrier visits have always contributed positively to their occupancy levels, as friends and families fly to Guam to visit the off-duty personnel. They welcome the prospect of more carrier operations for this reason. Historically, there have also been positive economic impacts on ocean-based tourism. Dive companies fly instructors out to carriers to initiate basic instruction for open-water certifications (the entry-level step for novice scuba divers), allowing what is normally a week-long process to be completed during the Sailors' time on Guam.

Impacts on Ocean-Based Tourism within Apra Harbor from More Population and Competition: Positive effects on ocean-based tourism volume would be countered by the prospect of increased congestion in the Apra Harbor area. Tourism-based companies such as commercial submarines utilize a mooring at the Port Authority of Guam, but utilize submerged lands and resources within Naval Base Guam for their operations. Guam's two major dive companies, as well as many of the smaller ones, launch their boats out of Apra Harbor and dock at Port Authority of Guam small boat basin. Military and tourist operations have conflicted in the past. Increases in military operations may increase this conflict.

Impacts on Hotels from Timing of Large-Scale Exercises: Large-scale military exercises do not necessarily involve aircraft carriers but often do. An issue set forth by some industry representatives (Guam Chamber of Commerce 2008) is that active-duty military personnel on Guam on temporary orders are exempt from hotel occupancy taxes when their stay at the hotel is strictly related to their military duties. This generally only occurs when transient billeting onboard military installations exceeds capacity. During these infrequent exercises, military personnel who qualify for tax exempt status may displace tourists who are required to pay the occupancy tax. The relative importance of this for the industry and for GovGuam depends on the season. It is problematic in the peak tourist seasons, but less so in the industry's off-peak seasons, such as spring.

16.2.2.3 Public Services Impacts

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

The primary input for estimating staffing impacts during the operational phase was the permanent population associated with economic spin-offs from the increased number of carrier in-port days, not the increased presence of transient personnel. The latter factor might conceivably impact only a relatively small number of GovGuam agencies, such as police or some health agencies. Such possibilities were determined through interviews because of the lack of specific data.

Public Education

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

Table 16.2-12 and Table 16.2-13 provide an overview of the proposed action's impacts on Guam Public School System (GPSS) staffing for the action's peak year and steady-state. The proposed action requires less than 1% increase over reported baseline staffing levels for GPSS. The analysis indicates less than significant impacts to public education agencies due to the proposed action alone, except in conjunction with other aspects of the aggregate action.

Table 16.2-12. GPSS Student Population Impacts Summary

<i>Agency</i>	<i>Baseline Service Population</i>	<i>Peak Year</i>	<i>Peak Year Additional Service Population</i>	<i>Peak Year Percentage Increase</i>	<i>Steady Additional Service Population (going forward)</i>	<i>Steady Requirements Percentage Increase</i>
GPSS Elementary	14,436	2012	98	<1%	34	<1%
GPSS Middle	6,887	2012	41	<1%	14	<1%
GPSS High	9,661	2012	55	<1%	19	<1%

Table 16.2-13. Primary and Secondary Education Teacher Requirements Impacts Summary

<i>Agency</i>	<i>Baseline Teacher Numbers</i>	<i>Peak Year</i>	<i>Peak Year Additional Teacher Requirements</i>	<i>Peak Year Percentage Increase</i>	<i>Steady State Additional Teacher Requirements (going forward)</i>	<i>Steady Requirements Percentage Increase</i>
GPSS Elementary	1,035	2012	7	<1%	2	<1%
GPSS Middle	504	2012	3	<1%	1	<1%
GPSS High	514	2012	3	<1%	1	<1%

Table 16.2-14 and Table 16.2-15 provide an overview of the proposed action's impacts on Guam Community College (GCC) and University of Guam (UoG) student populations and non-adjunct faculty requirements for the action's peak year and steady-state. The proposed action requires less than 1% increase over reported baseline staffing levels for public higher education institutions. The analysis indicates less than significant impacts to public higher education agencies due to the proposed action alone, except in conjunction with other aspects of the aggregate action.

