Report No. DODIG-2012-052 February 8, 2012

Inspector General
United States Department of Defense

Report on the Program and Contract Infrastructure Technical Requirements Development for the Guam Realignment Program

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Acronyms and Abbreviations

AFB	Air Force Base
AIP	Agreed Implementation Plan
DAR	Defense Access Road
DOD	Department of Defense
DOD IG	Department of Defense, Office of Inspector General
EIS	Environmental Impact Statement
FAR	Federal Acquisition Regulation
FCC	Federal Communications Commission
FHWA	Federal Highway Administration
FY	Fiscal Year
GAO	Government Accountability Office
GRN	Guam Road Network
GWA	Guam Waterworks Authority
ICG	Interagency Coordination Group
JFY	Japanese Fiscal Year
JRM	Joint Region Marianas
H.R.	House of Representatives
MARAD	Maritime Administration (Department of Transportation)
NAVFAC (PAC)	Naval Facilities Engineering Command (Pacific)
NCTS	Naval Computer and Telecommunications Station
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
OPNAV	Operational Navy
UFC	Unified Facilities Criteria
U.S.	United States
USC	United States Code
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency

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INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
4800 MARK CENTER DRIVE
ALEXANDRIA, VIRGINIA 22350-1500

February 8, 2012

MEMORANDUM FOR NAVAL INSPECTOR GENERAL

SUBJECT: Report on the Program and Contract Infrastructure Technical Requirements Development for the Guam Realignment Program (Report No. DODIG-2012-052)

We are providing this report for your review and comment. We conducted an engineering review of the development of program and contract infrastructure requirements to include cost estimates and budgets for the commercial port, roads, power production and transmission, drinking water, wastewater, solid waste and communications. We have three findings in the areas involving the port and communications; and two observations related to wastewater and solid waste. We considered management comments on a draft of this report from the Department of the Navy and the Department of Transportation, Maritime Administration when preparing the final report.

DOD Directive 7650.3, requires that recommendations be resolved promptly. Findings that concern other Federal agencies outside the DOD, were addressed in a memorandum of condition advocating a corrective course of action (Appendix B). We received comments from the Department of Transportation, Maritime Administration and the Department of the Navy on recommendations made in this report.

The comments from the Department of Transportation, Maritime Administration were responsive. Comments from the Department of the Navy on the communication findings were also responsive, however, per the comments, we have changed to whom the findings are addressed. Therefore, we request additional comments from the Department of the Navy on those recommendations regarding the communication findings by March 9, 2012.

We appreciate the courtesies extended to the staff. Please direct questions to Mr. James Howell at (703) 699-9954 (DSN 669-9954). If you desire, we will provide a formal briefing on the results.

Randolph R. Stone, SES
Deputy Inspector General
Policy and Oversight

cc: INSPECTOR GENERAL, DEPARTMENT OF TRANSPORTATION

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Results in Brief: Report on the Program and Contract Infrastructure Technical Requirements for the Guam Realignment Program

What We Did

The U.S. and the government of Japan agreed to realign U.S. and Japanese forces throughout the Pacific under the October 2005 agreement, "U.S.-Japan Alliance: Transformation and Realignment for the Future." As part of this realignment effort, the U.S. and Japanese government agreed to relocate approximately 8,000 Marines and 9,000 of their dependents from Okinawa to Guam by 2014. As a result of the realignment and additional increases in military personnel across Guam, it is estimated that Guam's current population of 171,000 will increase by an estimated 25,000 active duty military personnel and dependents to 196,000. In addition, the realignment will require additional workers to temporarily move to the island, including non-defense personnel, Department of Defense (DOD) contractors, and transient military personnel. The U.S. military realignment will substantially impact Guam's community and infrastructure. On June 21, 2011, it was acknowledged by the U.S. and Japan that the 2014 target date will not be met.

We conducted this engineering review from May 2010 to April 2011. The objective of the project was to report on the development of program and contract infrastructure technical requirements to include cost estimates and budgets for the Guam Realignment Program. Our review included seven areas of infrastructure making up what we call the composite program. The seven areas making up the composite program include: port, roads, power production and transmission, drinking water, wastewater, solid waste, and communications. We reviewed the existing infrastructure facilities on location, and reviewed the engineering improvements and supporting documentation. For each infrastructure area, the scope of our engineering review included: infrastructure area requirements, statutory and regulatory responsibilities, inclusion in the realignment program, cost estimates, budgeting, contract, schedule, and sustainment.

What We Found and Recommend

Commercial Port of Guam

The Port of Guam's cargo handling capacity must be upgraded to achieve the required throughput for the military realignment to the territory of Guam. All port improvements, as stated in the 2008 Memorandum of Understanding between the Government of Guam; the Port Authority of Guam; and the U.S. Department of Transportation, Maritime Administration (USDOT, MARAD), must be implemented within the 2007 Port Master Plan framework ranked in order of priority and should enable the Port of Guam to achieve the required throughput in support of the military realignment.

Finding. Given the fact that the Guam commercial port bulkhead is at significant risk of major structural failure, the Department of Defense, Office of Inspector General (DOD IG) issued a memorandum of condition to USDOT, MARAD addressing the serious condition of the bulkhead. The memorandum advocated that MARAD work with the Port Authority of Guam to implement the first priority of the Memorandum of Understanding between MARAD and the Port Authority of Guam, signed November 2008, that stated, *"Correct the deteriorated structural, utility and infrastructural facility deficiencies and upgrade said facilities to modern safe standard."*

Roads

There are 49 Guam Road Network projects deemed significant to support the military realignment. The road projects were chosen based on priorities and budget availability. The Federal Highway Administration (FHWA) determined that when the FY 2010 and FY 2011 Guam Road Network construction projects are completed, a sufficient amount of road improvements will be in place to support the initial military realignment.

Power Generation, Transmission and Distribution

The Guam Power Authority's current and future projected power supply after the refurbishment of electrical systems are adequate to support the island-wide power demand now and up to 2019.

Drinking Water

An additional 11.3 million gallons per day in potable water supply is required to meet the projected DOD demands for the military realignment. The demand would be met by the establishment of up to 22 new DOD water wells and rehabilitation to the existing wells.

Wastewater Treatment

Currently, the Guam wastewater plants do not meet primary treatment standards and lack sufficient capacity due to poor conditions of the existing assets. The plants are currently operating under two U.S. District Court stipulated orders. The U.S. Environmental Protection Agency (USEPA) has required the Guam Waterworks Authority to install full secondary treatments at both wastewater treatment plants.

Observation. NAVFAC PAC has identified $8 million in funding needed for the interim wastewater capacity upgrade at the Northern District Wastewater Treatment Plant. However, NAVFAC PAC has yet to obtain authority for obligating the identified funds. If the NDWWTP cannot achieve and ensure consistent compliance, USEPA will not adjust the permit limits to allow the additional flow needed to house the construction workforce and the development of the military realignment.

Solid Waste

The territory of Guam and DOD have separate solid waste facilities. Previously, all civilian solid waste on Guam was disposed of at the Ordot Dump facility. The Ordot Dump facility is now full and closed. A new landfill – Layon Landfill – was constructed.

The DOD's plan is to expand its recycling program and send all of its solid waste, with the exception of construction and demolition waste, to Layon Landfill.

Communications

The government of Guam and DOD in Guam currently only have the basic 911 services that cannot process a caller's telephone number and location automatically.

Finding and Recommendation A. The telephone number and location information of calls originating from inside DOD installations are not automatically provided to DOD emergency 911 operators by the DOD installations' Public Safety Answering Points. We recommend that the Navy's, Operational Navy (OPNAV) N2/N6 prepare, complete, and coordinate programs to upgrade the basic emergency 911 system to an Enhanced 911 system. Additionally, until the Enhanced 911 system is installed and operational, we recommend advising incoming military personnel and their families, during island in-processing, about the 911 limitations.

Finding and Recommendation B. The government of Guam has not implemented the Enhanced 911 system. The current 911 system has reached the end of its life cycle for maintenance support. This condition exists because the government of Guam uses the *"Enhanced 911 Emergency Reporting System Fund"* for administrative personnel salaries rather than the Enhanced 911 operation and maintenance. We recommend that OPNAV N2/N6 work in conjunction with the government of Guam to install the Enhanced 911 system, as encouraged by U.S. Public Law 108-494, so off-base and on-base residents are ensured a timely response.

Management Comments and Our Response

The USDOT, MARAD provided comments to the draft report. Comments from the Department of the Navy on the communication findings were also responsive, however, per the comments we have changed to whom the findings are addressed. Therefore, we request additional comments from the Department of the Navy on those recommendations. Please see the recommendations table below, on this page.

Recommendations Table

Management	Recommendations Requiring Comment
Department of the Navy, OPNAV N2/N6	Finding A: DOD Emergency Communications Finding B: Guam Emergency Communications

Please provide comments by March 9, 2012.

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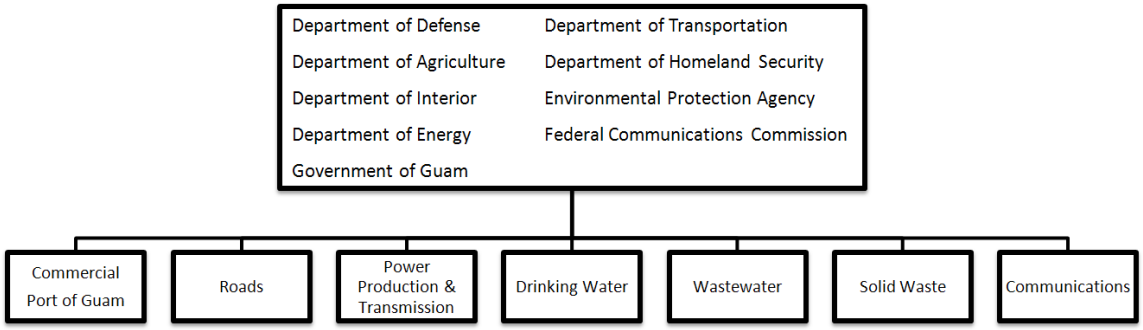
Introduction

Objectives

The objective of this project was to review the development of program and contract infrastructure technical requirements for the Guam Realignment Program. The engineering review included cost estimates and budgets for the harbor, roads, power production and transmission, drinking water, wastewater, solid waste, and communications. Each infrastructure area had several government entities and projects involved; therefore, we referred the overall project as the composite program. Figure 1 shows the government entities and infrastructure areas that make up the composite program. The results of this review are findings and observation in the respective areas where issues were found. Findings are non-conformities which include recommendations. Observations are without recommendations or a required response. They are non-conformities, which fall outside the authority of the DOD IG to impose a recommendation, or noted concerns without a violation of a criteria.

Figure 1. DOD IG Composite Program



Background

Origin of the Guam Realignment Program

Guam is an integral part of DOD's logistical support system and serves as an important forward operational hub for a mix of military mission requirements. Guam provides strategic flexibility, freedom of action, and prompt global action for Overseas Contingency Operations, peace and wartime engagement, and crisis response. DOD planned to begin the Guam military realignment construction during FY 2010 in order to meet the desired realignment deadline of FY 2014 as indicated in the U.S.-Japan Security Consultative Committee agreement reached on May 2006. Under the agreement, "United States-Japan Roadmap for Realignment Implementation," the U.S. and the government of Japan agreed to realign U.S. and Japanese forces throughout the Pacific, referred to as the "realignment roadmap." As part of this realignment effort, the U.S. and Japanese government agreed on February 17, 2009, to relocate approximately 8,000 Marines and 9,000 of their dependents from Okinawa to Guam by 2014. As a result of this relocation and additional increases in military personnel across Guam, it is estimated that Guam's current population of 171,000 will increase by an estimated 25,000 active duty military

personnel and dependents (or 14.6 percent), to 196,000. In addition, the realignment will require additional workers to temporarily move to the island including non-defense personnel, DOD contractors, and transient military personnel. The U.S. military realignment will substantially impact Guam's community and infrastructure. On June 21, 2011, it was acknowledged by the U.S. and Japan that the 2014 target date will not be met; however, they committed to complete the realignment at the earliest possible date after 2014.

The National Environmental Policy Act (NEPA) of 1969 requires Federal agencies to examine the environmental effects of their proposed actions. On behalf of the DOD, the Department of the Navy prepared a Final Environmental Impact Statement (EIS) in July 2010, to review the potential environmental effects associated with the proposed military activities. Additionally, the Final EIS addressed proposed actions involving the Marine Corps, the Navy, and the Army. In September 2010, the Record of Decision was issued providing a decision on the course of action for each area of the Final EIS. As part of this Record of Decision, Federal regulatory agencies committed to switching from a rapid build-up approach to a phased approach. As a mitigation measure, the agencies are referring the program as the 'Adaptive Program Management' and have established a Civil-Military Coordination Council to implement the adaptive program management. It will allow DOD to revise construction tempo and adjust the sequencing of construction activities to directly influence workforce population levels and indirectly influence induced population growth before significant environmental impacts occur or infrastructure capabilities are exceeded.

Establishment of the Interagency Coordination Group (ICG) for the Guam Realignment

U.S. Public Law 111-84, Section 2835 of the National Defense Authorization Act for FY 2010, designated the Inspector General of the DOD as the Chairman of the Interagency Coordination Group (ICG) of Inspectors General for Guam Realignment. The first ICG meeting occurred in November 2009. The objective of the meeting was to discuss the legislative requirements and request information on oversight initiatives planned or completed.

Members of the ICG include the Inspector General of the Department of the Interior and other Inspectors General, as appropriate. The ICG recognizes that the realignment may present challenges in operational readiness, quality of life, contract management, contractor oversight, asset accountability and financial management. A key factor impacting these challenges is the development of the realignment infrastructure on Guam. The ICG is responsible for considering the risks associated with these challenges when developing an oversight plan to effectively and efficiently utilize audit and investigative resources. Also, the ICG will provide transparency and accountability to the American people and U.S. military forces affected by the realignment.

Additionally, the ICG will provide an accounting of funds received from the government of Japan. The ICG is committed to providing independent, objective, and relevant information in achieving accountability, integrity, and efficiency in the Guam

realignment. As the group moves forward, Congress and senior leadership throughout the U.S. Government will use these oversight efforts to improve the economy and efficiency of vital programs and operations, sustain the readiness of U.S. forces, and minimize the impact on the citizens of Guam.

U.S. Public Law 111-84, Section 2835 goes on to state:

> It shall be the duty of the Interagency Coordination Group to conduct, supervise, and coordinate audits and investigations of the treatment, handling, and expenditure of amounts appropriated or otherwise made available for military construction on Guam and of the programs, operations, and contracts carried out utilizing such funds, including:
>
> (A) the oversight and accounting of the obligation and expenditure of such funds;
> (B) the monitoring and review of construction activities funded by such funds;
> (C) the monitoring and review of contracts funded by such funds;
> (D) the monitoring and review of the transfer of such funds and associated information between and among departments, agencies, and entities of the United States and private and nongovernmental entities;
> (E) the maintenance of records on the use of such funds to facilitate future audits and investigations of the use of such funds; and
> (F) the monitoring and review of the implementation of the Defense Posture Review Initiative relating to the realignment of military installations and the relocation of military personnel on Guam.
>
> Not later than February 1 of each year, the chairperson of the Interagency Coordination Group shall submit to the congressional defense committees, the Secretary of Defense, and the Secretary of the Interior a report summarizing, for the preceding calendar year, the activities of the Interagency Coordination Group during such year and the activities under programs and operations funded with amounts appropriated or otherwise made available for military construction on Guam. Each report shall include, for the year covered by the report, a detailed statement of all obligations, expenditures, and revenues associated with such construction.

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I. Commercial Port of Guam

Figure 2. Commercial Port of Guam

Source: Photo courtesy of DOD IG

Background

Requirements

All materials needed for the realignment construction projects will be transported to Guam by sea and enter through the Jose D. Leon Guerrero Commercial Port (Port of Guam). As much as 90 percent of the day-to-day goods and supplies used by the island of Guam pass through the port. However, the port's cargo handling capacity must be increased to achieve the required throughput for the scheduled military realignment.

Throughput is the average quantity of cargo and passengers that move through a port during a given time period. The Port Authority of Guam's support contractor, Parsons Brinkerhoff International (PBI) originally performed the throughput requirements analysis that was used in the Final EIS based on the realignment roadmap schedule. Throughput requirements for the realignment are projected to be as high as 190,000 containers versus the 86,558 containers passing through the port in recent years; a peak of 291,400 tons of break-bulk (see page 6 for definition), versus 125,565 tons in recent years; and a peak of 575,000 tons per year of bulk cement, versus 56,000 tons per year in recent years.

Container Forecast. The Final EIS states that the projected average number of containers to be handled each year during the period 2008 through 2018 is 153,636, with

the maximum container number of 190,000 occurring in the year 2015. This quantity is about twice the average number of containers handled during the period of 1995 through 2008 (86,558 containers). In the independent auditors' report by Ernst and Young, *"The total number of containers handled in fiscal year 2010 has improved by 4% from 94 thousand containers in fiscal year 2009 to almost 98 thousand in fiscal year 2010."* The container numbers are significantly lower than the projected average from the Final EIS. U.S. Department of Transportation, Maritime Administration (USDOT, MARAD) will use the container throughput from the Ernst and Young report for their final commercial port improvement program implementation.

Break-bulk Forecast. Break-bulk shipments are comprised of a variety of materials that cannot fit into containers or are more efficiently and/or economically handled in break-bulk form. Examples of break-bulk materials include steel plates, sheets and pipes, cement in super bags, asphalt in drums, motor vehicles, and bulk aggregates. The largest part of the break-bulk shipments destined to Guam is the materials for the construction industry.

The Final EIS states that the projected average tonnage of break-bulk cargo to be handled each year during the period of 2008 through 2018 is 180,409 tons. This is about 45 percent more than the tonnage of break-bulk cargo that was handled during the period of 2003 through 2008 (125,565 tons). The maximum tonnage of break-bulk cargo to be handled during the period of 2008 through 2018 is 291,400 tons in the year 2012. However, as a result of the adaptive program management, the pace and sequencing of the construction projects will likely be adjusted.

Bulk Cement Forecast. Bulk Cement is cement sold and transported in loose bulk form instead of in bags. PBI calculated the forecasts for bulk cement. The analysis included the military realignment for the next thirty years. The analysis established that the number of bulk imports of cement shipments handled and processed by the port was approximately 56,000 tons in 2009. During the realignment construction, bulk cement volumes are expected to grow and peak in 2013. However, as a result of the adaptive program management, it is likely that the pace and sequencing of the construction projects will be adjusted.

Statutory and Regulatory Responsibilities

The government of Guam's legislature passed Public Law 13-87 on October 31, 1975. The law reestablishes the Port Authority of Guam as a government of Guam public corporation and self-governing government agency. The Port Authority of Guam is solely responsible for the operation and maintenance of the port.

Section 3512 of Federal Public Law 110-417 ''Duncan Hunter National Defense Authorization Act for Fiscal Year 2009'' enacted on October 14, 2008, authorized the USDOT Secretary, acting through the USDOT, MARAD Administrator to establish a Port of Guam Improvement Enterprise Program. The program was intended to provide for the planning, design, and construction of projects for the Port of Guam to improve facilities, relieve port congestion, and give greater access to port facilities.

Under the authority of U.S. Public Law 110-417, the Port Authority of Guam and MARAD executed a Memorandum of Understanding in November 2008 outlining their respective responsibilities in jointly executing the Port Modernization Program. The Memorandum of Understanding outlined the cooperative arrangement whereby the relationship and responsibilities facilitate the efficient and timely completion of the Port Modernization Program. The Memorandum of Understanding ranks the program's objectives in the following priority:

1. Correct the deteriorated structural, utility and infrastructural facility deficiencies and upgrade said facilities to modern safe standards.
2. Execute the modernization program while maintaining levels of service to port users without disruption or deterioration of service levels.
3. Perform the modernization program activities in a fashion that prevents loss of cargo throughput levels including both local and transshipment service.
4. Modernize port equipment, cargo handling and other operational systems to standards equivalent to those in comparable, modern mainland and Asian container and break-bulk cargo ports.
5. Perform the modernization program with phasing and scheduling consistent with the above to achieve anticipated port capacity requirements.

As part of Public Law 110-417, on October 1, 2009, the Treasury of the United States established a fund in a separate account to be known as the ''Port of Guam Improvement Enterprise Fund." Additionally, the House of Representatives (H.R.) 4899-5: Supplemental Appropriations Act of 2010 Public Law 111-212, included a provision authorizing the DOD to transfer up to $50 million to the Enterprise Fund. MARAD received the $50 million from DOD on September 22, 2010.

