

GAO

Report to the Subcommittee on Military
Construction, Veterans Affairs, and
Related Agencies, Committee on
Appropriations, U.S. Senate

May 2011

DEFENSE MANAGEMENT

Comprehensive Cost Information and Analysis of Alternatives Needed to Assess Military Posture in Asia



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Highlights of [GAO-11-316](#), a report to the Subcommittee on Military Construction, Veterans Affairs, and Related Agencies, Committee on Appropriations, U.S. Senate

Why GAO Did This Study

The Department of Defense (DOD) is currently conducting the largest transformation of military posture in the Pacific region since the end of World War II. Transforming posture in Korea, Japan, and Guam will affect tens of thousands of military personnel and their families and require the construction of hundreds of new facilities and more than 3,500 housing units. GAO was asked to examine: (1) initiatives in Korea, their cost implications, and the basis for “tour normalization;” (2) initiatives in Japan and Guam and their cost implications; and (3) the extent to which DOD estimates the total cost of posture and addresses affordability issues. GAO assessed DOD policies and procedures, interviewed relevant DOD and State Department officials, and analyzed cost data from the military services.

What GAO Recommends

GAO recommends that DOD develop a business case analysis for its strategic objectives related to tour normalization in Korea, limit investments at Camp Humphreys until the business case is completed, and develop comprehensive cost estimates of posture in the Pacific. DOD generally agreed with GAO’s recommendations, but it did not specify what corrective actions it would take or time frames for completion.

View [GAO-11-316](#) or key components. For more information, contact Brian J. Lepore at (202) 512-4523 or leporeb@gao.gov.

DEFENSE MANAGEMENT

Comprehensive Cost Information and Analysis of Alternatives Needed to Assess Military Posture in Asia

What GAO Found

DOD is transforming the facilities and infrastructure that support its posture in Asia without the benefit of comprehensive cost information or an analysis of alternatives that are essential to conducting affordability analysis. In South Korea, DOD is transforming its military posture through a series of four interrelated posture initiatives. GAO obtained DOD cost estimates that total \$17.6 billion through 2020 for initiatives in South Korea, but DOD cost estimates are incomplete. One initiative, to extend the tour length of military service members and move thousands of dependents to South Korea—called “tour normalization”—could cost DOD \$5 billion by 2020 and \$22 billion or more through 2050, but this initiative was not supported by a business case analysis that would have considered alternative courses of action and their associated costs and benefits. As a result, DOD is unable to demonstrate that tour normalization is the most cost-effective approach to meeting its strategic objectives. This omission raises concerns about the investments being made in a \$13 billion construction program at Camp Humphreys, where tour normalization is largely being implemented.

DOD is also transforming its military posture in Japan, Okinawa, and Guam but has not estimated the total costs associated with these initiatives. Based on an October 2006 Government of Japan budget estimate study for realignment costs and limited cost information developed by DOD, GAO identified approximately \$29.1 billion—primarily just construction costs—that is anticipated to be shared by the United States and Japan to implement these initiatives. DOD officials stated total cost estimates for its initiatives were not available because of the significant uncertainty surrounding initiative-implementation schedules. The Senate Appropriations Committee recently directed DOD to provide annual status updates on posture initiatives in Korea, Japan, Guam, and the Northern Mariana Islands. If DOD is fully responsive to the Committee’s reporting direction, these updates should provide needed visibility into initiative cost and funding requirements.

DOD’s posture planning guidance does not require the U.S. Pacific Command to include comprehensive cost data in its theater posture plan, and as a result, DOD lacks critical information that could be used by decision makers as they deliberate on posture requirements and affordability. GAO analysis shows that of the approximately \$24.6 billion obligated by the military services to support installations in Asia from 2006 through 2010, approximately \$18.7 billion (76 percent) was for operation and maintenance of these facilities. The services estimate that operation and maintenance costs would be about \$2.9 billion per year through 2015. However, this estimate appears to be understated, and DOD’s initiatives may significantly increase those costs. For example, DOD has yet to estimate costs associated with furnishing and equipping approximately 321 new buildings and 578 housing units in Okinawa. Without comprehensive and routine reporting of posture costs, DOD decision makers will not have the full fiscal context in which to develop posture plans and requirements, and congressional committees will lack a full understanding of the potential funding requirements associated with DOD budget requests.

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Abbreviations

DOD	Department of Defense
PACOM	Pacific Command
USFJ	United States Forces Japan
USFK	United States Forces Korea

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Accountability * Integrity * Reliability

United States Government Accountability Office
Washington, DC 20548

May 25, 2011

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

According to the *2010 Quadrennial Defense Review* approximately 400,000 U.S. military personnel are forward-stationed or rotationally deployed around the world on any given day—including those involved in operations in Afghanistan and Iraq. In recent years, the Department of Defense (DOD) has embarked on the largest transformation of U.S. military posture in the Pacific region since the end of World War II. As of March 2011, DOD posture initiatives planned for South Korea, Japan, and Guam will affect tens of thousands of forward-deployed military personnel and their dependents, and require the construction of hundreds of new facilities and more than 3,500 housing units. According to DOD estimates, the DOD population in South Korea may increase from approximately 56,000 to as much as 84,000, and the DOD population in Guam may increase from 15,000 to 39,000 by as early as 2020. The cost of these initiatives has yet to be fully estimated, but billions of dollars in combined investments by host nations and the U.S. government have already been identified as necessary to implement these initiatives.

These posture transformation initiatives are being conducted in an era of increasing budgetary pressures and competition for scarce resources. In August 2010, the Secretary of Defense called on military leaders to consider the affordability of programs in developing future plans, with particular emphasis on reducing overhead costs. The Secretary of Defense sought a \$100-billion reduction in overhead costs over the next 5 years, froze the size of combatant commands, and required “zero-based” reviews of their staffing and organizations.¹ In January 2011, the Secretary of Defense announced he had approved the elimination of more than

¹ A “zero-based” review is a review conducted without consideration of funding requirements, availability of personnel, and organizational limitations.

100 general officer and flag officer positions and the elimination or downgrading of nearly 200 civilian Senior Executive Service or equivalent positions.

In addition, we have recently reported on the need to address the long-term sustainability of the federal government's fiscal policies.² Since the end of the recent recession, the gross domestic product has grown slowly and unemployment has remained at a high level. While the economy is still recovering and in need of careful attention, there is widespread agreement on the need to look not only at the near term but also at steps that begin to change the long-term fiscal path as soon as possible without slowing the recovery. In our report on opportunities to reduce potential duplication in government programs, save tax dollars, and enhance revenue, we observed that having U.S. troops stationed overseas provides benefits, such as deterring aggression against U.S. allies, but permanent stationing comes with significant costs.³ We emphasized the need for DOD to assess costs and benefits of overseas military presence options before committing to costly personnel realignments and construction plans.

The *2010 Quadrennial Defense Review* highlights the importance of periodically assessing and tailoring global defense posture in light of continued globalization and enduring transnational threats. In the *Quadrennial Defense Review*, DOD indicates that defense posture will continuously adapt to the dynamic world environment and that ongoing assessments of national interests, military requirements, and the strategic environment should guide U.S. global defense-posture planning. In addition, DOD identifies global posture as consisting of: (1) forces (forward-stationed and rotationally deployed), capabilities, and equipment; (2) overseas infrastructure and facilities; and (3) international agreements with allies and key partners that may address issues such as access, transit, and the framework under which U.S. military personnel operate in a foreign country. This report focuses on one of these three elements—DOD's network of overseas infrastructure and facilities—which can vary widely in size and complexity from location to location.

² GAO, *The Federal Government's Long-Term Fiscal Outlook: Fall 2010 Update*, [GAO-11-201SP](#) (Washington, D.C.: Nov. 15, 2010). Additional information on the federal fiscal outlook, federal debt, and the outlook for the state and local government sector is available at: www.gao.gov/special.pubs/longterm/.

³ GAO, *Opportunities to Reduce Potential Duplication in Government Programs, Save Tax Dollars, and Enhance Revenue*, [GAO-11-318SP](#) (Washington, D.C.: March 2011).

Given the cost of DOD's efforts to realign its global posture and the criticality to national security of the U.S. force structure and infrastructure abroad, you asked us to examine major global posture realignment initiatives in Europe, Africa, and Asia. This report, prepared prior to the earthquake and tsunami that struck Japan on March 11, 2011, addresses the cost and affordability of the the department's efforts to transform its defense posture in Asia. We examine: (1) the magnitude of cost associated with the major global defense posture initiatives ongoing and planned on the Korean peninsula and the process by which the decision was made to move forward with the largest of these initiatives—"tour normalization;" (2) the magnitude of cost associated with the major global defense-posture initiatives ongoing and planned in Japan and Guam; and (3) the extent to which DOD develops comprehensive estimates of the cost of defense posture in Asia to inform the decision-making process.

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 posture in Europe, and the establishment of the United States Africa Command.⁴ Those reports make a number of recommendations to improve DOD's management of these efforts and the information about them that DOD makes available to the executive branch and congressional committees. Most recently, in February 2011, we reported on DOD military posture in Europe, highlighting the need for additional cost information and methods for evaluating posture alternatives in that region.⁵ In many cases, DOD has agreed with our recommendations and has taken actions to implement them.

For each of our objectives, we reviewed relevant policies and procedures governing the management and supervision of global defense posture, and collected information by interviewing and communicating with officials in the Office of the Secretary of Defense, the Air Force, the Army, the Navy, the Marine Corps, the Joint Staff, United States Pacific Command (PACOM), and the State Department. We conducted site visits at PACOM and its service components in Hawaii; United States Forces Japan (USFJ), its service components, and the U.S. Embassy in Tokyo, Japan, and the

⁴ See related GAO products at the end of this report.

⁵ GAO, *Defense Management: Additional Cost Information and Stakeholder Input Needed to Assess Military Posture in Europe*, [GAO-11-131](#) (Washington, D.C.: February 2011).

U.S. Consulate on Okinawa; United States Forces Korea (USFK), its service components, and the U.S. Embassy in Seoul, South Korea. To identify the major global defense-posture initiatives ongoing and planned and their associated costs, we reviewed appropriate DOD strategies, plans and guidance including, but not limited to, the *Quadrennial Defense Review*, *Guidance for the Employment of the Force*, and *Guidance for the Deployment of the Force*; we also reviewed PACOM's *Theater Campaign Plan*, *Theater Posture Plan*, and relevant plans and strategies developed by PACOM's service components. To identify the cost of posture initiatives in Korea and Japan, we requested posture-initiative cost estimates from officials in each military service headquarters, PACOM, USFK, and USFJ. For initiatives in Japan, DOD officials provided information based on budget estimates prepared by the Government of Japan, but provided only limited estimates of costs to the United States. For initiatives in Korea, DOD officials provided high-level cost estimates, which included assumptions related to the use of host-nation support funding and host-nation costs, which in some cases were constantly changing or not yet approved. We discussed this cost information with officials in USFK, USFJ, and the Office of the Secretary of Defense (Comptroller) and determined that although the information was incomplete, it was sufficiently reliable to provide an order of magnitude estimate of the potential cost of each initiative, and therefore was adequate for the purposes of our review, subject to the limitations discussed in this report. To determine whether DOD captures and reports the total cost of posture across the PACOM area of responsibility, we assessed the information included in the 2009 and 2010 DOD Global Defense Posture Reports to Congress, including the sections addressing posture costs, the *2010 PACOM Theater Posture Plan*, and President's Budget requests for fiscal years 2010 and 2011. We then used a systematic data collection approach to obtain cost data from the departments of the Army, Air Force, and Navy, including the Marine Corps, and their PACOM service component commands, on posture funding requirements and obligations for fiscal years 2006 through 2015. To assess the reliability of the cost data obtained through our systematic data collection effort, we reviewed data system documentation and obtained information on internal controls for those systems. We determined that the cost data we received were reliable for the purposes of this report.

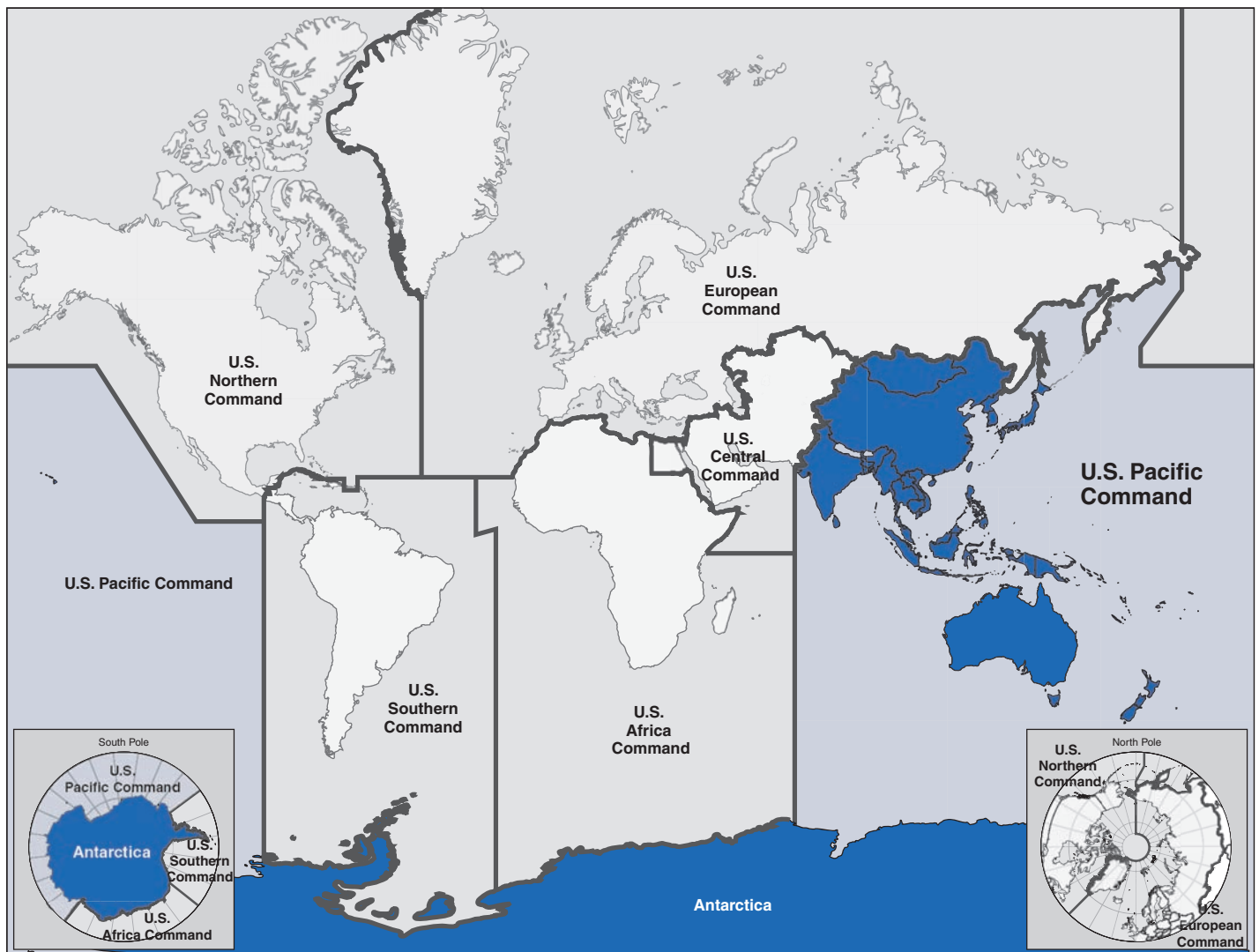
We conducted this performance audit from November 2009 to April 2011, in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions 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.