Table 16.2-14. Higher Education Student Population Impacts Summary

<i>Agency</i>	<i>Baseline Service Population</i>	<i>Peak Year</i>	<i>Peak Year Additional Service Population</i>	<i>Peak Year Percentage Increase</i>	<i>Steady Additional Service Population (going forward)</i>	<i>Steady Requirements Percentage Increase</i>
GCC	1,806	2012	13	<1%	4	<1%
UoG	3,282	2012	23	<1%	8	<1%

Table 16.2-15. Higher Education Faculty Requirement Impacts Summary

<i>Agency</i>	<i>Baseline Non-adjunct Faculty Numbers</i>	<i>Peak Year</i>	<i>Peak Year Additional Non-adjunct Faculty Requirements</i>	<i>Peak Year Percentage Increase</i>	<i>Steady State Additional Non-adjunct Faculty Requirements (going forward)</i>	<i>Steady Requirements Percentage Increase</i>
GCC	100	2012	1	<1%	<1	<1%
UoG	185	2012	1	<1%	<1	<1%

Public Health and Human Services

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

Table 16.2-16 provides an overview of the proposed action's impacts on Guam Memorial Hospital Authority (GMHA), Guam Department Public Health and Social Services (GDPHSS), Guam Department of Mental Health and Substance Abuse (GDMHSA) and Guam Department of Integrated Services for Individuals with Disabilities (GDISID) service populations for the action's peak year and steady-state.

Table 16.2-16. Impact on Public Health and Human Services, Service Population Summary

<i>Agency</i>	<i>Baseline Service Population</i>	<i>Peak Year</i>	<i>Peak Year Additional Service Population</i>	<i>Peak Year Percentage Increase</i>	<i>Steady Additional Service Population (going forward)</i>	<i>Steady Requirements Percentage Increase</i>
GMHA	160,797	2012	1,478	<1%	386	<1%
GDPHSS	65,954	2012	554	<1%	145	<1%
GDMHSA	65,954	2012	545	<1%	145	<1%
GDISID	169,209	2012	1,478	<1%	368	<1%

Table 16.2-17 provides an overview of the proposed action's impacts on various public health and human services agency staffing requirements for the action's peak year and steady-state. The proposed action requires less than 1% increase over reported baseline staffing levels for public health and human services institutions. The analysis indicates less than significant impacts to public health and human services agencies due to the proposed action alone, except in conjunction with other aspects of the aggregate action.

Table 16.2-17. Public Health and Human Services Impact Summary

<i>Agency and Staffing Type</i>	<i>Baseline Staffing Numbers</i>	<i>Peak Year</i>	<i>Peak Year Additional Staffing Requirements</i>	<i>Peak Year Percentage Increase</i>	<i>Steady Additional Staffing Requirements (going forward)</i>	<i>Steady Staffing Requirements Percentage Increase</i>
GMHA Physicians	57	2012	<1	<1%	<1	<1%
GMHA Nurses and Allied Health Professionals	355	2012	3	<1%	1	<1%
GDPHSS - Primary Care Medical Providers and Nursing Staff	44	2012	<1	<1%	<1	<1%
GDPHSS – Bureau of Communicable Disease Control (BCDC) Communicable Disease Prevention Professionals	33	2012	<1	<1%	<1	<1%
GDPHSS – Bureau of Family Health and Nursing Services (BFHNS) Nurses	22	2012	<1	<1%	<1	<1%
GDMHSA – Mental Health Professionals	130	2012	1	<1%	<1	<1%
GDISID Social Workers and Counselors	14	2012	<1	<1%	<1	<1%

Public Safety Services

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

Table 16.2-18 provides an overview of the proposed action's impacts on Guam Police Department (GPD), Guam Fire Department (GFD), Guam Department of Corrections (GDoC), and Guam Department of Youth Affairs (GDYA) service populations for the action's peak year and steady-state.

Table 16.2-18. Impact on Public Safety Service Population Summary

<i>Agency</i>	<i>Baseline Service Population</i>	<i>Peak Year</i>	<i>Peak Year Additional Service Population</i>	<i>Peak Year Percentage Increase</i>	<i>Steady Additional Service Population (going forward)</i>	<i>Steady Requirements Percentage Increase</i>
GPD	160,797	2012	1,478	<1%	386	<1%
GFD	175,877	2012	1,660	<1%	386	<1%
GDoC	1,035	2012	7	<1%	1	<1%
GDYA	39,813	2012	302	<1%	105	<1%

Table 16.2-19 provides an overview of the proposed action's impacts on various public safety services agency staffing requirements for the action's peak year and steady-state. The proposed action requires less than 1% increase over reported baseline staffing levels for public safety agencies. The analysis indicates less than significant impacts to public safety agencies due to the proposed action alone, except in conjunction with other aspects of the aggregate action.