Inclusion in Composite Program

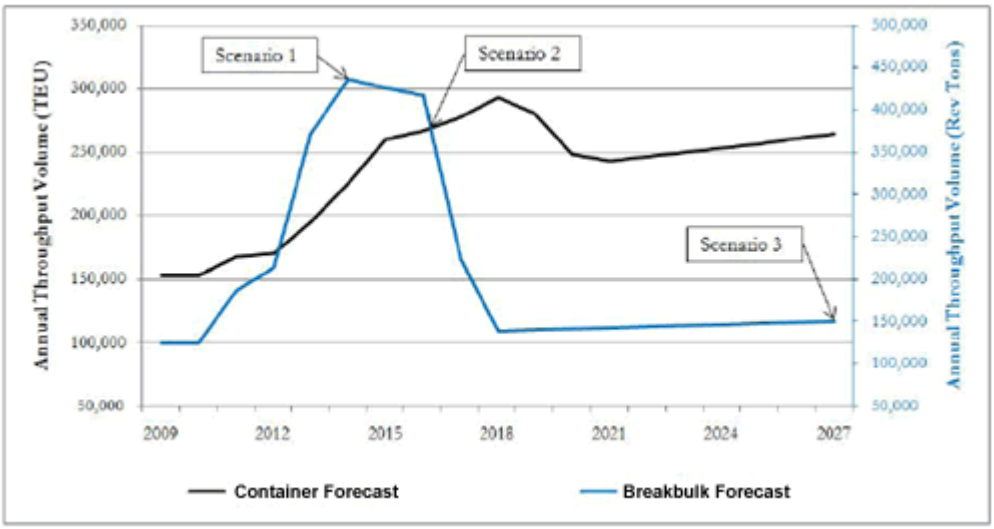
The Port Authority of Guam initially planned a two-phased capital improvement project for modernization, repair, and capacity improvements to the port. Phase I was later split into two parts – Phase IA and Phase IB – mainly due to the source of available funding. Currently, only Phase IA is being funded.

The Port Authority of Guam planned Phase IA to take into account the container, break-bulk and bulk cement forecast cargo requirements to ensure the throughput adequacy to support the military realignment. To achieve the throughput, the following improvements were found to be required:

1. **Automated Gate System.** The gate system will be automated, access roads will be relocated, and truck routes will be redesigned to speed up the process. During the peak year container throughput, it is estimated that the gate complex will experience a peak volume of 150 trucks per hour two times per a peak day. The automated gate system is designed to be able to handle over 180 trucks per hour. Additionally, a truck appointment system will be put in place to spread out peak times for the gate throughput during the day. The port will also be extending the hours of gate operations from 8 hours per day to 11 hours per day.

2. **Break-bulk Area Expansion.** The port ran scenarios at three different time periods to determine how much acreage will be needed to handle the increased break-bulk (see Figure 3). Based on the analysis of these scenarios, the Port Authority of Guam determined that the break-bulk area will expand to 10 acres from the current area of about five acres. However, in scenario 1 and 2, additional expansion into the container staging area will be used to give enough room to temporarily store excessive break-bulk material.

Figure 3. Break-bulk Cargo Throughput Forecast vs. Container Throughput Forecast



Source: "Final Terminal Development & Operations Plan," April 2010

3. **Container Staging Area Expansion.** The container staging area will be increased and stacking heights will be determined to ensure that there is enough room for all containers predicted at the peak of the throughput.

Based on improvements from the port's *Final Terminal Development & Operations Plan* of April 2010, Phase IA should enable the Port of Guam to achieve the required throughput in support of the military realignment. However, not included in Phase IA are the repairs to the bulkhead which have a high risk of failure. Bulkhead failure would have a severe impact on the throughput, affecting the realignment progress. This issue is presented in 'Finding: Port Bulkhead' section on page 12.

Repairs to the bulkhead are included in the port's *Final Terminal Development & Operations Plan* of April 2010, in Phase IB. However, funding and scheduling for the phase have not been determined. Additionally, having the bulkhead repairs in Phase IB does not adhere to the priorities of the objectives in the Memorandum of Understanding between MARAD and the Port Authority of Guam. MARAD and the Port Authority of Guam are jointly developing a revised implementation plan for the Port Improvement Program which is projected to be completed in October 2011.

Cost Estimate

The Port Authority of Guam contracted with PBI for a cost estimate for Phase IA. PBI initially performed a detailed engineering cost estimate for Phase IA in the amount of $133 million. However, the Port Authority of Guam's available funding was only $105.5 million (as show in 'Budget' section below). Due to the significant funding shortfall, PBI completed a value-engineering analysis of the initial estimate aimed at reducing approximately $27.5 million in program costs to bring it as close as possible to the $105.5 million. However, MARAD has stated that the cost estimate does not include any contingency calculations, which imposes a significant risk of cost over-runs. MARAD and the Port Authority of Guam are jointly planning to include a new cost estimate in the revised implementation plan for the Port Improvement Program; MARAD is attempting to determine a timeframe for the final plan.

Budget

On October 14, 2008, Public Law 110-417 established in the Treasury of the United States, a separate account known as the ''Port of Guam Improvement Enterprise Fund." The fund was created on October 1, 2009. The amounts deposited in the fund were set up to be available to the MARAD Administrator to carry out the program. The H.R. 4899-5: Supplemental Appropriations Act of 2010 Public Law 111-212, included a provision authorizing DOD to transfer up to $50 million to the fund. MARAD received the $50 million from DOD on September 22, 2010. The funds are to remain available until expended. The program is intended to provide for the planning, design, and construction of projects to improve facilities, relieve port congestion, and give greater access to port facilities at the Port of Guam.

On October 22, 2010, a $54.5 million appropriation was obligated to the U.S. Department of Agriculture (USDA) for loans to the Port Authority of Guam to complete the funding for Phase IA. However, the financial negotiations and conditions for the funding between the Port Authority of Guam and USDA have not been finalized. Additionally, $1 million in Department of Interior Office of Insular Affairs grant funding was reprogrammed from the Port Authority of Guam to MARAD for startup activities. Table 1 shows the summation of the funding available for Phase IA.

Table 1. Commercial Port of Guam Phase 1A Funding

Source of Capital	Amount in million ($M)
Federal Funding	
Department of Interior Office of Insular Affairs grant funding transferred by Port Authority of Guam to Enterprise Fund	$1.0
DOD funding transferred to Enterprise Fund	$50.0
Port Authority of Guam Loan Financing	
U.S. Department of Agriculture Direct Loan	$25.0
U.S. Department of Agriculture Guaranteed Loan	$25.0
U.S. Department of Agriculture Equipment Loan	$4.5
Total Funding Available for Phase IA	**$105.5**

Contract

Prior to the establishment of the Enterprise Fund, the Port Authority of Guam and MARAD executed a Memorandum of Understanding in November 2008. The Memorandum of Understanding outlined the cooperative arrangement whereby MARAD will provide technical support consistent with the Port Modernization Program objectives.

In April 2010, MARAD awarded a contract to EA Engineering, Science, and Technology, Inc. as the Program Management Team to help accomplish its Memorandum of Understanding, and legislative and agency responsibilities. The Program Management Team will be involved in the oversight of design, engineering, and environmental services; contracting (for purchases, professional services, and construction); construction permitting; and overall program management. MARAD can issue task orders and order design management services for port modernization activities to the contractor Program Management Team. All invoices from the Program Management Team will be submitted to MARAD and only MARAD can authorize the Program Management Team's contractor to purchase supplies and services.

Additionally, the Memorandum of Understanding states that the Port Authority of Guam will prescribe the functional, operational, quality, performance and engineering standards for improvements to be executed through MARAD to the Program Management Team.

Schedule

MARAD and the Port Authority of Guam originally planned to start Phase IA capital improvement projects in July 2011 and the scheduled construction was to be completed in 2013. Because the pace and sequencing of the construction projects are now being reevaluated as part of the adaptive program management, the original cargo projections are no longer valid.

Sustainment

The Port Authority of Guam is responsible for the port's sustainment. The sustainment required for the Port of Guam continues to be demanding because of increased wear and tear to the wharf structures and equipment that operate on these structures as cargo volumes increase. It is anticipated that port's sustainment funding for continuous operations and maintenance will be derived from revenues. If maintenance is not done properly, it would directly affect the throughput needed for a successful realignment.

Additionally, as previously stated, the bulkhead is at serious risk for failure. See 'Finding: Port Bulkhead' on page 12, for more information.

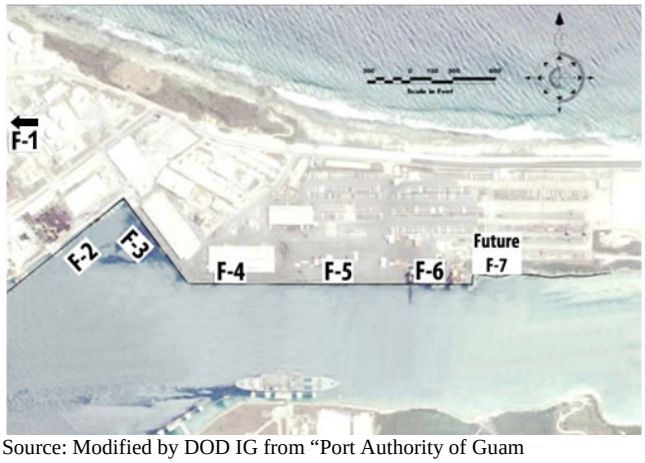
Finding: Port Bulkhead

The structural integrity of the commercial port bulkhead is seriously damaged and at a high risk for significant failure. The current state of the bulkhead was caused by a lack of adequate repairs to damages from earthquakes, corrosion, and stresses from ships and cargo-handling equipment. Because of the lack of adequate repairs, there is significant risk in achieving the projected throughput needed for the scheduled realignment.

Discussion

The Guam commercial port was originally constructed in 1969. The bulkhead, a concrete wall that serves as a protective barrier between the docking ships and the land, has six berths - F-1 through F-6 (see Figure 4). Berth F-1 is managed by the private sector and operated by Shell Oil. It also accommodates liquid tankers and the Hotel Wharf. Berth F-2 is for fishing fleet repairs and is leased to a private company. Berths F-3, F-4, F-5, and F-6 accommodate containerships, general cargo vessels, passenger vessels, and fishing vessels. Each berth is 660-feet long and 34-feet deep, with a maximum beam of 107-feet. The damage and deterioration findings noted in this report focus mainly on berths F-4, F-5, and F-6 which are located along the straight part of the bulkhead.

Figure 4. Port of Guam, Berths F-1 to F-6



Source: Modified by DOD IG from "Port Authority of Guam Implementation Plan," September 2010

Earthquake Damage

Seismic design for a port facility is a critical factor. The 2009 International Building Code recognizes Guam's high earthquake risk, and categorizes the Port of Guam in the same 'Seismic Design Level' as Japan, Taiwan, and Seattle. A majority of the earthquakes that have occurred in this region have been some of the most damaging earthquakes in the world.

There have been multiple earthquakes in Guam in recent years, with the most devastating taking place on August 08, 1993. This earthquake lasted 60 seconds and caused extensive damage to the port's bulkhead. The earthquake struck with a magnitude of 8.3 and its epicenter was located approximately 50 km south of Guam in the Marianas Trench. The island sustained massive devastation with significant damage to the port's berth F-5, which required major reconstruction. Although other port berths were also damaged, they were not reconstructed. It took 3 years to repair the destruction to berth F-5 and those repairs were not completed until 1998.

Bulkhead Condition

There are multiple continuous failing defects that have been documented in various reports and surveys performed on the structural integrity of the Port of Guam bulkhead. The report and surveys indicate that the bulkhead was damaged both above and below the water. On the facade, the sides and the surface show cracks, fissures, separation, spalling, delamination, exposed rebar, rusting rebar and severe under deck slab deterioration damage. Underwater, there is extensive damage to the concrete bulkhead, the sheet pile which revealed no cathodic protection, and the tie-rods, as documented in the surveys performed in 1998, 2002, 2004, 2007, 2008, and most recently in 2010 (which was reported in March 2011) by various consulting and engineering firms to include: Harza Engineering Company; Lifttech Consultants, Inc.; ProMarine Technology; Duenas Bordallo Camacho & Associates, Inc.; Parsons Brinkerhoff International; Sea Engineering Inc.; and Kleinefielder.

Bulkhead Movement

Earth Movement. Post-earthquake damage surveys conducted on the Port of Guam's bulkhead have found liquefaction and lateral spreading as the main causes of the damage. A majority of the bulkhead's structural and pavement damage is due to liquefaction (induced lateral spreading of the loose, coral fill underlying estuarine sediment behind the anchored sheet pile of the bulkhead). Liquefaction of the soil on the waterside of the sheet pile has resulted in a shift of the tie-rods, which being in this condition, continue to move. The 2002 survey noted that the boulders that formerly supported the sheet piling at berth F-6, shifted up to 8-feet away from the piling. The shift and movement has created an increased risk to each berth along the "crane runway section" (berth F-4 through berth F-6) of the bulkhead wall, both laterally and vertically. On the landside of the bulkhead, a 2008 survey measured significant lateral displacement along the "crane runway" by as much as 18-inches toward the water due to the shifted tie-rods.

A survey completed by Harza in 1994, noted:

> Sandy materials behind the bulkhead wall liquefied causing increased lateral forces on the bulkhead wall. As a result of the increased lateral forces and the liquefaction of the sandy soils in front of the sheet pile wall, the bulkhead wall moved toward the waterside. In addition, the liquefaction of the underlying sandy soils caused the upper gravel fill layer and asphaltic concrete pavement to crack and settle.

Harza consultants also noted the shifting of the tie-rods and recommended inspection and replacement; the survey stated "*…a total of four excavations be performed so that the tie-rods can be visually inspected for their entire length."* Additionally, Harza went on to recommend, *"a new concrete pile supported wharf structure."*

Fourteen years later, Duenas Bordallo Camacho & Associates, Inc. in their 2008 survey indicated that all recommendations had not been addressed. Only spot welds to the steel plates on the sheet pile and the bulkhead wall, as well as filled-in surface cracks to the bulkhead had been completed. The 2011 report by PBI noted that, *"Tie-rods and steel sheetpile deadman were not inspected because open excavations to reveal these*

components for an inspection could not be performed due to the potential impact on terminal operations."

Structural Movement. The lack of maintenance from additional bulkhead stress caused by the movement of the cranes is another significant cause of deterioration to the bulkhead. The 2008 survey conducted by Duenas Bordallo Camacho & Associates, Inc. confirmed the condition of the bulkhead as explained in the 1994 report by Liftech. Due to the liquefaction of the soil behind the bulkhead, the tie-rods are no longer held firmly in place to the soil behind the wall. As a result, the bulkhead together with the crane rail support rotates clockwise toward the water when a crane operates. This crane rail rotation translates to as much as 24-inches in the direction of the water. As a result of excessive movement of the bulkhead and tie-rods, the soil behind the bulkhead has settled, causing fissures in the asphalt pavement along the crane runway. The 2008 Duenas Bordallo Camacho & Associates, Inc. survey resulted in a recommendation to replace the crane rail system. In November 2009, the replacement of the crane rail system was completed. Additionally, the 2011 report recommended that the spur rail (which acts as a passing track) be removed:

> "At this time, PB (Parsons Brinkerhoff) has determined that the majority of damage observed is related to structural elements that support the spur rail. In its current condition, the structure beneath F-5 can not support anticipated loads for crane activity on these spur rails…It is therefore our recommendation that this spur rail be removed to eliminate any possibility of use in the future."

Furthermore, in January 2011, the port failed an insurance inspection which resulted in the temporary closure of F-5 and an investigation. The berth at F-5 was re-opened for normal operations on April 18, 2011. See 'Recent Inspection' section on page 16 for further details.

Stresses and Corrosion

Underwater Stresses. After the 3-year repair effort following the earthquake of 1993, the first underwater survey was performed on berths F-3, F-4, F-5, and F-6. The survey was conducted by ProMarine Technology on January 13, 1998. The ProMarine survey noted a gouge 3-feet long and 12-inches into the berth F-3 bulkhead wall. ProMarine stated that the damage was caused from a ship, which left the rebar exposed and rusted. This triangle void was also noted in later surveys. As for berth F-4, it had a cover plate welded to a sheet pile covering a 19-feet long crack that was injected with grout. The cover plate began at 22-feet below the surface and continued down to 41-feet. The ProMarine survey showed the earthquake repair construction area to be holding for berths F-5 and F-6.

Four years later, on May 20, 2002, another survey was conducted by ProMarine Technology. The survey revealed even more damage to berths F-4, F-5, and F-6. First noted was the 90 degree intersection joint of berths F-2 and F-3, where the sheet piling was separated. The separation revealed ground water and fuel oil discharging through the gap. Also, berth F-4 showed multiple areas of exposed rebar on the bottom of the concrete cap. Within berth F-4, the May survey revealed that an 18-feet x 3-feet steel

plate was no longer welded to the sheet pile. The ProMarine surveyor noted, "*Repair plate is short, it has no sheet piling behind the repair plate, the erosion is significant and goes back approx. 3-feet and up 4.5-feet.*"

For berth F-5, the 2002 survey noted that the bottom of the concrete cap was fractured, leaving exposed rebar. The survey gave detailed descriptions of two areas in berth F-6 with two short sheet piles. Erosion was apparent underneath the sheet pile ends as the 4-feet x 2.5-feet steel repair plates were too short and did not fully cover the area that they were welded onto. In addition, erosion was apparent behind the repair plates. Years later, in the 2010 survey, the condition was still observed, *"…the original repair plate did not reach down to the mudline and there was erosion behind the plate as reported by others. Subsequently, an additional repair plate was welded to the original repair plate and the space between the repair plate and the sheetpile bulkhead was filled with concrete to avoid further erosion."*

Long-term Corrosion. Long-term corrosion was found underwater where the rebar has been exposed for many years. On September 10, 2004, another survey was performed by ProMarine Tech. The survey reported that the gouge at berth F-3 had grown in size from the original survey performed in 1998. The triangular void grew to 6-feet wide at the bottom, 3-feet and 6-inches in height, and 18-inches deep. This void exposed a very corroded rebar. The 2004 survey also reported that previous conditions from the 2002 survey had worsened. Erosion continued on the bulkhead wall behind the various repair plates and the metal plates were no longer attached to the sheet pile. The 2004 survey noted a great amount of corrosion to the rebar and erosion of the concrete wall where repair plates were once attached to cover the long and deep cracks. The 2010 survey noted in berth F-4 and F-5 that, "*Cathodic potential readings as part of the Level III inspection revealed that the steel sheetpile bulkhead is currently not protected against corrosion by the anodes. Visual inspection also revealed that sacrificial anodes have been completely consumed.*" Anodes are typically used to protect other metals from eroding and corroding at higher rates.

Ship Docking Stresses. Ship docking stresses were noted where holes and chunks of concrete have been knocked off from the bulkhead surface of the concrete cap, and in some cases exposing the rebar. In 2008, a structural and civil assessment, as well as a topographic and hydrostatic survey of the bulkhead was performed by Duenas Bordallo Camacho & Associates, Inc. The assessment and survey were commissioned by the Port Authority of Guam to address the bulkhead docking facilities from berths F-3 through F-6, above and below the water. The assessment and evaluation is the most current documentation depicting the dilapidated condition of the bulkhead berths. Based on field observations, the assessment and evaluation noted:

> There are several areas along the docking facility bulkhead that are severely deteriorated, cracked, spalled, and have exposed reinforcement. The entire length of concrete bulkhead will need to be repaired, rehabilitated and partially replaced.

The assessment and evaluation confirm the 2008 survey recommendation that, *"…the entire length of concrete bulkhead will need to be repaired, rehabilitated and partially replaced…"* establishing that the structural integrity of the bulkhead is in significant danger of failure.

In order to determine the severe spalling and delamination noted in the previous report, the Port Authority of Guam authorized PBI to have concrete chemical testing performed on the beams, piles, and under deck structure. The 2011 report included the results of the material testing which stated:

> The chloride content of the concrete was twice the acceptable levels by normal industry standards. Additionally, the permeability of chlorides through the concrete was high.… chlorides increase the potential for corrosion of the reinforcement… higher levels of electrical activity are an indicator of the presence of active corrosion of the reinforcement. Test indicated that there is active corrosion occurring.

Recent Inspection

On January 31, 2011, it was reported in a press release that the Port Authority of Guam will stop using berth F-5 for a few weeks because of "unidentified damage" to the underwater support structure as found in a recently scheduled underwater inspection. The port's general manager stated, *"Representatives of the Port's insurance company have instructed the Port that, per the requirements of the Port's insurance, operation changes are required as a preventative measure to reduce the risk of further damage… Once a completed investigation is complete, a re-evaluation of the operations will be made."*

Further preliminary inspection revealed that the situation with the insurance company's temporary closure of berth F-5, *"is related to unanticipated damage to the concrete structures (beams, piles) involving concrete spalling, delamination of concrete, cracks in concrete, and exposed structural rebar in a few locations. The Port is restricting operations until further assessment can be completed."*

In a timely fashion, the 2011 PBI report with the December 2010 survey was submitted for review. Shortly after, the Port Authority of Guam reported that, "…*analysis revealed that the beams supporting wharf F-5 are structurally intact and that the Port Authority resumed normal operations at the dock on April 18,* (2011)."