Background

DOD operates six geographic combatant commands, each with an assigned area of responsibility (see fig. 1). Each geographic combatant commander carries out a variety of missions and activities, including humanitarian assistance and combat operations, and assigns functions to subordinate commanders. Each command is supported by a service-component command from each of the services. All of these component commands play significant roles in preparing detailed posture plans and providing the resources that the combatant commands need to execute operations in support of their missions and goals.

Figure 1: Geographic Combatant Commands and Areas of Responsibility



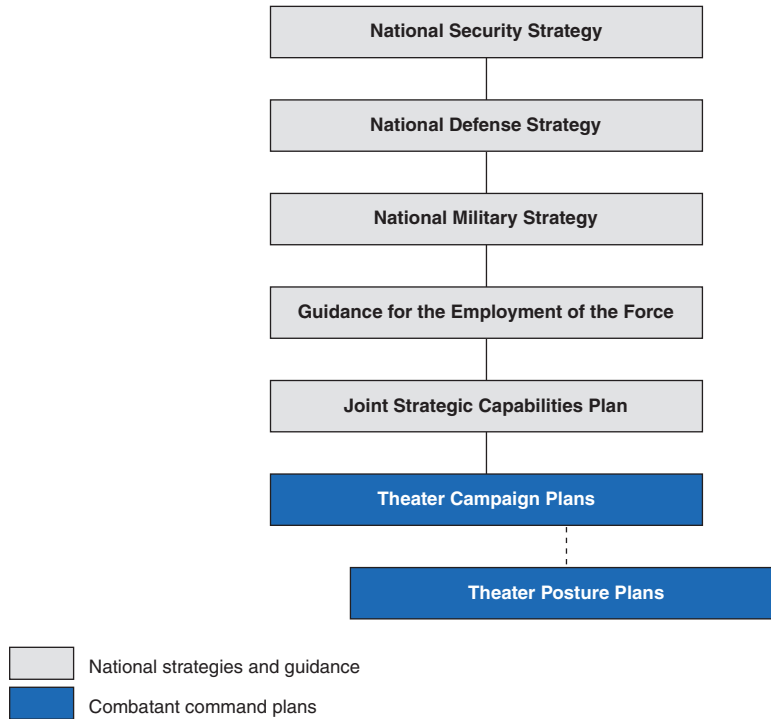
Source: DOD; Map Resources (map).

DOD's facilities are located in a variety of sites that vary widely in size and complexity. Some sites are large complexes containing many facilities to support military operations, housing, and other support facilities, while others can be as small as a single radar site. To develop common terminology for posture planning, DOD has identified three types of installations that reflect the large-to-small scale of DOD's enduring overseas posture—main-operating bases, forward-operating sites, and cooperative security locations.

-
- Main-operating bases are overseas installations with relatively large numbers of permanently stationed operating forces and robust infrastructure, including family support facilities.
 - Forward-operating sites are scaleable installations intended for rotational use by operating forces in lieu of permanently stationed forces that DOD would have to support. Because they are scaleable, they may have a large capacity that can be adapted to provide support for combat operations, and therefore DOD populations at these locations can vary greatly, depending on how they are used at any given time.
 - Cooperative security locations are overseas installations with little or no permanent U.S. military presence, which are maintained with periodic U.S. military, contractor, or host-nation support. DOD populations at these locations can vary greatly, as they do at forward-operating sites, depending on how they are being used at any given time.

A hierarchy of national and defense guidance informs the development of DOD's global posture. The National Security Strategy, issued by the President at the beginning of each new Administration and annually thereafter, describes and discusses the worldwide interests, goals, and objectives of the United States that are vital to its national security, among other topics. The Secretary of Defense provides corresponding strategic direction in the *National Defense Strategy*. Furthermore, the Chairman of the Joint Chiefs of Staff provides guidance to the military through the *National Military Strategy*. The department has developed new guidance for global defense posture in numerous documents, principally the *2008 Guidance for Employment of the Force* and the *2008 Joint Strategic Capabilities Plan*. The *Guidance for Employment of the Force* consolidates and integrates planning guidance related to operations and other military activities, while the *Joint Strategic Capabilities Plan* implements the strategic policy direction provided in the *Guidance for Employment of the Force* and tasks combatant commanders to develop theater campaign, contingency, and posture plans that are consistent with the *Guidance for Employment of the Force*. The *Theater Campaign Plan* translates strategic objectives to facilitate the development of operational and contingency plans, while the *Theater Posture Plan* provides an overview of posture requirements to support those plans and identifies major ongoing and new posture initiatives, including current and planned military construction requirements. Figure 2 illustrates the relationships among these national and DOD strategic guidance documents.

Figure 2: National and DOD Guidance, Strategies, and Plans Related to Global Defense Posture



Source: GAO analysis of National Strategies and Defense guidance.

DOD Has Not Fully Estimated the Cost of Posture Initiatives in South Korea or Provided an Analysis of Alternatives to Tour Normalization

DOD is currently transforming its military posture in South Korea through a series of four interrelated posture initiatives, but has not estimated the total costs involved, or provided an analysis of alternatives for one initiative—tour normalization—that was initiated by the Commander, USFK that potentially could affect tens of thousands of DOD personnel and dependents and increase costs by billions of dollars. Although DOD has not fully estimated the total cost of its posture initiatives, we obtained USFK and Army estimates for each initiative, which were primarily focused on construction costs, which indicate the magnitude of costs will be significant—almost \$18 billion in costs have been identified either to the Government of South Korea or to DOD through fiscal year 2020 (see table 1). The largest of these four initiatives and the primary long-term cost driver is tour normalization—extending the tour length of military service members and moving thousands of their dependents from the United States to South Korea. According to USFK officials, the decision to

move forward with tour normalization was made to achieve certain USFK strategic objectives, such as to provide military commanders greater flexibility in how U.S. military forces assigned to South Korea are used and to improve the quality of life for military service members and their families. However, prior to making the decision to move forward with the tour normalization initiative, DOD did not complete a business case analysis that would evaluate the quantifiable and nonquantifiable benefits, advantages, or disadvantages of competing alternatives in order to identify the most cost-effective means to satisfy its strategic objectives. As a result, DOD is embarking on an initiative that involves moving thousands of U.S. civilians to South Korea and constructing schools, medical facilities, and other infrastructure to support them without fully understanding the costs involved or considering potential alternatives that might more efficiently achieve U.S. strategic objectives.

Table 1: Summary of Estimated Costs of PACOM Posture Initiatives in South Korea Identified as of January 2011 (Billions of Dollars)

Posture initiative ^a	Estimated costs		
	United States ^b	Korea	Total ^c
Yongsan Relocation Plan	\$2.0 ^d	6.3 ^d	\$8.3
Land Partnership Plan	3.4 ^d	0.6 ^d	4.0
28,500 U.S. troops in Korea	0.2 ^d		0.2
Tour normalization	5.1 ^e		5.1
Total	\$10.7	\$6.9	\$17.6

Source: GAO analysis of USFK and Army cost data.

^aEach initiative has a different starting date. The Yongsan Relocation was agreed to in October 2004; Land Partnership Plan was agreed to in March 2002; the 28,500 troop level agreement was announced in 2008, and tour normalization was started in 2007. See narrative below for additional details.

^bCost estimates prepared by USFK officials assumed the use of Special Measures Agreement contributions to help defray costs of these initiatives to the United States. According to USFK and State Department officials, the United States and South Korea are currently consulting on the extent to which Special Measures Agreement contributions will be applied to these initiatives. Special Measures Agreement contributions are funds provided or expenditures borne by South Korea to help defray the cost of locating U.S. military personnel in South Korea. Currently, those contributions are used for a variety of purposes—for example, Special Measures Agreement contributions can be used to reduce construction costs for new facilities and for sustainment costs of current facilities.

^cBecause some components of the cost estimates were presented as totals over some of the time periods and were not broken out by year, we were not able to convert these costs into constant dollars.

^dCosts estimated by USFK through 2016.

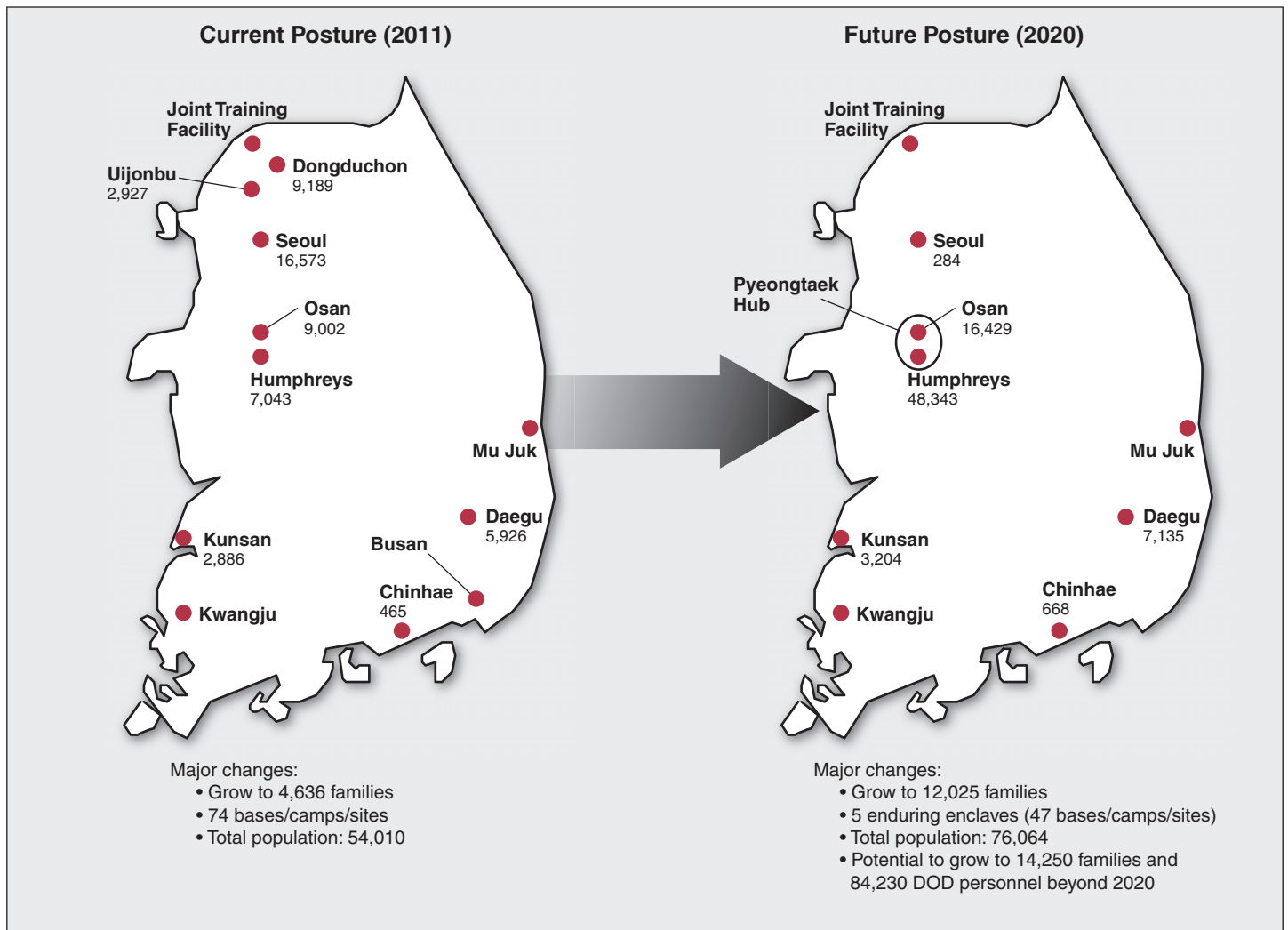
⁶Total costs estimated by USFK through 2020. USFK has estimated that in addition to \$5.1 billion through 2020, \$1.5 billion is needed to implement tour normalization at Kunsan Air Base after 2020, but Air Force officials indicated this would only cover construction costs and may be a low estimate. Also, the Army calculated an extended cost estimate for tour normalization from 2021 to 2050, which indicates that tour normalization could increase Army operation and support costs by \$15.7 billion or more during that time period.

Transforming United States Military Posture in South Korea

Four major, interrelated initiatives that will affect posture are under way in South Korea. Two of these initiatives—the Yongsan Relocation Plan and the Land Partnership Plan—will consolidate U.S. military and civilian personnel from Seoul and sites north of Seoul, to a site south of Seoul. The third will establish and maintain United States military troop strength at 28,500 soldiers, and the fourth—tour normalization—will provide for 36-month accompanied tours (personnel who bring their families with them) for military personnel stationed in South Korea. In total, USFK officials have estimated the total DOD population in South Korea could increase from approximately 54,000 to 84,000 under these initiatives (see fig. 3).⁶ DOD has not estimated the full cost to implement these initiatives, but as of January 2011, DOD had identified approximately \$18 billion in costs from the start of the initiative through fiscal year 2020 either to the Government of South Korea or to DOD, as described below. According to USFK and State Department officials, the United States and South Korea are currently consulting on the extent to which Special Measures Agreement funding will be applied to these initiatives.

⁶ Total DOD population estimates prepared by USFK included military personnel, dependents, civilian employees, contractors, and retirees. According to USFK officials, retirees were included in the estimate because they are provided access to DOD support services, such as commissaries and medical care, and therefore those facilities were sized to accommodate them.

Figure 3: South Korea Posture Transformation and Population Figures



Source: United States Forces Korea; Map Resources (map).

Yongsan Relocation Plan (\$8.3 billion through fiscal year 2016).

According to USFK officials, this is an initiative agreed to between the governments of the United States and South Korea in October 2004. The agreement involves the relocation of U.S. Army Garrison Yongsan, which contains the headquarters for U.S. 8th Army, USFK, Combined Forces Command, and the United Nations Command. This initiative will move most DOD personnel and their families—currently more than 17,000 people—from U.S. Army Garrison Yongsan, an installation located in the heart of Seoul, to U.S. Army Garrison Humphreys (Camp Humphreys), so

that the land at Yongsan can be returned to South Korea. It is anticipated that South Korea will fund much of the construction costs for this initiative; USFK officials estimate that it will cost South Korea about \$6.3 billion and the United States about \$2 billion in construction costs through fiscal year 2016.

Land Partnership Plan (\$4 billion through fiscal year 2016). This realignment, agreed to between the governments of the United States and South Korea in March 2002, will move U.S. troops who are currently stationed north of Seoul farther south to Camp Humphreys, and the land they vacate is intended to be returned to South Korea. This move will involve about 7,000 to 8,000 servicemembers, primarily from the 2nd Infantry Division. The total estimated construction costs for the Land Partnership Plan are nearly \$4 billion, about \$3.4 billion of that to be funded by the United States.

28,500 U.S. troops (\$0.245 billion through fiscal year 2016). According to the State Department, in 2008, the Presidents of the United States and South Korea agreed that U.S. troop strength would reach and be maintained at 28,500. USFK officials estimate that this initiative will cost the United States about \$245 million during the 5-year period of fiscal years 2012 through 2016 (\$140 million in military construction and \$105 million in operation and support costs).

