

GAO

Report to the Honorable  
John E. Sununu,  
House of Representatives

December 1998

# MILITARY BASES

## Status of Prior Base Realignment and Closure Rounds



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United States  
General Accounting Office  
Washington, D.C. 20548

**National Security and  
International Affairs Division**

B-278553

December 11, 1998

The Honorable John E. Sununu  
House of Representatives

Dear Mr. Sununu:

This report responds to your request that we review important issues associated with the four rounds of military base realignments and closures (BRAC) beginning in 1988. Through closure rounds in 1988, 1991, 1993, and 1995, the Department of Defense (DOD) expected to significantly reduce its domestic infrastructure and provide needed dollars for high-priority defense programs such as modernization. This report addresses (1) DOD's progress in completing action on BRAC recommendations and transferring unneeded base property to other users, (2) the precision of DOD's estimates of BRAC costs and savings, (3) environmental cleanup progress and estimated associated costs, and (4) reported trends in economic recovery in communities affected by base closures.

We are sending copies of this report to the Chairmen and Ranking Minority Members, Senate Committee on Appropriations, Subcommittee on Defense; Senate Committee on Armed Services; House Committee on Appropriations, Subcommittee on National Security; House Committee on National Security; the Secretaries of Defense, the Army, the Navy, and the Air Force; the Directors of the Defense Logistics Agency and the Defense Information Systems Agency; and the Director, Office of Management and Budget. We will also make copies available to others upon request.

This report was prepared under the direction of David R. Warren, Director, Defense Management Issues, who may be reached on (202) 512-8412 if you or your staff have any questions. Major contributors to this report are listed in appendix VI.

Sincerely yours,

Henry L. Hinton, Jr.  
Assistant Comptroller General

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# Executive Summary

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## Purpose

By 2001, four rounds of base realignments and closures (BRAC) will have reduced the domestic military basing structure by about 20 percent from its 1988 level. The Department of Defense (DOD) has asked the Congress for further rounds to align basing structure with force structure and to free up funds for programs such as weapons modernization. Mr. John E. Sununu, House of Representatives, requested that GAO provide analyses and information on closures and realignments as the Congress considers whether to enact new BRAC legislation. Accordingly, this report addresses (1) DOD's progress in completing action on BRAC recommendations and transferring unneeded base property to other users, (2) the precision of DOD's estimates of BRAC costs and savings, (3) environmental cleanup progress and estimated associated costs, and (4) reported trends in economic recovery in communities affected by base closures.

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## Background

The Congress authorized four BRAC rounds, beginning in 1988, 1991, 1993, and 1995. Generally, bases were selected for closure or realignment by an independent commission based on DOD's recommendations. While DOD has 6 years to complete implementation of closure or realignment decisions, other related actions, such as the cleanup of environmental contamination and transfer of unneeded base property to other users, can extend the process many years beyond the 6-year period. Property DOD no longer needed was to be offered first to other federal agencies, then to state or local authorities by various means. Any remaining property could be sold.

DOD is primarily responsible for cleaning up environmental contamination at military bases. Generally, cleanup remedies must be in place, meeting both federal and state regulatory requirements, before base property can be transferred to nonfederal entities. For each BRAC round, the Congress appropriated funds for environmental cleanup of unneeded property.

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## Results in Brief

By September 30, 1998, DOD had completed actions on about 85 percent of the four BRAC commissions' 451 recommendations.<sup>1</sup> The pace of completion accelerated after the first round. In taking action on the recommendations, DOD declared about 464,000 acres of base property as excess. As of September 30, 1997, 46 percent, or about 213,000 acres, of the unneeded BRAC property was to be retained by the federal government; 33 percent, or about 154,000 acres, was slated for nonfederal users such as state and local authorities or private parties; the disposition of 21 percent,

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<sup>1</sup>The four BRAC commissions generated 499 recommendations. However, only 451 of these ultimately required action primarily because 48 were changed in some manner by recommendations of a later commission.

or about 98,000 acres, had not yet been decided. However, most of this property is still awaiting transfer. Eight percent of the property slated for federal use has been transferred, while 31 percent of the property slated for nonfederal use has been transferred. DOD officials noted a number of obstacles that must be overcome before transfer can occur. To help ease this situation, DOD is leasing some property, pending actual transfer of the property.

By 2001, DOD estimates it will have spent \$23 billion on BRAC and saved \$37 billion in costs it would have incurred if BRAC actions had not occurred, for a net savings of \$14 billion. Beyond 2001, when the last of the four rounds is complete, DOD expects to save \$5.7 billion annually as a result of BRAC actions. However, the cost estimates exclude certain types of federally incurred costs, some of which are funded outside of DOD BRAC budget accounts, while the savings estimates have not been routinely updated and thus are not precise. For example, the Air Force's savings figure reflects initial rough estimates that predate any actual closures. Despite the imprecision of DOD's savings estimates, GAO believes BRAC savings will be substantial.

A major cost factor in BRAC actions, as well as a major obstacle to the disposal of unneeded property, is the need for environmental cleanup at BRAC bases. Both the eventual cost and the completion date for the BRAC-related environmental program are uncertain. However, available DOD data indicate that the total environmental cost will likely exceed \$9 billion and that cleanup activities, including monitoring, will extend well beyond 2001. The potential for higher costs exists, given uncertainties associated with the extent of cleanup of unexploded ordnance and monitoring of cleanup remedies needed at selected sites. DOD has made progress since the earlier BRAC years when it was investigating sites for contamination. Its emphasis now is on implementing cleanup measures.

The majority of communities surrounding closed bases are faring well economically in relation to the national average, according to the latest data available at the time of GAO's analysis, and show some improvement since the time closures were beginning in 1988. Of the 62 communities surrounding major base closures, about two-thirds had 1997 unemployment rates equal to or lower than the national average; the remaining one-third had rates higher than the national average. Of the 49 surrounding communities involved in the first three rounds, 31 had equal or higher average per capita income growth rates compared to the national average for the period 1991-95.

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## Principal Findings

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### Recommended Actions Are on Track, but Property Disposal Is Progressing Slowly

The military services have been completing recommended actions within the 6-year period permitted by law. Further, although first-round actions required nearly 5-1/2 years to complete on average, DOD learned from this early experience, and it has accelerated the pace for subsequent rounds to an average of 3 years. By September 30, 1998, DOD had completed 85 percent of the recommended actions. However, property disposal involves factors not completely under DOD's control and has not been easy to manage. Completing actions and disposing of property quickly not only puts excess property into alternative use sooner but also increases savings.

At BRAC-affected bases, the military services have identified about 464,000 acres that are excess to their needs. As of September 30, 1997, the federal government, including DOD, was expected to retain about 46 percent, or about 213,000 acres, of that property. While most, or about 163,000 acres, of this federally retained property is being transferred to the Fish and Wildlife Service, DOD is retaining about 13,000 acres for other uses.<sup>2</sup> State, local authorities, and private parties are expected to take ownership of 33 percent of the unneeded property. The recipients of the remaining 21 percent have not been determined.

The amount of unneeded acreage actually transferred has been relatively small. Overall, as of September 30, 1997, about 14 percent of the unneeded property had been transferred; about 8 percent of the property destined for federal parties had been transferred and about 31 percent of the property destined for nonfederal parties had been transferred. The steps that must be taken to accomplish transfers include preparing and approving property reuse plans; negotiating the terms of transfer, including the transfer method and the price and payment terms, if any; lining up a community organization with adequate financing to administer and maintain the transferred property; and in many cases, addressing environmental concerns.

To help get property into use as quickly as possible, DOD is often leasing property prior to actual transfer. The services do not centrally maintain leasing information and could not readily provide comprehensive data.

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<sup>2</sup>Additionally, DOD is retaining over 330,000 acres at both closing and realigning bases for use by the reserve components—this involves acreage that was not formally declared excess and not included in the 464,000 acres noted previously.

However, data GAO was able to obtain indicated that during the second quarter of fiscal year 1998, at least 38,000 acres, or 8 percent of the unneeded BRAC acreage, were operating under some type of leasing arrangement. According to these data, about 25 percent of the property awaiting transfer to nonfederal recipients is under interim leases.

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### Costs and Savings Estimates Are Not Precise

While the military services have updated their cost estimates annually, they have not routinely updated their savings estimates based on their experience with carrying out BRAC actions. To assist in choosing among potential BRAC actions at the start of each round, the services initially estimated implementation costs and savings using a rough methodology for comparative purposes. Once decisions had been made on which bases to close and realign, DOD planned to replace these estimates with more site-specific estimates in its budgets.

Beginning with the 1993 budget, DOD required the services to annually update these estimates. However, the Air Force is still reporting its initial rough estimates with some adjustments for inflation. The Army and the Navy have refined their estimates for budget purposes and have updated these estimates for some bases, but neither has performed a comprehensive update for all actions or even those actions defined as major. Nevertheless, the current estimates are incorporated annually into DOD's 5-year spending plans as prospective savings. Service officials stated that keeping track of savings would be costly and labor intensive and that they have not had systems in place for doing so.

BRAC savings do not take into account expected environmental costs beyond 2001 and financial assistance provided by federal agencies to BRAC-affected communities and individuals. While BRAC implementation authority expires in 2001, post-BRAC cleanup costs may exceed \$2.4 billion. Further, over \$1 billion in grants have been provided by the (1) Economic Development Administration to assist communities with infrastructure improvements, building demolition, and revolving fund loans; (2) Federal Aviation Administration to help convert military airports to civilian use; (3) Department of Labor to help retrain civilian workers who lose their base jobs; and (4) DOD's Office of Economic Adjustment to help BRAC-affected communities develop former base property reuse plans. While inclusion of these costs in the estimates would reduce overall net savings estimates, BRAC net annual savings will be substantial once implementation costs have been offset.

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## Environmental Cleanup Is Progressing, but Is Costly and Time-consuming

DOD is making progress toward cleaning up contamination at BRAC bases and now reports spending more funds on implementing cleanups than on studying the problems. A program initiated in 1993 to accelerate the steps leading to cleanup appears to have improved progress.

Through fiscal year 1997, DOD estimates it has spent \$4.1 billion to bring excess property at BRAC bases up to environmental standards that must be met before property can be transferred. By the time BRAC implementation authority expires in 2001, DOD expects to spend an additional \$3.1 billion. Beyond 2001, DOD expects it will need an additional \$2.4 billion to complete cleanup. However, because of the expiration of BRAC authority at that time, the BRAC cleanup effort would then be funded through the overall DOD environmental budget. In response to congressional direction, DOD is preparing legislation to create a new account to fund the remaining cleanup.

Additionally, the estimate of post-BRAC environmental costs is uncertain, but likely conservative, because DOD has not projected all costs for the program's duration. Costs could increase if (1) cleanup requirements change; (2) DOD is required to extensively clean up unexploded ordnance such as shells, grenades, and mines that misfired and still pose a danger; and (3) selected remedies fail to clean up contaminated sites. Given such uncertainties, it is difficult to identify a date for completing BRAC-related environmental activities. However, DOD estimates that monitoring to ensure the effectiveness of remedies will continue for many years beyond 2001.

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## Most Communities Where Bases Closed Are Recovering

The majority of communities surrounding closed bases are faring well economically in relation to the national average, according to the latest data available at the time of GAO's review, and show some improvement since the time closures were beginning. As of 1997, 68 percent had average or lower unemployment, compared with 60 percent in 1988. During 1991-95, incomes in 63 percent of the communities were growing faster than the national average, up from 55 percent during 1988-91. Rural communities seemed to be doing about as well as cities. Notwithstanding trends, a few communities were struggling—two had double-digit unemployment rates and five had declining average incomes.

Officials in the communities GAO visited recalled an initial period of disruption, followed by recovery. In some cases, the panic resulting from the announcement of a closure seemed to have a more severe economic

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impact than the closure itself. Officials noted, however, some adverse impacts are not reflected in economic measurements, such as social losses felt in local schools, churches, and organizations that benefited from active military personnel and families.

Local officials also mentioned several factors contributing to recovery, including the health of the regional economy and successful redevelopment of base property. However, some expressed impatience with the slow pace of property disposal. For example, community officials from the Castle Air Force Base area told GAO they have yet to take ownership of property from the former base even though it closed in September 1995.

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## Agency Comments

In commenting on a draft of this report, DOD concurred with GAO's findings and conclusions (see app. V for DOD's comments). DOD also provided technical comments, which GAO has incorporated as appropriate.



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Abbreviations

BRAC	base realignment and closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COBRA	Cost of Base Realignment Actions
DOD	Department of Defense
FYDP	Future Years Defense Program
GAO	General Accounting Office
LMI	Logistics Management Institute
NPL	National Priorities List
UXO	unexploded ordnance



# Introduction

Between 1988 and 1995, the Department of Defense (DOD), acting under special legislative authorities, conducted four rounds of base realignments and closures (BRAC).<sup>1</sup> According to DOD's calculations, when all BRAC actions from those rounds are completed, no later than 2001, DOD will have reduced its domestic military basing structure by about 20 percent. DOD believes it needs to reduce its domestic basing infrastructure even further to bring it more into line with reductions in its force structure and funding levels and free up funds for other programs, including modernization. Consequently, in 1997 and 1998, the Secretary of Defense requested the Congress to authorize additional rounds of base closures.

However, the Congress continues to have many questions about the four BRAC rounds and has not been willing to authorize additional ones to date. Some in the Congress, noting the lengthy time frame allowed for closures and realignments to be completed, have suggested that additional BRAC rounds should not be authorized until prior recommendations have been implemented and the effects of those decisions fully assessed. Some members have also raised questions about the adequacy of DOD's accounting for the costs and savings associated with BRAC decisions, including environmental restoration costs and other costs to the government not borne directly by DOD; the extent to which environmental restoration associated with BRAC might continue beyond 2001; and the economic impact on communities affected by closures and their ability to recover.

## Assessing the Magnitude of Base Closures and Realignments Is Difficult

DOD has characterized the four rounds of BRAC actions as representing about 20 percent of its major bases, producing decisions to close 97 out of 495 major domestic installations and many smaller ones and to realign many other facilities. However, trying to fully assess the magnitude of closures, tally the precise numbers of bases closed or realigned, or differentiate between the two is difficult. For example, individual BRAC commission recommendations may have included actions affecting multiple bases. Additionally, BRAC commissions in the later rounds made

<sup>1</sup>The initial round was completed under the Defense Authorization Amendments and Base Closure and Realignment Act of 1988 (P.L. 100-526). The last three rounds were completed under the Defense Base Closure and Realignment Act of 1990 (P.L. 101-510, title XXIX, part A, as amended). Under the latter legislation, an independent BRAC commission reviewed recommendations for closure or realignment submitted by the Secretary of Defense. The commission either approved or modified the Secretary's recommendations and ultimately forwarded its own recommendations to the President who, in each instance, forwarded the recommendations to the Congress. The Congress generally had 45 days in which to enact a joint resolution should it desire to disapprove the recommendations -- in each instance, the absence of a disapproval action by the Congress resulted in the recommendations becoming effective.

changes, or what are termed “redirects,” to prior BRAC decisions.<sup>2</sup> In total, the four BRAC rounds produced 499 recommendations affecting about 450 military activities.