Finding Recap

Because of the significant structural damage sustained from the 1993 earthquake and the continuing deterioration of the bulkhead (in spite of the marginal 3-year repairs completed in 1998), there is a significant risk for a major structural failure in the Port of Guam's bulkhead which has a dilapidating under deck structure, beams with cracks that run the entire length, numerous areas of exposed-corroding rebar, and chloride permeable concrete that is self-destructing with high levels of electrical activity. The structural failure would directly impact the throughput of military shipments during the critical phase of the military realignment. These findings were reported in numerous surveys

(dating from 1998 to present). The current bulkhead condition poses an increased risk of failure that could shut down or significantly reduce the throughput while unscheduled and unfunded repairs are completed on an emergency basis. The risk would be significantly reduced if the bulkhead issues are addressed by a revised implementation plan for Port Improvement Program utilizing the priorities outlined in the Memorandum of Understanding.

Coordination of Finding

Given the fact that the Guam commercial port bulkhead is at significant risk of major structural failure, the DOD IG issued a memorandum of condition to USDOT, MARAD addressing the serious condition of the bulkhead (see Appendix B on page 73). The memorandum advocated that MARAD work with the Port Authority of Guam to implement the first priority of the Memorandum of Understanding between MARAD and the Port Authority of Guam, signed November 2008, that stated, *"Correct the deteriorated structural, utility and infrastructural facility deficiencies and upgrade said facilities to modern safe standard."*

Management Comments on the Finding

The USDOT, MARAD agreed with the Port Bulkhead finding. MARAD stated, *"MARAD recognizes that structural deterioration to the bulkhead threatens the Port's capability to provide safe and sufficient capacity. MARAD will use every opportunity to emphasize that the bulkhead integrity should be the Port Authority's top priority."*

MARAD has initiated actions to ensure that the structural deterioration to the bulkhead is identified. In their response to the draft report they stated, *"To focus on these actions, MARAD has initiated an independent engineering review to evaluate the existing defects in Berths F-4, F-5, and F-6."* MARAD went on to state that they expect to receive the independent engineering report in October. In addition, MARAD stated, *"MARAD will ensure that the results of its independent review are appropriately considered in finalizing the Implementation Plan."*

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II. ROADS

Figure 5. Points of Interest and Initial Construction

Source: Assessment of FHWA Organizational Involvement and Preparedness for DOD Military Build-up in Guam

Background

Requirements

The Federal Highway Administration (FHWA) report, *Assessment of FHWA Organizational Involvement and Preparedness for DOD Military Build-up in Guam* dated September 2009, stated that construction activities caused by the military realignment in Guam will increase traffic volumes and vehicular cargo weights beyond current levels. This increase will stress portions of the existing road system to a point of failure.

Initially, by identifying points of interest, necessary routes that form a network of roads to support the realignment construction were chosen (see Figure 5). Points of interest on the island include the military bases and their airfields, the main island airport, the Port of Guam, the center of the city (downtown), and solid waste landfill.

The FHWA report and Final EIS identified the following types of Guam Road Network (GRN) projects to meet the demand of the military realignment: intersection improvement projects (including intersections at military access points), bridge repair/replacement, pavement strengthening, road widening and realignment, and new road construction projects.

The purpose of the proposed GRN is to improve the existing Guam roadway through the Defense Access Road (DAR) program or other funds and to provide transportation infrastructure improvements necessary for the military realignment. Proposed improvements for the GRN will result in strengthened roadways, bridge replacements, increased roadway capacity, new access, and enhanced roadway safety on Guam to accommodate the increased construction traffic caused by the military realignment and subsequent induced growth.

The Joint Guam Program Office, Naval Facilities Engineering Command Pacific (NAVFAC PAC), and government of Guam worked together to determine infrastructure needs and impacts. As a result, roadways were identified and prioritized. Guam route numbers 1, 3, 8, 9, 11, 16 and 27 were listed as the preferred truck routes for cargo hauled from the port to the northern part of Guam. FHWA also included route 15 and Chalan Lajuna as preferred truck routes leading to the quarry. Altogether, these roadways are essential for transporting construction materials from the commercial port to military construction locations.

The Final EIS identified various road and bridge construction projects to support the increased traffic caused by the military realignment. The report identified projects along the preferred truck routes of 1, 3, 8, 9, 11, 16 and 27, and Chalan Lajuna. The projects can be broken down into 'off-base' projects (intersection improvement, replacement or repair of bridges, pavement strengthening, roadway realignment, roadway widening, and new road construction) and intersection improvement projects at Military Access Points. The projects cover four geographic regions in Guam: Apra Harbor, north, central, and south. The U.S. Navy evaluated and identified appropriate sites for consideration of primary facility components. The process resulted in the selection of 49 GRN projects.

Statutory and Regulatory Responsibilities

Responsibility for the roads in Guam belongs to both, the Guam Department of Public Works and the FHWA. On May 24, 2007, the two agencies signed an agreement, the "Stewardship Agreement," defining the responsibilities of each agency.

The purpose of the DAR program is to establish the means by which the DOD helps to fund public highway improvements. The DAR program is authorized by Title 23, United States Code, "Highways," Section 210.

> 23 USC 210(a). The Secretary [of Transportation] is authorized, out of the funds appropriated for defense access roads, to provide for the construction and maintenance of defense access roads (including bridges, tubes, and tunnels thereon) to military reservations, to defense

> industries and defense industry sites, and to the sources of raw materials when such roads are certified to the Secretary as important to the national defense by the Secretary of Defense or such other official as the President may designate, and for replacing existing highways and highway connections that are shut off from the general public use by necessary closures or restrictions at military reservations and defense industry sites.

The DAR program is jointly administered by the Surface Deployment and Distribution Command for DOD and FHWA for USDOT. Once the DAR projects are completed, the roads are turned over to Guam highway authorities for operation and maintenance.

Inclusion in Composite Program

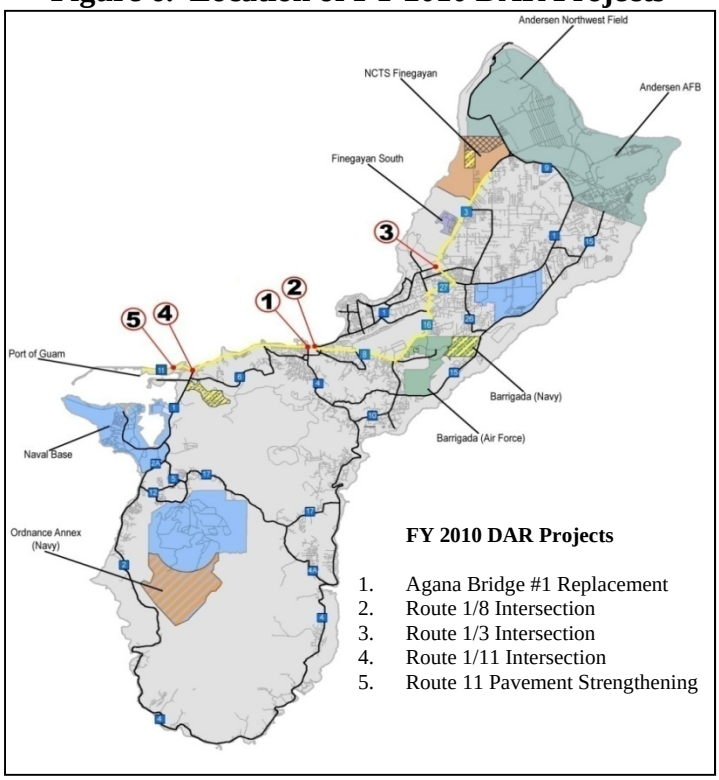
Forty-nine approved individual roadway and bridge projects were identified and proposed as the "Guam Road Network" project. Five projects are expected to occur in FY 2010 (see Figure 6) and three are planned for FY 2011 (see Figure 7). Requests for Proposals have been advertised for both FY 2010 and FY 2011. Additionally, eight projects in the GRN have been determined DAR-eligible. Of the eight projects, there are seven bridges combined together as GRN project #35. Those bridges have ratings below the appropriate load-bearing capacity for many military vehicles. Before any large axle military vehicle with higher cargo gross weight can traverse the routes, the eight DAR-eligible projects must be constructed (see Table 2).

Table 2. Guam Road Network Project Status

Fiscal Year	Guam Road Network Projects Number	Description of the Project	RFP	Budget	Funding Status
FY 2010	1	Rt.1 & Rt. 8 Intersection	GU-DAR-0001(014)	$50 M	EIS (July 2010) stated that these five high priority projects has been DAR-certified, authorized and appropriated
	3	Agana Bridge			
	2	Rt.1 & Rt.3 Intersection	GU-DAR-0001(125)		
	4	Rt. 11 Paving – Port to Rt.1	GU-DAR-0011(008)		
	5	Rt. 11 & Rt. 1 Intersection			
FY 2011	9	Rt. 3 Paving – NCTS Finegayan to Rt. 28	GU-DAR-0003(105)	$66.73 M	EIS (July 2010) stated that these three projects have been DAR-certified, authorized and appropriated
	38	Rt. 3 Paving – NCTS Finegayan to Commercial Gate			
	39	Rt. 3 Paving – NCTS Finegayan to Main Gate			
FY TBD	10	Widening	TBD	TBD	EIS (July 2010) stated that these 8 projects have been determined to be *DAR-eligible*
	11	Strengthening			
	22	Widening			
	35	7 Bridges	TBD		
	36	Road Relocation			
	44	Intersection	TBD		
	46	Intersection			
	52	Intersection			

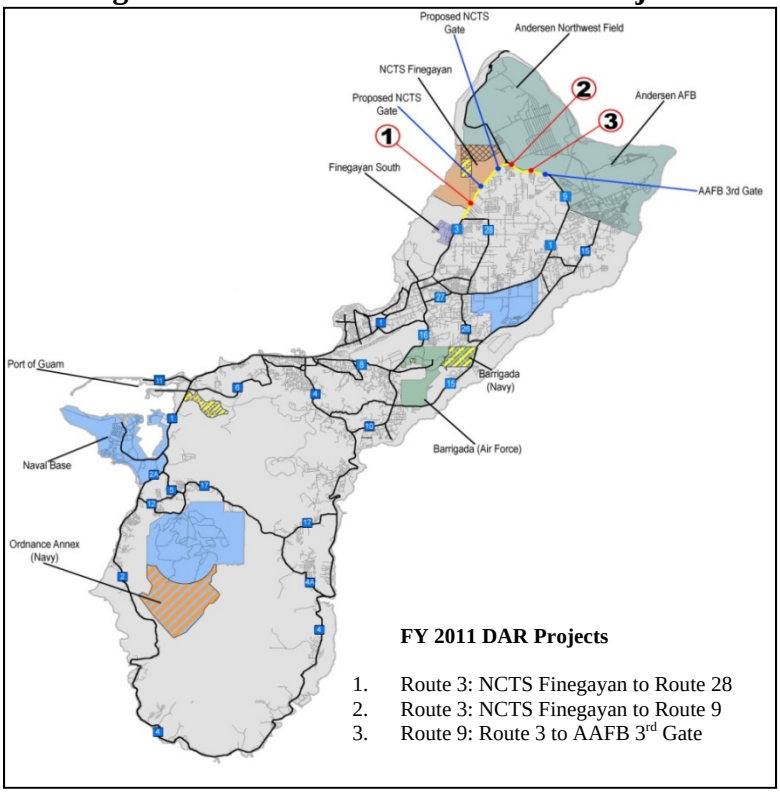
*Remaining 33 GRN projects are in the evaluation process for DAR eligibility or identifying another funding source.
Source: FEIS July 2010 & FHWA report & DAR updated schedule

Figure 6. Location of FY 2010 DAR Projects



Source: Guam and CNMI Military Relocation EIS Off-Base Roads Planning Effort

Figure 7. Location of FY 2011 DAR Projects



Source: Guam and CNMI Military Relocation EIS Off-Base Roads Planning Effort

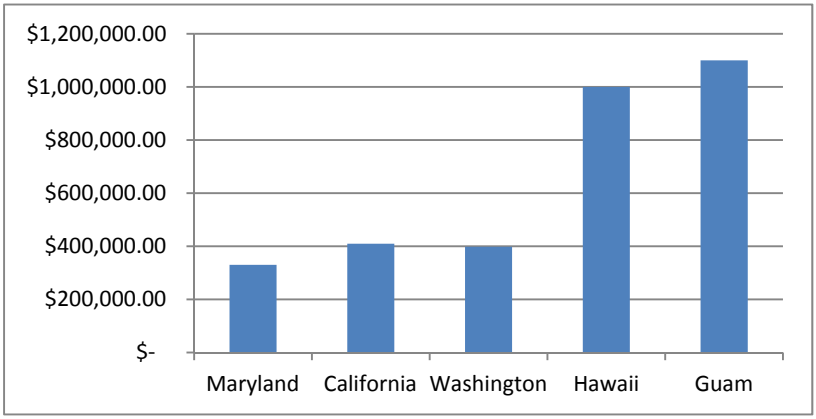
Cost Estimate

The methodology used to develop the cost estimate for Guam roads entailed an evaluation of the type and amount of materials required, analysis of the cost of those materials, and assessment of the construction/labor cost to build the civil infrastructure. In order to establish the amount of construction materials necessary for improvements, the Remaining Service Life was determined on portions of road where an evaluation of the pavement condition and performance was needed in the GRN. The Remaining Service Life was calculated in terms of Equivalent Single Axle Load which provided maintenance, rehabilitation and reconstruction recommendations. By determining the existing pavement condition and Equivalent Single Axle Load (design thickness of asphalt pavement by an evaluation of the cargo's gross weight distributed among trucks, the number of trips, and class of truck that transports material), the actual quantity of construction materials were calculated.

The cost estimate for individual costs of materials followed the requirements of FHWA Code of Federal Regulations for DOT (23 CFR). Engineering cost estimates for each Request for Proposal road project was calculated and then re-calculated five times. The calculations were made once before the submittal of the DD1391; then again upon completion of each - 30%, 60%, and 90% - design phase of the road plans; and once for a final updated cost estimate recalculated prior to the Request for Proposal publication. The Request for Proposal was produced by FHWA and publicized by the Guam Department of Public Works. Accuracy in determining the costs of each item was contingent upon the final amounts of construction materials needed and upon local/imported materials.

The final Guam road construction cost was estimated to be approximately $1.03 million per lane mile. In comparison, construction costs per lane mile are $1.0 million in Hawaii, $0.41 million in Maryland, and $0.33 million in California (see Figure 8).

Figure 8. Cost per lane mile



Source: Guam and CNMI Military Relocation EIS Off-Base Roads Planning Effort

The higher cost of road construction in Guam is caused by the necessity to import materials. Imported aggregate comes from Taiwan, and asphalt and basalt come from Japan. In addition to transportation costs, the Port Authority of Guam assesses container charges and terminal handling charges based on origin of the ship, Guam wharfage/terminal charges, facility maintenance fees, crane surcharges and ocean freight charges either per container or per weight/measurement (the greater of the two), and a 28 percent fuel surcharge.

To keep down costs, locally mined coral is used in the concrete mix for the roads. However, the coral polishes over time and becomes very slippery when wet. Therefore, a 1-inch anti-skid layer comprised of imported basalt and aggregate rock is applied as the top layer.

Although the cost of labor is significantly lower in Guam than the U.S. mainland, labor salaries are in agreement with the salaries set by Davis Bacon wage rates. Davis Bacon wage rates are overseen by Department of Labor, Employment Standards Administration and Wage Hour Division per the Davis–Bacon Act of 1931. A peak demand in year 2013, based on the realignment roadmap schedule, will require 15,913 construction workers to construct the GRN. However, as a result of the adaptive program management, the pace and sequencing of the projects may change. The National Defense Authorization Act for FY 2010 addresses wage control and the lack of workforce and employment of visa workers. The labor issue of attracting construction workers and related information for the entire realignment program are discussed in detail in 'Other Areas of Concern' section found in Chapter VIII on page 67.

Budget

The Record of Decision of the Final EIS was the major factor in initializing the FY 2010 DAR projects. The Record of Decision includes descriptions and discussions of the proposed actions, and related actions and their impacts associated with all actions addressed in the Final EIS. The Record of Decision was signed in September 2010 and DAR projects have officially begun (see Table 3 for details). DAR eligibility was certified prior to the authorization and appropriation of the FY 2010 budget of $50 million and the FY 2011 budget of $66.73 million.

Contract

The Request for Proposals for FY 2010 and FY 2011 projects have been advertised on the Guam Transportation Program Contractor Opportunities Web site.

The two Design Build RFPs for FY 2010 are:
GU-DAR-0011(008) (GRN #4/#5) advertised on Sept. 2010; and
GU-DAR-0001(014) (GRN #1/#3) advertised on Sept. 2010.

The two Design Bid Builds are:
FY 2010 - GU-DAR-0001(125) (GRN #2), advertised on Oct. 2009; and
FY 2011 - GU-DAR-0003(105) (GRN #9, #38, #39), advertised on March 2010.

The Guam Department of Public Works will execute the contract. The FHWA obligated the funds for the FY 2011 project during the third week of January 2011.

Schedule

The schedule provided by FHWA for FY 2010 and FY 2011 are listed in Table 3.

Table 3. Guam Road Network Project Schedule for FY 2010 and FY 2011

FY	Contract #	GRN#	Construction Begin	Construction End
FY 2010	GU-DAR-0001(014)	1 & 3	October 2011	November 2013
	GU-DAR-0011(008)	4 & 5	September 2011	September 2012
	GU-DAR-0001(125)	2	September 2012	September 2013
FY 2011	GU-DAR-0003(105)	9, 38, 39	September 2012	September 2013

Source: DAR Projects Schedule (DAR FY2010/2011 GPA/GWA CIP Projects) Provided by FHWA-USDOT

Sustainment

The FHWA and the government of Guam signed a "Stewardship Agreement" in May 2007 establishing their roles and responsibilities regarding the GRN. In the agreement, the government of Guam committed to provide routine maintenance to the facilities constructed or operated, and to adequately serve the needs of present and future traffic.

The FHWA is committed to routinely assessing the facilities during their visits to Guam. The Stewardship Agreement describes the role of the FHWA:

> If at any time the FHWA finds that any project constructed with Federal-aid highway funds are not properly maintained, the FHWA shall call such fact to the Government of Guam. If, within 90 days after receipt of such notice, such project has not been put in proper condition of maintenance, the FHWA shall withhold approval of further projects of all types in an area for which the FHWA deems most appropriate, until such projects shall have been put in proper condition of maintenance.

Conclusion

The Joint Guam Program Office, NAVFAC PAC, and government of Guam worked together to determine infrastructure needs and impacts. As a result, roadways were identified and prioritized for transporting construction materials from the commercial port to military construction locations. The Final EIS identified the road and bridge construction projects to support the increased traffic caused by the military realignment. Forty-nine approved individual roadway and bridge projects were identified and proposed as the "Guam Road Network" project. Five projects are expected to occur in FY 2010 and three are planned for FY 2011. Requests for Proposals have been advertised for both FY 2010 and FY 2011.

III. Power Generation, Transmission & Distribution

Figure 9. Harmon Annex Power Station

Source: Photo courtesy of DOD IG

Background

Requirements

As part of the military realignment to Guam, NAVFAC PAC worked with NAVFAC Marianas and the Guam Power Authority to establish projected impacts. NAVFAC calculated that the current existing generation systems consisting of backup units, base load units (steam turbine and slow speed to slow medium speed diesel), and peaking/reserve units (combustion turbine and medium speed diesel) provide a total installed power capacity of 586.70 megawatts (MW), an actual available capacity of 463.10 MW, and a peak use of 245 MW. The actual capacity is less than the installed power supply because some combustion turbines are under repair and/or not needed.

DOD Requirements. The NAVFAC calculated the anticipated demand for each component of the proposed military realignment and provided the calculation to Guam Power Authority for system analysis. The DOD estimated a future peak demand of 126.29 MW. The estimate includes the current DOD demand of 56 MW at existing DOD facilities on Guam, 9.11 MW from other planned projects not related to the military realignment, 21.36 MW from the military realignment, and 39.82 MW of transient demand. Each demand value was calculated based on the Unified Facilities Criteria (UFC) planning criteria. The estimated loads are based on planned facilities to meet the needs of the projected population. Different cantonments would require different

transmission and distribution upgrades, but the basic facility demands would remain the same. Proposed generation facilities are also expected to remain the same in both capacity and location.

Transient power demand would occur when either the berthing of a Carrier Strike Group or an Expeditionary Strike Group would be in port. The Carrier Strike Group and the Expeditionary Strike Group will never be in port at the same time; so, the power demand requirement will be the greater of the two. The demand from the Carrier Strike Group is estimated at 39.82 MW and is greater than the estimated at 16.78 MW than the Expeditionary Strike Group. Therefore, the demand from the Carrier Strike Group was considered in demand projections and is part of the total estimated total demand of 126.29 MW.

Non DOD Requirements. Other types of demand that would increase power demand on Guam are induced civilian growth and construction workers. The power demand for induced civilian growth was estimated at two-thirds of the current per capita demand for Guam, which is 1.1 kilowatt (kW). The power demand for construction workers was considered at one-third of current per capita civilian demand. Power demand from induced civilian population growth caused by the planned military realignment on Guam would then be estimated at 0.74 kW per person. Power demand for construction workers would be estimated at 0.36 kW per person.