Tour normalization (\$5.1 billion through fiscal year 2020, and approximately \$22 billion or more through fiscal year 2050). Started in 2007 by a previous Commander at USFK, this initiative will provide 36-month accompanied tours (personnel who bring their families with them), and 24-month unaccompanied tours (personnel who do not bring their families with them) to military personnel stationed in South Korea. According to the *2010 Quadrennial Defense Review*, DOD's long-term goal is to phase out all unaccompanied tours in South Korea. According to the *USFK Program Objective Memorandum Fiscal Year 2012 – 2017 Commander's Narrative Assessment*, if tour lengths in Korea are normalized, U.S. forces stationed in Korea could become available to support regional and global contingencies, support that, prior to normalization, was prohibited by dwell-time⁷ requirements and

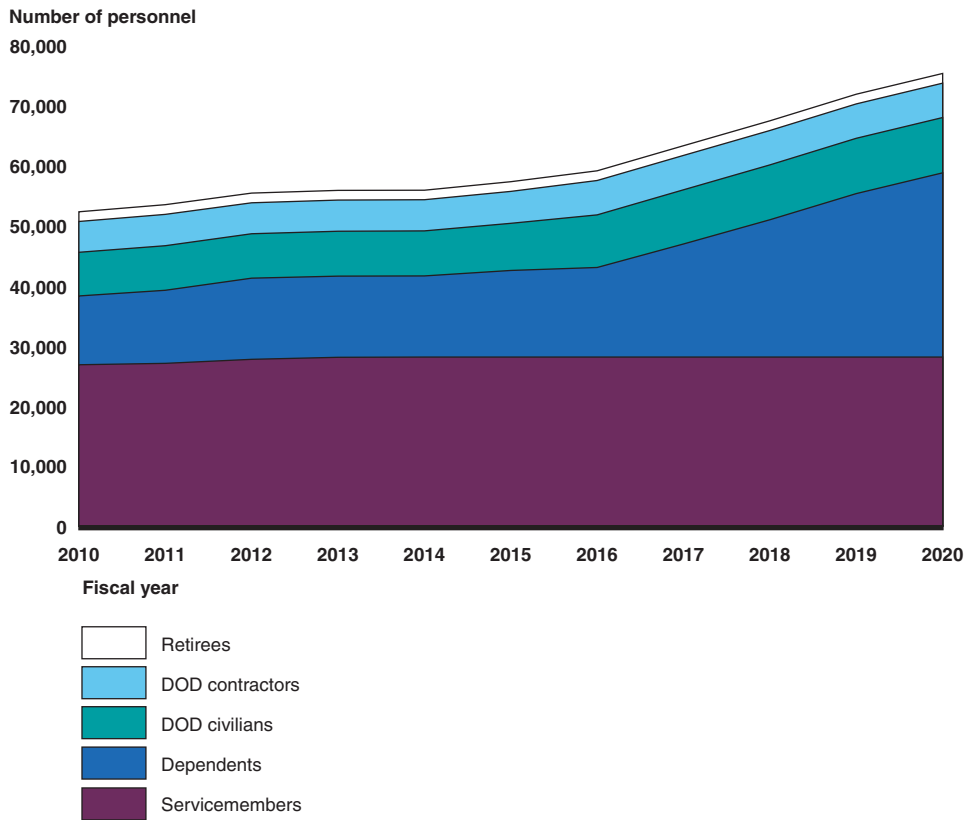
⁷ DOD defines dwell time as the period of time between the release from involuntary active duty and the reporting date for a subsequent tour of active duty pursuant to 10 U.S.C. § 12302. Such time includes any voluntary active duty performed between two periods of involuntary active duty pursuant to 10 U.S.C. § 12302.

consideration for back-to-back non-accompanied deployments. Tour normalization would reduce uncertainty for service members and their families, and affirm the United States commitment to the U.S.-Korean alliance and the region. It enables a more adaptive and flexible U.S. and combined-force posture on the Korean peninsula to strengthen the alliance's deterrent and defense capabilities and long-term capacity for regional and global defense and security cooperation, according to the *Commander's Narrative Assessment*.

DOD has not finalized an implementation schedule for tour normalization as DOD continues to evaluate alternative implementation schedules and associated costs. As of September 2010, USFK officials estimated that the total DOD population in South Korea was approximately 52,800, including 11,600 dependents. One approach developed by USFK officials for implementing tour normalization called for completing the construction of facilities and movement of dependents to South Korea by 2020 except for the facilities and dependents associated with service members at Kunsan Air Base (the Air Force has yet to decide if tour normalization will be implemented at Kunsan Air Base). Under that schedule, initial steps to implement tour normalization, such as increasing the number of accompanied tours in South Korea, were expected to be completed in fiscal year 2011, when USFK officials estimated the total DOD population in South Korea would be about 54,000.⁸ Follow-on implementation steps would increase the DOD population to about 60,000 by 2016, and 76,000 by 2020, according to USFK estimates (see fig. 4). If DOD implements tour normalization at Kunsan Air Base, USFK estimated that this would occur after 2020, and the total DOD population on the South Korean peninsula could increase to about 84,000.

⁸ USFK planned to increase the number of accompanied tours from 1805 positions as of September, 2008 to 4636 positions by December, 2010 during the initial phase of implementing tour normalization.

Figure 4: Planned Changes to DOD Population in South Korea 2009 through 2020



Source: United States Forces Korea.

Note: This figure does not include implementing tour normalization at Kunsan Air Base. If tour normalization is implemented at Kunsan Air Base, USFK officials stated it would be after 2020, and increase the total DOD population in South Korea to about 84,000.

Because DOD is still analyzing alternative tour normalization implementation schedules, the estimated costs have yet to be fully defined and have been changing. USFK officials have estimated that based on the 2020 implementation schedule, the cost to implement tour normalization for all services (including military construction, family housing, personnel,⁹ and operation and maintenance costs) would be about \$5.1 billion from fiscal year 2012 through fiscal year 2020, although these

⁹ Military Personnel costs included overseas-housing allowance, assignment incentive pay, cost-of-living allowance, family-separation allowance, and permanent change of station costs.

estimates are very preliminary and likely to change. Additional costs estimated by USFK and the Army include:

- USFK estimated \$1.5 billion would be needed to implement tour normalization at Kunsan AFB after fiscal year 2020.¹⁰ However, according to Air Force officials, this estimate only covers construction costs; the total implementation costs could be much higher.
- The Army calculated an extended cost estimate for tour normalization from 2021 through 2050. That estimate shows that tour normalization could increase Army operations and support costs by \$15.7 billion or more from 2021 through 2050 in areas such as increased personnel and medical expenses.¹¹

On October 18, 2010, the Secretary of Defense announced in a memo to the Secretaries of the Military Departments and similar officials from other DOD organizations that he had directed USFK and the military services to “proceed with full Tour Normalization for Korea, as affordable, but not according to any specific timeline.”¹² He also directed the Army to execute the Humphreys Housing Opportunity Program for the construction of 1,400 units and to pursue Military Construction funding for additional family housing.¹³ However, the Secretary directed that no later than March 31, 2011, USFK—along with PACOM, the military services, and other relevant DOD organizations—was to provide the Secretary with a feasible and affordable plan to continue the momentum toward full tour normalization on the Korean peninsula. He directed the Cost Analysis and Program Evaluation organization to evaluate the plan and cost estimates to establish a “no less than” funding level to be identified on an annual basis. The Secretary stated he would continue to closely monitor changes

¹⁰ As previously discussed, if tour normalization is fully implemented in Kunsan, USFK has estimated that the total DOD population in South Korea could increase to approximately 84,000.

¹¹ The Army estimate does not include any other military service cost, especially Air Force costs, for tour normalization between 2020 and 2050 nor does it include the additional cost associated with the other U.S. posture initiatives in South Korea between 2016 and 2050.

¹² In the memo, the Secretary of Defense did not define the level of tour normalization resource requirements that would be affordable.

¹³ According to USFK officials, the Humphreys Housing Opportunity Program would use private developers to construct military-housing facilities at Camp Humphreys that in turn would be rented by military service members using DOD overseas housing allowance funds—estimated at \$4,200 per month.

in timelines, requirements, and cost as he considered how to most effectively implement the overall tour normalization plan.

Tour Normalization Is Not Supported by a Business Case Analysis

Although detailed cost estimates are being prepared at the direction of the Secretary of Defense as alternative implementation schedules are considered, DOD has not developed a business case analysis that would include an analysis of alternatives to support the decision to move forward with tour normalization, and did not have one planned at the time of our report. According to the *GAO Cost Estimating and Assessment Guide*, a business case analysis is a comparative analysis that presents facts and supporting details among competing alternatives.¹⁴ A business case analysis considers not only all the life cycle costs of competing alternatives, but also quantifiable and nonquantifiable benefits. This analysis should be unbiased by considering all possible alternatives and should not be developed solely for supporting a predetermined solution. Moreover, a business case analysis should be rigorous enough that independent auditors can review it and clearly understand why a particular alternative was chosen. A business case analysis seeks to find the best value solution by linking each alternative to how it satisfies a strategic objective. Each alternative should identify the

- relative life-cycle costs and benefits;
- methods and rationale for quantifying the life-cycle costs and benefits;
- effect and value of cost, schedule and performance tradeoffs;
- Sensitivity to changes in assumptions; and
- risk factors.

On the basis of this information, the business case analysis then recommends the best alternative. Our *Cost Assessment Guide* also states that in addition to supporting an investment decision, the business case analysis should be considered a living document and should be updated often to reflect changes in scope, schedule, or budget. In this way, a business case analysis is a valuable tool for validating decisions to sustain or enhance the program.

DOD has focused on and produced tour normalization cost estimates and continues to refine them, but has not addressed the other aspects of a

¹⁴ GAO, *Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, [GAO-09-3SP](#) (Washington, D.C.: March 2009).

business case analysis—which, according to the *GAO Cost Estimating and Assessment Guide* would include analyzing alternatives to tour normalization and determining the associated costs, benefits, advantages, and disadvantages of any viable alternative. For example, USFK officials stated that tour normalization was driven by the USFK Commander’s strategic objectives to (1) obtain greater flexibility in deploying U.S. forces assigned to South Korea and (2) improve military families’ quality of life by reducing the amount of time they were separated by deployments. However, DOD has not clearly demonstrated the extent to which tour normalization will actually achieve these objectives or the total costs involved relative to other alternatives. Specifically, a January 2006 joint statement of the United States and South Korea affirms that South Korea, as an ally, fully understands the rationale for the transformation of the U.S. global military strategy and respects the necessity for strategic flexibility of the U.S. forces in South Korea.¹⁵ U.S. Embassy officials in Seoul confirmed that there are currently no legal impediments to prevent the United States from deploying its forces, and under existing agreements, DOD has flexibility in deploying its forces to other countries or regions as necessary. However, USFK officials told us that in their view, the Government of South Korea and the general public remained reluctant to support such deployments after the United States deployed an Army brigade to Iraq in 2004 that did not return to South Korea.¹⁶ Despite the agreement between the U.S. and South Korean presidents to maintain the force presence at 28,500 troops, the USFK Commander said that the decision to move forward with tour normalization and bring more American military families to South Korea demonstrates the United States’ commitment to a long-term force presence in the country and would alleviate concerns that any soldiers deployed from the peninsula would not return.

In addition, as for achieving the goal of improving quality of life for servicemembers, DOD has not produced specific analysis to show that moving families to South Korea is an option that most servicemembers and their families would consider an improvement to their quality of life, especially if servicemembers deployed to South Korea would then be subject to separation from their families if they are redeployed to other

¹⁵ *Text of the Joint United States-Republic of Korea Statement on the Launch of the Strategic Consultation for Allied Partnership* (Jan. 19, 2006).

¹⁶ According to the State Department, in April 2008 the Presidents of the United States and South Korea agreed to maintain the United States force level on the peninsula at 28,500.

regions. In those cases, servicemembers would be separated from their immediate family members in South Korea when they are deployed, and family members residing in South Korea would be separated from their extended family network in the United States.

The financial risks of implementing tour normalization without a business case analysis to support the decision are high, given the magnitude of the resources that will be required and the impact on military construction plans. For example, most of the military dependents who would move to South Korea under this initiative would move to Camp Humphreys. At the time of our visit to that location in March 2010 the construction plan for Camp Humphreys included adding 2,328 acres to the camp, increasing the total size to 3,538 acres. The plan also included constructing more than a thousand new structures, including five new schools and an assortment of housing and other support facilities at an estimated cost of approximately \$13.1 billion. This construction plan and the estimated cost combines construction of new facilities and infrastructure to accommodate military service members and dependents associated with the Yongsan Relocation Plan, Land Partnership Plan, and initial construction associated with tour normalization initiatives. At the time of our visit, significant land reclamation was already under way to support the overall transformation efforts, and new construction had started on facilities such as family housing, recreational facilities and a family style water park. (see fig. 5).

Figure 5: Camp Humphreys Planned Expansion and Ongoing Land Reclamation and Construction, as of April 2010



Source: United States Forces Korea; Map Resources (map); GAO (photo).

However, the plan for Camp Humphreys at the time of our visit did not include building the necessary infrastructure to accommodate the population expected to be added if tour normalization is fully implemented.¹⁷ DOD officials stated that if tour normalization were to be

¹⁷ In March 2011, OSD officials stated that the master plan for Camp Humphreys is currently being modified to reflect full implementation of tour normalization.

fully implemented, Camp Humphreys would require seven additional schools—as well as an increase in other infrastructure such as housing, commissaries, and postal facilities. We were also told that the land area currently dedicated to new construction would not accommodate these additional buildings, and therefore existing building plans would have to be modified and additional land might have to be acquired. The Army Corps of Engineers official responsible for executing the building plan at Camp Humphreys stated that accommodating the total tour normalization population would call for a modified or new plan for the camp and that, with construction already under way, it would be critical to modify the plans as soon as possible, because costly modifications to building plans could result from changing facility requirements after major construction has begun. However, in our discussions with Office of the Secretary of Defense officials from the Policy and Comptroller's office, we were told that because the construction plan for Camp Humphreys combines facility and infrastructure requirements for the Yongsan Relocation, Land Partnership, and tour normalization initiatives, they were unable to determine the extent to which tour normalization has affected construction plans at Camp Humphreys.

Tour normalization will also have a major impact on posture costs and pilot training capabilities at Osan Air Base, located a few miles away from Camp Humphreys. For example, during our visit to Osan Air Base, officials told us that one of the challenges they face in implementing tour normalization is the limited amount of space available to construct the required housing, parking, child development center, commissary, six schools, and other quality-of-life facilities. At the time of our visit to Osan Air Base, base officials provided an overview of their plans to implement tour normalization, which required the demolition of approximately 20 or more existing facilities and included 51 construction projects. (All but one of these projects were planned to start in fiscal year 2012 or later.) Also, according to Air Force officials, the Air Force's training capabilities in South Korea for its F-16 pilots are inadequate; lengthening tours to 2 or 3 years would exacerbate this training deficiency. Specifically, Air Force officials stated that their pilots do not get enough training time on South Korean training ranges because the pilots must share the ranges with South Korean pilots. In addition, South Korean ranges do not offer all of the training these pilots need. Currently, this reduced training capacity is deemed acceptable by the Air Force because pilots are reassigned after a 1-year tour and can update their training at their next duty station. However, according to Air Force officials, if 3-year tours are established for their pilots in South Korea, they may have to send the pilots on training missions to Alaska—the closest site with the required capabilities—for the

training they need to maintain the necessary qualification levels. The additional costs in terms of fuel and other operating expenses for these training missions to Alaska would be an added expense.

Without a business case analysis that identifies alternative courses of action and their associated life cycle costs, potential benefits, advantages, and disadvantages, DOD is embarking on an initiative that involves moving thousands of U.S. civilians to South Korea and constructing schools, medical facilities, and other infrastructure to support them without fully understanding the costs involved or considering potential alternatives that might more efficiently achieve its strategic objectives. Furthermore, blending the construction requirements for the Yongsan Relocation Plan, Land Partnership Plan, and tour normalization has obscured the extent to which construction at Camp Humphreys has been or could be affected by tour normalization decisions. As previously discussed, the Secretary of Defense requested a feasible and affordable plan to continue the momentum toward full tour normalization on the Korean peninsula; this plan could help determine the future of the initiative. However, according to USFK and OSD officials, a business case analysis has not been included as part of this decision process.