In our 1995 report on the BRAC process, we noted that the term base closure often leaves the impression that a larger facility is being closed.<sup>3</sup> However, that may not actually be the case. Military installations are diverse and can include a base, camp, post, station, yard, center, home port, or leased facility and can vary in size from a few acres to hundreds of thousands of acres. Further, an installation may house more than one mission or function. For example, in 1993 the Navy closed the Norfolk Naval Aviation Depot, which was located on the Norfolk Navy Base, which included the Norfolk Navy Station, Supply Center, and Air Station. Our report noted that full closures may involve relatively small facilities, rather than the stereotypical large military base. It also noted that the number of bases recommended for closure or realignment in a given BRAC round was often difficult to precisely tabulate because closure decisions did not necessarily completely close facilities.

In the BRAC process, decisions generally were made to either close or realign facilities. While the 1990 BRAC enabling legislation did not specifically define what is meant by “close,” it did define a realignment as any action that reduces and relocates functions and civilian positions.<sup>4</sup> Our 1995 report noted that an individual BRAC recommendation may actually affect a variety of activities and functions without fully closing an installation. More specifically, the nature of closures and realignments was such that both could result in the closure of portions of facilities, and the distinction between the two was not always clear. For example, our 1997 report on BRAC lessons learned contained a listing of base closure decisions DOD reported as major closures.<sup>5</sup> Excluded from that list was the BRAC 1995 decision regarding Kelly Air Force Base, Texas, which DOD characterized as a major base realignment. The actual decision included shifting a portion of the base’s property to the adjacent Lackland Air Force

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<sup>2</sup>Likewise, individual bases may be the subject of more than one BRAC recommendation as succeeding BRAC rounds occur, especially where realignments occur.

<sup>3</sup>Military Bases: Analysis of DOD’s 1995 Process and Recommendations for Closure and Realignment (GAO/NSIAD-95-133, Apr. 14, 1995).

<sup>4</sup>For BRAC purposes, the Office of the Secretary of Defense defined “close” as meaning all missions of the installation would cease or be relocated. It also used the term “close, except” to mean that the vast majority of missions on an installation would cease or be relocated and all but a small portion of the base would be excessed and the property disposed. The small portion retained would often be facilities in an enclave for use by a reserve component.

<sup>5</sup>Military Bases: Lessons Learned From Prior Closure Rounds (GAO/NSIAD-97-151, July 25, 1997).

Base and moving the depot maintenance workload of the Air Logistics Center located on Kelly to other DOD depots or to private sector commercial activities as determined by the Defense Depot Maintenance Council.<sup>6</sup> Some closures, as well as realignments, such as those involving the Army's Fort Pickett, Virginia, and Fort Hunter Liggett, California, essentially call for cessation of active military presence on the installations while retaining nearly all of the property for use by reserve components.

Finally, efforts to precisely determine the numbers of bases closed or realigned are complicated by changes that are made to BRAC decisions in later BRAC rounds. The BRAC process allowed DOD to propose changes to previous commission recommendations, or redirects, while it was considering new base closures in rounds conducted in 1991, 1993, and 1995. Redirects often meant redirecting the planned movement or activity to a base other than the one cited as the receiving base in a prior BRAC round.

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## The Process for Terminating Military Involvement and Disposing of Unneeded Property Can Be Complicated and Time-consuming

By law, DOD must initiate closure or realignment actions no later than 2 years after the President submits the recommended BRAC list to the Congress and must complete implementation within 6 years. However, this 6-year period refers only to the time permitted to implement realignment or closure decisions, such as moving functions from one base to another or halting military activities on a base as a base closes. DOD's involvement on an installation can go beyond the 6 years as it completes the process of cleaning up environmental contamination on the bases and disposing of the unneeded property.

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## Environmental Cleanup Can Take Many Years to Complete

DOD must comply with cleanup standards and processes associated with laws, regulations, and executive orders in conducting assessments and cleanup of its base closure property. DOD spends about \$5 billion annually to fulfill its environmental mission, including compliance and cleanup of contamination from hazardous substances and waste on active, closing, and formerly used DOD sites. While DOD has an ongoing environmental program at each of its military bases, the decision to close a military base and dispose of unneeded property can require expedited cleanups that may not have otherwise occurred. The time needed to accomplish required cleanup activities can extend many years beyond the 6 years allowed under BRAC legislation for ceasing military operations and closing a base.

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<sup>6</sup>Kelly Air Force Base is in the process of realignment; the maintenance depot on the installation is being closed as a government-owned facility; and the depot maintenance workload is undergoing public-private competition to determine where the work will be done in the future.

The status of cleanup activities can also affect transferring title of the property from the federal government to others.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 ( 42 U.S.C. 9601 et seq.) provides the framework for responding to contamination problems. CERCLA authorizes the federal government to respond to spills and other releases of hazardous substances. It generally requires that the government warrant that all remedial action necessary to protect human health and the environment has been taken before property is transferred by the United States to nonfederal entities, such as communities or private parties. While CERCLA had originally authorized property transfers to nonfederal ownership only after all remedial action had been taken, the act was amended in 1996 to expedite transfer of contaminated property.<sup>7</sup> Now such property, under some circumstances, can be transferred to nonfederal users before all remedial action has been taken. However, remedial action must still be taken at some point.

Given the large amount of land being affected by the BRAC process and the delays that could be encountered due to environmental cleanup, the Congress included provisions in the National Defense Authorization Act for Fiscal Year 1994 (P.L. 103-160) that were intended to stimulate base reuse prior to property transfer. That legislation authorized the military services to lease property to facilitate state or local economic reuse without limiting the length of a lease. Previous leases were subject to certain limitations, including a term not to exceed 5 years and DOD's right to revoke the leases at will. Although leasing property allows its reuse before cleanup has been completed, DOD is still liable for environmental cleanup costs.

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## Various Alternatives for Disposing of Unneeded Real Estate

Once property is no longer needed by a federal agency, the property is declared excess by the agency and is offered to other federal agencies to satisfy their requirements. Excess property that is not selected by federal agencies is declared surplus to the federal government. At that point, the Federal Property and Administrative Services Act of 1949 authorizes disposal of the property through a variety of means, including transfers to states and local governments for public benefit purposes and negotiated or public sales. Additionally, a 1993 amendment to the BRAC legislation states that under certain circumstances, surplus real property can be transferred to local redevelopment authorities under economic development

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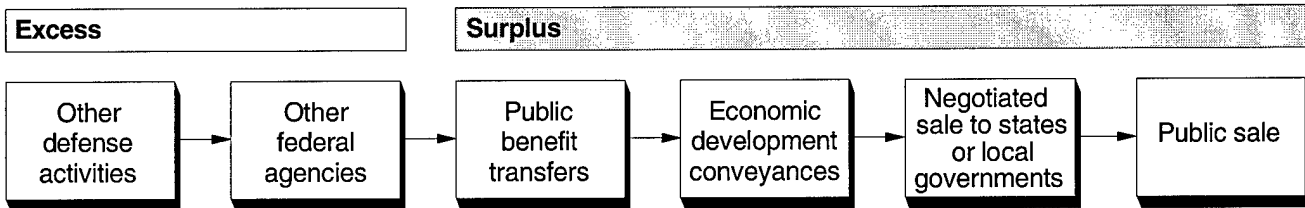
<sup>7</sup>Section 334, National Defense Authorization Act for Fiscal Year 1997 (P.L. 104-201).



conveyances for economic development and job creation purposes. This section enables communities to obtain property under more flexible finance and payment terms than previously existed. For example, a community can request property at less than fair market value if it can show the discount is needed for economic development.

An important step for communities as they seek to recover from the adverse effects of base closures is to organize local base reuse authorities to interact with DOD on base closure, property disposal, and reuse issues. As shown in figure 1.1, local reuse authorities generally seek surplus property under one of the public benefit transfer or economic development authorities because these can be no-cost or no-initial cost acquisitions. If the property reuse does not meet the requirements for these conveyances, local reuse authorities can still pursue a negotiated sale without competing with other interested parties. Any surplus property that remains is available for sale to the general public.

Figure 1.1: DOD's Usual Procedures for Transferring Property



Source: Our analysis.

## Accounting Precisely for Costs and Savings Is Difficult

While our previous work has shown that BRAC savings are likely to be substantial, accounting precisely for the costs and savings of BRAC actions is a difficult task. DOD does not have systems in place to track and update savings. Further, some costs associated with BRAC actions, such as federal assistance to BRAC-affected communities, are not included in BRAC implementation budgets and are not considered when calculating overall costs.

We have previously reported that savings from prior BRAC rounds are expected to be substantial, although DOD has not always documented them well or updated them on a regular basis so as to provide the precision

needed to support savings claims. Likewise, as stated in our July 1997 report, significant net savings are likely once up-front closure costs have been paid, although such costs have been higher than initially estimated and have caused net savings not to be realized as quickly as DOD projected.

The first publicly released costs and savings forecasts from BRAC actions are the numbers typically associated with DOD's list of proposed closures and realignments that are endorsed by the commission. DOD's and the commissions' initial BRAC decision-making did not include the cost of environmental restoration, in keeping with DOD's long-standing policy of not considering such costs in its BRAC decision-making, whereas subsequent BRAC implementation budget estimates do. This policy is based on DOD's obligation to cleanup contaminated sites on military bases regardless of whether they are closed. We agree with DOD in not considering these costs in developing its cost and savings estimates as a basis for base closure recommendations. At the same time, we agree with DOD's position that environmental restoration costs are a liability to it regardless of its base closure decisions, and we have reported that these costs are substantial. The subsequent inclusion of environmental cleanup costs in DOD's budget has the practical effect of reducing the short-term savings from BRAC actions and delaying the beginning of net annual recurring savings.

We have also reported that another difficulty in precisely determining BRAC savings is that accounting systems—not just those in DOD—are designed to record disbursements, not savings. The services develop savings estimates at the time they are developing initial BRAC implementation budgets, and these are reported in DOD's BRAC budget justifications. Because DOD's accounting systems do not track savings, updating these estimates requires a separate data tracking system, which DOD does not have. The lack of updates is problematic because initial savings estimates are based on forecasted data that can change during actual implementation, thereby increasing or decreasing the amount of savings. We have recommended that regardless of whether the Congress authorizes future BRAC rounds, DOD needs to improve its periodic updating and reporting of savings projections from prior BRAC decisions. As stated in our July 1997 report, this information has been needed to strengthen DOD's budgeting process and ensure that correct assumptions were being made regarding expected reductions in base operating costs, as well as to provide greater precision to DOD's estimates of BRAC savings.

We have also noted that not all federal costs associated with implementing base closures are included in DOD's BRAC implementation budgets. We previously reported that various forms of federal assistance have been made available to communities, including planning assistance to help communities determine how they could best develop the property, training grants to provide the workforce with new skills, and grants to improve the infrastructure on bases. Our 1996 report stated that over \$780 million in direct financial assistance to areas affected by the 1988, 1991, and 1993 BRAC rounds was not included in the BRAC budget.

## Community Economic Impact Concerns Are of Lower Value in the BRAC Decision-making Process

The economic impact on communities affected by BRAC actions has been a long-standing source of public anxiety. Because of this concern, DOD included economic impact as one of eight criteria it used for making BRAC recommendations in the last three BRAC rounds. While economic impact did not play as large a role in initial BRAC deliberations as did other criteria and was not a key decision factor, such as military value, its importance was such that DOD components were required to calculate the economic impact of each of their recommendations.

For BRAC 1995, where the cumulative economic impact of prior BRAC rounds also became a concern, we found little documentation indicating that DOD components had eliminated potential closure or realignment candidates from consideration for economic impact reasons. While defense civilian job loss and other adverse effects on communities are an inescapable byproduct of base closures, at least in the short term, we noted in our July 1997 report that some limited studies indicated that, in a number of BRAC-affected communities, the local economies appeared to be able to absorb the economic losses, though some communities were faring better than others. To some extent, it appears that the various federal programs and benefits provided to those communities affected by BRAC actions helped to cushion the impact of base closures. Still unanswered were questions about overall changes in employment and income levels in the broad range of communities affected by BRAC actions, particularly those in less urban areas with less diverse economic bases.

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## DOD's 1998 Report on Base Closures Addressed Various BRAC Issues

In part, because of lingering questions about the costs and savings generated by previous BRAC rounds, in 1997 the Congress required the Secretary of Defense to report on the costs and savings attributable to prior BRAC rounds and the need, if any, for additional BRAC rounds, among other issues.<sup>8</sup> DOD issued its report in April 1998 and concluded that BRAC costs were below or close to its original estimates and that BRAC actions would save billions of dollars after up-front costs were paid. DOD emphasized that excess capacity in its installations warrants two additional BRAC rounds and that upkeep for unneeded installations wastes resources needed for modernization. DOD also reported that BRAC rounds enhanced military capabilities primarily by enabling the services to consolidate activities and shift funding from infrastructure support to other priorities. In our review of DOD's report, we agreed that BRAC savings would be substantial after up-front costs were paid but questioned the preciseness of the estimates. We also agreed that DOD had excess capacity at its installations, but questioned DOD's methodology for assessing its infrastructure capacity.<sup>9</sup>

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## Objectives, Scope, and Methodology

To assist the Congress should it consider the need for future BRAC rounds in the future, we reviewed a number of important issues associated with the prior rounds. At the request of Mr. John E. Sununu, House of Representatives, we are providing information that addresses (1) DOD's progress in completing action on BRAC recommendations and transferring unneeded base property to other users, (2) the precision of DOD's estimates of BRAC costs and savings, (3) environmental cleanup progress and estimated associated costs, and (4) reported trends in economic recovery in communities affected by base closures.

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## Completing BRAC Recommendations and Transferring Unneeded Property

To determine whether DOD has taken action on BRAC commissions' recommendations as required by law, we compiled a comprehensive listing of recommended actions included in the commissions' reports. Because DOD reports typically focus on major closures and realignments and it is not readily apparent what constitutes a major action because the military services define the term differently, our listing is as complete as possible. We compared the commissions' recommended actions to military service and defense agency data to determine if they were completed

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<sup>8</sup>Section 2824, National Defense Authorization Act for Fiscal Year 1998 (P.L. 105-85).

