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MILITARY BASE REALIGNMENTS AND CLOSURES

Transportation Impact
of Personnel Increases
Will Be Significant,
but Long-Term Costs
Are Uncertain and
Direct Federal
Support Is Limited



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Why GAO Did This Study

As part of the 2005 Base Realignment and Closure (BRAC) round, the Department of Defense (DOD) plans to relocate over 123,000 military and DOD civilian personnel, thereby increasing the staffing at 18 bases nationwide. In addition, DOD and local officials expect thousands of dependents and DOD contractor employees to relocate to communities near the BRAC 2005 growth bases. These actions will greatly increase traffic in the surrounding communities. BRAC recommendations must be implemented by September 2011.

The House and Senate Committees on Appropriations directed GAO to assess and report on the impact of BRAC-related growth on transportation systems and on the responses of federal, state, and local governments. Accordingly, GAO determined the (1) expected impact on transportation in communities affected by BRAC decisions, and (2) federal, state, and local response to the expected impacts. To perform its work, GAO obtained information from the 18 communities with expected substantial BRAC growth; visited 8 of these communities; interviewed federal civilian and military officials and state and local officials; and reviewed DOD data, transportation plans, and environmental studies.

GAO provided copies of this report to the Departments of Defense and Transportation for their review. The Departments provided technical comments, which GAO incorporated as appropriate.

View [GAO-09-750](#) or [key components](#). For more information, contact Phillip Herr (202) 512-2834 or herrp@gao.gov.

MILITARY BASE REALIGNMENTS AND CLOSURES

Transportation Impact of Personnel Increases Will Be Significant, but Long-Term Costs Are Uncertain and Direct Federal Support Is Limited

What GAO Found

Growth resulting from BRAC decisions will have a significant impact on transportation systems in some communities, but estimates of the total cost to address those impacts are uncertain. In addition to BRAC, other defense initiatives will result in growth in communities and also add to transportation needs. BRAC growth will result in increased traffic in communities ranging from very large metropolitan areas to small communities, creating or worsening congested roads at specific locations. Traffic impacts can also affect larger relocation decisions, and were important in DOD's decision to acquire an additional site for Fort Belvoir, Virginia, an acquisition that DOD estimates will cost \$1.2 billion. According to a DOD Office of Economic Adjustment (OEA) survey, 17 of 18 BRAC growth communities identified transportation as one of their top challenges. Near-term transportation projects to address these challenges could cost about \$2.0 billion, of which about \$1.1 billion is related to projects in the metropolitan Washington, D.C., area. BRAC-related transportation infrastructure costs are subject to a number of uncertainties. For example, not all potential projects are included in the estimate, military staffing levels at some growth installations are in flux and the location decisions of military and civilian personnel have not yet been made, and pre-existing, non-military community growth makes a direct link between transportation projects to military growth difficult.

The federal government has provided limited direct assistance to help communities address BRAC transportation impacts, and state and local governments have adopted strategies to expedite projects within the time frame allowed by BRAC. For example, DOD's Defense Access Roads Program has certified transportation projects for funding at three affected communities. Also, OEA has provided planning grants and funded traffic studies and local planning positions. While federal highway and transit programs can be used for many BRAC-related transportation needs, dedicated funds are not available. Instead, BRAC-related transportation projects must compete with other proposed transportation projects. Communities had identified funding for about \$500 million of the estimated \$2.0 billion needed to address their near term project needs. Some state and local governments have adopted strategies to expedite highway projects, such as prioritizing short-term high-impact projects, because the time frames for completing BRAC personnel moves are much shorter than the time frames for such projects. While legislation mandates that BRAC growth be completed by 2011, major highway and transit projects usually take 9 to 19 years. To complete some critical projects before BRAC growth occurs, state and local officials are reprioritizing planned projects and implementing those that can be completed quickly. For example, Maryland prioritized certain lower-cost intersection projects that will improve traffic flow. In Texas, officials used an innovative financing approach to generate funding quickly for a major highway project at Fort Bliss.

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Abbreviations

BRAC	Base Realignment and Closure
CTB	Commonwealth of Virginia Transportation Board
DAR	Defense Access Roads Program
DOD	Department of Defense
EIS	environmental impact statement
EUL	enhanced use lease
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
MARC	Maryland Area Regional Commuter Train Service
MDOT	Maryland Department of Transportation
MPO	metropolitan planning organization
OEA	Office of Economic Adjustment
SDDC	Military Surface Deployment and Distribution Command
VDOT	Virginia Department of Transportation

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United States Government Accountability Office
Washington, DC 20548

September 9, 2009

The Honorable Patty Murray
Chairman
The Honorable Christopher S. Bond
Ranking Member
Subcommittee on Transportation, Housing and Urban Development, and
Related Agencies
Committee on Appropriations
United States Senate

The Honorable John W. Olver
Chairman
The Honorable Tom Latham
Ranking Member
Subcommittee on Transportation, Housing and Urban Development, and
Related Agencies
Committee on Appropriations
House of Representatives

As part of the 2005 Base Realignment and Closure (BRAC) process, the Department of Defense (DOD) plans to relocate over 123,000 DOD military and civilian personnel, thereby increasing the staffing at numerous bases nationwide. In addition, other DOD initiatives, such as those designed to realign U.S. military capabilities worldwide and increase the size of the nation's permanent military forces, are expected to add about another 59,000 DOD personnel at these bases. DOD and local officials further expect thousands of dependents and DOD contractor employees to relocate to communities near these bases. Thus, several U.S. bases could each see the addition of more than 10,000 military and civilian personnel. While studies indicate that communities surrounding these growth bases will realize economic benefits in the long term, the expected population growth will greatly increase traffic in the surrounding communities. The growth attributable to BRAC and other military initiatives will occur quickly because the initiatives are in progress and, by law, the BRAC realignments must be completed by September 2011. Some of the affected bases are in congested urban areas while others are in areas with smaller communities that have limited transportation infrastructure.

State and local governments are largely responsible for determining the funding priorities for transportation improvements needed to respond to BRAC 2005 and the other military growth initiatives. Some federal

assistance is, however, available through DOD's Office of Economic Adjustment (OEA), which provides guidance and planning grants to communities affected by military relocation decisions; DOD's Defense Access Roads (DAR) program, which may make some military construction funds available for road improvements outside a military base; and the Department of Transportation (DOT), which provides federal funds for states, transit agencies, and local units of government to use for highway and transit improvements that are approved through the metropolitan or statewide transportation process.

The House and Senate Committees on Appropriations, in the House report accompanying the fiscal year 2008 Departments of Transportation, and Housing and Urban Development, and Related Agencies Appropriations Act, directed that GAO assess and report on the impact of BRAC military growth decisions on transportation and the response of the federal, state, and local governments.¹ Because neither DOD nor community planners typically attempt to isolate the impact of BRAC-related growth from the impact of other military growth initiatives, data are not available for an assessment of the impact of BRAC decisions alone. Accordingly, we determined (1) the expected impact of military growth on transportation in communities affected by BRAC decisions, including the estimated costs, and (2) the federal, state, and local response to the expected impact.

To perform our work, we identified and gathered information from communities in the vicinity of the 18 military bases that OEA determined will be substantially and seriously affected by growth resulting from the BRAC 2005 realignments, visited 8 of these BRAC bases and nearby communities, and observed local transportation conditions. We selected these eight bases and nearby communities because they (1) varied in size, including very large metropolitan areas over 1 million, smaller metropolitan areas of 200,000 to 1 million, and smaller urban areas of less than 200,000; (2) had completed environmental studies; and (3) had identified transportation as a concern. In addition, we interviewed state and local transportation officials and DOD, Army, Navy, and Air Force officials about the impact of BRAC decisions on transportation and their responses. We also reviewed relevant state and local planning documents, such as state transportation improvement plans, local transportation plans, and detailed traffic studies. We analyzed information OEA collected from affected local governments showing their cost estimates and funding

¹H.R. 110-238, at 61 (2007).

available for growth-related projects. Finally, we reviewed federal environmental studies on the impact of BRAC decisions and the treatment of transportation issues in those documents and interviewed Army, Navy, and Air Force officials responsible for the oversight of these environmental studies.

We conducted this performance audit from April 2008 through September 2009 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 I provides a more detailed description of our scope and methodology.

