United States Government Accountability Office

Report to Congressional Committees

June 2013

# DEFENSE MANAGEMENT

# More Reliable Cost Estimates and Further Planning Needed to Inform the Marine Corps Realignment Initiatives in the Pacific

GAO-13-360

# Report Documentation Page

*Form Approved*
*OMB No. 0704-0188*



| 1. REPORT DATE | 2. REPORT TYPE | 3. DATES COVERED |
|---|---|---|
| **JUN 2013** | | **00-00-2013 to 00-00-2013** |

| 4. TITLE AND SUBTITLE | 5a. CONTRACT NUMBER |
|---|---|
| **Defense Management: More Reliable Cost Estimates and Further Planning Needed to Inform the Marine Corps Realignment Initiatives in the Pacific** | 5b. GRANT NUMBER |
| | 5c. PROGRAM ELEMENT NUMBER |
| 6. AUTHOR(S) | 5d. PROJECT NUMBER |
| | 5e. TASK NUMBER |
| | 5f. WORK UNIT NUMBER |
| 7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)<br>**U.S. Government Accountability Office,441 G Street NW,Washington,DC,20548** | 8. PERFORMING ORGANIZATION REPORT NUMBER |
| 9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) | 10. SPONSOR/MONITOR'S ACRONYM(S) |
| | 11. SPONSOR/MONITOR'S REPORT NUMBER(S) |

12. DISTRIBUTION/AVAILABILITY STATEMENT
**Approved for public release; distribution unlimited**

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

| 16. SECURITY CLASSIFICATION OF: | | | 17. LIMITATION OF ABSTRACT | 18. NUMBER OF PAGES | 19a. NAME OF RESPONSIBLE PERSON |
|---|---|---|---|---|---|
| a. REPORT | b. ABSTRACT | c. THIS PAGE | | | |
| **unclassified** | **unclassified** | **unclassified** | **Same as Report (SAR)** | **102** | |

June 2013

# DEFENSE MANAGEMENT

## More Reliable Cost Estimates and Further Planning Needed to Inform the Marine Corps Realignment Initiatives in the Pacific

GAO Highlights

Highlights of GAO-13-360, a report to congressional committees

### Why GAO Did This Study

DOD has stated that it intends to rebalance its defense posture toward the Asia-Pacific region. Japan hosts the largest U.S. forward-operating presence in this region; the majority of the U.S. forces in Japan are located in Okinawa. The United States and Japan planned to reduce the U.S. military presence on Okinawa by relocating approximately 9,000 Marines. DOD had originally planned to move the Marines only to Guam, but revised its plans in 2012 to include other locations in the Pacific. Congressional committees have directed GAO to examine DOD's initiatives in the Pacific, focusing on planning and costs. This report discusses the extent to which DOD has (1) developed a comprehensive cost estimate for the realignment of Marines, (2) planned for and synchronized other movements to coincide with the realignment, and (3) identified plans to sustain the force until all initiatives are implemented. To address these objectives, GAO reviewed relevant policies and procedures, reviewed and analyzed cost documents related to the realignment initiatives, interviewed DOD officials, and conducted site visits at U.S. military installations in the Pacific.

### What GAO Recommends

GAO recommends that DOD develop more reliable cost estimates and an integrated master plan for the realignment of Marines, develop a mechanism to share annual updates on the status of each, and identify sustainment requirements for affected facilities until realignment initiatives are complete. DOD generally agreed with GAO's recommendations.

View GAO-13-360. For more information, contact Brian Lepore at (202) 512-4523 or leporeb@gao.gov.

### What GAO Found

The Department of Defense's (DOD) preliminary cost estimate for its current realignment plan is not reliable, because it is missing costs and is based on limited data. According to DOD officials, DOD has not yet been able to put together a more reliable cost estimate because it will not have specific detailed information on the plan's requirements until the completion of environmental analyses and host nation negotiations. Currently, DOD estimates that it would cost approximately $12.1 billion to implement its realignment plan—not including the Australia segment of the realignment. Still, GAO found that DOD did not include some up-front practices that could have provided a more reliable estimate that are not dependent on the completion of the environmental analyses and host nation negotiations. Specifically, DOD omitted any costs associated with mobility support, a critical component of the implementation, from its cost estimate. Furthermore, although DOD based its cost estimate on several assumptions, there was no evidence DOD conducted analysis needed to determine the reliability of those assumptions. Without a reliable estimate, DOD will not be able to provide Congress and other stakeholders with the information Congress needs to make informed decisions regarding the realignment.

DOD has not developed an integrated master plan for its current realignment plan, and it has not developed a strategy to support the development and oversight of the Japanese construction projects associated with other realignment initiatives. DOD has taken initial steps to develop an integrated scheduling document based on currently known data, but indicated that specific requirements, schedules, and costs cannot be formalized in an integrated master plan until several studies and host nation negotiations are completed, which will take several years. Developing a master plan could enhance the management of the realignment by creating a systematic approach to planning, scheduling, and execution. In addition, DOD has not developed a strategy that identifies the resources needed to support the development of and oversight for these projects. According to best practices, a strategy identifies goals and resources and supports the implementation of a program. Without the information contained in an integrated master plan and a construction support strategy, Congress will be unable to make informed decisions about the order in which it needs to provide funding to support the realignment.

DOD has taken some steps to plan for the sustainment of U.S. forces on Okinawa and Guam, but it has yet to fully identify sustainment needs and costs for both locations during this period. At several installations on Okinawa, some of the infrastructure has severely deteriorated. DOD facilities planning guidance calls for updated facility master plans that capture requirements and propose solutions. On Guam, DOD has been maintaining an inventory of unoccupied family housing that could potentially be used for Marines relocating to Guam. However, DOD has not determined all the costs and benefits of maintaining this housing or the Marines' potential housing requirements—information needed to perform an economic analysis. Without an estimate of the sustainment requirements for Okinawa, the costs for maintaining housing, and the potential Marine requirements for housing on Guam, DOD will be unable to make informed decisions on whether continued investment in sustaining these facilities is warranted.

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DOD Department of Defense
DPRI Defense Policy Review Initiative

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June 11, 2013

Congressional Committees

U.S. economic and security interests are inextricably linked to developments in the arc extending from the Western Pacific and East Asia into the Indian Ocean and South Asia, creating a mix of evolving challenges and opportunities. The Department of Defense (DOD) has stated that it would tailor its global presence and posture by rebalancing toward the Asia-Pacific region, emphasizing existing alliances and expanding networks of cooperation with emerging partners throughout the region to ensure collective capability and capacity for securing common interests. One of the United States' most important allies in the Asia-Pacific region is Japan, which serves as the United States' most significant forward-operating location in the region, accommodating approximately 39,000 U.S. military personnel, 43,000 dependents, and 5,000 DOD civilian employees. The majority of this presence resides in Okinawa, an island prefecture south of the Japanese mainland that represents less than 1 percent of Japan's entire land mass. Although it is small, Okinawa currently hosts over 25 percent of the U.S. bases in Japan, and Okinawa's bases house approximately 8,000 Air Force personnel and up to 19,000 Marine Corps personnel on any given day. To balance the importance of this forward presence to both the United States and Japan with the stated need to reduce the burden on the Okinawa community, attempts to realign, consolidate, and increase the sustainability of this presence have been ongoing for nearly two decades. Most recently, after 6 years of unsuccessful attempts to implement a realignment plan to move approximately 8,000 Marines and 9,000 dependents from Okinawa to Guam, representatives from the U.S. and Japanese governments announced in a joint statement issued in April 2012, that they would adjust the plan.[1] The Marine Corps' current realignment plan would relocate over 9,000 Marines from Okinawa and

[1]*See* United States-Japan Security Consultative Committee, Joint Statement of the Security Consultative Committee (Apr. 26, 2012). Hereinafter referred to as the "April 2012 Statement", the entire statement is reprinted in app. II of this report.

realign Marine forces throughout the Pacific: 4,800 to Guam, 2,700 to Hawaii, and 2,500 to Australia.[2]

Conducting large-scale posture transformations during an era of increasing budgetary pressures and competition for scarce resources has proven to be a challenge for DOD. In May 2011, we reported that while DOD had originally estimated that the cost to the United States to execute the original plan to relocate 8,600 Marines and their dependents from Okinawa to Guam would be $4.2 billion, the Marine Corps estimated that it would actually likely cost the United States in excess of $13 billion to fully execute.[3] Congressional committees have discussed the uncertainty surrounding the cost and schedule information regarding the realignment.[4] Congress, in section 2207 of the National Defense Authorization Act for Fiscal Year 2012, and section 2832 of the National Defense Authorization Act for Fiscal Year 2013, restricted the use of certain DOD funds to implement the realignment of Marines until DOD provided to the congressional defense committees specified information related to its plans to move units to Guam and its overall posture in the Pacific.[5] In Senate Report 112-29, we were directed to conduct a detailed

[2]According to Marine Corps officials, these are approximate numbers and do not include any numbers specific to the continental United States; however, some units from the 9,000 relocating from Okinawa are expected to relocate to the continental United States.

[3]Although the document developed by representatives from the two governments concerning the original Guam realignment referred to approximately 8,000 personnel, the Record of Decision for the Guam and Commonwealth of Northern Mariana Islands Military Relocation referred to approximately 8,600 Marines. *See* Department of the Army and Department of the Navy, Record of Decision for the Guam and Commonwealth of the Northern Mariana Islands Military Relocation (September 2010).

[4]*See, e.g.,* H.R. Rep. No. 112-705, at 867-68, 969-70 (2012) (Conference Report, accompanying the National Defense Authorization Act for Fiscal Year 2013); S. Rep. No. 112-173, at 257, 258-59 (2012) (Senate Armed Services Committee report, accompanying a bill for the National Defense Authorization Act for Fiscal Year 2013); S. Rep. No. 112-29, at 8-11 (2011) (Senate Appropriations Committee report, accompanying the Military Construction and Veterans Affairs, and Related Agencies Appropriation Bill, 2012).

[5]*See* Pub. L. No. 112-239, § 2832 (2013) and Pub. L. No. 112-81, § 2207 (2011). Section 2832(e) of the National Defense Authorization Act for Fiscal Year 2013 superseded and repealed section 2207 of the National Defense Authorization Act for Fiscal Year 2012. In addition to the information to be provided by DOD, both provisions also required the submission to the congressional defense committees of a plan coordinated by all pertinent federal agencies, *see* § 2832(a)(4) and § 2207(a)(4), and contained certain exceptions to the restriction. *See* § 2832(c) and § 2207(c). Please see app. III of this report for full text of the respective sections in the Fiscal Years 2012 and 2013 National Defense Authorization Acts related to restrictions on the use of funding for Marine Corps realignment initiatives in the Pacific.

assessment of posture initiatives in Japan, Okinawa, and Guam, focused on planning, costs, long-term financial commitments, and other topics.[6] We were also directed, in Senate Report 112-173, to assess and identify the costs associated with the new plan to realign Marine Corps units to Guam, Australia, and Hawaii.[7] This report examines DOD's plans and the costs associated with the most significant of these posture initiatives, the realignment of Marines off Okinawa, and the effects of this initiative on the current and future landscapes of Okinawa and Guam. Specifically, we report on the extent to which DOD has (1) developed comprehensive cost estimates for the realignment of Marines off Okinawa; (2) planned for and synchronized other U.S. defense posture movements on Okinawa and Japan to coincide with the relocation of Marines off Okinawa; and (3) identified plans to sustain the force until the Marine Corps realignment and other initiatives are completed.

For each of our objectives, we reviewed relevant policies and procedures, and collected information by interviewing and communicating with officials from the Office of the Under Secretary of Defense (Policy) and Office of the Under Secretary of Defense (Comptroller); the Air Force; the Army; the Navy; the Marine Corps; the Joint Staff; United States Pacific Command; and the State Department. We conducted site visits at Pacific Command and its service components in Hawaii; U.S. Forces—Japan and its service components; and the U.S. Embassy in Tokyo, Japan; the U.S. Consulate on Okinawa; and military installations on Guam. To determine the extent to which DOD has developed comprehensive cost estimates for the realignment of the Marines, we reviewed DOD's cost estimating methodology and planning assumptions and compared them to the cost estimating guidance in GAO's Cost Estimating Guide. Furthermore, we interviewed relevant officials from the Marine Corps, Pacific Command, U.S. Forces–Japan, Joint Guam Program Office, Office of the Secretary of Defense, and Office of Economic Adjustment to determine the validity of the data. To determine the extent to which DOD has planned for and synchronized other U.S. defense posture movements in Okinawa and Japan to coincide with the Marine Corps realignment, we collected relevant planning documentation and interviewed Marine Corps officials in Washington, Honolulu, and Okinawa. Furthermore, we compared the data we received from each component within the Marine

[6]*See* S. Rep. No. 112-29, at 11 (2011).

[7]*See* S. Rep. No. 112-173, at 257 (2012).

Corps to one another, and the data we collected from the Pacific Command, U.S. Forces–Japan, Joint Guam Program Office, and the Office of the Secretary of Defense to determine the status of planning consistencies and synchronization. Finally, to determine the extent to which DOD has identified a strategy to sustain its current forces on Okinawa and Guam, we reviewed sustainment planning documentation, base master plans, and historical host nation support and U.S. sustainment data for Okinawa. We also interviewed relevant Marine Corps and Air Force officials in Okinawa to determine sustainment planning needs and the status of future sustainment funding requests. For Guam, we interviewed Navy officials to determine the extent to which they have planned for the sustainment of family housing on Guam, and we reviewed planning documentation and analyzed current DOD cost data collection methodologies used by the service.

We conducted this performance audit from November 2011 to March 2013, in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. Appendix I provides a more detailed description of our scope and methodology.

This report is one of a series of GAO reports on DOD's global defense posture initiatives. Since 2006, we have reported on issues related to DOD's overall global posture strategy and management practices, the military buildup on Guam, the transformation of United States Army and Navy posture in Europe, the transformation and consolidation of U.S. defense posture in South Korea and Japan, and the establishment of the United States Africa Command. Those reports make a number of recommendations to improve DOD's management of these efforts and the information about them that DOD makes available within the executive branch and to congressional committees. Most recently, in May 2011, we reported on U.S. defense posture in Asia, highlighting the need for additional cost information and methods for evaluating posture in that region. See the list of related GAO products at the end of this report.

## Background

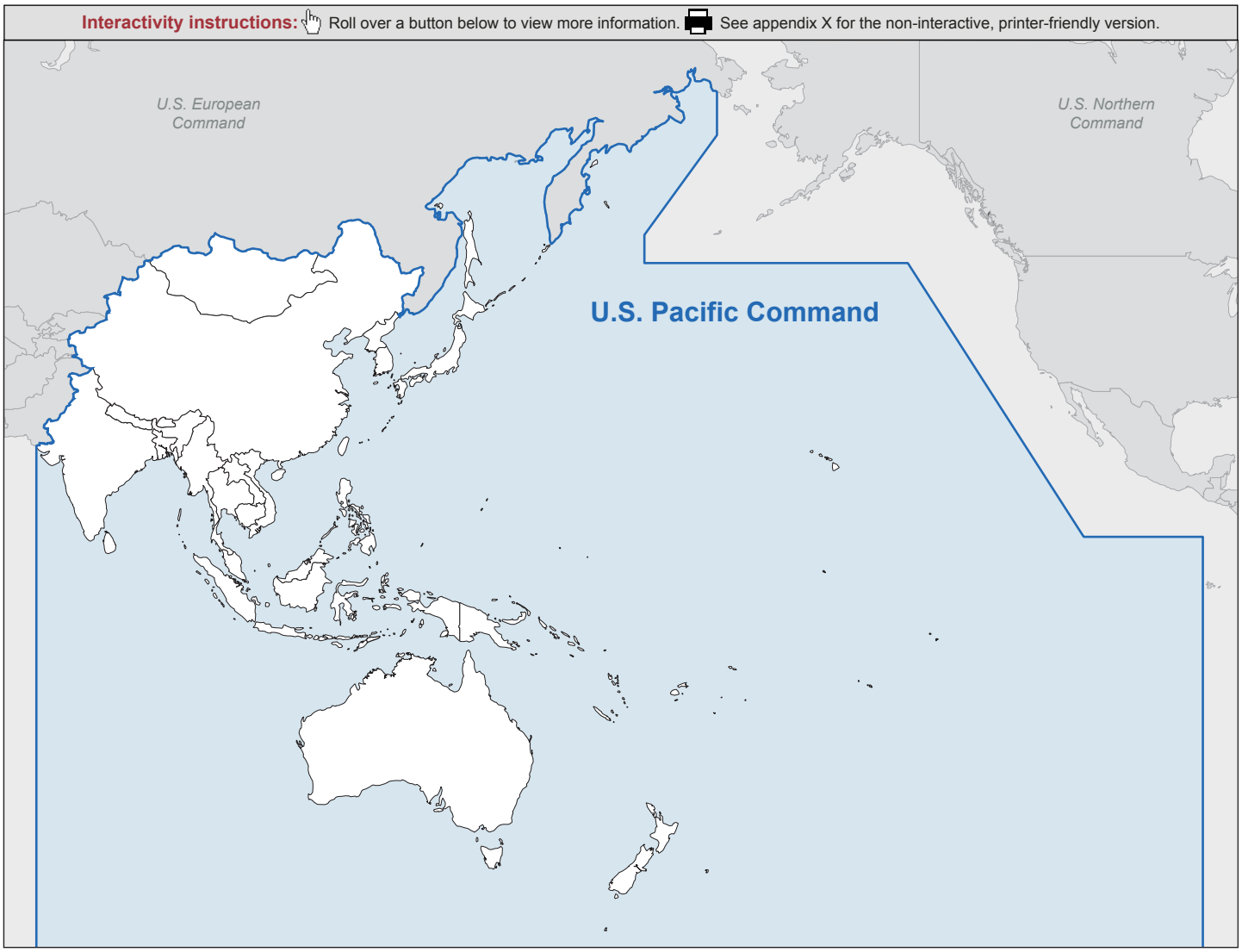
The senior U.S. military authority in the Pacific Area of Responsibility is the Commander of U.S. Pacific Command. Pacific Command is one of six U.S. geographic combatant commands. Pacific Command's area of responsibility spans roughly half the earth's surface and encompasses 36

countries, including Australia, China, India, Japan, the Philippines, and South Korea.[8] The Pacific Command is supported by four service component commands: U.S. Army Pacific; U.S. Pacific Air Forces; U.S. Marine Forces, Pacific; and the U.S. Pacific Fleet. Each component command is generally responsible for its service's actions and missions within the Pacific Command area of responsibility and is supported by subordinate commands, which help support the service's presence in the region. For example, U.S. Marine Forces, Pacific, is supported by the III Marine Expeditionary Force, a large Marine Corps unit forward deployed to Japan and other parts of Asia, which stands ready to conduct operations.[9] Also supporting Marines in the Pacific is U.S. Marine Corps Installations, Pacific, which is responsible for the command and control of all Marine Corps installations in the region. In Japan, U.S. Forces–Japan—a subunified command under the Pacific Command—supports U.S. forward presence and ensures bilateral defense cooperation with the government of Japan. According to U.S. Forces–Japan, it focuses on war planning, the conduct of joint/bilateral exercises and studies, administering the Status of Forces Agreement, improving combat readiness, and enhancing the quality of life of military and DOD civilian personnel and their dependents. See figure 1 for information on major U.S. forces and installations in Japan, Okinawa, and Guam; approximate distances between Guam and other strategic locations in the Pacific; and U.S. strategic allies in the Pacific.

[8]The Unified Command Plan establishes combatant commanders' missions and geographic responsibilities. Combatant commanders link operational military forces to the Secretary of Defense and the President. The Secretary of Defense deploys troops and exercises military power through the combatant commands.

[9]The III Marine Expeditionary Force is a formation of multiple Marine units forward-deployed in Japan and Asia to support the Treaty of Mutual Cooperation and Security between the United States and Japan, and other alliance relationships of the United States. It is able to deploy rapidly and conduct operations across the spectrum from humanitarian assistance and disaster relief to amphibious assault and high-intensity combat.

**Figure 1: U.S. Defense Posture in Asia**




Source: GAO analysis of DOD and other federal agency data.

U.S. Forces | Travel distances | U.S. allies

## Realignment of U.S. Forces in the Pacific

The U.S.-Japan alliance dates back to the U.S. occupation of Japan after its defeat in World War II. The alliance is supported by the 1960 Treaty of Mutual Cooperation and Security[10] and a related Status of Forces Agreement[11] which today covers about 51,200 U.S. servicemembers, 5,400 DOD civilian employees, and 42,200 dependents in Japan, as of January 2013. As a result of the treaty, the Status of Forces Agreement, and related agreements, U.S. forces have the use of nearly 90 installations throughout both mainland Japan and Okinawa, for the purpose of contributing to the security of Japan and the maintenance of international peace and security in the region. Under the treaty and Status of Forces Agreement, the United States is granted the use of facilities and areas in Japan, with specific facilities and areas to be determined by the two governments. Generally, according to U.S. Forces–Japan officials, Japan constructs the facilities, while the United States bears the costs of maintenance—with each facility typically having a 50-year service life.

One issue that remains at the forefront of the alliance is the realignment of U.S. forces in Japan. Efforts to realign U.S. forces in Japan date back to 1995. Discontent among the people of Okinawa regarding the U.S. military presence led to the establishment of the Special Action Committee on Okinawa in November 1995 by the Security Consultative Committee, a bilateral group of high-ranking U.S. and Japanese officials involved with overall bilateral policy regarding the security relationship between the two countries.[12] In December 1996, this committee approved the final report of the Special Action Committee on Okinawa, which included recommendations on how to consolidate, realign, and reduce U.S. facilities and areas and adjust the operational procedures of U.S. forces in Okinawa in order to reduce the burden on local communities.[13]

[10]*See* Treaty of Mutual Cooperation and Security, U.S.-Japan, Jan. 19, 1960, 11 U.S.T. 1632.

[11]*See* Agreement Under Article VI of the Treaty of Mutual Cooperation and Security: Facilities and Areas and the Status of United States Armed Forces in Japan, U.S.-Japan, Jan. 19, 1960, 11 U.S.T. 1652.

[12]The Security Consultative Committee is made up of the U.S. Secretaries of State and Defense and Japan's Ministers of Foreign Affairs and Minister of State for Defense.

[13]GAO has performed a review of U.S. realignment efforts under this agreement. *See* GAO, *Overseas Presence: Issues Involved in Reducing the Impact of the U.S. Military Presence on Okinawa*, GAO/NSIAD 98-66 (Washington, D.C.: Mar. 2, 1998).

Realignment efforts did not gain much traction until the end of 2002, when the United States and Japan launched an ambitious series of realignment initiatives called The Defense Policy Review Initiative (DPRI).[14] Under DPRI, both countries were seeking to reduce the U.S. footprint in Okinawa, enhance interoperability and communication, and better position U.S. forces to respond to a changing security environment. The major realignment initiatives under DPRI are outlined in the United States—Japan Roadmap for Realignment Implementation (2006 Roadmap) which was issued in May 2006 by the Security Consultative Committee,[15] reaffirmed and implemented in part in a 2009 bilateral agreement,[16] and recently adjusted in the April 2012 statement. There are four initiatives under DPRI that are specific to the Marine Corps and its current plans to realign its forces in the Pacific:

1. Futenma Replacement Facility,
2. Realignment of Marine Corps units,
3. Okinawa Consolidation, and
4. Carrier Air Wing Move from Atsugi to Iwakuni.

## Futenma Replacement Facility

As envisioned by the 2006 Roadmap, the U.S. government would return to Japan the Marine Corps Air Station Futenma in Okinawa once the government of Japan constructed a fully operational replacement facility (Futenma Replacement Facility), including a runway, in a northern, less populated area of the island.[17] This facility was originally projected to be complete by 2014. According to Marine Corps officials, some facilities have been constructed at the planned site of the realignment—Camp

[14]GAO has done work on posture issues related to Japan. See GAO, *Defense Management: Comprehensive Cost Information and Analysis of Alternatives Needed to Assess Military Posture in Asia*, GAO-11-316 (Washington, D.C.: May 25, 2011).

[15]United States-Japan Security Consultative Committee Document, U.S.-Japan Roadmap for Realignment Implementation (May 1, 2006). This document provided implementation details for realignment initiatives described in United States-Japan Security Consultative Committee Document, U.S.-Japan Alliance: Transformation and Realignment for the Future (Oct. 29, 2005).

[16]*See* Agreement Concerning the Implementation of the Relocation of III Marine Expeditionary Force Personnel and Their Dependents from Okinawa to Guam, U.S.-Japan, Feb. 17, 2009, Temp. State Dep't No. 09-89.

[17]The plan to return Marine Corps Air Station Futenma to the Government of Japan dates back to 1997. See *Special Action Committee on Okinawa Final Report* (Aug. 5, 1997).

Schwab; however, the construction of the replacement runway has stalled.[18] Those same officials stated that before construction of the runway can proceed, the government of Japan has to issue an environmental impact statement for the construction of the runway, and the Okinawa government has to approve a landfill permit. According to DOD officials, in December 2012, Japan's Ministry of Defense submitted the environmental impact statement to the Governor of Okinawa. Subsequently, in March 2013, DOD officials informed us that the government of Japan submitted the application for the landfill permit to the Governor of Okinawa.[19] Figure 2 shows the planned location of the runway at Camp Schwab. The Marine Corps estimates that its Operation and Maintenance and Procurement costs for the Futenma Replacement Facility will be approximately $178 million over the next 5 years; however, this estimate does not constitute the total cost to the United States and, according to Marine Corps officials, has not been approved.

