

**GAO**

Report to the Subcommittee on  
Readiness, Committee on Armed  
Services, House of Representatives

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June 2010

# DEFENSE INFRASTRUCTURE

Army Needs to  
Improve Its Facility  
Planning Systems to  
Better Support  
Installations  
Experiencing  
Significant Growth



**GAO**

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Highlights of [GAO-10-602](#), a report to the Subcommittee on Readiness, Committee on Armed Services, House of Representatives

## Why GAO Did This Study

The Army is concurrently implementing several major force structure and basing initiatives, including Base Realignment and Closure, Grow the Force, and Army Modularity. The resulting large increase in personnel associated with these initiatives at many installations has required and will continue to require significant facility planning and construction to meet needs.

GAO was asked to (1) describe the Army's investment in domestic facilities to meet the needs associated with the initiatives; (2) determine the extent to which the Army's facility planning systems are complete, current, and accurate; and (3) assess whether stationing information has been provided to installations far enough in advance to permit facility planning and acquisition to accommodate arriving personnel. To address these objectives, GAO reviewed relevant documentation; analyzed budget documents, information from Army planning systems, and facility criteria standards; visited installations; and interviewed relevant officials.

## What GAO Recommends

GAO is recommending improvements to the Army's facility planning systems and actions to improve communication and timeliness of stationing information provided to affected installations. DOD concurred with all of GAO's recommendations.

[View GAO-10-602 or key components.](#)  
For more information, contact Brian Lepore at (202) 512-4523 or [leporeb@gao.gov](mailto:leporeb@gao.gov).

## DEFENSE INFRASTRUCTURE

### Army Needs to Improve Its Facility Planning Systems to Better Support Installations Experiencing Significant Growth

#### What GAO Found

For fiscal years 2006 through 2015, the Army plans to have spent about \$31 billion to meet domestic installation facility needs associated with the personnel increases resulting from several major force structure and infrastructure initiatives. This investment will reduce facility shortages at the affected installations, but some shortages will still exist for certain types of facilities, including tactical vehicle maintenance facilities and battalion and company headquarters. The Army estimates that it could cost an additional \$19 billion to eliminate the shortages. Yet, without these buildings, the Army will continue to rely on legacy facilities that often do not meet current Army standards or use relocatable facilities. The Army plans to evaluate these requirements and priorities in preparing future budget requests.

The systems used by the Army to determine the number, type, and size of facilities needed to accommodate forces stationed at domestic installations have not always produced reliable results for some types of facilities because the systems have often relied on data that are not complete, current, or accurate. GAO examined the criteria system for 62 essential facility types and found that the system did not include the Army's current standard design criteria for 51 of the 62 facilities. Without current criteria embedded into the facility planning systems, the systems cannot help planners accurately calculate facility requirements. Additionally, GAO found that the automated calculations that produce facility allowances—a baseline for determining facility requirements—were questionable in several cases, such as producing a requirement for 74 baseball fields for Fort Bragg. Moreover, because the information from the planning systems is used to identify facility shortages and support budget decisions, incomplete, out-of-date, or inaccurate data could adversely affect management decisions about the construction and renovation of facilities.

The Army has not always provided installation planners with information on stationing actions far enough in advance to allow the installations to prepare the permanent facilities necessary for arriving personnel. Army guidance recommends 5 years' lead time for submitting stationing packages for approval that require new construction; however, the size of ongoing operations in Iraq and Afghanistan, which has led to an increase in the movement of Army personnel, has made this difficult. For example, GAO found cases where installations were informed of stationing decisions with less than a year's notice, which installation officials said was far less time than needed to prepare the required facilities. As a result, new facilities have not always been available for arriving units and installations have had to employ interim measures, such as using relocatable facilities or using sustainment funds to build facilities, which, in turn, could result in needed sustainment work going unmet. GAO also found that installations were not always being notified when proposed stationing actions had been delayed or canceled, potentially leading to funds being wasted on unnecessary preparations.

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United States Government Accountability Office  
Washington, DC 20548

June 24, 2010

The Honorable Solomon Ortiz  
Chairman  
The Honorable J. Randy Forbes  
Ranking Member  
Subcommittee on Readiness  
Committee on Armed Services  
House of Representatives

The Army faces a significant challenge in meeting the facility needs associated with large personnel increases at many domestic installations that have resulted from the concurrent implementation of several recent force structure and infrastructure initiatives. Collectively, the simultaneous implementation of recommendations from the 2005 Base Realignment and Closure (BRAC) round, the redeployment of U.S. forces from overseas locations back to the United States under the Global Defense Posture and Realignment, a major Army reorganization known as Army Modularity, force structure increases for the Army under the Grow the Force initiative, and the drawdown of forces from Iraq are generating large personnel increases at many military installations within the United States. The Army's challenge is to accurately identify the requirements for new or renovated facilities at each of the installations gaining significant numbers of soldiers as a result of these initiatives and then to ensure that the required facility construction is completed in time to accommodate the arrival of the soldiers and their families. Compounding the Army's challenge to meeting facility requirements in a timely manner is the evolving and changing nature of some of the Army's initiatives, such as the recent decision to eliminate the establishment of three combat brigade teams and the Quadrennial Defense Review decision to retain four brigade combat teams in Europe instead of moving two of them back to the United States pending a review of the North Atlantic Treaty Organization's strategic concept and an accompanying U.S. assessment of the U.S. European defense posture network. These decisions have already caused the Army to reevaluate some of its facility construction plans, and additional changes are likely to result from future decisions in areas such as the Department of Defense's (DOD) global posture reassessment.

Because of the significant growth that many installations will experience as a result of the Army's concurrent implementation of the aforementioned force structure and infrastructure initiatives, you requested that we review the Army's facility planning systems to assess the likelihood that the Army

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will successfully meet its installation facility needs. Thus, this report's objectives were to (1) describe the Army's investments in current and planned domestic facilities to meet infrastructure requirements associated with the initiatives; (2) determine the extent to which the Army's facility planning systems are complete, current, and accurate; and (3) assess whether the Army's stationing process provides information to installations far enough in advance to permit facility planning and acquisition to accommodate arriving personnel.

To address these objectives, we reviewed the Army's stationing, force structure, and construction plans for the initiatives and analyzed military construction budget documents for fiscal years 2006 through 2015 to determine what the Army has spent and plans to spend on constructing facilities in support of the initiatives. Further, we compared these military construction budget data to facility requirements data, in order to determine the extent to which investments will reduce shortages in essential facilities and to determine the cost that will remain beyond 2015 to address the shortages. We performed this analysis for 48 Installation Management Command installations, including all of the top 20 growth installations and 83 essential facilities, which were labeled essential by the Army, and we grouped them into 17 essential facility groups. To identify the types of projects the Army was funding, we analyzed the Army's military construction budgets and budget projections from fiscal years 2006 through 2015 for the same subset of installations and facilities. In addition to these analyses, we obtained and reviewed the garrison commanders' facility condition reports to obtain examples of installations that have facility shortages. To determine the extent to which the Army's facility planning systems are complete, current, and accurate, we analyzed the data contained in the Army's installation population, facility requirements, and facility design criteria systems. To determine whether information about stationing actions is being provided to installations sufficiently in advance to allow them to prepare facilities to accommodate arriving personnel, we analyzed data from the Army Stationing and Installation Plan, Campaign Plan, and stationing packages and compared these plans to the Army's military construction plans. We visited four installations that were experiencing significant growth, were affected by recent force structure decisions, or both, and we visited the Installation Management Command's West and Southeast headquarters. During each visit, we were briefed on the installations' and regions' master plans, and we interviewed directors or garrison commanders, as well as master planning and public works personnel, to discuss any challenges they had experienced in providing facilities and any mitigation efforts that were planned or under way. We also interviewed officials from Headquarters,

Department of the Army, Assistant Chief of Staff for Installation Management; Headquarters, Installation Management Command; and Headquarters, Department of the Army, Deputy Chief of Staff program office (G-3/5/7), to obtain information regarding the Army's military construction, facility planning systems, and stationing processes. Although we did not independently validate the budget, construction, stationing, and facility planning data provided by the Army, we discussed with officials the steps they had taken to ensure reasonable accuracy of the data. We determined the data to be sufficiently reliable for the purposes of this report.

We conducted this performance audit from June 2009 through June 2010 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. Further details on our scope and methodology can be found in appendix I.

## Background

As summarized in table 1, the Army is currently implementing several major force structure and infrastructure initiatives that collectively result in a large number of personnel movements and changes in the size and shape of the Army's domestic installation infrastructure.

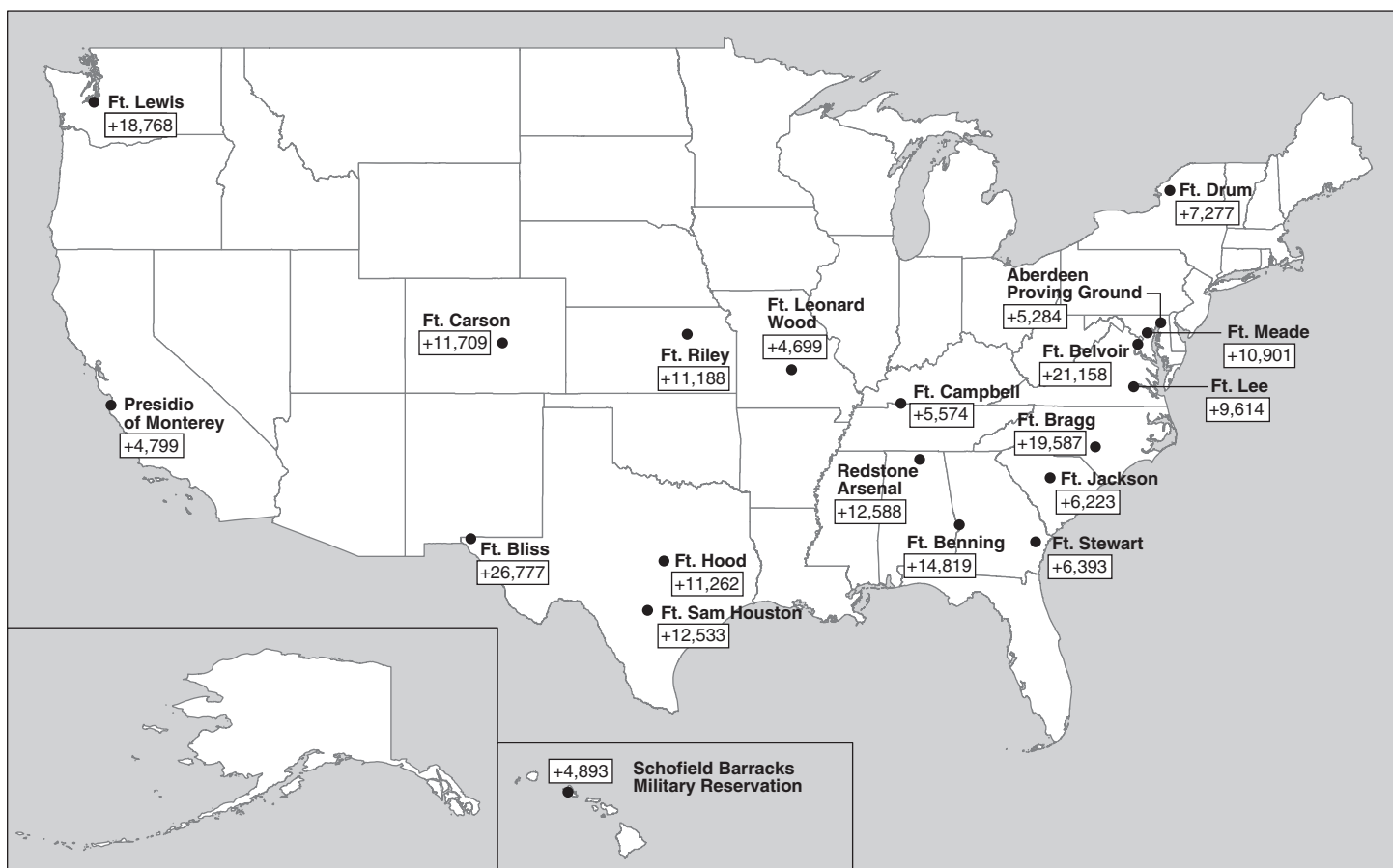
**Table 1: Impact of the Army's Infrastructure and Force Structure Initiatives on Domestic Installations**