Table 16.2-19. Public Safety Services Staffing Impacts Summary

<i>Agency and Staffing Type</i>	<i>Baseline Staffing Numbers</i>	<i>Peak Year</i>	<i>Peak Year Additional Staffing Requirements</i>	<i>Peak Year Percentage Increase</i>	<i>Steady Additional Staffing Requirements (going forward)</i>	<i>Steady Staffing Requirements Percentage Increase</i>
GPD – Police Officers	309	2012	3	<1%	1	<1%
GFD - Firefighters	190	2012	2	<1%	<1	<1%
GDoC – Custody and Security Personnel	188	2012	1	<1%	<1	<1%
GDYA – Youth Service Professionals	79	2012	<1	<1%	<1	<1%

Other Selected General Services

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

Table 16.2-20 provides an overview of the proposed action's impacts on Guam Department of Parks and Recreation (GDPR), Guam Public Library System (GPLS) and Guam Judiciary key staffing requirements for the action's peak year and steady-state.

Table 16.2-20. Impact on Other Selected General Service Agency Service Population

	<i>Baseline Service Population Numbers</i>	<i>Peak Year</i>	<i>Peak Year Additional Service Population</i>	<i>Peak Year Percentage Increase</i>	<i>Steady Additional Service Population Numbers (going forward)</i>	<i>Steady Service Population Percentage Increase</i>
GDPR, GPLS, and Judiciary Service Population	160,797	2012	1,478	<1%	386	<1%

Table 16.2-21 provides an overview of the proposed action's impacts on GDPR, GPLS and Guam Judiciary key staffing requirements for the action's peak year and steady-state. The proposed action requires less than 1% increase over reported baseline staffing levels for these agencies. The analysis indicates less than significant impacts to the agencies due to the proposed action alone, except in conjunction with other aspects of the aggregate action.

Table 16.2-21. Other Selected General Service Agency Impacts Summary

<i>Agency and Staffing Type</i>	<i>Baseline Key Staffing Numbers</i>	<i>Peak Year</i>	<i>Peak Year Additional Key Staffing Requirements</i>	<i>Peak Year Percentage Increase</i>	<i>Steady Additional Key Staffing Requirements (going forward)</i>	<i>Steady Requirements Percentage Increase</i>
GDPR – General Staff	90	2012	<1	<1%	<1	<1%
GPLS – General Staff	28	2012	<1	<1%	<1	<1%
Judiciary - Judges	6	2012	<1	<1%	<1	<1%

Growth Permitting and Regulatory Agencies

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

Table 16.2-22 shows the estimated number of key professional staff required due to the proposed action. Absolute numbers in the table are low, but proportionate increases would be high or at least notable for a few agencies with small reported baseline levels. The peak requirement would represent a 26% increase in the GDoL - Alien Labor Processing and Certification Division (ALPCD) baseline staffing level and 4% for the Coastal Management Program (CMP), with others ranging from 0% to 3%. After construction ends, the required staffing levels from 2017 on are all just 0% to 2% greater than baseline levels. Although a few agencies would be significantly affected, based on the criteria used for this analysis, the overall effect would be a less than significant impact for the proposed action alone, except in conjunction with the aggregate action.

Table 16.2-22. Additional Growth Permitting Staff Required

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Guam Department of Public Works (GDPW) Permitting Staff	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Guam Department of Land Management (GDLM) Permitting Staff	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Guam Environmental Protection Agency (GEPA) Permitting Staff	1.1	1.1	1.6	1.5	1.0	0.1	0.1	0.1	0.1	0.1	0.1
Coastal Management Program (CMP) Permitting Staff	0.4	0.4	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Guam Power Authority (GPA) Permitting Staff	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Guam Water Authority (GWA) Permitting Staff	0.5	0.3	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
GFD Permitting Staff	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GDPHSS - DEH Permitting Staff	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
GDPR - HPO Permitting Staff	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GDoL - ALPCD Permitting Staff	0.0	0.9	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

16.2.2.4 Sociocultural Impacts

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

Most sociocultural impacts would be due to the overall volume of the proposed action, not the unique attributes of any particular service (i.e., Marines, Navy, or Army). However, during the operation phase, the Navy component of the proposed action would be of a more concentrated nature than the Marine Corps component, as it consists of shore leave components. This would result in slightly different crime and social order impacts.