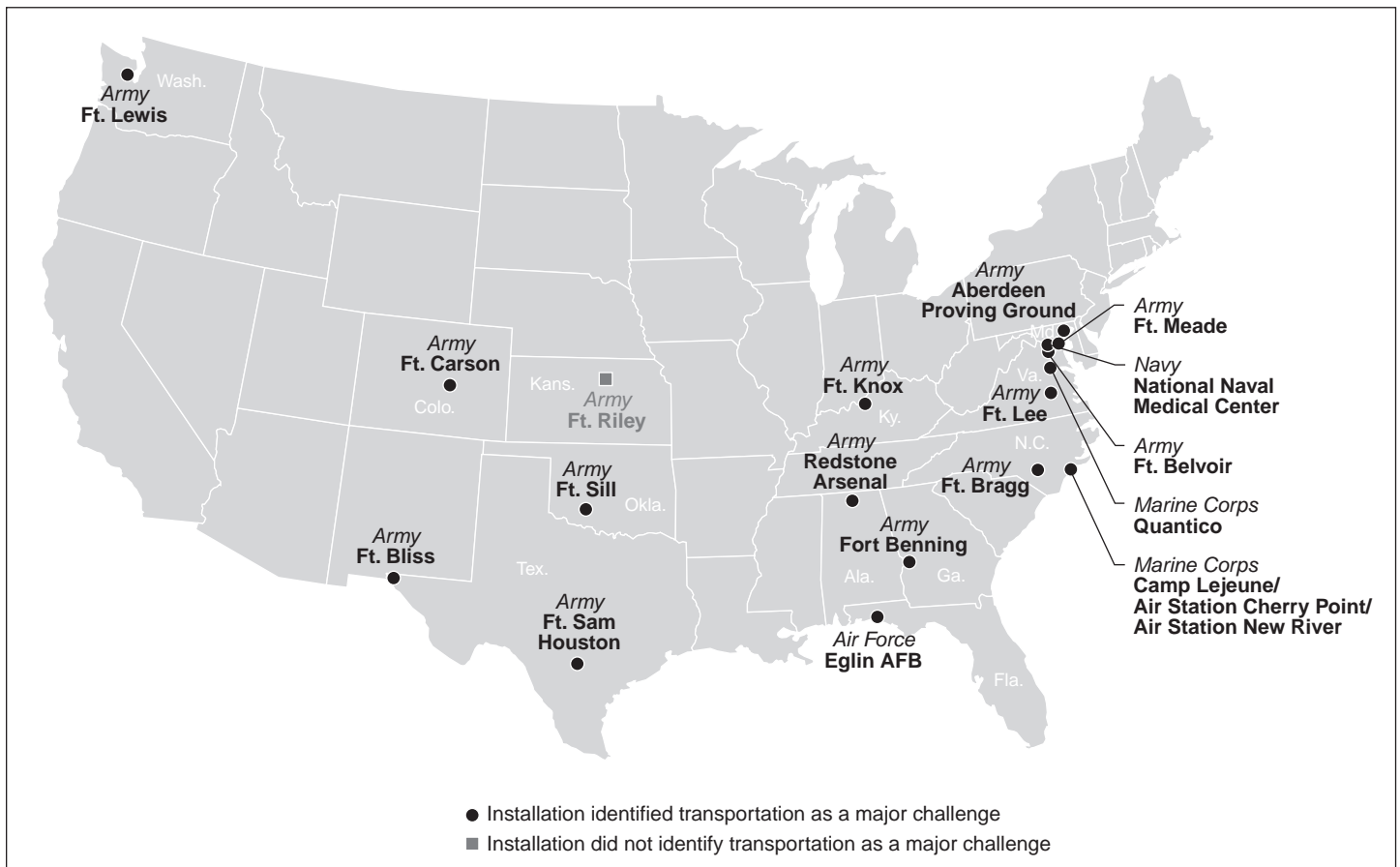
We provided copies of this report to the Departments of Defense and Transportation for their review and comment. Both provided technical comments, which we incorporated into the report, as appropriate.

Background

BRAC 2005 was the fifth round of decisions designed to streamline the nation's defense infrastructure. Unlike past BRAC rounds, which have generally focused on reducing excess physical infrastructure, this round also presents military growth challenges for DOD, states, and local governments. Its implementation will increase the numbers of on-base personnel, military families, and defense-related contractors at and near 18 military bases. Furthermore, because the BRAC realignments must, by law, be completed by September 15, 2011,² these community changes will be rapid, as personnel will arrive quickly once the bases are readied. Figure 1 shows the 18 bases where BRAC growth will affect neighboring communities. Other military growth communities exist, but their growth is not a result of BRAC.

²BRAC 2005 requires DOD to complete the implementation of the BRAC 2005 recommendations for closing or realigning bases within a 6-year time frame, which ends September 15, 2011. National Defense Authorization Act for Fiscal Year 1991, Pub. L. No. 101-510, title XXIX, § 2904(a)(5), 104 Stat. 1485, 1812 Nov. 5, 1990 (as amended).

Figure 1: Military Bases Affected by BRAC Growth



Sources: U.S. Army, U.S. Marine Corps, U.S. Navy, U.S. Air Force, Office of Economic Adjustment, and Map Resources (map).

Other Military Growth Initiatives

While BRAC 2005 is taking place, other major initiatives will increase growth at and near some BRAC-affected bases. These include two major military reorganizations. First, the Global Defense Posture Realignment initiative will move about 70,000 military and civilian personnel from overseas to U.S. bases by 2011 to better support current strategies and address emerging threats. Second, the Army's force modularity effort will restructure the Army from a division-based force to a more readily deployable modular, brigade-based force. Some of these brigade units will relocate to other existing bases. A third initiative, Grow the Force, is not a reorganization but will increase the permanent strength of the military to enhance overall U.S. forces. This initiative will add about 74,000 soldiers and about 27,000 marines. Finally, troop drawdowns from Iraq could

increase personnel numbers at some BRAC-affected bases. These other military initiatives will also be implemented over a longer time frame than BRAC decisions, which are scheduled to be completed in 2011.³

Though not a major force initiative, DOD's enhanced use lease (EUL) activities will also affect growth and development in military communities. EULs allow the military to lease its land to private developers to build offices and other facilities that generate operating income for the military. In some cases, the growth from EUL activities may exceed the BRAC-related growth. For example, the EUL at Fort Meade, which is planned to include up to 2 million square feet of office space, could house up to 10,000 new workers by 2013. This EUL activity will generate more new jobs in the Fort Meade area than the 6,600 additional military and civilian DOD personnel attributable to BRAC.

Because all these initiatives are taking place at the same time, the forces driving growth at military bases and the surrounding communities are more complex than they would be if they were the result of BRAC decisions alone. As table 1 indicates, six of the eight bases we visited expect to be affected by various defense initiatives in addition to BRAC.

Table 1: Sources of Growth at and near Selected Military Bases

Base	BRAC	Grow the Force	Global Defense Posture Realignment	Force modularity	Enhanced use lease
Aberdeen Proving Ground, Md.	Yes	Yes	No	No	Yes
Bethesda National Naval Medical Center, Md.	Yes	No	No	No	No
Eglin Air Force Base, Fla.	Yes	No	No	No	Yes
Fort Belvoir, Va.	Yes	No	No	No	No
Fort Bliss, Tex.	Yes	Yes	Yes	Yes	No
Fort Carson, Colo.	Yes	Yes	Yes	Yes	No
Fort Knox, Ky.	Yes	Yes	No	No	Yes
Fort Meade, Md.	Yes	No	No	No	Yes

Source: GAO analysis of data from selected bases.

³Because of these military growth initiatives, some bases that are not BRAC growth bases will nevertheless see personnel increases.

During fiscal years 2006 through 2012, the populations of the communities in the vicinity of the 18 BRAC bases identified in figure 1 are expected to increase by an estimated 181,800 military and civilian personnel, plus an estimated 173,200 dependents, for a total increase of about 355,000 persons, as shown in table 2. At two bases, Fort Bliss and Fort Belvoir, DOD has estimated that the on-base populations alone will more than double. In addition, defense-related contractors who follow and settle near the relocated commands will compound the growth and traffic near some bases, and the impact of these contractor relocations is not reflected in the military growth figures. For example, at Fort Meade, Maryland, DOD has estimated that an additional 10,000 contractor personnel may relocate near to or on the base.

Table 2: Estimated Growth from All DOD Sources at and near BRAC-Affected Military Bases Fiscal Years 2006 through 2012, as of March 2008

Base	Total change in military and civilian DOD population	Total change in population of military and civilian DOD dependents	Total population increase	Current total regional population ^a
Aberdeen Proving Ground, Md.	3,400	2,200	5,600	2,512,000
Bethesda National Naval Medical Center, Md.	2,500	Not available	2,500	4,331,000
Camp Lejeune, Cherry Point, and New River, N.C.	13,400	18,700	32,100	108,000
Eglin Air Force Base, Fla. ^b	3,600	5,900	9,500	190,000
Fort Belvoir, Va. ^c	24,100	12,700	36,800	4,331,000
Fort Benning, Ga.	12,700	6,100	18,800	247,000
Fort Bliss, Tex.	28,000	41,700	69,700	722,000
Fort Bragg, N.C.	18,900	17,100	36,000	301,000
Fort Carson, Colo.	10,400	14,400	24,800	514,000
Fort Knox, Ky.	(2,900)	4,500	1,600	117,000
Fort Lee, Va.	10,200	4,600	14,800	138,000
Fort Lewis, Wash. ^d	13,500	17,400	30,900	3,422,000
Fort Meade, Md.	7,000	4,200	11,200	2,512,000
Fort Sam Houston, Tex.	10,900	6,100	17,000	1,416,000
Fort Sill, Okla.	3,700	(400)	3,300	81,000
Fort Riley, Kans.	10,900	15,000	25,900	109,000
Marine Corps Base Quantico, Va.	3,600	1,000	4,600	202,000
Redstone Arsenal, Ala.	7,900	2,000	9,900	291,000
Total	181,800	173,200	355,000	

Sources: GAO, Army Stationing and Installation Plan, Air Force BRAC Program Office, Navy BRAC Program Office, and DOT's metropolitan planning organization (MPO) database.