Initiative	Summary	Impact on domestic installations
BRAC 2005	Potentially closes 13 active Army installations and realigns 50 active Army installations.	Results in significant personnel movement between installations, requiring additional facilities at certain installations.
Grow the Force	Adds about 65,000 active Army soldiers to Army's permanent end strength.	Increases the population of several installations, requiring facilities to support the additional soldiers.
Army Modularity	Converts some Army units to brigade combat teams.	Results in a need for different and increased facilities to support the transformed units.
Global Defense Posture and Realignment	Relocates about 44,500 Army soldiers from foreign to domestic installations.	Increases the population of several installations, requiring facilities to support the relocated soldiers.
Iraq drawdown	Relocates many troops from Iraq to domestic installations, although some of this may be offset by some troops deploying to Afghanistan.	Compounds the challenge of ensuring that adequate facilities are available when needed to support the four major basing and force structure initiatives.

Sources: DOD and Army documents.

As a result of the initiatives, many installations will experience significant population growth, which results in the need for new or renovated facilities to accommodate the additional soldiers and their families. Figure 1 identifies the Army installations expected to experience the largest population growth for fiscal years 2003 through 2016.<sup>1</sup>

**Figure 1: Top 20 Army Installations Expected to Experience Largest Population Increases, Fiscal Years 2003 through 2016**



Source: GAO analysis of Army Stationing and Installation Plan Total Base Population, January 2010 (data); Map Info (map).

<sup>1</sup> We began our analysis in 2003, 1 year before the start of Army Modularity, so that we could compare populations before and after the implementation of the initiatives.



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## Organizations Involved in Determining Army Facility Requirements

Determining installation facility requirements involves several Army offices and organizations with differing levels of roles and responsibilities.

- At the garrison level, installation planners develop a real property master plan, which captures the short- and long-term facility needs of the garrison, as well as a prioritized list of facility requirements. The senior mission commander of each garrison reviews the master plan and priority list before submitting these documents to the regional Installation Management Command.
- Installation Management Command regions serve as advocates for the garrison commanders' facility requirements and associated resource needs for installations in their regions.
- Installation Management Command Headquarters consolidates the project priority lists from the regions and forwards them to the Office of the Assistant Chief of Staff for Installation Management for consideration in the military construction budget. Installation Management Command Headquarters is also responsible for ensuring the implementation of the Army's master planning policies and guidance, and may review certain facility planning documentation, such as installation master plans.
- The Office of the Assistant Chief of Staff for Installation Management is responsible for programming, budgeting, and distributing funds; tracking resources; and monitoring program performance for all existing and future facility master planning and associated policies, programs, systems, and initiatives Army-wide. Specifically, this office reviews the prioritized lists of facility requirements received from the various Army commands as part of the prioritization of facility requirements Army-wide.
- The Army Deputy Chief of Staff program office (G-3/5/7) collaborates with other Army Headquarters' staff, primarily those in the Office of the Assistant Chief of Staff for Installation Management, to prioritize and validate requirements in the various Army commands' priority lists for use in resource management decision making processes. Together with the Office of the Assistant Chief of Staff for Installation Management, the program office processes and coordinates stationing actions with military construction plans.

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## Planning Systems Used by Army in Determining Facility Requirements

The Army uses several management systems to determine facility requirements and make military construction budget decisions.

- The Real Property Planning and Analysis System is the primary, Army-wide system used to determine the amount of facilities needed on an installation in accordance with the unit of measure of each facility type.
- The Army Stationing and Installation Population database is the Army's official source for installation population. It provides installation population data to the Real Property Planning and Analysis System.

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- The Army Criteria Tracking System is the official Army repository for facility space planning criteria. These criteria are used by the Real Property Planning and Analysis System to generate facility allowances.<sup>2</sup>
  - The Installation Status Report is a real-time decision support tool used by Army leadership to identify the quantity and quality of facilities. The Real Property Planning and Analysis System provides data to this system.

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## Prior GAO Reports

Since 1997, we have identified management of DOD support infrastructure as a high-risk area, because infrastructure costs have affected the department's ability to devote funds to other, more critical programs and needs. In a January 2009 update to our high-risk series, we noted that although DOD has made progress in managing its support infrastructure in recent years, a number of challenges remain in managing its portfolio of facilities and reducing unneeded infrastructure while providing the facilities needed to support several simultaneous force structure initiatives.<sup>3</sup> Further, we noted that because of these issues, DOD's management of support infrastructure remains a high-risk area. This report is one in a series of GAO products that addresses emerging issues associated with the implementation of the BRAC 2005 round recommendations, overseas rebasing, Army Modularity, the Army Grow the Force initiative, and DOD's military construction program in general. For example, in February 2004, we found that while DOD had taken a number of steps to enhance the management of the military construction program, opportunities existed for further improvements. Among other things, we recommended that DOD develop a mechanism for periodically reassessing construction priorities so that facilities with potential operational and quality of life impacts are given appropriate consideration during the budget process.<sup>4</sup> DOD agreed and subsequently took steps to provide a more consistent approach to managing facilities and planning construction projects and costs. Additionally, in September 2007, we reported that several complex implementation challenges arising from the growth of personnel assigned to many installations as a result of BRAC, Global Defense Posture and Realignment, and force modularity actions

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<sup>2</sup> According to the Army, this system will be subsumed under the Web-based Real Property Planning and Analysis System and will no longer be referred to as the Army Criteria Tracking System but rather the Army Space Planning Criteria.

<sup>3</sup> GAO, *High-Risk Series: An Update*, [GAO-09-271](#) (Washington, D.C.: Jan. 2009).

<sup>4</sup> GAO, *Defense Infrastructure: Long-term Challenges in Managing the Military Construction Program*, [GAO-04-288](#) (Washington, D.C.: Feb. 24, 2004).

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raised questions about the Army's ability to provide needed infrastructure to support incoming personnel at its growth bases and that some nearby communities had found it difficult to fully identify needed infrastructure and associated costs, because of the evolving nature of the Army's plans.<sup>5</sup> In January 2009, we reported that although DOD had made progress in implementing BRAC, it still faced challenges in its ability to provide facilities in time to meet the BRAC statutory deadline of September 15, 2011.<sup>6</sup>

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## The Army Plans to Invest Billions in Facilities for the Various Initiatives, but Billions More in Facility Shortages Will Exist for Several More Years

For fiscal years 2006 through 2015, the Army plans to have invested about \$31 billion to meet facility needs associated with the various force structure and infrastructure initiatives. This investment will reduce facility shortages at many affected installations, but some shortages will still exist for certain types of facilities, including tactical vehicle maintenance facilities and battalion and company headquarters. The Army estimates that it could cost about an additional \$19 billion to eliminate the shortages.

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## The Army Plans to Invest Billions in Facilities for the Various Initiatives

The Army has invested about \$22.5 billion in military construction during fiscal years 2006 through 2010 to build facilities that support the various initiatives and plans to invest about an additional \$8.5 billion for fiscal years 2011 through 2015 to continue to build facilities in support of the initiatives.<sup>7</sup> Of this combined \$31 billion military construction current and planned investment, about \$14 billion is to support BRAC, about \$1 billion is to support Global Defense Posture and Realignment, about \$8 billion is for Army Modularity facilities support, and about \$8 billion is for Grow the

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<sup>5</sup> GAO, *Defense Infrastructure: Challenges Increase Risks for Providing Timely Infrastructure Support for Army Installations Expecting Substantial Personnel Growth*, [GAO-07-1007](#) (Washington, D.C.: Sept. 13, 2007).

<sup>6</sup> GAO, *Military Base Realignment and Closures: DOD Faces Challenges in Implementing Recommendations on Time and Is Not Consistently Updating Savings Estimates*, [GAO-09-217](#) (Washington, D.C.: Jan. 30, 2009).

<sup>7</sup> These estimates do not include \$180 million appropriated for Army Military Construction in the American Recovery and Reinvestment Act of 2009.