Power Supply and Demand Projection. Based on the realignment roadmap schedule, NAVFAC calculated the anticipated total demand and supply requirements up to the year 2019 for DOD, construction workers, general population growth projections, and population growth induced by the proposed military realignment to Guam.

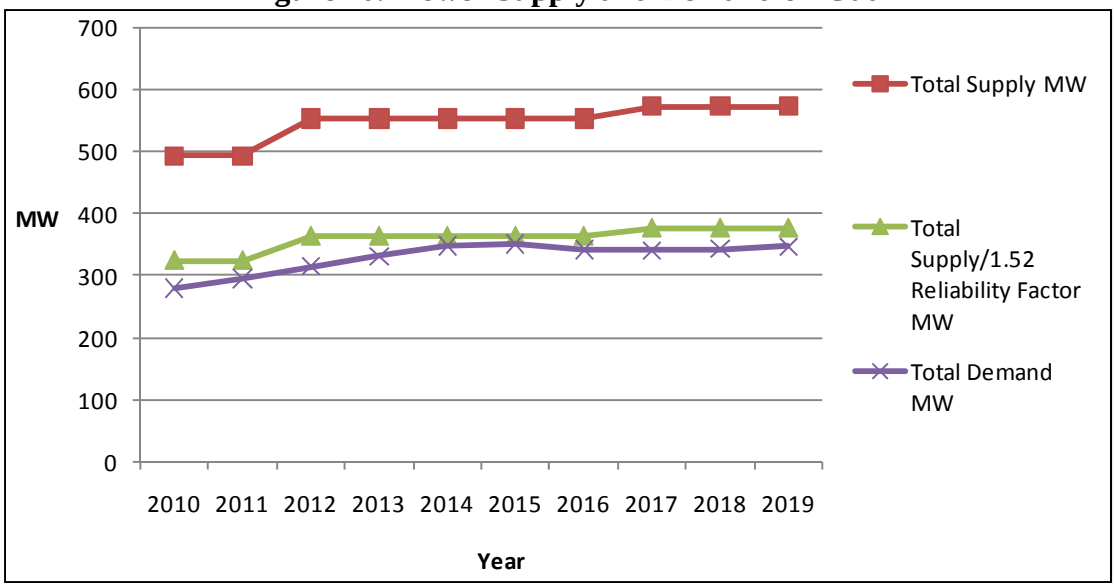
Electric power would be provided in accordance with customer service agreements between Guam Power Authority and the U.S. Navy. Any Guam Power Authority commitments for additional power to support the aircraft carrier and its escort ships will be determined by future Customer Service Agreement modifications. Any required changes in the shore side power infrastructure or their operations to meet the requirements for the aircraft carrier and its escort ships may require additional NEPA review.

The DOD IG developed the following Power Supply and Demand plot (Figure 11) based on the NAVFAC's data. The plot shows the comparison of total demand (red line), total power supply (green line), and total power supply with considered reliability factor (purple line). The total power supply with considered reliability factor is the total power supply dividing to 1.52, and it is the maximum level that the Guam Power Authority can provide and ensure the system reliability. This level should be higher than the demand.

Figure 11 compares the projected total supply (red line), along with the total supply incorporating the reliability factor (green line), to the total demand (purple line) from 2010 to 2019. For the years 2010 and 2011, the Guam Power Authority's current total install power capacity is 586.70 MW and due to the breakdown of some combustion

turbines, its actual available capacity is 463.10 MW. The available capacity with considered reliability factor is then 385.91 MW (463.10/1.52) and still higher than the current demands. For the years 2012 and after, to ensure the power supply for increasing demand due to the realignment of Guam, the Navy proposed to refurbish the breakdown combustion turbines and its transmission lines to raise the available power capacity. The plot shows that the Guam Power Authority's current and future projected power supply after the refurbishment of electrical systems are adequate to support the island-wide power demand for now and up to 2019.

Figure 10. Power Supply and Demand on Guam



Source: "Final Guam Power Generation Study Report" April 2010

Proposed Projects. To ensure that anticipated demands and system reliability is met, NAVFAC proposed the following power generation options for evaluation:

Option 1: Recapitalize, modernize and modify the Guam Power Authority system to support the added base load to the Guam Power Authority grid. The added generation will be provided by Guam Power Authority.

Option 2A: Construct a new private entity owned/operated base load power plant on DOD-provided land specifically to meet load requirements for the facilities associated with the military realignment. The facility would have the ability to provide excess power to the Guam Power Authority grid. Also, the Guam Power Authority grid would be used for backup power in the event the private entity plant is out of service.

Option 2B: Construct a new private entity owned/operated base load power plant on DOD or other provided land. The normal operation of this base load plant will be to provide power to the Guam Power Authority grid at the best available location as an Independent Power Producer. The new military realignment loads

would be connected to the Island-Wide Power System, but not at the point of the new private entity facility.

Option 3: Construct a new private entity owned/operated base load power plant for load on North Finegayan with no connection to Guam Power Authority. This option would require spare capacity to provide necessary generation with one unit out of service and failure of the largest unit (if units are not the same size).

Option 1 was chosen as it best utilizes the existing Guam Power Authority generating resources, can be implemented in a timely fashion, and provides adequate power for the proposed realignment and preferred cantonment alternative. This option would upgrade 15 different Guam Power Authority transmission lines and distribution systems. Option 1 also calls for the recondition of up to five existing Guam Power Authority combustion turbines to restore the island-wide power supply system to its original design capacity and support the required reserve capacity for reliability.

The work for option 1 would be undertaken by the Guam Power Authority on its existing permitted facilities. Reconditioning would be made to existing permitted facilities at the Marbo, Yigo, Dededo (2 units), and Macheche combustion turbines. The four combustion turbine plants serve as peaking and reserve units that provide necessary reliability of Guam's Island-Wide Power System. These combustion turbines are currently not being used to permit limits as they have been under repair and/or not needed. Transmission and distribution system upgrades would include existing above ground and underground transmission lines.

The DD Form 1391, the FY 2011 Power Utility Cost Estimate dated June 2010, and the comparison of each project item in its form to the projects on the wish list of the Guam Power Generation Study and Combustion Turbine Plant Reliability Assessment revealed that the U.S. Navy proposes refurbishment of 3 combustion turbines and upgrading 12 Guam Power Authority transmission lines and distribution systems.

Statutory and Regulatory Responsibilities

Electrical service for DOD facilities is currently provided by the Guam Power Authority and 19 service locations throughout the island. These service locations are governed by a Customer Service Agreement (CSA) between the U.S. Navy and Guam Power Authority. This agreement establishes the electrical rates paid to the Guam Power Authority and is in force until 2012. In addition, the CSA requires the U.S. Navy to notify Guam Power Authority of any anticipated DOD-Guam load increases. Guam Power Authority needs to be notified because its service rules and regulations must be considered in the planning of future DOD-Guam facilities and infrastructure improvements. The Guam Power Authority will also construct, own, operate and maintain electric lines and equipment under, along, upon, and over public streets, roads, and highways where it has the legal right to do so. Guam Power Authority will also construct, own, operate and maintain electric lines and equipment on public land and private property across in which it has obtained right-of-way or other necessary rights.

The NAVFAC PAC conducted the Guam Joint Military Master Plan, which is the master plan for the future build-up of Guam detailing plans for the military realignment. The master plan identifies Naval Computer and Telecommunications Station (NCTS) Finegayan, South Finegayan Housing area, Andersen Air Force Base (AFB), Andersen AFB Northwest Field, and Andersen South as the most impacted locations associated with the military realignment to Guam. The increased population to these locations will result in an electrical load increase to the island-wide power system.

NAVFAC PAC conducted the Guam Power Generation Study and Combustion Turbine Plant Reliability Assessment. NAVFAC PAC proposed a wish list of reconditioning up to 5 existing Guam Power Authority combustion turbines and upgrading 15 Guam Power Authority transmissions and distribution systems. The work would be undertaken by Guam Power Authority on its existing permitted facilities with oversight provided by NAVFAC Mariana.

Inclusion in Composite Program

NAVFAC PAC conducted the Guam Power Generation Study and Combustion Turbine Plant Reliability Assessment. The study is part of the Final EIS. NAVFAC PAC proposed reconditioning 5 existing Guam Power Authority combustion turbines and upgrading 15 Guam Power Authority transmissions and distribution systems. The recondition would be made to existing permitted facilities at the Marbo, Yigo, Dededo (two units), and Macheche combustion turbines. Transmission and distribution system upgrades would occur on existing above ground and underground transmission lines. The work would be undertaken by Guam Power Authority on its existing permitted facilities with oversight provided by NAVFAC Mariana.

The NAVFAC Engineering Service Center (ESC) was tasked by the NAVFAC Marianas to conduct an assessment of Guam Power Authority's Dededo, Macheche, Yigo, and Marbo combustion turbine plants. The assessment recommended specific work to ensure reliability to five existing combustion turbines at these plants. This work included a review of historical records to include operational and maintenance historical data, and parts inventories. The work also included a survey of the existing condition of the five combustion turbines, support equipment, and electrical controls and distribution equipment. This report provides commentary regarding the evaluation of the data collected, observations made during this assessment, and refurbishment costs. Also included in this task is an evaluation of the recommended changes and the impact that these changes would have against existing environmental permits.

Cost Estimate

The DD Form 1391 for the FY 2011 Power Utility Cost Estimate dated June 2010, shows that the U.S. Navy proposed the refurbishment of 3 combustion turbines and upgrades to 12 Guam Power Authority transmissions and distribution systems. The total cost for refurbishment and upgrades is $160 million.

Details of the transmission and distribution project’s justification and cost estimate are listed in the DD Form 1391 and Budget Estimate Summary Sheet dated June 2010. The

cost estimate is based on engineering judgment and cost estimating data RS Means cost books. RS Means cost books is a construction cost estimating tool. NAVFAC PAC issued a Technical Direction Form, dated May 21, 2010, to independently verify each transmission and distribution project in the DD Form 1391.

The *Combustion Turbine Plant Reliability Assessment* showed that the total cost estimates for refurbishing the power plants and its associated systems are: Dededo – $6.95 million, Macheche – $3.6 million, Yigo – $10.75 million, and Marbo – $10.71 million. The recommendations and costs are categorized by plant and unit, and prioritized based on impact to reliability and safety concerns. The estimated costs were assembled by contacting vendors, using historical models, and estimating labor based on project management experience of the NAVFAC ESC engineers with a modifier for Guam. The costs estimates are approximately $30 million for five combustion turbines – two going to the Dededo site and three going to other sites to include Macheche, Yigo, and Marbo.

The *Combustion Turbine Plant Reliability Assessment*, Executive Summary shows that it costs approximately $80,000 to replace Dededo's combustion turbine (No. 2) generator. The cost was not in line with the cost analysis for the Dededo's combustion turbine (No. 2) in Appendix A. The cost analysis proposes a repair plan with two options for the rotor and a plan with three options for the stator. For repairing the rotor, the total cost for option 1 is $164,000 and the total cost for option 2 is $913,000. For repairing the stator, the total cost estimates for options A, B, and C are $2,931,000; $1,897,000; and $1,800,000 respectively. The difference in combustion turbine (No. 2) cost estimates between executive summary and cost analysis in Appendix A shows that there was an inconsistency in the cost estimate of the combustion turbine refurbishment and this may have lead to the over or under cost estimate for combustion turbines refurbishment projects. The DOD IG raised the cost estimate inconsistency issue to NAVFAC PAC and they concurred with it. Subsequently, NAVFAC PAC corrected the cost estimate in the updated Executive Summary to reflect the correction.

Budget

The DOD is seeking Japanese financing for improvements. Funding is anticipated as part of the Japanese budget package. $160 million is expected for the refurbishment of 3 combustion turbines and upgrades to 12 Guam Power Authority transmission and distribution systems. Funding for the projects should be available subsequent to Japanese FY* 2011 budget approval by the government of Japan.

Contract

NAVFAC PAC originally proposed upgrading 15 Guam Power Authority transmission lines and distribution systems, and reconditioning 5 Guam Power Authority combustion turbines. This would restore the island-wide power supply system to its original design capacity and support the required reserve capacity for reliability. However, due to

* The Japanese FY runs from April 1st through March 31st of each year.

limited funding, NAVFAC PAC is planning on only upgrading 12 Guam Power Authority transmission lines and distribution systems, and reconditioning 3 Guam Power Authority combustion turbines. The work would be undertaken by the Guam Power Authority on its existing permitted facilities with oversight by NAVFAC Mariana. The NAVFAC and Guam Power Authority have been working together to finalize projects for power generation, transmission, and distribution systems. The contract is currently in negotiation.

Schedule

There is no firm schedule available for the refurbishment of combustion turbines and upgrades to the transmission and distribution systems. Construction/refurbishment is expected to begin approximately in June 2012, with completion by December 2014. However, as a result of the adaptive program management, the pace and sequencing of the projects may change.

Sustainment

The refurbishment of combustion turbines and upgrades to the transmission and distribution systems will reinstall the Guam Power Authority's maximum power capacity and ensure its reliability. The power generation planning, sizing, performance, sustainment, and implementation of responsibility will be placed with the Guam Power Authority. It is anticipated that the Guam Power Authority would be responsible for sustainment.

Conclusion

The current existing generation systems could provide a potential total installed power capacity of 586.70 MW; however, due to the malfunction of some combustion turbines, the actual available capacity is 463.10 MW. This available capacity is still adequate and higher than the current peak use of 245 MW. To ensure the adequate power supply for the military realignment to Guam through 2019, NAVFAC PAC proposed upgrading 12 different Guam Power Authority transmission lines and distribution systems, and reconditioning up to 3 existing Guam Power Authority combustion turbines to raise its installed power capacity.

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IV. Drinking Water

Figure 11. Ugum Water Treatment Plant

Source: Photo courtesy of DOD IG

Background

Requirements

The Guam Waterworks Authority (GWA) is the provider of water services to the entire civilian population and most military facilities on the island of Guam. Approximately, 70 percent of the total water supply is obtained from GWA's system of groundwater sources comprising of 121 wells and 5 springs that draw fresh water from an aquifer underlying the island. The remaining 30 percent of the total water supply comes from surface water sources which include rivers and reservoirs. The U.S. Navy transfers up to 4 million gallons per day (mgd) to GWA. Collectively, the groundwater sources have a daily water average production rate of approximately 38 mgd. The GWA water system has no excess water available for transfer to the DOD to support the military realignment for the new expansion at Finegayan. The Final EIS specified that an additional 11.3 mgd of potable water supply would be required to meet future on-base DOD demands projected for the military realignment. The Final EIS further required a minimum storage capacity of 4.3 million gallons of water for the military realignment.

Currently, potable water for the existing bases is provided by separate U.S. Navy and Air Force water systems. In addition to supplying current military bases, the U.S. Navy provides 4 mgd to GWA from its surface water reservoir for a limited number of civilians located on the southern part of Guam. The U.S. Air Force also leases a well to GWA on

the Naval Support Activity at Andersen AFB. The construction of new wells and related water supply systems on DOD property is needed to support military realignment.

The Department of the Navy considered nine water resource options/alternatives to meet the military realignment potable water requirements. The selected alternative would provide the required additional potable water capacity of 11.3 mgd, through the establishment of up to 22 new DOD water wells at Andersen AFB; rehabilitation of existing wells; interconnects with the GWA water system; and construction of associated treatment, storage and distribution systems. Any excess water from the Marine Corps base at Finegayan would be supplied to Andersen AFB and the NCTS in Barrigada (near Andersen South base), to meet the projected deficits at those bases due to the military realignment.

Statutory and Regulatory Responsibilities

The USEPA ensures that Federal laws protecting human health and the environment are enforced fairly and effectively. USEPA Region 9 has a direct role in environmental protection for the U.S. territories of Guam. The Department of the Navy prepared an EIS to evaluate environmental consequences of the proposed military realignment to Guam. The EIS addressed surface water, ground water, near shore water, and wetlands. The statement also concluded that there would be significant indirect impacts on the existing GWA drinking water system.

Currently, GWA potable water system is in non-compliance for the Safe Drinking Water Act – 42 U.S.C. §300f et seq. – and the Clean Water Act – 33 U.S.C. §1251 et seq. The unreliable drinking water distribution system has historically resulted in frequent bacterial contamination from sewage spills, causing "boil water" notices to be sent to residents. In December 2002, the United States Department of Justice filed a civil suit against GWA (Civil No. 02-00035) and the government of Guam for failure to comply with the Safe Drinking Water Act and the Clean Water Act. The U.S. District Court for the territory of Guam directed GWA to comply with the Safe Drinking Water Act and the Clean Water Act. In keeping with its responsibility, the court issued two stipulated orders. The first stipulated order for preliminary relief was entered in June 2003. Subsequently, the parties agreed to two modifications of the stipulated order. The second amended stipulated order was entered by the court in October 2006. The parties viewed the stipulated order as the most appropriate way to require GWA to immediately implement short-term projects to address GWA's compliance with the Safe Drinking Water Act and the Clean Water Act. Over the last several years, USEPA has demanded stipulated penalties for violations of the court order. The stipulated order addressed potential threats to public health and safety, and set intermediate, achievable goals to bring Guam drinking water into compliance with relevant health, safety and environmental regulations.

Inclusion in Composite Program

NAVFAC PAC has included the drinking water projects in their Japanese Fiscal Year (JFY) 2011, 2012, and 2013 Military Construction Programs. The JFY 2011 projects include well facilities, water treatment, and water transmission. The U.S. Navy will

select 14 wells yielding 450 gallons per minute or higher, from an estimated 28 test wells. The JFY 2012 projects include water storage and transmission work, raw well facilities, and transmission mains for new wells. The JFY 2013 projects include the remaining well construction and installation, and water transmission projects.

Cost Estimate

NAVFAC PAC issued a contract to TEC, Inc. Joint Venture that included preparing the preliminary cost estimates for a water utility study. NAVFAC PAC used these cost estimates in preparing the Military Construction Program documents (DD Forms 1391) for all drinking water projects. However, NAVFAC PAC is not procuring the capital improvements for the drinking water projects. The cost estimates were prepared as programming documents in order for the Japanese Ministry of Defense to prepare budget requests. The DOD procurement will be for water service only, not capital improvements.

Budget

The DD Forms 1391 for JFY 2011, 2012, and 2013, dated September 2010, provide estimated costs for the drinking water projects (see Table 4 below).

Table 4. JFY 2011 - 2013 Drinking Water Cost Estimates

Fiscal Year	Total Requested (in $ millions)
JFY 2011	$77.1
JFY 2012	$67.3
JFY 2013	$15.2
Total	**$159.6**

The DOD is seeking Japanese financing for improvements. Funding is anticipated as part of the Japanese budget package, of which $159.6 million is expected for the drinking water projects. Funding for the projects should be available subsequent to JFY 2011 budget approval by the government of Japan.

Contract

No contract for the water projects has been awarded yet due to nonavailability of funds.

Schedule

The schedule for the Guam drinking water projects is contingent upon the availability of funds. Programmatic plans based on the realignment roadmap schedule call for a 2014 completion date. However, as a result of the adaptive program management, the pace and sequencing of the projects may change.

Sustainment

Discussions between GWA and the DOD continue on the best business approach to facilitate the required drinking water system upgrades. The Final EIS stated that the approach could involve a special purpose entity that would finance, develop, upgrade, operate and manage the drinking water infrastructure associated with the military realignment.

Conclusion

GWA is the provider of water services to the entire civilian population and most military facilities on the island of Guam. However, in order to meet the on-base DOD demands projected for the military realignment, the Final EIS specified that an additional 11.3 mgd of potable water supply and a minimum storage capacity of 4.3 million gallons of water would be required. To meet these requirements NAVFAC PAC has developed a three stage program over JFY 2011 – JFY 2013. The JFY 2011 projects include well facilities, water treatment, and water transmission. The U.S. Navy will select 14 wells yielding 450 gallons per minute or higher, from an estimated 28 test wells. The JFY 2012 projects include water storage and transmission work, raw well facilities, and transmission mains for new wells. The JFY 2013 projects include the remaining well construction and installation, and water transmission projects.

V. Wastewater Treatment

Figure 12. Northern District Wastewater Plant

Source: Photo courtesy of DOD IG

Background

Requirements

Overall Requirements. Wastewater treatment for the military is currently provided at GWA's two major wastewater treatment plants, the Northern District plant and the Hagatna plant in the island's central region. GWA owns both the Northern District Wastewater Treatment Plant (NDWWTP) and the Hagatna Wastewater Treatment Plant (WWTP). GWA has contracted the management and operation of the plants since January 2007. Sewage from several existing DOD bases is currently conveyed to the NDWWTP for treatment and disposal. The design capacity of NDWWTP is 12.0 mgd average daily demand and 27.0 mgd peak daily demand. However, the existing National Pollutant Discharge Elimination System (NPDES) permit to NDWWTP limits the maximum daily flow to 6 mgd. The current estimated flow is 5.7 mgd and the projected future flow requirement by 2019 is 10.54 mgd which includes DOD wastewater flow from the proposed military realignment. Neither flow requirement exceeds the original design capacity of 12.0 mgd.