Sociocultural Considerations

The increase in the numbers of port-days of Carrier Strike Group (CSG) personnel onshore leave associated with the operational phase of the transient berthing of the carrier nuclear vessel (CVN) has the potential to have adverse sociocultural impacts. Overall, the occupational setting is one that is characterized by alternating periods of being at sea for lengthy periods of time experiencing "... intense activity, gruelingly long work hours ...", followed by "...periods of recreation in U.S. or foreign ports" (Ames et. al. 2009). It is this period of recreation where Sailors tend to "blow off steam" (Russ and Ames 2006).

One important aspect of Navy shore leave is the consumption of alcoholic beverages. Young Sailors are often under the legal drinking age, and have a relative lack of drinking experience (Ames et. al. 2009). During deployment, Navy policy does not allow any drinking of alcohol onboard ship while at sea, except under certain tightly regulated situations. The docking of ships at ports for periods of "liberty" or "shore leave" often leads to heavy and/or binge drinking activities (Federman et al. 2000), and anecdotal evidence indicates that this is the case currently when carriers dock at Guam's port (GDYA Interview – Volume 9, Appendix F).

Finally, although quantitative measures of the current impact of Navy shore leave on Guam's crime and social order environment were not available, GovGuam agency interviews suggested that any increase in port-days or number of Sailors onshore leave on Guam would require additional enforcement from both civilian and military public safety agencies (GDoC, GPD, and U.S. Naval Security Interviews – Volume 9, Appendix F). The Public Safety Services impact section of this study provides additional discussion of this topic.

Political and Chamorro Issues

Refer to the corresponding section of Volume 2.

Community Cohesion

Refer to the corresponding section of Volume 2 for general discussion.

There remains a measure of community apprehension about the increased pulses of Sailors arriving on Guam for shore leave and how their presence might cause discomfort in the community. Most of the community apprehension comes from uncertainties regarding possible changes in the sociocultural framework of Guam because of the influx of the 18 to 45 age group. The ultimate impact on community cohesion that might occur would be dependent on how successful intercultural education programs are in mitigating this apprehension.

16.2.3 Summary of Impacts

The impacts in this chapter are calculated under a scenario that assumes there would be no constraints (blockages) to the rapid development of spin-off private-sector economic activity driven by the military construction and permanent military operational stages. Most impacts would be characterized by a burst of activity and impacts in the 2013-2014 timeframe, followed by relatively much lower impacts when only permanent operations (increased number of port-days) are implemented.

16.2.3.1 Population Impacts

Although there would be no permanent transfer of active-duty Navy personnel and dependents, the economic spin-off activity from the proposed action would add about 1,480 residents to Guam's population at the 2012 construction peak and a subsequent more stable population of about 390 during the operational period.

16.2.3.2 Economic Impacts

Most long-term economic benefits would clearly be beneficial though small. The construction activity for the aircraft carrier berth would contribute to less than significant population influx and housing demand.

Including all the spin-off activity, the proposed action would provide jobs for about 1,100 civilian workers at the 2012-13 peak and 230 on a more permanent basis. Guam residents are estimated to capture about 90 of the direct on-site construction jobs for aircraft carrier berthing facilities at the 2012 peak, as well as approximately 70 spin-off jobs that year and a more permanent 200 jobs a few years thereafter.

Cost of living increases, particularly during the construction phase, would negatively affect households on fixed incomes, though other households would benefit from rising wages; however, this would come more from the Apra Harbor construction's additive effects to other military actions than this Naval action alone.

Although a more detailed fiscal impact assessment would be done by GovGuam using output from this Environmental Impact Statement (EIS), preliminary estimates in this chapter suggest revenues from the

three most important tax sources: gross receipts, corporate income, and personal income, would exceed \$9.5 million in 2012-2013 and stabilize at about \$1.9 million thereafter.