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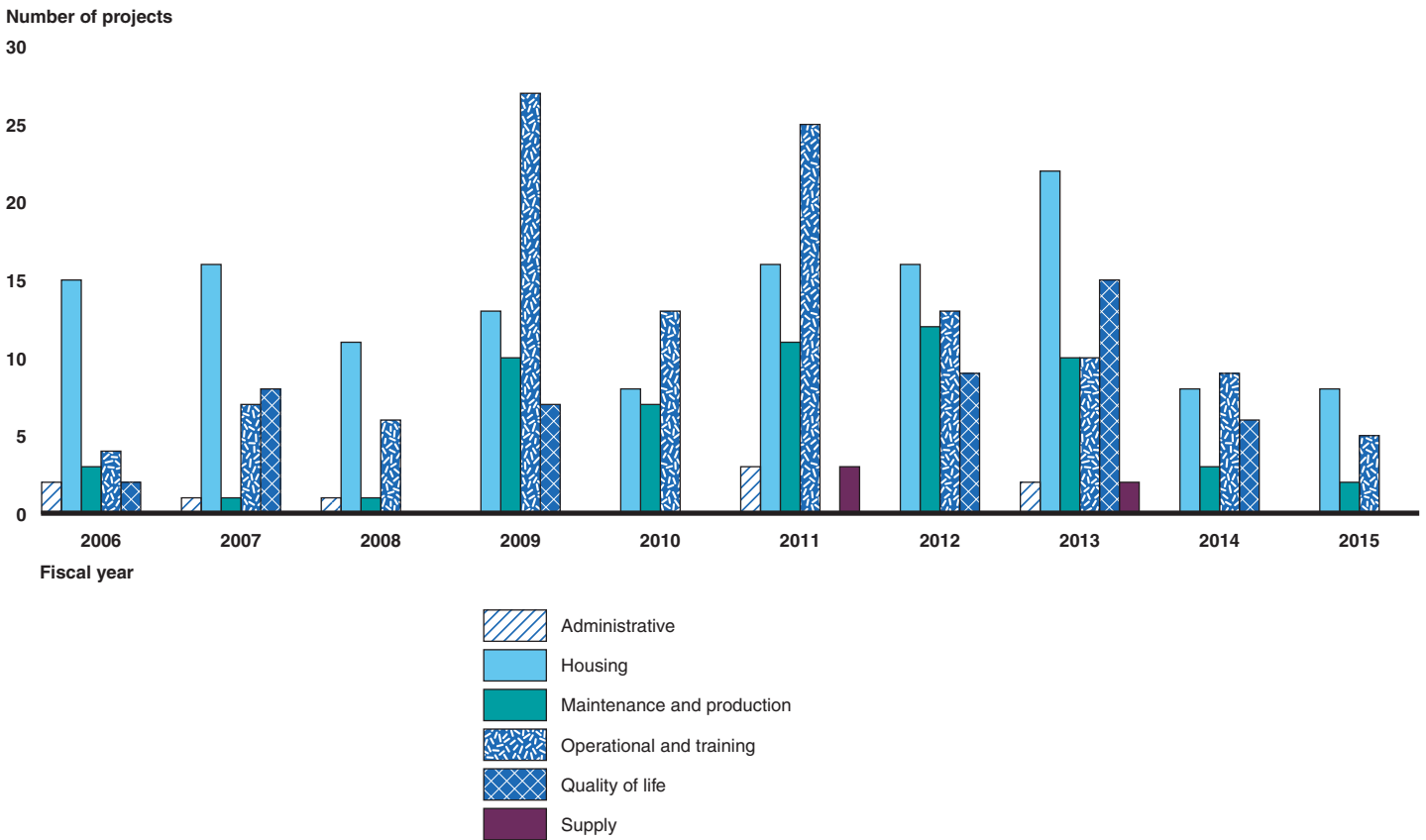
Force, according to Army budget figures.<sup>8</sup> Army officials stated that the majority of their military construction investments from fiscal years 2006 through 2010 were targeted at building facilities to meet the infrastructure demands generated by various initiatives, such as BRAC, Army Modularity, and Grow the Force. However, as these construction projects to support the initiatives reach their completion dates, officials said the Army plans to transition its priorities for investing military construction funds from building strictly in support of the initiatives toward having more discretion to build many deferred housing and quality of life projects. Our analysis of the Army's military construction budget shows that from fiscal years 2006 through 2010, the Army placed an emphasis on funding housing and projects that met operational and training needs, such as headquarters and general instruction facilities for brigade combat teams and their support units. According to Army officials, during this time span, quality of life facilities, such as churches, fitness centers, and recreation centers, were labeled noncritical projects and many projects were moved into future years on the construction timeline. For example, as seen in figure 2, although there were some quality of life projects funded in fiscal years 2006 and 2007, there are no quality of life projects scheduled to be funded during fiscal years 2010 and 2011.<sup>9</sup>

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<sup>8</sup> Army calculations for BRAC include Army Reserve and National Guard military construction, while other initiative calculations do not.

<sup>9</sup> These figures do not include seven child development centers that are planned to be built with funds received from the American Recovery and Reinvestment Act of 2009.

**Figure 2: Types of Army Military Construction Projects Funded and Planned to Be Funded, Fiscal Years 2006 through 2015**

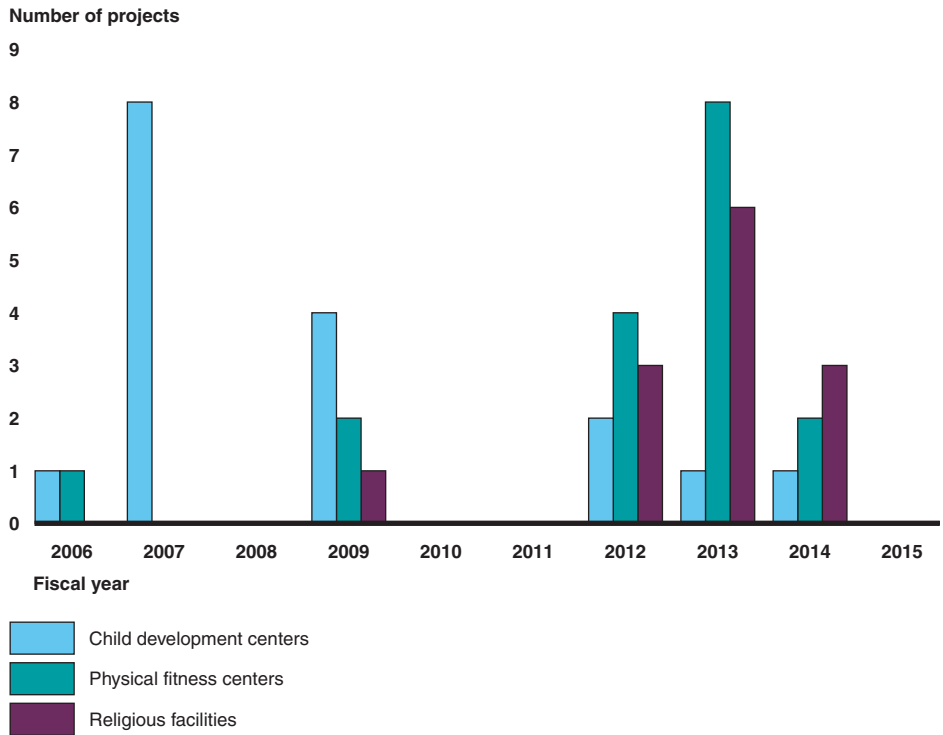


Source: GAO analysis of Army military construction budgets, fiscal years 2006 through 2015.

Further, our analysis of the Army’s military construction budgets for quality of life facilities shows that from fiscal years 2006 through 2009, the Army focused primarily on constructing child development centers and that it planned to fund several physical fitness centers and religious facilities during fiscal years 2012 through 2014. See figure 3.<sup>10</sup>

<sup>10</sup> These figures do not include seven child development centers that are planned to be built with funds received from the American Recovery and Reinvestment Act of 2009.

**Figure 3: Types of Army Military Construction Quality of Life Projects Funded and Planned to Be Funded, Fiscal Years 2006 through 2015**



Source: GAO analysis of Army military construction budgets, fiscal years 2006 through 2015.

Part of the Army’s total \$31 billion military construction planned investment includes about \$2 billion that the Army retained from funding that the Army explains was originally requested for the construction of brigade facilities for three new brigade combat teams that were canceled in June 2009. An army analysis showed that the majority of the planned brigade complex construction projects were still needed to replace undersized or older facilities at the three installations where the brigade combat teams were originally going to be established. Specifically, the Army explains that Congress permitted it to keep about \$2 billion of the \$2.7 billion in military construction funding, and the Army is using about \$482 million at Fort Stewart to replace relocatable facilities and about \$108 million at Fort Carson and \$1.4 billion at Fort Bliss to replace undersized legacy facilities. According to Army officials, with the completion of these projects, the Army will be able to cancel future plans to request funds for new facilities to replace some of the relocatable facilities and legacy facilities at these installations. Furthermore,

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according to Army officials, one of the three brigade complex projects had already been contracted at Fort Bliss. As a result, according to the officials, the Army could have had to pay certain costs if it had terminated the construction because the contract for the complex was part of a multi-brigade team complex contract.

In addition, the Army received about \$180 million in military construction funds from the American Recovery and Reinvestment Act of 2009. The Army plans to use \$80 million of these funds to construct seven child development centers, which will further address facility shortages in this essential facility category. The remaining \$100 million will be used to construct two warrior in transition complexes, which are facilities intended to temporarily house soldiers while they are recuperating from injuries sustained during their service in combat.

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**Although the Army's Significant Investments Will Reduce Facility Shortages, Billions More in Facility Shortages Will Exist for Several More Years**

These military construction investments, if funded and implemented as planned, will enable the Army to reduce essential facility shortages at major Installation Management Command installations by 30 and 12 percent, but some shortages will still remain. For example, with its investments, the Army will reduce its shortage of brigade headquarters from 1,352,425 square feet in fiscal 2010 to 714,024 square feet in fiscal year 2015—a reduction of 638,401 square feet, or 47 percent. According to our analysis of Army facility data for 17 facility groups and 48 major installations, including all 20 top growth installations, the Army will make some progress in reducing the amount of facility shortages in several areas, such as permanent party barracks, brigade headquarters, and general instructional buildings, and for certain quality of life facilities, such as child development centers and physical fitness facilities. Table 2 shows the planned impact of the Army's military construction investments in reducing essential facility shortages for fiscal year 2010 and fiscal year

2015 and the Army's projected cost to eliminate projected facility shortages beyond 2015. <sup>11</sup>

**Table 2: Essential Facility Shortages at 48 Major Installations, Fiscal Years 2010 and 2015**

Dollars in millions

Type of facilities	Facility shortage in fiscal year 2010	Projected facility shortage in fiscal year 2015	Projected shortage reduction	Projected shortage reduction (percentage)	Army's estimated cost to eliminate projected facility shortage in fiscal year 2015
<b>Measured in square feet</b>					
Tactical vehicle maintenance	9,188,019	3,538,566	5,649,452	61	\$1,236
Organizational classroom	1,048,149	865,247	182,902	17	232
Brigade headquarters	1,352,425	714,024	638,401	47	318
Battalion headquarters	2,201,254	1,191,519	1,009,735	46	453
Company headquarters	24,746,183	14,400,449	10,345,734	42	3,928
Religious/religious education	2,318,802	2,027,141	291,661	13	849
Physical fitness center	1,905,105	1,441,886	463,219	24	565
Administrative	6,094,997	5,758,340	336,657	6	1,878
Aircraft maintenance	1,806,313	1,318,778	487,535	27	617
Child development center	1,355,358	1,042,519	312,839	23	411
Post vehicle maintenance	441,974	456,276	-14,302	-3	152
General instruction	3,509,519	1,967,250	1,542,269	44	660
Applied instructional	3,014,688	2,618,099	396,589	13	1,008
Supply/storage	16,949,122	15,446,363	1,502,759	9	2,655
Total	75,931,908	52,786,457	23,145,450	30	\$14,962

<sup>11</sup> To calculate facility shortages, the Army compares installation facility requirements to current and planned inventory. It did not use facility allowances to calculate shortages. The difference between requirements and allowances are that the allowances are the computer-generated needs based solely on standardized criteria and requirements are the refined allowances that have been adjusted to meet the needs of individual installations. According to Army officials, refined facility requirements are a more accurate picture of facility needs than the computer-generated allowances and are what they used to guide their investment and budget request decisions. To estimate the cost to eliminate the projected facility shortage, we used the Army's nominal dollar per square foot estimate and not actual construction programming documents, which would provide more accurate representations of actual costs. As a result, the actual amount of additional investment needed is likely to be more than \$19 billion.