DOD Has Not Estimated the Cost of Posture Initiatives in Japan and Guam

DOD has embarked on a major realignment of U.S. military posture in mainland Japan, Okinawa, and Guam, but has not developed comprehensive cost estimates for these initiatives; as a result, DOD is unable to ensure that all costs are fully accounted for or determine if resources are adequate to support the program. In February 2005, the United States Secretary of State and Secretary of Defense hosted Japan's Minister for Foreign Affairs, and its Minister of State for Defense and Director-General of the Defense Agency in a meeting of the United States-Japan Security Consultative Committee. During that meeting, the officials reached an understanding on common strategic objectives, and underscored the need to continue examinations of the roles, missions, and capabilities of Japan's Self-Defense Forces and the U.S. Armed Forces in pursuing those objectives. They also decided to intensify their consultations on realignment of U.S. force structure in Japan.¹⁸ On October 29, 2005, the Security Consultative Committee released a document titled *U.S.-Japan Alliance: Transformation and Realignment for the Future*

¹⁸ See Joint Statement, U.S.-Japan Security Consultative Committee (Washington, D.C.: Feb. 19, 2005).

that, among other points, approved recommendations for realignment of U.S. military forces in Japan and related Japan Self Defense Forces, in light of their shared commitment to maintain deterrence and capabilities while reducing burdens on local communities, including those in Okinawa.¹⁹ Both sides recognized the importance of enhancing Japanese and U.S. public support for the security alliance. In May 2006, a *United States—Japan Roadmap for Realignment Implementation* was released that provided details on the approved recommendations for realignment and stated the construction and other costs for facility development in the implementation of these initiatives will be borne by the Government of Japan unless otherwise specified.²⁰ The *Roadmap* also stated the U.S. Government will bear the operational costs that arise from implementation of these initiatives, and the two Governments will finance their realignment-associated costs consistent with their commitments to maintain deterrence and capabilities while reducing burdens on local communities. The U.S. and Japanese governments signed an agreement in February 2009 that implemented certain aspects of the *Roadmap* related to the relocation of the III Marine Expeditionary Force from Okinawa to Guam.²¹

As of December 2009, DOD had approximately 45,000 servicemembers stationed in Japan, with approximately 24,600 stationed in Okinawa.²² In addition, DOD had almost 39,800 dependents who accompanied these servicemembers—20,250 in mainland Japan and 19,521 in Okinawa. The planned end state of the announced realignment initiatives will affect DOD posture in several areas of Japan, including servicemembers, dependents, and/or military forces located in Misawa, Yokota, Camp Zama, Yokusuka, Atsugi, Iwakuni, Kadena, and Futenma (see fig. 6). For example, DOD's realignment initiatives, as presented in the *Roadmap*, would include

¹⁹ See United States-Japan Security Consultative Committee Document, *U.S.-Japan Alliance: Transformation and Realignment for the Future* (Oct. 29, 2005).

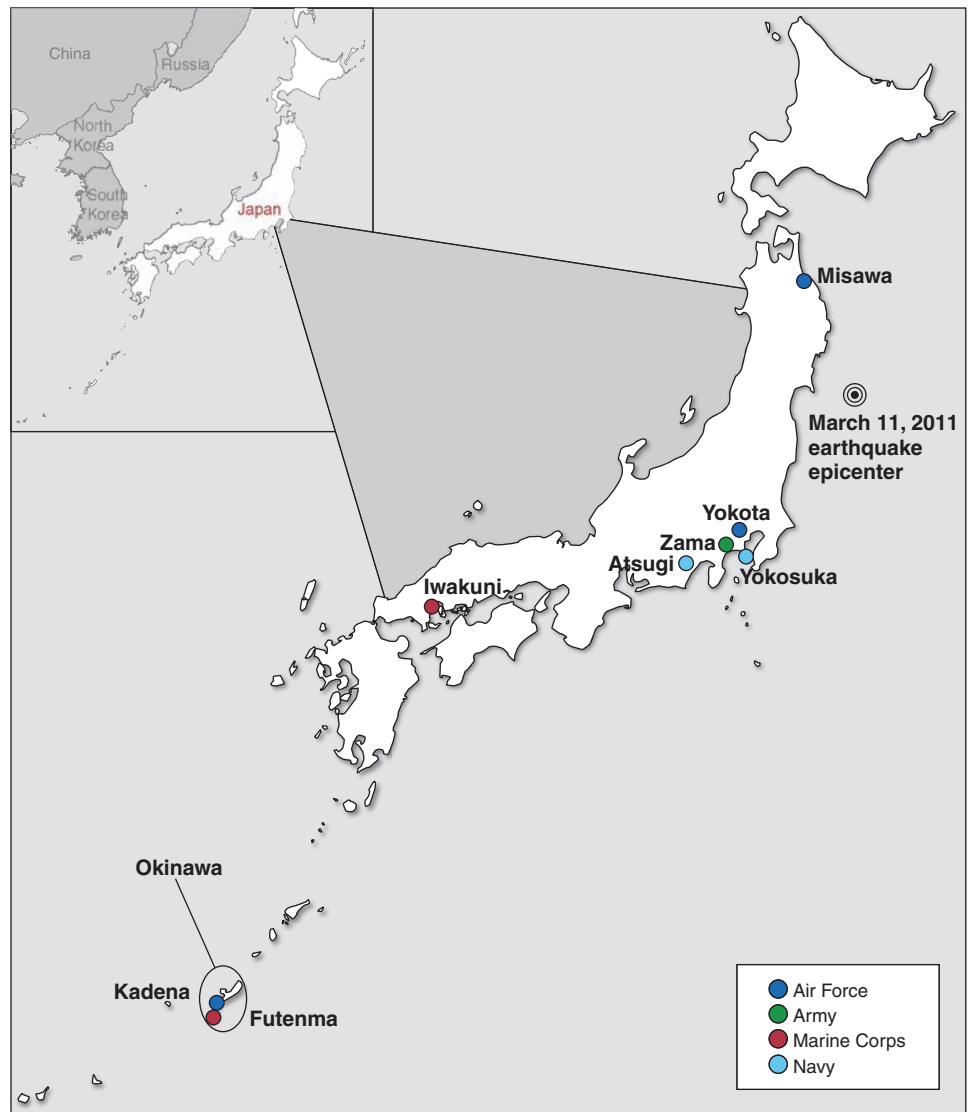
²⁰ See United States-Japan Security Consultative Committee Document, *U.S.-Japan Roadmap for Realignment Implementation*, (May 1, 2006) The U.S.-Japan Security Consultative Committee has discussed the *Roadmap* in subsequent Joint Statements made in May 2007 and May 2010.

²¹ *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.

²² Servicemember population totals include Navy Ashore and Afloat, Marines Ashore and Rotational, Army, Air Force, and Coast Guard.

relocating a joint U.S./Japan Air Defense Command headquarters to Yokota Air Base, relocating a carrier air wing from Atsugi to Iwakuni, consolidating several Marine Corps bases in Okinawa, and relocating Marine Corps units to Guam. These and other initiatives are discussed in greater detail below. Figure 6 also illustrates the approximate location of the epicenter of the earthquake that struck off the east coast of Japan on March 11, 2011. The effect of this and the ensuing tsunami and nuclear reactor incidents on DOD posture realignment initiatives is not yet known.

Figure 6: Key Locations of Realignment Initiatives in Japan



Source: DOD; Map Resources (map).

Although DOD and the Government of Japan have embarked on these initiatives, DOD has not estimated the total costs associated with them. However, USFJ officials were able to provide us with details from an October 2006 Government of Japan budget estimate study for realignment costs covering Japan's fiscal years 2007 through 2014. According to USFJ officials, the Government of Japan has not provided any updates to these costs, so they are the best estimates of Government of Japan costs

available at this time.²³ We also obtained limited cost information associated with initiatives in Guam and the Northern Mariana Islands that was developed by the Marine Forces, Pacific Command. Taken together, the available cost information we gathered indicates that posture initiative costs will be significant—we identified approximately \$29.1 billion—primarily construction costs for these initiatives (see table 2). According to USFJ and OSD officials, DOD is now in the process of developing cost estimates for these initiatives. These costs may include, among other items, the cost to outfit, furnish, and maintain buildings constructed by Japan and to move personnel and equipment into consolidated locations.

Table 2: Summary of Estimated Costs of PACOM Posture Initiatives in Japan and Guam Identified as of January 2011 (Billions of Dollars)

Posture initiative	Estimated costs ^e		
	United States	Japan	Total
Japan			
Carrier air wing ,moving from Atsugi to Iwakuni	Not yet estimated ^a	\$1.4 ^b	\$1.4
Camp Zama/ Sagama Depot	Not yet estimated ^a	0.3 ^b	0.3
Aviation training relocation	Not yet estimated ^a	0.3 ^b	0.3
Yokota Air Base and Air Space	Not yet estimated ^a	No costs estimate provided	
Okinawa consolidation	Not yet estimated ^a	4.2 ^b	4.2
Futenma Replacement Facility	Not yet estimated ^a	3.6 ^b	3.6
Subtotal Japan		\$9.8	\$9.8
Guam			
Roadmap agreement ^c	4.2	6.1	10.3
Additional requirements	7.1 ^d		7.1
Subtotal Guam	\$11.3	\$6.1	\$17.4
Northern Mariana Islands Training Range	\$1.9	0	\$1.9
Total	\$13.2	\$15.9	\$29.1

Source: GAO analysis of cost data provided by DOD officials.

²³ We requested total cost estimates for each initiative from DOD officials at all levels in the department, including the Office of the Secretary of Defense, PACOM, USFJ, and their respective service component commands. See appendix I for more details on our scope and methodology.

^aAccording to USFJ and OSD officials, DOD is in the process of developing cost estimates for these initiatives. These costs may include, among other items, the cost to outfit, furnish, and maintain buildings constructed by Japan and to move personnel and equipment into consolidated locations.

^bUSFJ information drawn from an October 2006 Government of Japan budget-estimate study for realignment costs covering Japan's fiscal years 2007 through 2014, using a conversion rate of \$1 USD = ¥ 111.

^cAnticipated funding in U.S. fiscal year 2008 dollars, as stipulated in the *United States-Japan Roadmap for Realignment Implementation*, May 1, 2006.

^dThe Marine Corps has estimated these additional costs to complete the relocation of Marines from Okinawa to Guam; however, they have not been validated by the Department of Defense.

^eInitiatives listed cover different time periods. Japan initiatives were estimates of Japan Fiscal Years 2007 through 2014, Bi-lateral agreement costs were 2006 through 2014, additional Guam requirements were over an unspecified period of time, Northern Mariana Islands Training Range costs were estimated from 2012 through an unspecified end date. See below for more details.

Carrier air wing move from Atsugi to Iwakuni (\$1.4 billion—Japan budget estimate only). As outlined in the *U.S.-Japan Roadmap for Realignment Implementation (the Roadmap)*,²⁴ Carrier Air Wing 5, a Navy air wing paired with the aircraft carrier USS George Washington (currently stationed at Fleet Activities Yokosuka, Japan), would move its headquarters and fixed wing flight operations from Naval Air Facility Atsugi to Marine Corps Air Station Iwakuni. In 2006, Japan estimated that it would spend approximately \$1.4 billion to construct new facilities under this initiative, but DOD has not estimated its own costs. Under this initiative, the fixed-wing aircraft attached to Carrier Air Wing 5 would move to Iwakuni, but according to Navy officials, the rotary wing squadrons would stay at Atsugi. In addition, Marine Corps rotary wing aircraft currently located at Iwakuni would eventually relocate to Guam as part of the Marine Corps relocation from Okinawa to Guam described below.

Camp Zama/ Sagami Depot (\$0.3 billion—Japan budget estimate only). The intent of this initiative is to improve command and control capabilities between the U.S. Army and the Japanese Ground Self Defense Force by transforming the Army's headquarters at Camp Zama, establishing the headquarters of the Japanese Ground Self Defense Force Central Readiness Force there, and giving Japanese helicopters access to the Army's Kastner Army Airfield at Camp Zama. In addition, a battle command training center and other support facilities are to be constructed at Sagami General Depot. The United States would also return portions of both Camp Zama and Sagami General Depot to Japan for local

²⁴ United States-Japan Security Consultative Committee Document, *United States-Japan Roadmap for Realignment Implementation*, May 1, 2006.

redevelopment. According to USFJ officials, in 2006, Japan estimated it would spend approximately \$300 million to construct new facilities under this initiative, but DOD has not estimated its own costs.

Aviation Training Relocation (\$0.3 billion—Japan budget estimate only). In order to reduce the impact of noise on communities surrounding U.S. air facilities at Kadena Air Base, Naval Air Facility Misawa, and Marine Corps Air Station Iwakuni and to enhance bilateral training with the Japanese, aviation training would be relocated to six Japanese Air Self Defense Force facilities.²⁵ Both the United States and Japan would work toward expanding the use of Japanese Air Self Defense Force facilities for bilateral training and exercises in the future. In 2006, Japan estimated it would spend approximately \$300 million to construct new facilities for this initiative, but DOD has not estimated its own costs.

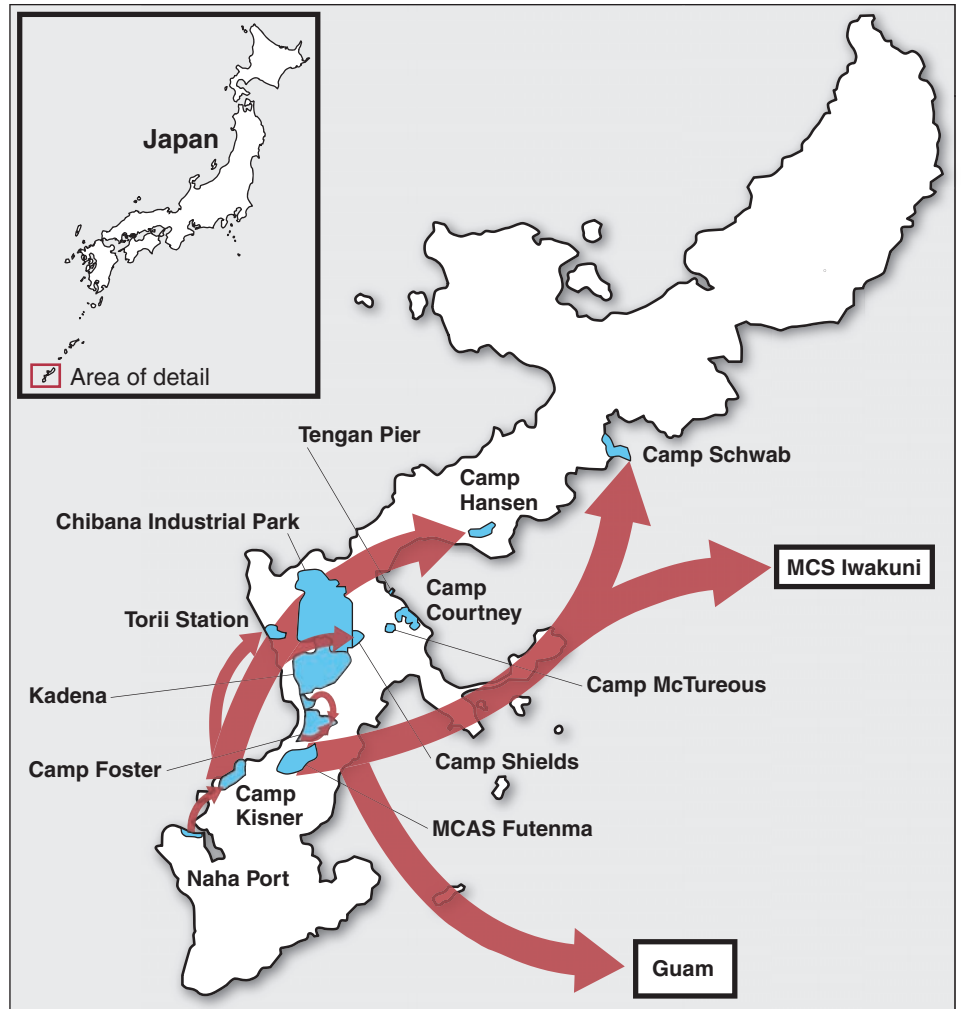
Yokota Air Base and Air Space (No cost estimate provided). The Japan Air Self Defense Force Air Defense Command and relevant units would relocate to Yokota Air Base and a bilateral master plan would be developed to accommodate facility and infrastructure requirements. A bilateral, joint operations coordination center, established at Yokota Air Base, would include a collocated air and missile defense coordination function. Measures would be pursued to facilitate the movement of civilian aircraft through the Yokota airspace while satisfying military operational requirements.