[18]According to Marine Corps documentation, the construction of 10 projects at Camp Schwab has been completed.

[19]Subsequent to the completion of the audit work on this engagement, in April 2013, DOD announced the completion and public release of the bilateral Okinawa Consolidation Plan that, according to DOD officials, stated that the best-case scenario for the completion of the runway is in 2022 or later.

**Figure 2: Planned Location of Replacement Runway at Camp Schwab**


Line on the base bowling alley at Camp Schwab shows how high fill material must rise to build the runway for the Futenma Replacement Facility. GAO extended the line to show the impact of building the runway on surrounding facilities and the nearby bay.

Source: GAO.

Because of the uncertainties surrounding the construction of the runway at Camp Schwab and following direction from the Senate Armed Services Committee, DOD has examined the feasibility of relocating air assets from Marine Corps Air Station Futenma to Kadena Air Base, as an

alternative to constructing the Futenma Replacement Facility at Camp Schwab.[20] However, DOD concluded that it was not a viable solution. In the April 2012 statement, the representatives from the United States and Japan reconfirmed their view that the Futenma Replacement Facility remains the only viable solution that has been identified to date.[21] In addition, the April 2012 statement noted that both governments expressed their commitment to contribute to refurbishment projects at Marine Corps Air Station Futenma to sustain safe mission capability until the Futenma Replacement Facility is fully operational and to protect the environment. According to Marine Corps officials, as of February 2013, a list of refurbishment projects to be funded by the U.S. government and the government of Japan has been identified, and planning for these projects is expected to be completed by April 2013. Though time frames may vary, Marine Corps officials expect work on these projects could start sometime in 2014.

## Realignment of Marine Units

After several years of planning to move approximately 8,000 Marines off Okinawa to Guam, DOD revised its plan in April 2012 to relocate some units from Okinawa to Guam, Hawaii, and the Continental United States. Additionally, the plan includes establishing a rotational Marine Corps presence in Australia, a move that, according to DOD officials, stems from a November 2011 agreement between the United States and Australia. To date, the Marine Corps has established a small presence on Guam to prepare for the Marine realignment, but it has not yet relocated any units from Okinawa to Guam, nor has it been able to reduce its presence on Okinawa as anticipated under the April 2012 statement.[22] According to Marine Corps officials, Marines cannot be relocated until

[20]Kadena Air Base is a United States Air Force base in the towns of Kadena and Chatan and the city of Okinawa, in Okinawa Prefecture, Japan. Kadena Air Base is the hub of U.S. airpower in the Pacific, and home to the United States Air Force's 18th Wing and a variety of associate units. In 2011, the Senate Armed Services Committee directed the Secretary of Defense to study the feasibility of relocating Air Force assets at Kadena Air Base and moving Marine Corps aviation assets from Futenma to Kadena, in lieu of building a replacement facility at Camp Schwab. *See* S. Rep. No. 112-26, at 242 (2011).

[21]*See* United States-Japan Security Consultative Committee, *Joint Statement of the Security Consultative Committee* (Apr. 26, 2012).

[22]The Security Consultative Committee statement noted that relocation of Marine Corps units from Okinawa was to occur when appropriate facilities were available to receive them, to be completed as soon as possible while ensuring operational capability throughout the process. *See id.*

suitable replacement facilities are constructed and made operationally capable on Guam and in other locations.

The Marine Corps' current plan is to build facilities on Guam and live-fire training ranges on Guam, Tinian, and Pagan—members of the Mariana Islands—to support the realignment of approximately 5,000 personnel (mostly rotational) and any dependents to Guam.[23] Before any Marines can relocate to Guam, DOD must examine the environmental effects of its proposed actions, pursuant to the National Environmental Policy Act of 1969.[24] To address this requirement in the past, DOD performed an environmental review of certain proposed actions under the original 2006 realignment plan and released the Guam and Commonwealth of the Northern Mariana Islands Military Relocation Final Environmental Impact Statement in July 2010.[25] In September 2010, the Department of the Navy announced in the record of Decision for the Guam and Commonwealth of the Northern Mariana Islands Military Relocation that it will proceed with the Marine Corps realignment, but deferred the selection of a specific site for a live-fire training range complex on Guam pending further study.[26] In February 2012, the Department of the Navy gave notice that it intended to prepare a Supplemental Environmental Impact Statement to evaluate locations for a live-fire training range complex on Guam.[27] In October 2012, as a result of the current realignment plan, the Department of the Navy gave notice that it was planning to expand the

[23]Rotational refers to Marine Corps units that are deployed for periods of approximately 6 months to any given location.

[24]Pub. L. No. 91-190 (1970) (codified as amended at 42 U.S.C. §§ 4321-4347). Under the act, federal agencies must assess the effects of major federal actions—those they propose to carry out or to permit—that significantly affect the environment. The act has two principal purposes: (1) to ensure that an agency carefully considers detailed information concerning significant environmental impacts and (2) to ensure that this information will be made available to the public.

[25]Department of the Navy, *Final Environmental Impact Statement: Guam and CNMI Military Relocation: Relocating Marines from Okinawa, Visiting Aircraft Carrier Berthing, and Army Air and Missile Defense Task Force* (July 2010).

[26]The Departments of the Navy and Army released a Record of Decision in September 2010, which announced their decision to proceed with the Guam and the Commonwealth of the Northern Mariana Islands Military Relocation. *See* Departments of the Navy and Army, *Record of Decision for Guam and CNMI Military Relocation* (Sept. 2010); 75 Fed. Reg. 60,438 (Sept. 30, 2010).

[27]*See* 77 Fed. Reg. 6,787 (Feb. 9, 2012).

scope of the ongoing Supplemental Environmental Impact Statement evaluating locations for the live-fire training range complex, to determine the potential environmental consequences from construction and operation of a main cantonment area, including family housing, and associated infrastructure on Guam to support the recently revised realignment plan.[28] According to Marine Corps officials, the Supplemental Environmental Impact Statement is expected to be completed by 2014, and it is anticipated that a final decision on all matters being evaluated will be released by 2015.[29] The Joint Guam Program Office, which was established by the Navy in August 2006, leads this effort.

DOD, using costing data derived from previous cost estimates for Guam, estimates that the total cost to relocate Marines to Guam as part of the realignment plan will be $8.6 billion in fiscal year 2012 dollars. According to DOD officials, the government of Japan is expected to provide approximately $3.1 billion for this realignment.[30] As of June 2012, the United States had received $833.90 million from the Government of Japan for this initiative; however, provisions in the National Defense Authorization Acts for Fiscal Years 2012 and 2013 restricted the use of funds provided by the government of Japan to implement the realignment from Okinawa to Guam until DOD provided certain information to the

[28]*See* 77 Fed. Reg. 61,746 (Oct. 11, 2012).

[29]A provision in the National Defense Authorization Act for Fiscal Year 2013 prohibited DOD from establishing a live-fire training range complex in Guam (including any construction or lease of lands related to such establishment) in coordination with the realignment of forces in the Pacific until the Secretary of Defense certifies to the congressional defense committees that there is a military training and readiness requirement for the complex. *See* Pub. L. No. 112-239, § 2831. Section 2831 is reprinted in app. III of this report.

[30]Under a 2009 agreement implementing the 2006 Roadmap, the government of Japan had agreed to provide up to $2.8 billion in fiscal year 2008 dollars in direct cash contributions to support the Guam relocation, subject to certain U.S. funding. *See* Agreement Concerning the Implementation of the Relocation of III Marine Expeditionary Force Personnel and Their Dependents from Okinawa to Guam, U.S.-Japan, art. I, ¶ 1, Feb. 17, 2009, Temp. State Dep't No. 09-89. In its April 2012 statement, the Security Consultative Committee reaffirmed that Japan's financial commitment would be these direct cash contributions. According to DOD officials, the contributions would amount to roughly $3.1 billion in fiscal year 2012 dollars.

congressional defense committees.[31] Although the National Defense Authorization Act for Fiscal Year 2013 restricts the use of funds, it contains exceptions allowing DOD to use funds to complete additional environmental analysis for proposed actions on Guam or Hawaii, initiate planning and design of construction projects at Andersen Air Force Base and on Andersen South, and to carry out certain military construction projects as specified in the act.[32]

As part of the current realignment plan, DOD plans to move some Marine Corps units to Hawaii and the continental United States. As of March 2013, the Marine Corps has not moved any units from Okinawa to either Hawaii or the continental United States. Additionally, DOD plans to establish a rotational presence of up to a 2,500 person Marine Air Ground Task Force in an undetermined location in Australia. As an initial step toward establishing a Marine Air-Ground Task Force in Australia, the Marine Corps rotated approximately 200 Marines from Fox Company, 2nd Battalion, 3rd Marine Division from their home station at Marine Corps Base Hawaii, Kaneohe Bay, to Darwin, Australia for a 6-month rotation from April to September 2012.

## Okinawa Consolidation

The April 2012 statement noted that the United States is committed to returning lands on Okinawa to Japan as designated Marine Corps forces are relocated and as facilities become available for units and other tenant activities relocating to other locations on Okinawa.[33] Figure 3 depicts all U.S. installations on Okinawa and identifies which installations have been designated to be partially or fully returned to Japan according to the April 2012 statement. According to the statement, the two governments will jointly develop a consolidation plan, including sequencing of realignment steps, for facilities and locations remaining in Okinawa by the end of

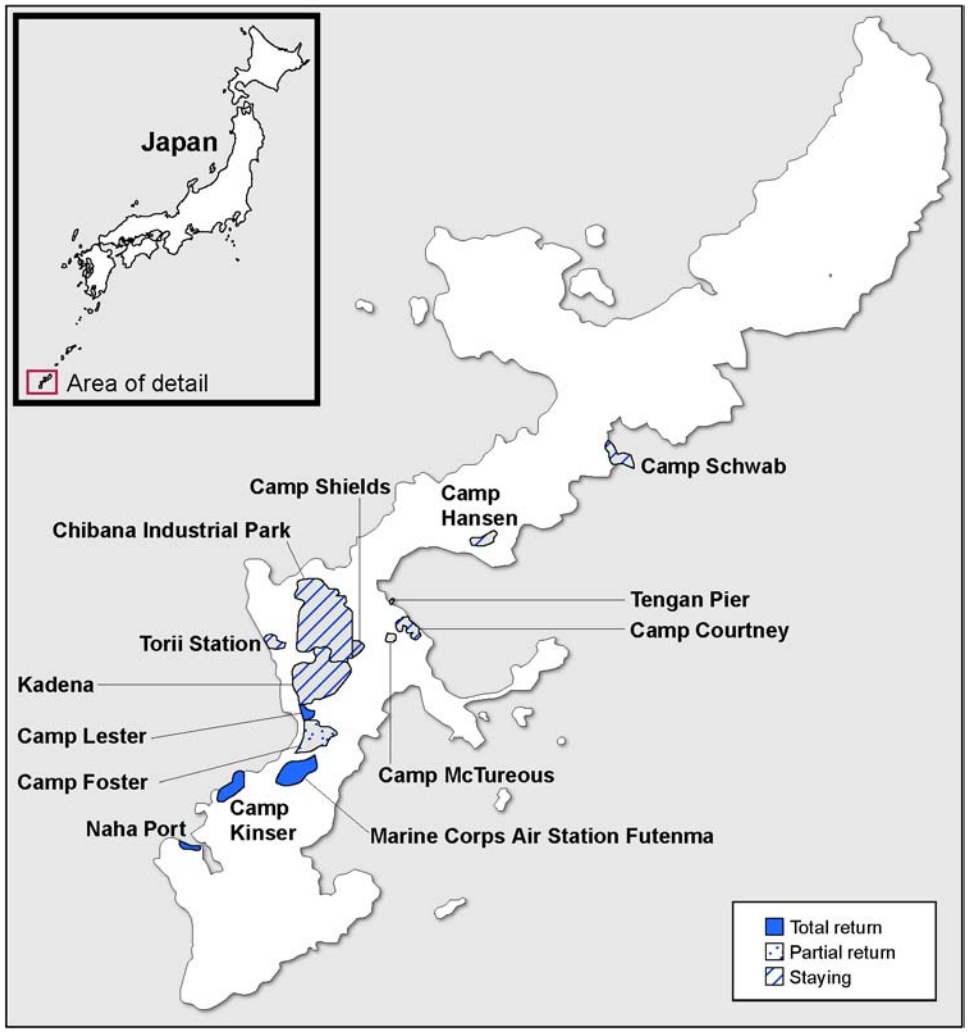
[31] *See* Pub. L. No. 112-239, § 2832 and Pub. L. No. 112-81, § 2207. The provisions similarly restrained the use of funds authorized to be appropriated by the respective National Defense Authorization Acts and contained certain exceptions. *See id.* See app. II for the text of these provisions.

[32] *See* § 2832(c).

[33] The facilities that would be fully returned to Japan are Marine Corps Air Station Futenma, Camp Kinser, Naha Port, Kuwae Tank Farm, and Camp Lester. Camp Foster would be partially returned.

2012.[34] DOD officials said that they have not been able to estimate U.S. costs for the consolidation, because consolidation plans remain under development.

**Figure 3: Okinawa Consolidation Plan**




Source: DOD (data); Map Resources (map).

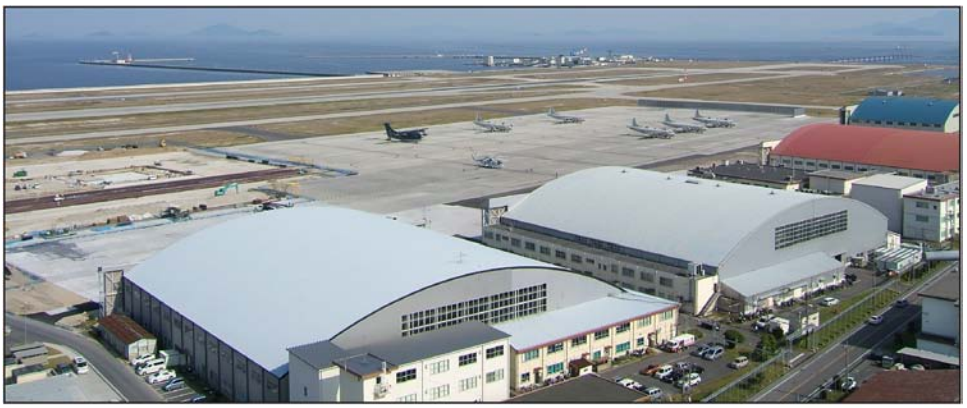
[34]Subsequent to the completion of the audit work on this engagement, in April 2013, DOD announced the completion and public release of the bilateral Okinawa Consolidation Plan for forces remaining on Okinawa.

## Carrier Air Wing Move from Atsugi to Iwakuni

Carrier Air Wing 5, a Navy unit paired with the aircraft carrier USS George Washington, is currently located at Naval Air Station Atsugi (about 35 miles southwest of Tokyo, Japan). On the basis of the 2006 Roadmap, Carrier Air Wing 5 would move its headquarters and fixed-wing flight operations from Atsugi to Marine Corps Air Station Iwakuni, which is approximately 500 miles away. As a result, Marine Corps officials expect that when this initiative is complete, the air station will have increased in size from approximately 8,000 to 14,000 personnel. The air station's acreage is also expected to increase, from 1,633 to 2,900 acres. According to Marine Corps officials, this initiative calls for 1,306 new structures, at an estimated cost of $3.0 billion to the government of Japan. The Marine Corps estimates that the cost to the U.S. government for this initiative in fiscal years 2013 through 2018 will be $389 million for operation and maintenance, procurement, and family housing operation costs. However, this estimate may not constitute the total cost to the United States because it does not include such things as U.S. Navy collateral equipment costs associated with Carrier Air Wing 5 facilities.

The government of Japan recently constructed a new 8,000-foot runway at Marine Corps Air Station Iwakuni, which is similar to the runway planned for the Futenma Replacement Facility at Camp Schwab (see fig. 4). The new runway was constructed using landfill material from a nearby mountain and took nearly 13 years to complete. According to Marine Corps officials, the government of Japan contributed $2.53 billion to the project, while the Marine Corps contributed $9.7 million. Furthermore, according to Marine Corps officials, an important lesson learned from this runway project is that it is important to identify sufficient landfill and concrete sources to complete a project. Failure to do so could further delay construction of the runway at Camp Schwab.

**Figure 4: Japanese-Constructed Runway at Marine Corps Air Station Iwakuni**



Japanese constructed-runway at Marine Corps Air Station Iwakuni.

Source: GAO.

## Government of Japan Host Nation Support

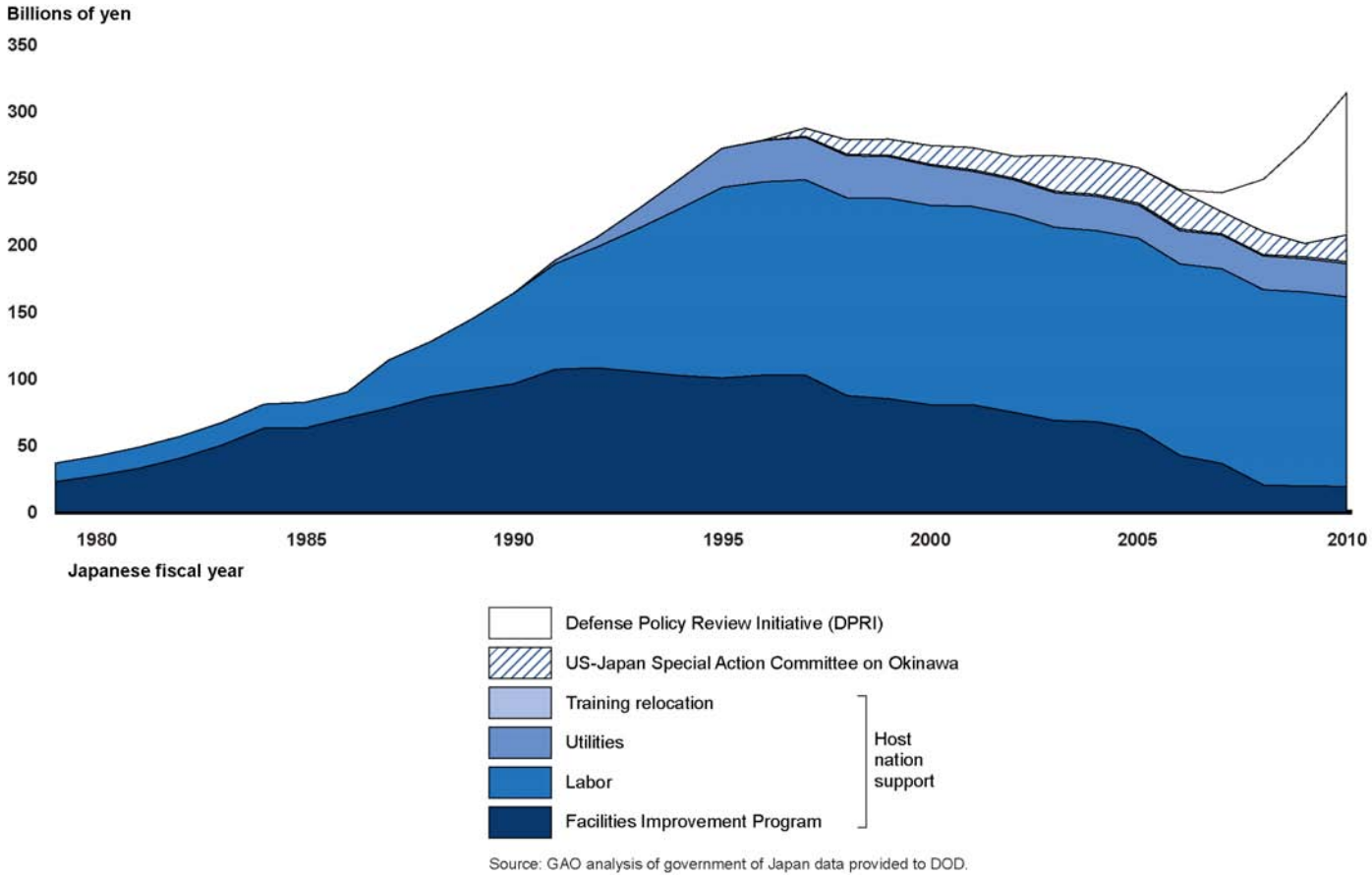
In support of the security alliance, the government of Japan provides host nation support to defray some of the costs of stationing U.S. forces within its territory and contributes to the efforts to realign U.S. forces in Japan. Support provided through a series of Special Measures Agreements helps offset labor, utility, and some training costs for U.S. forces in Japan. As part of host nation support, to defray U.S. military construction costs the government of Japan also constructs facilities—such as family housing—for U.S. forces through the Japan Facilities Improvement Program. According to DOD officials, this program is on a voluntary basis and from 1979 to April 2010 has provided over $22 billion worth of construction for U.S. military facilities in mainland Japan and Okinawa.

In addition to host nation support, the government of Japan provides funding to support the realignment of U.S. forces within and from Japan. The government of Japan began funding projects to implement the Special Action Committee on Okinawa program in 1996 and the DPRI in 2006. These projects include land purchases and the construction of replacement facilities to support realignment and consolidation efforts. Although Special Action Committee on Okinawa and DPRI realignment funding directly supports U.S. posture, according to U.S. Forces Japan officials, it is accounted for in separate government of Japan budget categories from host nation support.

As noted, the government of Japan has historically been a major financial contributor in the form of host nation support funding; however, as reflected in figure 5, after peaking in 1999 (at ¥276 billion), host nation

support funding from Japan has steadily declined. In 2010, the Government of Japan provided ¥187 billion, or approximately $2 billion, in host nation support—the lowest total since 1992.[35] The most significant decline in host nation support has come from the Japan Facilities Improvement Program, which has declined nearly 80 percent since 1993. According to DOD officials, much of the decline in host nation support can be attributed to the increase in funding for the Special Action Committee on Okinawa and DPRI realignment initiatives, as reflected in figure 5.

**Figure 5: Government of Japan Host Nation Support and Realignment Funding (in Billions of Yen) from Japan Fiscal Years 1979 to 2010**




Source: GAO analysis of government of Japan data provided to DOD.

[35]¥187 billion equals about $2 billion, based on a 89.96 foreign exchange rate

## DPRI-Related Construction Under Way on Guam

Over the past several years, DOD has been conducting both U.S.- and Japanese-funded military construction projects on Guam to support the realignment.[36] For example, DOD is working to improve military wharves at Apra Harbor to support future Marine Corps embarkation and disembarkation operations (see fig. 6). As of January 2013, DOD had expended approximately $129.8 million for military construction and design projects and estimated that it would need to expend an additional $220.8 million to complete those projects (see app. V for a list of ongoing projects).[37] DOD also had expended approximately $47.1 million for military construction and design projects using funds provided by the government of Japan, and had estimated that it would need to expend $157.6 million more to complete those projects. According to DOD officials, these active projects are in support of elements of the planned Marine Corps realignment to Guam, covered by the 2010 Record of Decision, and based on previously certified cost analyses, and remain necessary under the current realignment plan.

[36] According to agency officials, the projects currently being constructed on Guam were being built with fiscal year 2010 and 2011 funding, and were being constructed before any restrictions were placed in the law.

[37] For a more detailed list of projects associated with the military construction on Guam, see Interagency Coordination Group of Inspectors General for Guam Realignment Annual Report (Feb. 1, 2013).

**Figure 6: Apra Harbor Wharf Improvements**


Apra Harbor wharf improvements.

Source: GAO.

## DOD's Initial Estimate for the Current Marine Corps Realignment Plan Is Not Reliable

Although DOD has developed a preliminary rough-order-of-magnitude cost estimate for its current plan to relocate Marines from Okinawa and realign them to Guam and other locations in the Pacific, it is not reliable, because it is missing costs and is based on limited data. According to DOD officials, DOD has not yet been able to put together a more reliable cost estimate for its current plan, because it will not have the information needed to do so until the completion of several key studies, including environmental analyses for Guam and Hawaii. In addition, host nation negotiations—specifically those with the government of Australia—have not been completed. As part of its preliminary rough-order-of-magnitude cost estimate, DOD currently estimates that it would cost approximately $12.1 billion to implement the current realignment plan—not including the Australia segment of the realignment. However, this estimate is not reliable because it omits potentially critical cost elements and risk parameters tied to the assumptions, and lacks detailed information on requirements for several key cost components that are needed to capture all costs related to the realignment. GAO's cost estimation guide specifies four characteristics of a reliable cost estimate—the extent to which an

estimate is comprehensive, well documented, accurate, and credible. We found DOD's estimate only partially meets best practices for being comprehensive, and according to best practices, when a cost estimate is not comprehensive, it cannot fully meet the other characteristics of a reliable cost estimate. As a result, we did not evaluate the other three characteristics. According to DOD officials, specific requirements and their associated costs cannot be developed for each cost component until the necessary analyses and host nation negotiations have been completed. Still, we found that DOD did not include some up-front practices that could have provided a more reliable estimate and could have been done despite the fact that the environmental analyses and host nation negotiations are not complete. For example, DOD officials identified mobility support as a critical component to the implementation of the realignment; however, no costs associated with mobility support were included in the estimate. Additionally, DOD based its estimate on several assumptions, but there was no evidence that DOD identified risk impacts or parameters for any of these assumptions. Overall, the cost components not fully addressed in the current estimate include the Guam physical layout and requirements; the housing requirements on Guam; the requirements to upgrade utilities and infrastructure on Guam; the Joint Training Range Complex in the Northern Marianas; the Marine Corps requirements for Australia; the Marine Corps requirements for Hawaii and other U.S. locations; and mobility support. In addition, DOD continues to seek funding for utilities and infrastructure projects on Guam that once supported the original Marine Corps realignment plan. DOD officials believe that some of these projects should not be affected by the current realignment plan. However, assessments to determine the extent to which these projects remain valid for the current realignment plan have not been completed. As a result, it is unknown to what extent these projects need adjusting, if at all, to support the new realignment plan. Although DOD officials expect to develop a more reliable estimate as the necessary environmental analyses are completed and host nation negotiations have been finalized, they have not determined when this estimate will be available for Congress.