Note: The table does not reflect the results of a June 2009 DOD announcement removing a combat brigade from both Fort Bliss and Fort Carson growth.

^aTotal regional population based on population of the MPO area, except for Fort Riley, Kansas. Fort Riley does not fall within an area governed by an MPO. The population statistic shown for Fort Riley is for three counties affected by BRAC growth. MPOs are regional organizations responsible for developing regional transportation plans.

^bData for Eglin Air Force Base is for the beginning of fiscal year 2013.

^cThe number of dependents moving to the Fort Belvoir area is difficult to estimate due to the location of some personnel to a site in Alexandria, Virginia, and the fact that some personnel moving to Fort Belvoir already live within commuting distance of the base.

^dFort Lewis's regional population includes figures for two MPOs.

OEA is DOD's primary source for assisting communities adversely affected by defense program changes, including base closures or realignments. OEA provides guidance and assistance to growth communities through growth management planning grants, guidance, and expertise to help communities with significantly adverse consequences as a result of BRAC decisions. OEA has identified those communities that are expected to be impacted by BRAC-related growth and that have expressed a need for planning assistance. As part of this assistance, OEA has provided support to communities to hire planners or consultants to perform studies identifying infrastructure needs created by military growth. Additionally, DOD's Defense Access Roads (DAR) Program may allow Military Construction funds to help address highway needs created by military activities. The focus of DAR is not typical traffic growth, which should be addressed through normal federal, state, and local transportation programs, but rather unusual changes and military necessity.

Federal Transportation Funding Available to Help Address Impact of Military Growth

National security is one of the explicit goals of the Federal-Aid Highway Program; however, DOT does not have special programs to deal with military growth. Nevertheless, many federal transportation grant programs provide state and local governments with funding that they can use to help address BRAC-related transportation challenges. The Federal-Aid Highway program consists of seven core formula grant programs and several smaller formula and discretionary grant programs.⁴ Broad flexibility

⁴The majority of highway infrastructure funding is distributed through seven core highway programs. These programs are the National Highway System, Surface Transportation Program, Interstate Maintenance, Highway Bridge Replacement and Rehabilitation Program, Highway Safety Improvement Program, Congestion Mitigation and Air Quality Improvement Program, and Equity Bonus Program. The Federal Highway Administration (FHWA) also administers a number of smaller discretionary grants programs to provide federal highway infrastructure assistance to the states.

provisions allow for states to transfer funds between core programs and also to eligible transit projects. Federal capital transit programs include formula grants to transit agencies and states.⁵ Additionally, transit capital investment grants provide discretionary funds for the construction and extension of fixed-guideway systems such as rail or bus rapid transit lines. Federal transportation programs also require states to set their own priorities for addressing transportation needs.

Traffic Impacts Can Be Identified through Level of Service Measures

Traffic growth impacts can be analyzed by the effect of the addition of automobiles on traffic flow. Generally, traffic flow on roadways is measured by “level of service,” a qualitative grading system. The Transportation Research Board defines service levels for roadways using “A through F” grades. Service level “A” defines roadways with no delays and unimpeded traffic flow at posted speed limits. Service level “F” is defined as a failing service level and describes roadways with traffic conditions that most drivers consider to be unacceptable. Drivers on these roadways experience long delays and poor to nonexistent traffic flow. Even small increases in traffic can have a large impact when roads are already congested.

Military Growth Will Have a Significant Impact on Transportation in Affected Communities, but the Full Extent and Cost of That Impact Are Uncertain

Affected communities expect BRAC and other military growth initiatives to have a significant impact on local transportation. In response to an OEA survey, nearly all BRAC growth communities identified transportation as a top growth challenge. Transportation studies done in communities of varying size show how BRAC-related growth is expected to result in a deterioration of traffic conditions. Affected communities identified about \$2 billion in expected costs for transportation projects that they consider needed to address military growth in the near term, before the September 2011 deadline. The costs of longer-term projects to address the impact of military growth on transportation in these communities beyond the BRAC deadline are uncertain.

⁵The formula and bus grants provide capital and operating assistance to transit agencies and states through a combination of seven relatively large and five smaller formula and discretionary programs. The largest of these programs is the Urbanized Area Formula Grants program.

Impact of Military Growth on Transportation Is Significant, but Will Vary across Communities

Many communities affected by BRAC growth recognize that changes resulting from that growth will place additional demands on their transportation systems. In 2007, OEA asked growth communities, including 18 current BRAC growth communities,⁶ to determine which of the problems they would face as a result of military growth would create the greatest challenges.⁷ Of 18 current BRAC-growth communities,⁸ 17 identified transportation as one of their top three priorities. These 17 communities ranged in size from very large metropolitan areas to relatively small communities, and the extent of the impact depended in part on the size of the affected community.

Very Large Metropolitan Areas

Some BRAC growth bases are located in metropolitan areas with populations of well over 1 million. In these areas, the military growth may be small relative to the community's total population, but the community nevertheless anticipates localized effects on already congested urban roadways. At the *National Naval Medical Center*, for example—a BRAC growth base located in Bethesda, Maryland, a densely populated Washington suburb—a planned consolidation with Walter Reed Army Medical Center, located in Washington, D.C., will create additional traffic not only from 2,500 additional hospital employees, but also from patients and visitors, resulting in an about 1,900 estimated additional trips to the hospital campus per day. While small compared to the regional population, these additional employees, patients, and visitors will travel to the base using either the Washington Metrorail system or by bus or auto on an already congested roadway system. The medical center is located near two major arterial roads, two state highways, and an Interstate highway (I-495, the Capitol Beltway). It is also located across from the National Institutes of Health, where over 18,000 personnel are employed. According to Maryland transportation planners, the additional traffic resulting from the BRAC action will lead to further deterioration of traffic conditions in the area. Specifically, without intersection improvements, the number of intersections with failing conditions is projected to increase from three to

⁶OEA does not differentiate in how they support the communities impacted by BRAC and those affected by other DOD activities. OEA is currently providing assistance to 25 local areas, plus the Territory of Guam, affected by DOD mission growth.

⁷The categories of projects included communications, education, energy and utilities, planning and zoning, social, transportation, water and sewer, and workforce.

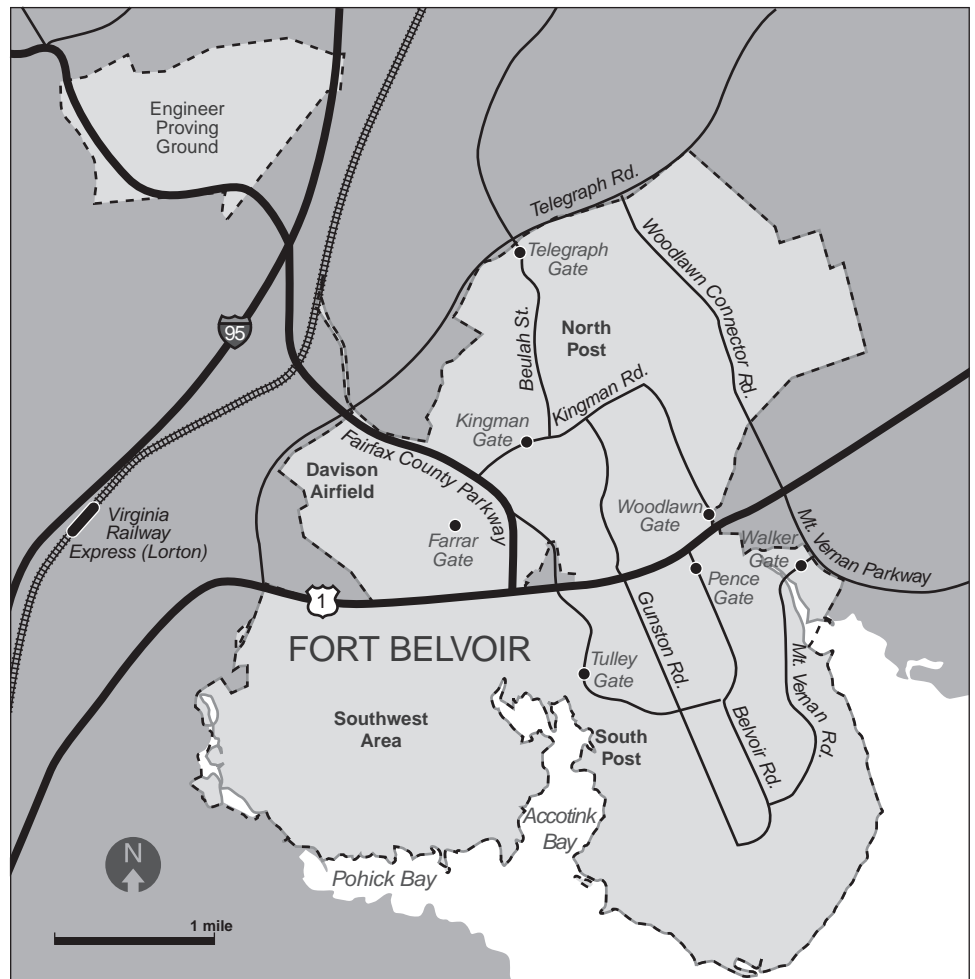
⁸We defined the communities in the vicinity of each affected base as a single community. Thus, a “community” may be a county, city, or several smaller localities near an affected base.

five. In addition, traffic conditions may deteriorate at 10 other intersections, but not to the point of failure. Traffic analyses done for DOD as part of an environmental impact statement (EIS)⁹ reviewed 27 major intersections in the vicinity and estimated that with no improvements, the increases in traffic would result in failing or deteriorating service levels at 15 of those intersections during peak periods, compared with current conditions. Such declining service levels mean significant delays will occur, likely increasing base employees' and others' commute times.