Okinawa consolidation (\$4.2 billion—Japan budget estimate only). Following the relocation of Marines to the Futenma Replacement Facility, the return of Marine Corps Air Station Futenma to the Japanese, and the transfer of III Marine Expeditionary Forces personnel to Guam, four additional U.S. facilities and part of a fifth facility in southern Okinawa would be vacated (see fig. 7).²⁶ The Marines in these locations plan to move to four primary locations in the northern, less crowded part of Okinawa. In 2006, Japan estimated it would spend approximately \$4.2 billion to construct projects under this initiative, but DOD has not estimated its own costs.

²⁵ Japanese Air Self Defense Force bases where aviation training would be relocated are Chitose, Misawa, Hyakuri, Komatsu, Tsuiki, and Nyutabaru.

²⁶ 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.

Figure 7: Relocation of U.S. Military Posture in Okinawa



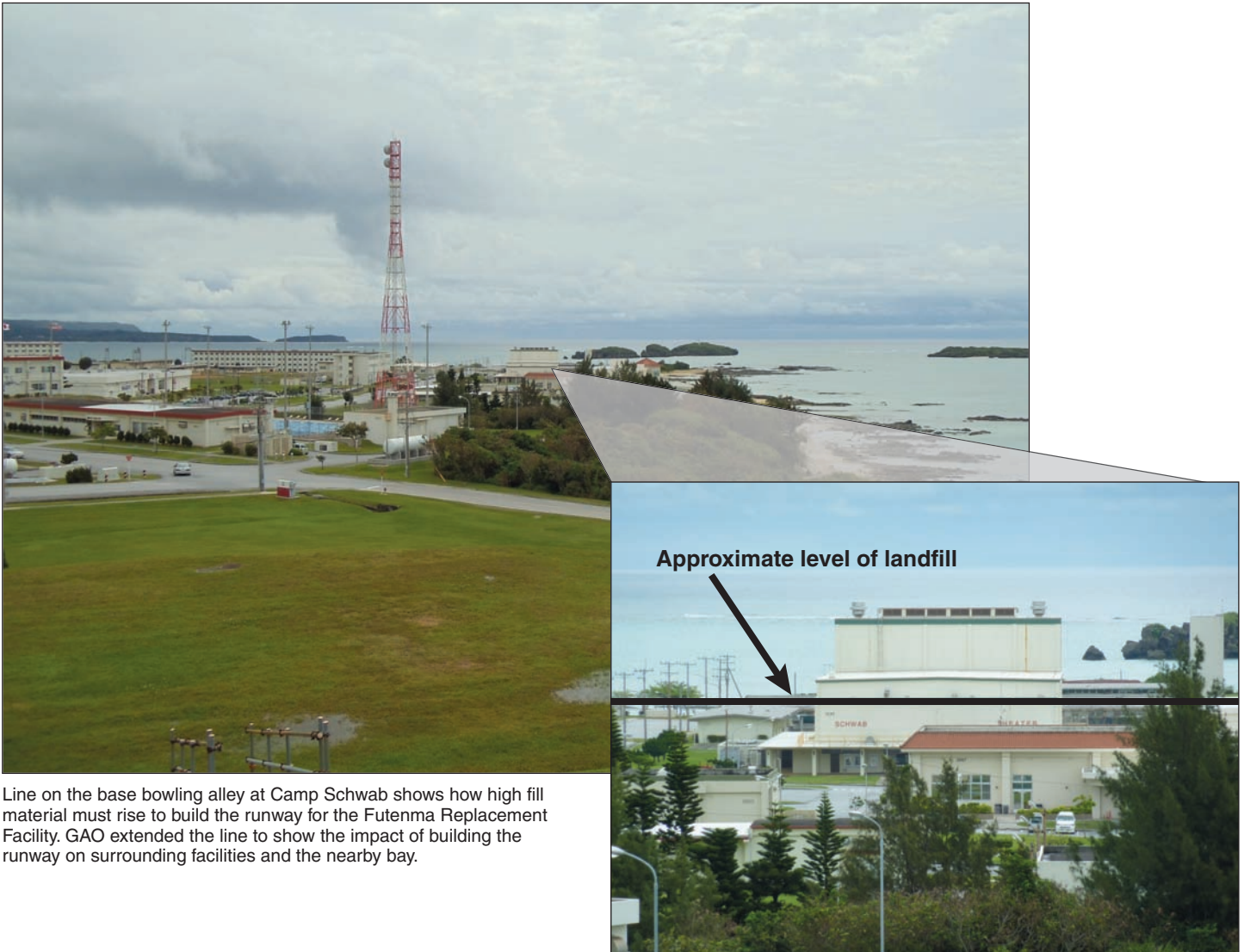
Source: DOD; Map Resources (map).

Futenma Replacement Facility (\$3.6 billion—Japan budget estimate only). A new runway and surrounding infrastructure for the Marine Corps are to be built at Camp Schwab to replace Marine Corps Air Station Futenma; this new facility is known as the Futenma Replacement Facility. DOD plans to relocate a Marine Aviation Group, Logistics Squadron, and several helicopter squadrons to the Futenma Replacement

Facility once it is complete.²⁷ Although plans for the new air base have not been finalized, one option includes the construction of two runways aligned in a V shape that would extend into the Oura and Henoko Bays, while another option would require a single runway. Both options would require significant reclamation of the sea to complete. Figure 8 below shows some of the current facilities at Camp Schwab and the estimated level of landfill that would be required to construct the runway(s). The Marine Corps relocation to the Futenma Replacement Facility at Camp Schwab is planned to occur when the facility is fully operationally capable. In 2006, Japan estimated it would spend approximately \$3.6 billion for this initiative, but DOD has not estimated what its costs will be.

²⁷ Marine Corps plans indicate that heavy (CH-53), medium (CH-46), and light (AH-1) helicopter assets may relocate to Camp Schwab, among other assets.

Figure 8: Camp Schwab, Okinawa, as of April 2010



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.

Marine Corps Relocation from Okinawa to Guam (\$17.4 billion—Japan budget estimate and DOD estimated costs). As part of the military posture realignment on Okinawa, about 8,600 Marines and their 9,000 dependents are to transfer from several locations in Okinawa to Guam.²⁸ It is expected that the 8,600 marines who relocate to Guam will include the III Marine Expeditionary Force Command Element, the 3rd Marine Division Headquarters and 3rd Marine Logistics Group Headquarters, the 1st Marine Air Wing Headquarters, and the 12th Marine Regiment Headquarters. The governments of Japan and the United States have agreed to share the costs of transferring the Marines from Okinawa to Guam, with the Government of Japan anticipated to provide about \$6.1 billion and the United States anticipated to provide an additional \$4.2 billion (in U.S. fiscal year 2008 dollars) for construction of new facilities and infrastructure development on Guam.²⁹ In addition, the Marine Corps estimates that an additional \$7.1 billion may be required to complete the move to Guam—\$4.7 billion for additional construction costs and \$2.4 for costs associated with utilities, labor, and procurement of military equipment.³⁰ However, these Marine Corps estimates have not been validated by DOD.

This transfer of Marine Corps personnel and families is part of a larger DOD effort to increase the military posture on Guam, including Air Force initiatives to add intelligence, surveillance, and reconnaissance capabilities; Navy initiatives related to new pier construction and a new hospital; and an Army initiative related to installation of an air and missile defense system. Figure 9 illustrates the locations where these initiatives will be implemented on the island. If implemented as planned, these initiatives will increase the U.S. military presence on Guam from about

²⁸ Although the *Roadmap* and the *Agreement* concerning the Guam relocation refer to approximately 8,000 personnel, the Record of Decision for the Guam and Commonwealth of Northern Mariana Islands relocation refers to approximately 8,600 Marines. See Department of the Army and Department of the Navy, Record of Decision for the Guam and CNMI Relocation (Sept. 2010).

²⁹ The *Roadmap* provides a framework for the funding amounts, which were subsequently reaffirmed in the introduction to the U.S.-Japan Agreement concerning the relocation to Guam. *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.

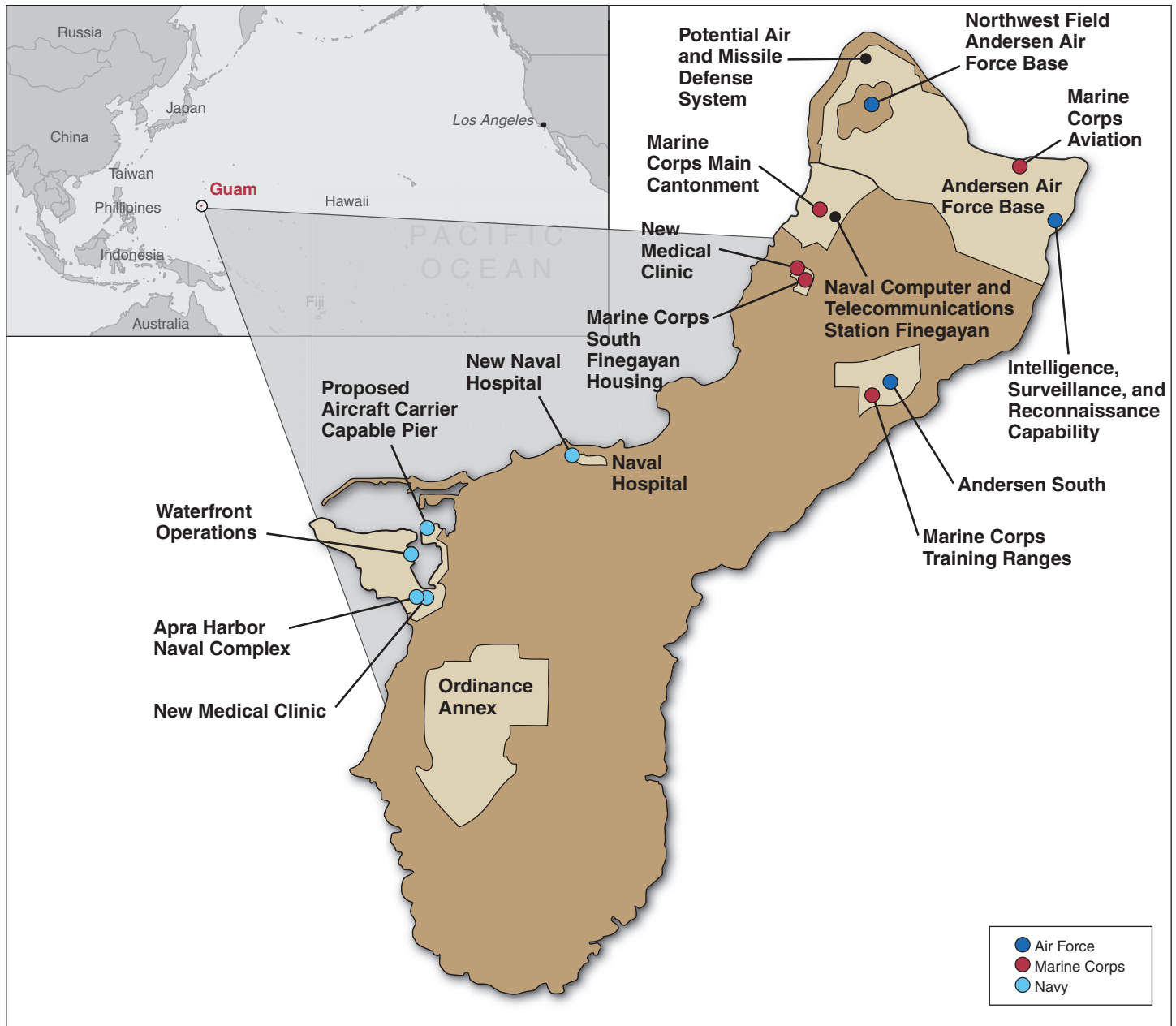
³⁰ In Japan the Marine Corps has portions of its labor and utilities costs paid by the Japanese Government. According to Marine Corps officials, on Guam these costs will need to be paid from the Marine Corps' budget.

15,000 in 2009 to more than 39,000 by 2020, which will increase the current population of the island by about 14 percent over those years.³¹ We have issued a series of reports discussing various aspects of the military buildup on Guam and the costs and challenges DOD will face in accomplishing those initiatives, including obtaining adequate funding and meeting operational needs, such as mobility support and training capabilities.³² For example, we have reported DOD cost estimates for the military buildup in Guam do not include the estimated costs of all other defense organizations that will be needed to support the additional military personnel and dependents who will relocate to Guam.

³¹ GAO, *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., Nov. 13, 2009).

³² See our list of related products at the end of this report for additional information.

Figure 9: Locations of Key Posture Initiatives on Guam



Source: DOD; Map Resources (map).

Expanding training capabilities in the Northern Mariana Islands (\$1.9 billion). According to Marine Corps officials, independent of the progress made on the initiatives in Japan and Guam, the Marine Corps will proceed with constructing new training areas in the Pacific. Some training areas are expected to be constructed on Guam for the Marines. However, the environmental impact statement (EIS) for the Marine Corps' move to Guam found that Guam cannot accommodate all training for the realigned Marine Corps forces. DOD has identified the nearby island of Tinian (100 miles away) and other islands in the Northern Mariana Islands as locations that could provide additional land for training. Marine Corps officials estimate that building the training range in the Northern Mariana Islands could cost approximately \$1.9 billion or more. Of that amount, Marine Corps Pacific officials identified \$1 billion in funding requirements from fiscal years 2012 through 2015 to cover costs such as military construction, planning and development, environmental compliance, and combat arms training ranges. The remaining cost for full development of the training capabilities and capacity in the Northern Mariana Islands was at least \$900 million over an unspecified period of time, according to the Marine Corps officials.

According to DOD officials, comprehensive cost estimates for posture initiatives in Japan, including all costs that will be incurred by the United States, have not been completed because there are many uncertainties surrounding initiative implementation schedules. According to Marine Corps officials and confirmed by USFJ officials, when the Government of Japan is constructing any facility for the United States, it does not outline specific timetables; therefore, knowing when a Government of Japan-led construction project will begin or end is difficult to determine and can affect DOD's ability to estimate future costs. This is important because the *United States-Japan Roadmap for Realignment Implementation*, dated May 1, 2006, indicates that the Government of Japan will generally bear the construction and other costs for facility development under these initiatives, and the United States will bear the operational costs.³³ In January 2011, USFJ officials indicated that the service component commands were in the process of developing some initiative cost estimates, but their efforts were not complete and no additional information was provided on the status of these efforts or expected results.

³³ *United States-Japan Security Consultative Committee Document: United States-Japan Roadmap for Realignment Implementation* (May 1, 2006).