Dollars in millions

Type of facilities	Facility shortage in fiscal year 2010	Projected facility shortage in fiscal year 2015	Projected shortage reduction	Projected shortage reduction (percentage)	Army's estimated cost to eliminate projected facility shortage in fiscal year 2015
<b>Measured in spaces</b>					
Advanced individual training barracks (beds)	41,536	43,548	-2,012	-5	3,857
Basic training barracks (beds)	5,559	3,122	2,437	44	119
Permanent party barracks (rooms)	10,107	3,519	6,588	65	395
Total	57,202	50,189	7,013	12	4,371
<b>Total reduction and total cost for all essential facilities</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>12 and 30</b>	<b>\$19,333</b>

Source: GAO analysis of Army's Real Property Planning and Analysis System data, April 2010.

Notes: Religious facilities are not included in the Army's list of essential facility groups, but we included them as they were described during our site visits as important to quality of life. Facility shortages for post vehicle maintenance and advanced individual training barracks increased because requirements for these facilities outpaced the Army's ability to fund these types of projects in its military construction budget.

Some of the facility shortages that are projected to remain after fiscal year 2015 include those for tactical vehicle maintenance buildings, classrooms, headquarters buildings, religious facilities, and physical fitness centers. Without these buildings, the Army will continue to rely on legacy facilities, which do not all meet Army standards, or will use movable facilities, referred to as relocatable facilities, intended as temporary measures. Specific examples of remaining shortages follow.

- Tactical vehicle maintenance facilities:** Fort Sam Houston, Texas; Fort Campbell, Kentucky; Fort Jackson, South Carolina; and Fort Leonard Wood, Missouri, will have less than 65 percent of their reported tactical vehicle maintenance facility requirements in fiscal year 2015. Smaller shortages will still exist in fiscal year 2015 at Fort Bragg, North Carolina; Fort Knox, Kentucky; and Schofield Barracks, Hawaii, among others. In addition, even though units at many installations are adapting by using legacy facilities, these legacy facilities in many cases are 20 to 40 years old and do not support new Army Modularity requirements. For example, at Fort Lewis, Washington, the bay doors of the legacy maintenance facilities occupied by the Stryker brigades are not wide enough for the Strykers to enter; as a result, soldiers have to perform maintenance outside in sometimes inclement weather. Additionally, at Fort Bragg, the 82nd Airborne Division operates out of extremely cramped maintenance facilities built in the 1950s; these facilities lack sufficient bay space. At Fort Stewart, Georgia, none of the legacy maintenance facilities satisfies

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current mission requirements, as they were constructed prior to Army transformation and designed for a different force structure, according to Fort Stewart officials. At Fort Riley, Kansas, in several cases two battalions share a single battalion complex, and many maintenance facilities do not meet current Army standards, according to the Army. As a result, vehicle maintenance services are conducted outdoors in sometimes severe Kansas weather, because bay space and overhead lift capability are inadequate. According to the garrison commander, these conditions adversely affect unit maintenance and overall unit readiness.

- **Classrooms:** Some shortages will continue to exist in fiscal year 2015 at Fort Polk, Louisiana; Fort Hood, Texas; Fort Campbell, Kentucky; Fort Stewart; and Fort Drum, New York, among others. At Fort Huachuca, Arizona, the garrison commander commented that there is an overall lack of training/instruction facilities and that classroom space is at full capacity as a result of the increased training needs brought on by combined contingency operations in Iraq and Afghanistan.
- **Headquarters facilities:** In fiscal year 2015, Fort Huachuca; Fort Irwin, California; and Fort Sam Houston will have less than half of their reported brigade headquarters requirements, and Fort Benning, Georgia; Fort Jackson; and Fort Hood will all have less than half of their reported company headquarters requirement. Additionally, smaller shortages in some types of headquarters facilities will still exist in fiscal year 2015 at Fort Bragg; Fort Carson, Colorado; and Fort Riley, among others. As a result of these shortages, some units have turned supply areas into operational administration and training room space and use external containers for storing supplies.
- **Religious facilities:** Fort Bragg; Fort Carson; Fort Gordon, Georgia; and Fort Stewart will have less than 50 percent of their reported religious facility requirements in fiscal year 2015. At Fort Gordon, the religious education center is housed in 12 separate, dispersed buildings to accommodate the required number of classes. These buildings are not located near any of the installation's chapel facilities, which, according to the garrison commander, deters the participation of chapel congregants. Although the garrison has developed a project to redress this issue and has submitted it for funding, the project remains unfunded.
- **Physical fitness centers:** Fort Jackson and Fort Irwin will have less than half of their reported physical fitness center requirements in fiscal year 2015. Additionally, smaller shortages for physical fitness facilities will still exist in fiscal year 2015 at Fort Bragg, Fort Carson, Fort Stewart, Fort Polk, Fort Bliss, Fort Lewis, and Fort Knox, among others. At Fort Bliss, in

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an effort to address the shortage of fitness centers, soldiers have improvised by fabricating wood sit-up and pull-up bars in areas near soldier housing facilities.

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## The Army's Complex Facility Planning Systems Rely on Some Data That Are Not Complete, Current, or Accurate, Undermining Effective Decision Making

The Army's facility planning systems are made up of several complex databases that determine the number, type, and size of facilities needed to accommodate forces stationed at domestic installations. However, these systems have not always produced reliable results for some types of facilities because the systems have often relied on data that are not complete, current, or accurate, which could adversely affect management decisions made about the construction and renovation of facilities.

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## The Army's Facility Planning Systems Are Complex

The Army's facility planning systems are complex and comprise several databases that provide information used to generate facility requirements that ultimately influence budgetary decisions. To build facility requirements, Army guidance calls for its planners to use an Army-wide facility planning system known as the Real Property Planning and Analysis System, which uses information on the type of units and number of personnel and Army space planning criteria to determine the amount of facilities needed to accommodate forces stationed at an installation.<sup>12</sup> The Real Property Planning and Analysis System uses a formula, based on Army facility design criteria contained in the Army Criteria Tracking System, to determine the amount of space needed for each type of facility. The formula depends on installation population and force structure data from the Army's official database of installation populations, known as the Army Stationing and Installation Plan. The Real Property Planning and Analysis System uses the population information from this database and the criteria information from the Army Criteria Tracking System to determine the appropriate amount of facilities needed to accommodate

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<sup>12</sup> Army Regulation 210-20, *Real Property Master Planning for Army Installations*, governs the process for real property master planning in the Army. In addition to prescribing roles, responsibilities, and procedures related to real property planning, this regulation requires the use of the Real Property Planning and Analysis System for generating facility allowances and requirements.

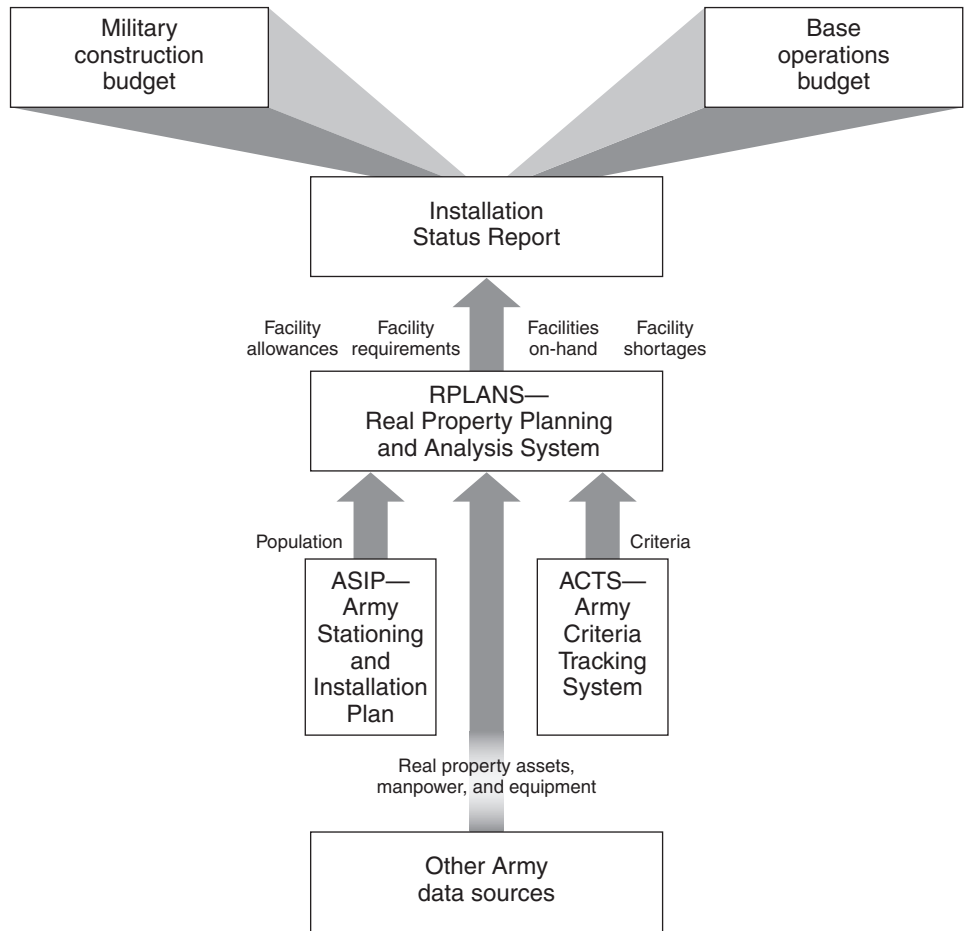
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the units stationed at the installation.<sup>13</sup> Information from the Real Property Planning and Analysis System is then used to inform the Installation Status Report, which is a high-level decision management tool used by Army leadership to identify the quantity and quality of facilities and make budgetary decisions. The Assistant Chief of Staff for Installation Management has a role in maintaining and operating all four systems. Figure 4 shows the relationship among these databases.

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<sup>13</sup> In addition, other Army management systems, such as the Army Headquarters Installation Information System, Structure and Manpower Allocation System, and Authorization Document System, feed real property asset, manpower, and unit equipment data into the Real Property Planning and Analysis System.

**Figure 4: Army's Facility Planning Systems**



Source: GAO analysis of Army documents on facility planning and military construction.