Fort Belvoir is located in Fairfax County, Virginia, where employment and development have grown rapidly and transportation improvements have not kept pace with growth. The planned net addition of 24,100 personnel at the base will increase congestion on the already congested Interstate highway (I-95). Local planners anticipate additional BRAC-related congestion on a number of other nearby Interstate, federal, and local highways (I-395, I-495, U.S. Route 1, and the Fairfax County Parkway). The physical layout of Fort Belvoir also complicates commuter access, in that the base is situated on two major land parcels—the main post and the Engineer Proving Ground—separated by a busy highway (see fig. 2). In addition, gate and road closures after the September 11, 2001, terrorist attacks have already concentrated traffic near the base. The BRAC Fort Belvoir EIS estimated that, with the planned increase in personnel, the number of failing intersections near the base would increase from 2 to 6 during the morning peak period, and the level of service would deteriorate by at least one level at 13 intersections.

⁹The EIS is detailed assessment of environmental impacts. It describes the project, characterizes the surrounding environment, analyzes the environmental impact of a range of project alternatives, and indicates plans for complying with environmental laws and mitigating any environmental damage caused by the project.

Figure 2: Current Fort Belvoir and Vicinity



Source: DOD.

Traffic and development density problems at Fort Belvoir identified during the environmental review process were so severe that DOD decided to acquire and develop an additional site, at an estimated cost of \$1.2 billion, to accommodate about 6,400 employees of DOD's Washington Headquarters Services and additional organizations. DOD officials told us, for example, that they would have had to construct a parking structure separate from the potential office site on the other side of U.S. Route 1, as well as an additional pedestrian bridge structure across the highway, estimated to cost \$90 million. Army officials also determined that the existing Engineer Proving Ground location at Fort Belvoir was not large

enough to accommodate office space and parking for so many additional personnel. However, even with the acquisition of the new site, congestion will grow on roadways near the current base, and local officials estimate that initial transportation improvements to address the impact of growth, including an additional access ramp to Interstate 95, could cost as much as \$458 million. Over the longer term, state and local officials expect the costs of transportation improvements to address congestion to be much higher.

Fort Meade, Maryland, located in the corridor between Washington, D.C., and Baltimore, is also located in a region of significant growth. Traffic delays are already prevalent at many intersections near the base, where drivers have few roadway alternatives, and county officials expect the growth at Fort Meade to exacerbate these conditions. Given the planning cycle for major highway construction and the state's large backlog of transportation projects, the state will likely be precluded from addressing these needs before BRAC 2005 actions are completed. The EIS concluded that significant adverse effects on area roadways would be expected during and after 2011. For example, it concluded that the growth at Fort Meade would cause failing traffic conditions on 12 sections of road near the base, potentially resulting in significant delays.

The effects of BRAC decisions, however, cannot be isolated from the effects of other transportation challenges that the region around Fort Meade will face, especially the challenges resulting from the construction of an EUL facility at the base. This facility is designed to include about 2 million square feet of office space and could house up to 10,000 new workers by 2013. EUL activities could generate more new jobs in the Fort Meade area than the military growth initiatives that are scheduled to bring about 7,000 additional military and civilian DOD personnel to the area. Although Maryland transportation planners have not separately estimated the effects of BRAC and the EUL on transportation, they said that the EUL is planned to be constructed at about the same time as the BRAC decision is to be implemented and they expected the EUL to contribute significantly to the new traffic.

Finally, *Aberdeen Proving Grounds, Maryland*, consists of about 72,000 acres—including 33,000 acres of water—primarily within Harford County, Maryland, north of Baltimore. The base is located on the northwestern shore of Chesapeake Bay, and most of the base is located on two peninsulas—one to the north and one to the south. The number of military and civilian personnel working at the base is scheduled to increase by about 3,400 through 2012. According to Army officials, the Army also has

entered into an EUL agreement with a developer to build up to 3 million square feet of office space within the base for up to 3,000 additional workers. Transportation planners expect this growth to aggravate traffic conditions on area roadways, which include a major Interstate highway, federal and state highways, and county roads. For example, the EIS completed for this base examined 17 off-post intersections and found that without improvements to roadways and greater use of bus and rail systems by base personnel, levels of service would deteriorate at seven intersections near the base and would fail at three intersections. At the time of the EIS, none of these intersections had failing service levels.

Smaller Metropolitan Areas

Military growth may also affect transportation in metropolitan areas with populations of less than 1 million. While the additional traffic may cause congestion, these communities generally do not face the same physical constraints as the largest metropolitan areas. Military growth bases may be located in or adjacent to these areas, but also extend far outside the built-up urban sections. Colorado Springs, Colorado, bordering Fort Carson, and El Paso, Texas, bordering Fort Bliss, were growing rapidly before the BRAC 2005 decisions.

Fort Carson is located to the south of Colorado Springs, and Interstate 25, two state highways, and a major county road are the major routes to the base. In Colorado Springs, a study by the Pikes Peak Area Council of Governments found that traffic around Fort Carson will increase by at least 20 percent over 2005 levels by 2015, largely because of an influx of about 24,800 troops and dependents. Fort Carson officials estimate that over 24,000 vehicles will pass through one major base gate every day by 2012, an increase of about 150 percent or 14,600 additional vehicles per day. Vehicles must approach the gate from a highway interchange where traffic is already congested. Local officials are concerned that the increased traffic near the gate and at the interchange will lead to more accidents.

In El Paso, Texas, where Fort Bliss is located, officials identified a need for new roads to address mobility problems in the rapidly growing region, including increased congestion on I-10, the only Interstate highway serving the city. BRAC and other military growth initiatives will bring almost 70,000 additional military personnel and dependents to the base, significantly increasing El Paso's population. Local officials expect that many of the new personnel at Fort Bliss who will live off-base will choose to live in east and northeast El Paso. To accommodate the expected increases in traffic on roadways connecting east and northeast El Paso and Fort Bliss, the state of Texas worked with a private developer to

construct a 7.4 mile roadway—Spur 601—connecting east and northeast El Paso to the base. State and local officials expect the new roadway to provide base personnel with easy access to base gates and reduce congestion for all commuters in the vicinity.

Smaller Urban Areas

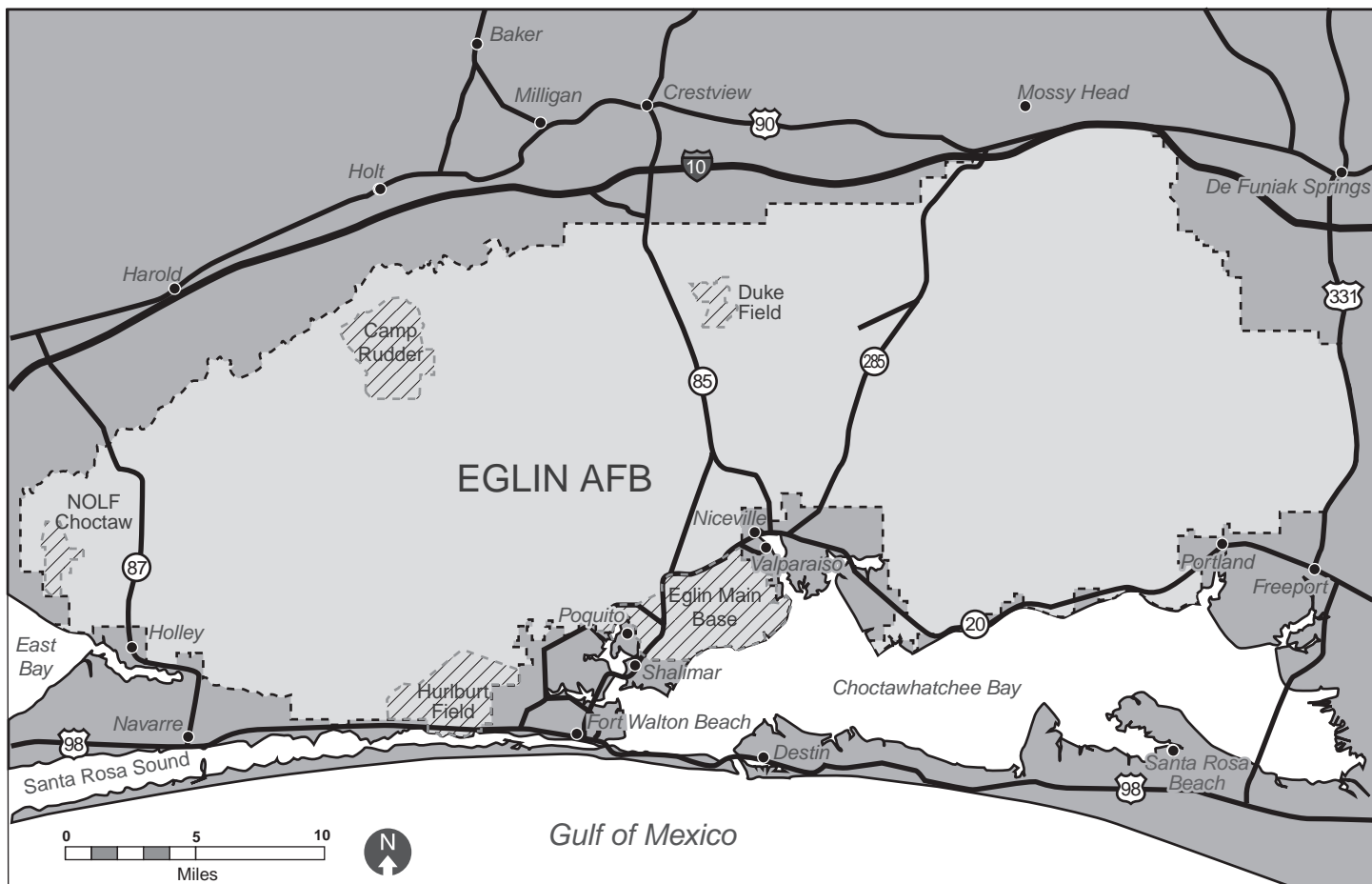
Military growth may also affect transportation in less heavily populated communities. Here, road networks are less extensive than road networks in metropolitan areas, forcing the additional traffic onto roadways such as two lane rural roads not always designed for higher traffic levels. In addition, smaller urban areas affected by BRAC growth are also less likely to have transit options—rail transit is generally not available and bus transit can be limited.