In the *United States Department of Defense Fiscal Year 2011 Budget Request Overview*, prepared by the Office of the Under Secretary of Defense (Comptroller), DOD outlined the need to change how the department buys its weapons and other important systems and investments. According to DOD, one way to reform how the department invests is to strengthen front-end scrutiny of costs and not rely on overly optimistic or underestimated costs from the beginning of the investment. In addition, according to the *GAO Cost Estimating and Assessment Guide*, one method for capturing all cost elements that pertain to a program from the initial concept through its operations, support, and eventual end, is through a life-cycle cost estimate. A life cycle cost estimate encompasses all past, present, and future costs for every aspect of the program, regardless of funding source. A life-cycle cost estimate usually becomes the program's budget baseline because the estimate ensures that all costs are fully accounted for, determines when a program is supposed to move from one phase to another, and establishes if resources are adequate to support the program.

Seeking more visibility into DOD posture initiative costs and funding requirements, the Senate Appropriations Committee recently directed DOD to provide comprehensive and routine updates on the status of posture-restructuring initiatives in South Korea, Japan, Guam, and the Northern Mariana Islands (see app. II).³⁴ The updates should be provided annually, beginning with the submission of the fiscal year 2012 budget request, until the restructuring initiatives are complete or funding requirements to support them are satisfied. The updates should address such things as schedule status, facilities requirements, and total costs—including operations and maintenance. If fully responsive to the committee's reporting direction, DOD status updates should provide needed transparency and visibility into the near- and long-term costs and funding requirements associated with the transformation initiatives.

³⁴ See S. Rep. No. 111-226, at 13-15 (2010). The direction appeared in a committee report accompanying a proposed bill for appropriations for military construction, the Department of Veterans Affairs, and related agencies for the fiscal year ending September 30, 2011 (S. 3615). Specifically, the committee directed DOD to provide detailed annual updates on the status of posture-restructuring initiatives in Korea, Japan, Guam, and the initiative that will address training capabilities and capacity in the Pacific region as an appendix to the annual DOD Global Posture Report.

DOD Lacks Comprehensive Cost Information Needed for Affordability Analysis

As discussed in our recent report on military posture in Europe, DOD guidance does not require combatant commanders to include comprehensive information on posture costs in their theater posture plan, and as a result, DOD lacks critical information that could be used by decision makers and congressional committees as they deliberate new posture requirements and the associated allocation of resources.³⁵ The *2008 Joint Strategic Capabilities Plan* requires that each combatant command provide, in its theater posture plan, information on the inventory of installations in the combatant commander's area of responsibility, to include estimates of the funding required for proposed military construction projects. However, this guidance does not specifically require—and therefore PACOM does not report—the total cost to operate and maintain DOD's posture in Asia whether those costs are associated with a posture initiative or not. Our analysis shows that operation and maintenance costs are significant. Of the approximately \$24.6 billion obligated by the services to support DOD's posture in Asia from fiscal years 2006 through 2010, approximately \$18.7 billion (76 percent) was for operation and maintenance costs.³⁶ The military services project that operation and maintenance funding requirements will continue at about \$2.9 billion annually for fiscal years 2011-2015. However, as previously discussed, DOD has major posture transformation initiatives underway in South Korea, Japan, and Guam that could significantly impact estimates of these future costs. For example, according to USFJ and Marine Corps officials, although the Government of Japan has agreed to construct new facilities as part of the realignment of U.S. military forces in Japan, DOD is responsible for the costs to furnish, equip, and maintain those facilities to make them usable, and for operation and support costs, but DOD has not yet estimated those costs. According to USFJ officials, in Okinawa alone, Japan would build approximately 321 new buildings and 573 housing units, all of which will need to be furnished and equipped by DOD. Our prior work has demonstrated that comprehensive cost information—including accurate cost estimates—is key to enabling

³⁵ GAO, *Defense Management: Additional Cost Information and Stakeholder Input Needed to Assess Military Posture in Europe*, [GAO-11-131](#) (Washington, D.C.: February 2011).

³⁶ The estimated \$24.6 billion obligated by the services to build, operate, and maintain military installations in Asia does not include funds obligated by tenant organizations at those locations that can contribute significant funding to operate and maintain infrastructure. See app. I for more details on our scope and methodology to collect and analyze posture costs.

decision makers to make funding decisions, develop annual budget requests, and evaluate resource requirements at key decision points.

DOD Does Not Routinely Capture and Report Total Posture Costs

As we previously reported, the *2008 Joint Strategic Capabilities Plan* requires that theater posture plans prepared by each combatant command provide information on each installation in a combatant commander's area of responsibility, to include identifying the service responsible for each installation, the number of military personnel at the installation, and estimates of the funding required for military construction projects.³⁷⁻³⁸ In accordance with these reporting requirements, PACOM's 2010 theater posture plan provides personnel numbers, service responsibilities, specified posture initiatives, and associated military construction costs for installations within PACOM's area of responsibility. However, the *Joint Strategic Capabilities Plan* does not specifically require the combatant commands to report estimates for other types of costs, such as costs associated with the operation and maintenance of DOD installations, in their theater posture plans. DOD's operation and maintenance funding provides for a large number of expenses. For example, with respect to DOD installations, operations and maintenance funding provides for base operation support and sustainment, restoration, and modernization of DOD's buildings and infrastructure, funding that—among other purposes—is to keep facilities and grounds in good working order.³⁹ Because the *Joint Strategic Capabilities Plan* does not require operations and maintenance costs to be reported, they were not included in PACOM's 2010 theater posture plan.

To obtain a more comprehensive estimate of the cost of defense posture in the Pacific, we gathered, from each military service, obligations data related to military construction, family housing, and operation and maintenance appropriations for installations in the PACOM area of responsibility. We found that military construction and family housing obligations accounted for almost one-quarter of the services' total obligations against those appropriations from fiscal years 2006 through

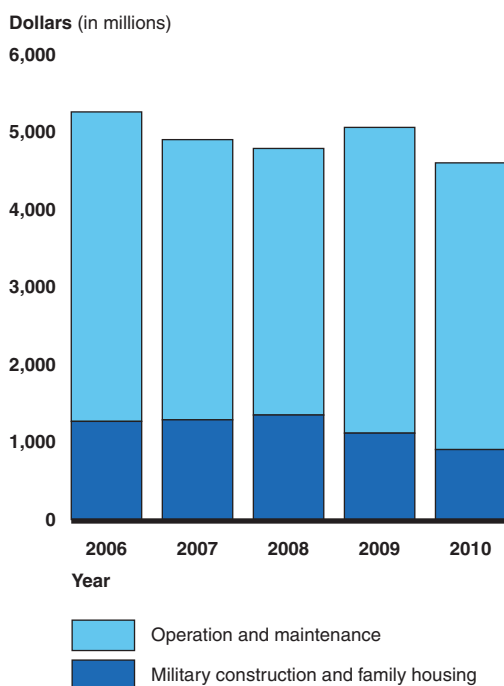
³⁷ [GAO-11-131](#).

³⁸ The Joint Strategic Capabilities Plan defined an installation as any one of three types of locations: main operating base, forward operating site, or cooperative security location.

³⁹ As discussed later in this report, the Government of Japan does provide some host-nation support funding to help defray DOD labor, utilities and facility improvement costs for facilities in Japan.

2010. In total, from 2006 through 2010, the military services obligated about \$24.6 billion to build, operate, and maintain installations in Asia, of which about \$5.9 billion (24 percent) was for military construction and family housing, and \$18.7 billion (76 percent) was for operation and maintenance of these installations (for a more detailed breakdown of costs at installations in Asia see app. III).⁴⁰ On average, the services reported they obligated almost \$5 billion annually for installations in PACOM's area of responsibility, with \$3.7 billion obligated for operations and maintenance (see fig. 10).⁴¹

Figure 10: Service Obligations for DOD Installations in PACOM's Area of Responsibility (Fiscal Years 2006–2010)



Source: GAO analysis of DOD data.

⁴⁰ This data does not include (1) supplementary funding provided to support ongoing operations, (2) costs reimbursed by tenant organizations at installations in PACOM's area of responsibility, and (3) personnel costs for troops stationed at installations in PACOM's area of responsibility. See appendix III for more details on PACOM posture obligations and estimated requirements.

⁴¹ See appendix I for details on our cost-estimate methodology.

Ongoing Transformation Initiatives May Significantly Increase the Cost of DOD's Posture in Asia

Data provided by the military services projects that they will require approximately \$5.2 billion per year through 2015, of which \$2.3 billion (45 percent) will be for military construction and family housing and \$2.9 billion per year (55 percent) will be for installation operations and maintenance costs. However, the operations and maintenance costs may be significantly understated since the military services historically obligated approximately \$3.7 billion annually from 2006 through 2010 for installation operation and maintenance costs, as discussed above, and the major transformation initiatives under way in South Korea, Japan, and Guam may significantly increase costs over the long term, potentially through 2015 and beyond, as illustrated by the following examples.

Potential for Cost Growth in South Korea:

- To provide housing for thousands of dependents that DOD wants to move to South Korea under tour normalization, DOD has established the Humphreys Housing Opportunity Program, whereby, according to USFK officials, private developers would build housing for DOD families and then recover their investments through the rents that military families pay using DOD overseas housing allowance funds. (Current estimates indicate this monthly allowance would be about \$4,200/month for service members at Camp Humphreys.) Although using the Humphreys Housing Opportunity Program has the potential to lower or even eliminate construction-funding requirements, it would increase the Army housing-allowance costs.
- One Army estimate indicates fully implementing tour normalization could increase education and medical costs by almost \$10 billion from 2012 through 2050.
- According to USFK and State Department officials, the United States and Korea are currently consulting on the extent to which Special Measures Agreement contributions (funds provided and expenditures borne by the Government of South Korea to help defray the costs of the U.S. military presence in South Korea) will be used to pay for some military construction costs.⁴² Based on historical information and the current Special Measures Agreement through 2013, South Korea has provided or agreed to provide the United States on average ₩786 billion per year from fiscal years 2007 through 2013, which is equivalent to

⁴² According to USFK officials, the Republic of Korea provided ₩790.4 billion of host-nation support in 2010, which would equal about \$663.3 million.

approximately \$698 million U.S. dollars.⁴³ While using these contributions to pay for construction costs can lower DOD's construction funding requirements, it also eliminates the opportunity DOD has to apply those funds to reduce operation and maintenance costs and related appropriations, thus increasing the required funding in these appropriations.

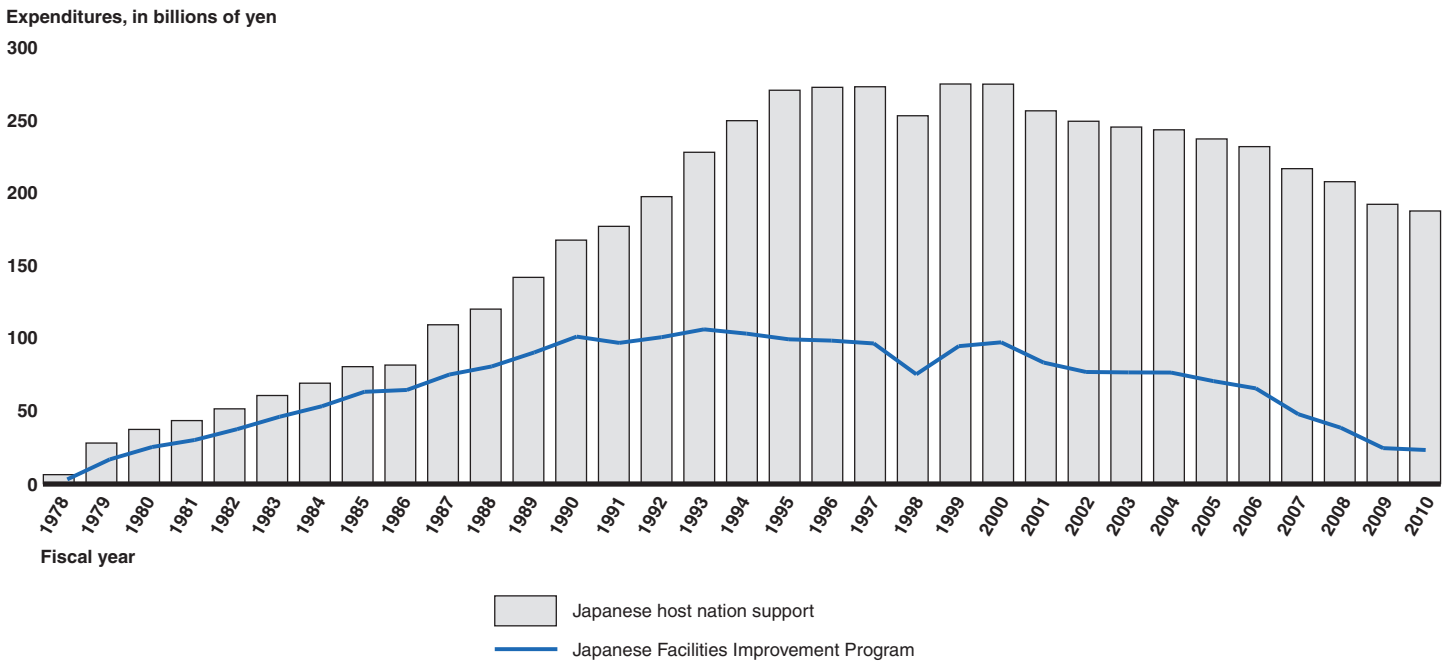
Potential for Cost Growth in Japan:

- The Government of Japan has historically been a major financial contributor, in the form of host-nation support funding, to help defray DOD posture costs. However, after peaking in 1999 (¥276 billion), funding from Japan has steadily declined. In 2010, the Government of Japan provided ¥187 billion in host-nation support—the lowest total since 1992.⁴⁴ One element of host-nation support, the Japanese Facilities Improvement Program—which, as of April 2010, has provided over \$22 billion worth of construction for U.S. military facilities—has declined nearly 80 percent since 1993, as illustrated in figure 11. According to an official in the Office of the Secretary of Defense, in January 2011, the governments of Japan and the United States agreed to maintain the 2010 levels of host-nation support for the next 5 years. Any increases in DOD's operation and support costs would therefore be borne by DOD.

⁴³ Conversion to U.S. dollars is calculated using the annual exchange rates from 2007 through 2010, and the 2010 exchange rate for the period 2011 through 2013. The Special Measures Agreement signed in January 2009 indicates that the 2009 contribution is ¥760 billion, with subsequent yearly contributions for 2010–2013 determined by increasing the contribution of the previous year by an inflation rate. *See* Agreement Concerning Special Measures, U.S.-S. Korea, art. II, Jan. 15, 2009, Temp. State Dep't No. 09-63.

⁴⁴ ¥188 billion equals about \$1.3 billion, based on a 87.78 foreign exchange rate.

Figure 11: Japan Host-Nation Contributions Related to U.S. Military Defense Posture in Japan (Fiscal Years 1978–2010)



Source: GAO analysis of DOD data.

- As previously discussed, DOD has not estimated the total costs to the United States associated with the posture initiatives in Japan, which could be significant. According to USFJ and Marine Corps officials, although the Government of Japan has agreed to construct new facilities as part of the realignment of U.S. military forces in Japan, DOD is responsible for the costs to furnish and equip those facilities to make them usable, and DOD has not yet estimated those costs. Due to the number of buildings involved, these costs could be significant—USFJ officials have estimated that Japan would build approximately 321 new buildings and 573 housing units in Okinawa, all of which will need to be furnished and equipped by the U.S. government.
- While it is difficult to determine at this time what, if any, impact the March 11, 2011, earthquake, tsunami, and associated nuclear reactor incident will have on current agreements and initiative construction plans, DOD officials have said that there is potential for increases in the cost of materials and labor in Asia. They said that it could be similar to the impact that was experienced in the United States after Hurricane Katrina. As we reported, at that time, service officials at

various installations expressed concern about the potential for increases in construction costs because of ongoing reconstruction due to damage caused by Hurricane Katrina, coupled with the large volume of anticipated Base Realignment and Closure construction.⁴⁵

Potential for Cost Growth in Guam:

- In the introduction to the 2009 *Agreement*, the United States and Japan have reaffirmed their intention to spend just over \$10 billion together to provide facilities and infrastructure on Guam to accommodate the Marine Corps relocation by 2014.⁴⁶ However, as previously discussed, Marine Corps officials estimate it will cost an additional \$4.7 billion for military construction and \$2.4 billion for operation and maintenance, procurement, and collateral equipment to complete the relocation. These Marine Corps cost estimates have not been reviewed or validated within DOD and are therefore subject to change.
- If implemented as planned, military posture initiatives will increase the U.S. military presence on Guam from about 15,000 in 2009 to more than 39,000 by 2020, a presence that will increase the current island population by about 14 percent over those years.⁴⁷ Operation and maintenance costs will increase as the DOD population grows.