<sup>9</sup>The Congress required that we review DOD's report, The Report of the Department of Defense on Base Realignment and Closure, issued in April 1998. Our assessment is found in Military Bases: Review of DOD's 1998 Report on Base Realignment and Closure (GAO/NSIAD-99-17, Nov. 13, 1998).

within a 6-year period specified by law. We also performed a comparative analysis of the completed actions by round and the time to complete them. To assure that we were using the most reliable data available, we followed up to reconcile discrepancies. While we examined the timing of the completed actions based on March 1998 data, we did not attempt to determine whether the specific actions taken complied with the commissions' recommendations.

To assess DOD's progress in transferring unneeded base property to other users, we reviewed property disposition plans as of September 30, 1997, and compared the plans with available data on actual property transfers. We collected transfer data from the services and defense agencies and reconciled discrepancies with data from our prior reviews. We validated selected data by visiting several closing bases and comparing their property records to those provided by the services' and defense agencies' BRAC offices. The bases where we performed work included Lowry Air Force Base, Colorado; Mather Air Force Base, California; Mare Island Naval Shipyard, California; Defense Distribution Depot, Ogden, Utah; Tooele Army Depot, Utah; Cameron Station, Virginia; and Vint Hill Farms Station, Virginia. Our visits provided us with a mix of service and defense agency BRAC sites across various closure rounds.

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### Precision of DOD's BRAC Cost and Savings Estimates

To determine to what extent DOD has routinely updated its cost and savings estimates for BRAC actions, we relied, in part, on our prior BRAC reports and reviewed Congressional Budget Office, DOD, DOD Office of Inspector General, and service audit agency reports. We also interviewed officials in the DOD Comptroller office and the BRAC and budget offices of the military services and two defense agencies—the Defense Logistics Agency and the Defense Information Systems Agency—to obtain their views concerning DOD policy, procedures, and practices for updating cost and savings estimates. To determine how frequently these estimates were updated, we compared estimates presented in DOD's fiscal year 1993-99 BRAC budget submissions for the 1991, 1993, and 1995 rounds. We did not evaluate the 1988 round because DOD and military service officials cited numerous budget estimation difficulties with BRAC 1988 activities. While we did not independently determine the reliability of the budget data we used for our analysis, we did examine data included in the services' and DOD's budget submissions to ensure that the figures were consistent. In this regard, we found some inconsistencies and informed appropriate officials who took corrective actions.

To assess the completeness of DOD's cost and savings estimates for BRAC-related actions, we reviewed data included in the estimates. Because two major cost elements—expected environmental costs beyond 2001 and certain federal agency economic assistance provided to BRAC-affected communities—were not included in the estimates and not used to calculate savings, we obtained available cost data for these elements to assess their relative impact on BRAC net savings.

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## Environmental Cleanup Progress and Associated Estimated Costs

To determine DOD's progress and costs associated with its environmental work at BRAC bases, we

- analyzed DOD documentation on environmental program initiatives and costs;
- met with officials from the military services, the Defense Logistics Agency, and the Office of the Deputy Under Secretary of Defense for Environmental Security to discuss difficulties in cleaning BRAC bases and overall program status;
- contacted U.S. Environmental Protection Agency officials to obtain financial data and their views on DOD's environmental cleanup efforts;
- spoke with California, Colorado, and Utah environmental regulators to obtain their views on the cleanup process; and
- visited several BRAC bases to discuss environmental issues with base officials and community personnel.

The bases where we performed work were Lowry Air Force Base; Mather Air Force Base; Mare Island Naval Shipyard; Fort Ord, California; Defense Distribution Depot, Ogden, Utah; and Tooele Army Depot. These bases provided us a mix of service and defense agency BRAC sites across various BRAC rounds. Some sites afforded us an opportunity to gain insights into specific environmental issues. For example, the Fort Ord site has extensive unexploded ordnance (UXO) contamination, which presents a costly and challenging cleanup task for DOD.<sup>10</sup>

Because DOD has not developed a total environmental cost estimate for its BRAC bases, we developed such an estimate, using available program cost data from various DOD financial sources. We had to reconcile discrepancies in environmental cost data in multiple DOD documents in order to use the most reliable data for developing that estimate. Even so, the estimate is subject to variability because of unknowns and unresolved cleanup issues

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<sup>10</sup>Ordnance that remains unexploded either through malfunction or design can injure personnel or damage material. Types of UXO include bombs, missiles, rockets, artillery rounds, ammunition, or mines.

associated with UXO. To gain a sense of the potential costs of removing UXO, we discussed the matter with DOD and Environmental Protection Agency officials.

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### Trends in Economic Recovery of BRAC-affected Communities

To assess the economic recovery of communities affected by base closures and realignments, we reviewed several studies dealing with this issue. We also (1) performed an economic assessment of communities where more than 300 civilian jobs were eliminated in the four closure rounds and (2) visited the surrounding communities of six major base closures. In performing our economic assessment, we used unemployment rates and per capita income as measures for analyzing changes in the economic condition of affected communities. We chose to use unemployment rates and per capita income as key performance measures because (1) DOD used these measures in assessing the economic condition of local areas in its economic impact analysis for recommended BRAC locations in the closure rounds and (2) these measures are commonly used by economists to gauge changes in the economic health of an area over time. During our site visits, we collected additional information to (1) enhance our understanding of the relationship between base closures and local communities and (2) provide a close-up of how a base closure affects individual communities.

To establish a baseline for our economic analysis, we obtained selected economic indicator data from the Logistics Management Institute (LMI), a Federally Funded Research and Development Center that maintains a database of key economic data for impact areas surrounding base closures during the four rounds. Data obtained were multiyear data (1988 through September 30, 1997) on total employment, unemployment rate, total income, per capita income, and population for local economic impact areas that experienced a base closure. The employment data originated in the Department of Labor's Bureau of Labor Statistics and the income and population data, which were only available through 1995, came from the Department of Commerce's Bureau of Economic Analysis. The economic impact areas, based on 1990 census data, were defined using accepted standard definitions for metropolitan and nonmetropolitan statistical areas and reflected the impact areas used in the 1995 BRAC round. The 1995 BRAC areas were configured to reflect the residences of the majority of military and civilian employees at an activity. LMI routinely validates data and reconciles discrepancies as necessary. We also performed a limited reliability assessment of the data by comparing selected data to Bureau of

Labor Statistics and Bureau of Economic Analysis data available on those agencies' Internet sites.<sup>11</sup> We did not find any discrepancies.

In analyzing the economic condition of BRAC-affected communities over time, we compared unemployment rates and per capita incomes to national averages for the time period encompassing the four BRAC rounds to the present to assess if communities were below national averages. We analyzed the data for bases closed under BRAC that had government and contractor civilian personnel reductions of 300 or more. While our assessment does provide an overall picture of how these selected communities compare to other communities based on national averages, it does not necessarily isolate the condition or the changes in that condition that may be attributable to a BRAC action.

In selecting sites for our visits, we sought to satisfy several criteria: significant civilian job loss; at least one site from each military service; geographic diversity; at least one major shipyard or depot complex; and a mix of urban and rural sites. We focused on 1991 BRAC round sites because DOD and communities had more experience than those in the 1988 round, and the 1993 and 1995 rounds did not provide enough time to assess recovery. Our site visits included Philadelphia Naval Base and Shipyard, Pennsylvania; Naval Air Station, Chase Field, Texas; Eaker Air Force Base, Arkansas; Castle Air Force Base, California; Fort Devens, Massachusetts; and Fort Benjamin Harrison, Indiana. At these sites, we met with various local officials, including business leaders and government officials, to gain their perspective on how the closures affected their communities and how the communities recovered. While information of this nature reflects unique experiences and thus presents a limited basis for drawing general conclusions about the impacts and recovery of all communities undergoing base closures, we were able to highlight common trends and themes.

In performing site visits, we asked local officials to discuss how base reuse contributes to economic recovery, and some of those discussions covered governmental assistance and the property disposal process. We also collected data on certain federal assistance provided to BRAC communities (see app. I). Because of data problems and the subsequent inability to make valid projections or generalizations, we did not track the after-closure employment status and job quality of specific individuals who lost their jobs due to base closures. Personnel data were generally

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<sup>11</sup>When the Bureau of Labor Statistics and the Bureau of Economic Analysis report new employment and income estimates, they also adjust estimates for past years. The local level estimates used in this report were obtained in January 1998 and may not exactly match estimates available at a later date.



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incomplete or not readily available at closing bases, and local employment officials had only limited relevant data. We did, however, obtain data on the estimated number of civilian jobs lost and actual jobs created at major base closures and realignments for the four rounds (see app. II).

We performed our review between August 1997 and September 1998 in accordance with generally accepted government auditing standards. We obtained DOD comments on a draft of this report. The comments have been summarized in chapters 2 through 5 and are presented in their entirety in appendix V.

# Most BRAC Recommendations Completed, but Transfer of Unneeded Base Property Is Proceeding Slowly

By the end of fiscal year 1998, DOD had completed action on about 85 percent of 451 BRAC commissions' recommendations for the four BRAC rounds.<sup>1</sup> The four BRAC commissions actually generated 499 recommendations; however, only 451 of these ultimately required action because 48 were changed in some manner by recommendations of a later commission. According to DOD documentation, all of the 1988 and 1991 round recommendations have been completed within the statutory 6-year period. Furthermore, from the first round to the second, the services accelerated the pace at which they completed recommendations, from an average of just under 5-1/2 years for the first round to just over 3 years for the second. DOD's plans to complete remaining 1993 and 1995 round recommendations indicate that the pace will be consistent with the 1991 round.

Despite timely completion of BRAC recommended actions, disposal of unneeded base property is proceeding slowly. About 464,000 acres were designated as unneeded real property at closing or realigning locations, but, as of March 1998, only about 31 percent of the property designated for nonfederal users had actually been transferred by formal deed, and only 8 percent of the property designated for federal entities had actually been transferred.<sup>2</sup> DOD and service officials cited various impediments such as environmental cleanup that extend property disposal time frames. To help ease this situation, DOD has been using interim leasing to get usable property to users quicker until a deed transfer can be issued. Nonetheless, DOD has much to do before it completes the transfer of its unneeded property.

## Most Recommended BRAC Actions Are Complete

DOD has typically reported to the Congress on its progress in implementing BRAC actions that the services have defined as major. According to a DOD official, DOD has completed 77 of 152 major recommendations. However, what constitutes a major or minor recommendation is not always apparent because the services define these terms differently. We analyzed all BRAC commissions' recommendations directed to the military departments and

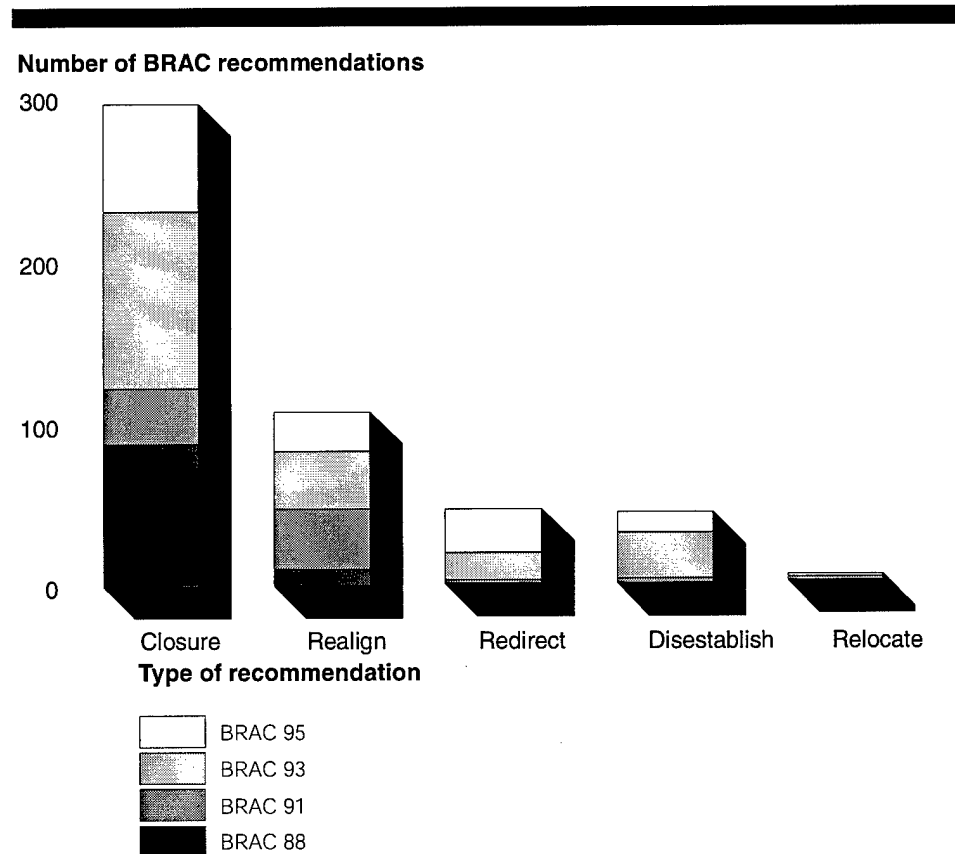
<sup>1</sup>A BRAC recommendation is considered completed when all activities relating to an installation's or activity's operational mission have ceased or been relocated. After completion, a caretaker work force may remain to bridge the period between operational closure and actual property disposal.

<sup>2</sup>These figures exclude property vacated by a military service's active component but set aside for use by reserve components within that service. Data for these types of property reuse are not readily available and not maintained centrally within DOD.

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defense agencies.<sup>3</sup> Our count of 499 recommendations is based on the BRAC commissions' reports, which are somewhat arbitrary in the way they enumerate recommendations. For example, a closure or a realignment in which several missions are disestablished or relocated may count as one recommendation or several. The types of recommendations are shown in figure 2.1.

**Figure 2.1: BRAC Recommendations by Round and Type**



Source: BRAC commission reports for the four rounds.

<sup>3</sup>The recommendations included closures, realignments, disestablishments, relocations, and redirections. In a closure, all missions carried at a base either cease or relocate (although some property may be retained for new purposes), while in a realignment, a base remains open but loses and sometimes gains missions. Disestablishments and relocations refer to missions; those disestablished cease operations, while those relocated are moved to another base. Redirection refers to cases in which a BRAC commission changes the recommendation of a previous commission.