For example, in Radcliff, Kentucky, the community adjacent to Fort Knox, one highway serves the community's business district and also provides access to all three gates at the base. As many as 48,000 vehicles travel over portions of this road between Elizabethtown, Kentucky, and Fort Knox each day, causing traffic congestion. In addition, some military and civilian personnel at Fort Knox commute to the base using two-lane rural roads. Even though Fort Knox expects to see a net reduction of about 2,900 personnel, changing demographics at the base will greatly increase congestion on the main highway. For example, as part of BRAC 2005, Fort Knox will lose military trainees who live and largely remain on-base, but gain civilian employees who will live off-base, along with their dependents. A 2007 study of traffic conditions near Fort Knox performed for a local metropolitan planning organization concluded that without significant improvements, the existing roadway system would be incapable of providing the capacity required to accommodate traffic increases caused by the change in personnel at the base. The study also concluded that the BRAC personnel changes would cause travel conditions on the roadway to deteriorate greatly. Furthermore, while Radcliff, Kentucky, has a transit provider—a social agency offering dial-a-ride and vanpool services including vanpools to the base—this provider does not offer regularly scheduled bus service. According to transit agency officials, the provider hopes to move toward regular service that could transport commuters to the base. Conditions at Radcliff, Kentucky, illustrate how growth can have a more severe impact on traffic than the change in the net number of base personnel would indicate.

Similarly, at *Eglin Air Force Base*, a limited roadway network serving the 724 square-mile facility channels traffic along relatively few major roads and causes congestion. The base spans three counties in northwest Florida, and some communities along the coast are constricted by the base

(see fig. 3). According to local officials, improving transportation is the main growth-related challenge facing communities near Eglin Air Force Base. Local and regional transportation studies have focused primarily on the impact of growth on the major roadways that accommodate most of the traffic in the area and serve as hurricane evacuation routes for area residents. Three main roads traverse the base from north to south. One major road, bracketed by the base and the Gulf of Mexico, runs east to west along the base's southern boundary. With the planned increase of 3,600 personnel and without transportation improvements, traffic conditions will decline during peak traffic hours, with failing levels of service projected at 17 locations, compared with 9 now.

Figure 3: Eglin Air Force Base and Vicinity



Source: DOD.

Near-Term Projects to Address Growth Are Estimated to Cost \$2.0 Billion; Longer-Term Project Costs and Impacts Are Uncertain

Using community estimates, OEA projected that the cost of addressing the most immediate effects of military growth on transportation in the affected communities would be about \$2.0 billion. This estimate includes transportation projects that had to meet four criteria: the project had to (1) be clearly and substantially linked to military growth, (2) have detailed cost estimates and funding sources that were specific and could be validated, (3) have a demonstrated gap in funding, and (4) be essential to prepare for military growth by September 2011. Many projects were largely designed to improve intersections and to widen and extend roadways near growth bases. Over half of these costs are for transportation improvements concentrated near three bases in the metropolitan Washington, D.C., area—Bethesda National Naval Medical Center, Fort Belvoir, and Fort Meade. Communities near these three bases have identified 11 critical transportation projects estimated to cost over \$1.1 billion.

The impact of military growth on transportation could be greater than the affected communities have estimated thus far, and the costs of projects to address those impacts are still uncertain for several reasons. First, some potential projects are not included in the \$2.0 billion estimate, and, if built, will result in additional costs beyond the \$2.0 billion estimate. Texas Department of Transportation officials told us they had identified additional projects designed, at least in part, to address military growth, which they estimate will cost about \$327 million. However, according to El Paso officials, the community is able to fund the projects and, although the number of military personnel arriving in El Paso is very substantial, it is not a large percentage of the existing community's population. In some cases uncertainty remains regarding the transportation impacts. For example, officials at growth-affected communities near Camp Lejeune, North Carolina, were still identifying what levels of growth would occur and the impact of military growth on transportation. Additionally, some communities were unsure where arriving personnel and contractors would choose to live. For example, officials from Fort Belvoir were unsure how many personnel would relocate near the base, and officials at Fort Knox did not know if some new personnel would choose to commute from the Louisville area. Finally, many communities anticipate future growth anyway, and it is not always clear whether its impact on transportation is clearly and substantially linked to military growth. Studies and other evidence clearly linking projects to military growth are not always available. For example, OEA officials told us they have no evidence available to link three costly potential longer-term projects to military growth. These three projects, which are not included in the \$2.0 billion estimate and which OEA officials said are among the four costliest

unfunded longer-term projects that affected communities identified, are estimated to cost a total of about \$1.6 billion and include expanding public transit in the Washington, D.C., area. OEA officials expect to complete an updated assessment of military growth projects, costs, and funding needs in late 2009.

DOD Funding for Transportation Projects Is Limited, and Projects Must Compete for DOT Funds, but State and Local Governments Have Adopted Strategies to Expedite Projects

The federal response to the expected impact of military growth on transportation includes helping with planning, estimating project costs, and providing some funding for projects. Both DOD and DOT have programs that can help states and localities; however, projects to address the impact of military growth must compete with other projects for funding. State and local officials are prioritizing highway projects that can be completed with existing funding and identifying alternative transportation approaches, such as transit and biking, to help address the growth expected in their communities.

OEA Provides Planning Assistance to Communities, but DOD Funding for Transportation Projects Is Limited and BRAC-Related Projects Must Compete with Other State Transportation Priorities under DOT Programs

OEA is DOD's primary source of assistance for communities adversely affected by Defense program changes. OEA provides technical and financial assistance to help communities address adverse consequences of BRAC decisions. However, as we have previously reported, OEA is not at an appropriate organizational level within DOD to coordinate the assistance from multiple federal and other government agencies that affected communities need. Accordingly, we recommended that DOD provide high-level agency leadership to ensure interagency and intergovernmental coordination.¹⁰ DOD agreed with this recommendation.

OEA has funded local coordinator positions to assist in coordinating local activities responding to BRAC, including transportation-related activities. For example, Harford County, Maryland, established a BRAC Planning

¹⁰GAO, *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).

Commission for Aberdeen Proving Ground. This Commission, with OEA funding, helped establish the Chesapeake Science and Security Corridor Consortium, which includes eight jurisdictions in three states—Delaware, Maryland, and Pennsylvania. With Harford County as the lead agency, the Chesapeake Science and Security Corridor Regional BRAC Office administer grants and coordinates regional BRAC responses.

OEA also has funded studies, such as traffic studies, which help states and local communities define the impact of military growth on transportation. For example, OEA has provided transportation planning grants to Maryland and Virginia. According to local officials, OEA also has funded transportation studies for communities near several of the bases we visited, including those near Eglin Air Force Base and Fort Knox. These studies can provide communities with more detailed, precise information about the transportation impact of military growth than the initial environmental studies performed by DOD.

Defense Access Roads Program Has Provided Limited Funding for Community Transportation Needs

Under the DAR program, administered by the Military Surface Deployment and Distribution Command (SDDC), DOD may pay for public highway improvements needed to address the impact on traffic of sudden or unusual defense-related actions. DAR enables DOD to help pay indirectly for improvements to highways DOD designates as important to the national defense. Under DAR, DOD can use funds provided in military construction appropriations to pay for all or part of the cost of constructing and maintaining roads designated as “defense access roads.” However, proposals for funding these roads must compete with proposals for funding all other military construction projects, and projects must meet specific criteria.