Civilian housing unit demand would peak at about 290 units in 2012, falling to about 100 for the operational period.

Guam construction businesses are expected to benefit from various opportunities.

Tourism would be positively impacted as there would be more days that aircraft carrier personnel book hotel rooms for themselves and/or visiting family members, although some industry leaders are concerned that timing of exercises during the industry's peak season could displace tourists who pay hotel taxes. Many military personnel are exempt from these taxes.

Guam's GIP, the total market value of all final goods and services produced in a given year, would see a beneficial increase of \$28 million (2008 dollars) in the 2012-13 construction peak and about \$13 million a year from 2015.

16.2.3.3 Public Service Impacts

GovGuam's public service agencies would generally need to make only minor staffing increases to service new population associated with the proposed action alone, though the impacts would be more notable during the construction timeframe. Most of these agencies would need to expand their services and staff slightly during the 2012-2013 peak, and then cut them back as construction ends.

For public education services, the GPSS, GCC and UoG together would need to hire a combined 15 teachers/faculty for the 2012-13 construction peak, falling to a combined five after construction ends.

For health and human services, this chapter considered impacts on various aspects of GMHA, GDPHSS, GDMHSA, and GDISID. These agencies would need a combined six new key professional workers for 2012-13, dropping to a combined two for 2015.

Public safety agencies: Police, Fire, Corrections, and Youth Affairs would also require a combined seven key professionals in 2012-13, falling to a combined two for 2015.

Other selected general service agencies: Parks and Recreation, Libraries, and the Judiciary would require a combined one key professional in 2012-13, falling to less than one after construction ends.

Other agencies that deal with permitting and regulating growth are affected more by the initial requests for permits and then subsequent inspections and monitoring. Development permitting agencies on Guam would experience very low increases in demands for their services because the amount of housing and commercial space needed to serve this small population and employment increment would be below the existing stock of vacancies. GEPA and ALPCD (these agencies process H-2B worker permits, not developer permits) would be the only agencies whose increased workloads would peak at more than one FTE (about 1.5, and 1, respectively).

16.2.3.4 Sociocultural Impacts

The limited construction activity related to this component of the proposed action would likely not have significant impacts on the local community.

In terms of assessing the possible impacts of the operational phase of the component, data on the current impacts of aircraft carrier berthing on crime and social order and community cohesion on Guam are not available. Studies of Naval shore leave behavior, however, indicate possible impact on these areas,

especially as they are related to excessive alcohol consumption or irresponsible sexual activity. There is also potential for increased fighting between different branches of the military.

The long-term impacts of increased shore days taken would depend on how much military security increases the amount of shore patrol during times of aircraft carrier berthing, as well as how effectively civilian and military security agencies collaborate.

The greatest driver for impacts on the Chamorro community on Guam would be the potential surges of populations that are not familiar with the Chamorro culture on the island of Guam.

Table 16.2-23 provides a summary assessment of the potential impacts of each action alternative and the no-action alternative. Some topics are seen as inherently mixed (as indicated by the SI/BI designation). In addition, a text summary follows.

Table 16.2-23. Summary of Impacts

<i>Impact Area</i>	<i>Alternatives 1 and 2</i>
Population Impacts	<ul style="list-style-type: none"> • Less than significant direct and indirect impacts – of mixed beneficial/adverse nature – due to construction effects peaking at 1,478 additional population in 2012 and final operational impacts of 386 civilian population; also, increase of up to 47 port-days during when up to 7,200 transient personnel would be present on Guam.
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. • No impact on standard of living from the proposed action construction or operation. • Beneficial impacts due to increase in local government revenue. • Less than significant direct and indirect impact of demand for civilian (private-market, excluding temporary construction workforce housing) housing units peaking at 813 units in 2014, with permanent operational demand for 147 civilian housing units from 2016 on (Note: combined total impact peaks in 2015 at demand for 920 units). • 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. • Impacts to tourism would be mixed (adverse and beneficial). On balance beneficial impacts outweigh adverse impacts
Public Service Impacts	<ul style="list-style-type: none"> • Less than significant impact as public service agencies would see increased service populations representing less than a 1% increase over current service populations. • Less than significant construction-related impacts to growth-permitting 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"> • Significant impacts to crime and social order in proportion to increase in population • Little or no construction impact to community cohesion, but mixed set of direct and indirect significant beneficial impacts and adverse impacts, with outcome dependent on success of standard law enforcement programs and education of personnel prior to port stops.