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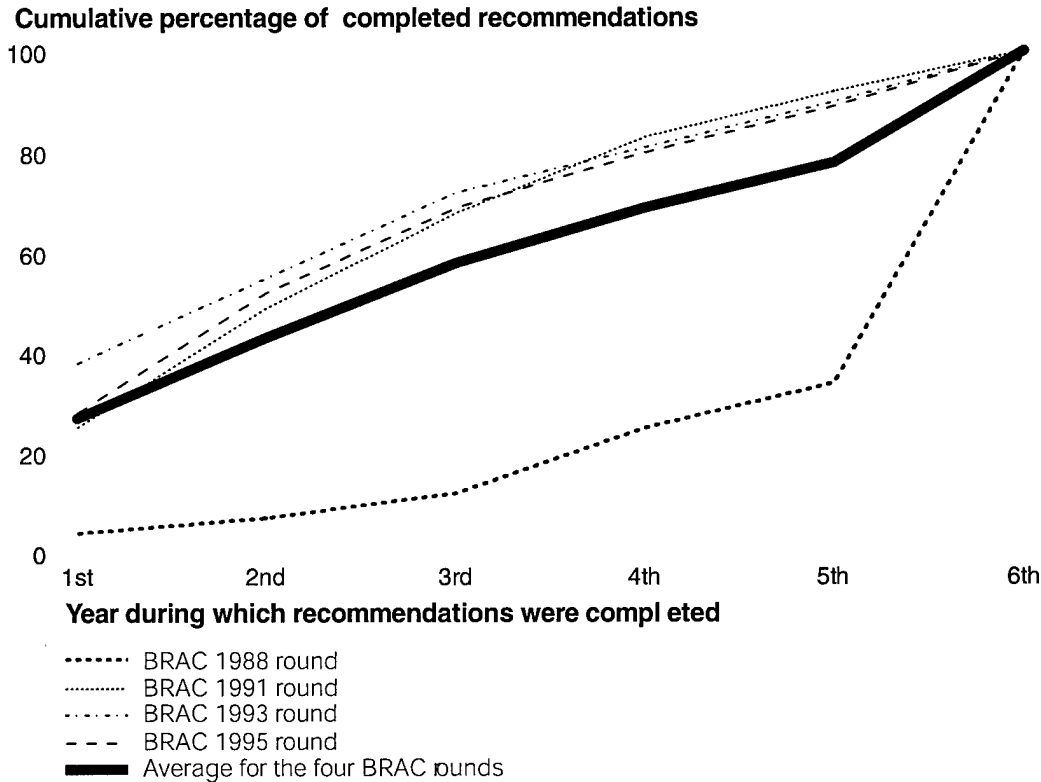
Overall, according to DOD data, 383, or about 85 percent, of 451 recommendations were completed as of September 30, 1998, including all recommendations associated with the 1988 and 1991 rounds; 68 actions remain in process.<sup>4</sup> For the 1993 and 1995 rounds, the completion rates were 87 and 60 percent, respectively, at that time. Further, DOD reported completing recommendations within mandated time frames. The statutory completion dates for the four rounds were September 30, 1995, July 11, 1997, July 2, 1999, and July 13, 2001, respectively. Our review showed 1988 and 1991 round recommendations were completed within the required time frames. DOD's schedule for the 1993 and 1995 rounds also anticipates completion within mandated time frames.

According to DOD, the sooner a BRAC recommendation is completed, the faster savings can begin to materialize and unneeded property can be transferred to users who can benefit by putting the property to alternative use. We agree that recurring savings could begin to accrue earlier and the property disposal process could be underway earlier to the extent that military operations at a closing base can be terminated earlier than expected. The average time required to complete a BRAC recommendation has been shortened in all rounds since the 1988 round, which took an average of nearly 5-1/2 years to complete. As a result, the subsequent rounds were over two-thirds complete after 3 years. Service officials generally attributed the faster completion rate to lessons learned during the first round. However, they added that implementation of individual recommendations could be slowed by unavailability of funds or complexity of actions required to construct new facilities and move organizations and units. The cumulative pace of completion for each round and the average completion pace for all four rounds are shown in figure 2.2.

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<sup>4</sup>As noted previously, only 451 of the 499 BRAC commissions' recommendations ultimately required action primarily because 48 were changed by a later commission.

Figure 2.2: Pace of Completing Recommendations by Round



Note: The completion rates for years five and six of the 1993 round and years three through six of the 1995 round are DOD's estimates.

Source: Our analysis of DOD data.

## Recipients Have Been Identified for Most Unneeded Real Property, but Transfers Are Proceeding Slowly

BRAC-affected installations contained about 464,000 acres that the individual military services and components did not need. Property disposition has been decided for about 79 percent of this acreage. Plans indicate that federal entities, including DOD activities, are the largest recipient of this property. As of September 30, 1997, 46 percent, or about 213,000 acres, of the unneeded BRAC property was to be retained by the federal government; 33 percent, or about 154,000 acres, was slated for nonfederal users such as state and local authorities or private parties; and the disposition of 21 percent, or about 98,000 acres had not yet been determined. However, only about 8 and 31 percent of the property

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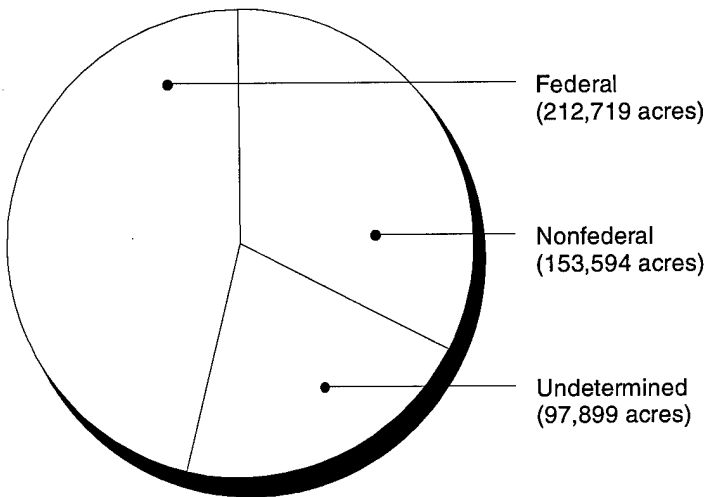
designated for federal and nonfederal recipients, respectively, had been transferred.

DOD officials cited various factors that affect property disposal. These factors include the iterative process of preparing site-specific reuse plans, environmental cleanup, preparing conveyance documentation, and, in some cases, communities' delays in assuming responsibility for the property. To get more property to users faster, DOD has been leasing property for several years, pending transfer of title.

**Planned Disposition of  
Unneeded Property**

As shown in figure 2.3, DOD data indicate that a substantial portion of BRAC acreage will be retained by DOD or transferred to other federal agencies.

**Figure 2.3: Planned Disposition of  
Unneeded Property**



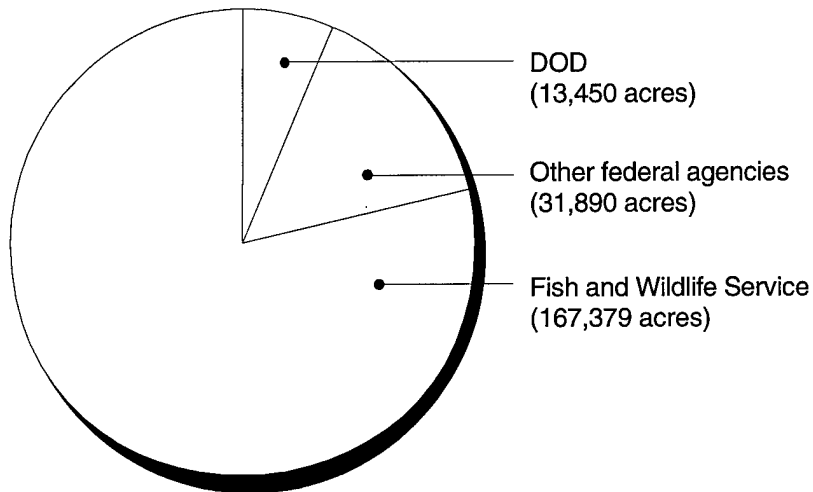
Source: Our analysis of DOD data.

Most of the property to be retained by the federal government is to go to the Fish and Wildlife Service, Department of the Interior, for use as wildlife habitats (see fig. 2.4). Other federal agencies, such as the National Park Service, the Federal Aviation Administration, and the Department of Veterans Affairs, are also to receive property. Further, DOD intends to retain property for, among other things, administrative space for the

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Defense Finance and Accounting Service. As previously noted, DOD is actually retaining more property than this because, in many cases during the BRAC process, the property of an active military service base was turned over to a reserve component without being declared excess; such actions would not be displayed in the figure. In particular, available DOD data indicate that over 330,000 acres of BRAC property are being retained for use by the reserve components. About 324,000 acres of this amount are attributable to five Army BRAC 1995 round bases—Fort Hunter Liggett, California; Fort Chaffee, Arkansas; Fort Pickett, Virginia, Fort Dix, New Jersey; and Fort McClellan, Alabama.

**Figure 2.4: Planned Disposition of Federally Retained Property**



Note: In addition to the acreage shown in the figure, DOD is retaining over 330,000 acres at its closing and realigning bases for reserve component use. This acreage was not formally classified as excess; thus, it is not displayed.

Source: Our analysis of DOD data.

In transferring property to nonfederal entities, several conveyance methods—public benefit transfers, economic development conveyances, and sales—are used (see fig. 2.5). Through public benefit transfers, property can usually be obtained at no cost for public benefit purposes such as airports, parks and recreation, education, and homeless assistance. Through economic development conveyances, property can

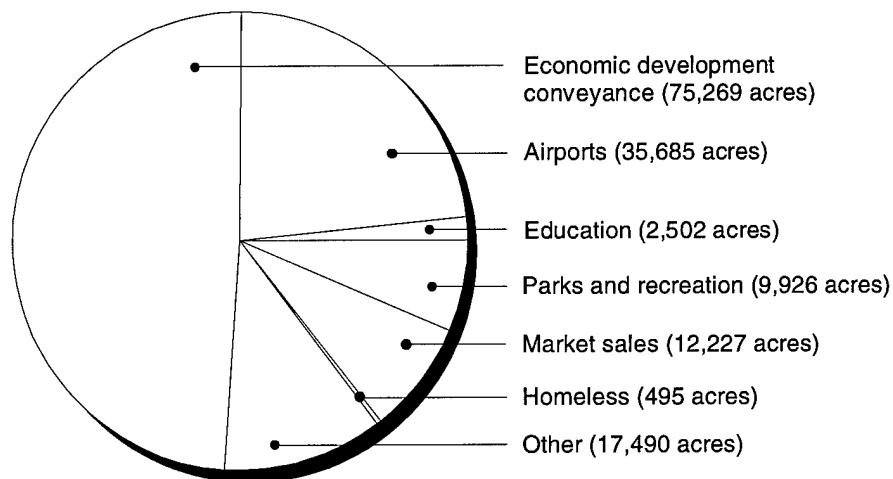
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usually be obtained at no-cost or no-initial cost for economic development and job creation purposes. To use this authority, however, a nonfederal entity must show that economic development and job creation cannot be accomplished under established sales or public benefit transfers.

Finally, property can be sold. Our work at seven BRAC sites showed the various forms of property conveyance the communities were using to obtain property. Appendix III provides a summary of the status of property disposition at these sites.

In the early years of BRAC, DOD was projecting higher revenue from land sales than it is now experiencing. DOD originally projected about \$4.7 billion in revenue from such sales for the four closure rounds; however, according to the fiscal year 1999 budget, total expected sales are about \$122 million for those rounds. The decrease in sales is attributable primarily to national policy changes and legislation that emphasize assisting communities that are losing bases.

**Figure 2.5: Planned Nonfederal Transfers**



Source: Our analysis of DOD data.

**Most Unneeded Property Awaits Final Disposition**

While DOD has plans for transferring most of its unneeded property, actual transfers are much less than planned. Overall, DOD data indicate that about 14 percent, or about 64,000 acres, of the 464,000 acres of unneeded



property has been transferred to federal or nonfederal entities. Specifically, about 17,000 acres have been transferred to federal entities and about 47,000 acres have been transferred to nonfederal entities. Excluding that property for which plans have been established for final disposition, DOD has reportedly transferred about 8 percent of the property to federal entities and about 31 percent of the property to nonfederal entities.

Progress in transferring title of BRAC property to users is slowed by many factors. Planning for reuse can be a lengthy process and many actions must precede disposition. For example, the Defense Base Closure and Realignment Act of 1990, as amended, requires the Secretary of Defense to consult with local authorities about their plans before transferring former military property. The law also states that the Secretaries of Defense and of Housing and Urban Development must review and approve the reuse plan of a local redevelopment authority before DOD can transfer property to assist the homeless. In addition, DOD guidelines require that a redevelopment authority complete a reuse plan before DOD can transfer property for economic redevelopment and job creation purposes. Furthermore, the need to address environmental contamination can also delay final disposition. (See ch. 4 for a discussion of environmental laws and regulations and other environmental issues.) Finally, according to DOD officials, some communities are not prepared to assume responsibility for control of unneeded base property. Specifically, communities need to, among other things, establish an organization to administer prospective property, determine uses, and arrange for financing for providing for property protection, maintenance, and improvements.

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### Leasing Allows Property Reuse Pending Transfer

While awaiting property transfers, communities can sometimes begin using base property through interim leasing. Military service leasing policies and practices provide opportunities for communities to lease property before environmental cleanup and final disposal are complete, then find tenants to sublease it. According to community representatives, leasing is a useful interim measure to promote reuse and job creation. It can also help DOD gain an advantage as the community assumes responsibility and pays for protecting and maintaining the property.

Interim leasing may not always be viable, however. Prospective tenants may experience financing difficulties or are sometimes reluctant to sublease property while DOD retains title. For example, DOD and community officials told us that tenants may have difficulty obtaining

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financing for redevelopment because banks are disinclined to lend money under these circumstances. Also, since much of the property under consideration has remaining environmental contamination, there are liability issues to be addressed, and tenants are reluctant to lease until these are resolved.

The services do not centrally maintain leasing information and could not readily provide comprehensive data. However, service data we were able to obtain indicated that during the second quarter of fiscal year 1998, nearly 38,000 acres, or 8 percent of the unneeded BRAC acreage, were operating under some type of lease. According to these data, about 25 percent of the property planned for nonfederal recipients and awaiting transfer was under interim leases.