As figure 4 shows, the Army Stationing and Installation Plan feeds population data into the Real Property Planning and Analysis System, and this then helps form the basis for planning and programming of real property and other base operations resources. The Army Stationing and Installation Plan is the only consolidated source that shows the total authorized planning populations for Army installations. It produces a report showing authorized planning populations of all units, activities, students, and other tenants at Army installations over the current fiscal year and the next 6 fiscal years, as data are updated. In previous years, these data were updated only annually or semiannually; however, in 2007, the Army implemented quarterly data updates. Installation officials told us that these quarterly updates have been a great improvement and have

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enhanced their facility planning, as planners now have access to more current installation population data.

Army officials told us that although the Army Stationing and Installation Plan has always contained data on contractors, the data were limited and did not fully capture the number of contractors actually working on the installation, contributing to facility shortfalls because the full scope of contractor facility requirements did not appear in the Real Property Planning and Analysis System. To help alleviate this problem, in 2009 the Army developed a contractor module in the Army Stationing and Installation Plan to improve contractor reporting. According to the Army, the data in this module are more comprehensive than those previously entered in the Army Stationing and Installation Plan. The new module allows entries for supported and hiring units, so that contractors can be linked to the units that support them. According to the Army, this allows the Army Stationing and Installation Plan to reflect a unit's total impact, including the contractor population, which in turn allows the Real Property Planning and Analysis System to generate facility allowances for contractor populations.

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### The Army's Facility Planning Systems Have Relied on Some Data That Are Not Complete, Current, or Accurate

Although the Army has taken some steps to improve its facility planning systems, our analysis of criteria in the Army Criteria Tracking System and requirements in the Real Property Planning and Analysis System showed that some of the data are missing, out of date, or inaccurate. To illustrate, we compared the Army's list of 62 facility types for which standard designs were created to the corresponding facility design criteria in the Army Criteria Tracking System, to determine the extent to which the Army Criteria Tracking System was being updated with the new standard designs.<sup>14</sup> Although an Army regulation requires that facility master plans be updated as changes occur, we found that out of 62 facility types, 4 were missing entirely from the Army Criteria Tracking System. For example, criteria for supply-support activities—facilities needed to store brigade combat teams' supplies and equipment—were not in the criteria system

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<sup>14</sup> In 2006, the Army adopted a strategy, known as military construction transformation, which included numerous changes to its traditional practices that were designed to reduce facility acquisition costs and construction timelines. Among the changes was the development of standard designs for common facility types. So far, the Army Corps of Engineers has developed 44 standard facility designs that encompass 62 different types of facilities. See GAO, *Defense Infrastructure: DOD Needs to Determine and Use the Most Economical Building Materials and Methods When Acquiring New Permanent Facilities*, [GAO-10-436](#) (Washington, D.C.: Apr. 30, 2010).

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and facilities subsequently were not constructed. Installation officials told us that in their absence units were using either tarped, tented, or open-sided facilities intended for other uses, potentially exposing equipment to weather damage leading to potentially unnecessarily increasing repair expenses. Our analysis further showed that out of the 58 remaining facility types that were in the Army Criteria Tracking System, 47 did not have the updated standard criteria. For example, the standard design for child development centers for infants and toddlers had been finalized in March 2008, but the criteria in the criteria system showed that the last design update had occurred in 2007. Without the latest, standardized Army-wide criteria embedded in the facility planning systems, there is a risk that facility planners will not be using the most recent criteria to calculate requirements and that facilities will not be planned to meet the latest standards or actually built in the case of the supply-support activities.

To gain further insight into the extent to which the Army's facility planning systems are complete, current, and accurate, we performed another analysis that compared facility allowances with facility requirements for all 287 facility types in the Real Property Planning and Analysis System. Facility allowances are computer-generated estimates based purely on facility design criteria and installation population. Allowances provide installation master planners a baseline for determining facility requirements. Requirements are refined allowances adjusted to meet the needs of individual installations, as determined by installation master planners. Requirements reflect factors unique to a given unit or installation, such as special unit missions, personnel, and equipment that may not be captured in the automated allowance calculation. As a result, slight differences between allowances and requirements are to be expected. For example, general-purpose administrative space allowances are calculated by the number of personnel requiring general administrative space, multiplied by 162 gross square feet. However, this calculation does not take into consideration unique or installation-specific special space requirements, such as rooms for handling classified information or space to accommodate tenants or contractors in accordance with a contract or agreement. As a result, installation planners will need to manually adjust the allowance to reflect the actual general-purpose administrative space requirements of units on their specific installation. As shown in table 3, however, our analysis showed that there were large differences for several types of facilities, including enclosed storage, administrative, and general instruction facilities.

**Table 3: Differences between Selected Facility Allowances and Requirements**

<b>Facility type</b>	<b>Allowance</b>	<b>Requirement</b>	<b>Difference</b>
<b>Measured in millions of square feet</b>			
Enclosed storage installation	7	28	<b>21</b>
Administrative	18	39	<b>21</b>
General instruction	5	12	<b>7</b>
Aircraft maintenance	9	15	<b>6</b>
Unit storage	7	10	<b>3</b>
Annual training officer's quarters	13	15	<b>2</b>
Basic training barracks	10	9	<b>1</b>
<b>Measured in millions of square yards</b>			
Runways, fixed wing	1	8	<b>7</b>
<b>Measured in single units (each)</b>			
Baseball fields	831	776	<b>55</b>
Outdoor pools	375	312	<b>63</b>
Softball fields	1,417	1,281	<b>136</b>

Source: GAO analysis of Real Property Planning and Analysis System data, April 2010.

Note: Data for allowances, requirements, and differences are for all Army installations worldwide.

Large differences between allowances and requirements, such as those shown in table 3, may indicate that the formula used to determine the allowance for a facility type is out of date or inaccurate, resulting in facility data that do not reflect what installations really need and increase the risk that the Army may be planning for facilities that do not meet the latest standards. While this analysis provides some insight into systemic discrepancies—highlighting areas that collectively appear to be out of sync—significant issues are particularly noticeable at the individual installation level. For example, the computer-driven allowance for the number of baseball fields needed is 74 at Fort Bragg. However, installation officials told us that this is not a realistic requirement and that they would never request funding for that number of baseball fields for the installation. Although all installations have an opportunity to review allowances and provide edits that more accurately reflect the installation requirement, according to Army headquarters officials, no edits were received for baseball fields at Fort Bragg. According to these same officials, such reviews and input from installations would help to identify criteria for facilities such as the ones we highlighted that may need updating. Officials told us that they are aware that some of the facility criteria in the Army Criteria Tracking System may cause the Real Property Planning and Analysis System to produce unrealistic allowances for some



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types of facilities, but that they are normally not made aware of these kinds of discrepancies unless someone notifies them, as there is no routine process or established guidance requiring that criteria in the criteria system be reviewed, updated, or validated on a recurring basis. While officials acknowledged that some of the allowances may be inaccurate and should be reevaluated to be more useful, they said that allowances only provide a starting point to build facility requirements and those projects submitted for budget requests are based on refined requirements.

In addition, during our site visits, installation officials told us that their planners do not use the Real Property Planning and Analysis System for determining range and medical facility requirements. Officials told us that although the Real Property Planning and Analysis System generates data for ranges and medical requirements, its formulas and criteria do not generate realistic requirements, hence planners had decided to avoid using it to determine range and medical facility needs. Instead, installation planners use the Army Range Requirements Model to determine range requirements and the Army Health Facility Planning Agency's system to determine medical facility requirements. However, neither of these systems is linked to the Real Property Planning and Analysis System, the primary system for determining facility requirements, and officials told us that there is no guidance requiring them to be linked. Without input from these two other systems, the Real Property Planning and Analysis System will not accurately represent requirements for ranges and medical facilities, potentially leading to budget requests based on inaccurate requirements. In addition, with two sets of data available—one set in the Army Range Requirements Model and the Army Health Facility Planning Agency's system and another in the Real Property Planning and Analysis System—there is a potential for installation planners to be confused about which are the correct medical and range requirements.

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## Lack of Timely Information within the Army's Stationing Process Has Hampered Installations' Abilities to Meet Facility Requirements

The Army's stationing process involves many functional areas and therefore requires close coordination and information sharing. Installations are prescribed a key role in this coordination and in the planning for and successful implementation of stationing actions. However, the Army's process for providing installations information on stationing actions does not always allow installations sufficient time to accommodate all newly arriving units with permanent facilities. As a result, needed facilities have not always been available for arriving units and installations have had to employ certain interim measures to accommodate the units.

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## The Army's Stationing Process Requires Close Coordination and Information Sharing among Various Army Stakeholders

The Army's stationing process involves close coordination and information sharing among the Army Deputy Chief of Staff program office (G-3/5/7), the Army's Office of the Assistant Chief of Staff for Installation Management, the Installation Management Command, and individual installations. Specifically, Army Regulation 5-10 establishes policy, procedures, and responsibilities for stationing actions.<sup>15</sup> Army officials informed us that the Army currently uses a draft revised version of this regulation rather than the official version from March 2001. Accordingly, we used the draft version of the regulation for our assessment as well. As per the regulation, the Army Deputy Chief of Staff program office (G-3/5/7) is the official clearinghouse and processing approval authority for some proposed stationing actions for active forces relocating to or from Army installations. Once a proposed stationing action is identified, the respective Army command or Army service component command is to begin coordinating the proposed action with the gaining and losing installations. This includes ensuring that the gaining installation can