## DOD's Estimates for Prior Realignment Plans Were More Detailed than the Estimate for the Current Plan

DOD has revised its plans and updated its cost estimates several times to relocate Marines from Okinawa and realign them to other locations in the Pacific. Table 1 lists the significant features, the number of Marines expected to leave Okinawa, and the estimated costs associated with its plans.

**Table 1: History of DOD's Plans and Estimates for the Realignment of Marines**

| Plan | Significant feature | Planned number of Marines leaving Okinawa | Anticipated United States share of cost (dollars in billions) | Anticipated Japan share of Guam cost (dollars in billions) | Total estimated cost (dollars in billions) |
|---|---|---|---|---|---|
| Original Realignment Plan (2006)[a] | • Establish large Marine Corps presence on Guam.<br>• Mostly Headquarter units relocate to Guam. | 8,000 | $4.2 | $6.1 | **$10.3** |
| Original Realignment Plan Revised Cost Estimate (2010)[b] | • Establish large Marine Corps presence on Guam.<br>• Mostly headquarters units relocate to Guam.<br>• Estimate includes more cost elements not included in prior estimate. | 8,600 [c] | $12.7 | $6.3 | **$19** |
| Current Realignment Plan (2012)[b] | • Establish Marine Air-Ground Task Forces on Guam and in Australia, and relocate some units to Hawaii and the continental United States.<br>• Smaller Marine Corps presence in Guam than in previous plans.<br>• Includes estimated costs for operation and maintenance and procurement for Defense Policy Review Initiative (DPRI) activities at Marine Corps Air Station Iwakuni and the Futenma Replacement Facility initiative on Okinawa. | 9,500 | $9 [d] | $3.1 | **$12.1**[d] |

Source: DOD.

[a]Estimates are in fiscal year 2008 dollars.

[b]Estimates are in fiscal year 2012 dollars.

[c]Although the 2006 Roadmap concerning the Guam realignment referred to approximately 8,000 personnel, the Record of Decision for the Guam and Commonwealth of the Northern Mariana Islands Military Relocation referred to approximately 8,600 Marines. See Department of Navy and Department of the Army, Record of Decision for Guam and Commonwealth of the Northern Mariana Islands Military Relocation (September 2010).

[d]The $9 billion and $12.1 billion figures do not include costs for Australia.

As noted in table 1, under the original realignment plan developed in 2006, the III Marine Expeditionary Force would have moved most of its headquarters elements from Okinawa to Guam, but not the other elements, such as ground forces and aviation units, that are needed to

create a full Marine Air-Ground Task Force capability.[38] In 2010, DOD developed a revised cost estimate, referred to as the Original Realignment Plan Revised Cost Estimate (see table 1). This estimate is based on planning, studies, and defined facilities requirements and included additional cost elements, such as operation and maintenance, procurement, overseas housing allowance, and family housing and operations. [39] On the basis of this more detailed analysis, DOD's estimate for the original realignment plan increased from $10.3 billion in 2006 to $19 billion in 2010. Marine Corps officials told us they believed that not having a full Marine Air-Ground Task Force capability on Guam, a feature of the original realignment plan, would have hindered the Marines' ability to properly train or deploy as a combined-arms force. Therefore, between 2010 and 2012, DOD examined different options for realigning Marines in the Pacific. Although different options were considered, the costs remained significant to the United States and no option was officially adopted.

In April 2012, DOD briefed its current realignment plan to the congressional defense committees. The current realignment plan calls for the establishment of Marine Air-Ground Task Forces in Guam and Hawaii, and a rotational presence in Australia. In 2012, DOD officials developed a preliminary rough-order-of-magnitude cost estimate for the current realignment plan, which relocates fewer troops to Guam and realigns Marines to other locations in the Pacific. This preliminary rough-order-of-magnitude estimate for the current plan, which was briefed to congressional defense committees in the spring of 2012, is $12.1 billion; however, this estimate does not include any potential costs for the Australia segment of the realignment. Table 2 provides more location-specific information on cost estimates and personnel breakdown for the current realignment plan.

[38]Specifically designed for swift deployment of Marine forces by air, land, or sea, the Marine Air-Ground Task Force provides a broad spectrum of response options when the nation's interests are threatened. Coordinating a balanced team of ground, air, and logistics assets under a central command, these self-sustained, combined-arms forces conduct the full range of operations. Marine Air-Ground Task Forces can be tailored in size and capability to meet the needs of each mission.

[39]In GAO's May 2011 report, GAO-11-316, DOD identified over $13 billion in potential costs to the United States associated with the realignment of Marines.

**Table 2: Breakdown of Costs and Marine Corps Distribution for Current Realignment Plan**

| | Guam | Hawaii | Australia | Continental United States | Japan | Total |
|---|---|---|---|---|---|---|
| Total estimated cost (dollars in billions) | $8.6 | $2.5 | n/a | $0.4 | $0.6 | **$12.1**[b] |
| Planned number of Marines once realignment completed (approximate figures) | 4,700 | 8,800 | 2,500 | 800 [a] | 15,000 | **31,000** |

Source: DOD.

[a]The 800 number reflects the total number of Marines moving to the continental United States due to the Realignment of Marines initiative. It does not reflect the total number of Marines in the continental United States, whereas the other figures represent an approximate total population.

[b]The $12.1 billion figure does not include costs for Australia.

DOD officials informed us that the estimate for the current realignment plan is lower than estimates for prior plans because of several factors. One factor is that more Marines, approximately 1,300, will remain in Okinawa than in previous plans, resulting in overall lower operation and maintenance costs. For example, on Guam and Hawaii, the United States will likely assume full responsibility for such things as labor and utilities costs, whereas the government of Japan provides significant host nation support for these two cost categories in Japan. Since more Marines will remain on Okinawa, operation and maintenance costs will not be as significant, causing the overall cost estimate to likely go down. Another factor is a reduction in expected military construction costs on Guam. According to DOD officials, since approximately 5,000 fewer Marines are expected to relocate to Guam, and most of those who do will be deployed on a rotational basis, there will be a reduced demand for additional facilities and housing. Furthermore, DOD officials stated that the area cost factor for Guam had declined in 2011, helping to reduce the overall cost estimate.[40] DOD officials believe the cost estimate for the current realignment plan will be lower than the estimates for previous plans. However, DOD has not been able to apply the same rigor as was used in developing previous estimates because, unlike for previous estimates,

[40]The area cost factor is used by planners to adjust average historical facility costs to a specific project location, taking into consideration the costs of construction material, labor, and equipment, along with factors such as weather, climate, seismic conditions, mobilization, overhead and profit, labor availability, and labor productivity for each area.

key studies, like environmental analyses, and host nation negotiations that will affect requirements have not yet been completed.

## DOD's Estimate for the Current Realignment Plan Is Not Reliable

According to documentation attached to DOD's fiscal year 2013 budget, DOD cannot continue the practice of starting programs that prove to be unaffordable. Therefore, DOD plans to achieve program affordability by working to ensure that programs start with firm cost goals in place, appropriate priorities set, and necessary trade-offs made to keep them within affordable limits. Furthermore, this documentation states that understanding and controlling future costs from a program's inception is critical to achieving the goal of affordability.[41] According to GAO's Cost Estimating and Assessment Guide, whether or not a program is affordable depends a great deal on the quality of its cost estimate.[42] A reliable cost estimate is critical to the success of any government program, because it provides the basis for informed investment decision making, realistic budget formulation and program resourcing, and meaningful progress measurement. Office of Management and Budget guidance containing best practices indicates that programs should maintain current and well-documented estimates of program costs.[43] In addition, our research has identified a number of best practices that provide a basis for effective program cost estimating and should result in reliable cost estimates that an organization can use to make informed decisions. These practices can be organized into the four characteristics of a reliable cost estimate. The cost estimate should be comprehensive, well-documented, accurate, and credible, as explained in table 3.

[41]Office of the Undersecretary of Defense (Comptroller)/Chief Financial Officer, *Overview – FY 2013 Defense Budget* (February 2012).

[42]GAO, *Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, GAO-09-3SP (Washington, D.C.: March 2009).

[43]*See* Office of Management and Budget, *Capital Programming Guide: Supplement to OMB Circular A-11: Planning, Budgeting, and Acquisition of Capital Assets*, app. 8 (V 3.0, July 2012).

**Table 3: Four Characteristics of a Reliable Cost Estimate**

| Characteristic | Explanation |
|---|---|
| Comprehensive | The cost estimate should include both government and contractor costs of the program over its full life cycle, from inception of the program through design, development, deployment, and operation and maintenance, to retirement of the program. It should also completely define the program, reflect the current schedule, and be technically reasonable. Comprehensive cost estimates should be structured in sufficient detail (at least three levels of cost elements) to ensure that costs are neither omitted nor double counted.[a] Specifically, the cost estimate should be based on a product-oriented work breakdown structure that allows a program to track cost and schedule by defined deliverables, such as hardware or software components. Finally, where information is limited and judgments must be made, the cost estimate should document all cost-influencing ground rules and assumptions. |
| Well-documented | A good cost estimate—while taking the form of a single number—is supported by detailed documentation that describes how it was derived and how the expected funding will be spent in order to achieve a given objective. Therefore, the documentation should capture in writing such things as the source data used, the calculations performed and their results, and the estimating methodology used to derive each work breakdown structure element's cost. Moreover, this information should be captured in such a way that the data used to derive the estimate can be traced back to and verified against their sources so that the estimate can be easily replicated and updated. The documentation should also discuss the technical baseline description and how the data were normalized. Finally, the final cost estimate should be reviewed and accepted by management on the basis of confidence in the estimating process and the estimate produced by the process. |
| Accurate | The cost estimate should provide for results that are unbiased, and it should not be overly conservative or optimistic. An estimate is accurate when it is based on an assessment of most likely costs, adjusted properly for inflation, and contains few, if any, minor mistakes. In addition, the estimate should be grounded in a historical record of cost estimating and actual experiences on other comparable programs. Finally, a cost estimate should be updated regularly to reflect material changes in the program, such as when schedules or other assumptions change, and actual costs, so that it is always reflecting current status. |
| Credible | The cost estimates should discuss any limitations of the analysis because of uncertainty or biases surrounding data or assumptions. Major assumptions should be varied, and other outcomes recomputed to determine how sensitive they are to changes in the assumptions (i.e., sensitivity analysis). A risk and uncertainty analysis should be performed to determine the level of risk associated with the estimate. For management to make good decisions, the program estimate must reflect the degree of uncertainty, so that a level of confidence can be given about the estimate. Having a range of costs around a point estimate is more useful to decision makers because it conveys the level of confidence in achieving the most likely cost and also informs them on cost, schedule, and technical risks.[b] Further, the estimate's results should be cross-checked, and an independent cost estimate conducted by a group outside the acquiring organization should be developed to determine whether other estimating methods produce similar results. |

Source: GAO.

[a]The appropriate number of levels for a work breakdown structure varies from program to program and depends on a program's complexity and risk. However, each work breakdown structure should, at the very least, include three levels. The first level represents the program as a whole and therefore contains only one element—the program's name. The second level contains the major program segments, and level three contains the lower-level components or subsystems for each segment.

[b]A point estimate is the most likely value for the cost estimate, given the underlying data. The level of confidence for the point estimate is the probability that the point estimate will actually be met. For example, if the confidence level for a point estimate is 80 percent, there is an 80 percent chance that the final cost will be at or below the point estimate and a 20 percent chance that costs will exceed the point estimate.

Our assessment of DOD's preliminary estimate for the current realignment plan is that it is not reliable, because it is missing costs and

based on limited data. To arrive at this conclusion, we assessed DOD's preliminary estimate against one of the four characteristics of a reliable cost estimate, comprehensiveness. As shown in table 4, we found that the preliminary estimate only minimally met best practices for being comprehensive.[44] According to best practices, when a cost estimate is not comprehensive, it cannot fully meet the other characteristics of a reliable cost estimate. For example, because the cost estimate is missing some cost elements, the documentation is incomplete, and since the requirements for the realignment are still being determined, the estimate cannot be considered accurate. Finally, the cost estimate is not credible because it does not include a full risk and uncertainty analysis, and the potential exists that some of the costs have been underestimated. Table 4 provides a summary of our assessment of DOD's preliminary cost estimate.

**Table 4: Summary Assessment of DOD's Current Realignment Cost Estimate Compared to Best Practices for Comprehensive Cost Estimates**

| Detailed best practice | Detailed assessment summary | Assessment |
|---|---|---|
| Cost estimate includes all costs | The estimate for the current realignment plan does not include all costs; instead, it includes some detailed cost elements from a previous cost estimate for Guam and relies on a high-level cost factor to estimate military construction, and operation and maintenance costs in other locations.<br>• The current estimate does not include detailed requirements for all aspects of the plan and is missing some cost elements because it was a preliminary rough-order-of-magnitude cost estimate. In addition, the current estimate omitted the cost of providing and supporting additional lift capabilities such as the procurement of the Joint High Speed Vessel (as well as other mobility costs to support the relocation).<br>• The cost estimates for realigning Marines to other geographic locations like Australia, Hawaii, and the continental United States were not determined using detailed requirements and facilities planning, but instead were developed using a high-level cost factor based on Guam cost data from a previous plan. This estimating approach did not provide the necessary details to determine if all military construction, and operation and maintenance costs were accounted for in the current realignment plan cost estimate.<br>Unless estimates account for all costs, they cannot enhance decision making by allowing for design trade-off studies to be evaluated on a total cost basis. Without | Partially Met |

[44]For this analysis, we focused only on the comprehensive characteristic. The cost estimate under review is a preliminary rough-order-of-magnitude estimate. Since the Marine Corps and DOD do not consider this a "budget-quality" estimate and had intended to use it for bilateral negotiations and assessment of alternatives instead of as the basis of budget requests, we determined that it was not necessary to perform a more in-depth review at this time.

| Detailed best practice | Detailed assessment summary | Assessment |
|---|---|---|
| | fully accounting for all costs, organizations will have difficulty successfully planning program resource requirements and making informed decisions. | |
| Cost estimate completely defines the program, reflects the current schedule, and is technically reasonable | The current estimate does not include a document that contains a documented technical baseline description, but technical details are available in other sources. For example, one document outlines the number of Marines to be relocated from Okinawa, and realigned to Guam and other locations. However, these technical details are incomplete or remain unknown, because DOD has not been able to perform the necessary planning and assessments until certain environmental analyses and host nation negotiations have been completed. As a result, DOD cannot yet fully account for the requirements and costs associated with the following seven cost components:<br>1. Guam Physical Layout and Requirements;<br>2. Housing Requirements on Guam;<br>3. Requirements to Upgrade Utilities and Infrastructure on Guam;<br>4. Joint Training Range Complex in the Northern Marianas;<br>5. Marine Corps Requirements for Australia;<br>6. Marine Corps Requirements for Hawaii and Other U.S. Locations; and<br>7. Mobility Support.<br>Since specific technical details and any risks associated with them are not yet available, the cost estimate technical baseline is not sufficiently mature. Until this work is completed, and detailed master planning for all locations is completed, an accurate and refined cost estimate of budget quality cannot be prepared.<br>The key to developing a credible estimate is having an adequate understanding of the technical definition and characteristics associated with the program. Without these data, the cost estimator will not be able to identify the technical and program parameters that will bind the cost estimate and the quality of the cost estimate will be compromised. | Minimally Met |
| Cost estimate Work Breakdown Structure is product oriented, traceable to the statement of work, and at an appropriate level of detail to ensure that cost elements are neither omitted nor double-counted | The current estimate breaks costs down into two main levels: military construction and non-military construction. Non-military construction costs include operation and maintenance, procurement requirements, and—for the Guam realignment—utilities and infrastructure upgrades. A detailed breakdown of costs exists for the Guam realignment, but this breakdown was developed for a previous realignment plan. Up-to-date and comprehensive cost breakdowns do not exist for Guam or the other locations under the current plan.<br>DOD officials said that a more detailed breakdown of costs for the current realignment plan would not be available until certain environmental analyses and host nation negotiations are completed.<br>Without a breakdown of costs at an appropriate level, we cannot determine if all cost elements have been included. In addition, the program lacks a framework to develop a schedule and cost plan that can easily track technical accomplishments in terms of resources spent in relation to the plan as well as completion of activities and tasks. | Minimally Met |
| Cost estimate documents all cost-influencing ground rules and assumptions | DOD provided us documentation of its planning assumptions for the current realignment plan. These assumptions include, but are not limited to:<br>• area cost factors for Guam, Hawaii, Australia and the continental United States;<br>• a non-military construction cost factor;<br>• utilities and infrastructure costs of $600 million for Guam civil military utilities; | Minimally Met |

| Detailed best practice | Detailed assessment summary | Assessment |
|---|---|---|
| | • the number of months required to complete various environmental studies; and<br>• the number of personnel that would be realigned including which ones would be have a permanent change of station versus those who would be unit-deployed.<br>However, we found no historical data to support all of DOD's assumptions, and no evidence that risk impacts resulting from assumptions changing were identified. In addition, none of the assumptions discussed included items such as additional lift capabilities needed to support the Marine Corps realignment.<br>Because assumptions are best guesses, the risks associated with any of these assumptions changing need to be identified and assessed. Unless ground rules and assumptions are clearly documented, the cost estimate will not have a basis for areas of potential risk to be resolved. | |
| Overall Assessment | | Minimally Met |

Source: GAO.

As discussed in table 4, we found that DOD's preliminary rough-order-of-magnitude estimate does not fully include requirements and associated costs for all segments of the realignment plan, because this information will not become available until several environmental analyses and specific host nation negotiations are completed. While the reason for the missing requirements and their associated costs is understandable, we also found that DOD omitted specific costs and risk data that could have resulted in a more reliable estimate and are not dependent on completion of the environmental analyses and host nation negotiations. Most notably, the estimate did not include any costs for mobility support, a component that DOD officials said was necessary for the implementation of the realignment. According to some DOD officials we spoke to, the potential cost for additional mobility support could be considerable. In addition, we found that the estimate was based on several assumptions, but there was no evidence that DOD identified risk impacts or parameters for any of these assumptions. For example, DOD assumed it would need $600 million to cover utilities and infrastructure costs for Guam. There were no risk parameters put on this assumption indicating the estimate could be higher or lower. Considering that historical data from previous realignment plans estimated utilities and infrastructure costs for Guam at over $1 billion, risk parameters could have identified the potential for higher costs to DOD. Overall, we found that the preliminary estimate does not adequately reflect the program because it cannot yet fully account for the requirements and costs associated with the following seven cost components:

1. Guam Physical Layout and Requirements.

2. Housing Requirements on Guam.
3. Requirements to Upgrade Utilities and Infrastructure on Guam.
4. Joint Training Range Complex in the Northern Marianas.
5. Marine Corps Requirements for Australia.
6. Marine Corps Requirements for Hawaii and Other U.S. Locations.
7. Mobility Support.

We discuss each of the seven cost areas in more detail below.

## Guam Physical Layout and Requirements

DOD does not yet know the full facilities requirements for Guam or potential environmental mitigations; therefore, it does not have sufficient information to determine the full costs of building the facilities and training ranges needed to support the Guam segment of the realignment. The cost estimate for the Guam segment of the current realignment plan—including the cost of establishing training ranges in the Commonwealth of the Northern Mariana Islands and investing in local civilian infrastructure—is approximately $8.6 billion, of which a portion will be funded by the government of Japan.[45] However, this estimate does not fully capture the total costs of the Guam segment of the realignment, because DOD has not determined the physical layout of the Marine Corps presence on Guam, or fully identified specific infrastructure requirements yet. To estimate the costs for the Guam portion of the realignment, DOD officials assumed that the main Marine Corps installation, or cantonment, would be constructed at Finegayan (an area in the northern part of Guam just south of Andersen Air Force Base), and that the training range requirements would not have changed from those in prior plans. However, since the current plan calls for fewer Marines to relocate to Guam, and the composition of the Marine units that will relocate has changed, different locations might be selected for the main Marine Corps cantonment and live-fire training ranges. Those locations under

[45]Under a 2009 agreement implementing the 2006 Roadmap, the Government of Japan had agreed to provide up to $2.8 billion in fiscal year 2008 dollars in direct cash contributions to support the Guam relocation, subject to certain U.S. funding. *See* Agreement Concerning the Implementation of the Relocation of III Marine Expeditionary Force Personnel and Their Dependents from Okinawa to Guam, U.S.-Japan, art. I, ¶ 1, Feb. 17, 2009, Temp. State Dep't No. 09-89. In its April 2012 statement, the Security Consultative Committee reaffirmed that Japan's financial commitment would be these direct cash contributions. According to DOD officials, the contributions would amount to roughly $3.1 billion in fiscal year 2012 dollars.

consideration include military space at Andersen Air Force Base and Naval Base Guam. As of January 2013, DOD is assessing alternatives and the possible effects that the current plan might have on Guam's infrastructure and on the environment in order to develop the Supplemental Environmental Impact Statement. The results of DOD's assessments could affect where DOD builds, what the facilities requirements will be, and what environmental mitigations DOD might take. DOD officials told us that they will wait until this environmental impact statement is completed before proceeding with any further planning and assessments that may be needed to identify specific requirements.

## Housing Requirements on Guam

DOD does not know the minimum level of government-provided housing needed to accommodate the relocated Marines and to inform its housing investment strategies to ensure that the housing needs of servicemembers and their families are cost-effective on Guam. Of the $8.6 billion estimate for the Guam segment of the current realignment plan, DOD includes approximately $400 million to construct military housing for Marines on Guam; however, DOD has not performed the necessary housing analysis to validate this estimate yet, nor has it determined how Navy housing policies and Joint Region Marianas housing practices will affect Marine Corps housing requirements. According to Joint Region Marianas officials, Joint Region Marianas is responsible for maintaining and sustaining housing on Guam. In 2010, DOD performed an analysis to determine the minimum level of government-provided military housing needed to serve both unaccompanied and accompanied servicemembers on Guam. However, this analysis was based on the original realignment plan and is no longer valid. The current realignment plan involves a smaller population and will consist primarily of rotational personnel. Navy officials told us that a realistic housing analysis indentifying construction requirements for the Guam segment of the realignment would not be able to be determined until closer to the time when Marine Corps families are expected to move to Guam, which is not expected for another 10 years. In the interim, Marine Corps officials have said that they will plan to build to 100 percent of the Marine Corps' housing requirement on Guam, an assumption that will be used while completing necessary environmental reviews for the Guam segment of the realignment. According to Joint Region Marianas officials, their organization does not have the authority or responsibility to determine how much housing the Marine Corps should build on Guam.

Navy housing policy is to encourage and rely on private-sector housing whenever possible.[46] Along these lines, the practice of Joint Region Marianas is to rely on the private sector for housing for servicemembers whenever possible.[47] A majority of the current Navy and Air Force servicemembers choose to live in private housing on Guam. Joint Region Marianas officials were uncertain what the effects would be if the Marine Corps proceeds with building 100 percent of the housing it needs for the relocated Marines, and whether the Marine Corps would attempt to prohibit Marines from living in private, off-base housing. Furthermore, according to DOD officials, if the decision is to house Marines on any existing installations on Guam, such as Andersen Air Force Base or Naval Base Guam, additional support infrastructure, such as dining facilities and gymnasiums, will likely be required. Joint Region Marianas also has a surplus of unoccupied military housing that could potentially be used to house Marines (see fig. 7 for photographs of select unoccupied military housing units on Guam). Unoccupied housing will be discussed in greater detail later in this report.

[46] *See* Commander Navy Installations Command, *Navy Housing Eligibility, Assignment, and Termination Criteria*, Instruction 5009.5, para. 4 (May 13, 2008).

[47] However, Joint Region Marianas has made a determination that adequate housing in sufficient quantity to accommodate civilian employees is not available from the private sector on Guam. *See* Joint Region Marianas, *Region Family Housing, Eligibility, Assignment and Governance*, Instruction 11101.2, para. 7.b (Sept. 30, 2009).

**Figure 7: Unoccupied Military Housing on Guam**

Unoccupied military housing on Guam.

Source: GAO.

## Requirements to Upgrade Utilities and Infrastructure on Guam

DOD has not updated its list of utilities and infrastructure requirements that is tied to the current realignment plan; therefore DOD does not have an accurate estimate of how much it will cost to upgrade Guam's utilities and infrastructure to support the planned Marine Corps presence on the island. These public infrastructure requirements include utilities and infrastructure improvements, as well as projects to augment public health and social services, and mitigate the social, economic, cultural, and environmental effects of the Marine Corps realignment to Guam. In June 2009, we reported that DOD had determined that existing utilities and infrastructure on Guam were near or at their maximum capacities already, and would require significant enhancements to support the increase in the island's population expected under the original realignment plan.[48] In addition, during the development of the 2010 Final Environmental Impact Statement, DOD, the Guam Waterworks Authority, and the U.S.