Three of the sites where we performed work on property disposal (see app. III) were using leases while actions for final disposal progressed. The conditions we noted regarding leases are summarized below:

- At the former Mather Air Force Base, California, about 93 percent of the property requested under an economic development conveyance is operated under an interim lease. The remaining property under this conveyance has already been deeded, although a portion of the property devoted to family housing has been vacant since the base closed in 1993 and has increasingly deteriorated as negotiations continued between the Air Force and the community over property transfer. Agreement was recently reached for a negotiated sale of the property. Also, the airport property is under a 55-year lease to Sacramento County, California, pending a public benefit conveyance.
- At the former Vint Hill Farms Station, Virginia, the Army has approved several interim leases and is planning an additional lease to support development of a golf course.
- At the former Mare Island Naval Shipyard, California, the Navy and the local reuse authority have entered into a short-term lease for about 48 percent of the property requested under an economic development conveyance. As of July 1998, the local authority had 58 subleases that covered over 178 acres of land and buildings.

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## Conclusions

DOD has reportedly completed most of the commissions' recommendations and accelerated the pace of completion since the 1988 round. Those recommendations that remain outstanding are generally attributable to the 1993 and 1995 rounds, and DOD's plans call for closing them out within

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required time frames. However, the actual transfer of unneeded base property has been slow due to a variety of factors. Activities and rules governing the disposition process, while designed to ensure that all requirements of applicable laws and regulations are met, contribute to the slow rate of progress. This situation has been somewhat eased by the use of leases. Nonetheless, DOD has much to do before it completes its task of transferring remaining BRAC property it no longer needs.

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**Agency Comments**

DOD stated that its goal in property disposal is to convey property as quickly as possible to advance both the local communities' economic recovery and to accelerate DOD savings by eliminating costs associated with maintaining the property. However, DOD acknowledged that property transfer is a complex process involving many challenges, including time needed to clean up BRAC property. In this regard, DOD stated it supports a variety of initiatives to accelerate, refine, or simplify the process.

# BRAC Savings Estimates Are Not Routinely Updated, but Evidence Points to Substantial Savings

Through 2001, DOD estimates it will achieve a net savings<sup>1</sup> of about \$14 billion as a result of BRAC actions. Beyond 2001, DOD expects to save about \$5.7 billion annually.<sup>2</sup> Because DOD is relying on BRAC savings to help free up funds for future defense programs, such as weapons modernization, and has adjusted its prospective budgets to reflect savings, it is important that savings estimates be adjusted to reflect experience. The services have updated costs annually, but they have not routinely updated savings. The lack of current data on savings raises doubts about the precision of net savings estimates, and estimates should be considered a rough order of magnitude.

In addition, DOD cost estimates exclude two categories of closure-related costs. First, one-time costs of over \$1 billion in federal financial assistance provided to communities affected by BRAC actions are excluded. While these costs are incurred by the federal government, they are not funded through BRAC budget accounts. Second, DOD has not included estimated costs of at least \$2.4 billion to complete environmental cleanup at BRAC bases for its annual savings projections beyond 2001. Including these costs would reduce overall savings and delay the point at which net savings begin, even though the impact is relatively small. Despite these omissions and the lack of current savings data, our prior work and the work of others, such as the DOD Inspector General, indicate that BRAC net annual savings will be substantial once implementation costs have been offset.

## DOD Expects Substantial Savings From BRAC

DOD expects that the four BRAC rounds will cumulatively result in substantial net savings through 2001 and in additional ongoing recurring savings after that time. DOD expects one-time costs of about \$23 billion for the period of 1990 through 2001, while achieving total savings of almost \$37 billion, resulting in net savings of about \$14 billion (see fig. 3.1).<sup>3</sup> As shown in the figure, DOD reports that cumulative BRAC savings are expected to surpass cumulative BRAC costs for the first time in fiscal year 1998. If community assistance costs of over \$1 billion are considered as a BRAC

<sup>1</sup>The term savings includes costs avoided, such as planned military construction projects that are canceled due to BRAC actions, and reductions in operating costs, such as the reduction of civilian or military personnel positions that recur for an indefinite time.

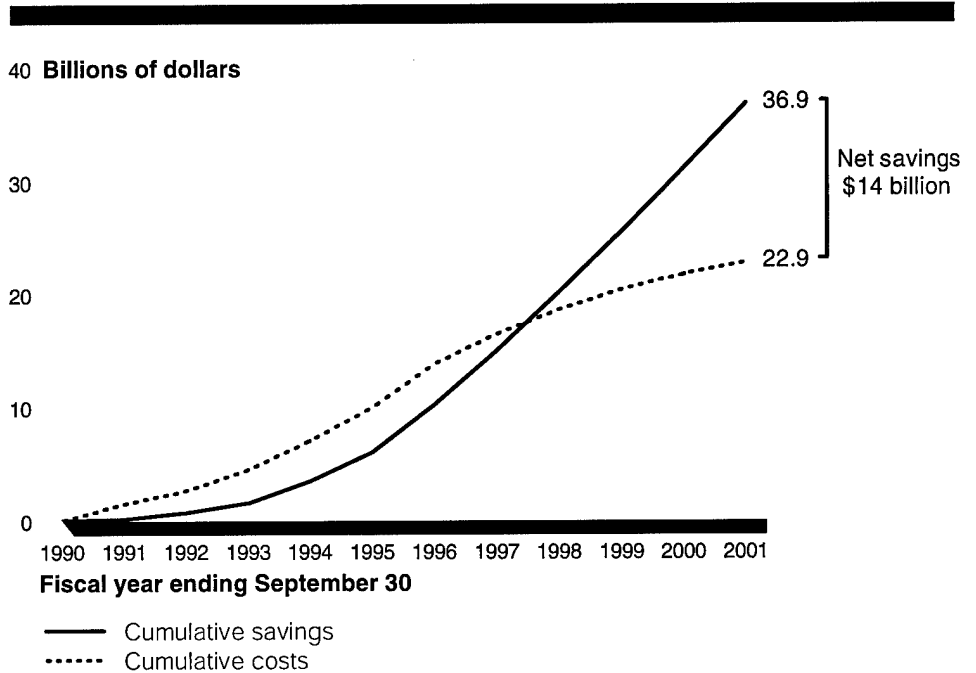
<sup>2</sup>DOD reports the expected annual savings at \$5.6 billion, but because recurring savings estimates for the Navy were underreported by \$100 million in the fiscal year 1999 budget request, the savings estimate should be \$5.7 billion.

<sup>3</sup>The Congress recognized that an up-front investment was necessary to achieve savings and established two Base Closure Accounts to fund certain implementation or one-time costs. The initial account funds 1988 round actions while the second account funds the 1991, 1993, and 1995 rounds.

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cost and included in the costs and savings calculations, the breakeven point for costs and savings would occur later in fiscal year 1998.

**Figure 3.1: BRAC Costs and Savings for 1990 Through 2001**



Source: Our analysis of DOD data.

BRAC costs and savings differ by round because of variations in the number and scope of closures and realignments in each round. The BRAC 1991 round is the only one where DOD expects to achieve a net savings during the 6-year implementation period; after the implementation periods, however, DOD expects substantial recurring savings for all BRAC rounds. The highest costs occurred in the BRAC 1993 round, but this round also accounted for the highest level of estimated recurring net annual savings. The lowest costs occurred in the BRAC 1988 round, but this round is expected to produce the lowest annual estimated recurring savings. For the 6-year implementation periods for the rounds, total estimated costs are slightly higher than total estimated savings; however, following 2001, DOD estimates annual recurring savings of \$5.7 billion (see table 3.1).

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**Table 3.1: BRAC Estimated Costs and Savings by Round Through 2001**

Dollars in billions

Round	Implementation period estimates <sup>a</sup>		Net annual recurring savings <sup>b</sup>	Total savings through 2001 <sup>c</sup>	Net savings through 2001 <sup>d</sup>	
	6-year period	Costs				Savings
BRAC 1988	1990-1995	\$2.7	\$2.4	\$0.8	\$6.9	\$4.2
BRAC 1991	1992-1997	5.2	6.4	1.5	12.4	7.2
BRAC 1993	1994-1999	7.7	7.5	2.1	11.7	4.0
BRAC 1995	1996-2001	7.3	5.9	1.3	5.9	(1.4)
<b>Total</b>		<b>\$22.9</b>	<b>\$22.2</b>	<b>\$5.7</b>	<b>\$36.9</b>	<b>\$14.0<sup>d</sup></b>

Note: Amounts presented are current-year dollars consistent with DOD's budget submissions; totals may not add due to rounding.

<sup>a</sup>Implementation period estimates are the one-time BRAC costs and savings for the 6-year period authorized to complete a BRAC action. The cost estimates are less any revenues from the sale of unneeded base property.

<sup>b</sup>Net annual recurring savings start the year after completion of the round and are usually based on estimated savings during the last implementation year for each round.

<sup>c</sup>Total savings through 2001 consist of 6-year implementation period savings plus recurring savings for each year after the end of a round through 2001. For example, BRAC 1991 total savings of \$12.4 billion through 2001 consist of \$6.4 billion in savings during the implementation period and \$6 billion in recurring savings for the years 1998 through 2001 (\$1.5 billion for 4 years).

<sup>d</sup>Net savings through 2001 consist of total savings through 2001, less the costs incurred through 2001.

Source: DOD fiscal year 1999 BRAC budget submission.

**DOD's Development of  
Cost and Savings  
Estimates**

Potential costs and savings of a BRAC action were factors the BRAC commissions considered in recommending which bases to realign and close. DOD developed initial cost and savings estimates by using its Cost of Base Realignment Actions (COBRA) model, to compare various alternative BRAC actions. While COBRA was useful in the decision-making process, it was not intended to produce data for developing specific cost and savings estimates for any particular action that was to be implemented. After BRAC decisions were finalized, DOD intended to replace the COBRA estimates with more refined estimates for submission in its annual budgets to the Congress. Starting in fiscal year 1993, DOD was required to update these estimates on an annual basis in its budget submissions.

The COBRA model consists of a set of formulas that incorporate standard factors, such as moving and construction costs, as well as base-specific

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data, such as average salaries and overhead cost computations. It incorporates data pertaining to three major cost elements—the current cost of operations, the cost of operations after a BRAC action, and the cost of implementing the action. In our analyses of the BRAC commissions' recommendations for the four BRAC rounds, we found and reported on various problems with COBRA.<sup>4</sup> Improvements were made to the model after each BRAC round. In our review of the 1995 BRAC round, we stated that COBRA estimates are only a starting point for preparing BRAC implementation budgets and that COBRA is a comparative tool, rather than a precise indicator of budget costs and savings. DOD agrees that COBRA provides a methodology for consistently estimating costs and savings for alternative closure options but that it is not intended to be used in its budget submissions.

DOD submits costs and savings estimates for BRAC actions with its annual budget. COBRA estimates were a starting point for the military services in preparing initial BRAC implementation budgets. BRAC legislation, supplemented by DOD Financial Management Regulations, requires that for fiscal year 1993 and thereafter, DOD submit annual schedules estimating BRAC cost and savings, as well as the period during which savings are to be achieved. DOD components are required to prepare budget justification books for each BRAC commissions' recommendations with narrative and financial summary exhibits. Each service is also required to prepare a cost and savings exhibit for each base closure package, showing one-time implementation costs, anticipated revenues from land sales, and expected savings.<sup>5</sup> The projected BRAC costs and savings are reported in the budget for the 6-year implementation period for each round. The Congress uses these estimates in appropriating funds annually for BRAC actions.

Data developed for the budget submissions differ from those in COBRA for a variety of reasons, including the following:

- Some factors in COBRA estimates are averages, whereas budget data are more specific.

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<sup>4</sup>Military Bases: An Analysis of the Commission's Realignment and Closure Recommendations (GAO/NSIAD-90-42, Nov. 29, 1989), Military Bases: Observations on the Analyses Supporting Proposed Closures and Realignments (GAO/NSIAD-91-224, May 15, 1991), Military Bases: Analysis of DOD's Recommendations and Selection Process for Closures and Realignments (GAO/NSIAD-93-173, Apr. 15, 1993), and Military Bases: Analysis of DOD's 1995 Process and Recommendations for Closure and Realignment (GAO/NSIAD-95-133, Apr. 14, 1995).

<sup>5</sup>One-time costs, less any estimated land sale revenues, constitute the BRAC budget request. Some costs resulting from implementing BRAC actions are not authorized funding from the Base Closure Account and are funded by other appropriations. Savings may be one-time or recurring. One-time savings are cost avoidances or revenue gains that result from BRAC actions, while recurring savings are reductions in operating costs at BRAC sites that continue for an indefinite period.

- COBRA costs are expressed in constant-year dollars; budgets are expressed in inflated dollars.
- Environmental restoration costs are not included in COBRA estimates, but these costs are included in BRAC implementation budgets.
- COBRA estimates show costs and savings pertinent to a given installation even if multiple tenants are involved; BRAC implementation budgets represent only a single component's costs.

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### BRAC Savings Estimates Are Applied to Future DOD Budgets

Accurately gauging BRAC savings is important because DOD is depending on them to help fund future defense programs, such as weapons modernization. To the extent that the savings are greater than estimated, DOD could have more resources for future programs than needed while the opposite would hold true if the savings are less than estimated. DOD and service BRAC officials stated that estimated BRAC savings are applied to future annual budgets formally in the budget process. Estimated amounts of net savings projected at the beginning of a BRAC round are subtracted from the expected future cost of each service's plans in DOD's Future Years Defense Program (FYDP).<sup>6</sup> These early estimates, according to DOD and service officials, are generally not updated for more current estimates of savings. Further, the services have discretion in how they apply the estimated savings. DOD officials told us, for example, that the Army distributes savings across a number of different budgetary accounts, while the Navy applies savings as a lump sum against future budget authority. We could not confirm that all BRAC savings estimates were applied to future budgets because they may be combined with savings from other initiatives or, as in the Army's case, distributed as small amounts across many accounts.

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### BRAC Cost Estimates Are Revised Annually, but Savings Estimates Are Updated Infrequently

While DOD and its components have emphasized the importance of accurate and current cost estimates for their annual BRAC budgets, the military services have not placed a priority on updating BRAC savings estimates. DOD has consistently updated BRAC costs in its annual budget; however, the services seldom update estimates of BRAC savings and do not change savings estimates to reflect actual savings. Among the reasons savings estimates are not updated are that DOD's accounting system, or other accounting systems, is not designed to track savings and that updating savings has not been a high priority.

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<sup>6</sup>The FYDP is an authoritative record of current and projected force structure, costs, and personnel levels approved by the Secretary of Defense. The 1998 FYDP supported the President's fiscal year 1998 budget and included budget estimates for fiscal years 1998-2003.