The NDWWTP, commissioned in 1979, is the only wastewater treatment facility in northern Guam and is designated a USEPA Class III wastewater treatment plant. The NDWWTP is currently operating under a Clean Water Act 301 (h) waiver that allows the

discharge of primary treated effluent. The NDWWTP disposes of primary treated effluent into the Philippine Sea.

Currently, NDWWTP does not meet primary treatment standards and lacks sufficient capacity as GWA's wastewater infrastructure (treatment plants, collection piping, and pump stations). NDWWTP has a legacy of deferred maintenance and minimal capital improvements that have caused the systems to slowly deteriorate over the years. Due to poor conditions of the existing assets and limitations of the primary treatment to remove Biological Oxygen Demand, the plant does not consistently meet the permit requirements for total suspended solids and Biological Oxygen Demand concentration and loading. Additionally, the maximum daily flow limit of 6 mgd is occasionally breached.

The NDWWTP NPDES permit expired on June 30, 1991, and was administratively extended. USEPA denied GWA's request to renew 301 (h) waivers because GWA did not comply with Clean Water Act requirements. The USEPA Region 9 issued a final decision on September 30, 2009, to deny the variance on secondary treatment for NDWWTP, effectively requiring GWA to install full secondary treatment at both NDWWTP and Hagatna WWTP.

Interim Requirements. Military realignment projects will require an influx of temporary construction workers in addition to the military personnel, family members and civilian support staff. A contractor built the Ukudu workforce village in the Tanguisson area of Tamuning and Dededo adjacent to the NDWWTP to house up to 14,000 workers.

In order to meet the additional wastewater requirements for the temporary workforce village, NAVFAC PAC issued a contract to Pacific Program-Design Management Services JV in December 2010 for a preliminary design study to investigate options to provide temporary treatment capability at the NDWWTP. The study proposed that interim upgrades to the plant be commissioned by September 2011 to allow for the predicted flow requirements of up to 9 mgd. The estimated cost for the temporary improvement is $8 million. The temporary improvements would be operational until 2014, when permanent treatment upgrades to the plant are completed. USEPA has agreed, in principle, to the phased approach for the WWTP improvements, but NAVFAC PAC will have to obtain a formal approval from USEPA upon obligation of the funds.

Statutory and Regulatory Responsibilities

The following agencies are potential stakeholders and were contacted during the Final EIS process for the proposed wastewater treatment alternatives.

- U.S. Environmental Protection Agency Region 9
- Guam Environmental Protection Agency
- Guam Water Authority
- Bureau of Statistics and Planning (Coastal Management)
- Guam Department of Aquatic and Wildlife Resources
- Department of Parks and Recreation (Historic Preservation)

- Department of Public Works

The Federal Water Pollution Control Act and subsequent amendments, commonly referred to as the Clean Water Act, authorizes the USEPA, individual states, and local governments to establish programs to control pollution and restore and maintain the chemical, physical, and biological integrity of the nation's water. The goal of the Clean Water Act is to restore the quality of the nation's water by regulating the discharge of point sources. The Clean Water Act considers all discharges to the nation's water as unlawful, unless specifically authorized by a permit that requires the discharge to attain technology-based effluent quality limits. The NPDES permit program was established in 1972 under the Clean Water Act. The USEPA administers the NPDES program and mandates that dischargers of point source pollutants obtain an NPDES permit.

Guam Environmental Protection Agency, the local regulatory agency, provides input regarding the receiving water quality standards, pursuant to Section 401 of the Clean Water Act. Guam Environmental Protection Agency is responsible for implementing specific local and Federal statutes and regulations on environmental protection. The agency is responsible for administering a local program that provides sewage treatment and related facilities for Guam, and controlling pollution from domestic wastewater.

GWA was established by the Guam legislature and is a semi autonomous, self-supporting agency. GWA administers Guam water utility services to include water treatment and distribution, sewage conveyance, treatment, and disposal. An elected, non-partisan Consolidated Commission on Utilities oversees the GWA operations and regulates its rates.

The United States Department of Justice filed a civil suit against GWA and the government of Guam in December 2002, for failure to comply with the Safe Drinking Water Act and the Clean Water Act (U.S. vs. Guam Waterworks Authority, Civil No. 02-00035 (D. Guam)). A stipulated order for preliminary relief was entered in June 2003. Subsequently, the parties agreed to two modifications of the stipulated order. The second amended stipulated order was entered by the court in October 2006. Both parties viewed the stipulated order as the most appropriate way to address GWA's compliance with the Clean Water Act and Safe Drinking Water Act. The stipulated order contains 56 "deliverable" actions requiring documentation of which eight are delayed but in progress, as stated in the *Quarterly Compliance Progress Report No. 26*, prepared by GWA dated October 27, 2010.

Inclusion in Composite Program

The Department of the Navy evaluated nine options for wastewater treatment and disposal to meet the military realignment wastewater requirements. The U.S. Navy's preferred option was a phased implementation of two options that combine upgrades to the existing primary treatment facilities and expansion to secondary treatment at the NDWWTP. The first phase would restore the existing primary treatment facilities at NDWWTP to accept the increased wastewater from the military realignment in the

northern Guam. The second phase would expand and upgrade the NDWWTP to provide secondary treatment capacity.

The September 2010 Military Construction Project Data for JFY 2011 describes the restoration and upgrade of the existing primary treatment facilities at the NDWWTP, capacity and compliance improvements at the Hagatna WWTP, and Phase I collection system improvements in northern and central Guam districts.

The planned JFY 2012 construction projects include the upgrade to secondary treatment facilities at the NDWWTP and Phase II collection system improvements in northern and central Guam districts.

The planned JFY 2013 construction projects include upgrades to the GWA's Hagatna WWTP from a primary treatment facility to a secondary treatment facility.

Additionally, NAVFAC PAC has planned and is awaiting authorization for funding from Headquarters NAVFAC to implement interim capacity improvement requirements related to housing for the temporary workforce of more than 18,000 off-island construction workers.

Cost Estimate

NAVFAC PAC issued a contract to TEC, Inc. Joint Venture that included preparing the preliminary cost estimates for a water utility study. NAVFAC PAC used these cost estimates in preparing Military Construction Program documents (DD Forms 1391) for all drinking water projects. However, NAVFAC PAC is not procuring the capital improvements for the wastewater projects. The cost estimates were prepared as programming documents in order for the Japanese Ministry of Defense to prepare budget requests. Procurement of the capital improvements will be made directly by GWA. The planned construction cost estimate for the wastewater projects is approximately $420.4 million.

The estimated construction cost for the interim upgrades at NDWWTP is $8 million as stated in the preliminary design study. NAVFAC PAC has completed an independent government cost estimate to validate the $8 million cost required for the interim capacity upgrade.

Budget

The September 2010 DD Form 1391 for JFY 2011, 2012, and 2013 provided the following estimated costs for the wastewater projects (see Table 5).

Table 5. JFY 2011 - 2013 Wastewater Cost Estimates

Fiscal Year	Total Requested (in $ million)
JFY 2011	$107
JFY 2012	$166.9
JFY 2013	$146.5
Total	**$420.4**

The DOD is seeking Japanese financing for improvements. Funding is anticipated as part of the Japanese budget package, of which $420.4 million is expected for the wastewater improvement projects. Funding for the projects should be available subsequent to JFY 2011 budget approval by the government of Japan. The package would accomplish wastewater improvements at NDWWTP, while the JFY 2013 program would fund the secondary treatment at the Hagatna WWTP.

NAVFAC PAC is seeking $8 million for the interim upgrade project from the government of Japan 2009 budget set aside for mitigation purposes. However, it has yet to receive approval for obligating the funds. (see 'Observation: Interim Wastewater Capacity' on page 44).

Contract

No contract has been awarded to date as the Japanese funding is currently not available.

Schedule

The schedule for the Guam wastewater projects is contingent upon availability of the government of Japan funding and subsequent contract awards for the wastewater projects. Programmatic plans, based on the realignment roadmap schedule, call for completion by 2014. However, as a result of the adaptive program management, the pace and sequencing of the projects may change.

Sustainment

Discussions between GWA and DOD continue on the best business approach to facilitate the required wastewater system upgrades. The Final EIS stated that the approach could involve a special purpose entity that would finance, develop, upgrade, operate and manage the wastewater infrastructure associated with the military realignment.

Observation: Interim Wastewater Capacity

NAVFAC PAC is seeking $8 million in funding needed for the interim wastewater capacity upgrade from 6 mgd to 9 mgd at the NDWWTP. However, it has not yet obtained approval for obligating the funds. Additionally, since NDWWTP cannot consistently meet the NPDES permit requirements for wastewater treatment and discharge, the USEPA will not adjust the permit limits to allow additional flow. Consequently, the interim wastewater upgrades could be delayed and impact other military realignment projects.

Discussion

A temporary workforce consisting of more than 18,000 off-island construction workers will be required during FY 2011-2014 to build the infrastructure needed for the military realignment. In order to meet the demand of the temporary workforce, arrangements for housing, power, water, and wastewater will need to be made. The existing capacity of NDWWTP to treat 6 mgd of wastewater daily is barely enough to meet the current Guam demand. Additional interim capacity is required to meet the anticipated wastewater processing demand. A December 2010 preliminary design study contracted to Pacific Program-Design Management Services JV by NAVFAC PAC, proposed that the interim upgrades to the plant be commissioned by September 2011 to allow for predicted additional average flow of up to 9 mgd. The estimated cost for the temporary improvement is $8 million. NAVFAC PAC is seeking $8 million for the interim upgrade project from the government of Japan 2009 budget set aside for mitigation purposes, but has not yet received approval for obligating the funds.

On November 17, 2010, a quarterly hearing related to the stipulated order was held. USEPA requested the court to require GWA to complete the construction of interim treatment improvements at the NDWWTP by December 31, 2011, and achieve consistent compliance with the interim effluent limits. If the NDWWTP cannot achieve and ensure consistent compliance, USEPA will not adjust the permit limits to allow the additional flow needed to house the construction workforce and the development of the military realignment.

Observation Recap

NAVFAC PAC is seeking $8 million in funding needed for the interim wastewater capacity upgrade from 6 mgd to 9 mgd at NDWWTP. If the NDWWTP cannot achieve and ensure consistent compliance, USEPA will not adjust the permit limits to allow the additional flow needed to house the construction workforce and the development of the military realignment. However, NAVFAC PAC has yet to obtain authority for obligating the identified funds. Consequently, temporary housing for the construction workforce would not be available due to the lack of sewer connections.

VI. Solid Waste

Figure 13. Ordot Dump

Source: Photo courtesy of DOD IG

Background

Requirements

Currently, the territory of Guam and DOD have separate solid waste facilities. All civilian solid waste on Guam is disposed of at the Ordot Dump facility, which will close once a new landfill is constructed. Solid waste from DOD base operations is disposed of in one of the two DOD operated landfill sites – Andersen AFB and Apra Harbor Naval Base. Additionally, DOD operates a recycling center located at Andersen AFB. The plan for DOD is to close all of its landfills except Apra Harbor Naval Base Landfill, which will continue to accept construction and demolition waste, send all of its solid waste to the new territory of Guam landfill, and expand its recycling program.

Territory of Guam Requirements. On March 17, 2008, the District Court of Guam's Federal court order stated that all of the responsibilities, functions, duties, powers and authority of all civilian solid waste operations would be assumed by an appointed receiver, Gershman, Brickner & Bratton, Inc. Receivership is the process of appointment by a court of a "receiver" to take custody of the property. Additionally, the court order required the closure of Ordot Dump because of island-wide health and environmental hazard caused by discharging leachate from the dump. Since the court order, the receiver has opened a new USEPA-compliant landfill, the Layon Landfill. Upon opening of Layon Landfill, the Ordot Dump closed. However, the Ordot Dump will stay under receivership until the environmental cleaned up process is completed. In addition, Layon Landfill will stay under receivership as long as the court deems necessary. The receiver is currently contracting for an operator.

DOD Requirements. The two DOD-operated landfill sites are almost at capacity. Once construction to Layon Landfill is complete, the DOD landfills will close to all solid waste except Apra Harbor Naval Base Landfill which will continue to accept construction and demolition waste. The DOD has written a letter of intent stating that DOD will start sending solid waste to Layon Landfill once the landfill opens. DOD plans to send solid waste at the current tipping fees rate set by the receiver. In the interim, before Layon Landfill opens, the Andersen AFB Landfill will reach capacity and the Air Force will have to send all of its solid waste to Apra Harbor Naval Base Landfill.

Additionally, DOD is planning to construct two new transfer stations – one in northern Guam and one in southern Guam. The transfer stations will serve as access points for solid waste going to Layon Landfill. The DOD also plans to expand the existing source separation recycling programs and construct at least one DOD materials resource recovery facility (MRRF). A MRRF would recover and segregate targeted recyclable materials from the solid waste stream prior to the solid waste being disposed of at the Layon Landfill or Apra Harbor Naval Base Landfill. The DOD is considering four alternatives for construction of MRRFs, refuse transfer stations, and recycling centers:

- Alternative 1: Construct a MRRF with refuse transfer stations and recycling centers in northern and southern Guam.
- Alternative 2: Construct a MRRF with a refuse transfer station and recycling center in southern Guam, and construct a refuse transfer station and recycling center in northern Guam.
- Alternative 3: Construct a MRRF with a refuse transfer station and recycling center in northern Guam, and construct a refuse transfer station and recycling center in southern Guam.
- Alternative 4: Construct a MRRF with a refuse transfer station and recycling center in Barrigada, construct a recycling center in northern Guam and construct a recycling center in southern Guam.

Statutory and Regulatory Responsibilities

Territory of Guam Responsibilities. On March 17, 2008, the District Court of Guam placed all public solid waste operations under the control of an appointed receiver. The court order required the closure of Ordot Dump. Since the court order, the receiver has started construction on the new USEPA-compliant landfill. The USEPA-compliant landfill, Layon Landfill, opened on August 31, 2011.

DOD Responsibilities. The DOD is responsible for disposing DOD solid waste. DOD will collect and deliver solid waste from on-base operations to transfer stations for Layon Landfill. The same tipping fee rate will apply to the DOD as commercial tipping fees to the landfill for disposal of solid waste.

Inclusion in Composite Program

Territory of Guam Inclusion. Civilian Guam's solid waste operations and facilities are under the receivership as appointed by the District Court of Guam. The receiver's plan

for Layon Landfill includes the disposal of DOD solid waste. As a result, DOD will not have to build a new landfill.

DOD Inclusion. The current DOD landfill sites are operated solely by the DOD. The landfills provide service to military personnel and residents of the bases as well as commercial waste streams from base activities.

Cost Estimate

Territory of Guam Cost Estimate. The receiver developed cost estimates for the closure of Ordot Dump and the construction of Layon Landfill, including new access roads and transfer stations. The current cost estimate is $160 million; however, the receiver stated to the court and the government of Guam that this estimate should be considered very preliminary and would need to be reevaluated once a final plan for closure is developed.

DOD Cost Estimate. For DOD's solid waste program, DOD has created estimates for the four alternatives presented in the requirements section. Table 6 gives a breakdown of the cost estimates for each alternative being considered. These estimates are preliminary; once an alternative is selected, a verified independent government cost estimate, with backup data and supporting documents will be required.

Table 6. Estimates for Cost of Military Solid Waste Alternatives

Alternative	Total Present Value Analysis 50 years
Alternative 1 – Construct MRRFs with refuse transfer stations and recycling centers in northern and southern Guam	$457,800,000
Alternative 2 – Construct MRRF with refuse transfer station and recycling center in southern Guam and construct refuse transfer facility and recycling center in northern Guam	$417,400,000
Alternative 3 – Construct MRRF with refuse transfer station and recycling center in northern Guam and construct refuse transfer facility and recycling center in southern Guam	$419,400,000
Alternative 4 – Construct MRRF with refuse transfer station in Barrigada and construct recycling centers in northern Guam and southern Guam	$478,300,000

Source: "Recycling and Solid Waste Diversion Study for DOD Bases, Guam," April 26, 2010

Budget

Territory of Guam Budget. As part of the court order, the District Court of Guam required the government of Guam to provide funds for the closure of Ordot Dump and the construction of Layon Landfill. Initially, the government of Guam pursued budget authority from two different sources to fund the receiver's efforts. On March 26, 2009, Bill No. 1(1-S) was passed, authorizing the government of Guam to issue Section 30 bonds, not to exceed $202,425,000, to fund the closure of Ordot Dump and the construction of the new landfill. On July 20, 2009, USDA obligated $104 million ($88.5 million loan and $15.5 million grant) to fund the construction of Layon Landfill. This USDA loan/grant was intended to replace a portion of the Section 30 bonds already in place and to allow the bonds to be used for other Guam priorities. However, the USDA loan/grant was turned away by the government of Guam on July 29, 2009. The loan/grant was turned away due to several provisions in the American Recovery and Reinvestment Act which specify that excess fund are required to be returned and cannot be used for other areas in Guam.

The receiver stated that most of the contracts received were significantly under the budget approved by the court. The receiver recommended to the court and the government of Guam that any savings in the budget for Layon Landfill should be reserved as a contingency until the final cost of the Ordot Dump closure is known. The reserve would help to ensure that the cost of closing Ordot Dump would not affect the rates paid by customers for the Layon Landfill.

DOD Budget. The DOD stated that they are funding the budget for the chosen alternative. However, the source of funding has not been identified.

Contract

Territory of Guam Contract. The receiver was appointed on March 17, 2008. The receivership was not awarded under an official contract, but rather, through a consent decree from the District Court of Guam. Since being appointed, the receiver has issued various contracts for construction of the new Layon Landfill.

On September 8, 2010, the receiver issued a request for proposal for an operator for Layon Landfill. The contracted operator will be under the receiver's control and run the day-to-day operations of the landfill.

On November 8, 2010, the receiver issued a request for proposal for the closure and post-closure plan preparation for Ordot Dump.

DOD Contract. The DOD currently has a contractor that collects solid waste on-base and delivers the waste to the appropriate DOD landfill. In the new plan, DOD would continue to contract for the solid waste collection on-base. This contractor would then deliver the solid waste to the appropriate transfer station on the island.

Additionally, DOD will contract for the military construction of the MRRF and the expansion of the recycling centers.

Schedule

Territory of Guam Schedule. Layon Landfill opened on August 31, 2011; and at that time, Ordot Dump closed.

DOD Schedule. The DOD has initiated a contract with the receiver in which the DOD will start sending solid waste to Layon Landfill. On September 30, 2011, NAVFAC Marianas initiated a contract with the receiver to establish the terms for the disposal of solid waste generated by DOD facilities to a transfer station and in the Layon Landfill. Additionally, since the DOD is still considering which solid waste alternative plan to select, the schedule for constructing the solid waste transfer stations have yet to be determined.

Sustainment

Territory of Guam Sustainment. The receiver estimated the life of Layon Landfill and indicated that there should be approximately 30 years of airspace in the landfill. The life analysis included the collection of DOD solid waste. However, the life analysis estimate could vary based on the to-be contracted Layon Landfill operator, recycling programs, and the flow of solid waste into the landfill.

DOD Sustainment. According to Executive Order 13423,

> Federal agencies are to conduct their environmental, transportation, and energy-related activities under the law in support of their respective missions, in an environmentally, economically, and fiscally sound, integrated, continuously improving, efficient, and sustainable manner.

Additionally,

> … the head of each agency shall … ensure that the agency … increases diversion of solid waste as appropriate, and … maintains cost effective waste prevention and recycling programs in its facilities.

According to Executive Order 13101, the Federal Government is required to improve the use of recycled products and environmentally preferable products and services. Additionally, the order states:

> … the head of each agency shall incorporate waste prevention and recycling in the agency's daily operations and work to increase and expand markets for recovered materials. . .

In compliance with Executive Orders 13101 and 13423, Joint Region Marianas has proposed to start a Qualified Recycling Program for its solid waste. With the program, the DOD would sell recyclable material and receive profits from receivables and retain sales proceeds obtained from Guam military and civilian individuals. Establishing the Qualified Recycling Program would minimize the amount of solid waste generated as well as increase the amount of waste diverted from disposal in landfills and incinerators.

Proceeds collected by the Qualified Recycling Program must first cover program costs. Up to 50 percent of the remaining proceeds may be used for pollution abatement; pollution prevention; composting; alternative fueled vehicle infrastructure support and vehicle conversion; energy conservation; or occupational safety and health projects, with first consideration given to projects included in the installation's pollution prevention plans. Any remaining proceeds may be transferred to the nonappropriated Morale, Welfare, and Recreation account or retained in the Qualified Recycling Program suspense account to cover anticipated future program costs. However, at this time, the Qualified Recycling Program is not funded.

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Memo Dated May 14, 2012

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VII. Communication

Figure 14. Guam Emergency Communication System

Source: Photos from "Guam Fire Department Enhanced 911 Emergency Reporting System Fund," December 2003 & October 2010 & "A Citizen-Centric Report for Guam Fire Department," February 2010

Background

Requirements

Government of Guam and the DOD in Guam currently only have the basic 911 services that cannot process a caller's telephone number and location automatically. 47 Code of Federal Regulations § 54.101, states that emergency 911 services fall into two categories – basic and enhanced. Basic 911 services forward calls to a single geographically appropriate Public Safety Answering Point. Basic 911 service networks are not capable of processing a caller's telephone number and location automatically. However, Enhanced 911 (E911) systems route 911 calls through a geographically appropriate Public Safety Answering Point based on the caller's location. The Enhanced 911 system enables the dispatcher to automatically pinpoint the exact location of a caller, even without the caller speaking.