Comprehensive Cost Information Is Needed for Affordability Analysis

According to the *GAO Cost Estimating and Assessment Guide*, affordability is the degree to which a program's funding requirements fit within the agency's overall portfolio plan. Making a determination about whether a program is affordable depends a great deal on the quality of its cost estimate. Our prior work has demonstrated that comprehensive cost information is a key component in enabling decision makers to set funding priorities, develop annual budget requests, and evaluate resource

⁴⁵ GAO, *Military Base Realignments and Closures: Cost Estimates Have Increased and Are Likely to Continue to Evolve*, [GAO-08-159](#), (Washington, D.C.: December 2007).

⁴⁶ 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.

⁴⁷ This DOD population increase includes all DOD initiatives planned for the military buildup on Guam, not just the transfer of Marine Corps forces from Okinawa. For more information on the Guam initiatives, see GAO, *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 2009).

requirements at key decision points. We have developed a cost estimation process that, when followed, should result in reliable and valid cost estimates that management can use to make informed decisions about whether a program is affordable within the portfolio plan.⁴⁸ Furthermore, guidance from the Office of Management and Budget has highlighted the importance of developing accurate cost estimates for all agencies, including DOD.⁴⁹

In addition, our *Cost Estimating and Assessment Guide* highlights the importance of considering the collective resources needed by all programs designed to support an agency's goals. The benefit of considering the collective program requirements gives decision makers a high level analysis of their portfolio and the resources they will need in the future. Whether these funds will be available will determine what programs remain in the agency's portfolio. Because programs must compete against one another for limited funds, it is considered a best practice to perform this affordability assessment at the agency level, not program by program. In the case of PACOM-posture costs, affordability analysis therefore requires an accurate cost estimate of the total cost to sustain existing posture—such as the cost to sustain existing DOD infrastructure and facilities in Hawaii and other locations currently in place in the Pacific—to serve as a foundation for deliberating the cost and affordability of new posture initiatives. While approaches may vary, an affordability assessment should address requirements at least through the programming period and, preferably, several years beyond.

⁴⁸ In March 2009, GAO published its *Cost Estimating and Assessment Guide* that identifies best practices for developing and managing capital program costs. Agencies can follow the 12-step process which addresses best practices, including defining the program's purpose, developing the estimating plan, defining the program's characteristics, determining the estimating approach, identifying ground rules and assumptions, obtaining data, developing the point estimate, conducting sensitivity analysis, performing a risk or uncertainty analysis, documenting the estimate, presenting it to management for approval, and updating it to reflect actual costs and changes. Following these steps ensures that realistic cost estimates are developed and presented to management, enabling them to make informed decisions about whether the program is affordable within the portfolio plan. GAO, *Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, [GAO-09-3SP](#) (Washington, D.C.: March 2009).

⁴⁹ See Office of Management and Budget, *Capital Programming Guide*, Version 2.0, Supplement to OMB Circular A-11, Part 7 (Washington, D.C.: June 2006).

To improve DOD's reporting on global posture costs, we recommended, in February 2011, that the Secretary of Defense direct the Chairman, Joint Chiefs of Staff, revise the *Joint Strategic Capabilities Plan* to require that theater posture plans include the cost of operating and maintaining existing installations and estimate the costs associated with initiatives that would alter future posture.⁵⁰ DOD agreed with this recommendation and recognized that the costs associated with operating and maintaining overseas facilities are an important consideration in the posture decision-making process, but DOD's proposed corrective actions did not fully address the intent of our recommendation. Specifically, the department did not state that it would further modify the *Joint Strategic Capabilities Plan* to require that the theater posture plans include the cost of operating and maintaining existing installations outside of costs associated with posture initiatives. DOD stated that there are limits to combatant commands' abilities to include operation and maintenance information in theater posture plans, as those costs are inherently a service function. DOD stated that, when operation and maintenance costs are known, combatant commanders should include them in their theater posture plans. When these costs are unknown—but required for oversight and decision making—the department would require the services to provide appropriate cost detail.

DOD's proposed corrective actions would therefore not require the combatant commanders to routinely collect and consider operations and maintenance costs at existing installations (costs that recently have been about \$3.7 billion annually in the Pacific) unrelated to posture initiatives as theater posture plans are developed. Furthermore, the department's proposed action to include operations and maintenance costs in the theater posture plans only when they are known and to require the services to provide additional data only when it is needed for decision making could result in DOD decision makers receiving fragmented posture cost information on an ad-hoc basis. Without a comprehensive estimate of the total cost of posture—including existing facilities and infrastructure that will not be affected by any new posture initiatives—and routine reporting of those costs, DOD decision makers and congressional committees will not have the full fiscal context they need to develop and consider DOD's funding requests for future posture initiatives. Absent further modification to the *Joint Strategic Capabilities Plan* to require

⁵⁰ GAO, Defense Management: Additional Cost Information and Stakeholder Input Needed to Assess Military Posture in Europe, [GAO-11-131](#) (Washington, D.C.: February, 2011).

the theater posture plans to include the cost of operating and maintaining existing installations, DOD decision makers are left with the option to require the Services to provide this data.

Conclusions

DOD posture in Asia provides important operational capabilities and demonstrates a strong commitment to our allies—critical aspects of our national defense. However, in an era of significant budgetary pressures and competition for resources, comprehensive cost information and alternative courses of action must be routinely considered as posture requirements are developed. To ensure the most cost effective approach is pursued, major initiatives, such as tour normalization in South Korea, require not only comprehensive cost estimates but a thorough examination of the potential benefits, advantages, disadvantages, and affordability of viable alternatives before a course of action is selected. However, despite not having an approved business case that supports the decision to move forward with tour normalization and the presence of outstanding questions about the cost and schedule to implement the initiative, DOD is constructing facilities and infrastructure at Camp Humphreys in a manner that combines requirements for multiple initiatives, an approach that makes it difficult to identify what funds or construction activities are at risk if a more cost-effective alternative to tour normalization is identified. Furthermore, across the Pacific region, DOD has embarked on complex initiatives to transform U.S. military posture, and these initiatives involve major construction programs and the movement of tens of thousands of DOD civilian and military personnel, and dependents—at an undetermined total cost to the United States and host nations. Although we have identified potential costs that range as high as \$46.7 billion through 2020, and \$63.9 billion through 2050, these estimates are volatile and not comprehensive. Furthermore, congressional committees have been presented with individual posture decisions and funding requests that are associated with specific construction programs or initiatives, but those requests lack comprehensive cost estimates and the financial context that such estimates would provide—including long-term costs to complete and annual operation and maintenance costs. Without that context, DOD is presenting Congress with near-term funding requests that will result in significant long-term financial requirements whose extent is unknown.

Recommendations for Executive Action

To provide DOD and Congress with comprehensive posture cost information that can be used to fully evaluate investment requirements and the affordability of posture initiatives, we recommend that the Secretary of Defense take the following seven actions:

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- Identify and direct appropriate organizations within the Department of Defense to complete a business case analysis for the strategic objectives that have to this point driven the decision to implement tour normalization in South Korea. This business case analysis should clearly articulate the strategic objectives, identify and evaluate alternative courses of action to achieve those objectives, and recommend the best alternative. For each alternative course of action considered, the business case analysis should address, at a minimum:
 - relative life-cycle costs and benefits;
 - methods and rationale for quantifying the life-cycle costs and benefits;
 - effect and value of cost and schedule trade-offs;
 - sensitivity to changes in assumptions;
 - potential advantages and disadvantages associated with the alternative; and
 - risk factors.
 - Set specific time frames for the completion of the business case analysis, the Secretary of Defense’s review, and the approval of the selected alternative.
 - Through the Chairman of the Joint Chiefs of Staff, direct the Commander, United States Forces Korea, to provide a detailed accounting of the funds currently being applied and requested to construct new facilities at Camp Humphreys, identify construction projects that will be affected—directly or indirectly—by a decision to fully implement tour normalization, and provide that information to the Office of the Secretary of Defense with sufficient time to limit investments associated with tour normalization as recommended below.
 - Identify and limit investments and other financial risks associated with construction programs at Camp Humphreys—funded either by direct appropriations or through alternative financing methods such as the Humphreys Housing Opportunity Program—that are affected by decisions related to tour normalization until a business case analysis for the strategic objectives that have to this point driven the decision to implement tour normalization in South Korea, is reviewed and the most cost-effective approach is approved by the Secretary of Defense.
 - Direct the Secretaries of the military departments to take the following three actions with respect to annual cost estimates:

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- Develop annual cost estimates for DOD posture in the U.S. Pacific Command area of responsibility that provide a comprehensive assessment of posture costs, including costs associated with operating and maintaining existing posture as well as costs associated with posture initiatives, in accordance with guidance developed by the Under Secretary of Defense (Comptroller).
 - Provide these cost estimates to the Combatant Commander in a time frame to support development of the annual theater posture plan.
 - Provide these cost estimates to the Offices of the Under Secretary of Defense (Comptroller) and the Under Secretary of Defense (Policy) to support DOD-wide posture deliberations, affordability analyses, and reporting to Congress.

Agency Comments and Our Evaluation

In written comments on a draft of this report, DOD fully agreed with six of our recommendations, partially agreed with one recommendation, and stated it would work with DOD components to implement the recommendations. However, DOD did not indicate the specific steps or time frames in which corrective actions would be taken. Specifics regarding DOD's corrective actions and time frames for completion are important to facilitate Congressional oversight, and can provide reasonable assurance that DOD will take all appropriate measures to mitigate financial risks and better define future requirements.

DOD agreed with our three recommendations to complete a business case analysis for the strategic objectives that have, to this point, driven the decision to implement tour normalization in South Korea; set specific time frames for the completion of the business case analysis; and account for the funds currently being applied and requested to construct new facilities at Camp Humphreys. In its response, DOD acknowledged that while USFK has completed numerous analyses concerning tour normalization, DOD agrees that there is value in conducting a business case analysis that assesses alternatives to strategic objectives. However, DOD provided no specifics on the steps or time frames it would follow to implement these corrective actions.

DOD also agreed with our recommendations to develop annual cost estimates for DOD posture in the U.S. Pacific Command area of responsibility; provide these cost estimates to the Combatant Commander in a time frame to support development of the annual theater posture plan; and to provide these cost estimates to the Offices of the Under Secretary

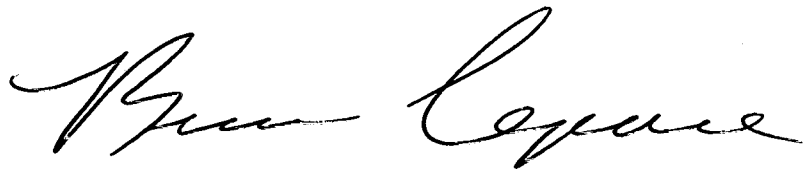
of Defense (Comptroller) and the Under Secretary of Defense (Policy) to support DOD-wide posture deliberations, affordability analyses and reporting to Congress. However, DOD provided no specifics on the steps or time frames it would follow to implement these corrective actions.

DOD partially agreed with our recommendation to identify and limit investments and other financial risks associated with construction programs at Camp Humphreys—funded either by direct appropriations or through alternative financing methods such as the Humphreys Housing Opportunity Program—that are affected by decisions related to tour normalization until a business case analysis for the strategic objectives is reviewed, and the most cost-effective approach is approved by the Secretary of Defense. DOD stated it will identify and consider limiting the investments and other financial risks, while examining the implications (diplomatic, fiscal) of such decisions. While we agree it is prudent to examine the implications of decisions to limit investments and financial risks, DOD provided no specifics on the steps or time frames it would follow to implement this corrective action. Without specific implementation time frames for a business case analysis that are synchronized with planned investment decisions, DOD may not be in a position to effectively limit actions and investments to expand housing at Camp Humphreys planned for this fiscal year if the business case analysis proves those investments to be inappropriate.

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 State Department. DOD and State provided technical comments separately that were incorporated into the report as appropriate. DOD's written comments are reprinted in appendix IV.

We are sending copies of this report to appropriate congressional committees, the Secretary of Defense, and appropriate DOD organizations. In addition, this report will be available at no charge on our Web site 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 V.

A handwritten signature in black ink, reading "Brian Lepore". The signature is written in a cursive style with a large initial "B" and "L".

Brian J. Lepore, Director
Defense Capabilities and Management

Appendix I: Scope and Methodology

To determine the magnitude of cost associated with the major global defense posture initiatives ongoing and planned on the Korean peninsula and the process by which the decision was made to move forward with the largest of these initiatives—tour normalization—we interviewed and collected data from officials in the Office of the Under Secretary of Defense (Policy), the Under Secretary of Defense (Comptroller), the Deputy Under Secretary of Defense (Installations and Environment), and the Joint Staff; the Department of the Army, and the Department of the Air Force; PACOM and the Army, Navy, Marine Corps, and Air Force component commands; and United States Forces Korea and its Army and Air Force service components. We conducted interviews and collected data from officials at the U.S. Army Garrison Yongsan, U.S. Army Garrison Humphreys, and Osan Air Base. We also met with U.S. officials at the U.S. Embassy in Seoul, South Korea. We collected planning and cost information at military service headquarters, PACOM, United States Forces Korea, and United States Forces Korea’s Army and Air Force service components. For initiatives in Korea, USFK officials provided high-level cost estimates, which included assumptions related to the use of host-nation support funding and host-nation costs, which in some cases were constantly changing or not yet approved. Army headquarters officials provided us with detailed estimates of tour normalization costs extended to 2050, and stated those estimates were the official position of the Department of the Army on tour normalization costs. We compiled this initiative information, including available cost information and assumptions related to host-nation funding, in order to identify the magnitude of DOD’s initiatives and their potential costs. We converted host-nation funding to U.S. dollars using exchange rates published in the 2011 Economic Report of the President. We discussed the cost information we received with officials in USFK and Office of the Secretary of Defense (Comptroller) and determined that although the information was incomplete, it was sufficiently reliable to provide an order-of-magnitude estimate of the potential cost of each initiative and therefore was adequate for the purposes of our review, subject to the limitations discussed in this report. Once we consolidated initiative description and cost information, we provided our summaries back to the cognizant DOD offices to ensure we had appropriately interpreted the data they provided. To determine whether tour normalization was supported by a business case analysis, we interviewed and collected data from the Office of the Under Secretary of Defense (Policy), the Department of the Army, and United States Forces Korea officials. Additionally, we collected and analyzed documentation, including the current and previous versions of the *Quadrennial Defense Review*, OSD policy documents related to tour normalization, and strategic documentation referencing the decision to move forward with tour

normalization. We then compared DOD's approach to criteria established in the *GAO Cost Estimating and Assessment Guide*.