16.2.4 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, would 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 in fact apply more to those Volumes than to this Volume 4 covering the CVN action, as CVN impacts alone sometimes would not attain significance.

Unlike physical resources, socioeconomic systems do not remain completely at baseline conditions if a proposed action is not implemented. Economies and population levels change due to 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.

16.2.4.1 Population/Economic Impacts

In the short-term, a decision not to implement the proposed action would deflate any current speculative activity attributable to 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.

16.2.4.2 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.

16.2.4.3 Sociocultural Impacts

Crime rates would be likely to rise in the short-term to the extent that Guam experiences recession (Pugh 2009). 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 (FAS) would decrease, reducing sociocultural issues associated with assimilating that population. However, the current

incentives for providing support for those populations, both on Guam and the Micronesian states themselves, would also be lessened, with detrimental implications for those populations.

16.2.5 Summary of Proposed Mitigation Measures

A review of the above impacts shows that the proposed action has the potential to have beneficial economic impacts, and significant sociocultural impacts on Guam. The proposed mitigations identified below focus on the issues where significant sociocultural impacts were identified.

Table 16.2-24 summarizes proposed mitigation measures.

Table 16.2-24. Summary of Proposed Mitigation Measures

<i>Impact Area</i>	<i>Potential Mitigation Measures</i>
Crime and Social Order	<ul style="list-style-type: none"> • DoD would increase collaborative programs with GovGuam public safety agencies to develop a comprehensive and regular shore patrol system, and maintain a regular visible preventative presence. • DoD would continue to participate in CMTF to address community crime and social order concerns such as effective crime prevention strategies and information sharing. • DoD would continue cross-training exercises with the GovGuam safety agencies. • DoD would assist by leading a federal inter-agency effort to identify other federal programs and funding sources for collaborative efforts between the governments of Guam, CNMI and FAS to enhance cultural awareness.
Chamorro Issues/ Community Cohesion	<ul style="list-style-type: none"> • Implement a collaborative effort with construction worker contractors to implement an orientation course on Guam local culture, language and history, designed in conjunction with the Guam Department of Chamorro Affairs and Chamorro cultural specialists, to be attended by all arriving H2B workers. • Implement a mayoral outreach task force aimed at developing military-civilian relationships, to minimize local community perceptions of separations of military and civilian communities. The task force would work with each mayor and their staff to integrate military participation in existing cultural or recreational community events, expand on existing military outreach activities, and develop new civilian-military collaborative projects as determined by the task force and mayors. • Implement an orientation course on Guam local culture, language and history, designed in conjunction with the Guam Department of Chamorro Affairs and Chamorro cultural specialists, to be attended by all arriving active-duty DoD personnel their dependents, and military civilian workers. • Develop a military-civilian cultural organization to promote tours, education, and volunteer opportunities. • Expand sister village programs to promote military civilian community interaction. • Implement the use of UoG and GCC locations for DoD adult education classes, to promote community integration, consistent with DoD policies. • Implement an orientation course on Guam local laws and culture, language and history, designed in conjunction with GovGuam public safety agencies, the Guam Department of Chamorro Affairs and Chamorro cultural specialists, to be attended by all arriving service members prior to shore leave on the island of Guam. • DoD would assist by leading a federal inter-agency effort to identify other federal programs and funding sources for GovGuam addressing the following: • Supporting the development of Chamorro cultural sites and activities, such as a museum and/or cultural center, Chamorro language immersion school, adult Chamorro language education, and cultural performance and arts organizations; • Job counseling assistance to be made available to low income families through the Guam Department of Labor (with US funds), which would include training sessions on how to fill out job applications, identify skills, and prepare resumes for job opportunities; • Before and/or after school programs for children on Guam including formal and

Table 16.2-24. Summary of Proposed Mitigation Measures

<i>Impact Area</i>	<i>Potential Mitigation Measures</i>
	informal education, while allowing their parent(s) the time to get a job. <ul style="list-style-type: none">• Transportation to job sites made available for those without the means to travel to work.