The U.S. Congress established Public Law 108-494 on December 23, 2004, for the sake of our nation's homeland security and public safety a universal emergency telephone

number (911) that has state-of-the-art enhanced telecommunications capabilities should be made available to all citizens in all regions of the nation – to include states and territories. Such communications are also to be made a high national priority. The law requires:

> The purposes of this title are -
> (1) to coordinate 911 services and E–911 services, at the Federal, State, and local levels; and
> (2) to ensure that funds collected on telecommunications bills for enhancing emergency 911 services are used only for the purposes for which the funds are being collected.

DOD Requirements. DOD issued a policy, DODI 6055.17 DOD Installation Emergency Management Program, dated November 19, 2010 that states:

> All installations shall have:
> a. The availability of enhanced 911 services with recording capability at domestic installations through either direct support (Government-owned and -operated) or support from State and local authorities off the installation.
> b. Requirements to subscribe for enhanced 911 services for Voice-Over Internet Protocol users and emergency dispatch capabilities for nondomestic installations

Currently, there are two DOD Public Safety Answering Points in Guam and neither is fully enhanced. One is operated by Andersen AFB and another is operated by Joint Region Marianas (JRM)/Navy. The existing Guam military Public Safety Answering Points do not provide the Enhanced 911 (E911) capability as required by DODI 6055.17. The Public Safety Answering Point's emergency systems at Andersen AFB do not provide the Automatic Location Information to the emergency operator if the 911 call is made inside the AFB from official or commercial lines. The Public Safety Answering Points' emergency systems at the JRM/Navy do not provide the Automatic Location Information and Automatic Number Information to the emergency operator if the 911 call is made inside a JRM/Navy base from a commercial line, however, from an official line the system will provide the Automatic Location Information. In addition, if an emergency call is made from a wireless or Voice over Internet Protocol (VoIP) phone inside the DOD installations, the Automatic Location Information and Automatic Number Information of the caller are not provided to the Public Safety Answering Points' operator (see 'Communications Finding A' on page 59).

Government of Guam Requirements. In coordination with U.S. Public Law 108-494, the government of Guam issued Public Law 25-55 and 1999 (First) Regular Session, and Section 4 states:

> There is hereby created, separate and apart from all other funds of the government, the *"Enhanced* 911 *Emergency Reporting System Fund"* ("Fund")" to be administered by the Department of Administration. The Fund is created to provide a source of funding for costs associated with an Enhanced 911 Emergency Reporting System. All the 911 surcharges collected by each [Local Exchange Carrier] LEC and [Commercial

> Mobile Radio Service] CMRS provider shall be paid into the Fund. The money collected and interest earned shall be used by the [Guam Fire] Department (GFD) solely for Enhanced 911 equipment and system costs as described in this Act.

The government of Guam also issued Public Law 28-44 that mandates the Public Utilities Commission to monitor the collection of the surcharge to ensure accuracy, completeness, and timeliness of Enhanced 911 surcharge remittance made by service providers.

The government of Guam created the Enhanced 911 Emergency Reporting System Fund under Guam Public Law 25-55, which collects one dollar per month for the surcharge and interest. The fund was created for the sole purpose of funding just and reasonable expenses in operating and maintaining the Enhanced 911 system. The Office of Public Accountability found that the Guam Fire Department used the fund for administrative expenses rather than the Enhanced 911 equipment and system costs. As a result, the government of Guam has not upgraded its basic emergency 911 system to the Enhanced 911 system that includes automatic identification of location and number information (see 'Communications Finding B' on page 62).

Statutory and Regulatory Responsibilities

U.S. Public Law 108-494 was issued on December 23, 2004, to use a universal emergency telephone number (911) that has state-of-the-art enhanced telecommunications capabilities. The enhanced communications are to be made available to all citizens in all regions of the states and territories. Such communications are to be made a high national priority and require the coordination of states and local governments and their resources working in cooperation with Federal leadership as well as numerous organizations dedicated to delivering emergency communications services.

DOD Responsibilities. The DOD-issued instruction DODI 6055.17, DOD Installation Emergency Management Program, requires all DOD installations to have the Enhanced 911 Initial Operation Capability in January 2011. The JRM/J3 is responsible for the commercial management system and JRM/J6 is responsible for the technology and leading the telecommunications infrastructure.

Government of Guam Responsibilities. Under Guam Public Law 25-55, Guam is to collect one dollar per month for the surcharge and interest to operate and maintain the Enhanced 911 system.

Inclusion in Composite Program

DOD Inclusion. The JRM/J3 is responsible for the commercial management system and JRM/J6 is responsible for the technology and leading the telecommunication infrastructure. Currently, there is no formal program established to implement the interfacing and upgrading of the Enhanced 911 systems.

Government of Guam Inclusion. The government of Guam established the Enhanced 911 Emergency Reporting System Fund in an attempt to advance the basic 911 system to

the Enhanced 911 system. There is no formal program established that implements the upgrading of the basic 911 system to the Enhanced 911 system.

Cost Estimate

DOD Cost Estimate. The rough cost estimate for life cycle management upgrades to the current Guam communications system runs from $10 million to $20 million. It would also cost $1 million to get a location data dispatcher system, and $6-$9.5 million to upgrade the current infrastructure throughout Guam. The cost estimate is preliminary and would need to be reevaluated once a final plan is developed for the DOD.

In addition to the rough cost estimates for the life cycle management and infrastructure upgrades throughout Guam, the cost estimates to upgrade the Public Safety Answering Points from the basic 911 to an Enhanced 911 system are:

1. Consolidate Air Force and Navy Coordination of Access to Information Requests System (CAIRS) databases and interface Andersen Public Safety Answering Point to JRM/Navy Automatic Location Information database and load all official Automatic Location Information into the JRM/Navy Automatic Location Information database. This project has upgraded and integrated the Andersen AFB and Navy database systems, and has allowed the Andersen AFB Public Safety Answering Point using the Navy Public Safety Answering Point Automatic Location Information database for the automatic location. This program costs roughly $825,800.

2. Incumbent local exchange carrier (ILEC) and the government of Guam 911 system implement a Selective Router function and Automatic Location Information/Automatic Number Information database. This project has allowed the government of Guam Public Safety Answering Point to route 911 calls from the DOD installation back to the appropriate Public Safety Answering Point automatically. The non-recurring cost estimate is roughly $680,600 and the monthly recurring cost is undefined.

Government of Guam Cost Estimate. Representatives from Guam Homeland Security provided contractor cost estimates for the life cycle management upgrades to the current communications system is between $8-12 million and $10-12 million, respectively. These cost estimates are preliminary and would need to be reevaluated once a final plan is developed for the DOD.

Budget

DOD Budget. Currently, there is no budget established to fund projects to upgrade the 911 systems at the DOD installations. The Navy and Andersen AFB are working together with JRM/J6 on the unfunded requirements to upgrade the current emergency 911 systems.

Government of Guam Budget. To assist the states and territories, U.S. Public Law 108-494 establishes Enhanced 911 implementation grants. The law provides for a

matching requirement grant. "The Federal share of the cost of a project eligible for a grant under this section shall not exceed 50 percent."

The Department of Homeland Security provides to states and territories Emergency Management grants. Department of Homeland Security is committed to contributing $1.5 million to Guam on an annual basis; however, it is not specifically for the communications infrastructure. The government of Guam prioritizes all requests for Emergency Management grant funds. In addition to the Department of Homeland Security grant, the Department of Interior provides $1-$1.5 million annually to Guam for technical assistance/infrastructure.

The government of Guam established an Enhanced 911 Emergency Reporting System Fund program under Guam Public Law 25-55 to fund the expense of operating and maintaining the 911 system. The government of Guam also implemented a monthly surcharge fee of no more than one dollar to residential and commercial telecommunications accounts. According to Guam Homeland Security representatives, Guam Public Law 25–55 does not clearly state whether the funds are to be solely used for Enhanced 911 operations and maintenance. Therefore, the Guam Fire Department is currently using the funds toward their administrative salaries (see 'Communications Finding B' detail on page 62).

Contract

Currently, there is no contract in place to upgrade the DOD or government of Guam Public Safety Answering Point.

Schedule

The DOD and government of Guam Public Safety Answering Point upgrades are still being discussed. Currently, there is no schedule available for the Enhanced 911 program.

Sustainment

DOD Sustainment. The JRM/J3 is responsible for the commercial management system and JRM/J6 is responsible for technology and leading the telecommunication infrastructure.

Guam Sustainment. The government of Guam is responsible for the installation and performance of all other equipment and work necessary for the completion of 911 projects.

The government of Guam established a surcharge tax program for Enhanced 911 with the intent to provide just and reasonable expenses to operate and maintain costs associated with the Enhanced 911 system.

Initially, the 911 emergency system was installed by a contractor who was hired by the government of Guam. This contract began in 2000 with the initial installation and ended on December 31, 2009. The Public Utilities Commission has taken authority for the collection of surcharges. However, due to the lack of guidance on proper fund allocation,

the Guam Fire Department continues to apply the fund toward their administrative salaries instead of Enhanced 911 operation and maintenance.

Finding A: Lack of Enhanced DOD Emergency Communications

The telephone number and location information of calls originating inside DOD installations are not automatically provided to DOD emergency 911 operators by the DOD installations' Public Safety Answering Points. This occurs because the Guam DOD installations have not implemented the Enhanced 911 system's Initial Operation Capability as required by DODI 6055.17. The lack of ability to generate automatic location and number information in the event of an emergency can increase the response time and the risk to life, health, and safety of personnel.

Discussion

DOD issued DODI 6055.17, DOD Installation Emergency Management Program, on January 13, 2009 stating:

> All installations shall have:
>
> a. The availability of enhanced 911 services with recording capability at domestic installations through either direct support (Government-owned and -operated) or support from State and local authorities off the installation.
> b. Requirements to subscribe for enhanced 911 services for Voice-Over Internet Protocol users and emergency dispatch capabilities for nondomestic installations

DODI 6055.17, Glossary, Change 1 defines Enhanced 911 as:

> A telephone system consisting of network, database, and Enhanced 911 equipment that uses the single three-digit number "911" for reporting police, fire, medical, or other emergency situations to a central location, while automatically associating a physical address with the calling party's telephone number.

Per DODI 6055.17, the Implementation Plan requires DOD to ensure Initial Operational Capability within 2 years - by January 2011, and Full Operational Capability within 5 years - by Jan 2014.

In order for the military Public Safety Answering Points to automatically recognize the 911 caller's location and telephone number from land line, wireless, and VoIP, the Public Safety Answering Points need to have technologies including a telephone switch that is able to recognize numbers, an Automatic Location Information database server with addresses, database clients, equipment that can calculate a location from cell phone towers, and the capability to identify the location based on VoIP.

Andersen Air Force Base Public Safety Answering Points

The primary Public Safety Answering Point has a personal computer that runs the Automatic Location Information client and is connected to the government of Guam Public Safety Answering Point Automatic Location Information database server via a public data connection.

There are four different methods that emergency calls could be made within Andersen AFB - official lines (base offices), commercial land lines (base housing), wireless (cell phones), and internet-based VoIP. The primary Public Safety Answering Point Automatic Location Information client has no capability to automatically determine the location of the caller from any of these methods of emergency calls. It only displays the verbally obtained location information that either Andersen AFB Public Safety Answering Point receives or the government of Guam Public Safety Answering Point manually transfers to the Andersen AFB Public Safety Answering Point.

Joint Region Marianas/Navy Public Safety Answering Points

The primary Public Safety Answering Point has an Automatic Location Information data server and Automatic Location Information client, but no direct network interface to the government of Guam Public Safety Answering Point. Therefore, when Navy official lines are used, the Public Safety Answering Point has some capability to determine the automatic location information of the callers.

Emergency calls from commercial land lines, wireless, and internet-based VoIP number and location information must be verbally obtained by emergency 911 operators and manually transferred to the JRM/Navy Public Safety Answering Point.

Finding Recap

The telephone number and location information of calls originating inside the installations are not provided to the emergency 911 operator automatically by the DOD Public Safety Answering Point as required by the DODI 6055.17. The DOD installations' Public Safety Answering Points have basic emergency 911 capability; however, DOD installations do not have Enhanced 911 Initial Operational Capabilities requirements. Although an Enhanced 911 system is required by DOD policy, the Navy and Air Force have not funded or coordinated plans to upgrade the basic emergency 911.

Recommendation

We recommend that the Navy's OPNAV N2/N6 prepare, complete, and coordinate programs to upgrade the basic emergency 911 system to Enhanced 911 to avoid increases in emergency response time, and risks to life, health, and safety of personnel. Additionally, until the Enhanced 911 system is installed and operational, we recommend advising incoming military personnel and their families, during island in processing, about the 911 limitations.

Management Comments on the Finding

The Under Secretary of the Navy (USN), Commander of Navy Installations Command (CNIC), N37 did not agree with the communications finding A. USN, CNIC N37 stated, "JRM [Joint Region Marianas] does not have ownership, authority or management responsibility over the DoD or Navy Phone systems resident on DoD Installations on Guam, to include the phone systems and location and number databases." USN, CNIC N37 went on to state, "The assignment of responsibility for enhancement to an E911 capability should be assigned to OPNAV N2/N6."

Our Response

Initially, we addressed the finding to the Commander of Joint Region Marianas, however, since the Navy, OPNAV N2/N6 is responsible for Navy network and communications investments through centralized coordination, we have changed the finding to be addressed to OPNAV N2/N6.

Finding B: Lack of Enhanced Guam Emergency Communications

The government of Guam has not implemented the Enhanced 911 system. The current government of Guam 911 system has reached the end of its life cycle for maintenance support. This condition occurred because the government of Guam used the *"Enhanced* 911 *Emergency Reporting System Fund"* for administrative personnel salaries instead of Enhanced 911 operations and maintenance. As a result, the government of Guam does not have an Enhanced 911 system with the automatic location and number information. The absence of the automatic location and number information may increase emergency response time, and risks to life, health, and safety of personnel.

Discussion

The 108th U.S. Congress created Public Law 108–494, Enhanced 911 Services on December 23, 2004. The law applies to all states of the U.S., the District of Columbia, Puerto Rico, the Northern Mariana Islands, and other territories or possessions of the U.S.

To assist the states and territories, the Public Law 108–494 has established Enhanced 911 implementation grants to provide for a matching requirement grant. Public Law 108–494 also put a the cap on the grant as it states, *"The Federal share of the cost of a project eligible for a grant under this section shall not exceed 50 percent."*

Currently, the government of Guam 911 system is not in compliance with the Enhanced 911 system requirements. The 911 system does not provide location information automatically if the calls originate from a commercial land line on military installations, wireless or VoIP to the emergency 911 Public Safety Answering Point's operator. The DOD is codependent upon the government of Guam's 911 system because calls are routed through Guam's emergency 911 Public Safety Answering Point's operator. In order for government of Guam operators to automatically recognize the 911 caller's location and telephone number from land line, wireless, and VoIP, the Public Safety Answering Points need to have various technologies such as a telephone switch that is able to recognize numbers, an Automatic Location Information database server with valid current addresses, database clients, equipment that can calculate caller locations from cell phone tower signals, and capability to identify the location based on a VoIP.

Emergency calls inside military installations from the commercial land lines route via the public network to the government of Guam Public Safety Answering Point. Currently, the Public Safety Answering Point's operator has to query the caller to determine the caller's telephone number and location information.

The current government of Guam Public Safety Answering Point does not have a hardware/software system to identify the location of a wireless caller. There is no Automatic Number Information and Automatic Location Information associated with wireless/cell phone calls and the Public Safety Answering Point's operator will query the caller in order to determine the Automatic Number Information and Automatic Location Information.

Emergency calls from internet-based VoIP phone routes via the global internet to the Public Safety Answering Point located in the U.S. mainland. Currently, government of Guam Public Safety Answering Points do not have hardware/software systems to identify the location of the caller based on VoIP. No Automatic Number Information and Automatic Location Information are associated with internet-based VoIP.

Additionally, emergency calls from a military resident residing off-base will only be routed through the government of Guam Public Safety Answering Point and will never be covered by any enhancement on the DOD bases.

A vendor was contracted to support the system with a Local Automatic Location Information database server through December 31, 2009. No additional support has been contracted and no parts or materials have been upgraded to the current system. According to the vendor, the government of Guam emergency system was installed in spring 2000 and has reached the end of its life cycle for maintenance support.

In enacting U.S. Public Law 108-494, Congress found that for the sake of our Nation's homeland security and public safety, a universal emergency telephone number (911) that is enhanced with the most modern and state-of-the-art telecommunications capabilities possible should be available to all citizens in all regions of the Nation. The purpose of Public Law 108-494 is to coordinate 911 services and Enhanced 911 services at the Federal, State, and local levels which includes U.S. territories such as Guam. The government of Guam has not upgraded the emergency system with the current technology. Furthermore, the system parts are no longer manufactured by the original vendor.

In effort to create a budget for maintenance and upgrades, the Guam Department of Administration (DOA) established Guam public laws to assess monthly charges to all Guam telephone/internet users.

Guam Public Law 25-55, Regular Session, Section 4 states:

> There is hereby created, separate and apart from all other funds of the government, the *"Enhanced* 911 *Emergency Reporting System Fund"* ("Fund")" to be administered by the Department of Administration. *The* Fund is created to provide a source of funding for costs associated with an Enhanced 911 Emergency Reporting System. All the 911 surcharges collected by each [Local Exchange Carrier] LEC and [Commercial Mobile *Radio* Service] CMRS provider shall be paid into the Fund. The money collected and interest earned shall be used by the [Guam Fire] Department (GFD) solely for Enhanced 911 equipment and system costs as described in this Act.

Guam Public Law 25–55, Section 7, Definition of "911" Equipment and System, part (a) states:

> (a) For purposes of this Act, *"enhanced* 911 *equipment'* means the equipment dedicated to the operation of, or use in, the establishment, operation or maintenance of an enhanced "911" system, including customer premises equipment, automatic number identification, or automatic location identification controllers and display units, printers, recorders, software and other essential communication equipment required by the system.

Guam Public Law 25–55, Section 7, Definition of "911" Equipment and System, part (d), states, *"An enhanced 911 system includes the personnel required to acquire, install, operate and maintain the system."*

Furthermore, Guam Public Law 28-44 mandates the Public Utilities Commission to monitor the collection of the surcharge to ensure accuracy, completeness, and timeliness of Enhanced 911 surcharge remittance made by the service provider.

The government of Guam does not have an Enhanced 911 system, however the Guam Fire Department is using the funds created for Enhanced 911 to pay their administrative salaries.

Finding Recap

The government of Guam has not implemented the Enhanced 911 system. The information of land lines, wireless and internet callers on the island of Guam does not automatically provide to the emergency 911 operator the Automatic Location Information of the callers as required by Enhanced 911. If the Public Safety Answering Point's operator does not verbally obtain the address location and phone number information of the caller, there may be an increase in emergency response time, and the risk to the life, health, and safety of the caller.

The current government of Guam 911 system installed in the year 2000 is unsupportable as it has reached the end of its life cycle for maintenance support. Due to the lack of guidance for proper fund allocation, the Public Utilities Commission has inadequately monitored the collection of the surcharges and the Guam Fire Department continues to apply the resources toward their administrative salaries. As a result, Guam's emergency response system has not been upgraded to an Enhanced 911 system.

Recommendation

Due to the codependency of a DOD Enhanced 911 system in conjunction with the government of Guam's 911 system, we recommend that the OPNAV N2/N6 work in conjunction with the government of Guam to install the Enhanced 911 system so off-base and on-base residence are ensured a timely response.

Management Comments on the Finding

The Under Secretary of the Navy (USN), Commander of Navy Installations Command (CNIC), N37 did not agree with the communications finding B. USN, CNIC N37 stated, "JRM [Joint Region Marianas] does not have ownership, authority or management responsibility over the DoD or Navy Phone systems resident on DoD Installations on

Guam, to include the phone systems and location and number databases." USN, CNIC N37 went on to state, "The assignment of responsibility for enhancement to an E911 capability should be assigned to OPNAV N2/N6."

Our Response

Initially, we addressed the finding to the Commander of Joint Region Marianas, however, since the Navy, OPNAV N2/N6 is responsible for Navy network and communications investments through centralized coordination, we have changed the finding to be addressed to OPNAV N2/N6.

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VIII. Other Areas of Concern

Background

During our site inspections in Guam and while reviewing collected information we noted several 'Other Areas of Concern' that fell outside the scope of this report but were of important note. The observations in this section are brief descriptions of those concerns.

Observation: Shortage of Labor Workers

The difficulty in attracting laborers to Guam to fill the demand for all construction jobs due to lower wage may cause a shortage of construction workers in Guam. The labor rate is significantly lower in Guam than the rest of the country. For example, an electrician would be paid approximately $30 per hour on the U.S. mainland instead of $15.45 per hour on the island of Guam. The lower wages for construction workers would present a problem of labor availability to fill the demand for construction jobs.