[48]See GAO, *Defense Infrastructure: Planning Challenges Could Increase Risks for DOD in Providing Utility Services When Needed to Support the Military Buildup on Guam*, GAO-09-653 (Washington, D.C.: June 30, 2009).

Environmental Protection Agency developed a list of water and wastewater projects to address deficiencies in Guam's water and wastewater infrastructure and respond to the increased population driven by the original realignment plan.[49] This list of projects, estimated to cost approximately $1.3 billion, spanned the first 5 years of an overall 30-year $5.3 billion capital improvement plan. The government of Japan was expected to provide $600 million of the needed $1.3 billion, with the remainder to be provided by DOD. Funding outside this 5-year timeframe was expected to be covered by the government of Guam and non-DOD federal government agencies. According to DOD Office of Economic Adjustment officials, although other federal agencies, such as the Department of the Interior's Office of Insular Affairs, could help fund these improvements on Guam, as of February 2013, there has been no financial assistance for these projects from non-DOD agencies.[50]

Although $1.3 billion in water and wastewater projects were connected to the original realignment plan, the Marine Corps, as part of the $8.6 billion estimate for the Guam segment of the current realignment plan, only identified $600 million for all utilities and infrastructure. According to Marine Corps officials, this $600 million was to only fund water and wastewater projects that the government of Japan was previously expected to finance, but is no longer obligated to pay for as a result of the adjustments to the 2006 Roadmap announced in April 2012. Marine Corps officials also said that the decision to include only $600 million was a planning decision and not based on any updated analysis of public infrastructure requirements for the current realignment plan. These same officials said that any updated analysis would not be available until the Supplemental Environmental Impact Statement for Guam was completed. According to Office of Economic Adjustment officials, no matter how many Marines relocate to Guam, significant improvements to the water and wastewater infrastructure will be necessary; many of these improvements are included in the $1.3 billion water and wastewater

[49]See Departments of the Navy and Army, *Record of Decision for Guam and Commonwealth of Northern Mariana Islands Military Relocation* (September 2010).

[50]The Office of Economic Adjustment is DOD's primary source for assisting communities that are adversely affected by defense program changes, including base closures or realignments, base expansions, and contract or program cancellations. This office manages the Defense Economic Adjustment Program, and coordinates the involvement of other federal agencies to assist affected communities.

infrastructure improvement estimate that was linked to the original realignment plan.

### Joint Training Range Complex in the Northern Marianas

DOD plans and designs for a joint training range complex on Tinian and Pagan in the Commonwealth of the Northern Mariana Islands have yet to be finalized, and the costs for this complex are not fully known. To support the original realignment plan, DOD developed plans and designs for live-fire training ranges on Tinian and Pagan, since not all training could be accommodated by the proposed live-fire training ranges on Guam. DOD also conducted several studies to identify training shortfalls in the region and determined the Marine Corps training requirements for units designated for realignment to Guam. According to Marine Corps officials, these plans and requirement studies have been under review since August 2012, and the studies have been updated to reflect the changes made under the current realignment plan. Marine Corps officials said that they intend to reexamine their plans and designs as they prepare an updated environmental impact statement for this complex; this environmental impact statement will be a separate effort from the Guam Supplemental Environmental Impact Statement, and, according to DOD officials, will be entitled the Commonwealth of the Northern Marianas Joint Military Training Environmental Impact Statement. For the joint training range complex environmental impact statement, Marine Corps officials plan to examine alternatives and identify environmental mitigations needed to proceed with the development of the complex. Marine Corps officials anticipate issuing a Record of Decision by early 2016.

As part of the $8.6 billion estimate for the Guam segment of the current realignment plan, DOD identifies military construction costs for the complex to be approximately $800 million. However, this estimate does not include updated costs associated with environmental mitigations or operation and maintenance associated with the current realignment plan. For example, Marine Corps officials said that developing an amphibious landing training area on Tinian could require coral realignment, which could cost approximately $10 million (see fig. 8 for photographs of select proposed amphibious landing training areas). According to these same officials, the Marine Corps will need to wait until environmental analyses are completed before fully determining the costs for environmental mitigations associated with the complex. Additionally, the Marine Corps estimated some operation and maintenance costs to maintain and sustain the complex under previous realignment plans, but has not updated these estimates based on the current plan. According to Marine Corps officials, there are currently no permanent DOD training facilities on Tinian, but the

Marine Corps intends to build permanent facilities to store equipment and house civilians and servicemembers deployed to the island to train. Furthermore, DOD has not developed a Concept of Operations for the complex, which could be used to determine other associated costs, such as transportation to and from the island.

**Figure 8: Proposed Locations for Amphibious Landing Training on Tinian**

Dankulo Beach

Chulu Beach

Source: GAO.

## Marine Corps Requirements for Australia

DOD has developed some initial, rough-order-of-magnitude cost estimates to establish a rotational presence of approximately 2,500 Marines in Australia; however, these cost estimates cannot be considered comprehensive, because they are not based on finalized plans or requirements. According to Marine Corps officials, facility requirements for the Marine Corps have been provided to the government of Australia; however, nothing has been finalized because there has yet to be a formal agreement on host nation support options for the provided requirements.[51] In preparing to establish a rotational Marine Air-Ground

[51]According to Marine Corps and State Department officials, as of March 2013, there is no time frame for the completion of negotiations between the United States and Australia.

Task Force in Australia, the Marine Corps rotated approximately 200 Marines to Darwin, Australia, for 6 months beginning in April 2012. DOD officials have also visited Australia to conduct site assessments and hold discussions with their Australian counterparts. According to DOD officials, DOD cannot finalize plans or fully determine facilities, housing, and training requirements until negotiations with the government of Australia have concluded. For example, Marine Corps officials said that the training requirements for Marines in Australia will not differ from those of Marines on Guam; therefore, officials did not know what additional infrastructure and support facilities in Australia, if any, would be needed to address these requirements. DOD officials acknowledged that the level of host nation support has not been determined, including Australian preferences for which Australian facilities will host the Marines, whether new facilities need to be built and by whom, and how to coordinate training ranges for exercises—all of which could significantly affect the costs of rotating a presence to Australia. Other details related to the Marine Corps presence will also need to be negotiated. For example, according to Marine Corps officials, the Marine Corps is considering prepositioning equipment in Australia, since it may be cost-prohibitive to transport equipment with each new deployment, given the costs associated with agricultural quarantine inspections and transportation; however, Marine Corps and Defense Logistics Agency officials we spoke with said it was too early to determine any details related to prepositioned stock because no requirements had been established yet.

### Marine Corps Requirements for Hawaii and Other U.S. Locations

DOD has developed some initial, rough-order-of-magnitude cost estimates to relocate Marines to Hawaii and the continental United States; however, these cost estimates cannot be considered comprehensive because they are not based on finalized plans or requirements. According to Marine Corps officials, information needed to help develop a comprehensive cost estimate will not be available until necessary environmental analyses have been completed. The Marine Corps and Navy have conducted initial assessments of possible locations to expand the Marine Corps presence in Hawaii, but facility, housing, and training requirements to support the realignment remain undefined. According to Marine Corps officials, Naval Facilities Engineering Command Pacific is currently in the process of conducting three preliminary studies for the Marine Corps which will examine many potential options (among all DOD lands on Oahu) for basing additional

Marines in Hawaii.[52] The Marine Corps has yet to identify possible locations for units relocating to the continental United States. According to Marine Corps officials, before the Marine Corps can relocate units to Hawaii and the continental United States, DOD will need to perform environmental analyses and develop plans.

## Mobility Support

DOD did not include any estimates for mobility support in its preliminary estimate and could not provide sufficient information on how it intends to provide mobility support—which could be costly—to Marine Corps units once the current realignment plan has been implemented. According to Marine Corps officials, the current realignment plan was developed under the assumption that sufficient mobility capabilities would be available to support Marine Corps units stationed in the Pacific; however, as of August 2012, although DOD officials said studies looking at lift in the Pacific were underway, DOD had not completed any studies to determine the implications for mobility of distributing Marines to multiple locations in the Pacific. Marine Corps officials responsible for managing and implementing the current realignment plan could not provide us with information on how the Marines would travel to and from routine operations, such as training events, and contingency operations once the current realignment plan was implemented. As of August 2012, DOD officials said that the Department of the Navy was conducting a study of possible mobility solutions to support the current realignment. However, at the time of our review, the study remained in draft format and under review at DOD. Also, United States Transportation Command and its subordinate commands have not assessed the implications of the current realignment plan's mobility requirements for its current operations and assets, because no request has been made to perform such a study. According to United States Transportation Command Officials, they did not assess mobility requirements associated with distributing Marines to multiple locations in the Pacific in the command's last Mobility Capability Requirements Study, and to their knowledge, mobility requirements supporting the current realignment plan were not assessed for the command's current study, due to be published in summer 2013.

The Marine Corps uses a variety of assets to transport personnel and equipment in the Pacific region. For example, the Marine Corps has in the

[52] Marine Corps officials told us that these preliminary studies will be complete in December 2013 and will inform future environmental analyses.

past chartered the Westpac Express, a commercial shipping vessel, to transport personnel and equipment to various locations for training exercises or contingency operations. Marine Corps officials stated that they assumed that they would be able to use recently acquired Joint High Speed Vessels to transport troops and equipment. The Marine Corps can also use air and sea assets provided by U.S. Transportation Command. Another option is the Amphibious Ready Group, which consists of a group of Navy warships, including amphibious assault and dock landing ships, and a landing force used to perform amphibious operations.[53] The Navy has one forward-deployed Amphibious Ready Group stationed in Sasebo, Japan, that supports the 31st Marine Expeditionary Unit. Pacific Command officials said that a possible solution would be to deploy another Amphibious Ready Group to the command's area of responsibility, but this could be costly if new ships and supporting infrastructure are required. According to the Congressional Budget Office, the average cost of constructing an Amphibious Assault Ship[54] alone is $4.3 billion.[55]

DOD civilian, military, and State Department officials have all stressed the importance of ensuring that sufficient mobility capabilities are available to support the current realignment plan. State Department officials said that U.S. allies in the region may become concerned with DOD's ability to address threats, given the distribution of Marine Corps units across the Pacific region, as proposed under the current realignment plan. Military officials also warn that a lack of mobility capabilities could affect the ability of the U.S. military to both adequately train and execute missions.

[53]An Amphibious Ready Group can consist of approximately 5,000 personnel and include Amphibious Assault Ships, Amphibious Transport Docks, Dock Landing Ships, AV-8B Harrier II jets, CH-53D/E Sea Stallion Helicopters, CH-46D/E Sea Knight helicopters and AH-1W Super Cobra helicopters.

[54]Amphibious assault ships are the second largest ships in the fleet at 40,000 tons. They form the centerpiece of Amphibious Ready Groups and each can carry as many as 30 helicopters and 6 fixed-wing Harrier jump jets.

[55]Estimate for LHA-6 amphibious assault ship over the 2013-2042 period. See Congressional Budget Office, *An Analysis of the Navy's Fiscal Year 2013 Shipbuilding Plan* (Washington, D.C.: July 25, 2012).

## DOD Sought Funding for Guam Utilities and Infrastructure Projects in Fiscal Years 2012 and 2013, but the Request Was Not Revalidated on the basis of the Current Realignment Plan

DOD has sought funding to upgrade utilities and infrastructure on Guam prior to updating its assessment of requirements needed to support the personnel and facilities changes in the current realignment plan. According to Office of Economic Adjustment officials, $106.4 million in funding was sought for the first stages of the Guam water and wastewater improvements in fiscal year 2013. In addition to the water and wastewater improvements, DOD sought an additional $33 million of funding for the completion of mental health facilities, and the construction of a public health laboratory on Guam in fiscal year 2013. The $33 million is the second half of a $66 million island-wide socioeconomic improvement plan coordinated through the Economic Adjustment Committee based on the sudden population growth associated with the original realignment plan. [56] The other $33 million, for projects that included the construction of a cultural repository, the purchase of school buses (for emergency evacuations and military dependents), and improvements to the Guam Mental Health and Substance Abuse Facility, was sought in fiscal year 2012. The National Defense Authorization Act for Fiscal Year 2013 authorized appropriations for the Office of Economic Adjustment,[57] but did not include specific authorizations for the projects. [58] According to DOD officials, funding for these projects has been put on hold until restrictions

[56]The Economic Adjustment Committee is chaired by the Secretary of Defense or his or her designee, and is made up of representatives from 22 federal agencies. The committee is to develop procedures for ensuring, among other things, that communities that are substantially and seriously affected by certain DOD actions are notified of available federal economic adjustment programs. The committee is also to advise, assist, and support the Defense Economic Adjustment Program, which assures coordinated interagency and intergovernmental adjustment assistance concerning defense impact problems and serves as a clearinghouse to exchange information among federal, state, regional, metropolitan, and community officials involved in the resolution of community economic adjustment problems, among other functions. *See* Exec. Order No. 12,788, 57 Fed. Reg. 2213 (Jan. 15, 1992), *amended by* Exec. Order No. 13, 286, § 33, 68 Fed. Reg. 10, 619, 10,625 (Feb. 28, 2003) *and* Exec. Order No. 13,378, 70 Fed. Reg. 28,413 (May 12, 2005), *reprinted as amended in* 10 U.S.C. § 2391 note.

[57]*See* Pub. L. No. 112-239, §§ 301, 4301.

[58]The restriction on use of funds for realignment, noted previously, includes a restriction on DOD grants, cooperative agreements, transfer of funds to another federal agency, or supplement of funds available in fiscal year 2012 or 2013 under federal programs administered by agencies other than DOD. If the Secretary of Defense determines that one of these actions will result in the development of public infrastructure on Guam, he may not carry out the grant, transfer, cooperative agreement, or supplemental funding, unless it is specifically authorized by law. *See* § 2832(b). Office of Economic Adjustment officials stated that they need specific authorization to spend funds for the public infrastructure and socioeconomic projects on Guam.

imposed by the National Defense Authorization Act for Fiscal Year 2013 have been addressed.

According to Office of Economic Adjustment officials, some of the socioeconomic and utilities projects, such as the cultural repository, and water and wastewater improvements, should not be affected by the changes in personnel and facilities associated with the current realignment plan; however, some projects, such as the improvements to a mental health and substance abuse facility, may not be necessary due to fewer Marines and dependents relocating to Guam. Office of Economic Adjustment officials said that they intend to perform assessments, in conjunction with the Joint Guam Program Office, to reexamine and validate all utilities and infrastructure projects during DOD's development of the Supplemental Environmental Impact Statement for Guam. However, until these assessments are completed, DOD is seeking funding for utilities and infrastructure projects that have either not been fully estimated or may no longer be needed.

## A Comprehensive Cost Estimate for the Realignment of Marines in the Pacific May Take Years

DOD officials told us that they intend to develop a more reliable cost estimate for the current realignment plan as environmental analyses and host nation negotiations are completed. According to DOD officials, the completed analyses and finalized host nation negotiations will provide the necessary information needed to complete a comprehensive cost estimate for the current realignment plan, but DOD officials have not determined when this estimate will be available. They informed us that a more detailed estimate for the Guam realignment would require the completion of an ongoing environmental impact statement on Guam, which is expected to be completed in 2014, and a separate environmental impact statement for the Joint Training Range Complex on Tinian and Pagan, which is expected to be completed in 2015. According to DOD officials, the Hawaii segment of the realignment would also require an environmental analysis before a more detailed cost estimate could be performed, but as of March 2013, they did not anticipate that this analysis will be completed until a date beyond 2018. Furthermore, DOD officials do not anticipate that a more detailed estimate for Australia will be available until host nation negotiations are complete, but no date has been determined for the conclusion of these negotiations. According to the Office of Management and Budget guidance containing best practices for cost estimating in the context of capital programming, early emphasis

on cost estimating during the planning phase is critical to successful life cycle management of a program or project.[59] This guidance recognizes that insufficient data and undefined risks are some of the challenges in estimating costs. It also notes that the cost estimating process is continuously updated, on the basis of the latest information available, to keep the estimate current, accurate, and valid. According to DOD officials, updated cost estimates will be developed when additional data from ongoing analyses are available and negotiations have been completed. However, until estimates are developed that address the seven cost components described in this report, DOD will not be able to provide Congress and other stakeholders with a reliable cost estimate to make informed funding decisions regarding the realignment of Marines.

## DOD Has Not Yet Completed an Integrated Master Plan to Synchronize Realignment Initiatives in the Pacific or a Strategy to Support Japanese Construction

In April 2012, DOD announced that it would be revising its previous Marine Corps realignment plan; however, DOD has not yet completed two key planning mechanisms: an integrated master plan that synchronizes the various realignment initiatives with all geographic segments of the realignment and a construction support strategy. Although DOD has taken initial steps to begin the master planning effort for the realignment, DOD has not yet been able to fully develop an integrated master plan synchronizing the realignment with other DPRI initiatives and laying out the necessary facilities, progression of construction, unit movements, and costs to efficiently complete the realignment. Furthermore, DOD has not developed a strategy to support a potential surge of simultaneous Japanese construction projects associated with the other DPRI initiatives that may occur concurrently with the realignment of Marines.

### Effects of Other Initiatives in the Pacific on the Sequencing of the Current Realignment Plan Remain Uncertain

DOD is moving forward with the current realignment plan; however, Marine Corps officials are still determining how the projects associated with the Futenma Replacement Facility and Okinawa Consolidation are either related to or dependent on each other, and what effects these projects might have on the realignment of Marines. According to Marine Corps officials, uncertainties surrounding these initiatives and the effects on the realignment of Marines will exist until the government of Japan can

[59] Office of Management and Budget, Capital Programming Guide: Supplement to OMB Circular A-11: Planning, Budgeting, and Acquisition of Capital Assets, App. 8 (V 3.0, July 2012*).* The information in the appendix on cost estimating is based in part on GAO guidance.

provide a timeline for construction of related facilities. The Futenma Replacement Facility is an initiative in which Japan is constructing facilities and a runway to replace Marine Corps Air Station Futenma on Okinawa. Okinawa Consolidation is an initiative that involves returning land to Japan that is currently occupied by U.S. military installations and consolidating the remaining U.S. forces in less populated areas of Okinawa once Japan has constructed necessary replacement facilities. Under the 2006 Roadmap and the 2009 agreement, these initiatives, along with the realignment of Marines to Guam, were directly linked because progress on both Okinawa Consolidation and the realignment of Marines was contingent on Japan making a certain level of progress toward completion of the Futenma Replacement Facility and financial contributions to fund development on Guam.[60] However, as part of the April 2012 statement, the Security Consultative Committee decided to delink these initiatives, effectively no longer requiring that progress on constructing the Futenma Replacement Facility be made before the other initiatives could commence. This change, in theory, allows all three initiatives to move forward independently of each other; however, in practical terms, the three initiatives still have elements that are linked, and each could ultimately affect the progress of the others.

According to Marine Corps officials, since the three initiatives remain likely to be implemented concurrently, the proper sequencing of movements will influence whether the Marine Corps can maintain full operational capability and how smoothly the realignment can be accomplished. However, at the time of our review, it was too early to tell how each of the three initiatives will affect the progress or sequencing of the others. For example, Marine Corps officials said that many elements of Okinawa Consolidation will still be contingent on substantial progress—and in some cases completion—of the Futenma Replacement Facility at Camp Schwab. In the April 2012 statement, the Security Consultative Committee agreed that some segments of Okinawa Consolidation could

[60]The 2009 Agreement provided that the relocation of Marines from Okinawa to Guam would be dependent on "tangible progress" towards the completion of the Futenma Replacement Facility by Japan as stipulated in the Roadmap. *See* Agreement Concerning the Implementation of the Relocation of III Marine Expeditionary Force Personnel and Their Dependents from Okinawa to Guam, U.S.-Japan, art. 3, Feb. 17, 2009, Temp. State Dep't No. 09-89; *see also* Roadmap, § 1(d). Furthermore, the Roadmap provided that approximately 8,000 III Marine Expeditionary Force Marines and dependents needed to relocate to Guam prior to the commencement of Okinawa Consolidation. *See* Roadmap, § 1(d).

start immediately, but the sequencing and timing of the more significant segments, such as those related to Marine Corps Air Station Futenma and Camp Schwab, were going to have to be determined through bilateral planning at a later date. At the time of our review, the two countries had not finalized a bilateral plan for Okinawa Consolidation; therefore, Marine Corps officials on Okinawa could only make assumptions about the details of the initiative.[61] Furthermore, Marine Corps officials on Okinawa believed that unless facilities related to the realignment of Marines are constructed on Guam and Hawaii, significant elements of the Okinawa Consolidation could not progress. For example, certain Marine Corps units that currently reside at Camp Schwab on Okinawa would have to be able to relocate to either Guam or Hawaii before other units could move to Camp Schwab.

## DOD Has Not Yet Been Able to Complete an Integrated Master Plan for the Current Realignment Plan

Since the original realignment plan in 2006, congressional committees have been calling for DOD to submit a master plan or other information regarding the realignment, including costs and schedules for projects. However, DOD has not developed and finalized a master plan in support of the realignment. Congressional committees have expressed concern about the sweeping transformation in the Pacific, including concern regarding the practicality and economic viability of the realignment. In some instances, committees have sought a master plan or other information regarding the realignment of Marines before they will support the authorization or appropriation of certain funds to be used towards the implementation of the initiative. Most recently, the National Defense Authorization Acts for Fiscal Years 2012 and 2013 imposed restrictions on the use of funds to implement the realignment until DOD submits certain information to the congressional defense committees, including master plans.[62] Previous GAO reports on the original realignment plan

[61]Subsequent to the completion of the audit work on this report, in April 2013, DOD announced the completion and public release of the bilateral Okinawa Consolidation Plan for forces remaining on Okinawa. DOD officials are in the process of updating planning documents to reflect this plan.

[62]*See* Pub. L. No. 112-239, § 2832(a)(2) and Pub. L. No. 112-81, § 2207(a)(2). Section 2832(e) of the National Defense Authorization Act for Fiscal Year 2013 superseded and repealed section 2207 of the National Defense Authorization Act for Fiscal Year 2012. The master plans called for by the National Defense Authorization Act for Fiscal Year 2013 would be for the construction of facilities and infrastructure to execute the Marine Corps distributed lay-down on Guam and Hawaii, including a detailed description of costs and the schedule for such construction. *See* § 2832(a)(2). See app. III.

have stressed the importance of a master plan to provide Congress with a complete picture of facility requirements and associated costs so that it can make informed funding decisions.[63] DOD was not able to provide a specific time frame including when it plans to complete an overarching master plan in support of the current realignment plan.

In the context of acquisition, the integrated master plan is a fundamental management tool that is critical to performing effective planning, scheduling, and execution of work efforts, according to a guide prepared by the Office of the Secretary of Defense on Integrated Master Plan and Master Schedule Preparation and Use.[64] It consists of a hierarchy of program events, each event supported by specific accomplishments and each accomplishment associated with specific criteria that must be satisfied for its completion. In the context of DOD installation development and management, master planning is a continuous, analytical process that involves evaluation of factors affecting the present and future physical development and operation of an installation.[65] The evaluation forms the basis for determination of development objectives and planning proposals to solve current problems and meet future needs, with each step or element of the process building upon the preceding step, providing a logical framework for the planning effort. A successful installation master plan provides timely and correct planning information and real property support for installation missions, and supports informed decision-making. The integrated master plan for the current realignment would not be an acquisition integrated master plan and, unlike an installation master plan, would focus on a variety of installations and locations. However, if developed on the basis of similar concepts, the realignment integrated master plan could help planners determine the necessary progression of Marine Corps movements, and establish a logical sequencing of events. It could also include all projects associated with each event, with the expected costs and resource requirements for each. Additionally, an integrated master plan for the realignment could

[63]GAO, *Defense Infrastructure: Opportunity to Improve the Timeliness of Future Overseas Planning Reports and Factors Affecting the Master Planning Effort for the Military Build-Up on Guam*, GAO-08-1005 *(*Sept. 17, 2008).

[64]Department of Defense, *Integrated Master Plan and Integrated Master Schedule Preparation and Use Guide*, ver. 0.9 (Oct. 21, 2005).

[65]*See* Department of Defense, Unified Facilities Criteria 2-100-01: *Installation Master Planning* (May 15, 2012).

take planners through “what if” scenarios to determine whether certain aspects of the realignment are actually executable.

At the time of our review, Headquarters Marine Corps, which is conducting the master planning process for the realignment of Marines, had started to develop what officials called the first step of an integrated master plan. This first step, called the synchronization matrix, is described by Headquarters Marine Corps officials as an overarching scheduling tool that synchronizes the various realignment initiatives and graphically depicts how these realignments are interconnected and affected by both unit movements and facilities construction. Specifically, the synchronization matrix attempts to synchronize other DPRI initiatives—the Carrier Air Wing Move from Atsugi to Iwakuni, Okinawa Consolidation, and the Futenma Replacement Facility—with time frames and unit movements associated with the realignment of Marines. During the course of our review we spoke with Marine Corps officials from the Pentagon, Honolulu, and Okinawa, and heard conflicting views on the logical order of unit movements, the potential effects of the other DPRI initiatives on the realignment, and the time frames associated with each move. For example, Headquarters Marine Corps officials said they believed that fighting forces should be the first to leave Okinawa and relocate to Guam; however, Marine Corps officials we spoke to in Okinawa did not agree, stating that headquarters units should move first, followed by the fighting forces. According to Headquarters Marine Corps officials, the synchronization matrix will serve as a tool to address any conflicting internal views, determine how each initiative relates, and establish the appropriate sequencing of events needed to complete all realignment initiatives.