Local government and military base officials we interviewed said they considered DAR funding difficult to obtain because of the program’s narrow eligibility criteria.¹¹ For example, if a road is already heavily used or congested, traffic may not double as a result of military growth even though traffic may increase significantly. In addition, the DAR criteria do

¹¹Projects are eligible for funding if they meet one of the following criteria: (1) the installation needs a new access road to accommodate a defense action, (2) a defense action causes traffic to double, (3) the installation needs a new or improved access road to accommodate a temporary surge in traffic to or from the installation due to a defense action, (4) the installation needs a new or improved access road to accommodate special military vehicles such as heavy equipment transport vehicles, or (5) the installation needs a road to replace one closed because of military necessity.

not specifically refer to transit-related improvements. The DAR program has not funded large numbers of defense access road projects. From 2000 to 2009, the program received applications to certify of 27 projects. Of those, 17 have been certified and funded, 6 have been certified and are pursuing funding, 3 are currently being evaluated for certification, and 1 did not meet the funding criteria. Since 2005, the program has provided about \$22 million annually for transportation improvements, including projects that are not BRAC-related.

In 2008, we reported that for 11 bases whose populations were scheduled to increase by at least 25 percent, DOD had certified and requested funding for one DAR project—\$36.0 million for access ramps and a parkway at Fort Belvoir, Virginia.¹² Since that time, DOD has approved and provided funds for additional projects at two BRAC growth bases: \$8.3 million for access roads at Fort Carson, Colorado, and \$21.8 million for a road-widening project at Fort Bragg, North Carolina.

In October 2008, DOD reported to the Senate Committee on Armed Services addressing DAR criteria. The report concluded that the current DAR criteria provide flexibility for addressing communities' concerns about the impact of traffic. However, the report also recognized the difficulty in linking safety issues to the criteria and acknowledged that the impact of DOD growth on safety is a particular concern. Consequently, DOD was considering expanding or modifying the criteria to make projects eligible for DAR certification when population growth at a base increases traffic congestion to the point that it presents a public safety risk. DOD directed SDDC to provide by December 2009 an independent study on the merits of specific criteria to address safety issues related to growth. The study will be coordinated with DOT.

BRAC-Related Transportation Projects Must Compete for DOT Funds with Other State and Regional Transportation Priorities

DOT does not have special programs to address BRAC growth. However, a number of existing federal transportation grant programs provide funding that state and local governments can use to help address BRAC-related transportation challenges. Federal laws and requirements specify an overall approach for transportation planning agencies to use in planning

¹²GAO, *Defense Infrastructure: DOD Funding for Infrastructure and Road Improvements Surrounding Growth Installations*, [GAO-08-602R](#) (Washington, D.C.: Apr. 1, 2008). The 11 installations with 25 percent growth were Fort Benning, Georgia; Fort Belvoir, Virginia; Fort Bliss, Texas; Fort Bragg; North Carolina; Fort Carson, Colorado; Fort Lee, Virginia; Fort Lewis, Washington; Fort Riley, Kansas; Fort Sam Houston, Texas; Marine Corps Base Quantico, Virginia; and National Navy Medical Center, Maryland.

and selecting projects for federal funding. Under this process, localities—acting through metropolitan planning organizations¹³—and states develop long-range plans and short-range programs to identify transportation needs and projects. BRAC-related projects must be incorporated into metropolitan area long-range transportation plans and transportation improvement programs—for improvements located in metropolitan area—as well as state transportation improvement programs, before federal funding may be used. Decisions about which projects are to be funded take place at the state and local level. As a result, BRAC-related projects must compete with other state, regional, and local transportation priorities.

Communities Lack Funding and Time to Complete Major Transportation Projects before BRAC Growth Occurs

Because of the short BRAC growth time frames, communities near the affected bases have estimated that they have less funding than they need for critical, short-term, growth-related transportation projects. According to our analysis of the data 17 growth communities provided to OEA, these communities had identified, as of August 2008, sources for about \$0.5 billion of the \$2.0 billion they indicated they would need for 46 short-term transportation projects.¹⁴ Transportation projects constituted about 93 percent of the short-term infrastructure funding needs identified by communities.

Since February 2009, the American Recovery and Reinvestment Act of 2009 (the Recovery Act) has provided additional funding for transportation projects.¹⁵ Recovery Act funds may be used for BRAC-related projects, but the projects already need to be advanced in the normal development cycle, because these funds must be obligated very quickly or states risk losing them. The act requires that DOT obligate for each state, by June 30, 2009, 50 percent of the highway funds made available to each state, and 100 percent of these funds by March 1, 2010. If these requirements are not met

¹³Metropolitan planning organizations are regional transportation policy bodies made up of representatives from various governmental and other organizations. The Federal Highway Act of 1970 required the development of such agencies in areas with populations of 50,000 or greater to carry out cooperative planning at the metropolitan level.

¹⁴One of the 18 communities had not yet submitted the data. OEA is in the process of updating this information. According to OEA officials and preliminary data, overall transportation project costs and available funding both appear to have declined for short-term transportation projects, but available funding has declined more sharply. As a result, the funding gap may have risen.

¹⁵Pub. L. No. 111-5, 123 Stat.115 (Feb. 17, 2009).

for a state, the unobligated funds are to be redistributed to other states.¹⁶ Thus, even though BRAC transportation projects ideally should be completed more quickly than typical highway projects, the time frames for using Recovery Act funds may be too short for some BRAC projects. However, states are using Recovery Act funds for BRAC-related transportation projects at two of the eight bases we visited—Eglin Air Force Base and Fort Belvoir. Florida is using \$46 million in Recovery Act funds for an intersection grade separation project near Eglin Air Force Base and Virginia is using about \$60 million in Recovery Act funds for its Fairfax County Parkway project. Texas and Maryland officials did not report applying Recovery Act funds for any of the 46 transportation projects OEA officials identified as related to military growth. However, they reasoned that applying Recovery Act funds for highway projects or to transit agencies generally could help improve mobility in the region. DOT is continuing to obligate Recovery Act funds, and the total amount of these funds that ultimately will be used to respond to BRAC transportation needs is not known at this time.

According to community and state transportation planners, communities that will be affected by BRAC growth will often not be able to complete major transportation projects designed to address that growth before it occurs. The BRAC growth time frame is shorter than the average time frame for developing significant new infrastructure projects. As noted, legislation mandates that BRAC actions be completed by September 2011, 6 years from the date the President submitted his approval of the recommendations to Congress. According to the Maryland Department of Transportation, major roadway improvement and construction projects typically take 10 to 15 years to plan, fund, design, and construct. As shown in table 3, Federal Highway Administration data suggest similar time frames for completing major highway construction projects.

¹⁶GAO, *Recovery Act: States' and Localities' Current and Planned Uses of Funds While Facing Fiscal Stresses*, [GAO-09-829](#) (Washington, D.C.: June 17, 2008).

Table 3: Typical Time Necessary to Complete a Federally Financed Major New Construction Highway Project

Phase	Time to complete, in years
Planning	4-5
Preliminary design and environmental review	1-5
Final design and right-of-way acquisition	2-3
Construction	2-6
Total	9-19

Source: FHWA.

Note: The durations of the phases are approximate. The preliminary design/environmental review steps and the final design/right-of-way acquisition steps often overlap.

Some state and local governments have encountered difficulties in responding to transportation needs before the BRAC moves take place.

- Kentucky state and local governments will not complete a key “connector” road designed to alleviate traffic near Fort Knox until 2013—2 years after the deadline for completing the BRAC realignment.
- Texas state and local government officials do not expect to finish widening a major road to better accommodate increased traffic on the perimeter of Fort Bliss or constructing a new freeway allowing traffic to more directly access the base until at least 4 years after growth at the base occurs.

In commenting on a draft of this report, the Federal Transit Administration (FTA) observed that transit operational improvements such as increasing the frequency of service can be implemented in less time than is required for construction of new transportation facilities. In addition, Urbanized Area Formula grants administered by the FTA can be used for near-term service extensions as a stopgap measure to meet a surge in demand, but not as an alternative to a long-term capital project.

State and Local Governments Are Employing Several Strategies to Complete Some Critical Projects before BRAC Growth Occurs

Given the estimated shortfall in affected communities' funding for critical near-term projects and the difficulties posed by the Recovery Act's short obligation time frames, local officials are adopting various strategies to complete some projects before the BRAC 2005 implementation deadline. In particular, officials are reprioritizing planned projects, assigning higher priorities to projects that will help mitigate the impact of BRAC growth on transportation, and immediately implementing projects that they can complete before or during BRAC growth.

Three Maryland Bases: Aberdeen Proving Grounds, Fort Meade, and Bethesda National Naval Medical Center

Three Maryland bases—Aberdeen Proving Grounds, Fort Meade, and the Bethesda National Naval Medical Center—are expected to grow by over 12,000 personnel as a result of BRAC. These three bases are located within large metropolitan areas. Officials expect the growth to have a severe impact on intersections and roadways near all three bases.

State government in Maryland has taken the lead role in responding to BRAC growth within the state. For example, the governor created a BRAC subcabinet, which coordinates the responses of several state agencies, including the Maryland Department of Transportation (MDOT). In addition, MDOT has responded to time and funding constraints for addressing the impact of growth at the three bases by implementing a strategy to identify lower-cost improvements for immediate implementation while continuing to plan higher-dollar, higher-capacity projects that take longer to plan, engineer, and construct.