To determine the magnitude of cost associated with the major global defense posture initiatives ongoing and planned in Japan, Guam, and the Northern Mariana Islands, we interviewed and collected data from officials in the Office of the Under Secretary of Defense (Policy), the Office of the Under Secretary of Defense (Comptroller), the Office of the Deputy Under Secretary of Defense (Installations and Environment), and the Joint Staff; the Department of the Army, the Department of the Navy, and the Department of the Air Force; PACOM and the Army, Navy, Marine Corps, and Air Force component commands; United States Forces Japan and its military service components, including Marine Corps Bases Japan; and the Joint Guam Program Office. We conducted interviews and collected data from officials at Yokota Air Base, Camp Zama, and Fleet Activities Yokosuka, and on Okinawa at Camps Schwab, Butler, and Courtney, and Marine Corps Air Station Futenma. We also met with U.S. officials at the U.S. Embassy in Tokyo, Japan, and the U.S. Consulate in Naha, Okinawa. At all appropriate offices included in our review, including Office of the Secretary of Defense, PACOM and its service component commands, USFJ and its component commands and at specific military facilities visited, we requested comprehensive DOD cost estimates for each posture initiative and were told that comprehensive cost estimates for each initiative did not exist. As a result, we collected planning, any cost information that was available, and initiative status information. For initiatives in Japan, DOD officials provided information based on budget estimates prepared by the Government of Japan, but provided only limited estimates of costs to the United States. We discussed this cost information with officials at USFJ and the Office of the Secretary of Defense (Comptroller) and determined that although the information was incomplete, it was sufficiently reliable to provide an order-of-magnitude estimate of the potential cost of each initiative, and therefore was adequate for the purposes of our review, subject to the limitations discussed in this report. We compiled the data, including cost information, from all locations in order to assemble a full description of the initiatives and any identified cost. We analyzed and compared the cost information received with criteria established in the *GAO Cost Estimating and Assessment Guide*. Additionally, to provide us with more comprehensive information on the military buildup on Guam, we interviewed and collected data from the Joint Guam Program Office and used information developed through other related GAO work.

To determine the extent to which DOD develops comprehensive estimates of the total cost of defense posture in Asia to inform the decision-making

process, we interviewed and collected data from officials in the Office of the Under Secretary of Defense (Policy), the Under Secretary of Defense (Comptroller), the Deputy Under Secretary of Defense (Installations and Environment), and the Joint Staff; the Department of the Army, the Department of the Navy, and the Department of the Air Force; PACOM and its Army, Navy, Marine Corps, and Air Force component commands; United States Forces Japan and its military service components; United States Forces Korea and its Army and Air Force service components; and the Joint Guam Program Office. We also reviewed the 2009 and 2010 DOD Global Defense Posture Reports to Congress, including the sections addressing posture costs, and sections of the 2010 PACOM Theater Posture Plans. We also reviewed budget documentation, including the military construction appropriations component of the President's Budget request for fiscal years 2010 and 2011. Furthermore, we issued data requests asking for actual obligations and projected requirements data on military construction, family housing, and operations and maintenance appropriations related to installations as part of DOD's defense posture in Asia for fiscal years 2006 through 2015. We obtained data from the Departments of the Army, Navy, and Air Force and their PACOM service component commands, including the Marine Corps. After we received the data and consolidated them by military service, we sent this information back to the services that had provided them to ensure we had appropriately interpreted the data they had provided. After receiving validated data from all of the services, we aggregated and analyzed it. To assess the reliability of the cost data received during this data call, we reviewed data system documentation and obtained written responses to questions regarding the internal controls on the systems. To ensure the accuracy of our analysis, we used Statistical Analysis Software (SAS) when analyzing the data and had the programming code used to complete those analyses verified for logic and accuracy by an independent reviewer. Furthermore, we reviewed previous GAO reporting on overseas basing, military construction, the uses of cost information when making decisions about programs, and guidance on cost estimating and the basic characteristics of credible cost estimates.

Given the various steps discussed above to assess the quality of the cost data, cost estimates, and other data used, we determined the data were sufficiently reliable for purposes of this report.

We conducted this performance audit from November 2009 through April 2011 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 that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Committee Reporting Direction Contained in Senate Report 111-226 (S. Rep. No. 111-226, at 13-15 (2010))

In order to provide Congress with comprehensive and routine information on the status of these major DOD posture initiatives in a manner that can be used to provide the appropriate context for budget deliberations and oversight, the Committee directs the Department to provide detailed annual updates on the status of posture restructuring initiatives in Korea, Japan, Guam, and the initiative that will address training capabilities and capacity in the Pacific region as an appendix to the annual DOD Global Posture Report.

These initiative status updates should be provided annually, beginning with the submission of the fiscal year 2012 budget request, until the restructuring initiatives are complete and/or funding requirements to support them are satisfied. The initiative status updates should address the following areas:

- **Initiative Description**—an overall description of each initiative, the major components of the initiative, the relationships between each component and the overall successful completion of the initiative, a program baseline that provides an estimated total cost of the initiative, expected completion date, and the basis for pursuing the initiative that is clearly linked to specific DOD strategic goals and objectives defined by the Secretary of Defense, Military Departments, Combatant Commander, or Service Component Commands.
- **DOD organization** responsible for managing and executing the initiative.
- **Schedule Status**—a comparison of the current estimated timeframe to complete the overall initiative and major components of the initiative with original baseline estimates and the currently approved schedule. An explanation of changes in the estimated completion date or changes in the approved schedule should be provided.
- **Facilities Requirements**—a comparison of the baseline and current projected number of facilities required to provide appropriate work space, housing, and support services to the population DOD anticipates it will be supporting, including facilities, family housing, commissaries/post exchanges, schools, child care, clinics and hospitals, and any other facility that will be needed to support the military, civilian employee, local national employees, contractor, and retiree population.

- Cost and Funding Status
 - Cost Summary—a comparison of the baseline, approved program, and current estimated costs by appropriation; expressed in base year and then-year dollars, addressing all costs associated with establishing, modifying, and sustaining DOD’s posture under this initiative, including costs such as the housing allowance provided to military service members and families that are then paid to external organizations for housing.
 - Funding Summary—a listing of the funding profile, by appropriation, for the initiative, based on the current year President’s Budget detailing prior years, current year, future years defense program, and costs to complete; expressed in then-year dollars. All funding requirements associated with the initiative should be addressed, including, but not limited to military construction, operations and support, and personnel appropriations
- Initiative Estimate Assumptions—the key assumptions that drive initiative cost and schedule estimates, including:
 - Population, including the number of military, civilian, non- DOD personnel, command sponsored families and dependants, non-command sponsored families and dependants, and military retirees affected by the initiative.
 - Housing, including the use of public/private partnerships to provide necessary facilities, percentage of personnel and dependents expected to reside in base housing and off the base or installation, availability of host-nation land for construction of facilities, and the anticipated host-nation funded and/or provided housing construction.
 - Cost Estimating, including modeling used to predict costs, inflation estimates used for then-year dollar projections, and contracting strategy.
 - Financial, including the funding that will be available and provided by military services and other DOD agencies affected by the initiative to cover their respective costs, including the expected overseas base housing allowance that will be provided to military families.
 - Medical, including extent to which each military base or installation will have stand-alone medical treatment facilities, will share medical treatment facilities or capacity, the services provided (medical, dental, vision), dates new facilities will be available for use, ratio of primary care providers to population, and

any other element that drives the number of medical treatment facilities and associated infrastructure or personnel required to support the population.

- Education, including the estimated number of children per family, student distribution by grade level, tuition assistance that will be required/provided, assumptions used to develop related Department of Defense Education Activity [DODEA] cost factors, and any other element that drives the number of schools and associated infrastructure or personnel required to support the population.
- Support Services, including capacities of commissaries, exchanges, USO, Red Cross or other support services or organizations, necessary modifications to their existing facilities, and sources of funding necessary to pay for any needed improvements or new construction.
- Local Community Support, including the extent to which local business, housing, medical treatment, education, and other support services will be available and necessary to support the expected DOD population.
- Host-Nation Agreements, including any specific agreements with host nations or legal issues that establish or drive specific timeframes for completion of the initiative or major components of the initiatives.

S. Rep. No. 111-226, at 13-15 (2010).

Appendix III: Additional PACOM Cost and Funding Data

Figure 12: Obligations by Appropriation Category Related to DOD Facilities and Infrastructure: Fiscal Years 2006–2010 (Then-Year Dollars), PACOM Area of Responsibility

Service	Appropriation	2006	2007	2008	2009	2010	Total
Air Force	Military construction	193,093,947	229,488,267	124,791,877	144,571,902	91,833,683	783,779,676
	Family housing	145,446,251	155,291,465	145,378,007	138,083,185	115,912,420	700,111,328
	Operations and maintenance	2,089,371,770	1,712,180,826	1,337,538,829	1,527,902,866	1,188,754,179	7,855,748,470
	Total	2,427,911,968	2,096,960,558	1,607,708,713	1,810,557,953	1,396,500,282	9,339,639,474
Army	Military construction	399,084,688	404,816,440	382,916,312	228,837,701	254,713,287	1,670,368,428
	Family housing	138,459,889	129,700,976	107,267,438	106,880,599	78,864,842	561,173,744
	Operations and maintenance	945,767,563	938,007,393	1,036,868,296	1,119,613,020	1,084,952,878	5,125,209,150
	Total	1,483,312,140	1,472,524,809	1,527,052,046	1,455,331,320	1,418,531,007	7,356,751,322
Navy	Military construction	65,389,883	152,592,843	370,358,517	293,256,375	72,269,230	953,866,848
	Family housing	221,089,276	188,773,004	170,798,725	158,873,003	155,809,407	895,343,415
	Operations and maintenance	659,437,364	652,559,851	714,723,989	864,527,302	1,021,578,554	3,912,827,060
	Total	945,916,523	993,925,698	1,255,881,231	1,316,656,680	1,249,657,191	5,762,037,323
Marine Corps	Military construction	6,865,000	2,689,616	27,663,578	25,872,286	115,377,635	178,468,115
	Family housing	98,434,926	24,474,357	20,524,120	19,136,813	19,871,778	182,441,994
	Operations and maintenance	302,030,829	315,878,594	353,896,975	437,027,171	407,816,335	1,816,649,904
	Total	407,330,755	343,042,567	402,084,673	482,036,270	543,065,748	2,177,560,013
Grand total	5,264,471,386	4,906,453,632	4,792,726,663	5,064,582,223	4,607,754,228	24,635,988,132	

Source: GAO analysis of DOD data.

Appendix IV: Comments from the Department of Defense



POLICY

UNDER SECRETARY OF DEFENSE
2000 DEFENSE PENTAGON
WASHINGTON, DC 20301-2000

MAY 13 2011

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

Dear Mr. Lepore:

This is the Department of Defense's (DoD) response to the Government Accountability Office's (GAO) draft report, "Comprehensive Cost Information and Analysis of Alternatives Needed to Assess Military Posture in Asia" – GAO Code 351410/GAO-11-316.

The Department concurs with six of GAO's recommendations and partially concurs with one. Clarification and further information are included for each recommendation on the accompanying pages.

We will work with DoD components to implement these recommendations and look forward to further dialogue with GAO on costing posture initiatives.

Sincerely,


Michèle A. Flournoy

GAO DRAFT REPORT DATED APRIL 8, 2011
GAO-11-316 (GAO CODE 351410)

“DEFENSE MANAGEMENT: COMPREHENSIVE COST
INFORMATION AND ANALYSIS OF ALTERNATIVES NEEDED TO
ASSESS MILITARY POSTURE IN ASIA”

DEPARTMENT OF DEFENSE COMMENTS
TO THE GAO RECOMMENDATIONS

RECOMMENDATION 1: The GAO recommends that the Secretary of Defense identify and direct appropriate organizations within the Department of Defense to complete a business case analysis for the strategic objectives that have to this point driven the decision to implement tour normalization in South Korea. This business case analysis should clearly articulate the strategic objectives, identify and evaluate alternative courses of action to achieve these objectives, and recommend the best alternative. For each alternative course of action considered, the business case analysis should address, at a minimum:

- relative life-cycle costs and benefits;
- methods and rationale for quantifying the life-cycle costs and benefits;
- effect and value of cost and schedule tradeoffs;
- sensitivity to changes in assumptions;
- potential advantages and disadvantages associated with the alternative; and
- risk factors. (See page 47/GAO Draft Report.)

DoD RESPONSE: Concur. While USFK has conducted numerous analyses concerning Tour Normalization and continues to assess and evaluate different courses of action, the Department of Defense agrees that there is value in conducting a business case analysis that assesses alternatives to strategic objectives.

RECOMMENDATION 2: The GAO recommends that the Secretary of Defense set specific timeframes for the completion of the business case analysis, Secretary of Defense review, and approval of the selected alternative. (See page 48/GAO Draft Report.)

DoD RESPONSE: Concur.

RECOMMENDATION 3: The GAO recommends that the Secretary of Defense, through the Combatant Commander, Pacific Command, direct the Commander,

United States Forces Korea to provide a detailed accounting of the funds currently being applied and requested to construct new facilities at Camp Humphreys, identify construction projects that will be affected-directly or indirectly-by a decision to fully implement tour normalization, and provide that information to the Office of the Secretary of Defense with sufficient time to limit investments associated with tour normalization as recommended below. (See page 48/GAO Draft Report.)

DoD RESPONSE: Concur.

RECOMMENDATION 4: The GAO recommends that the Secretary of Defense identify and limit investments and other financial risks associated with construction programs at Camp Humphreys- funded either by direct appropriations or through alternative financing methods such as the Humphreys Housing Opportunity Program-that are affected by decisions related to tour normalization until a business case analysis for the strategic objectives that have to this point driven the decision to implement tour normalization in South Korea is reviewed and the most cost-effective approach is approved by the Secretary of Defense. (See page 48/GAO Draft Report.)

DoD RESPONSE: Partially concur. DoD will identify and consider limiting the investments and other financial risks, while examining the implications (diplomatic, fiscal) of such decisions.

RECOMMENDATION 5: The GAO recommends that the Secretary of Defense direct the Secretaries of the Military Departments take the following action with respect to annual cost estimates; develop annual cost estimates for DoD posture in the U.S. Pacific Command area of responsibility that provide a comprehensive assessment of posture costs, including costs associated with operating and maintaining existing posture as well as costs associated with posture initiatives, in accordance with guidance developed by the Under Secretary of Defense (Comptroller). (See page 48/GAO Draft Report.)

DoD RESPONSE: Concur.

RECOMMENDATION 6: The GAO recommends that the Secretary of Defense direct the Secretaries of the Military Departments take the following action with respect to annual cost estimates; provide these cost estimates to the Combatant Commander in a timeframe to support development of the annual theater posture plan. (See page 48/GAO Draft Report.)

DoD RESPONSE: Concur.

RECOMMENDATION 7: The GAO recommends that the Secretary of Defense direct the Secretaries of the Military Departments take the following action with respect to annual cost estimates; provide these cost estimates to the Offices of the Under Secretary of Defense (Comptroller) and the Under Secretary of Defense (Policy) to support DoD-wide posture deliberations, affordability analyses and reporting to Congress. (See page 48/GAO Draft Report.)

DoD RESPONSE: Concur.

Appendix V: GAO Contact and Staff Acknowledgments

GAO Contact

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

Acknowledgments

In addition to the contact named above, Robert L. Repasky, Assistant Director; Jeff Hubbard; Joanne Landesman; Ying Long; Greg Marchand; Richard Meeks; Charles Perdue; Lisa Reijula; Terry Richardson; Michael Shaughnessey; and Amie Steele made key contributions to this report.

Related GAO Products

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.

National Security: Interagency Collaboration Practices and Challenges at DOD's Southern and Africa Commands. [GAO-10-962T](#). Washington, D.C.: July 28, 2010.

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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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Defense Management: Actions Needed to Address Stakeholder Concerns, Improve Interagency Collaboration, and Determine Full Costs Associated with the U.S. Africa Command. [GAO-09-181](#). Washington, D.C.: February 20, 2009.

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