Although the synchronization matrix is an important first step of the integrated master plan, it is still based on several assumptions regarding environmental analyses, facilities planning, funding availability, and, where applicable, host nation support, meaning that it’s always subject to change. As previously discussed, since environmental analyses and host nation negotiations still need to be completed, Marine Corps officials have not developed specific projects, facility and resource requirements, and costs for the realignment of Marines. According to Marine Corps officials, once the necessary analyses and negotiations are completed for each geographic segment—Guam, Hawaii, Australia, and the continental United States—of the realignment, DOD can begin to finalize master plans specific for each location. Each master plan, coupled with the synchronization matrix, will eventually formulate an integrated master plan for the realignment of Marines.

According to Marine Corps officials, they recognize the importance of the master planning process for the realignment of Marines; however, they know master plans for some geographic segments of the realignment may take several years to produce. DOD officials stated that they can only estimate when an integrated master plan can be completed, but it will likely be beyond the 2018 time frame. Until then, Marine Corps officials stated that they will continue to update the synchronization matrix as geostrategic events change, and analyses and negotiations conclude. Still, without an integrated master plan that reflects not only the synchronization of DPRI initiatives with the realignment of Marines, but the projects, facility and resource requirements, and costs for all geographic segments of the realignment, congressional committees will not have a complete picture of the requirements and costs in order to make informed funding decisions.

## It Is Unclear Whether DOD Can Support a Surge in DPRI-Related Construction

With several hundred projects associated with the remaining DPRI initiatives in mainland Japan and on Okinawa, and the likelihood that these initiatives will be implemented concurrently, it remains unclear whether DOD would be able to support a surge of this magnitude in construction in Japan. Although the April 2012 Security Consultative Committee statement did not establish definitive time frames or identify start and completion dates for the Futenma Replacement Facility, Okinawa Consolidation, or the realignment of Marines, DOD officials have stated that it is likely all three of these initiatives will proceed concurrently with the ongoing DPRI initiative to relocate a carrier air wing from Naval Base Atsugi to Marine Corps Air Station Iwakuni in mainland Japan. It is anticipated that the government of Japan will fund and construct the hundreds of projects associated with the remaining DPRI initiatives in mainland Japan and Okinawa; however, DOD will play a critical role in the design and construction oversight of these projects, assuring that each project is built to U.S. requirements and standards. Although DPRI-related construction at Iwakuni commenced in the last year, and only 10 projects in Okinawa have been completed to date, Marine Corps officials told us that DOD has encountered several challenges in supporting the design and construction of these projects; these challenges have led to delays in construction and, in some instances, generated additional costs to the United States. Several DOD officials we spoke with were concerned that if the other DPRI initiatives were to begin, DOD might not be in a position to support the surge in construction.

DPRI construction projects in mainland Japan and Okinawa fall under the purview of the United States Army Corps of Engineers.[66] As the DOD construction agent, the Army Corps of Engineers is responsible for working with each service to provide design and construction criteria to the government of Japan, and then design and construction surveillance and inspection to make sure that every DPRI project is being completed in accordance with the appropriate requirements and standards. However, according to Marine Corps officials, the Army Corps of Engineers has had a difficult time supporting the DPRI-initiatives at both at Iwakuni and at Okinawa. For example, Marine Corps officials at Iwakuni told us that the Army Corps of Engineers was both underfunded and understaffed to support initial Japanese design and construction efforts, and that, as a result, officials at Iwakuni circumvented the DPRI project development process in order to move project design and development along more quickly. According to these same officials, the government of Japan was prepared to provide as much funding as was necessary to complete construction of the facilities at Iwakuni as early as possible. Marine Corps officials also told us that in its fiscal year 2011 budget, the government of Japan allocated $700 million for the design and construction of facilities at Iwakuni (see fig. 9 for a photograph of the ongoing Japanese construction at Marine Corps Station Iwakuni). However, DOD and the Army Corps of Engineers were unprepared to support an effort of this magnitude.[67] According to officials at Iwakuni, the Army Corps of Engineers did not have the resources to support an accelerated buildup of this magnitude by the government of Japan and questioned whether the Army Corps of Engineers could fully support the entire DPRI initiative at Iwakuni, which will eventually cost Japan nearly $3 billion to complete through 2017.

[66]According to its Japan Engineering District, the U.S. Army Corps of Engineers is responsible for the design, engineering, and construction oversight of all projects in Japan, including military construction projects built by the United States. In mainland Japan and Okinawa, about 80 percent of construction projects are funded and built by the government of Japan.

[67]According to DOD officials, the Japanese fund construction projects on a year-by-year basis, and not the typical 5-year basis that DOD uses to fund its projects.

**Figure 9: Ongoing Japanese Construction at Marine Corps Air Station Iwakuni**

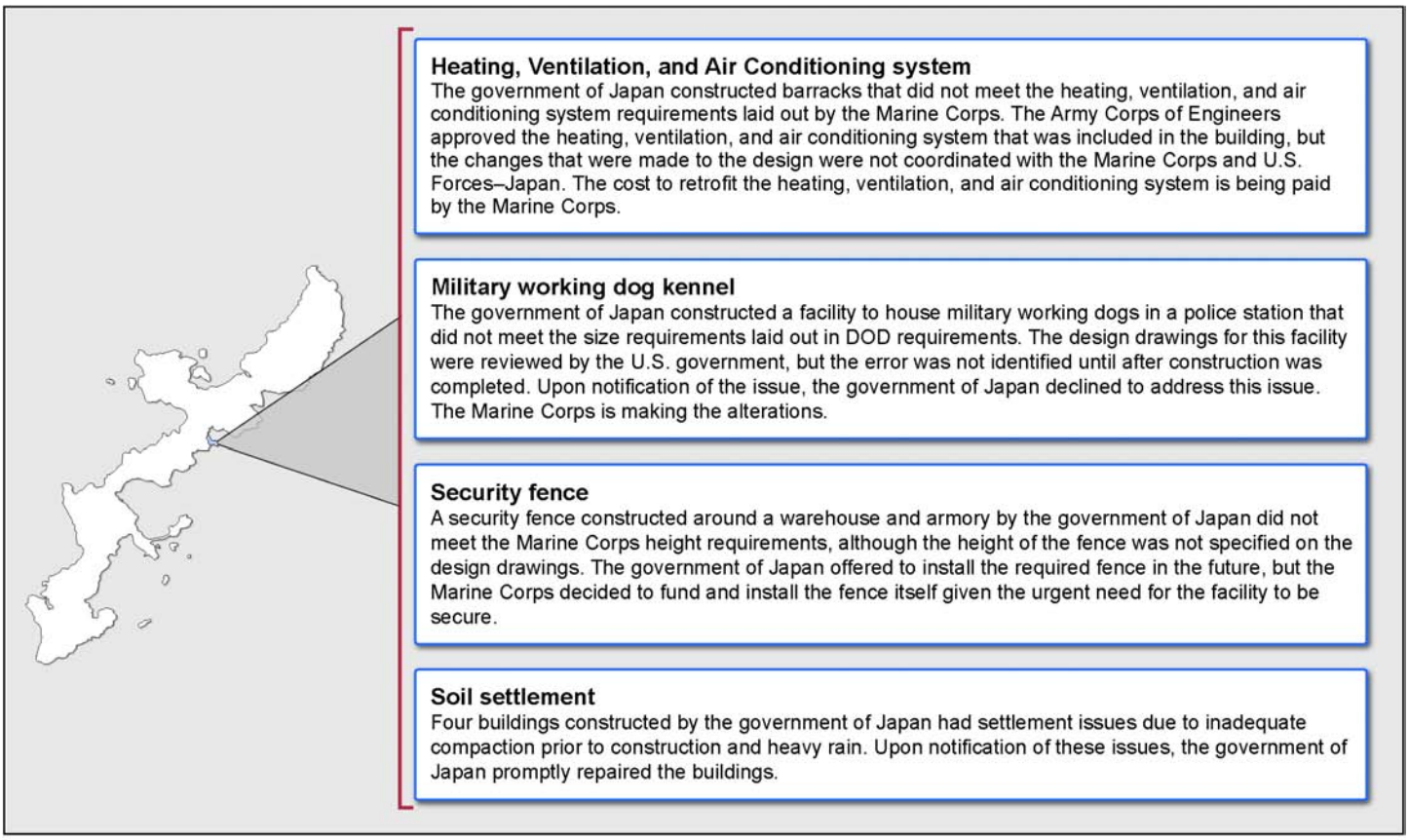
Ongoing Japanese construction at Marine Corps Air Station Iwakuni.

Source: GAO.

The Marine Corps officials we spoke with in Okinawa agreed with the officials at Iwakuni, suggesting that the Army Corps of Engineers did not have the appropriate resources to oversee the design and construction of the DPRI-related projects in Okinawa. Although less than 20 DPRI-related projects have been designed and constructed to date, according to Marine Corps officials several of these projects had errors that led to unplanned budget expenditures by DOD. Marine Corps officials attributed most of the errors to a lack of communication of proper requirements to the government of Japan, and insufficient oversight during the construction process. For example, the government of Japan designed and constructed a bachelor enlisted quarters at Camp Schwab based on requirements provided by the Army Corps of Engineers and the Marine Corps. After construction was completed, the Marine Corps refused to accept the building, because it discovered that the building's heating, ventilation, and air conditioning systems did not meet Marine Corps standards. Army Corps of Engineers officials said that they had not

identified the discrepancy between the Marine Corps' requirement and the government of Japan's designs prior to construction, resulting in the error. After about a year, the Marine Corps corrected the problem by developing an ad hoc solution to the heating, ventilation, and air conditioning systems issue at its own expense in order to bring the building up to its standards. In another example, on the basis of requirements provided by the Marine Corps and Army Corps of Engineers, the government of Japan designed and constructed a new police station with a fenced-in area to house military working dogs at Camp Foster. After construction had been completed, it was discovered that the fenced-in area had not met DOD standards for housing military working dogs. As a result, the Marine Corps funded a corrective action. See figure 10 for a list of additional DPRI-related construction errors in Okinawa, as described by the Army Corps of Engineers.

**Figure 10: Construction Errors on Defense Policy Review Initiative (DPRI) Projects in Okinawa as Identified by the Army Corps of Engineers**




Source: GAO analysis of DOD data; Map Resources (map).

Army Corps of Engineers officials said they are aware of the setbacks associated with the DPRI-projects in both Iwakuni and Okinawa; however, Army Corps of Engineers officials told us that external factors associated with its DOD counterparts (U.S. Forces–Japan and the military services) may have helped to contribute to these setbacks. For example, Army Corps of Engineers officials told us that both a lack of proper master planning and circumventing the DPRI project development process at Iwakuni led to an expedited process that caused heightened risk. The expedited process, according to Army Corps of Engineers officials, made it difficult to catch and correct errors in the design phase of DPRI projects. Army Corps of Engineers officials expressed concern that if DPRI projects in Okinawa proceed in a similar, expedited manner as Iwakuni, similar problems will occur, including heightened risk and an inability to appropriately plan for resource requirements.

In response to the setbacks related to DPRI projects in both Iwakuni and Okinawa, the Army Corps of Engineers has requested funding to increase staff at Iwakuni by 75 percent in fiscal year 2013 and have designed tools intended to prevent such setbacks in the future. For example, Army Corps of Engineers officials developed case studies of the errors and disseminated the information throughout their organization to better prepare their staff. In March 2011, Army Corps of Engineers personnel and senior leadership held an internal meeting to review construction project errors and discuss ways of improving their services. In addition, to ensure that they have sufficient resources and staffing to support the Marine Corps and the other services, Army Corps of Engineers officials have told us that they have conducted analyses every 6 months since July 2011 to forecast their future workload. These forecasts, according to Army Corps of Engineers officials, will continue in the future and include planning for any ramp-up needed in the immediate future.

## DOD Does Not Have a Strategy for Supporting a Surge in Japanese Construction

Although the Army Corps of Engineers has recognized and attempted to address the problems associated with the DPRI-related projects at Iwakuni and Okinawa, at the time of our review it had not yet developed a strategy, in conjunction with its DOD counterparts, to support a surge in Japanese construction that would require Army Corps of Engineers to support multiple, concurrent DPRI initiatives. Army Corps of Engineers officials acknowledged that there is potential for a surge in Japanese construction, so it is important that both the Army Corps of Engineers and the services be prepared for such an event. Furthermore, Army Corps of Engineers officials stated that the way the government of Japan funds and plans for construction makes DOD planning difficult. Specifically,

according to DOD officials, the government of Japan funds projects on a year-by-year basis, giving DOD limited time to react in any given year. According to Army Corps of Engineers officials, the lack of a bilateral integrated master schedule for all DPRI initiatives between the United States and Japan makes it very difficult to forecast its resource requirements more than 1 year at a time. However, Army Corps of Engineers officials agreed that they must still work to develop a strategy to deal with the possibility that additional resources will be needed to support any surges in Japanese construction up to 5 years in the future.

In previous work, we identified key elements that should be included in a support strategy:[68]

- Goals, subordinate objectives, activities, and performance measures set clear desired results and priorities, specific milestones, and outcome-related performance measures while giving implementing parties flexibility to pursue and achieve those results within a reasonable time frame.
- Organizational roles, responsibilities, and mechanisms for coordinating their efforts identify the relevant components. The strategy clarifies the components' relationships in terms of leading, supporting, and partnering.
- Resources, investments, and risk management identify, among other things, the sources and types of resources and investments associated with the strategy and where those resources and investments should be targeted.

Without a strategy to address future construction surges, the Army Corps of Engineers and the services will not have a clear picture of how the design and construction process should be handled moving forward, or the resources needed to support the effort. Such a strategy would allow both the Army Corps of Engineers and service officials—mainly the Marine Corps—to establish a process that assigns specific responsibilities, with time frames, to participating parties and assist the Army Corps of Engineers in identifying funding needed to support construction projects being conducted by both the United States and Japan. Without a strategy, DOD may not be in a position to successfully support upcoming DPRI-related projects and may face further planning

[68]GAO, *Combating Terrorism: Evaluation of Selected Characteristics in National Strategies Related to Terrorism*, GAO-04-408T (Washington, D.C., Feb. 3, 2004).

and construction errors that have in the past led to unplanned funding needs and delayed completion schedules. Delayed completion schedules may ultimately affect the implementation of the realignment of Marines or other DPRI initiatives.

## DOD Has Taken Initial Steps but Has Not Fully Identified Sustainment Needs and Costs on Okinawa and Guam

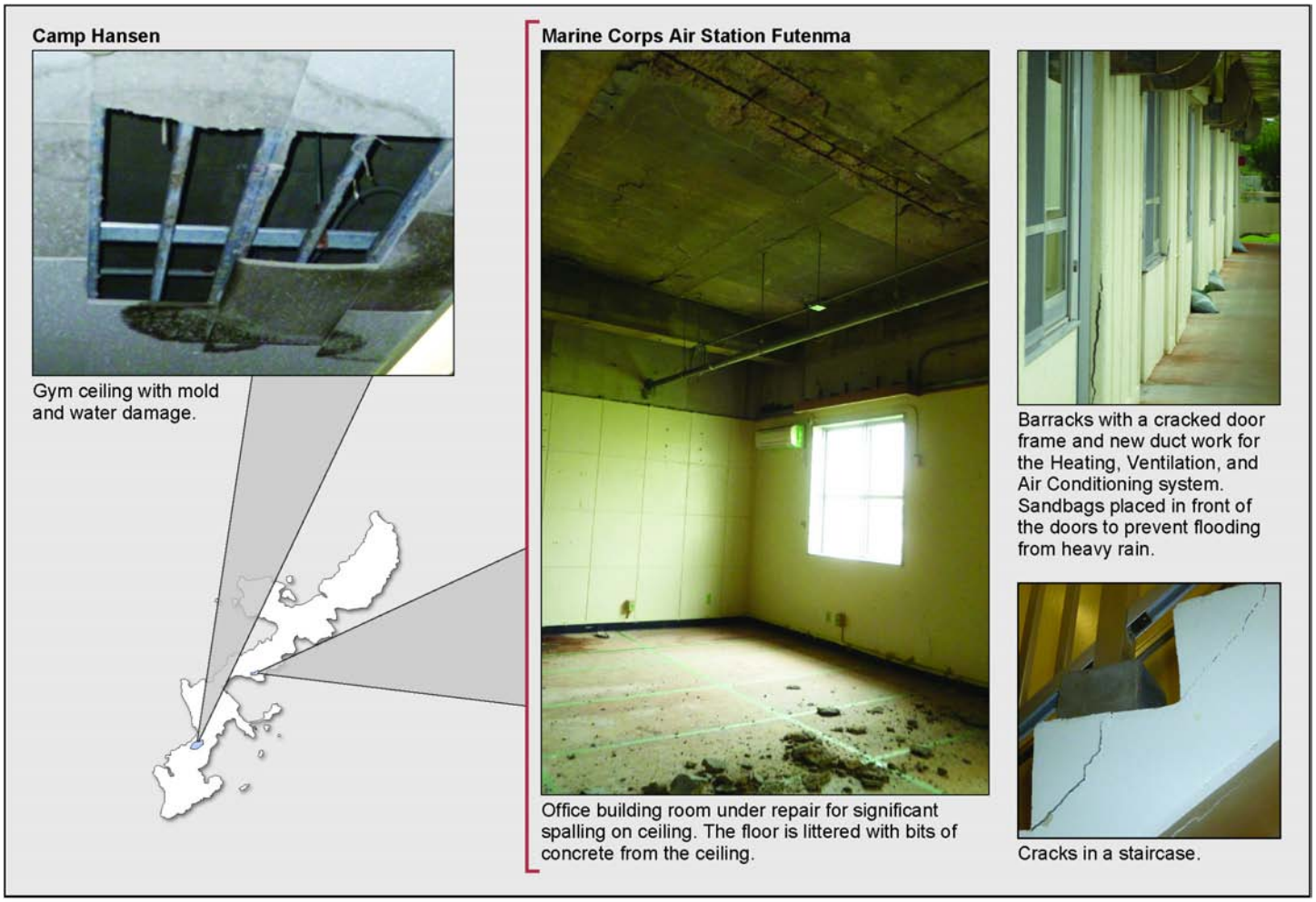
DOD has taken some steps to plan for sustaining its forces on both Okinawa and Guam until the Marine Corps realignment is implemented and consolidation initiatives on Okinawa are complete, but it has not yet fully identified what will need to be done to sustain the facilities at these locations and what it will cost for the immediate future. Facility maintenance and replacement for installations on Okinawa that were identified to be returned to the government of Japan have been limited for many years. As a result, many facilities have reached the end of their useful life and are in a state of disrepair. Specifically, DOD has identified the sustainment needs on Okinawa for Marine Corps Air Station Futenma; however, it has not identified sustainment needs for other facilities on the island that are expected to be eventually returned to Japan or fully planned for the sustainment of its family housing units on Okinawa. In Guam, DOD has begun to develop initial sustainment plans for its family housing units; however, these plans have not been updated to reflect the Marine Corps' current realignment plan.

### Many Okinawa Facilities Have Reached the End of Their Projected Service Life, and Maintenance and Replacement Has Been Limited

According to Marine Corps officials on Okinawa, many of the facilities supporting U.S. forces there are old, and are in need of resources to sustain them. We observed multiple facilities in various states of disrepair during our site visit to the island. For example, we observed facilities at Marine Corps Air Station Futenma that had been shuttered because service officials deemed them too dangerous to occupy; in some cases, there was so much mold growth that an extensive removal process would be necessary before the facilities could be occupied again. In addition to mold removal, some of these facilities would require other improvements or complete renovation before they could be used again. Marine Corps officials said that in some of the Marine Corps installations south of Kadena Air Base several facilities either are nearing or have already exceeded their 50-year service life and will need to be either renovated or replaced. The most significant examples of aging and deterioration that we observed were at Marine Corps Air Station Futenma, the installation that has been at the center of controversy on Okinawa for nearly two decades. At Futenma, at several facilities currently in use, we observed concrete ceilings, staircases, and walls that showed evidence of deterioration, ranging from superficial cracks on the exterior of the

structure to severe fracturing that rendered the facility unsafe for occupancy. Figure 11 shows some examples of deteriorated conditions at two locations on Okinawa.

**Figure 11: Examples of Deteriorated Conditions of Facilities on Okinawa**




Source: GAO (photos); Map Resources (map).

On Okinawa, DOD conducts routine maintenance and repair to keep its facilities in good working order over a 50-year service life and has

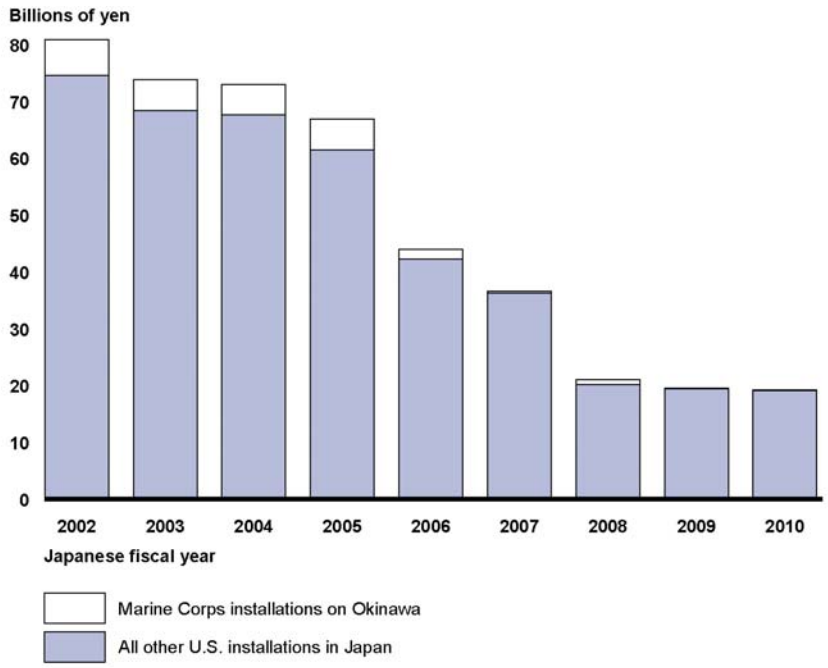
historically relied on the government of Japan to fund the construction of new U.S. facilities to replace deteriorating, obsolete structures.[69] The government of Japan will demolish these structures and construct new ones through the Japan Facilities Improvement Program. The program allows DOD to identify necessary projects from across the services and installations in Japan, rank them by priority, and submit them to the government of Japan for funding consideration.

In recent years, sustainment funding and facility replacement by the government of Japan has been limited because delays in the Marine Corps realignment, construction of the Futenma Replacement Facility, and Okinawa Consolidation have left unclear what facilities will need to be available and sustained—and for how long. Since 2006, in the face of the uncertainties surrounding these initiatives, both DOD and the government of Japan have questioned how they will proceed with maintaining some existing facilities on Okinawa. According to Marine Corps officials, because of the uncertainties surrounding the timing of the various realignment initiatives, the government of Japan has been hesitant to invest in constructing new facilities on Okinawa. Figure 12 shows a steady decline in funding since 2002 under the Japan Facilities Improvement Program. In 2002, Japan provided approximately ¥75 billion, or approximately $834 million. Of that ¥75 billion, approximately ¥6 billion, or $67 million, was for Marine Corps installations in Okinawa.[70] The figure shows a significant decline for funding in 2006, the year the 2006 Roadmap was developed outlining the realignment initiatives.

[69]According to Marine Corps officials, the service life of buildings before the government of Japan will replace them is dependent both on the type of building and the type of construction.

[70]The U.S. dollar figures are based on the January 2013 foreign exchange rate of 89.86 to indicate an approximate value.

**Figure 12: Japan Facilities Improvement Program Funding for All U.S. Installations in Japan and for Marine Corps Installations on Okinawa from 2002 to 2010 (in Billions of Yen)**




Source: GAO analysis of government of Japan data provided to DOD.

DOD officials told us that, to date, the services have submitted over $1.2 billion in backlogged construction replacement projects to the government of Japan under the Japan Facilities Improvement Program. However, according to DOD officials, the projects in this total for Okinawa are on hold until firm requirements can be determined for what will be needed to support the final Marine Corps end strength left in Okinawa to avoid the government of Japan constructing new facilities on lands that will subsequently be returned. DOD officials told us that a large portion of these backlogged projects are family housing projects.

## Family Housing

The Air Force, which is the executive agent for military family housing on Okinawa, had 7,823 family housing units in its active inventory as of February 2013. In February 2013, approximately 75 percent of its housing units were occupied. According to DOD officials, similar to other DOD facilities on Okinawa, many of the family housing units are old and in need of renovation or replacement. At Kadena Air Force Base, we

observed several vacant housing units that had not been renovated and showed significant mold damage. We also observed several recently renovated units. According to Air Force officials, approximately 58 percent of the military family housing units on Okinawa have been assessed as inadequate.[71] However, inadequate units are not necessarily uninhabitable. Air Force officials told us that one reason these units have been assessed as inadequate is that they were built to Japanese standards, which can differ significantly from Air Force standards. For example, Japanese accommodations tend to be smaller than housing units constructed by the services, so that kitchen, bathroom, and bedroom space may be more limited than it is in family housing units at other DOD locations, although the units are still viewed as safe to occupy.