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For BRAC 1991, 1993, and 1995 round budget submissions, the military components reviewed and revised their total cost estimates for base closures and realignments annually.<sup>7</sup> The components provide guidance to their major commands and/or installations detailing instructions for supporting BRAC costs included in budget submissions. Each service's estimated costs in the budget requests showed annual changes of varying size. Costs for two defense agencies—the Defense Logistics Agency and the Defense Information Systems Agency—did not change in some years, but agency officials told us that the costs were carefully evaluated during the budget process. We did not verify the accuracy of the estimates; however, the DOD Inspector General, in a BRAC 1993 audit of costs and savings, noted that DOD has a reasonably effective process for updating BRAC cost estimates.

In contrast, savings updates were infrequent. Although our review showed the Defense Logistics Agency and the Defense Information Systems Agency updated savings projections annually, the services have seldom revised savings estimates, despite requirements to do so. The BRAC 1990 legislation required that, for fiscal year 1993 and thereafter, DOD submit annual schedules estimating the cost and savings of each BRAC action. In 1996, DOD provided additional budget guidance to the military components, requiring that savings estimates be based on the best projection of the savings that would actually accrue from approved realignments and closures. DOD Defense Planning Guidance issued that year stated that, as a matter of general policy, the military components should track actual BRAC savings and compare them with projected savings.

The Air Force has not updated its savings estimates, and the Army and the Navy have rarely done so. For the 1991, 1993, and 1995 BRAC rounds, each service had 11 opportunities in its annual budget submissions to update savings estimates for one round or another—for a total of 33 opportunities. Altogether, they submitted a total of seven updates. The Navy updated savings in four budget submissions and the Army updated savings in three submissions.

In addition to not updating its savings estimates, the Air Force did not refine its initial COBRA estimates for its annual budget submissions. The Air Force's budget estimates consist of COBRA data, with adjustments for

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<sup>7</sup>Because the requirement to update cost and savings estimates was not effective until fiscal year 1993, we did not evaluate costs and savings estimates for the 1988 round. To determine the frequency of cost and savings estimate updates, we reviewed annual budget submissions for the other BRAC rounds as follows: BRAC 1991, 6 years (1993-1998); BRAC 1993, 5 years (1995-1999); and BRAC 1995, 3 years (1997-1999).

inflation and recurring cost increases at gaining installations. Air Force officials stated that its BRAC office never instructed major commands to update savings estimates. They stated that at the beginning, the Air Force decided not to update savings estimates because there was no accounting system to track savings changes and no resources to create one. These officials agreed that COBRA estimates are broad estimates that may differ from actual savings.

In contrast, the Navy refined COBRA estimates for its budget submission at the start of each round. Thereafter, according to Navy officials, it was Navy policy to update savings only when major BRAC changes occurred that could affect overall savings. For example, the Navy's 1998 budget submission for the 1995 round showed increased savings over the prior year's submission. Specifically, Navy officials stated that the decisions to privatize workloads at the Naval Air Warfare Center at Indianapolis, Indiana, and the Naval Surface Warfare Center at Louisville, Kentucky, instead of closing them and transferring some jobs to other locations, resulted in greater savings estimates at both locations. These centers were the only 1995 round installations for which the Navy updated the savings estimates; savings for other locations were neither reviewed nor revised. However, we believe the revised savings estimates for these two locations may be overstated because our previous reviews of BRAC actions involving privatization have questioned the cost-effectiveness and whether it reduces excess capacity.<sup>8</sup> In particular, our 1996 report on the Navy's Naval Surface Warfare Center in Louisville showed that the plan for privatizing workloads in place will not reduce excess capacity in the remaining depots or the private sector and may prove more costly than transferring the work to other depots.<sup>9</sup>

Like the Navy, the Army revised COBRA savings estimates to more precise estimates based on its BRAC implementation plans but, until recently, had not instructed commands to annually update initial savings estimates. Acting on Army Audit Agency recommendations, the Army updated its savings estimates for selected BRAC 1995 actions in the fiscal year 1999 budget.<sup>10</sup> The Army Audit Agency reviewed costs incurred and avoided at 10 BRAC 1995 closures and developed revised savings estimates. In

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<sup>8</sup>Air Force Depot Maintenance: Privatization-in-Place Plans Are Costly While Excess Capacity Exists (GAO/NSIAD-97-13, Dec. 31, 1996).

<sup>9</sup>Navy Depot Maintenance: Cost and Savings Issues Related to Privatizing-in-Place at the Louisville, Kentucky, Depot (GAO/NSIAD-96-202, Sept. 18, 1996).

<sup>10</sup>Base Realignment and Closure 1995 Savings Estimates, U.S. Army Audit Agency, Audit Report AA 97-225, July 31, 1997.

August 1997, the Army BRAC office instructed major commands to incorporate these revised savings estimates in the 1999 budget request and to update estimates annually in future budgets. The Army, however, did not review or revise savings estimates for any installations that were not included in the Army Audit Agency review.

Officials cited a number of reasons for not routinely updating savings estimates. BRAC officials told us that the emphasis in preparing the annual budget has always been to update costs—not savings. Service officials stated that updating savings estimates would be very labor intensive and costly and that a fundamental limitation in updating savings is the lack of an accounting system that can track savings. Like other accounting systems, DOD's system is oriented toward tracking cost-related transactions, such as obligations and expenditures. In addition, as we reported in July 1997, some DOD and service officials stated that the possibility that the components' appropriations would be reduced by the amount of savings gives them a disincentive to separately track savings.

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## Net Savings Estimates Exclude Some Costs

BRAC net savings estimates consist of a comparison of BRAC expenditures with anticipated savings, but they exclude some BRAC-related costs. First, expected environmental cleanup costs of at least \$2.4 billion after 2001 are not included in annual recurring savings estimates. (See ch. 4 for a discussion of DOD's environmental program for BRAC bases). Second, BRAC-related economic assistance costs, much of which are funded through agencies other than DOD, are not included in the calculation of one-time implementation savings. We identified about \$1.1 billion that was provided in assistance for purposes such as base reuse planning, airport planning, job training, infrastructure improvements, and community economic development.<sup>11</sup>

- About \$334 million was provided by the Department of Commerce's Economic Development Administration to assist communities with infrastructure improvements, building demolition, and revolving fund loans.
- About \$271 million was provided by the Federal Aviation Administration to assist with converting military airfields to civilian use.<sup>12</sup>

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<sup>11</sup>Economic Development Administration costs cover fiscal years 1992 through 1997. Federal Aviation Administration costs cover fiscal years 1991 through 1997. Department of Labor costs cover from July 1, 1991, through September 30, 1997. DOD's Office of Economic Adjustment costs cover fiscal year 1988 through February 17, 1998.

<sup>12</sup>Some consider this more of an investment in the national airport system than a BRAC cost.

- About \$210 million was provided by the Department of Labor to help communities retrain workers who have lost their jobs because of closures.
- About \$231 million was provided by DOD's Office of Economic Adjustment to help communities plan the reuse of BRAC bases.
- About \$90 million in unemployment compensation was provided for employees who lost jobs during the four BRAC rounds. According to DOD, data were not available to provide base-by-base estimates for this cost.

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## Despite Estimation Difficulties, BRAC Savings Should Be Substantial

Despite the imprecision associated with DOD's cost and savings estimates, our analysis continues to show that BRAC actions will result in substantial long-term savings after the costs of closing and realigning bases are incurred. For example, we reported in April 1996 that overall base support costs for DOD had been reduced, although DOD's reporting system could not indicate how much of the reduction was due to BRAC and how much was due to force structure or other changes.<sup>13</sup> We found that by fiscal year 1997, DOD had expected to reduce annual base support costs by \$11.5 billion annually from a fiscal year 1988 baseline, resulting in a cumulative reduction over the period of about \$59 billion.

In addition, an Army Audit Agency audit concluded that BRAC actions would result in overall savings, although savings estimates were not precise. In its July 1997 report, the Army Audit Agency concluded that savings would be substantial after full implementation for the 10 BRAC 1995 sites it had examined but that annual recurring savings beyond the implementation period were 16 percent less than the major commands' estimates.

DOD Inspector General audits have also concluded that savings estimates will be substantial. The Inspector General's report on bases closed during BRAC 1993 stated that for the implementation period, savings will overtake costs sooner than expected.<sup>14</sup> DOD's original budget estimate for the 1993 round indicated costs of \$8.3 billion and savings of \$7.4 billion for a net cost of \$900 million. The Inspector General's audit showed that the costs were closer to \$6.8 billion and that savings could approach \$9.2 billion, which would result in up to \$2.4 billion in net savings. The report indicated that the greater savings were due to factors such as obligations for one-time implementation costs (which were never adjusted to reflect

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<sup>13</sup>Military Bases: Closure and Realignment Savings Are Significant, but Not Easily Quantified (GAO/NSIAD-96-67, Apr. 8, 1996).

<sup>14</sup>Costs and Savings for 1993 Defense Base Realignment and Closures, Office of the Inspector General, Department of Defense, Report No. 98-130, May 6, 1998.

actual disbursements), canceled military construction projects, and less of an increase in overhead costs than originally projected at a base receiving work from a closing base. Additionally, some undefined portion of the savings included personnel reductions that could not be solely attributed to BRAC.

The Inspector General's audit of selected BRAC 1995 closures showed variation between budget estimates and implementation experience.<sup>15</sup> The audit of 23 closed bases noted savings during the implementation period were within 1.4 percent and costs were within 4.3 percent of budget estimates. However, the audit excluded costs and savings from two activities—the Naval Air Warfare Center in Indianapolis and the Naval Surface Warfare Center in Louisville—that were privatized-in-place. However, our prior reviews have raise cost-effectiveness questions about privatization-in-place efforts. As noted previously, our 1996 report on the Navy's Louisville activity showed that the plan for privatizing workloads may prove more costly than transferring the work to other depots having underutilized capacity.

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## Conclusions

DOD is depending on BRAC savings to help fund future defense programs. Although evidence indicates that BRAC savings should be substantial, savings estimates have not been routinely updated and certain costs are not considered in developing estimates, thereby calling into question the degree of precision that is associated with the expected savings. To the extent that actual BRAC savings differ from the estimated amounts applied to future budgets, DOD either will have to seek additional funds for programs it hoped to fund with BRAC savings in the future or may have more funds available than anticipated.

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## Agency Comments

DOD concurred with our conclusion that BRAC savings will be substantial once implementation costs have been offset. DOD acknowledged that savings estimates are important because they help measure the value of the BRAC process. However, DOD stated that such estimates are difficult to track and update, and that it does not maintain a separate system to account precisely for savings. Nonetheless, DOD stated it is taking measures to improve the accuracy of its savings estimates. For example, DOD cited that the DOD Comptroller, in a May 1998 memorandum to the

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<sup>15</sup>Analysis of the 1995 Defense Bases Realignment and Closure (BRAC) Costs and Savings, Memorandum for Deputy Under Secretary of Defense (Industrial Affairs and Installations), Inspector General, Department of Defense, March 20, 1998.

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military services, had reiterated the requirement to update savings estimates in annual budget submissions as much as practical.

# Environmental Cleanup Is Progressing, but It Is Costly and Time-consuming

The process of making BRAC property available for transfer and reuse involves cleaning up environmental contamination resulting from years of military operations. While DOD had an environmental program at its military bases prior to BRAC 1988, the onset of realignments and closures and the desire to cease operations and transfer property as quickly as possible have heightened the interest in environmental cleanup. Addressing environmental problems has proven to be both costly and challenging for DOD. Although DOD has not compiled a total cost estimate, available DOD data indicate that BRAC environmental costs are likely to exceed \$9 billion, of which at least \$2.4 billion is needed to continue restoration after the BRAC implementation authority expires in fiscal year 2001. Cleanup is expected to continue many years beyond that time and the potential for higher costs exists, given uncertainties associated with the extent of cleanup of UXO and monitoring of cleanup remedies needed at selected sites.<sup>1</sup>

In the early years of the BRAC program, much of the emphasis was on site studies and investigations. Now, DOD has reported that, with much of that investigative work completed, the program's emphasis has shifted to actual cleanup. To expedite cleanup and help promote the transfer of BRAC property, DOD established the Fast-Track Cleanup program in fiscal year 1993 to remove needless delays in the cleanup process while protecting human health and the environment. Most of the key provisions of the program have been met. Further, DOD, the services, and regulators generally agree that the program has contributed to environmental program progress. However, while some of the steps leading to actual cleanups have been accelerated, actual cleanups can still be lengthy and projections for completing cleanups extend well into the next century.

## BRAC Environmental Program Is Complex and Costly

The BRAC environmental program involves restoring contaminated sites to meet property transfer requirements and ensuring that the property is in compliance with federal and state regulations. The program consists of restoration, closure-related compliance, and program planning and support activities. Restoration activities involve the cleanup of contamination caused by past disposal practices, which were accepted at the time but which have proved damaging to the environment. Compliance activities ensure that closing bases clean up hazardous waste following

<sup>1</sup>UXO is unexploded ordnance. It is ordnance that remains unexploded either through malfunction or design and can injure personnel or damage material. Types of UXO include bombs, missiles, rockets, artillery rounds, ammunition, or mines.

specific practices outlined in environmental laws and regulations.<sup>2</sup> Program planning is generally associated with examining the environmental consequences of property transfer and reuse decisions.<sup>3</sup> Program support activities include program management, administration, travel, training, and other support requirements, such as funds provided to the federal and state environmental regulatory agencies and the Agency for Toxic Substances and Disease Registry.

Of the \$23 billion estimated cost for the entire BRAC program through 2001, about \$7.2 billion, or 31 percent, is associated with environmental protection efforts. Also, additional environmental costs of at least \$2.4 billion are expected after that time because the duration of environmental activities is dependent on the level of cleanup required for reuse and the selected remedy. In some cases, the contamination problem can be addressed quickly, but in other cases, the cleanups may require years to complete. The estimated costs after 2001 are expected to be incurred over a number of years and would therefore only slightly reduce DOD's projected annual recurring savings over the long term.<sup>4</sup> Currently, available data indicate that environmental program costs at BRAC locations are expected to exceed \$9 billion (see table 4.1); however, this estimate is conservative because DOD has not projected all costs for the program's duration. Further, costs could increase if (1) cleanup standards or intended property reuses are revised, (2) DOD undertakes significant UXO cleanups, or (3) selected remedies fail to clean up contaminated sites. Likewise, costs could decrease if (1) cleanup standards or intended property reuses are revised or (2) new cleanup technologies are developed and implemented.

Over 40 percent of the \$9.6 billion estimate had been obligated through fiscal year 1997. Over 75 percent of the total environmental cost is expected to be devoted to restoration actions. As noted in the table, some cost estimates are not all inclusive because either DOD had not estimated future costs or the data were commingled with other environmental data.