MDOT officials consider improvements to key intersections near the three bases as critical short-term BRAC projects but are concerned that the improvements may not be completed before growth occurs. State and local transportation officials determined the potential impact of military growth on traffic at the three bases within the next 5 to 7 years and identified 58 intersections where they expect traffic conditions to fail during that time because of this growth. In addition, the officials identified intersection improvements, such as additional turn lanes and other minor projects, to maintain acceptable traffic conditions near the bases in the short term. MDOT prioritized these improvements based on level of service, cost of improvements, environmental and socio-economic impact, and proximity to the bases, giving highest priority to improvements at 16 intersections. State and local government officials said they plan to fund and complete these improvements but are uncertain whether they will have sufficient funds to do so. For example, the state has programmed

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- \$31.6 million for improvements to six intersections near Fort Meade, but another \$65 million to \$100 million may be needed to complete the projects;
 - \$31.9 million for improvements to six intersections near Aberdeen Proving Ground, but \$90 million to \$155 million more may be needed to complete the projects; and
 - \$31.3 million for improvements to four intersections near Bethesda National Naval Medical Center, but \$160 million to \$215 million more may be needed to complete the projects.

These shortfalls reflect a broader difficulty in funding Maryland's transportation capital program. The state has deferred over \$2.2 billion in transportation projects as transportation revenues have declined. Partially offsetting this shortfall is \$610 million in Recovery Act funds for highways and transit. However, according to an MDOT official, Recovery Act funds are not a good fit for the BRAC-related intersection improvements because the projects are not ready for funds to be obligated, and the Recovery Act has tight obligation deadlines for highway and transit funds.

MDOT also initiated evaluations of how direct commuter and local bus and shuttle services could be expanded to help accommodate growth at the three bases. Furthermore, according to an MDOT official, MDOT is exploring the possibility of obtaining a discretionary grant under the Recovery Act for a maintenance and storage facility to help support and grow local bus service to the Fort Meade area. MDOT officials are also exploring other short-term projects to address the growth, including bicycle and pedestrian path improvements, better access to transit systems, and efforts to promote car- and vanpools, teleworking, and transit systems.

MDOT's long-term projects to address growth at the bases include rail improvements. Maryland officials had identified these projects before the 2005 BRAC decisions to address regional growth, but the projects are also needed to improve access to the bases, since growth will create additional demand for rail and transit services. State officials plan to invest \$201.3 million from 2008 through 2013 to increase capacity and improve service on the Maryland Area Regional Commuter (MARC) system statewide.

Finally, a key project for addressing the transportation impact of growth at Bethesda National Naval Medical Center is improved access to the Medical Center Metrorail station. Roads in this community are already at or near

capacity, and with no room for significant roadway expansion; local and state officials expect a significant portion of the commuters to use the Metrorail system. The Washington Metropolitan Area Transit Authority has studied five alternatives, including improving the existing street crossing, two pedestrian tunnel designs, a pedestrian bridge design and a new elevator entrance. Cost estimates for these options varied from \$700,000 for the improving the existing crossing to \$59.4 million for the elevator entrance option. A preferred alternative has not been selected. Maryland state officials told us that they are working with transit authority officials to plan the project. In May 2008, Bethesda National Naval Medical Center officials requested that DOD provide \$21 million for the project through the DAR program.

Fort Belvoir, Virginia

As discussed, Fort Belvoir will gain about 24,100 military and civilian personnel. Fairfax County, where Fort Belvoir is located, is within the Washington, D.C., metropolitan area—one of the most congested transportation regions in the nation. Because of traffic and other development issues at Fort Belvoir, the Army acquired additional property for the base in Alexandria, Virginia, and 6,400 of the new personnel will relocate there.

State and local officials also identified and addressed their highest-priority transportation projects immediately while recognizing that longer-term projects may not be completed before BRAC growth occurs at Fort Belvoir. In total, the officials estimated \$390 million in costs for five short-term projects that they consider critical for responding to BRAC growth at Fort Belvoir. In addition, they identified about \$1.6 billion in costs for short-term and longer-term projects not included in the \$2 billion estimate of nationwide project costs. Virginia has thus far allocated about \$96 million in Recovery Act funds to BRAC-related projects. Of this sum, the Virginia Department of Transportation (VDOT) has allocated about \$60 million to extend the Fairfax County Parkway near Fort Belvoir. This Recovery Act funding, together with funding from other sources, has enabled VDOT to allocate the estimated \$175 million needed to complete this road. However, VDOT has not been able to obtain any of the estimated \$165 million needed to complete the two other short-term projects near the base—constructing a traffic interchange and widening Interstate 95. In Virginia, as in Maryland, transportation revenues have fallen. Specifically, the projected funding for projects listed in Virginia's 6-year transportation

improvement plan has declined by almost 40 percent since 2007.¹⁷ According to VDOT officials, this decrease in projected funding is mainly due to a 2007 Virginia Supreme Court decision disallowing the Northern Virginia Transportation Authority's imposition of taxes and user fees to obtain revenue for transportation projects.¹⁸

In addition to highways, several transit systems serve Fairfax County, including the Washington Metropolitan Area Transit Authority bus and Metrorail, Fairfax County bus services, and Virginia Rail Express. However, transit access to the base itself is limited, and there is no rail connection. Likewise, the new base location in Alexandria does not have a direct rail connection. Some local officials see an extension of Metrorail to the Fort Belvoir area as a way to address the transportation impact of growth near the base.

Fort Carson, Colorado

About 10,400 Army personnel, plus an additional 14,400 dependents, were expected to relocate to Fort Carson. However, a June 2009 DOD decision not to locate a combat brigade there will lower this estimate.¹⁹ Fort Carson is located in El Paso County, Colorado, adjacent to the city of Colorado Springs. Colorado state and local officials expect the growth to have a significant impact on traffic conditions throughout El Paso County and in adjacent counties.

After learning about planned BRAC-related military, civilian, and contractor personnel increases at Fort Carson, local transportation officials reprioritized their planned transportation projects during 2006 and 2007. This reprioritization allowed them to include projects designed to address the impact of military growth among their planned short-term projects. Although state and local officials have completed two key projects, they lack sufficient funding to complete other growth-related projects before the growth occurs.

¹⁷The Commonwealth of Virginia Transportation Board (CTB) maintains a 6-year transportation improvement plan, which allocates funds for transportation projects proposed for construction, development, or study.

¹⁸The Virginia Supreme Court held that the Virginia General Assembly did not have the authority to delegate its power of taxation to a nonelected body such as the Northern Virginia Transportation Authority. *Marshall v. Northern Va. Transp. Auth.*, 657 S.E. 2d 71 (2008).

¹⁹Currently, a combat brigade typically contains about 3,800 soldiers.

State and local officials used a combination of state and local funds to complete needed improvements to Interstate and state highways and to a major roadway near the base. However, local transportation officials estimate that additional projects designed to address the impact of military growth could cost as much as \$1 billion. The officials told us that although they have made BRAC growth-related projects a priority, additional projects will not be completed before September 2011 because of funding constraints. Local transportation agencies obtain their funding mainly from sales and fuel tax receipts, and local officials noted that these tax receipts are declining. The officials also told us that the fiscal year 2010 state transportation budget could be reduced by over \$400 million from the fiscal year 2009 funding level, further reducing the funding available for projects designed to address the growth at Fort Carson. The officials told us that, should the fiscal year 2010 funding be reduced, the state's transportation funding would be at its lowest level in 10 years.

Officials for Mountain Metro Transit, the transit services provider for Colorado Springs, told us that their agency does not provide service inside the gates at Fort Carson. They stated that most buildings at the base are not within a reasonable walking distance from the entrance and exit gates and that providing transit service would necessitate creating an on-base shuttle system from the gates to several buildings on base. City and transit officials told us that funding for transit services could be cut by 10 percent, further limiting the agency's ability to address the transportation effects of growth. In addition, Fort Carson officials told us that demand for transit services is low among base personnel.

Fort Bliss, Texas

As a result of the BRAC 2005 legislation and other initiatives, about 28,000 personnel were to relocate to Fort Bliss in El Paso County, Texas, by 2011. However, a June 2009 DOD decision not to relocate a combat brigade there will lower this number. State and local officials expect the growth to adversely affect conditions on local roadways and transit systems. However, the officials added that they do not consider the impact of military growth to be significant because the additional personnel represent a small percentage of the city's total population of about 750,000.

Local officials have identified 31 road projects and four transit projects that will help address the impact of military growth at Fort Bliss. According to their estimate, the total cost of these projects will be

between \$623 million and \$830 million.²⁰ The officials told us that they are capable of funding most of these projects within 5 years. They added that most of the projects that will address the impact of military growth will also address nonmilitary growth and were planned before the decisions to increase personnel at Fort Bliss. However, they told us that they will not be able to complete a major road-widening project until at least 4 years after the growth occurs.