The Air Force developed a family housing master plan in November 2011 to provide a corporate, requirements-based housing investment strategy that integrates traditional construction funding and private sector financing. This master plan covered the period of fiscal years 2012 through 2017 and estimated that the total funding required to maintain adequate military family housing and bring all housing-related infrastructure on Okinawa up to modern DOD standards would be $690.7 million; this figure includes $131.7 for military construction and $559.1 for operation and maintenance. On the basis of its analyses and master plan, the Air Force has been working to modernize or replace 6,988—89 percent—of its family housing units on Okinawa through various initiatives. Under its Post-Acquisition Improvement Program, the Air Force intends to renovate 3,747 housing units; these renovations are considered to be more extensive than minor repair and maintenance work and are intended to ensure that the renovated unit remains habitable for their full service lives. The government of Japan planned to build 1,770 new units under the 1996 Special Action Committee on Okinawa report and another 1,471 under the Japan Facilities Improvement Program, but as of February 2013 it had built only 38 percent of the first group and 13 percent of the second. (See table 5 for list of family housing projects and status as of February 2013.)

[71]These officials explained that they used the Condition Assessment Matrix to assess housing conditions in Okinawa. Housing units that score below 3.75 are deemed inadequate.

**Table 5: Okinawa Housing Redevelopment Plan as of February 2013**

| Funding program | Funding source | Total estimated cost (dollars in millions) | Housing units planned for repair | Percent of units completed |
|---|---|---|---|---|
| Special Action Committee on Okinawa | Japan | $1,032 | 1,770 | 38% |
| Japanese Facilities Improvement Program | Japan | $882 | 1,471 | 13% |
| Post-Acquisition Improvement Plan | United States | $650 | 3,747 | 69% |

Source: DOD.

The Air Force's current master plan and supporting analyses were based on the premise that approximately 8,600 Marines and 9,000 dependents would relocate to Guam by 2014—as anticipated under the original realignment plan. However, under the current realignment plan, DOD is planning to move only 4,700 Marines and their dependents to Guam. Air Force officials informed us that because many of the replacement projects funded by the government of Japan are on hold, they have developed a "bridging strategy" to fund minor renovations for a select number of units, in order to meet DOD's housing needs on Okinawa until additional units are constructed or renovated. As a result of the deterioration of its facilities and replacement projects being on hold, Marine Corps officials have stated that a sustainment funding strategy is going to be critical to maintain some of its infrastructure that has deteriorated past its useful life for the immediate future.

## DOD Has Taken Some Steps but It Has Not Fully Identified Sustainment Needs for Facilities on Okinawa

Marine Corps officials have stated that the uncertainties regarding the timing of the realignment initiatives have made it difficult for them to determine what sustainment projects will be needed for facilities on Okinawa, because they do not know when the realignment initiatives will be completed and therefore do not know how long the existing facilities will continue to be used. Marine Corps officials in Okinawa informed us that construction and sustainment projects described in the base master plans for each of the Marine Corps installations on Okinawa have not been updated to take into account delays in the realignment and consolidation plans, and that these base master plans remain in draft form. DOD has not developed any updated sustainment plans for these installations as part of their base master plans—with the recent exception of Marine Corps Air Station Futenma.

Many of the facilities on Futenma are 30 to 50 years old and have degraded over time due to limited investment in sustainment and the harsh tropical and corrosive saltwater environment of Okinawa. In response to the April 2012 Security Consultative Committee statement, and the delay in the Japanese construction of a replacement facility at Camp Schwab, the United States began to identify sustainment needs for Futenma. In April 2012, in a preliminary estimate, the Marine Corps identified approximately $165 million in funding needed to sustain Futenma for the next 10 years. In October 2012, the Marine Corps developed a draft sustainment plan after performing an assessment of the facilities on Futenma to identify, validate, and prioritize its sustainment needs. This plan included a priority list of repair and maintenance projects, and new construction projects needed to ensure that Futenma could continue to meet operational and training demands until the Futenma Replacement Facility is constructed and fully operational. The plan prioritizes facility repair and renovation projects to address critical mission and quality-of-life requirements. U.S. Forces–Japan officials said that DOD and the government of Japan are negotiating a possible cost-sharing arrangement, and that as of February 2013, both sides had agreed to a list of projects that the government of Japan had submitted to its legislature for funding consideration.[72] Marine Corps officials said that, without sustainment investment, the installation's ability to support operations would be put at risk.

Although DOD has developed a sustainment master plan for Futenma in response to the uncertainties surrounding the construction of the replacement facility on Okinawa, no plans of this type have been developed for any of the other installations on Okinawa. DOD Instruction 4165.70 requires that base master plans or comprehensive plans be developed for all installations and that these plans include a specific, annual listing of all construction and major repair and sustainment projects over the period covered by the plan.[73] According to the Unified Facilities Criteria, installation planning and programming staff must

[72]Marine Corps officials stated that planned U.S. government sustainment funding for Marine Corps Air Station Futenma for fiscal years 2013-2015 is $36 million, while the planned government of Japan sustainment funding during the same time frame is $28 million. However, funding requirements for fiscal year 2016 and beyond have yet to be determined.

[73]*See* Department of Defense Instruction 4165.70, *Real Property Management*, para. 6.1 (Apr. 6, 2005).

capture facility requirements and propose solutions to meet those requirements from the options available.[74] The Unified Facilities Criteria also indicates that a facility's master plan will be revised and updated to maintain its relevance as a useful planning and management tool.[75]

Furthermore, guidance on DOD housing management indicates that DOD housing—both family and unaccompanied—is to be operated and maintained to a standard that protects the facilities from deterioration and provides safe and comfortable living places for servicemembers and their dependents.[76] DOD policy is to rely on the private sector as the primary source for family housing for personnel stationed at locations within the United States. DOD guidance indicates that in overseas locations where servicemembers are given an overseas housing allowance to reimburse them for the cost of housing, the policy of relying on off-base housing first is not mandatory, but should be encouraged where appropriate.[77] DOD guidance also indicates that for installations on U.S. soil, to determine the need for military housing at the installation, the military services must perform a housing requirements and market analysis to determine whether the adjacent community can accommodate the housing needs of the military and must identify the minimum housing requirement—the minimum level of housing needed on base to allow the installation to effectively accomplish base missions. If the base is located overseas, the military service may determine the need and applicability of the housing requirements, and market analysis is not mandatory. DOD policy also states that master plans for housing should address, among other things, military housing requirements.

The Air Force's current housing requirements and market analysis for Okinawa do not reflect current plans. While the Marine Corps has provided the Air Force with the number of Marines that will remain on Okinawa following the full implementation of all realignment initiatives, the Air Force office responsible for family housing on Okinawa has not been

[74]*See* Department of Defense Unified Facilities Criteria 2-100-01, *Installation Master Planning*, para. 2-11.1.

[75]*See id.*, para. 3-2.4.

[76]See Department of Defense Manual 4165.63-M, *DOD Housing Management*, encl. 3, para. 2.a (Oct. 28, 2010).

[77]*See id.*, paras. 1.a, 1.f.

able to update its housing requirements and market analysis, and housing master plan, because the Marine Corps has yet to provide the Air Force with the incremental schedule and unit movements associated with the realignment initiatives on Okinawa. According to Marine Corps officials, the Marine Corps cannot provide incremental data until bilateral negotiations on the Okinawa Consolidation initiative and the subsequent master plan are finalized. Air Force officials told us that while they plan to update their housing requirements and market analysis in the summer of 2013, this will only cover the next 5 years. Considering that the realignment initiatives in Okinawa have no definitive timelines and may potentially take decades to complete, the Air Force office responsible for family housing on Okinawa told us that it needs a better understanding of when facilities will be constructed and units moved over the next 10-15 years. This incremental data will help Air Force officials conduct housing analyses and develop housing plans based on more short-term and intermediate housing requirement needs on Okinawa.

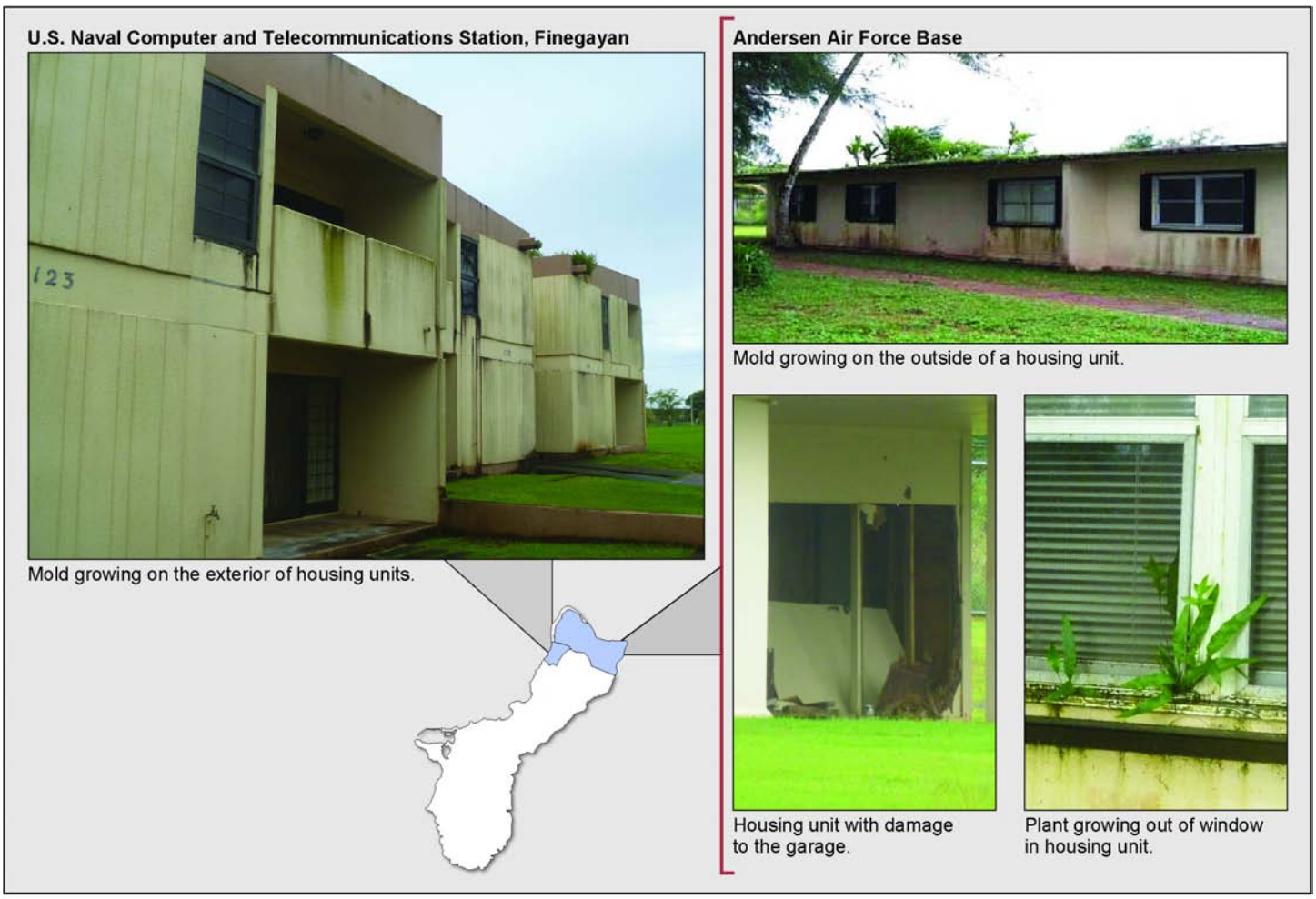
Until the Air Force knows what the incremental Marine Corps housing requirements will be for all phases of the realignment initiatives in Okinawa, it will not have sufficient information to project housing demand and assess the housing sustainment cost for the current realignment plan. As a result, the Air Force will not be able to determine how to sustain its housing inventory on Okinawa in a cost-effective manner, which could lead to overinvesting in certain housing areas and underinvesting in others. Without identifying sustainment needs for all its infrastructure that will be used until the realignment and consolidation actions are implemented, DOD risks not having the information necessary to make informed decisions about maintaining its infrastructure at an acceptable level to carry out its mission.

## DOD Has Not Accounted for the Marine Realignment in Its Housing Plans on Guam, and Housing Cost Data Are Limited

DOD is in the process of developing plans to meet the housing needs for U.S. forces on Guam, but these plans will not take into account the housing requirements associated with the current realignment. According to Joint Region Marianas officials, Joint Region Marianas is responsible for overseeing all military housing on Guam, but Naval Base Guam and Naval Support Activity, Andersen, are each responsible for implementing their own housing operations. Joint Region Marianas and its installations face many of the challenges associated with sustaining aging housing units that we reported are being experienced by the Air Force on Okinawa. A June 2012 assessment of housing on Naval Base Guam found housing deficiencies such as mold, broken windows, and inoperative fans and ventilation systems. While in Guam, we observed

several unoccupied housing units that showed significant pest infestation and mold growth in their interiors and heavy vegetation and mold growth on their exteriors. Figure 13 shows pictures of some of the housing units we observed.

**Figure 13: Examples of Unoccupied Housing Units on Guam**




Source: GAO (images); Map Resources (map).

There is currently a surplus of military family housing on Guam. As of January 2013, approximately 67 percent of available military housing on

Guam—1,577 housing units—are occupied, and 785 units remain vacant.[78] In addition, there are 311 additional housing units that have been classified as inactive, which according to Joint Region Marianas officials, means that those units are viewed as uninhabitable and are no longer considered part of the active housing inventory. Joint Region Marianas officials said that the low occupancy rate in their housing units can be attributed to several factors. First, since many servicemembers are eligible to live off base, many choose to do so to enjoy the benefits of living in the local community. Many servicemembers also choose to reside in private housing to take advantage of the high overseas housing allowance and utilities stipend. According to the Defense Finance and Accounting Service, in 2011 approximately 3,800 personnel from the Air Force, Army, Navy and Marine Corps who were stationed on Guam received a combined total of $96.1 million in overseas housing allowance. Under the auspices of Joint Region Marianas, both Naval Base Guam and Andersen Air Force Base have developed housing plans that seek to address the low occupancy rate in their on-base housing and make more effective and efficient use of their housing inventories. To increase the occupancy rate, Joint Region Marianas officials are assessing several alternatives, including revising their housing policy to make more DOD-civilians eligible to reside in military housing, requiring more servicemembers to reside in military housing, and reducing the number of housing units in the inventory. However, Joint Region Marianas officials informed us that, until the Marine Corps completes its requirements determination, arrival dates, and housing policy, none of their alternatives or plans will consider housing requirements associated with the current Marine Corps realignment plan that will eventually send nearly 5,000 Marines to Guam. Moreover, they said that they do not have plans to set aside and sustain existing facilities to support the realignment of Marines.

Joint Region Marianas officials informed us that, because of the uncertainty regarding when Marines will begin relocating to Guam, they had decided to proceed with developing housing plans independently of the Marine Corps realignment initiative. They explained that delaying action on meeting their housing needs could adversely affect their ability

[78]The data presented here are not reflected, as of January 2013, in the enterprise Military Housing Database used by Joint Region Marianas officials to manage their housing operations. These officials are in the process of updating this database. According to the database, there are 1,227 total units recorded on Guam; 739 are occupied, 270 vacant, and 218 inactive, as of January 2013.

to provide housing to servicemembers currently stationed on Guam. Initially, Joint Region Marianas was making preparations to support the Marine realignment. The Department of the Navy had conducted a housing requirements and market analysis to identify the demand for military housing on Guam based on the Marine Corps requirements associated with the previous realignment plan. Joint Region Marianas had identified surplus housing units that could have been used to provide transitional housing for Marines relocating to Guam. However because of the delay of the realignment and reduced number of troops relocating, the Marine Corps data that the Navy used when it conducted its housing requirements and market analysis were no longer valid. Because no firm requirements or a time frame for the realignment are available, Joint Region Marianas officials are currently only addressing the housing issues directly relevant to its immediate needs.

DOD data on the cost of maintaining vacant and inactive housing on Guam are limited.[79] Joint Region Marianas officials said that they have yet to determine the average cost of maintaining a vacant or inactive housing unit on Guam. Officials from Andersen Air Force Base estimated that the average annual cost of maintaining an inactive unit on the Air Force Base, including the cost of providing electrical power and ground maintenance, is approximately $4,500 per house. However, Joint Region Marianas officials said that similar data have not been calculated for Navy housing on Guam. Joint Region Marianas officials told us that Navy housing units on Guam can be found both on the military installations and embedded in the local community and that, because different types of costs are involved for the two types of housing units, it becomes difficult to determine an average cost for maintaining inactive housing units. For example, officials stated that certain services, like fire protection and security, for Navy housing units located on military installations would be incorporated into the base operating support expenses for that installation; however, for certain Navy housing units embedded in the local community, officials stated that Joint Region Marianas would pay for these services from accounts other than base operating support, and it may be difficult to isolate and merge this data.

[79]Joint Region Marianas identified vacant units as those that are suitable for occupancy but not occupied and inactive units as those that are not suitable for occupancy and will not be used for habitation.

DOD guidance on economic analysis for decision making states that the purpose of such an analysis is to give decision makers insight into economic factors bearing on accomplishing a project's objectives and that alternatives must be fully investigated and a determination made on whether an alternative satisfies the functional requirements for the project.[80] This guidance also indicates that, as part of assessing the costs and benefits of alternatives, an economic analysis should include all measurable costs and benefits to the federal government that are incident to achieving the stated objectives of the project. However, without the Marine Corps housing requirements being considered and the total costs of maintaining vacant and inactive housing units known, Joint Region Marianas' planned assessment of alternatives will not fully measure the costs and benefits to the federal government of its housing plans. As a result, decision makers will not have sufficient information to identify an investment strategy that addresses both Joint Region Marianas' current housing needs and the Marine Corps' housing requirements once the realignment is completed.

## Conclusions

DOD believes that rebalancing and strengthening its posture in the Asia-Pacific region offers many advantages, including reassuring allies and partners in the region of the United States' commitment and shaping the security environment, while also providing forward capabilities to deter and defeat aggression. However, in an era of significant budgetary pressures and competition for resources, it is important to conduct detailed planning, supported by comprehensive cost information, to ensure that DOD is making the most efficient use of its resources. Although DOD has revised its plan to relocate Marines off Okinawa, it has yet to identify the total costs, requirements, or sustainability of a move that will realign Marine Corps forces throughout the Pacific. In our assessment of DOD's preliminary estimate for the realignment, we found that DOD's estimate is not reliable because it omits potentially critical cost elements such as mobility support and risk parameters tied to the assumptions, and lacks detailed information on requirements for several key cost components that are needed to capture all costs related to the realignment. According to DOD officials, specific requirements and their associated costs cannot be developed for each cost component until the

[80] *See* Department of Defense Instruction 7041.3, *Economic Analysis for Decisionmaking*, encl. 3, para. E3.3, E3.3.2 (Nov. 7, 1995).

necessary environmental analyses and host nation negotiations have been completed. Still, we found that DOD did not include some up-front practices that could have provided a more reliable estimate and could have been done despite the fact that the environmental analyses and host nation negotiations are not complete. Office of Management and Budget guidance indicates that it is a best practice to continuously update the cost estimating process to keep estimates current, accurate, and valid; and DOD's overview of its fiscal year 2013 budget states that DOD cannot continue the practice of starting programs that prove to be unaffordable and that it will work to achieve program affordability by working to ensure programs start with firm cost goals in place, appropriate priorities set, and necessary trade-offs made to keep programs within affordable limits. Without comprehensive cost estimates developed for the realignment plan, DOD will be hampered in achieving its affordability goal of not starting a program without firm costs goals in place. DOD acknowledges that it will be 2018 or later before an integrated master plan can be completed to provide Congress with the necessary information it needs on all of the specific projects, requirements, schedules, and costs to aid it in its decision making regarding the realignment of Marines in the Pacific. However, DOD has made a first step in capturing some of its planning information including integrated schedules of its planned actions in its synchronization matrix. While we acknowledge that this type of information will periodically change as environmental analyses and negotiations are completed, and plans start to be implemented, this type of information would provide Congress with current plans in the interim until such time that the integrated master plan can be completed.

Furthermore, it is unknown what the government of Japan's long-term construction schedule will be for building the infrastructure to complete its plans for Iwakuni and Okinawa. DOD currently has not developed a strategy to identify the resources it needs to assist with the development and oversight of these projects that may involve a surge in concurrent construction. Without a strategy, DOD will not have the safeguards in place to help ensure facilities are being built to standard and that problems that already existed on a smaller scale are not magnified. Finally, uncertainties surrounding this realignment have disrupted planning for current facilities and family housing on Okinawa, and family housing on Guam, leaving the potential for hundreds of millions of dollars in unplanned sustainment projects in the future. Without developing comprehensive cost estimates and further planning to support the realignment, DOD risks requesting realignment funds without fully determining requirements, and Congress may be asked to fund

requirements without knowing the full cost. Furthermore, without developing updated sustainment plans on both Okinawa and Guam, DOD lacks reasonable assurance that it will have adequate facilities to support operations and the lives, health, and safety of servicemembers and their families.

## Recommendations for Executive Action

To provide DOD and Congress with more reliable information to inform investment decisions associated with the realignment of Marines and U.S. military posture in the Pacific, we recommend that the Secretary of Defense update the current cost estimate to include additional estimates for mobility support, and additional analysis that would quantify the risk impacts and parameters to account for its various assumptions changing. Furthermore, as appropriate environmental analyses and host nation negotiations are completed, update the estimate with comprehensive cost estimates (as identifiable) that factor in and include the following seven cost components associated with the current realignment plan:

- Guam Physical Layout and Requirements;
- Housing Requirements on Guam;
- Requirements to Upgrade Utilities and Infrastructure on Guam;
- Joint Training Range Complex Requirements including associated environmental mitigation in the Northern Marianas;
- Marine Corps Requirements for Australia;
- Marine Corps Requirements for Hawaii and Other U.S. Locations;
- Mobility requirements to support the current realignment plan to conduct routine operations, training, and any contingency situations.

To provide DOD and Congress with sufficient information to make informed decisions about the sequencing of projects supporting the realignment of Marines and the interdependent projects on Okinawa and about the timing for the funding needed to simultaneously support these projects and those already planned on mainland Japan, we recommend that the Secretary of Defense take the following two actions:

- As the master planning process continues over the next several years, require the Secretary of the Navy to develop annual updates on the status of planning efforts for appropriate congressional committees until such time as master plans are completed for each geographic segment of the realignment. These updates should include, but not be limited to, providing congressional committees with up-to-date information on the status of initiatives, identified requirements and time frames, and any updated cost information linked to specific facilities or projects.

- Direct the Secretary of the Army to require the Army Corps of Engineers to coordinate with appropriate military service officials involved in the planning and management of DPRI projects in Japan, including U.S. Forces–Japan, Marine Corps Installations Pacific, and Marine Corps Headquarters, to develop a strategy to identify how the design and construction process of DPRI projects should be handled moving forward and the necessary resources needed to support any surge in construction associated with posture-related initiatives in both Iwakuni and Okinawa.

To aid DOD and Congress in obtaining sufficient information to make prudent investment decisions for the sustainment of U.S. forces on Okinawa and Guam while implementing the planned movements associated with the realignment of Marines and the consolidation efforts on Okinawa, we recommend that the Secretary of Defense take the following three actions:

- Direct the appropriate service officials to update Okinawa installation master plans to include sustainment requirements and the costs to sustain the U.S. presence on Okinawa until the Marine realignment and Okinawa consolidation efforts are completed. At a minimum, these plans should identify both short-term needs and long-term needs to account for the uncertainty regarding the time needed to implement the realignment and consolidation initiatives on Okinawa.
- Direct appropriate service officials to provide, as they become available, annual master schedule and unit movement updates associated with the realignment initiatives on Okinawa to the appropriate Air Force officials. These updates should include any updated housing requirements such as the demographics of Marine families required to be housed on Okinawa during the future phases of the realignment initiatives on Okinawa, thus allowing the appropriate Air Force officials to perform up-to-date assessments and develop housing investment strategies reflecting the updated schedule and housing requirements.
- Direct the Secretary of the Navy to conduct an economic analysis to include assessing the costs of maintaining vacant housing on Guam to arrive at an informed decision weighing the cost of maintaining or renovating this housing versus the construction of new facilities to support the requirements for the Marine Corps realignment to Guam.

## Agency Comments and Our Evaluation

In written comments on a draft of this report, DOD fully concurred with five of our recommendations, partially concurred with two recommendations, and stated it would work with DOD components to implement the recommendations. While DOD agreed with the content of

the report and the recommendations, the department expressed concern with the report's title. DOD believes the title suggests the department currently has the ability to produce comprehensive cost estimates and complete planning for the realignment initiatives but has not done so. Our report title Defense Management: More Reliable Cost Estimates and Further Planning Needed to Inform the Marine Corps Realignment Initiatives in the Pacific conveys that more reliable estimates and comprehensive planning will be needed to inform decision makers. We acknowledged in our report that DOD will not be in a position to provide comprehensive cost estimates and complete planning documentation for the realignment to Congress until the environmental studies and host nation negotiations have been completed. However, it is important to ensure that Congress is aware that current cost estimates provided to them to date are not reliable because they are incomplete for the reasons stated above and in our report. As a result, we did not change the title of the report.