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<sup>2</sup>Compliance activities are those closure-related activities that must be undertaken to transfer property. They include the cleanup of friable asbestos, polychlorinated biphenyls, lead-based paint, and UXO; the removal of underground storage tanks that are (or will be) no longer in compliance when property is leased or transferred; and responses to leaks from in-service underground storage tanks.

<sup>3</sup>The National Environmental Policy Act of 1969 requires that federal agencies assess the impact of major federal actions affecting environmental quality and consider alternatives to those actions.

<sup>4</sup>An additional perspective on the out-year cost is that some undefined portion of them would have likely been incurred, regardless of BRAC actions at these bases.



**Chapter 4**  
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**Table 4.1: BRAC Estimated Environmental Program Costs**

Dollars in billions

<b>Cost category</b>	<b>Through fiscal year 1997</b>	<b>Fiscal years 1998-2001</b>	<b>Fiscal years 2002 –69</b>	<b>Total</b>
Restoration <sup>a</sup>	\$3.19	\$2.15	\$2.10	<b>\$7.44</b>
Compliance	0.94	0.58	Unavailable <sup>b</sup>	<b>1.52<sup>c</sup></b>
Program planning	Unavailable <sup>d</sup>	0.01	Unavailable <sup>b</sup>	<b>0.01<sup>c</sup></b>
Program support	Unavailable <sup>d</sup>	0.35	0.30	<b>0.65<sup>c</sup></b>
<b>Total</b>	<b>\$4.13<sup>c</sup></b>	<b>\$3.09</b>	<b>\$2.40<sup>c</sup></b>	<b>\$9.62<sup>c</sup></b>

<sup>a</sup>Includes costs for 205 installations with cleanup activities for contaminated sites.

<sup>b</sup>DOD does not estimate these costs after 2001.

<sup>c</sup>Totals are incomplete because of unavailability of some estimated cost data.

<sup>d</sup>The services were unable to provide estimates because they were not required to separate obligation data among different environmental subaccounts until fiscal year 1996.

Source: Our analysis of DOD data.

A major potential compliance cost that is not included in DOD's estimate is the cleanup of UXO. However, DOD does not define the cleanup of UXO as a restoration activity. Thus, UXO cleanup costs are not included in DOD's estimate for the restoration of BRAC bases. For example, according to Fort Ord's base environmental coordinator, DOD's annual restoration report does not include the estimated \$150 million cost of UXO cleanup at the fort. The Army indicated that such costs were not included in DOD's annual cleanup report because they were considered compliance, not restoration, costs. Regardless, UXO must be cleaned up or addressed in some manner before property can be transferred and reused.

**DOD's Cleanup Cost Estimates Are Decreasing**

While environmental cost estimates have risen over the years and the potential exists for even greater costs, DOD has decreased its cost estimate to complete BRAC cleanup at identified sites by about \$900 million over the last year. Among the reasons the services have given for the estimate decrease are factors such as enhanced estimating capability based on experience, improved site identification, and use of innovative technology. As DOD noted, some early estimates were based on worst-case scenarios, which have generally not occurred. DOD also sometimes assumed that it would be required by local redevelopment authorities to clean property to the highest cleanup standard, that of unrestricted use; this assumption has proved to be untrue in some cases. For example, at the Long Beach Naval

Station, the estimated cost to complete cleanup at the installation decreased from \$152.4 million in fiscal year 1996 to \$85.4 million in fiscal year 1997. While the earlier estimate was based on dredging all contaminated harbor sediments, Navy officials said they were able to decrease the estimated cleanup cost by negotiating a reduced amount of dredging and cleanup with the community. Further, the adoption of some innovative cleanup technologies is expected to reduce costs.

Ten years into the cleanup process, the military services have voiced increased confidence in their environmental cleanup estimates for sites where contamination exists. This confidence is due, in part, to what they perceive as their enhanced experience in identifying contaminated sites and selecting appropriate cleanup methods. The services report that they have used the experiences of successive closure rounds and their continued programs at active installations.

Assessing the accuracy of estimates, however, is difficult because data upon which to base conclusions are limited. Fiscal year 1996 was the first full year in which the services used a new model, referred to as the cost-to-complete model, to develop their estimates. Whereas earlier estimates were based on completing "projects," which could involve multiple sites with differing cleanup requirements, the new model formulates estimates on a site-by-site basis. The services stated that these cost-to-complete estimates are based on current remedies and known contamination; the discovery of new contamination or the development of new technology could change them. The cost to complete cleanup could increase if selected remedies are unsuccessful, and other remedies are required.

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### Key Factors Drive the High Cost of Cleanup

While overall cleanup cost estimates for BRAC bases are decreasing, the processes of identifying, designing, and implementing a cleanup program are nonetheless costly. As we reported in 1996, key factors contributing to the high cost of cleanup are the (1) number of contaminated sites and difficulties associated with certain types of contamination, (2) requirements of federal and state laws and regulations, (3) lack of cost-effective cleanup technology, and (4) intended property reuse.<sup>5</sup>

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<sup>5</sup>Military Base Closures: Reducing High Costs of Environmental Cleanup Requires Difficult Choices (GAO/NSIAD-96-172, Sept. 5, 1996).

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Contaminated Sites Are  
Numerous and Costly to Clean  
Up

Although most bases had some type of environmental cleanup activity while the bases were active, DOD officials told us that the requirements for disposing of property usually entail a more extensive review of potential contamination than is necessary for ongoing operations. As a result of such a review, more contaminated sites are often identified. While most BRAC bases have been closed and most investigative studies have been completed, new sites are still being identified. For example, DOD reported a total of 4,960 sites requiring cleanup in fiscal year 1997, an increase over the 4,787 sites reported in fiscal year 1996.

As we have reported, the extent of site contamination is often difficult, time-consuming and costly to investigate and may not be fully determined until environmental cleanup is underway. For example, at the Tooele Army Depot, the base environmental coordinator indicated that by 1990 sufficient sites had been identified to place the depot on the National Priorities List (NPL), yet nine additional sites were identified after the property was selected for closure in 1993.<sup>6</sup> With cleanup underway in 1995, another contaminated site was identified. The coordinator estimates the additional necessary cleanup cost for the last site alone would be \$12 million.

The type of contamination also affects cleanup costs. For example, cleaning up contaminated ground water, an environmental problem at many closing bases, is often expensive. Further, given available technology, cleaning up UXO is costly, labor intensive, time-consuming, and dangerous. According to a recent Defense Science Board Task Force report, DOD does not know the full extent of the UXO problem at its domestic bases, BRAC or otherwise, so it cannot accurately estimate cleanup costs.<sup>7</sup> However, the Board's report indicates that over 15 million acres on about 1,500 sites are potentially UXO contaminated. The report notes that even if only 5 percent of the suspected sites require cleanup, costs could exceed \$15 billion. While BRAC bases represent only a portion of this acreage, UXO contamination is a potentially costly and unresolved problem at BRAC bases. Issues still to be determined are how much acreage will require cleanup and to what degree.

According to DOD, efforts are underway to identify requirements and provide a comprehensive evaluation of the need for a UXO program, and

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<sup>6</sup>The NPL is the Environmental Protection Agency's list of highest priorities for further study and cleanup.

<sup>7</sup>Unexploded Ordnance (UXO) Clearance, Active Range UXO Clearance, and Explosive Ordnance Disposal Programs (April 1998).

the services are identifying UXO requirements in their budgetary planning. Also, DOD is developing policy delineating the methods it will use for UXO cleanup. Until that policy is published in mid-1999 and experience is gained using the methods, it will be difficult to predict reliably what the cleanup will cost.

#### Environmental Laws and Regulations Influence Costs

As we reported in September 1996, the requirements of federal and state environmental laws and regulations have a significant impact on the cost of environmental cleanup. Under the existing environmental legal framework, cleanup standards and processes associated with existing laws, regulations, and executive orders establish procedures in conducting assessments and cleanup of DOD's base closure property. (See app. IV for a partial listing of these requirements.) In addition to federal requirements, states may have their own requirements. These requirements vary by state and, in some instances, may be more stringent than the federal requirements. For example, California has some drinking water standards that are higher than federal standards and thus contamination could be more costly to clean up.

#### New Technology Can Potentially Reduce Cleanup Costs

In many cases, technology that is used to clean contaminated property may reduce the costs of cleanup. However, there is some expected reluctance on the part of the regulatory community, the services, and the communities to experiment with unproven technology because of the risks associated with innovation. While innovative technology offers the potential for reducing the cost of cleanup, it also entails a risk that the desired goal will not be achieved. In that case, both time and money will be lost and another remedy must be implemented.

New technologies that are being tested offer the potential to greatly decrease the cost of cleaning up groundwater, UXO, and other contaminants. However, their effectiveness has not yet been validated. For example, at the former Mare Island Shipyard, the Navy is testing a new technique that could significantly reduce the cost of cleaning up contaminated soil. An engineer in the Environmental Protection Agency noted that this technique could reduce the per-ton cleanup cost of contaminated soil from \$1,000 to \$300. Although initial results have been promising, a Navy official cautioned that the new technique has been tested on a small area only and that the results not been validated. Following validation, the technique must also go through the approval and adoption process before it can be put into practice.

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Community Reuse Plans  
Influence Costs

The cost of cleanup also depends partly on the intended reuse of the property, as the reuse in part determines cleanup level standards. For example, if there is interest in developing residential housing on a former industrial site, a higher level of cleanup will be required than if the property is slated for industrial reuse similar to its former use. The residential cleanup standard, which involves having no restrictions on the future use of the property, can be the highest and costliest to achieve. A less expensive alternative (at least in the short run) is to limit the reuse of property and maintain institutional controls, such as deed restrictions, fences, and warning signs to inform the public of restricted activities.<sup>8</sup>

While the services noted that estimates were initially developed based on the expectation that property would be cleaned to the highest standard, this has not always occurred. Both DOD and environmental regulators indicate that communities have generally been reasonable in their expectations for cleanup. For example, recognizing the magnitude of the UXO problem at the Army's Jefferson Proving Ground, the community has not sought to have the property cleaned up. Instead, it is considering making the area a wildlife refuge.

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**DOD Reports Cleanup  
Program Is Moving  
From Investigation to  
Implementation, but  
Challenges Remain**

Fiscal year 1996 was a turning point for the BRAC environmental cleanup program with a greater emphasis on cleanups than studies to determine what cleanups are needed. According to DOD, cleanup efforts since fiscal year 1996 have shifted from the investigative arena to the implementation phase. Thus, for the first time since 1988 when the first closure round was announced, DOD reported that 55 percent of BRAC-obligated environmental funds were spent on cleanup activities and 45 percent on investigations. Prior to that year, more money was obligated for investigations than for cleanup, primarily because disposing of unneeded property requires a more comprehensive review of the property. Not only are these investigations time-consuming, but they often uncover contaminated sites not previously identified. While DOD has made progress in identifying contaminated sites and developing solutions, cleanup actions at most sites have yet to be completed, and long-term monitoring may be needed at many sites. As a result, DOD will continue having financial obligations at BRAC installations for many years.

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<sup>8</sup>Institutional controls are mechanisms such as deed restrictions, fences, and warning signs, which inform the public that certain activities may not be conducted on property.

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DOD Reports Progress  
Toward Cleanup  
Milestones, but When  
Work Will End Is Difficult  
to Predict

DOD has made progress in identifying contaminated sites and developing solutions, although cleanup actions at most sites have yet to be completed. However, it is difficult to estimate when operations and maintenance and long-term monitoring and associated costs of the activities will end.

DOD has established milestones for (1) forming BRAC cleanup teams, (2) completing environmental baseline surveys, and (3) putting remedies in place or completing responses at its BRAC bases.<sup>9</sup> DOD data indicate that it has achieved the first two goals. The services are working toward the third milestone, set in defense planning guidance, of (1) having remedial systems in place or responses complete at 75 percent of the bases and 90 percent of the sites by 2001 and (2) having 100 percent of the installations and sites with remedial systems in place or responses complete by 2005. According to DOD, as of September 30, 1997, 77 of 205 BRAC installations had all remedial systems in place or achieved responses complete.<sup>10</sup> Twenty of the 77 bases had achieved response complete for all sites.

In some instances, response complete is the end of any activity at a site; however, in other cases, long-term operations and maintenance and monitoring may still be needed depending on the specific site conditions and the chosen remedy. For example, soil contamination can be addressed by physically removing the contaminated soil or by implementing some type of on-site soil treatment system. These activities have different time and cost requirements associated with their use. Additionally, the chosen remedy may need to be replaced or modified over time if it failed to achieve the expected cleanup standard or if a new method of cleanup was warranted and adopted. To ensure the effectiveness of a remedy and that cleanup goals are met, long-term monitoring may be necessary—possibly in perpetuity.

While DOD cannot provide dates when operations and maintenance and long-term monitoring will be completed, estimated long-term monitoring costs associated with remedies are included in its projected costs after 2001. DOD officials indicated that such estimates assume that site closeout will occur 5 years after the remedial action is completed. A review of the site remedy is required by law no less often than each 5 years after the

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<sup>9</sup>The term “remedy in place” indicates that a functioning cleanup solution is underway, while “response complete” indicates that the cleanup action is finished; however, monitoring may still be necessary to ensure that it has been effective.

<sup>10</sup>DOD reports there are actually 207 installations in the BRAC environmental cleanup program. However, two installations were unable to provide DOD with data so they were not included in the analysis.

initiation of remedial action if hazardous substances remain at the site to ensure that ongoing response actions are still protective of human health and the environment. However, it is possible that operations and maintenance and monitoring costs could continue beyond this period. BRAC-earmarked funding ceases in 2001, however, and although the services are committed to completing cleanup, the BRAC environmental program will have to compete for funding with other DOD needs, such as active base cleanup and mission requirements. To the extent that funding available for BRAC cleanup is curtailed, the program's completion could be delayed.

The Air Force expects to spend more than any other service for environmental efforts after 2001. The Air Force estimates it will require \$1.3 billion for cleanup, operations, and monitoring after that time. At McClellan Air Force Base, California, a 1995 BRAC activity, cleanup costs after 2001 are expected to be about \$396 million, with cleanup completion, except for continued monitoring, expected in 2033. Activities associated with completing cleanup include operation of cleanup systems, sampling and analysis, long-term monitoring of contaminated ground water, landfill cap maintenance, institutional control monitoring, regulatory reporting, and performance reviews. The Air Force estimates that one-third of its installations will complete long-term monitoring and operations by 2011, another one-third by 2021, and the remaining one-third, where there is extensive groundwater contamination, some decades later. Mather Air Force Base is among the bases that require many years of monitoring and operations, extending to an estimated closeout in 2069.