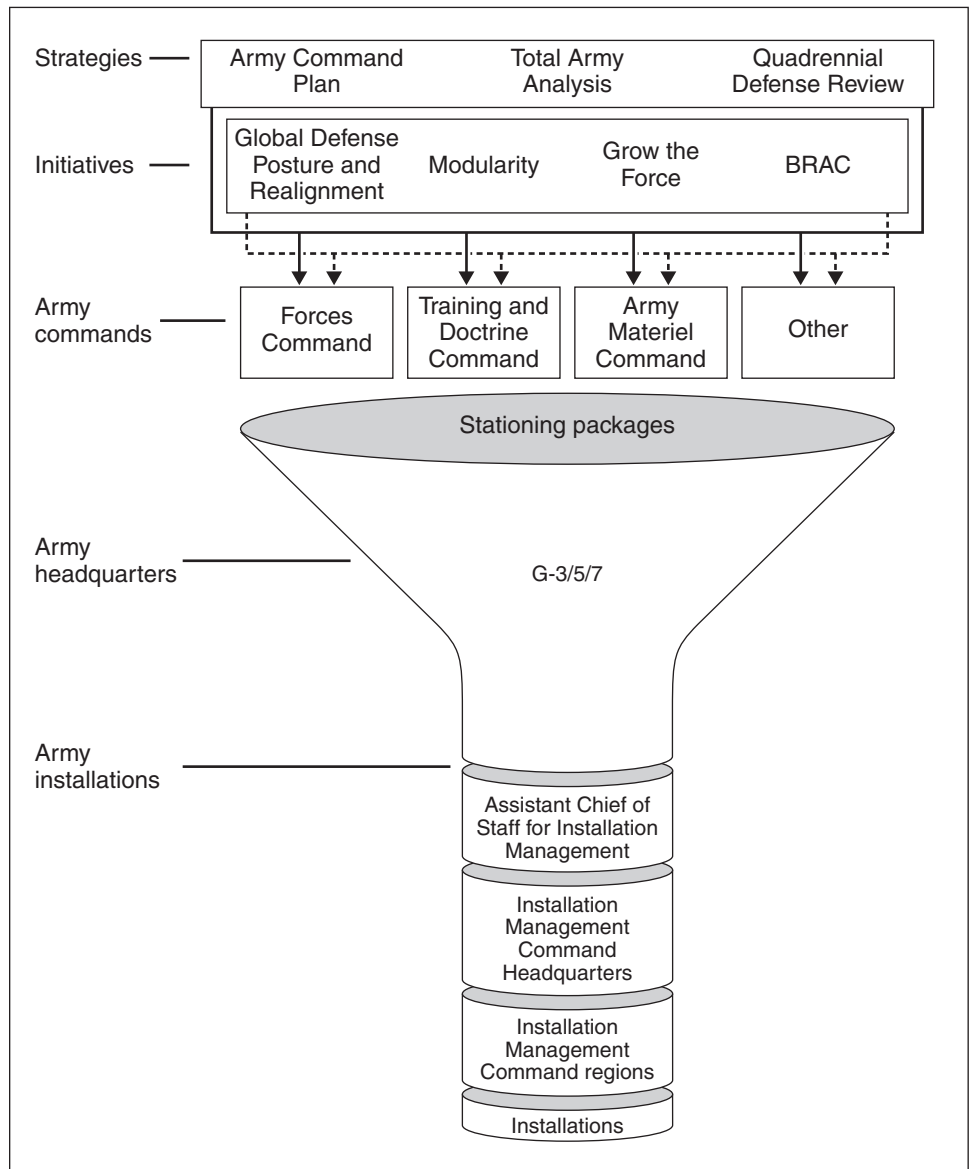
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<sup>15</sup> The primary focus of Army Regulation 5-10 is permanent stationing in the continental United States, Hawaii, Alaska, and the Trust Territories; permanent stationing from a location within the continental United States to a location outside the continental United States; and permanent stationing from a location outside the continental United States to a location within. It does not apply to a variety of stationing actions, including those specifically mandated by law (as well as actions specifically directed by BRAC), units returning to the continental United States in accordance with applicable emergency provisions in the execution of contingency plans or for other reasons of national security, temporary unit relocation because of approved construction or renovation of current facilities, or other specified actions. Nevertheless, the regulation indicates that the same planning methodology should be followed whenever a stationing action is being considered, regardless of the source or purpose of the action. See Army Regulation 5-10, *Stationing* (DRAFT), § 1-5(d) and (e).

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adequately support both its currently assigned force structure and the additional force structure associated with the proposed stationing action. To do this, the commands and reporting units work with the Army Installation Management Command, the Army's Office of the Assistant Chief of Staff for Installation Management, and the various installations. Together, these organizations conduct an analysis of the proposed stationing action that includes proposals, findings, and recommendations. This analysis is forwarded through the appropriate staff levels to decision makers in the form of a stationing package. A stationing package provides assurance to the Army leadership that all the requirements related to a stationing action have been accomplished. The purpose of the stationing process is to obtain complete coordination of and approval for stationing units in support of operational requirements. Additionally, the Army draft regulation states that wherever possible, standard Army databases and management information systems must be used, to include the Army Stationing and Installation Plan, the Real Property Planning and Analysis System, and the Installation Status Report. Ideally, according to officials, stationing actions should be inputted into the Army Stationing and Installation Plan at the same time the Army Deputy Chief of Staff program office (G-3/5/7) approves it for processing and a stationing package is developed. Additionally, the Army Stationing and Installation Plan should be updated to reflect any changes to the proposed stationing action as a result of installation input. Figure 5 shows the complexity of the stationing process and the various offices involved in it.

**Figure 5: Army's Stationing Process**



Source: GAO analysis of Army stationing regulations and guidance.

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## Installations Do Not Always Receive Timely Stationing Information

The Army's process for providing installations information on stationing actions does not always allow installations sufficient time to accommodate all newly arriving units with permanent facilities. Stationing involves many functional areas and therefore requires extensive coordination. An Army regulation prescribes a key role for installations in the planning for and successful implementation of stationing actions. The primary mechanism for informing an installation of a proposed stationing action and obtaining its input is the development and processing of a stationing package. Installations provide vital information regarding facility availability for these packages, and the Army regulation prescribes various timelines that could affect the timing of this input. According to Army officials, for stationing actions that will require new military construction, an installation should receive a package 5 years ahead of when troops and family members will arrive, to coincide with the normal military construction timeline and to provide time for the installation to obtain the necessary funding to build the needed facilities.

However, officials at several installations we visited told us that they have received stationing packages requiring new construction with only 1 year of advanced planning time available and some packages in the same year as the stationing action. In some cases, units have even arrived at an installation before the package is developed and facility requirements are identified. For example, during our visit to Fort Stewart in December 2009, officials told us that they had just received a stationing package for an engineering unit slated to arrive there in April 2010, which will not give them enough time to program and build permanent facilities for the unit. Indeed, Fort Stewart officials told us that since 2006 there have been approximately 15 unit arrivals requiring a total of \$131 million in new construction, where the time between the installation's receipt of the stationing package and the units' actual arrival did not provide the installation enough time to program and construct the facilities. According to Fort Stewart officials, all future stationing actions to the installation will require new military construction to accommodate arriving personnel. Similarly, during our visit to Fort Drum, officials told us of several instances where they had only 6 months' notice from when they received a stationing package for an arriving unit to when that unit was slated to arrive at the installation. Although situations like these can be partly attributed to factors such as the length and size of ongoing operations in Iraq and Afghanistan, which have led to an increase in the movement of Army personnel and units, Army officials also cited some other reasons. Specifically, these officials told us that many times situations like these are occurring because some Army commands that traditionally have not conducted many stationing actions are now having to manage significant

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relocations of units from some installations to other Army installations and consequently develop stationing packages because of Army transformation. As a result, some Army personnel responsible for preparing stationing packages are either not familiar with the stationing package time guidelines or do not know the proper way to develop a package. According to these officials, more training is needed to show the importance of timely stationing packages and how to correctly develop a package.

Another explanation offered by these officials is that the large number of stationing packages being processed is delaying the delivery of stationing packages to installations, and no abbreviated procedures exist to shorten the process for quick turnaround stationing decisions. Even though many of the units associated with these stationing issues are smaller combat service and combat service support units, rather than larger brigade combat teams, officials told us that the timeliness of stationing packages for these smaller units is still problematic. Many installations have minimal space left available that can be developed because of continued growth. Officials told us that as a result, even small unit moves can have a big impact on an installation's master planning—especially if neither permanent nor relocatable facilities are available. According to installation officials, a package or at least some other type of stationing information is needed even for small units as early in the stationing process as possible, so that installation input can be obtained and any space or facility issues can be resolved before the unit arrives.

A second point of concern raised by installation officials was that even when they do receive a stationing package and provide input, in many cases they are not notified of subsequent changes to the decision, such as unit arrival dates being canceled, expedited, or delayed. Although stationing guidance directs that there be coordination during the development of a stationing package, there is no specific guidance for communicating subsequent stationing action changes; as a result, subsequent changes to stationing actions are not always being communicated to installations or are not being communicated in a timely manner. For example, Fort Bragg officials stated that they are not getting notification of changes from the Office of the Assistant Chief of Staff for Installation Management or the Installation Management Command when stationing packages are submitted to G-3/5/7 for final approval; this complicates the installation planner's ability to properly plan for unit arrivals. Further, Installation Management Command Southeast officials told us that they are not receiving notification when proposed stationing actions to which installations provided input are subsequently delayed or

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canceled. This could lead to the wasting of scarce resources as installations continue to plan for units that will be arriving at a later date or not at all.

The lack of timely information concerning stationing actions complicates an installation's master planner's ability to provide facilities for arriving personnel. As a result, some installations have not had permanent facilities available for newly arriving units. For example, at Hunter Army Airfield on Fort Stewart new permanent facilities are still not available for the combat aviation brigade established there in 2006. Although according to the Army's military construction plans, some of the construction is funded, the funded portion of the facilities is not slated to be finished until 2015 and 2016. Similarly, at Fort Riley, although some of the new facilities for the combat aviation brigade that relocated there from Fort Carson in 2009 are funded, construction for them is not expected to be finished until 2013. The aircraft hangar and vehicle maintenance shop for the brigade remains unfunded. And at Fort Drum, construction for new permanent facilities for the combat aviation brigade that converted from a light to medium brigade on March 16, 2010, is not expected to start until 2013 and will not be completed until 2014 at the earliest. Because permanent facilities are not always available for these and other arriving units, the Army has employed several interim measures, as described below.

- **Relocatable facilities:** As we reported in 2009, the Army continues to use relocatable facilities extensively at several installations to provide facilities for incoming troops.<sup>16</sup> In some cases, relocatable facilities are being used as barracks and at some installations they are being used longer than anticipated. Indeed, during our visit to Fort Drum, officials told us they were considering requesting that some of their relocatable facilities be reclassified into real property so that they could keep them indefinitely to help address facility shortages. According to the Army, it has invested over \$2 billion in relocatable facilities and will continue to use them until permanent construction for all units is complete. Some officials told us that they might need to be used until 2016 or beyond.
- **Hot bunking/duffle bag drag:** The Army is using a complex rotation process of placing new units into facilities vacated by deployed units. However, according to officials, the use of facilities vacated by deployed

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<sup>16</sup> GAO, *Defense Infrastructure: DOD Needs to Improve Oversight of Relocatable Facilities and Develop a Strategy for Managing Their Use across the Military Services*, [GAO-09-585](#) (Washington, D.C.: June 12, 2009).