DOD partially concurred with our recommendation to update its current cost estimate for the realignment to include additional estimates for mobility support, and additional analysis that would quantify the risk impacts and parameters to account for its various assumptions changing. DOD stated that it is in the process of responding to requirements contained in Section 2832 of the National Defense Authorization Act for Fiscal Year 2013, which also requires an assessment of the necessary strategic and logistical resources. However, the provision does not specifically require DOD to include risk impacts and parameters. Furthermore, DOD stated that estimates for mobility support will not be available until the department completes the required environmental planning documents. As our report states, we acknowledge that comprehensive estimates for most costs tied to the realignment cannot be completed until appropriate environmental analyses and host nation negotiations are complete. However, we believe DOD should update its current estimate to include risk parameters to produce a more reliable cost estimate by accounting for potential cost fluctuations (if its assumptions change) and include an initial estimate for mobility support, a cost that DOD officials told us could be considerable.

DOD concurred with our recommendation to update the cost estimate for the realignment with comprehensive estimates as environmental analysis and host nation negotiations are completed and consequently more specific data becomes available on seven specific cost components including Guam physical layout and requirements; housing and utilities infrastructure on Guam; joint or Marine Corps training and other

requirements in the Northern Marianas, Australia, and Hawaii; and mobility requirements. DOD stated that it plans to identify and incorporate comprehensive cost estimates as they become available upon completion of necessary environmental planning documents.

DOD also concurred with our recommendation that the Secretary of Defense direct the Secretary of the Navy to provide annual updates on the status of master planning efforts to the appropriate congressional committees, until such time as master plans are completed for each geographic segment of the realignment.

DOD partially concurred with our recommendation to require the Army Corps of Engineers to coordinate with appropriate military service officials to develop a strategy to identify how the design and construction process of Defense Policy Review Initiative projects should be handled moving forward, and the necessary resources needed to support any surge in construction in both Iwakuni and Okinawa. DOD noted that it would take these steps, but stated that the effort necessarily relies upon a detailed master plan that has been coordinated among several organizations within DOD in order to identify the necessary resources to support a surge in construction. We agree that developing a master plan is the first step, and coordination with the various DOD organizations will be required to complete this task.

DOD concurred with our recommendation to update Okinawa installation master plans to include sustainment requirements and the costs to sustain the U.S. presence on Okinawa until the Marine realignment and Okinawa consolidation efforts are completed. DOD stated that the completion of the bilateral Okinawa Consolidation Plan in April 2013 removed much uncertainty and will allow the development of more detailed master plans for each camp.

DOD concurred with our recommendation to provide, as they become available, annual master schedule and unit movement updates associated with the realignment initiatives on Okinawa to the appropriate Air Force officials including updated housing requirements and demographics of Marine Corps families required to be housed on Okinawa. DOD stated it will direct U.S. Pacific Command and the Marine Corps to provide current fiscal and unit movement data to the Air Force, and update as plans are reviewed and revised.

DOD concurred with our recommendation to conduct an economic analysis to include assessing the costs of maintaining vacant housing on

Guam. DOD stated that the Navy is conducting a housing market analysis to establish a baseline for long-term military family housing requirements on Guam and that, once the baseline requirements are established, the Navy will conduct a cost/benefit analysis for addressing new requirements related to the Marine Corps realignment.

We also provided the Department of State with a draft of this report for official comment, but it declined to comment since the report contains no recommendations for the Department of State. DOD and State provided technical comments separately that were incorporated into the report as appropriate. DOD's written comments are reprinted in appendix VI.

We are sending copies of this report to appropriate congressional committees, the Secretary of Defense; the Secretaries of the Army, Navy, and Air Force; the Commandant of the Marine Corps; the Secretary of State; the Director, Office of Management and Budget; and appropriate organizations. In addition, this report will be available at no charge on our website at http://www.gao.gov.

If you or your staff has any questions about this report, please contact me at (202) 512-4523 or leporeb@gao.gov. Contact points for our Offices of Congressional Affairs and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix VII.

Brian J. Lepore, Director
Defense Capabilities and Management

*List of Committees*

The Honorable Carl Levin
Chairman
The Honorable James Inhofe
Ranking Member
Committee on Armed Services
United States Senate

The Honorable Dick Durbin
Chairman
The Honorable Thad Cochran
Ranking Member
Subcommittee on Defense
Committee on Appropriations
United States Senate

The Honorable Tim Johnson
Chairman
The Honorable Mark Kirk
Ranking Member
Subcommittee on Military Construction, Veterans' Affairs, and Related Agencies
Committee on Appropriations
United States Senate

The Honorable Howard P. McKeon
Chairman
The Honorable Adam Smith
Ranking Member
Committee on Armed Services
House of Representatives

The Honorable C.W. Bill Young
Chairman
The Honorable Pete Visclosky
Ranking Member
Subcommittee on Defense
Committee on Appropriations
House of Representatives

The Honorable John Culberson
Chairman

The Honorable Sanford Bishop
Ranking Member
Subcommittee on Military Construction, Veterans' Affairs, and Related Agencies
Committee on Appropriations
House of Representatives

# Appendix I: Scope and Methodology

To evaluate defense posture initiatives in the Asia-Pacific region, we interviewed and collected information from various Department of Defense (DOD) officials including:

- Office of the Under Secretary of Defense (Policy);
- Department of the Army;
- Department of the Air Force;
- Department of the Navy;
- U.S. Pacific Command and its Army, Navy, Marine Corps, and Air Force component commands;
- U.S. Forces–Japan and its Army, Navy, Marine Corps, and Air Force component commands;
- U.S. Army Corps of Engineers and its Japan Engineering District;
- Joint Region Marianas; and
- Joint Guam Program Office.

We conducted site visits to

- Yokota Air Base and Marine Corps Air Station Iwakuni in mainland Japan;
- Kadena Air Base, Camps Schwab and Kinser, and Marine Corps Air Station Futenma on Okinawa;
- Andersen Air Force Base and several Naval installations on Guam; and
- the proposed training locations on Tinian.

Specifically, to determine the extent to which DOD has developed comprehensive plans and cost estimates for the realignment of Marines, we interviewed appropriate DOD and State Department officials, collected plans and cost estimates related to this initiative, and applied the best practices included in the GAO Cost Estimating and Assessment Guide to our assessment of the available data. In addition to the agencies listed above, we interviewed and collected data from officials in the Office of the Under Secretary of Defense (Comptroller), Director, Cost Assessment and Program Evaluation; the Joint Staff; the Office of Economic Adjustment; U.S. Transportation Command; the Defense Logistics Agency; the Naval Center for Cost Analysis; and U.S. Embassy in Tokyo, Japan, and U.S. Consulate in Naha, Okinawa. For this review, we collected DOD plans and cost estimates associated with the original and current Marine realignment plans, DOD budget data on U.S. projects related to the Defense Posture Review Initiative (DPRI) and the Marine realignment, budget data on DPRI and Host Nation Support expenditures provided to DOD by the government of Japan, military base master plans and housing requirements analyses, and other relevant documentation.

To assess the comprehensiveness of DOD's realignment cost estimate, we analyzed DOD's plans, cost analyses, and cost estimating process and compared them with the best practices included in the GAO Cost Estimating and Assessment Guide.

To determine the extent to which DOD has planned for and synchronized other U.S. defense posture movements in Okinawa and Japan to coincide with the Marine Corps realignment, we reviewed planning documentation associated with these posture movements for completeness and coordination. We interviewed and collected relevant planning documentation from officials in the DOD offices listed above. We compared the data we received from each component within the Marine Corps to one another, and compared the data we collected from U.S. Pacific Command, U.S. Forces–Japan, the Joint Guam Program Office, and the Office of the Secretary of Defense to determine the status of planning consistencies and synchronization. We evaluated these plans with criteria established in relevant DOD guidance and Key Elements for Developing a Strategy.

To determine the extent to which DOD has identified a plan to sustain its current forces on Okinawa and Guam, we interviewed the DOD officials listed above and conducted site visits where we observed the conditions of facilities and housing, collected appropriate planning documentation and cost data, and assessed the data against GAO cost estimating guidance and DOD planning guidance. We interviewed officials to identify DOD requirements and plans for sustaining U.S. forces on Okinawa until realignment efforts are completed. We collected sustainment planning documentation, base master plans, and historical host nation support and U.S. sustainment cost data for Okinawa and compared them to GAO cost estimating guidance and DOD guidance on installation master planning to determine the extent to which DOD has planned for the sustainment of U.S. forces on Okinawa until realignment efforts are completed. We interviewed officials to determine the extent to which they have planned for the sustainment of family housing on Guam, reviewing planning documentation and analyzing current cost data collection methodologies used by the Air Force and the Navy. We compared sustainment plans to criteria established by relevant DOD guidance on economic analysis for decision making and installation master planning.

To determine the reliability of the numerical data provided to us by DOD organizations, we collected information on how the data was collected, managed, and used through interviews and a survey provided to relevant DOD officials. By assessing this information against GAO data quality

standards, we determined that the data presented in our findings were sufficiently reliable for the purposes of this report.

We conducted this performance audit from November 2011 to March 2013, in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

# Appendix II: April 2012 Joint Statement of the United States-Japan Security Consultative Committee

Joint Statement of
the Security Consultative Committee

April 27, 2012
By
Secretary of State Clinton
Secretary of Defense Panetta
Minister for Foreign Affairs Gemba
Minister of Defense Tanaka

The U.S. -Japan Security Consultative Committee (SCC) reconfirmed that the U.S.-Japan Alliance, supported by a robust U.S. military presence in Japan, including U.S. Marine Corps forces in Okinawa, continues to provide the deterrence and capabilities necessary for the defense of Japan and for the maintenance of peace, security, and economic prosperity in the Asia-Pacific region.

In view of the increasingly uncertain security environment in the Asia-Pacific region, the Ministers reiterated their commitment to advance the Common Strategic Objectives set forth in the June 21, 2011 SCC Joint Statement. The Ministers also expressed their intention to enhance bilateral security and defense cooperation in line with that Joint Statement and to identify ways to strengthen engagement with countries in the Asia-Pacific region.

The Government of Japan welcomed the January 2012 announcement by the U.S. Government of the new Strategic Guidance for the Department of Defense, which states the U.S. intent to rebalance defense priorities toward the Asia-Pacific region, and also welcomed U.S. efforts to advance its diplomatic engagement in the region.

To achieve the goals of the shared partnership between the two countries, the SCC decided to adjust the plans outlined in the May 1, 2006 SCC Document entitled, "United States-Japan Roadmap for Realignment Implementation" (Realignment Roadmap). As part of these adjustments, the Ministers decided to delink both the relocation of the III Marine Expeditionary Force (MEF) personnel from Okinawa to Guam and resulting land returns south of Kadena Air Base from progress on the Futenma Replacement Facility.

The Ministers affirmed that these adjustments are necessary to realize a U.S. force posture in the Asia-Pacific region that is more geographically distributed, operationally resilient and politically sustainable. The adjustments, moreover, do not alter the fundamental goals of the Realignment Roadmap, which are to maintain deterrence and mitigate the impact of U.S. forces on local communities. The adjustments also strengthen interoperability between U.S. forces and the Japan Self Defense Forces (JSDF) and support the development of Guam as a strategic hub.

The Ministers also affirmed that the unit composition described in Section I would strengthen the deterrence capabilities of the U.S.-Japan Alliance. Furthermore, the Ministers underscored that the deterrence capabilities of the Alliance would be

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strengthened through Japan's efforts, such as development of a dynamic defense force and enhancement of its defense posture in areas including the Southwestern Islands. They also noted that bilateral dynamic defense cooperation, including timely and effective joint training, joint surveillance and reconnaissance activities, as well as joint and shared use of facilities, would strengthen deterrence.

## I. Unit Composition in Guam and Okinawa

The Ministers announced their intent to adjust the composition of U.S. Marine Corps units in Okinawa and Guam. Because the authorized strength of U.S. Marine Corps forces in Okinawa has grown slightly since the Realignment Roadmap, and in order to maximize the operational capability of the departing and remaining units, both governments have decided on certain adjustments to the end-state composition of U.S. Marine Corps forces in Guam and Okinawa.

The United States plans to locate Marine Air-Ground Task Forces (MAGTF) in Okinawa, Guam, and Hawaii and intends to establish a rotational presence in Australia in order to establish a geographically distributed force posture while sustaining the forward presence of U.S. Marine Corps forces in the region. This revised posture will ensure a more capable U.S. Marine Corps presence in these locations, strengthening deterrence and enabling flexible and rapid responses to various contingencies. The Ministers confirmed that these steps would contribute to Japan's defense and to peace and stability throughout the Asia-Pacific region.

The Ministers confirmed that a total of approximately 9,000 U.S. Marines, along with their associated dependents, are to be relocated from Okinawa to locations outside of Japan. U.S. Marine Corps forces remaining in Okinawa are to consist of the III MEF Headquarters; the 1st Marine Aircraft Wing Headquarters; the 3rd Marine Logistics Group Headquarters; the 31st Marine Expeditionary Unit; and base sustainment elements of Marine Corps Installations Pacific, along with essential aviation, ground and support units. The Ministers reaffirmed their commitment to achieve an end-state for the U.S. Marine Corps presence in Okinawa consistent with the levels envisioned in the Realignment Roadmap. Consistent with the usual practice of Alliance consultations, the U.S. Government is to notify the Government of Japan of changes to the organizational structure of the U.S. Marine Corps units in Okinawa.

The United States is working to establish an operational U.S. Marine Corps presence in Guam consisting of the 3rd Marine Expeditionary Brigade Headquarters; the 4th Marine Regiment; and elements of aviation, ground and support units from III MEF. A base sustainment unit is also to be established there. The authorized strength of U.S. Marine Corps forces in Guam is to be approximately 5,000 personnel.

In conjunction with these adjustments, the U.S. Government also informed the Government of Japan that it is establishing a U.S. Marine Corps rotational presence in Australia, with other U.S. Marines moving to Hawaii to enhance operational capability there. In executing these moves, the U.S. government reaffirmed its commitment to sustain its current military presence and enhance military capability in the Western Pacific.

To reinforce the long-term sustainability of the U.S. military presence in Okinawa, the relocation of U.S. Marine Corps units from Okinawa mentioned above is to occur when appropriate facilities are available to receive them. Recognizing the strong desires of Okinawa residents, these relocations are to be completed as soon as possible while ensuring operational capability throughout the process.

The preliminary cost estimate by the U.S. Government for the relocation of Marines to Guam described above is $8.6 billion in U.S. fiscal year 2012 dollars. In order to expedite the establishment of an operational U.S. Marine Corps presence in Guam, and considering the aforementioned unit composition, the two governments reaffirmed that Japan's financial commitment is to be the direct cash contribution as stipulated in Article 1 of the 2009 Guam International Agreement. The two governments affirmed that other forms of Japanese financial support to Guam relocation would not be utilized. Any contributions from Japan to develop training areas as referred to in Section II are to be a part of the aforementioned commitment. The remaining costs and any additional costs are to be borne by the U.S. Government. Any funds already transferred by the Government of Japan to the U.S. Government under the 2009 Guam International Agreement are to be counted as part of the Japanese contribution. The two governments are to complete a bilateral cost breakdown. They are also to consult regarding further actions to be taken in light of the 2009 Guam International Agreement. The Ministers noted the importance of continued consultations on the programmatic and technical details of these initiatives with the legislative branches on both sides.

**II. New Initiatives to Promote Regional Peace, Stability, and Prosperity**

The Ministers confirmed the great importance of working together to promote peace, stability and prosperity in the Asia-Pacific region, and enhancing effective, efficient and creative cooperation.

In this context, the U.S. Government plans to continue to help allies and partners in the region to build their capacity with training and exercises. The Government of Japan, for its part, plans to take various measures to promote safety in the region, including strategic use of official development assistance, for example through providing coastal states with patrol boats.

In order to develop Guam as a strategic hub and mitigate the impact of the U.S. military presence on local communities, both governments plan to explore new efforts to promote bilateral dynamic defense cooperation in the region based on the assessment of the changing security environment. The two governments are to consider cooperation in developing training areas in Guam and the Commonwealth of the Northern Mariana Islands as shared-use facilities by U.S. forces and the JSDF. Both governments are to identify specific areas of cooperation in this regard by the end of 2012.

**III. Consolidation of Bases and Land Returns in Okinawa**

The total or partial return of the following six facilities and areas remains unchanged from the Realignment Roadmap:

- Camp Kuwae (Camp Lester): Total return.

- Camp Zukeran (Camp Foster): Partial return and consolidation of remaining facilities and infrastructure to the extent possible.
- Marine Corps Air Station (MCAS) Futenma: Total return.
- Makiminato Service Area (Camp Kinser): Total return.
- Naha Port: Total return (relocated to the new facilities, including additional staging area, to be constructed at Urasoe).
- Army Petroleum, Oil, and Lubricant Depot Kuwae Tank Farm No.1: Total return.

The United States committed to return lands on Okinawa as designated U.S. Marine Corps forces relocate from Okinawa, and as facilities become available for units and other tenant activities relocating to locations in Okinawa. The Government of Japan noted its responsibility to relocate all functions and capabilities that are resident in facilities designated for return, and that are required by forces remaining in Okinawa, including the housing necessary to support the remaining U.S. Marine Corps units, in coordination with the U.S. Government. Coordination with local communities is to take place as necessary.

Land of the aforementioned facilities and areas is to be returned as early as it becomes possible. The Special Action Committee on Okinawa (SACO) relocation and return initiatives may need to be re-evaluated.

In order to reduce the impact of U.S. forces on Okinawa as early as possible, both governments affirmed that the following areas utilized by U.S. forces are eligible for return:

- The Ministers confirmed that the following areas are eligible for immediate return upon completion of necessary procedures:
  - West Futenma Housing area of Camp Zukeran (Camp Foster)
  - The north access road of Makiminato Service Area (Camp Kinser)
  - Area near Gate 5 on Makiminato Service Area
  - A portion of the warehouse area of the Facilities and Engineering Compound in Camp Zukeran (after the provision of a replacement warehouse at another location)

- The Ministers confirmed that the following areas are eligible for return once the replacement facilities in Okinawa are provided:
  - Camp Kuwae (Camp Lester)
  - Lower Plaza Housing area, a part of Kishaba Housing area, and the Industrial Corridor of Camp Zukeran
  - Elements of Makiminato Service Area, including the preponderance of the storage area
  - Naha Port
  - Army Petroleum, Oil, and Lubricant Depot Kuwae Tank Farm No.1

- The Ministers confirmed that the following areas are eligible for return as U.S. Marine Corps forces relocate from Okinawa to locations outside of Japan:
  - Additional elements of Camp Zukeran
  - The remainder of Makiminato Service Area

A consolidation plan, including sequencing of relocation steps, is to be jointly developed for facilities and areas remaining in Okinawa, with a particular focus on determining the end-state of Camp Zukeran (Camp Foster), by the end of 2012. This effort should consider the land usage at Camp Zukeran required by this revised unit composition, as well as the possible impact of the joint and shared use of facilities on Okinawa. The Ministers noted that joint and shared use of facilities was a key objective of the Realignment Roadmap. This consolidation plan would be available for public release as soon as possible. The Ministers welcomed the formation of a working group, which is to include appropriate officials of their respective capitals, to develop and oversee this consolidation plan.

**IV. Futenma Replacement Facility (FRF) and MCAS Futenma**

The Ministers resolve to continue to work toward the relocation of MCAS Futenma in a way that meets the criteria: operationally viable, politically feasible, financially responsible, and strategically sound. The Ministers reconfirmed their view that the FRF, planned for construction at the Camp Schwab-Henoko saki area and adjacent waters, remains the only viable solution that has been identified to date.

The Ministers confirmed their commitment to resolve the issue of the FRF as soon as possible in order to avoid the indefinite use of MCAS Futenma, while maintaining Alliance capabilities.

Both governments expressed their commitment to contribute mutually to necessary refurbishment projects at MCAS Futenma, such as those to sustain its safe mission capability until the FRF is fully operational and to protect the environment, on a case-by case-basis and consistent with existing bilateral arrangements, including Host Nation Support. Bilateral discussion of specific refurbishment projects is to be conducted through a channel separate from the one used to discuss realignment initiatives, with initial refurbishment projects to be identified by the end of 2012.

**Conclusion**

The Ministers welcomed the close and fruitful cooperation embodied in this Joint Statement, and they directed that the adjusted realignment package should be implemented expeditiously, in consultation with the legislative branches on both sides. They further expressed confidence that the package would be a solid foundation for a deeper and broader U.S.-Japan Alliance. The Ministers noted a number of significant achievements with realignment initiatives since the last SCC meeting in June 2011, including: progress in the environmental impact assessment process regarding the FRF; the expansion of aviation training relocation programs to Guam; the relocation of the Japan Air Self Defense Force (JASDF) Air Defense Command to Yokota Air Base; and progress in the relocation of the Japan Ground Self Defense Force (JGSDF) Central Readiness Force Headquarters to Camp Zama. The Ministers expressed their intent to achieve further progress on realignment goals and more broadly to evaluate Alliance roles, missions, and capabilities (RMC), in order to fortify the Alliance for the evolving challenges of the regional and global security environment.

(End)

5

# Appendix III: Restrictions on Use of Funds For Marine Corps Realignment in National Defense Authorization Act for Fiscal Years 2013 and 2012

National Defense Authorization Act for Fiscal Year 2013[1]

**SEC. 2831. CERTIFICATION OF MILITARY READINESS NEED FOR A LIVE FIRE TRAINING RANGE COMPLEX ON GUAM AS CONDITION ON ESTABLISHMENT OF RANGE COMPLEX.**

A Live Fire Training Range Complex on Guam may not be established (including any construction or lease of lands related to such establishment) in coordination with the realignment of United States Armed Forces in the Pacific until the Secretary of Defense certifies to the congressional defense committees that there is a military training and readiness requirement for the Live Fire Training Range Complex.

**SEC. 2832. REALIGNMENT OF MARINE CORPS FORCES IN ASIA-PACIFIC REGION.**

(a) RESTRICTION ON USE OF FUNDS FOR REALIGNMENT.—Except as provided in subsection (c), none of the funds authorized to be appropriated under this Act, and none of the amounts provided by the Government of Japan for construction activities on land under the jurisdiction of the Department of Defense, may be obligated to implement the realignment of Marine Corps forces from Okinawa to Guam or Hawaii until each of the following occurs:

(1) The Commander of the United States Pacific Command provides to the congressional defense committees an assessment of the strategic and logistical resources needed to ensure the distributed lay-down of members of the Marine Corps in the United States Pacific Command Area of Responsibility meets the contingency operations plans.

(2) The Secretary of Defense submits to the congressional defense committees master plans for the construction of facilities and infrastructure to execute the Marine Corps distributed lay-down on Guam and Hawaii, including a detailed description of costs and the schedule for such construction.

(3) The Secretary of the Navy submits a plan to the congressional defense committees detailing the proposed investments and

[1] Pub. L. No. 112-239 (2013).

schedules required to restore facilities and infrastructure at Marine Corps Air Station Futenma.

(4) A plan coordinated by all pertinent Federal agencies is provided to the congressional defense committees detailing descriptions of work, costs, and a schedule for completion of construction, improvements, and repairs to the non-military utilities, facilities, and infrastructure, if any, on Guam affected by the realignment of forces.

(b) RESTRICTION ON DEVELOPMENT OF PUBLIC INFRASTRUCTURE.—

If the Secretary of Defense determines that any grant, cooperative agreement, transfer of funds to another Federal agency, or supplement of funds available in fiscal year 2012 or 2013 under Federal programs administered by agencies other than the Department of Defense will result in the development (including repair, replacement, renovation, conversion, improvement, expansion, acquisition, or construction) of public infrastructure on Guam, the Secretary of Defense may not carry out such grant, transfer, cooperative agreement, or supplemental funding unless such grant, transfer, cooperative agreement, or supplemental funding is specifically authorized by law.

(c) EXCEPTIONS TO FUNDING RESTRICTION.—The Secretary of Defense may use funds described in subsection (a)—

(1) to complete additional analysis or studies required under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) for proposed actions on Guam or Hawaii;

(2) to initiate planning and design of construction projects at Andersen Air Force Base and Andersen South; and

(3) to carry out any military construction project for which an authorization of appropriations is provided in section 2204, as specified in the funding table in section 4601.

(d) DEFINITIONS.—In this section:

(1) DISTRIBUTED LAY-DOWN.—The term ‘‘distributed laydown’’ refers to the planned distribution of members of the Marine Corps in Okinawa, Guam, Hawaii, Australia, and possibly elsewhere that is contemplated in support of the joint statement of the United States–Japan Security Consultative Committee issued April 26, 2012, in the District of Columbia (April 27, 2012, in Tokyo).

(2) PUBLIC INFRASTRUCTURE.—The term ''public infrastructure'' means any utility, method of transportation, item of equipment, or facility under the control of a public entity or State or local government that is used by, or constructed for the benefit of, the general public.

(e) REPEAL OF SUPERSEDED LAW.—Section 2207 of the Military Construction Authorization Act for Fiscal Year 2012 (division B of Public Law 112-81; 125 Stat. 1668) is repealed.

National Defense Authorization Act for Fiscal Year 2012[2]

**SEC. 2207. GUAM REALIGNMENT.**

(a) RESTRICTION ON USE OF FUNDS.—Except as provided in subsection (c), notwithstanding any other provision of law, none of the funds authorized to be appropriated under this Act, and none of the amounts provided by the Government of Japan for military construction activities on land under the jurisdiction of the Department of Defense, may be obligated to implement the realignment of United States Marine Corps forces from Okinawa to Guam as envisioned in the United States–Japan Roadmap for Realignment Implementation issued May 1, 2006, until—

(1) the Commandant of the Marine Corps, in consultation with the Commander of the United States Pacific Command, provides the congressional defense committees the Commandant's preferred force lay-down for the United States Pacific Command Area of Responsibility;

(2) the Secretary of Defense submits to the congressional defense committees a master plan for the construction of facilities and infrastructure to execute the Commandant's preferred force lay-down on Guam, including a detailed description of costs and a schedule for such construction;

(3) the Secretary of Defense certifies to the congressional defense committees that tangible progress has been made regarding the relocation of Marine Corps Air Station Futenma;

[2] Pub. L. No. 112-81 (2011). Section 2832 of the National Defense Authorization Act for Fiscal Year 2013 repealed section 2207 of the National Defense Authorization Act for Fiscal Year 2012. *See* Pub. L. No. 112-239, § 2832(e) (2013).