Officials in Texas used an innovative financing approach to generate funding sufficient to complete a critical BRAC growth-related project within a short time frame. This approach, which El Paso city officials worked on with Texas Department of Transportation officials, will provide funding to construct Spur 601, a \$367 million highway project that will ease access to Fort Bliss and relieve congestion in east and northeast El Paso. The financing approach, “pass through” financing, will repay a project developer to finance (through the Camino Real Regional Mobile Authority), design, acquire the right-of-way for, and construct the highway over several years. The regional authority will use state highway funds to repay the private developer, based on miles traveled by vehicles on the highway.

El Paso city officials plan to develop new bus services near Fort Bliss and citywide as part of their plans to address the transportation effects of military and nonmilitary growth. However, Fort Bliss officials told us that demand for transit services is low among base personnel because the base encompasses a large geographic area, the base gates are not within walking distance of most buildings, and the base does not have a shuttle service to transport transit customers from the gates to their on-base destinations. Fort Bliss officials added that they attempted to establish an on-base bus service but discontinued it because of low demand for the service.

Fort Knox, Kentucky

Fort Knox officials expect the base to gain about 1,600 military and civilian personnel and dependents by September 2011; however, the military-related population living off-base will grow by about 5,000. A local metropolitan planning organization study of traffic conditions near Fort Knox concludes that without significant improvements, the existing

²⁰As of March 2009, El Paso officials had not provided an estimate of short-term projects to OEA. Thus, these potential projects are not included in the estimated \$2 billion in short-term BRAC-related transportation projects.

roadway system will be incapable of providing the capacity required to accommodate traffic increases caused by the change in personnel at the base.

Likewise, Kentucky state and local officials said they completed a roadway improvement project that they considered essential to addressing the transportation impact of expected BRAC organizational changes at Fort Knox, but they do not have sufficient funding to complete other projects designed to address that impact before the changes occur. State and local officials report that the transportation projects needed to address the impact of growth at Fort Knox will cost about \$244 million. Shortly after state and local officials learned about the planned changes at Fort Knox, state officials prioritized the widening of a roadway that provides access to the base. According to a state official, the state completed the \$13 million improvement project in March 2008. Since then, state officials have been able to set aside an additional \$50 million in bond funds for the remaining projects. Local officials told us that state law leaves them with few other revenue-raising options for transportation improvements. For example, the Kentucky constitution prohibits the state General Assembly from granting city and county governments the authority to levy sales taxes, thus limiting their options to fund growth-related transportation improvements.²¹ Accordingly, local officials said the state government must fund most transportation improvements. The officials told us that the state must use most available funds for roadway maintenance and does not have sufficient funds remaining to address growth-related projects at Fort Knox before 2011.

Local officials are working to increase park-and-ride services to reduce anticipated roadway congestion but do not have the financial capacity to purchase additional buses and expand service. Local officials consider expanding key roadway capacity a higher priority than expanding transit services. Local transit services are limited, and the transit provider does not have the capacity to significantly expand services and help address the transportation impact of adding about 5,000 people to the off-base population. The Transit Authority of Central Kentucky provides bus and vanpool services for the communities near Fort Knox. According to transit authority officials, their bus and vanpool system provides services for about 135 passengers each day. Despite their limited ability to address the effects of the expected growth at Fort Knox, authority officials plan to

²¹KY. CONST. § 181.

operate larger buses and provide increased service as demand for transit services increases.

State officials do not expect to complete key projects until 2013 or 2014—2 to 3 years after the growth occurs. The projects include a bypass roadway to improve traffic conditions on a major roadway leading to the base and a new roadway serving residential areas where local officials expect most of the new personnel to reside.

Eglin Air Force Base, Florida

Eglin Air Force Base, located in Okaloosa, Walton, and Santa Rosa counties, will gain about 3,600 military and civilian personnel and 5,900 dependents by September 2011. State, local, and Air Force officials expect congestion on major roadways to worsen with this growth. As noted, a limited roadway network serving the 724 square-mile facility channels traffic along relatively few major roads and causes congestion.

Like officials in Maryland and Virginia, Florida state and local officials are prioritizing transportation projects and initially funding projects that they can complete before planned BRAC growth at Eglin Air Force Base occurs. Local and state officials have not estimated the total costs needed to address the impact of growth, but they have identified short- and long-term projects they consider critical to addressing the impact. State and county officials are initially funding some projects that address immediate needs of the communities that will be affected by the growth. These projects are considered critical to accommodating increased traffic levels and maintaining access to the base without unreasonable delays, including widening major roads near the base from four to six lanes. Another critical but currently unfunded project is construction of an overpass to allow personnel to access a nearby airfield without stopping traffic on a state highway.

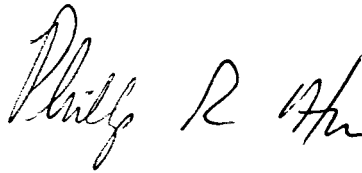
Florida state and local officials told us that they do not have the funding necessary to complete planned long-term projects. They added that long-term projects include improving and constructing roadways in and near several communities that will be affected by the growth and expanding transit services. Expanding transit services could be important to accommodate growth-related traffic increases because environmental concerns preclude widening several key roadway segments near the installation.

Agency Comments

We provided copies of this report to the Departments of Defense and Transportation for their review and comment. Both provided technical comments, which we incorporated into the report, as appropriate.

We are sending copies of this report to other interested congressional committees and the Secretaries of Defense, Transportation, the Army, the Air Force, and the Navy and the Commandant of the Marine Corps. Copies are available to others at no cost on GAO's Web Site at www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-2834, or herrp@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix II.



Phillip Herr
Director, Physical Infrastructure Issues

Appendix I: Scope and Methodology

To determine the expected impact of military growth on transportation in communities affected by the 2005 Base Realignment and Closure (BRAC) decisions, we reviewed the 18 military bases identified by the Office of Economic Adjustment (OEA) that will be substantially and seriously affected by growth resulting from the BRAC 2005 realignments. We analyzed relevant OEA reports, including reports that identified projects designed to address the impact of growth. We reviewed environmental impact statements and assessments for the 16 of these bases that had completed environmental documents at the time of our review. To obtain more detailed information on how community transportation likely would be affected, we selected 8 of the 18 bases, and their nearby communities, to visit. We selected these locations based on several of factors. We classified bases into three groups, including very large metropolitan areas of over 1 million people, smaller metropolitan areas of 200,000 to 1 million people, and smaller urban areas of under 200,000 people, and selected communities within each grouping, considering whether the environmental study was complete, and whether community officials identified transportation as a concern. The bases selected are listed in table 1 of this report. We interviewed Army, Navy, and Air Force officials responsible for implementing the BRAC decisions about the expected growth at these installations and the impact of the growth on transportation in the communities. For the eight communities, we analyzed state and community participation in the environmental review processes, and relevant studies to determine the transportation effects of growth, including state transportation improvement plans, local transportation plans, and detailed traffic studies, where available. We did not independently assess the transportation models used in these traffic studies, or independently calculate employment or population growth in the communities. In addition, we interviewed state and local transportation and other local officials responsible for addressing the impact of military growth about how that growth would affect transportation in these communities. We also observed conditions on roadways local officials expect to be affected by BRAC growth in the selected communities.

To determine the estimated costs to address the transportation impact of military growth and the status of their efforts to fund growth-related projects, we analyzed information OEA collected from affected local governments showing their cost estimates and funding available for growth-related projects. We interviewed OEA project managers responsible for coordinating data gathering from affected local governments and local government officials about the effort and the process and standards for including projects as part of OEA's assessment.

We also analyzed the data to determine the total costs of both the critical short-term projects and the longer-term projects. We also compared projects included in the data with projects identified in the environmental studies DOD conducted for the growth locations to establish a link between the proposed projects and military growth actions.

To determine the federal, state, and local response to the expected impact of BRAC growth on transportation, we reviewed DOD's Defense Access Roads (DAR) program guidance and interviewed base and DOD Military Surface Deployment and Distribution Command officials to determine which BRAC growth-related projects base commanders had submitted for program funding and the amount of program funding committed. We also interviewed OEA officials on the role OEA provides in supporting BRAC-affected communities. In addition, to obtain information on how military resources would help address the impact of growth on transportation, we interviewed Army, Navy, and Air Force officials responsible for implementing individual bases' efforts to help state and local governments address that impact. We interviewed Federal Highway Administration and Federal Transit Administration officials about their agencies' roles in helping affected communities address the impact of military growth on transportation and about the funding available to affected communities to address that impact. We reviewed local and state short- and long-term transportation improvement plans for the selected communities to identify transportation projects planned to address BRAC growth, communities' prioritization of these projects, and communities' strategies for funding and completing the projects. We also interviewed state and local officials at the eight selected communities about their strategies for addressing that impact, including how they would prioritize BRAC-related projects with other transportation projects, obtain needed funding, and coordinate with DOD and other federal officials, and their views on the environmental impact process.

We conducted this performance audit from April 2008 through September 2009 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: GAO Contact and Staff Acknowledgments

GAO Contact

Phillip Herr, Director (202) 512-2834 or herrp@gao.gov

Staff Acknowledgments

In addition to the individual named above, Robert Ciszewski, Catherine Colwell, Steve Cohen, Elizabeth Eisenstadt, Brian Lepore, Les Locke, Mike Mgebroff, and Stephanie Purcell made key contributions to this report.

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