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units requires multiple moves, as units now occupying the facilities will have to move once the other units return from deployment. According to officials, this reduces capacity, creates challenges for meeting unit reset timelines, and complicates life cycle upgrades to the facilities. For example, Fort Stewart officials told us that an engineer battalion relocated there in March 2010 and that there were no permanent facilities available for it. Officials said they were particularly concerned about the maintenance facilities and barracks for the battalion and, as a result, developed military construction projects for them that they plan to submit during the next budget cycle. These officials told us that in the interim their mitigation strategy has been to have the battalion occupy facilities that are currently vacant because of deployments but added that this will force multiple unit moves and incur additional costs, which in their view will degrade the unit's overall operational readiness. According to Fort Stewart officials, in 2008 one such "duffle bag drag" move cycle resulted in 4,000 productive man-hours lost, at a cost of approximately \$156,000, and increased unit reset time by 20 days because of the added cost and work hours needed to move the units to different buildings. In addition, officials told us that deployments are the primary reason they are able to accommodate the multitude of stationing actions occurring right now and that if there were no deployments then the Army would have to slow its growth and transformation. Some officials told us that the return of forces from Iraq will only exacerbate facility shortage problems at those installations currently using facilities that are available to "at home" units only because of deployments.

- **Reduced authorized space for unit operations facilities:** The Army has reduced the acceptable authorized space standard for all company, brigade, and battalion headquarters facilities Army-wide by 50 percent, resulting in many units having to cope with cramped, overcrowded facilities.
- **Outside leases:** The Army is leasing an abandoned Kmart store outside of Fort Sam Houston as a temporary home for the Installation Management Command Headquarters while its facilities are being built.
- **Use of sustainment funds:** Fort Stewart officials told us that because of insufficient notice, they have had to use \$745,000 of their sustainment funds to construct a motor pool for one unit and \$236,000 of sustainment funds to construct a parking lot for another unit recently stationed there.



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Such actions could further increase the backlog of deferred sustainment projects that we reported on Army-wide in 2009.<sup>17</sup>

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## Conclusions

The pace of growth associated with the Army's simultaneous implementation of several force structure and infrastructure initiatives has required the Army to employ a range of strategies to provide facilities in a timely manner. Accurate facility planning data are critical if the Army is to be able to match the pace of its military construction with the pace of this growth. However, some of the data in the Army's facility planning systems are incomplete, out of date, or inaccurate. Incomplete, out-of-date, or inaccurate facility planning data undermine effective management decision making about the construction and renovation of facilities, and if projects are constructed that do not meet the latest design standards and, as a result, require costly retrofitting, funds could be wasted. Army planners and resource programmers use the facility planning systems to identify support requirements for the Army installations and excesses and shortages of facilities, and this information is used to support funding decisions. For example, new construction might be started in response to reported shortages. Managers need reliable data to make accurate decisions about future resource allocations. Accurate, timely, and complete installation data improve credibility with Army leadership and Congress. However, unless the Army develops guidance that requires its facility criteria system to be updated as changes to facility design criteria occur and develops policies and procedures for linking its official facility planning systems to other facility planning databases, such as the ones for range and medical facilities, there is increased risk that Army facility planners will be using outdated or inaccurate facility criteria and requirements data, making poorly informed facility funding decisions, and potentially building facilities that do not fully meet unit requirements and subsequently require costly retrofitting.

Because construction of facilities is a process that requires ample lead time, the Army stationing regulation prescribes specific timelines and procedures for obtaining installation input into proposed stationing actions in order for installations to provide timely infrastructure support. However, the Army has not always provided installations with timely information on stationing actions because of numerous factors, such as

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<sup>17</sup> GAO, *Defense Infrastructure: DOD Needs to Periodically Review Support Standards and Costs at Joint Bases and Better Inform Congress of Facility Sustainment Funding Uses*, [GAO-09-336](#) (Washington, D.C.: Mar. 30, 2009).

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the length and size of ongoing operations, which has led to an increase in the movement of Army personnel and units, and as a result, installations' abilities to effectively develop plans to meet their facility requirements have been hindered. Although high-level Army or DOD staffs and senior decision makers have approval authority on stationing actions, the installation's role is critical for thorough planning and analysis and, ultimately, the successful execution of stationing actions. The installations are the platforms from which these stationing actions are initiated and executed. As the Army brings more troops back to the United States, the level of installation response becomes more critical. However, without developing a mechanism to more readily and quickly share stationing information with installations and enhancing communication with installations regarding changes to stationing actions, the Army faces increased risk that more units will not have permanent facilities available to them when they arrive at certain installations.

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## Recommendations for Executive Action

To improve the accuracy and completeness of the Army's Real Property Planning and Analysis System as a tool for generating facility requirements, we recommend that the Secretary of Defense direct the Secretary of the Army to take the following two actions.

- Develop and implement guidance that requires the Army Criteria Tracking System to be updated as changes to facility design criteria are made.
- Develop and implement policies and procedures for linking other systems, such as the Army Range Requirements Model and the Army Health Planning Agency's system, to the Real Property Planning and Analysis System in order to eliminate any potential confusion as to the correct range and medical facility requirements.

To improve installations' abilities to develop and implement plans to meet their facility requirements, we recommend that the Secretary of Defense direct the Secretary of the Army to take the following two actions.

- Develop a streamlined mechanism to expedite the flow of stationing information to installations.
- Modify existing guidance to enhance communication between decision makers and installations so that installation facility planners are notified when stationing actions are changed.

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## Agency Comments and Our Evaluation

In written comments on a draft of this report, DOD concurred with all four of our recommendations related to improvements in the Army's facility planning systems and stationing process. DOD's written comments are reprinted in appendix II. DOD also provided technical comments that we have incorporated into this report where applicable.

DOD concurred with our recommendation to direct the Secretary of the Army to develop and implement guidance that requires the Army Criteria Tracking System to be updated as changes to facility design criteria are made, stating that the Army has already taken action to enhance the accuracy of its planning systems to better respond to changing requirements. However, in its official response to us, the department provided neither specific details regarding the actions it had already taken nor any specific timelines for taking future action to develop and implement guidance that requires the Army Criteria Tracking System to be updated as changes to facility design criteria are made, as we recommended.

DOD also concurred with our recommendation to direct the Secretary of the Army to develop and implement policies and procedures for linking other facility planning systems, such as the Army Range Requirements Model and the Army Health Planning Agency's system, to the Real Property Planning and Analysis System. Although the department stated that linking the systems would require resolving numerous data management and mapping issues, in technical comments, DOD stated that it plans to partly address our recommendation by fielding a comprehensive range planning tool called the Range Complex Master Planning Tool. Further, the department said that the Army is developing range facility planning training materials targeted at Army Range management professionals using the Range Officer Professional Development courseware. Although these are positive steps, DOD did not indicate when the Army was going to link the Real Property Planning and Analysis System to this new system or the other systems, as we recommended.

The department also concurred with our recommendation to direct the Secretary of the Army to develop a streamlined mechanism to expedite the flow of stationing information to installations, stating that the Army has already initiated improvements in its process and is evaluating additional streamlining measures. The department did not provide details regarding the improvements it had already made or the additional measures it is evaluating to develop a mechanism that expedites the flow of stationing information to installations, as we recommended.

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Finally, regarding our recommendation to direct the Secretary of the Army to modify existing guidance to enhance communication between decision makers and installations, DOD concurred. In its response, DOD stated that the Army has already initiated improvements in its communication process, but DOD did not provide any information as to the nature of the improvements. DOD stated that it is evaluating additional measures to ensure that data integrity and transparency are achieved. Nonetheless, DOD provided no information showing that modifications to guidance had been made or are planned that would enhance communication so that the installation facility planners are notified when stationing actions are changed, as we recommended.

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We are sending copies of this report to interested congressional committees, the Secretary of Defense, and the Secretary of the Army. The report also is available at no charge on GAO's Web site at <http://www.gao.gov>.

If you or your staff have any questions concerning this report, please contact me at (202) 512-4523 or [leporeb@gao.gov](mailto:leporeb@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report are listed in appendix III.

A handwritten signature in black ink, appearing to read "Brian Lepore". The signature is fluid and cursive, with the first name "Brian" and last name "Lepore" clearly distinguishable.

Brian J. Lepore, Director  
Defense Capabilities and Management

# Appendix I: Scope and Methodology

To determine how the Army's current and planned investments will meet infrastructure requirements, we analyzed budget documents from fiscal year 2006 through fiscal year 2015 to determine what the Army has spent and plans to spend on constructing facilities in support of the initiatives. Specifically, we analyzed the President's Budget for Base Realignment and Closure (BRAC) and for the active Army's military construction from fiscal years 2006 through 2010 and the President's Budget Estimation Submission for fiscal year 2011, which together include budget data on military construction projects from fiscal years 2006 through 2015 for the Grow the Force, Global Defense Posture and Realignment, and Army Modularity initiatives. We included National Guard and Army Reserve projects in our base BRAC calculations. Additionally, we included domestic and overseas projects and planning and design funding associated with the initiatives in our scope and eliminated any projects that appeared on multiple budgets to ensure there would be no double counting. To determine the amount of funding for each initiative, we categorized each project according to its management decision package designation, since each initiative had its own designation. To determine to what extent the Army's investments will reduce shortages in essential facilities from fiscal years 2009 through 2015 and the cost of the shortages that will remain beyond fiscal year 2015, we analyzed data from the Army's Real Property Planning and Analysis System. We performed this analysis for 48 Installation Management Command installations, including all of the top 20 growth installations, and distilled it into 17 facility groups containing over 80 facility types, which were labeled by the Army as essential. See table 4 for a list of installations included in this analysis.

**Table 4: Installations Included in Essential Facility Shortage and Military Construction Budget Analyses**

1	Aberdeen Proving Ground, Maryland	25	Fort Shafter, Hawaii
2	Carlisle Barracks, Pennsylvania	26	Fort Wainwright, Alaska
3	Fort AP Hill, Virginia	27	Schofield Barracks, Hawaii
4	Fort Belvoir, Virginia	28	Fort Benning, Georgia
5	Fort Drum, New York	29	Fort Bragg, North Carolina
6	Fort Eustis, Virginia	30	Fort Campbell, Kentucky
7	Fort George G. Meade, Maryland	31	Fort Gordon, Georgia
8	Fort Hamilton, New York	32	Fort Jackson, South Carolina
9	Fort Lee, Virginia	33	Fort Knox, Kentucky
10	Fort Monmouth, New Jersey	34	Fort McPherson, Georgia
11	Fort Monroe, Virginia	35	Fort Rucker, Alabama

12	Fort Myer, Virginia	36	Fort Stewart, Georgia
13	Picatinny Arsenal, New Jersey	37	Redstone Arsenal, Alabama
14	West Point Military Reservation, New York	38	U.S. Army Garrison Miami, Florida
15	Detroit Arsenal, Michigan	39	Fort Bliss, Texas
16	Dugway Proving Ground, Utah	40	Fort Hood, Texas
17	Fort Carson, Colorado	41	Fort Huachuca, Arizona
18	Fort Leavenworth, Kansas	42	Fort Polk, Louisiana
19	Fort Leonard Wood, Missouri	43	Fort Sam Houston, Texas
20	Fort Lewis, Washington	44	Fort Sill, Oklahoma
21	Fort Riley, Kansas	45	National Training Center and Fort Irwin, California
22	Rock Island Arsenal, Illinois	46	Presidio of Monterey, California
23	Fort Greely, Alaska	47	White Sands Missile Range, New Mexico
24	Fort Richardson, Alaska	48	Yuma Proving Ground, Arizona

Source: GAO.