According to NAVFAC and the Census Bureau's population study, as of 2008, there were 5,600 Guam laborers on the island. Construction labor will need to increase to meet the peak demand of year 2013 to 15,913 construction workers. In addition to the construction workers, 20,095 indirect jobs are expected. NAVFAC projections indicate that there will be a shortage of available workers to fill the demand for labor jobs.

The National Defense Authorization Act for Fiscal Year 2010 H.R. 2647 – U.S. Public Law 111-84 – signed on January 6, 2009, which also addresses the Guam situation of wage control, workforce shortage, and employment of visa workers. The two major sections, 2833 and 2834, of the bill discuss the prevailing wage requirements for the workforce and the composition of workforce. U.S. workers will have access to direct job opportunities as Guam positions become available. The H2b visas holders will be eligible for employment; however, the contractors will have to submit a copy of the employment to the Secretary of Labor 60 days before start date. The employment offer will have to include a description of wages and other terms and conditions of employment. In addition, the contractors will have to offer the prevailing wage rates set for Guam by the Davis Bacon Act. The October 2008 letter from the governor of Guam supports these labor salaries.

However, as a result of the adaptive program management, the pace and sequencing of the projects may change. Notwithstanding, a shortage of labor will hinder the ability to achieve the reconstruction and improvements of Guam's infrastructure needed for the realignment.

Observation: Federal Aviation Administration Land Re-acquisition

In 1999/2000 land owned by the Federal Aviation Administration was returned to the Guam Chamorro Land Trust Commission and is considered ancestral land. Now, the

DOD has plans that would re-acquire 681 acres of that land back to use as part of the contiguous base along route 3, to form one cantonment; the planned education centers will be placed on the site. NAVFAC PAC has been in negotiations but the Chamorro Land Trust Commission would like to keep their historic land. As part of the Final EIS, the DOD has developed several alternative options that would have to be chosen if the land cannot be re-acquired. Any alternatives that do not include the Federal Aviation Administration Land would require a base configuration that would be non-contiguous to the Main Cantonment

Observation: Route 15 Firing Ranges

NAVFAC PAC is negotiating the procurement of additional lands from Chamorro Land Trust Commission where the Guam Racing Federation race track is located. The planned expansion will be for live-fire training ranges along route 15. However, Guam Public Law 30-06 designated that the property shall not be made available to DOD for the purpose of construction and operation of a firing range. In November 2011, the Navy filed a declaration with the court indicating that it will conduct a two-year supplemental review to include a new study to further examine alternative range locations. If the DOD is able to acquire the land, the DOD will work with Guam International Raceway officials as ranges are designed and constructed to minimize impacts to raceway facilities and seek compatible operational solutions that benefit both raceway patrons and the DOD.

Observation: Reduction of Marine Training Area

According to Marine Corps Forces, Pacific, there are training and readiness requirement shortfalls. The shortfalls stem from a reduction in training ranges from 52,000 acres in Okinawa to 10,900 acres in Guam. Marine Corps Forces, Pacific identified this as a significant issue because their mission requires properly trained Marines to perform and maintain core competencies. The Marines are looking into establishing training sites on other Marianas islands to fill the shortfall.

Observation: Federal Bureau of Investigations Request

The Federal Bureau of Investigations stated that most of their cases arise from public corruption and that it is a bigger issue on the island than counterterrorism. The Federal Bureau of Investigations representatives requested DOD IG to provide Defense Criminal Investigation Service contact information for agents in Hawaii. DOD IG provided the contact information.

Observation: Local Concerns about Radiation in the Harbor

Guam officials are demanding that the USEPA require the U.S. military to test for radiation contamination in Apra Harbor before the dredging and dumping of sediment is approved. Local news has alleged that U.S. Navy ships have leaked radioactive water in Apra Harbor. Media reports stated that given the nuclear history of the Mariana Islands, it is reasonable to expect that there is radioactive sediment in the harbor.

Appendix A. Scope and Methodology

We conducted this engineering review from May 2010 to April 2011. Our overall objective was to report on the development of program and contract infrastructure technical requirements for the Guam Realignment Program. Specifically, we reviewed the development of program and contract infrastructure requirements to include cost estimates and budgets. Our engineering review was conducted as part of the oversight of the Interagency Coordination Group of Inspectors General. We developed a composite program to break down the infrastructure technical requirements for the Guam Realignment Program into seven areas: port; roads; power generation, transmission, and distribution; drinking water; wastewater; solid waste; and communications.

We inspected the existing infrastructure facilities on location, and reviewed the engineering improvements and supporting documentation. For each of the infrastructure area, the scope of our engineering review included: infrastructure area requirements, statutory and regulatory responsibilities, inclusion in the composite program, cost estimates, budgeting, contract, schedule, and sustainment.

We conducted and reviewed each infrastructure requirement using the following six steps:

- Step 1: Infrastructure Requirements
  Research, document, and reference the Guam Realignment Infrastructure Requirements that have been proposed for this infrastructure element. Review the validation of each requirement. Include each requirement in our requirements matrix and link it to the requirement and validation documentation work paper. Include assessment review of the timing of the requirement. Also review the infrastructure element with a view to identifying requirements or better alternatives that have not been proposed.

- Step 2: Statutory and Regulatory Responsibilities
  Research, document, and reference the statutory and regulatory responsibilities and requirements for each of the government departments involved with the infrastructure. This work will form the criteria used in reviewing the inclusion or acceptance of each validated infrastructure requirement in Step 3.

- Step 3: Inclusion in Composite Program
  Determine whether each validated Guam Infrastructure requirement identified in Step 1 is included in the Composite Program; i.e., a government agency has accepted the responsibility. Research, document, and reference the accepted responsibility for each validated requirement. If a validated requirement has not been accepted, review the impact and recommend who “should” be responsible for it. Refer to Step 2 for criteria and link work papers to our requirements matrix.

- Step 4: Cost Estimate

  Research, document, and reference the cost estimates for each requirement. Review the methodology and adequacy of the cost estimates against appropriate criteria. Identify substantiating documentation, validations and/or certifications for the cost estimates.

- Step 5: Budget

  Research, document and reference the source of budgeting/funding. Review adequacy of budgeting/funding against the cost estimates. Review the impact of budgeting/funding for each requirement, including the impact of timing.

- Step 6: Contract

  Research, document, and reference the inclusion of each infrastructure requirement into a contractual vehicle. Review the contractual timeliness and inclusion of technical requirements in the statement of work.

We visited the following locations:

- San Francisco, CA: August 10, 2010 – August 12, 2010
  - DOD Office of Economic Adjustment coordination meeting with Guam Federal Stakeholders
  - Meet with Governor of Guam
- Hawaii: September 1, 2010 – September 3, 2010 & September 21, 2010 – September 24; 2010
  - Entranced and exited with:
    - Pacific Command
    - Commander of U.S. Pacific Fleet
    - Marine Force Command, Pacific
    - Naval Facilities Engineering Command, Pacific
- Guam: September 4, 2010 – September 21, 2010
  - Meet with Governor of Guam's Office
  - Site visit and interviews with each reviewed area

We contacted personnel from the following components and agencies:

Under Secretary of Defense for Acquisition, Technology and Logistics
Under Secretary of Defense for Policy
Under Secretary of Defense (Comptroller)/Chief Financial Officer
Under Secretary of Defense for Personnel and Readiness
Under Secretary of Defense for Intelligence
Commander, U.S. Pacific Command
Commander, U.S. Special Operations Command
Commander, U.S. Joint Forces Command
Assistant Secretary of Defense for Networks and Information Integration/Chief Information Officer
Assistant Secretary of the Air Force (Financial Management and Comptroller)
Director, Defense Finance and Accounting Service
Director, Defense Logistics Agency
Director, Joint Staff
Auditor General, Department of the Army
Naval Inspector General
Air Force Inspector General
DOD, Office of Economic Adjustment
Department of Agriculture
Department of Energy
Department of Homeland Security
Department of the Interior
Department of Transportation
- Maritime Administration
- Federal Highways Administration

Environmental Protection Agency
Federal Communications Commission
Governor of Guam
Government Accountability Office
Federal Bureau of Investigations
Joint Guam Program Office, HQ
Naval Facilities Command, HQ
Naval Facilities Command, Marianas
Naval Facilities Command, Pacific
Pacific Command
Marine Forces Command, Pacific
Commander of United States Pacific Fleet, IG
Joint Guam Program Office, Forward

We have removed the following section of the draft report from this report, based on management comments on the draft report or because of changes described below that have occurred since the initiation of this review:

Observation: Roads Cost - This observation compared the higher cost of road construction in Guam to road construction in Hawaii. The observation was removed because the cost of the road construction in Guam has changed. Since the initiation of our review, increased competition has been introduced into the Guam market reducing costs and making the cost comparable to Hawaii. For this reason we found it was necessary to remove this observation because the situation has become obsolete.

Finding: Drinking Water Cost Estimates – This finding stated that NAVFAC PAC did not provide an approved independent government cost estimate with backup data and supporting documents of architect-engineering services for drinking water projects, as required by FAR 36.605 and UFC 3-740-05. The removal of this finding was based on management comments. Originally, the plan was for NAVFAC PAC to act as the procuring agent for drinking water upgrades. As plans in Guam progressed and changed, NAVFAC PAC was no longer the procuring agent and instead Guam Water Authority became the procuring agent. The requirement of an independent government cost estimate only applies to federal procurement.

Finding: Wastewater Cost Estimate - This finding stated that NAVFAC PAC did not provide an approved independent government cost estimate with backup data and supporting documents of architect-engineering services for wastewater projects as required by FAR 36.605 and UFC 3-740-05. The removal of this finding was based on management comments. Originally, the plan was for NAVFAC PAC to be the procuring agent for wastewater upgrades. As plans in Guam progressed and changed, NAVFAC PAC was not longer the procuring agent and instead Guam Water Authority became the procuring agent. The requirement of an independent government cost estimate only applies to federal procurement.

Observation A: Solid Waste Contingency Plan – This Observation stated that the solid waste receiver had no plan as to where to place the solid waste in the event that Ordot Dump runs out of space prior to the completion of the Layon Landfill. Neither the receiver nor the government of Guam has developed a contingency plan in the event of a further delay to the opening of Layon Landfill. The observation was removed because Layon Landfill opened on August 31, 2011 and the need for a contingency plan has been overcome by events.

Appendix B. Memorandum of Condition Issued to Department of Transportation

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202-4704

SEP 0 8 2011

The Honorable Calvin L. Scovell, III
Inspector General
U.S. Department of Transportation
Washington, DC 20590-9898

Dear Mr. Scovell:

This memorandum of condition is to inform you of our finding addressing the Guam commercial port bulkhead and our suggestion concerning the matter.

The Technical Assessment Directorate performed an assessment of the development of program and contract infrastructure requirements to include the structural integrity of the commercial Port of Guam bulkhead. Enclosed is a copy of our draft report for your review and comment.

During our review, we identified that the Guam commercial port bulkhead is at significant risk of major structural failure that would directly impact the throughput of military shipments during the critical phase of the military realignment.

We assessed the current condition of the bulkhead and thoroughly reviewed various reports and surveys performed on the port. Our assessment found that the facade and underside of the bulkhead revealed cracks, fissures, separation, spalling, delamination, and numerous areas of exposed corroding rebar. We also found that chloride permeable concrete, which is self-destructing with high levels of electrical activity, mostly found on berth F-5, is leading to severe under-deck slab deterioration damage. In the underwater evaluation, liquefication and lateral spreading were determined to be the main causes of damage. As a result, boulders supporting the sheet piling have shifted and some tie-rods are no longer holding the bulkhead in place. Finally, the underwater inspection revealed that berth F-5's steel sheetpile bulkhead had no cathodic protection against corrosion by the anodes, while other berths had minimal protection.

Given the fact that the Guam commercial port bulkhead is at significant risk of major structural failure, we suggest that MARAD work with the Port Authority of Guam to implement the first priority in the approved November 2008 Memorandum of Understanding between MARAD and the Port Authority of Guam, stating *"Correct the deteriorated structural, utility and infrastructural facility deficiencies and upgrade said facilities to modern safe standard."*

We would welcome any comments regarding the disposition of this serious issue. If we receive your comments by September 30, 2011, we will be able to respond to them in our final report. If you consider any matters to be exempt from public release, please mark them clearly for our consideration.

If you have any questions or concerns, do not hesitate to contact Mr. James Howell at (703) 604-9096 or via e-mail at james.howell@dodig.mil. If you desire, we will provide a formal briefing on the results of our assessment.

Sincerely,

Randolph R. Stone, SES
Deputy Inspector General
Policy and Oversight

Enclosure:
As stated

Appendix C. Prior Coverage

During the last five years, the Government Accountability Office (GAO) has issued eight reports discussing Defense Infrastructure as it relates to Guam. Unrestricted GAO reports can be accessed over the internet at http://www.gao.gov. Additionally, in the past five years, the Guam Office of Public Accountability (OPA) issued two reports discussing Defense Infrastructure as it relates to Guam.

GAO

GAO-10-72, Defense Infrastructure Report, "DOD Needs to Provide Updated Labor Requirements to Help Guam Adequately Develop Its Labor Force for the Military Buildup," October 2009.

GAO-09-653, Defense Infrastructure Report, "Planning Challenges Could Increase Risks for DOD in Providing Utility Services When Needed to Support the Military Buildup on Guam," June 2009.

GAO-10-90R, Defense Infrastructure Memo," Defense Infrastructure: Guam Needs Timely Information from DOD to Meet Challenges in Planning and Financing Off-Base Projects and Programs to Support a Larger Military Presence," November 13, 2009.

GAO-09-500R, Defense Infrastructure Memo, "High-Level Leadership Needed to Help Guam Address Challenges Caused by DOD Related Growth," April 9, 2009.

GAO-08-1005, Defense Infrastructure Report, "Opportunity to Improve the Timeliness of Future Overseas Planning Reports and Factors Affecting the Master Planning Effort for the Military Buildup on Guam," September 2008.

GAO-08-427, Defense Logistics Report, "Navy Needs to Develop and Implement a Plan to Ensure That Voyage Repairs Are Available to Ships Operating near Guam when Needed," May 2008.

GAO-08-722T, Defense Infrastructure Report, "Planning Efforts for the Proposed Military Buildup on Guam Are in Their Initial Stages, with Many Challenges Yet to Be Addressed," May 2008.

GAO-07-1015, Defense Infrastructure Report, "Overseas Master Plans Are Improving, but DOD Needs to Provide Congress Additional Information about the Military Buildup on Guam," September 2007.

Guam OPA

OPA Report No. 10-06, “Guam Fire Department Enhanced 911 Emergency Reporting System Fund,” October 2010.

OPA Report No. 03-10, “Guam Fire Department Enhanced 911 Emergency Reporting System Fund,” December 2003.

Appendix D. Summary of Report Comments and Our Response

Department of Transportation, Maritime Administration Comments on Finding: Port Bulkhead

The USDOT, MARAD agreed with the Port Bulkhead finding. MARAD stated, "MARAD recognizes that structural deterioration to the bulkhead threatens the Port's capability to provide safe and sufficient capacity. MARAD will use every opportunity to emphasize that the bulkhead integrity should be the Port Authority's top priority."

MARAD has initiated actions to ensure that the structural deterioration to the bulkhead is identified. In their response they stated, "To focus on these actions, MARAD has initiated an independent engineering review to evaluate the existing defects in Berths F-4, F-5, and F-6." MARAD went on to state that they expect to receive the independent engineering report in October. In addition, MARAD stated, "MARAD will ensure that the results of its independent review are appropriately considered in finalizing the Implementation Plan."

Our Response

The USDOT, MARAD comments are responsive and the actions meet the intent of the recommendation.

Naval Facilities Engineering Command, Pacific Comments on Finding: Drinking Water Cost Estimates

The NAVFAC PAC did not agree with the drinking water cost estimates finding. NAVFAC PAC stated, "NAVFAC PAC is not procuring the capital improvements for the water utility identified in this report and consequently the FAR would not apply. Additionally, NAVFAC PAC did prepare independent government cost estimates of sufficient detail and peer review to meet programming objectives of providing assistance in funding justification for the Government of Japan (GoJ) for the proposed capital improvements." NAVFAC PAC went on to state, "A private entity will be contracted on a long-term basis to meet DoD water service requirements, and during the lifetime of that service contract, the private entity will retain ownership of the capital improvements."

Our Response

NAVFAC PAC's comment on the drinking water finding was responsive and we agree with their reasoning and response. The documentation and plans indicated that the project was Military Construction (MILCON). Since, NAVFAC PAC is not the procurement agent, there is no finding.

Naval Facilities Engineering Command, Pacific Comments on Finding: Wastewater Cost Estimate

The NAVFAC PAC did not agree with the wastewater cost estimates finding. NAVFAC PAC stated, "NAVFAC PAC is not procuring the capital improvements for the wastewater utility identified in this report and consequently the FAR would not apply. Additionally, NAVFAC PAC did prepare independent government cost estimates of sufficient detail and peer review to meet programming objectives of providing assistance in funding justification for the Government of Japan (GoJ) for the proposed capital improvements." NAVFAC PAC went on to state, "Procurement of the capital improvements will be made directly by GWA [Guam Water Authority] through the Japan Bank of International Cooperation (JBIC). NAVFAC will not procure the capital improvements and thus this will not be a FAR procurement, but rather a GWA design build acquisition. The cost estimates were prepared as programming documents in order for the Japanese Ministry of Defense (MOD) to prepare budget requests to the GoJ Diet[†], so that funding could be secured for JBIC."

Our Response

NAVFAC PAC's comment on the wastewater finding was responsive and we agree with their reasoning and response. The documentation and plans indicated that the project was MILCON. Since, NAVFAC PAC is not the procurement agent, there is no finding.

The Under Secretary of the Navy, Commander of Navy Installations Command, N37 Comments on Finding A: Lack of Enhanced DOD Emergency Communications and Finding B: Lack of Enhanced Guam Emergency Communications

The Under Secretary of the Navy (USN), Commander of Navy Installations Command (CNIC), N37 did not agree with the communications findings A and B. USN, CNIC N37 stated, "JRM [Joint Region Marianas] does not have ownership, authority or management responsibility over the DoD or Navy Phone systems resident on DoD Installations on Guam, to include the phone systems and location and number databases." USN, CNIC N37 went on to state, "The assignment of responsibility for enhancement to an E911 capability should be assigned to OPNAV N2/N6."

Our Response

The USN, CNIC N37 comment on the communication findings was responsive and we agree with their response. Initially, we addressed the findings to the Commander of Joint Region Marianas, however, since the Navy, OPNAV N2/N6 is responsible for Navy network and communications investments through centralized coordination, we have changed our finding to be addressed to OPNAV N2/N6.

[†] Japan's legislative organ is the National Diet, a bicameral parliament.

Deputy Chief of Naval Operations, Information Dominance (N2/N6) Comments on Finding A: Lack of Enhanced DOD Emergency Communications and Finding B: Lack of Enhanced Guam Emergency Communications

The Deputy Chief of Naval Operations, Information Dominance (N2/N6) agreed with the communications findings A and B. The Deputy Chief of Naval Operations N2/N6 stated, "I recommend that the current resource sponsor for Guam 911/E911 services, Deputy Chief of Naval Operations, Fleet Readiness and Logistics, host a working group with key stakeholders (CNIC and OPNAV N2/N6) , to develop a transition strategy and plan . This working group should also assess the transfer of all other 911/8911 services and infrastructure to OPNAV N2/N6. The final product of the working group should be a Memorandum of Agreement, which addresses the scope of the transfer and clearly identifies and articulates the requirements and resources that will transition."

Our Response

The Deputy Chief of Naval Operations, Information Dominance (N2/N6) comments are responsive and the actions meet the intent of the recommendation.

Department of Transportation, Maritime Administration Comments

U.S. Department of Transportation
Maritime Administration

Memorandum

Subject: Draft Report on Assessment of the Program and Contract Infrastructure Technical Requirements Development for the Guam Realignment Program

Date: October 17, 2011

Reply to Attn. of:

From: David T. Matsuda
Maritime Administrator

To: Randolph R. Stone
Deputy Inspector General
Policy and Oversight
Department of Defense
Office of Inspector General

The U.S. Department of Transportation's Maritime Administration (MARAD) is working very closely with the Department of Defense's (DOD) Guam Joint Program Office, the Government of Guam and the USDA, to ensure the Federal funds are invested to meet DOD's need for a commercial port capable of accommodating the surge in volumes associated with the troop relocation. Our overall objective is to ensure the funds are invested in the best way to both improve the state of repair of the infrastructure and expand port capacity to handle increased volumes. This is a fine balance. We appreciate the draft report incorporating MARAD's previous comments on the key components of the Memorandum of Understanding between the Port Authority of Guam, Government of Guam and MARAD that are central to the project's management.