(4) a plan coordinated by all pertinent Federal agencies is provided to the congressional defense committees detailing descriptions of work, costs, and a schedule for completion of construction, improvements, and repairs to the non-military utilities, facilities, and infrastructure on Guam affected by the realignment of forces; and

(5) the Secretary of Defense—

(A) submits to the congressional defense committees the report on the assessment of the United States force posture in East Asia and the Pacific region required under section 346 of this Act; or

(B) certifies to the congressional defense committees that the deadline established under such section for the submission of such report has not been met.

(b) DEVELOPMENT OF PUBLIC INFRASTRUCTURE.—

(1) AUTHORIZATION REQUIRED.—Notwithstanding any other provision of law, if the Secretary of Defense determines that any grant, cooperative agreement, transfer of funds to another Federal agency, or supplement of funds available in fiscal year 2012 under Federal programs administered by agencies other than the Department of Defense will result in the development (including repair, replacement, renovation, conversion, improvement, expansion, acquisition, or construction) of public infrastructure on Guam, such grant, transfer cooperative agreement, or supplemental funding shall be specifically authorized by law.

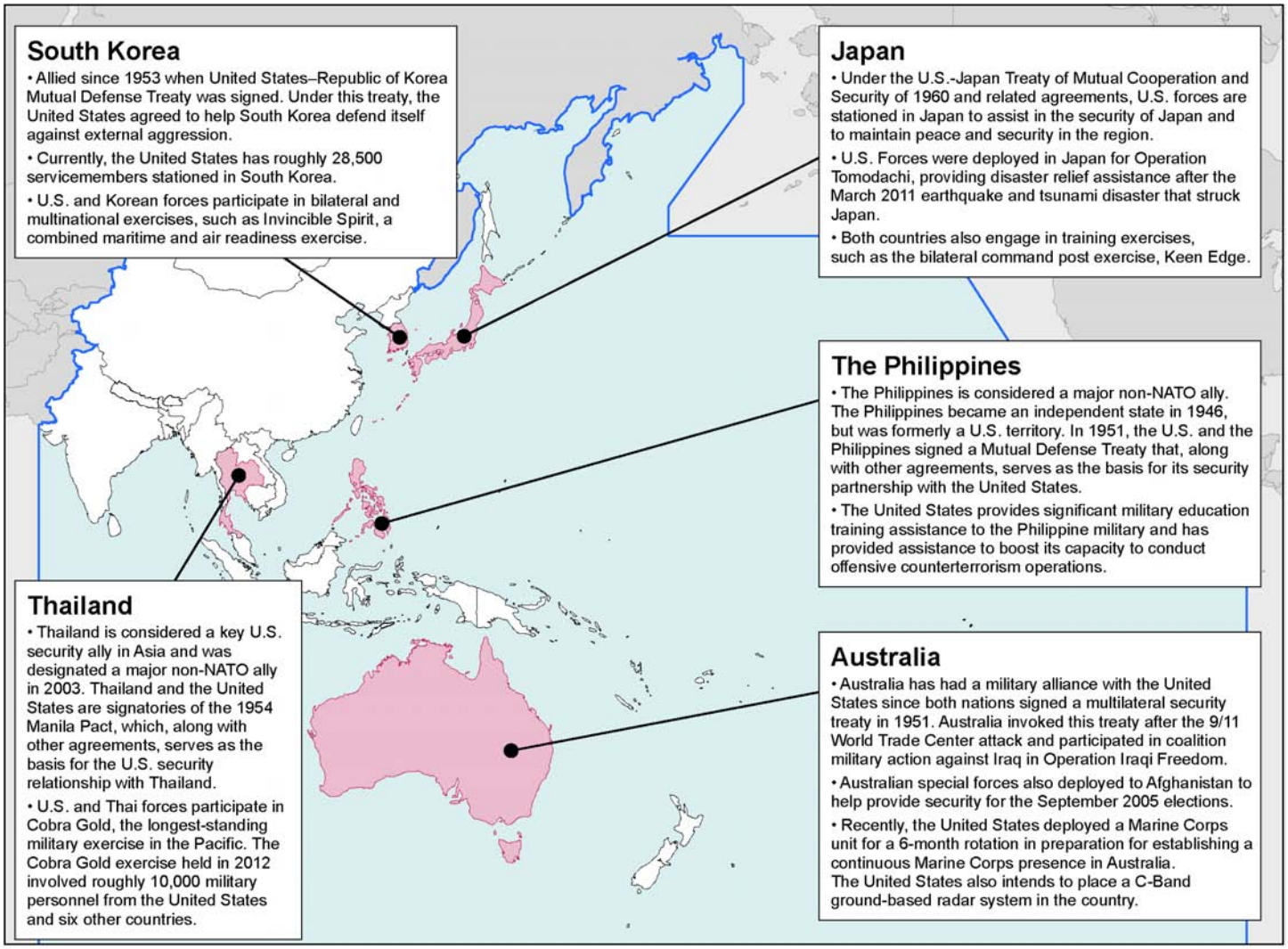
(2) PUBLIC INFRASTRUCTURE DEFINED.—In this section, the term ‘‘public infrastructure’’ means any utility, method of transportation, item of equipment, or facility under the control of a public entity or State or local government that is used by, or constructed for the benefit of, the general public.

(c) EXCEPTION TO RESTRICTION ON USE OF FUNDS.—The Secretary of Defense may use funds described in subsection (a) to carry out additional analysis under the National Environmental Policy Act of 1969 to include the following actions:

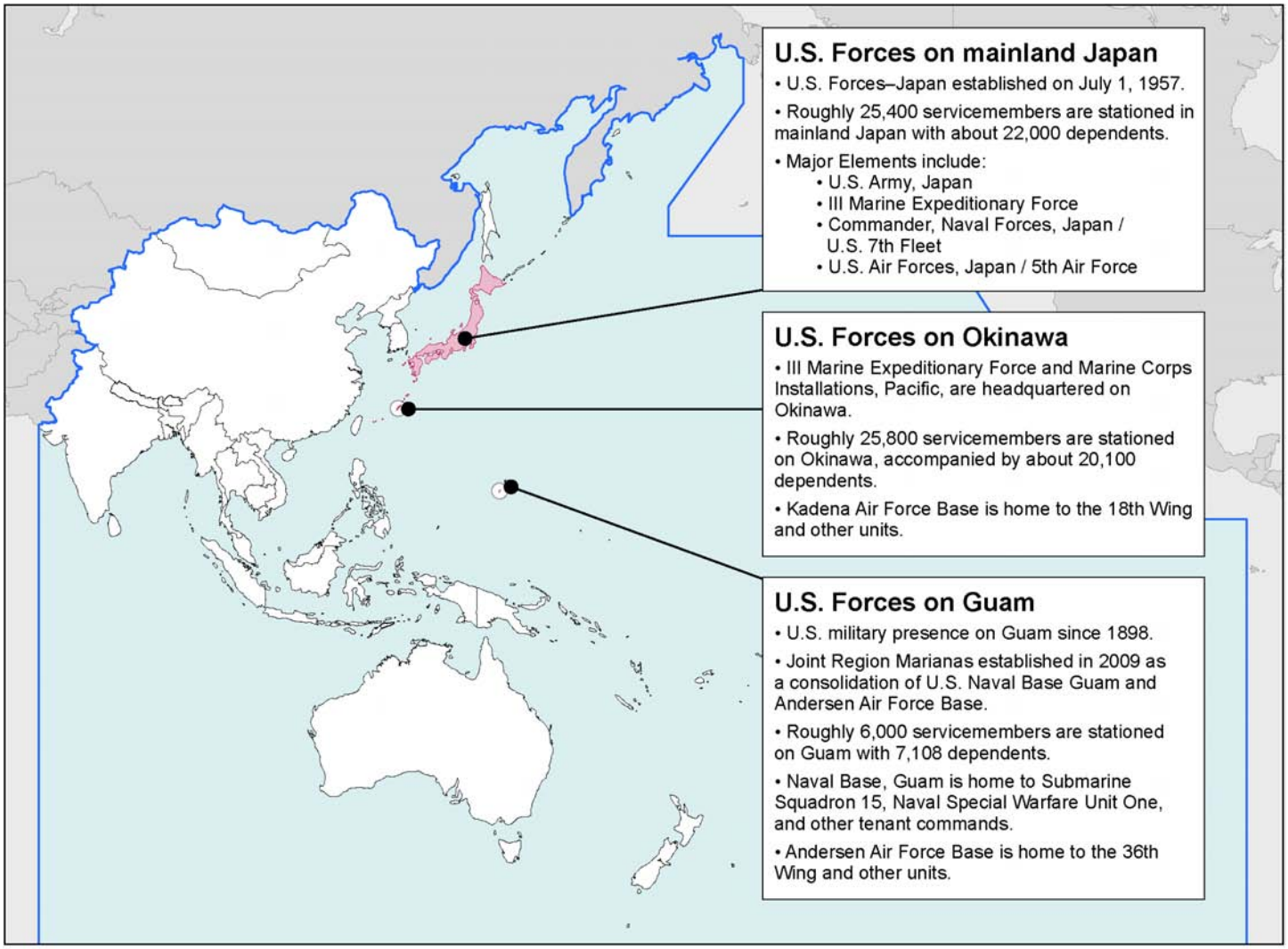
(1) A re-evaluation of live-fire training range complex alternatives, based upon the application of probabilistic modeling; and

(2) The ongoing analysis on the impacts of the realignment and build-up on Guam as described in subsection (a) on coral reefs in Apra Harbor, Guam.

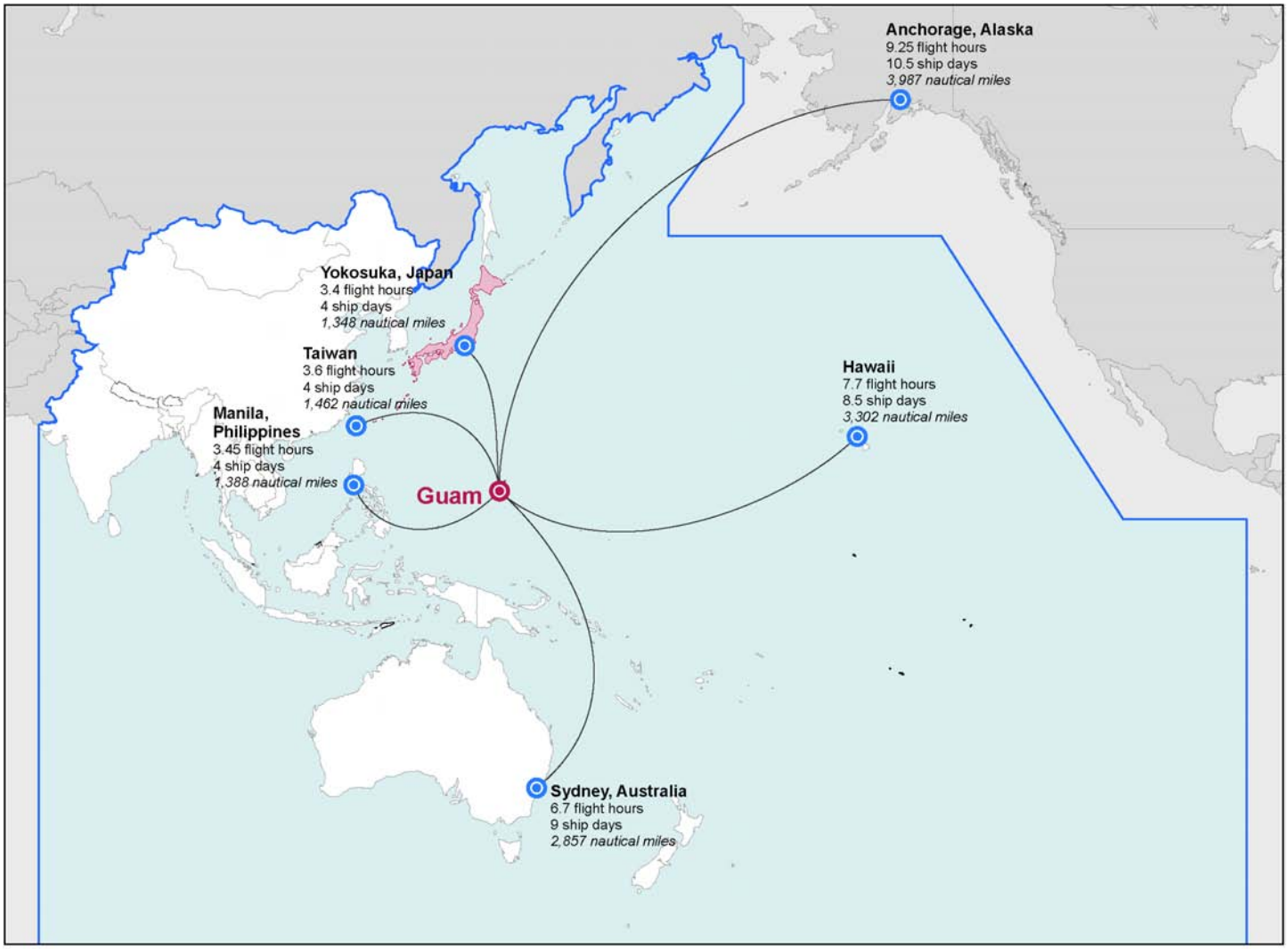
# Appendix IV: Print-Friendly Version of Figure I




Source: GAO analysis of DOD and other federal agency data.




Source: GAO analysis of DOD and other federal agency data.




Source: GAO analysis of DOD and other federal agency data.

# Appendix V: Funded Defense Policy Review Initiative (DPRI)-Related Military Construction Projects on Guam Supporting Marine Realignment

| Project | Funding category | Start date | Estimated budget (dollars in millions) | Cost incurred from inception to December 31, 2012 (dollars in millions) | Estimated remaining cost to complete (dollars in millions) |
|---|---|---|---|---|---|
| Government of Japan–funded | | | | | |
| Guam Utilities and Site Improvements – Phase 1 | Design | 14-Feb-09 | $8.544 | $8.544 | $0.000 |
| | Construction | 11-Aug-11 | 196.100 | 38.547 | 157.553 |
| | **Project total** | | **$204.644** | **$47.091** | **$157.553** |
| U.S. government–funded | | | | | |
| Apra Harbor Wharf Improvements I | Design (I and II)[a] | 14-Feb-09 | 6.396 | 6.396 | 0.000 |
| | Construction | 30-Sep-10 | 127.033 | 68.857 | 58.176 |
| | **Project total** | | **$133.429** | **$75.253** | **$58.176** |
| Apra Harbor Wharf Improvements II | Construction | 27-Nov-12 | 39.105 | 0.000 | 39.105 |
| Working Dog Facility Relocation | Design | 25-Oct-08 | 1.539 | 1.539 | 0.000 |
| | Construction | 29-Sep-10 | 14.000 | 3.529 | 10.471 |
| | **Project total** | | **$15.539** | **$5.068** | **$10.471** |
| Andersen Air Force Base North Ramp Utilities I | Design | 3-Dec-09 | 1.222 | 1.222 | 0.000 |
| | Construction | 6-Apr-11 | 21.500 | 6.136 | 15.364 |
| | **Project total** | | **$22.722** | **$7.358** | **$15.364** |
| Andersen Air Force Base North Ramp Parking I | Design | 3-Dec-09 | 2.197 | 2.189 | 0.007 |
| | Construction | 6-Apr-11 | 88.797 | 39.692 | 49.105 |
| | **Project total** | | **$90.994** | **$41.881** | **$49.112** |
| Defense Access Roads | Construction[b] | 13-Jul-11 | 48.860 | 0.268 | 48.592 |
| **U.S. government–funded total[c]** | | | **$350.648** | **$129.829** | **$220.819** |

Source: DOD.

[a]Design includes Apra Harbor Wharf Improvements I and II projects.

[b]Project executed by Federal Highway Administration. Construction funds used to develop design.

[c]Figures in table may not sum correctly due to rounding error.

# Appendix VI: Comments from the Department of Defense

PRINCIPAL DEPUTY UNDER SECRETARY
OF DEFENSE
2100 DEFENSE PENTAGON
WASHINGTON, DC 20301-2100

POLICY

MAY 23 2013

Mr. Brian J. Lepore
Director, Defense Capabilities and Management
U.S. Government Accountability Office
441 G Street, N.W.
Washington, DC 20548

Dear Mr. Lepore:

This is the Department of Defense (DoD) response to the GAO draft report, GAO-13-360, "DEFENSE MANAGEMENT: More Reliable Cost Estimates and Further Planning Needed to Inform the Marine Corps Realignment Initiatives in the Pacific," dated April 22, 2013.

The Department concurs in five recommendations and partially concurs in two of them. Clarification and further information are included for each recommendation on the accompanying pages.

We have expressed concern with the title of this report, which suggests the Department currently has the ability to provide comprehensive cost estimates and complete planning for all realignment initiatives but has failed to do so. As the report notes, there are environmental studies that must be completed before the Department can develop reliable cost estimates and finalize planning for related initiatives. We expect to issue the Guam Record of Decision in 2015, and sometime after that point, the Department will commence the Hawaii Environmental Impact Statement, with a completion date yet to be determined.

The U.S. Marine Corps realignment is a critical priority for the Department and a central element of our strategy for rebalance to the Pacific. We remain committed to providing Congress with the comprehensive costing and detailed planning necessary to solidify support for this key effort.

We will work with DoD components to implement these recommendations, and we look forward to further dialogue with GAO and Congress on details associated with Marine Corps realignment initiatives in the Pacific.

Sincerely,

Kathleen H. Hicks

Attachment:
As stated

**RECOMMENDATION 1**: The GAO recommends that the Secretary of Defense update the current cost estimate to include additional estimates for mobility support, and additional analysis that would quantify the risk impacts and parameters to account for its various assumptions changing.

**DoD RESPONSE**: Partially concur. The Department is currently in the process of responding to the legislative requirements contained in Section 2832 of the National Defense Authorization Act for Fiscal Year 2013, which also requires an assessment of the necessary strategic and logistical resources required for distributed laydown. When the Department has identified a preferred option for mobility support, the current cost estimate can be updated to include assumptions and parameters. However, comprehensive estimates for mobility support will not be available until completion of the required environmental planning documents.

**RECOMMENDATION 2**: As appropriate environmental analyses and host nation negotiations are completed, the GAO recommends that the Secretary of Defense update the estimate with comprehensive cost estimates (as identifiable) that factor in and include the following seven cost components associated with the current realignment plan: Guam physical layout and requirements; housing requirements on Guam; requirements to upgrade utilities and infrastructure on Guam; Joint Training Range Complex requirements including associated environmental mitigation in the Northern Marianas; Marine Corps requirements for Australia; Marine Corps requirements for Hawaii and other U.S. locations; mobility requirements to support the current realignment plan to conduct routine operations, training, and any contingency situations.

**DoD RESPONSE**: Concur. The Department plans to identify and incorporate comprehensive cost estimates as they become available upon completion of necessary environmental planning documents, to include the seven cost components identified for inclusion.

**RECOMMENDATION 3:** As the master planning process continues over the next several years, the GAO recommends that the Secretary of Defense require the Secretary of the Navy to provide annual updates on the status of planning efforts with appropriate congressional committees until such time as master plans are completed for each geographic segment of the realignment. These updates should include, but not be limited to, providing congressional committees with up-to-date information on the status of initiatives, identified requirements and time frames, and any updated cost information linked to specific facilities or projects.

**DoD RESPONSE**: Concur. The Department of the Navy regularly provides updates on the status of initiatives to the congressional committees. Updates will continue through the completion of the master planning process for each location.

**RECOMMENDATION 4**: The GAO recommends that the Secretary of Defense direct the Secretary of the Army to require the Army Corps of Engineers to coordinate with appropriate military service officials involved in the planning and management of Defense Policy Review Initiative (DPRI) projects in Japan, including U.S. Forces Japan, Marine Corps Installations Pacific, and Marine Corps Headquarters, to develop a strategy to identify how the design and construction process of DPRI projects should be handled moving forward, and the necessary resources needed to support any surge in construction associated with posture-related initiatives in both Iwakuni and Okinawa.

**DoD RESPONSE**: Partially concur. The U.S. Army Corps of Engineers manages the design and construction process for posture-related initiatives in Iwakuni and Okinawa and will coordinate with appropriate military service officials to develop a strategy to identify how this process should be handled moving forward; however, this effort necessarily relies upon a detailed master plan, that has been coordinated with U.S. Forces Japan (USFJ), the U.S. Marine Corps (USMC) Installations-Pacific, and Headquarters (HQ), USMC, to identify necessary resources to support any surge in construction.

**RECOMMENDATION 5:** The GAO recommends that the Secretary of Defense direct the appropriate Service officials to update Okinawa installation master plans to include sustainment requirements and the costs to sustain the U.S. presence on Okinawa until the Marine realignment and Okinawa consolidation efforts are completed. At a minimum, these plans should identify both short-term needs and long-term needs to account for the uncertainty regarding the time needed to implement the realignment and consolidation initiatives on Okinawa.

**DoD RESPONSE**: Concur. Once the new April 2013 bilateral Okinawa Consolidation Plan (OCP) was signed/published by the United States and Japan (with completion date goals for each phase of the land returns), much of the uncertainty that previously existed for a general OCP timeline was removed, allowing the development of more detailed installation master plans for each camp.

**RECOMMENDATION 6:** The GAO recommends that the Secretary of Defense direct appropriate Service officials to provide, as they become available, annual master schedule and unit movement updates associated with the realignment initiatives on Okinawa to the appropriate Air Force officials. These updates should include updated housing requirements such as the demographics of Marine families required to be housed on Okinawa during the future phases of the realignment initiatives on Okinawa, thus allowing the appropriate Air Force officials to perform up-to-date assessments and develop housing investment strategies reflecting the updated schedule and housing requirements.

**DoD RESPONSE**: Concur. The Department will direct U.S. Pacific Command and HQ USMC to provide current Future Years Defense Plans (FYDP) and long-range Okinawa master schedule and unit movement updates to HQ USAF, and to provide future updates as plans are reviewed and revised by USFJ and USMC. Updates will include the demographics of Marine Corps families required to be housed on Okinawa during the future phases of the realignment initiatives.

**RECOMMENDATION 7:** The GAO recommends that the Secretary of Defense direct the Secretary of the Navy to conduct an economic analysis to include assessing the costs of maintaining vacant housing on Guam, to arrive at an informed decision weighing the cost of maintaining or renovating this housing versus the construction of new facilities for the Marine Corps realignment to Guam.

**DoD RESPONSE**: Concur. The Navy is conducting a housing market analysis to establish a baseline for long-term military family housing requirements on Guam, including families associated with incoming Marines. Additionally, the strategy to address military housing requirements on the island will be further informed by final cantonment decisions, following completion of environmental planning documents. Once the baseline requirements are established, the Department of the Navy will conduct a cost/benefit analysis for addressing the new requirement related to the Marine Corps realignment that

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compares initial renovation with replacement investment costs, as well as recurring costs over the life of the assets. The recurring costs include the cost of operating and maintaining units (occupied or unoccupied). This analysis will allow the Navy to determine whether it is more cost-effective to retain and repair existing housing on the island versus construction of replacement or additional housing.

# Appendix VII: GAO Contact and Staff Acknowledgments

## GAO Contact

Brian Lepore, (202) 512-4523 or leporeb@gao.gov

## Staff Acknowledgements

In addition to the contact named above, Laura Durland, Assistant Director; Jeff Hubbard; Gilbert Kim; Joanne Landesman; Ying Long; Charles Perdue; Carol Petersen; Karen Richey; Michael Shaughnessy; Amie Steele; and Lindsay Taylor made key contributions to this report.

# Related GAO Products

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*Military Buildup on Guam: Costs and Challenges in Meeting Construction Timelines*. GAO-11-459R. Washington, D.C.: June 27, 2011.

*Defense Infrastructure: The Navy Needs Better Documentation to Support Its Proposed Military Treatment Facilities on Guam*. GAO-11-206. Washington, D.C.: April 5, 2011.

*Defense Management: Additional Cost Information and Stakeholder Input Needed to Assess Military Posture in Europe*. GAO-11-131. Washington, D.C.: February 3, 2011.

*Defense Planning: DOD Needs to Review the Costs and Benefits of Basing Alternatives for Army Forces in Europe*. GAO-10-745R. Washington, D.C.: September 13, 2010.

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*Defense Management: U.S Southern Command Demonstrates Interagency Collaboration, but Its Haiti Disaster Response Revealed Challenges Conducting a Large Military Operation*. GAO-10-801. Washington, D.C.: July 28, 2010.

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*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*. GAO-10-90R. Washington, D.C.: November 13, 2009.

*Defense Infrastructure: DOD Needs to Provide Updated Labor Requirements to Help Guam Adequately Develop Its Labor Force for the Military Buildup*. GAO-10-72. Washington, D.C.: October 14, 2009.

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