We added two facility types to the Army’s list of essential facilities—religious facilities and religious education facilities—and excluded family housing as most of the Army’s family housing is now privatized. For the trend analysis of military construction and quality of life projects, we analyzed the President’s Budget for the active Army’s military construction from fiscal years 2006 through 2010 and the President’s Budget Estimation Submission for fiscal year 2011. For projects in fiscal years 2006 through 2010, we counted a project as starting in that year if the year listed for the project matched the year on the source budget. For example, if a project was scheduled for fiscal year 2007 on the 2007 President’s Budget, then we counted that project as starting in 2007. We performed this analysis on the same 48 installations listed in table 4 and essential facility groups as in the previous analysis; however, we condensed the facility groups from 17 into 6 based on the categorization listed in Department of the Army Pamphlet 415-28, *Guide to Army Real Property Category Codes*. Finally, to provide insight into the results of these analyses, we obtained and reviewed the garrison commanders’ facility condition reports from the Army’s Installation Status Report database to obtain examples of installations that have facility shortages. We also interviewed officials from the Office of the Deputy Under Secretary of Defense (Installations and Environment); Headquarters, Department of the Army, Office of the Assistant Chief of Staff for Installation Management; Headquarters, Installation Management Command; and Headquarters, Department of the Army, Deputy Chief of Staff program office (G-3/5/7), to gain insight into the Army’s military construction budgeting process.

To assess the accuracy and completeness of information used in the Army's facility planning system, we were granted access to and analyzed the data in the Army Stationing and Installation Plan, the Real Property Planning and Analysis System, and the Army Criteria Tracking System that are used by planners to identify facility requirements and make budget decisions. To further assess these systems, we compared the 62 Army of Corps of Engineers facility standard designs currently completed to the information contained in the Army's Criteria Tracking System to determine the extent to which the criteria system contained the latest facility design criteria. To gain further insight into the extent to which the Army's facility planning systems are complete, current, and accurate, we performed a second analysis that compared the allowances to requirements for all 287 facility types in Army's Real Property Planning and Analysis System to determine the extent of differences. We also interviewed officials from the Office of the Deputy Under Secretary of Defense (Installations and Environment); Headquarters, Department of the Army, Office of the Assistant Chief of Staff for Installation Management; Headquarters, Installation Management Command; and Headquarters, Department of the Army, Deputy Chief of Staff program office (G-3/5/7), to obtain information regarding the Army's facility planning system.

To discuss the Army stationing process and determine whether information is being provided to installations in time to allow them to prepare facilities to meet stationing requirements, we analyzed data from the Army's Stationing and Installation Plan, Campaign Plan, and stationing packages, and we compared these to Army's military construction plans. Additionally, we obtained and analyzed each of the Army's rehearsal of concept drill briefs conducted for various installations and several senior stationing review group briefs from the last 2 years to identify any potential implementation issues associated with the various initiatives. Rehearsal of concept drills are Army headquarters-level, installation-specific exercises conducted to identify and address any synchronization issues associated with the implementation of the various initiatives. The senior stationing review group is a monthly meeting chaired by the Army Vice Chief of Staff conducted as part of the Army's overall military construction budget process where issues associated with the Army-wide implementation of the initiatives are surfaced and mitigated. Further, in conducting our review, we visited four installations, Fort Bliss, Texas; Fort Carson, Colorado; Fort Drum, New York; and Fort Stewart, Georgia, that were either experiencing significant growth, were affected by recent force structure decisions, or both. We also visited Installation Management Command West at Fort Sam Houston, Texas, and Installation Management Command Southeast at Fort McPherson, Georgia. During each visit, we

were briefed on the installations' and regions' master plans and interviewed directors or base commanders as well as master planning and public works personnel to discuss any challenges experienced in providing facilities and any mitigation efforts planned or under way. We also interviewed officials from the Office of the Deputy Under Secretary of Defense (Installations and Environment); Headquarters, Department of the Army, Office of the Assistant Chief of Staff for Installation Management; Headquarters, Installation Management Command; and Headquarters, Department of the Army, Deputy Chief of Staff program office (G-3/5/7), to obtain information regarding the Army's stationing process. Although we did not independently validate the budget, construction, stationing, and facility planning data provided by the Army, we discussed with officials steps they have taken to ensure reasonable accuracy of the data. As such, we determined the data to be sufficiently reliable for the purposes of this report.

We conducted this performance audit from June 2009 through June 2010 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: Comments from the Department of Defense



ACQUISITION,  
TECHNOLOGY  
AND LOGISTICS

OFFICE OF THE UNDER SECRETARY OF DEFENSE  
3000 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3000

JUN 17 2010

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

Dear Mr. Lepore:

This is the Department of Defense (DoD) response to the GAO draft report, GAO-10-602, "DEFENSE INFRASTRUCTURE: Army Needs to Improve Its Facility Planning Systems to Better Support Installations Experiencing Significant Growth," dated May 12, 2010 (GAO Code 351350). Specific comments are enclosed.

Sincerely,

Dorothy Robyn  
Deputy Under Secretary of Defense  
(Installations and Environment)

Enclosure:  
As stated

GAO DRAFT REPORT – DATED MAY 12, 2010  
GAO CODE 351350/GAO-10-602

"DEFENSE INFRASTRUCTURE: Army Needs to Improve Its Facility Planning Systems  
to Better Support Installations Experiencing Significant Growth"

DEPARTMENT OF DEFENSE COMMENTS  
TO THE RECOMMENDATIONS

**RECOMMENDATION 1:** The GAO recommends that the Secretary of Defense direct the Secretary of the Army to develop and implement guidance that requires the Army Criteria Tracking System to be updated as changes to facility design criteria are made.

**DOD RESPONSE:** DoD concurs. The Army has already taken action to enhance the accuracy of its planning systems to better respond to changing requirements.

**RECOMMENDATION 2:** The GAO recommends that the Secretary of Defense direct the Secretary of the Army to develop and implement policies and procedures for linking other systems, such as the Army Range Requirements Model and the Army Health Planning Agency's System, to the Real Property Planning and Analysis System in order to eliminate any confusion as to the correct medical and range facility requirements.

**DOD RESPONSE:** DoD concurs. This will require resolving numerous data management and mapping issues, but should reduce or eliminate confusion.

**RECOMMENDATION 3:** The GAO recommends that the Secretary of Defense direct the Secretary of the Army to develop a streamlined mechanism to expedite the flow of stationing information to installations.

**DOD RESPONSE:** DoD concurs. The Army has already initiated improvements in its process and is evaluating additional streamlining measures.

**RECOMMENDATION 4:** The GAO recommends that the Secretary of Defense direct the Secretary of the Army to modify existing guidance to enhance communication between decisionmakers and installations so that the installation facility planners are notified when stationing actions are changed.

**DOD RESPONSE:** DoD concurs. The Army has already initiated improvements in its communication process and is evaluating additional measures to ensure data integrity and transparency are achieved.

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# Appendix III: GAO Contact and Staff Acknowledgments

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## GAO Contact

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

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## Acknowledgments

In addition to the contact named above, Laura Durland, Assistant Director; Hiwotte Amare; Shawn Arbogast; Cynthia Grant; Shelby Kain; Joanne Landesman; Oscar Mardis; Crystal Robinson; and Michael Shaughnessy made key contributions to this report.

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# Related GAO Products

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*Defense Infrastructure: DOD Needs to Determine and Use the Most Economical Building Materials and Methods When Acquiring New Permanent Facilities.* [GAO-10-436](#). Washington, D.C.: April 30, 2010.

*Force Structure: Actions Needed to Improve DOD's Ability to Manage, Assess, and Report on Global Defense Posture Initiatives.* [GAO-09-706R](#). Washington, D.C.: July 2, 2009.

*Defense Infrastructure: DOD Needs to Improve Oversight of Relocatable Facilities and Develop a Strategy for Managing Their Use across the Military Services.* [GAO-09-585](#). Washington, D.C.: June 12, 2009.

*Defense Infrastructure: DOD Needs to Periodically Review Support Standards and Costs at Joint Bases and Better Inform Congress of Facility Sustainment Funding Uses.* [GAO-09-336](#). Washington, D.C.: March 30, 2009.

*Military Base Realignment and Closures: DOD Faces Challenges in Implementing Recommendations on Time and Is Not Consistently Updating Savings Estimates.* [GAO-09-217](#). Washington, D.C.: January 30, 2009.

*High-Risk Series: An Update.* [GAO-09-271](#). Washington, D.C.: January 2009.

*Defense Infrastructure: Army's Approach for Acquiring Land Is Not Guided by Up-to-Date Strategic Plan or Always Communicated Effectively.* [GAO-09-32](#). Washington, D.C.: January 13, 2009.

*Defense Infrastructure: High-Level Leadership Needed to Help Communities Address Challenges Caused by DOD-Related Growth.* [GAO-08-665](#). Washington, D.C.: June 17, 2008.

*Defense Infrastructure: Continued Management Attention Is Needed to Support Installation Facilities and Operations.* [GAO-08-502](#). Washington, D.C.: April 24, 2008.

*Defense Infrastructure: DOD Funding for Infrastructure and Road Improvements Surrounding Growth Installations.* [GAO-08-602R](#). Washington, D.C.: April 1, 2008.

*Defense Infrastructure: Army and Marine Corps Grow the Force Construction Projects Generally Support the Initiative.* [GAO-08-375](#). Washington, D.C.: March 6, 2008.

*Force Structure — Need for Greater Transparency for the Army's Grow the Force Initiative Funding Plan.* [GAO-08-354R](#). Washington, D.C.: January 18, 2008.

*Force Structure: Better Management Controls Are Needed to Oversee the Army's Modular Force and Expansion Initiatives and Improve Accountability for Results.* [GAO-08-145](#). Washington, D.C.: December 14, 2007.

*Defense Infrastructure: Challenges Increase Risks for Providing Timely Infrastructure Support for Army Installations Expecting Substantial Personnel Growth.* [GAO-07-1007](#). Washington, D.C.: September 13, 2007.

*Defense Management: Comprehensive Strategy and Annual Reporting Are Needed to Measure Progress and Costs of DOD's Global Posture Restructuring.* [GAO-06-852](#). Washington, D.C.: September 13, 2006.

*Defense Infrastructure: Issues Need to Be Addressed in Managing and Funding Base Operations and Facilities Support.* [GAO-05-556](#). Washington, D.C.: June 15, 2005.

*Defense Infrastructure: Long-term Challenges in Managing the Military Construction Program.* [GAO-04-288](#). Washington, D.C.: February 24, 2004.

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