Finding and Response

Finding: Given the fact that the Guam commercial port bulkhead is at significant risk of major structural failure, the DOD IG will issue a memorandum of condition to USDOT, MARAD addressing the serious condition of the bulkhead. The memorandum will advocate that MARAD work with the Port Authority of Guam to implement the first priority of the Memorandum of Understanding between MARAD and the Port Authority of Guam, signed November 2008, stating, "*Correct the deteriorated structural, utility and infrastructural facility deficiencies and upgrade said facilities to modern safe standards.*"

Response: MARAD recognizes the importance of the Port of Guam to DOD with regard to its realignment program. Further, MARAD has been working with DOD's Guam Joint Program Office and the Government of Guam to address issues associated with the structural integrity of the Port's bulkhead. The DOD IG's work provides additional documentation of the issues and provides useful reinforcement of the need to ensure that appropriate actions are taken with regard to the Port's bulkhead. To focus these actions, MARAD has initiated

an independent engineering review to evaluate the existing defects in Berths F-4, F-5, and F-6. As noted in the DOD IG review, these issues have been described in numerous engineering analyses dating back to 1998. MARAD's intent in conducting the ongoing review is to obtain a current, independent site inspection to corroborate and update the actual condition, then make recommendations for repair/replacement as required to have a structurally sound bulkhead. MARAD expects to receive the independent engineering report in October and can subsequently share a copy with DOD IG.

While the Memorandum of Understanding established under the authority of P.L. 110-417 outlined responsibilities among MARAD and the Port Authority of Guam, it is important to emphasize the DOD IG report's recognition that the Port of Guam is, "solely responsible for the operation and maintenance of the Port." MARAD is working with the Port and Government of Guam to finalize the current Implementation Plan, which addresses specifically the issue and cost of bulkhead repair/replacement. MARAD will ensure that the results of its independent review are appropriately considered in finalizing the Implementation Plan, which is expected to be completed and signed off by all the stakeholders before December 31, 2011.

MARAD recognizes that structural deterioration to the bulkhead threatens the Port's capability to provide safe and sufficient capacity. MARAD will use every opportunity to emphasize that the bulkhead integrity should be the Port Authority's top priority.

Department of the Navy Comments

DEPARTMENT OF THE NAVY
OFFICE OF THE ASSISTANT SECRETARY
(RESEARCH, DEVELOPMENT AND ACQUISITION)
1000 NAVY PENTAGON
WASHINGTON DC 20350-1000

October 7, 2011

MEMORANDUM FOR INSPECTOR GENERAL, DEPARTMENT OF DEFENSE

SUBJECT: Department Of Defense Inspector General Draft Report, Assessment of the Program and Contract Infrastructure Technical Requirements Development for the Guam Realignment Program (Project No. D2010-D000PT-0212.000)

This memorandum forwards the Department of Navy (DoN) responses to subject draft report. Attachment (1) provides detailed comments from Naval Facilities Engineering Command regarding the recommendations entitled Drinking Water Cost Estimate and Wastewater Cost Estimate. Attachment (2) provides detailed comments from Commander, Navy Installations Command regarding recommendations entitled DOD Emergency Communications and Guam Emergency Communications. Attachment (3) provides additional comments from the Assistant Secretary of the Navy (Energy, Installations and Environment) and includes recommendations and information regarding statements of fact contained in the subject draft report. The Navy's responses should be incorporated into the final DODIG report.

If you have any questions pertaining to this memo or its attachments, please refer them to [redacted].

Bruce A. Sharp
Director, Program Analysis and
Business Transformation
Deputy Assistant Secretary of the Navy
(Acquisition & Procurement)

Attachments:
As stated

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

7500
Ser 09IG/0659
23 SEP 2011

From: Commander, Naval Facilities Engineering Command, Pacific
To: Department of Defense, Office of the Inspector General
Via: Commander, Naval Facilities Engineering Command

Subj: RESPONSE TO DRAFT REPORT

Ref: (a) D-2010-D000PT-0212.000, Assessment of the Program and Contract Infrastructure Technical Requirements Development for the Guam Realignment Program, dated September 1, 2011

Encl: (1) Audit Response to Recommendations

1. I have reviewed reference (a). Enclosure (1) provides audit responses to the Drinking Water Recommendation and the Waste Water Recommendation included in reference (a).

2. The NAVFAC PAC technical point of contact is [redacted]. The NAVFAC PAC audit liaison point of contact is [redacted].

K. L. GREGORY

ATTACHMENT (1)

Final Report Reference

AUDIT RESPONSE

Department of Defense Office of Inspector General

D-2010-D000PT-0212.000

Assessment of the Program and Contract Infrastructure Technical Requirements Development for the Guam Realignment Program, dated September 1, 2011

DoDIG Drinking Water RECOMMENDATION: Naval Facilities Engineering Command, Pacific (NAVFAC PAC) did not provide an approved independent government cost estimate with backup data and supporting documents. The absence of a reliable government cost estimate places the Guam drinking water projects at risk for cost overruns, missed deadlines and potential performance shortfalls. We recommend that NAVFAC PAC prepare and approve an independent government cost estimate of architect-engineering services for Guam drinking water projects.

Deleted

NAVFAC RESPONSE: Non-Concur

NAVFAC PAC is not procuring the capital improvements for the water utility identified in this report and consequently the FAR would not apply. Additionally, NAVFAC PAC did prepare independent government cost estimates of sufficient detail and peer review to meet programming objectives of providing assistance in funding justification for the Government of Japan (GoJ) for the proposed capital improvements.

In the DODIG's report, it is noted that:

> NAVFAC PAC issued a contract to TEC, Inc. Joint Venture that included preparing the preliminary cost estimates for a water utility study. NAVFAC PAC used these cost estimates in preparing Military Construction Program documents (DD Forms 1391) for all drinking water projects. However, NAVFAC PAC did not prepare an independent government cost estimate with backup data and supporting documents as required by Federal Acquisition Regulation (FAR) 36.605 and UFC 3-740-05.

There will not be a procurement for the capital improvements by NAVFAC. A private entity will be contracted on a long-term basis to meet DoD water service requirements, and during the lifetime of that service contract, the private entity will retain ownership of the capital improvements. The FAR procurement will be for water service only, not capital improvements. The cost estimates were prepared as programming documents in order for the Japanese Ministry of Defense (MOD) to prepare budget requests to the GoJ Diet, so that funding could be secured for the Japan Bank of International Cooperation (JBIC). As part of the design-build process of the procurement, innovative designs may be considered to meet the water service requirement to develop 11.3 MGD

ATTACHMENT (1)

of drinking water capacity, and these innovative designs may deviate from the line item improvements listed in the 1391s as detailed design and value engineering proceeds. The risk of cost overruns and program execution will be borne by the private entity constructing the improvements in order to meet the water service requirements.

The DoD acquisition will be for drinking water service provided by the private entity constructing the capital improvements necessary to meet DoD's drinking water requirements

NAVFAC PAC submits that no further action is necessary and this recommendation be removed from the final report.

Deleted

DoDIG Wastewater Treatment RECOMMENDATION: NAVFAC PAC did not provide an approved independent government cost estimate with backup data and supporting documents. The absence of a reliable government cost estimate places the Guam wastewater projects at risk for cost overruns, missed deadlines and potential performance shortfalls. We recommend that NAVFAC PAC prepare and approve an independent government cost estimate of architect-engineering services for wastewater projects.

NAVFAC RESPONSE: Non-Concur

NAVFAC PAC is not procuring the capital improvements for the wastewater utility identified in this report and consequently the FAR would not apply. Additionally, NAVFAC PAC did prepare independent government cost estimates of sufficient detail and peer review to meet programming objectives of providing assistance in funding justification for the Government of Japan (GoJ) for the proposed capital improvements...

In the DODIG's report, it is noted that:

> NAVFAC PAC did not provide an approved independent government cost estimate with backup data and supporting documents of architect-engineering services for wastewater projects as required by FAR 36.605 and UFC 3-740-05. NAVFAC PAC used "preliminary" cost estimate data from a contractor's wastewater utility study prepared to support the EIS. As a result, the wastewater projects are at risk for incurring cost overruns, missed deadlines and potential performance shortfalls.

Procurement of the capital improvements will be made directly by GWA through the Japan Bank of International Cooperation (JBIC). NAVFAC will not procure the capital improvements and thus this will not be a FAR procurement, but rather a GWA design-build acquisition. The cost estimates were prepared as programming documents in order for the Japanese Ministry of Defense (MOD) to prepare budget requests to the

ATTACHMENT (1)

GoJ Diet, so that funding could be secured for JBIC. As part of GWA's design-build procurement, innovative designs may be considered to meet the wastewater collection and treatment requirements, and these innovative designs may deviate from the line item improvements listed in the 1391s as detailed design and value engineering proceeds. Through program management agreements with GoJ, the risk of missed deadlines and performance shortfalls will be mitigated by GWA participation in the program oversight, and the risk of cost overruns will also be borne between GWA and the Private Entity contracted for construction of the improvements.

There is no DoD acquisition associated with the capital improvements identified in the cost estimates. DoD's wastewater treatment requirements will be met by GWA, and DoD will remain a customer of GWA for these services.

These issues were discussed with the DODIG's technical team in a September 2010 meeting on Guam, and the full 1391s and BESSs were also provided in September 2010. An email with attachments to document the transmission of the cost estimates to the DODIG technical team is provided herein. Due to the unique and complex nature of the acquisition of the wastewater solution, it is likely that the discussions in September 2010 may not have clearly conveyed to the IG team the understanding of how the acquisition was to be structured and accomplished by GWA.

NAVFAC PAC submits that no further action is necessary and this recommendation be removed from the final report.

ATTACHMENT (1)

Final Report
Reference

UNCLASSIFIED

Previstar IMS CONOPS Comment Matrix

ITEM	#	SOURCE	TYPE	PAGE	PARA	LINE	COMMENT	RATIONALE	DECISION (A/R/M)
1.	1	USN, CNIC N37 [redacted]	C	iv	Communications; Rec A & B	N/A	Recommendations A & B to Communications assign Commander, JRM with responsibility to prepare, complete, and coordinate programs to upgrade to an E911 capability. CNIC N37 non-concurs with this recommendation. The assignment of responsibility for enhancement to an E911 capability should be assigned to OPNAV N2/N6.	JRM does not have ownership, authority or management responsibility over the DoD or Navy phone systems resident on DoD Installations on Guam, to include the phone systems and location and number databases.	
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Revised

D2010-0212 CNIC COMMENTS (CNIC N3)

ATTACHMENT (2)

Page 3 of 4

DEPARTMENT OF THE NAVY

THE ASSISTANT SECRETARY OF THE NAVY
(ENERGY, INSTALLATIONS & ENVIRONMENT)
1000 NAVY PENTAGON
WASHINGTON DC 20350 - 1000

ACTION MEMO

FOR: DEPUTY ASSISTANT SECRETARY OF THE NAVY (ACQUISITION & PROCUREMENT)

FROM: Roger M. Natsuhara, Principal Deputy Assistant Secretary of the Navy (EI&E) 4/4/08

SUBJECT: DOD Inspector General (DODIG) Report on Guam Realignment Program

- The attached document at TAB A is hereby forwarded to you as part of the Navy's response to the DODIG Report Titled "Assessment of the Program and Contract Infrastructure Technical Requirements Development for the Guam Realignment Program" (TAB B).

- TAB A contains comments from the Joint Guam Program Office and OASN (EI&E) as part of Navy's official response to DODIG.

RECOMMENDATION: DASN (A&P) incorporate TAB A into Navy's response to DODIG.

COORDINATION: None

Attachments:
As stated

Prepared By: [redacted]

ATTACHMENT (3)

**ASSISTANT SECRETARY OF THE NAVY (ENERGY, INSTALLATIONS AND ENVIRONMENT)
COMMENTS ON THE DEPARTMENT OF DEFENSE INSPECTOR GENERAL DRAFT
"ASSESSMENT OF THE PROGRAM AND CONTRACT INFRASTRUCTURE TECHNICAL
REQUIREMENTS DEVELOPMENT FOR THE GUAM REALIGNMENT PROGRAM"
DATED 8 SEPTEMBER 2011
PROJECT D2010-D000PT-0212.000**

GENERAL COMMENT: As noted in the draft report, both the Government of Japan and the United States Government have acknowledged that the 2014 deadline will not be met. Further, the draft report acknowledges that the Navy's implementation of Adaptive Program Management (APM) as described in the September 2010 Record of Decision (ROD) has adjusted the pace and sequencing of construction in support of the Guam Realignment. However, much of the discussion throughout the draft report centers on requirements or projections that are no longer valid given the relaxation of the aggressive construction timeline. The projections for water, wastewater, and electrical demand, as well as cargo throughput at the Port of Guam, are based on the assumption that a 2014 program timeline would have required a surge of more than 18,000 construction workers, resulting in a peak population of approximately 249,000 people on Guam. Altogether, political and fiscal realities, implementation of APM, and a slowdown induced by ongoing litigation will significantly mitigate the strain on Guam's infrastructure that is suggested in the draft report.

GENERAL COMMENT: The draft report uses incorrect terminology in describing agreements signed by the United States and Japan. The correct source documents are the May 2006 "United States-Japan Roadmap for Realignment Implementation" (Roadmap) and the February 2009 "Agreement Between the Government of the United States of America and the Government of Japan Concerning the Implementation of the Relocation of III Marine Expeditionary Force Personnel and Their Dependents From Okinawa to Guam" (Guam International Agreement).

ATTACHMENT (3)

Department of the Navy
Commander, Joint Region Marianas Comments

Final Report Reference

DEPARTMENT OF THE NAVY
JOINT REGION MARIANAS
PSC 455, BOX 211
FPO AP 96540-1000

7510
Ser J00G/ 0854
11 Oct 11

From: Commander, Joint Region Marianas
To: Office of the Inspector General,
(ATTN: Deputy Inspector General, Policy and Oversight)

Subj: ASSESSMENT OF THE PROGRAM AND CONTRACT INFRASTRUCTURE TECHNICAL REQUIREMENTS DEVELOPMENT FOR THE GUAM REALIGNMENT PROGRAM (PROJECT NO. D2010-D000PT-0212)

Ref: (a) DODIG Draft Report of 1 Sep 11

Revised

1. In response to reference (a), CJRM concurs with recommendations to prepare, complete, and coordinate programs for upgrade of the basic Emergency 911 system to an Enhanced 911 (E-911) system, and to work in conjunction with the Government of Guam to install the E-911 system, as encouraged in U.S. Public Law 108-494.

2. Factors which challenge immediate resolution include:

a. Engineering Expertise. Expertise is not available locally to fully determine the project's scope and develop a comprehensive engineering plan.

b. Funding. If the Region is to assume fiduciary responsibility for the system installation, advance budgetary planning is required as the telephone switches and equipment involved at emergency dispatch centers on both Andersen Air Force Base (AAFB) and Naval Base Guam (NAVBASE GU) require extensive upgrades to fully implement and integrate the E-911 functions of each required aboard the military bases.

c. Operational Culture. Interaction with local government officials and commercial carriers has disclosed that a perceived lack of immediate return on investment has negated a sense of urgency in investing funds for the installation of technology required for the full functionality of an effective E-911 system. Local government does not have the systems to support E-911 reporting requirements, which has a residual effect on functionality of Department of Defense system.

Attachment 2

Subj: ASSESSMENT OF THE PROGRAM AND CONTRACT INFRASTRUCTURE TECHNICAL REQUIREMENTS DEVELOPMENT FOR THE GUAM REALIGNMENT PROGRAM (PROJECT NO. D2010-D000PT-0212)

3. Points of contact for continued coordination of this matter include:

a. [redacted], who is my technical expert. [redacted].

b. [redacted], Deputy Operations Officer (JRM J3), who is my operational expert. [redacted].

c. [redacted], Region Inspector General (JRM J00G), who is my External Audit Liaison. [redacted].

P. J. BUSHONG

Copy to:
CNIC (IG)

Attachment 2

Department of Navy
Deputy Chief of Naval Operations, Information Dominance (N2/N6) Comments

DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
2000 NAVY PENTAGON
WASHINGTON, DC 20350-2000

2100
Ser N2N6/2U128002
27 Apr 12

From: Deputy Chief of Naval Operations, Information Dominance (N2/N6)
To: Assistant Secretary of the Navy (Research, Development and Acquisition)

Subj: RECOMMENDATION TO THE FINAL REPORT OF THE PROGRAM AND CONTRACT INFRASTRUCTURE TECHNICAL REQUIREMENTS DEVELOPMENT FOR THE GUAM REALIGNMENT PROGRAM

Ref: (a) DODIG-2012-052 report

1. Per reference (a), I have reviewed the Final Report of the Program and Contract Infrastructure Technical Requirements Development for the Guam Realignment Program.

2. The report identifies a lack of 911/ Enhanced 911 (E911) services in Guam, and recommends the transfer of 911/E911 resource sponsor responsibilities to OPNAV N2/N6. Additionally, it recommends that OPNAV N2N6 work with the government of Guam to install the E911 system to support off-base and on-base residences.

3. I recommend that the current resource sponsor for Guam 911/E911 services, Deputy Chief of Naval Operations, Fleet Readiness and Logistics, host a working group with key stakeholders (CNIC and OPNAV N2/N6), to develop a transition strategy and plan. This working group should also assess the transfer of all other 911/E911 services and infrastructure to OPNAV N2/N6. The final product of the working group should be a Memorandum of Agreement, which addresses the scope of the transfer and clearly identifies and articulates the requirements and resources that will transition.

for
KENDALL L. CARD
Vice Admiral, U.S. Navy

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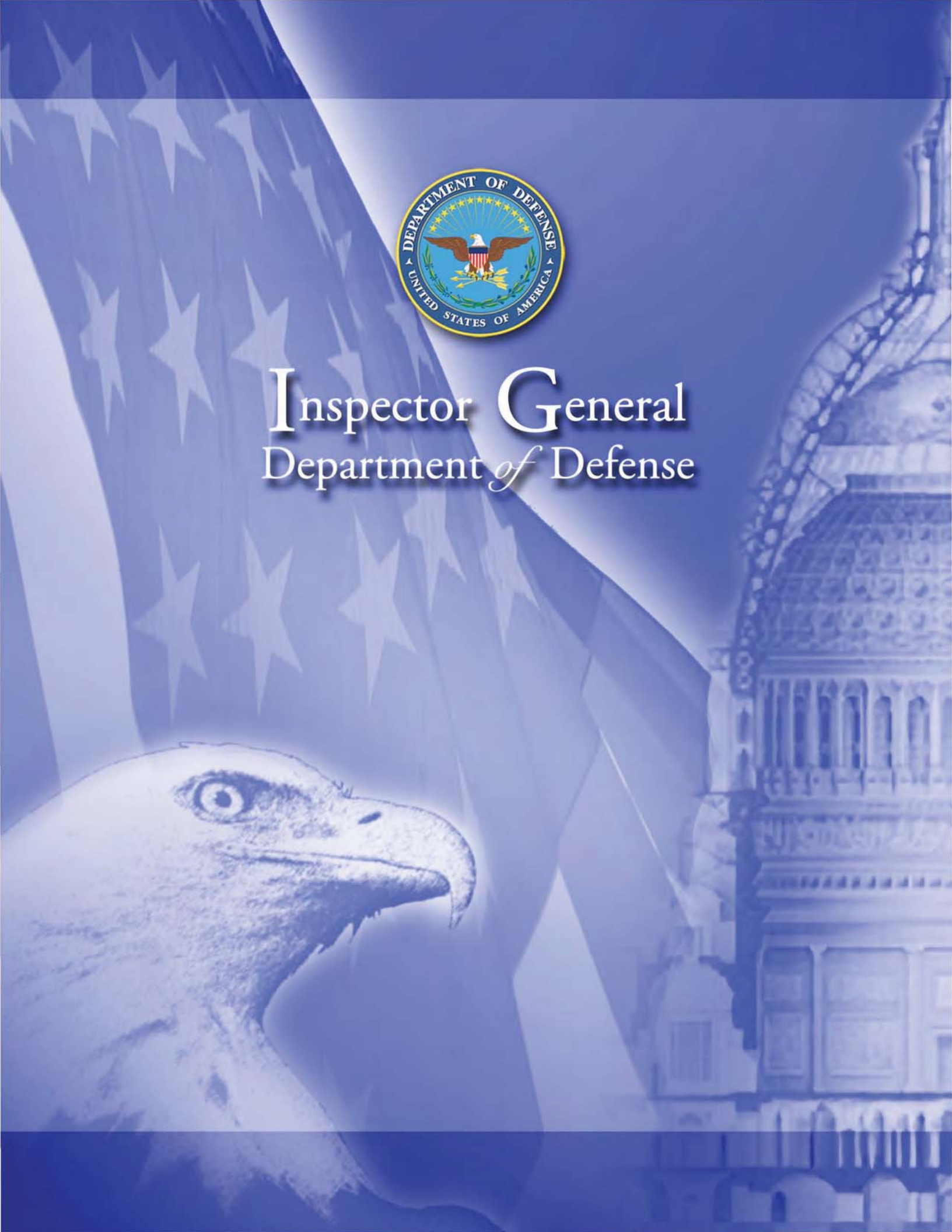
COMFLTCYBERCOM/COMTENTHFLT
SPAWAR PEO C4I (PMW 790)



Inspector General
Department of Defense