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## The Fast-Track Cleanup Program Is Improving Progress and Supporting Reuse

In September 1993, DOD established the Fast-Track Cleanup program to overcome obstacles associated with environmental cleanup and to help make BRAC property available quickly for transfer and reuse. DOD reports that 110 BRAC bases participate in the program, 32 of which are also NPL sites. Through this program, DOD expected to support the President's Five Part Community Reinvestment program, which was established in July 1993 and made early community redevelopment of BRAC property a priority.

According to DOD, the services, and regulators, the program has been successful in improving environmental cleanup progress, particularly in the processes leading up to the actual cleanup of contamination. However, actual cleanups can still be lengthy, depending on, among other factors, site conditions and available technology. In a January 1996 report, DOD

asserted that cleanup schedules had been accelerated as a result of the program; we did not, however, independently verify DOD's findings.<sup>11</sup> Further, our analysis showed that most key program provisions had been met. The key provisions are (1) establishing cleanup teams at major BRAC bases, (2) making clean parcels quickly available for transfer and reuse, (3) providing indemnification, and (4) accelerating the review process associated with requirements of the National Environmental Policy Act. While DOD has been successful in meeting the first three provisions, it has not been fully successful in meeting the fourth.

In addition to the specified program provisions, several mechanisms were developed to support the program. Two of the mechanisms focus on identifying and documenting properties that are clean or that are in the process of cleanup and can thus be transferred or leased to the community. The third mechanism, which is generally referred to as early transfer authority, makes it possible to transfer property prior to it being cleaned up, thus making it available for reuse more quickly.

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### Most Program Provisions Have Been Met

DOD has created BRAC cleanup teams at its major bases. The teams, made up of state and federal regulators and service officials, were developed with the expectation that they would find ways to expedite cleanup actions to prepare real property for transfer and reuse. By working together and fostering communication and coordination, DOD hoped to avoid the slow, uncoordinated reviews and comments and have a forum to settle disagreements over cleanup standards and methods. DOD indicated that the creation of the teams has reduced the time and costs to complete cleanup actions. For example, DOD reported in January 1996 that the program eliminated nearly 80 years from the cleanup process and that more than \$100 million was saved due to the early involvement of stakeholders in that process. Team members we spoke with during our site visits agree that the collaborative effort has created a more efficient working environment, allowing them to make decisions more quickly, resolve disputes, and thus save time and money. However, many of the cleanup activities are still lengthy. Thus, while the initial steps of the cleanup process were shortened (i.e., reaching agreement on both the level of cleanup and the remedy), actual physical cleanups may extend many years.

DOD has also been successful in making clean parcels of BRAC property immediately available for transfer and reuse. Under the requirements of

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<sup>11</sup>Fast Track Cleanup Successes and Challenges 1993-1995 (January 1996).



the Community Environmental Response Facilitation Act, DOD is to seek concurrence from the Environmental Protection Agency on the identification of uncontaminated parcels within 18 months of the BRAC round being approved. DOD data indicate that it has fulfilled this requirement, identifying approximately 100,000 acres of uncontaminated property for disposal from all four BRAC rounds.

In 1993, the Congress authorized DOD to indemnify future owners for the cleanup of contamination resulting from past DOD operations. According to DOD, this allows it to more readily lease or transfer real property and promote reuse.

DOD, however, has not in all instances met the fourth provision of speeding the review process associated with the National Environmental Policy Act. By statute, DOD is required, to the extent practicable, to complete any environmental impact analysis required with respect to an installation and any redevelopment plan for an installation no later than 1 year after the redevelopment plan is submitted. This requirement significantly shortens the usual time frame of 2 to 4 years. DOD officials acknowledge, however, that this requirement has not been met in all instances and are attempting to determine the cause of the delays. DOD reports that, as of September 1998, 37 of the 101 installations that it tracks had not completed the required environmental documentation within the specified time frame; another 30 were in the process of preparing the documentation, and their compliance is undetermined at this point.

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### DOD Has Several Mechanisms to Support Its Efforts to Make Property Available Quickly

In an effort to achieve the Fast Track's goal of making property available for reuse as quickly as possible, DOD has developed additional mechanisms for speeding up the availability of unneeded base property. In 1994, DOD developed two mechanisms to identify and document properties that are clean and thus can be transferred or that are in the process of cleanup and can thus be leased to the community. These mechanisms are referred to as the Findings of Suitability to Lease and the Findings of Suitability to Transfer. According to DOD officials and regulators, the documents serve to (1) act as a link between the environmental efforts and community reuse and (2) inform the public about the types of contamination on the base, actions taken or to be taken to address the problems, and restrictions associated with the use of that property. This information is important for both the environmental and real estate sides of the reuse and transfer process. As of September 30, 1997, DOD reported that lease or transfer documentation had been prepared for 25 percent of the acres that

were available for transfer. Of about 438,000 acres at 112 major BRAC installations, 43,000 acres had completed transfer documentation, and 68,000 acres had completed lease documentation.

In fiscal year 1997, DOD obtained the early transfer authority to transfer property before all remedial action has been taken. To assure new owners of DOD's commitment to cleaning up contamination after a transfer occurs, deeds contain an assurance stating that necessary response actions to clean up the property will be taken and a schedule for completion of the response actions. Also, the deed is to contain use restrictions and schedules to further uninterrupted response actions. While this authority allows DOD to make property available for reuse more quickly, it is too early to determine what impact this will have on property transfers. As of July 1998, only acreages at Grissom and Mather Air Force Bases had been transferred under this authority. Several other reuse authorities, including those at Griffiss Air Force Base, Naval Air Station, Memphis, and Tooele Army Depot, are pursuing early transfers. Concerns, however, are being raised. For example, during a meeting between the Army, and state and local reuse authority officials over the early transfer of Tooele Army Depot property, the issue of enforcement of land use restrictions was raised. State officials wanted to know how restrictions would be monitored and enforced and by whom because the Army would no longer retain the property's deed and therefore enforcement powers. According to DOD and Environmental Protection Agency officials, these issues are being examined.

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## Conclusions

As is the case for its active bases, cleaning up environmental contamination on BRAC bases has proven to be costly and challenging for DOD. However, it is a task that must be done to meet environmental laws and facilitate the transfer of unneeded property to other users. While DOD has made progress from the earlier BRAC years when much of its efforts were largely devoted to investigative studies and has established initiatives to expedite cleanup, many cleanup activities remain. As a result, DOD expects to continue its environmental efforts beyond 2001, the final year of BRAC implementation authority. Further, DOD estimates that \$2.4 billion is required after 2001, not including estimated costs for UXO, a potentially costly issue at this point in time. Until such time that this issue is fully addressed and questions regarding how long sites will require monitoring before achieving site closeout, determining the overall cost of the program is difficult.

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## Agency Comments

DOD stated that time and cost associated with the cleanup at BRAC bases is driven by the regulatory framework. Nonetheless, DOD cited its Fast-Track Cleanup program as one initiative that has accelerated the cleanup process through partnerships with state and regulatory agencies as well as with local communities. DOD believes these partnerships produce more cost-effective cleanups with consideration to future reuse and community concerns.

# Most Communities Are Recovering From the Economic Impacts of Base Closures

The expected negative economic impact of base closures on local communities has long been a concern for the citizens of those communities, as well as Members of Congress. A base closure can result in the loss of hundreds or even thousands of jobs in a community. Nevertheless, most communities where bases were closed under the four BRAC rounds have fared relatively well over time. A majority of such communities had 1997 unemployment rates that were lower than or equal to the national average and had per capita income growth rates that exceeded the national average during 1991-95. A few communities, however, continued to experience high unemployment rates and/or declining per capita incomes.

Our work at six selected base closure sites with varying population, economic circumstances and geography not only showed that the surrounding communities were recovering from BRAC but also that the transition was not necessarily easy. Community officials told us, in general, that they were recovering from the impacts of base closure and were optimistic about the future of their communities. Many of these officials credited the strong national economy and diversifying economic activity in their regions as key to their economic recovery. At the same time, they pointed to the considerable difficulties, frustrations, and losses that communities experience as they adjust to the loss of military jobs and the redevelopment of base property. These pains of adjustment included decreasing retail sales at some establishments, leading to some business closings; declining residential real estate values in areas predominately populated by base personnel; and social losses felt in local schools, churches, and organizations that benefited from military personnel and their families.

## Most Communities' Economic Indicators Compare Favorably to National Averages

Selected economic indicators for BRAC-affected communities compared favorably to national averages. We used unemployment rates and real per capita income growth rates as indicators of the economic health of those communities where base closures occurred during the prior BRAC rounds.<sup>1</sup> We identified 62 communities involving 88 base closures in which

<sup>1</sup>Ideally, to assess how the local communities fared after each BRAC round, we would need economic information on how those communities would have fared without each BRAC round compared to how they have fared since the BRAC program began. Because we do not have this ideal baseline and since we want to have some sense of how the communities fared, we have used the national averages for unemployment and real per capita income as a benchmark to compare how well the communities have fared. This comparison does not isolate economic effects of a base closure from the effects of other economic events occurring in a particular region.

government and contractor civilian job loss was estimated to be 300 or more.<sup>2</sup>

Unemployment rates for BRAC-affected communities compared favorably with national averages. About two-thirds of the communities affected by recent base closures (42 of 62) had a 1997 unemployment rate at or below the national rate of 5.1 percent.<sup>3</sup> This situation compared favorably to when the BRAC process was beginning in 1988. At that time, 37 communities, or 60 percent of the 62 communities, had unemployment rates at or below the U.S. average (then 5.5 percent).

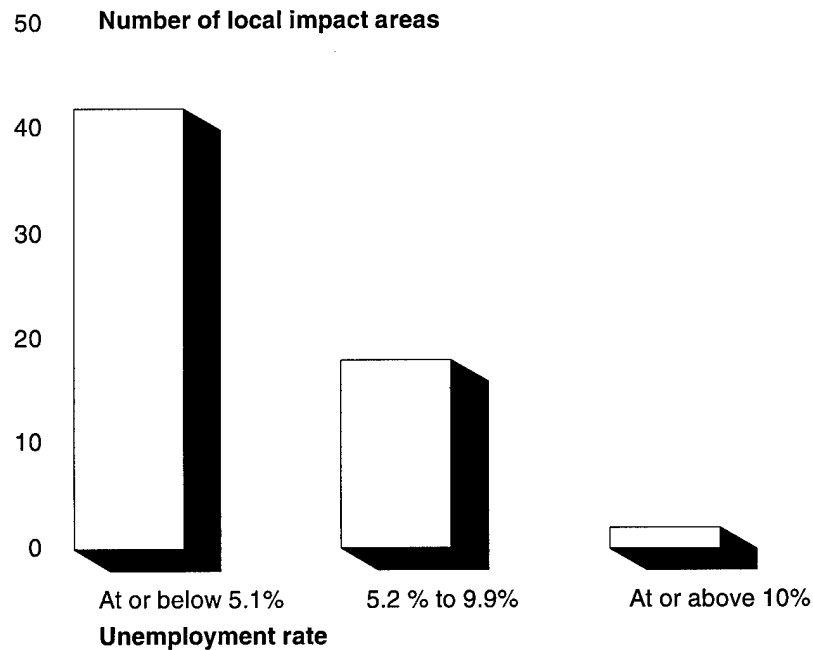
For all BRAC-affected communities with a higher than average 1997 unemployment rate, only two—the Merced area surrounding the now-closed Castle Air Force Base and the Salinas area surrounding the now-closed Fort Ord (both in California)—had double-digit unemployment rates: 15 percent and 10.3 percent, respectively. A comparison of the communities' 1997 unemployment rates to the national rate of 5.1 percent is shown in figure 5.1.

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<sup>2</sup>One of the limitations of our approach to selecting communities is that some areas may have also been the receiving location for DOD realignments and may have gained jobs. For example, St. Mary's County, Maryland, is included because of the closure of Navy facilities at St. Inigoes, Maryland in the 1993 BRAC round. However, in the 1995 round, the area gained DOD jobs at the Patuxent River facilities due to the relocation of Navy activities from the Washington, D.C., metropolitan area. Nevertheless, the communities we selected for our analysis lost a significant number of DOD jobs.

<sup>3</sup>The 1997 unemployment data for counties and metropolitan statistical areas represent the annual rate as of September 1997. The U.S. average through September 1997 was 5.1 percent.

Figure 5.1: 1997 Unemployment Rates of BRAC-Affected Areas Compared to National Average



Note: The 1997 unemployment rates for the United States and the local impact areas were averaged through September 1997. The U.S. rate was 5.1 percent averaged through September 1997.

Source: Our analysis of LMI data.

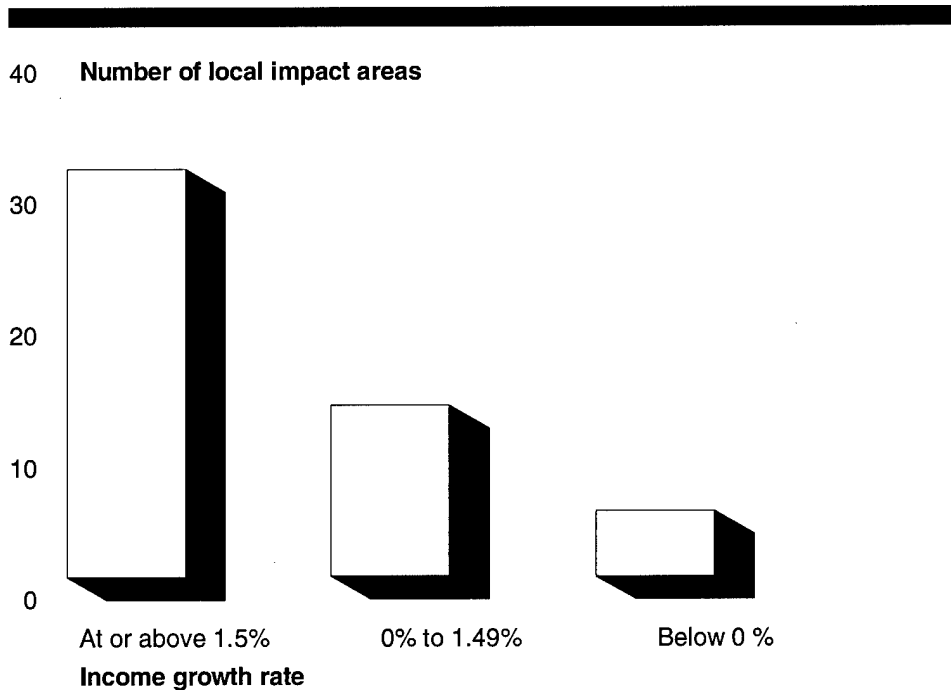
Similarly, a June 1996 report by the Congressional Research Service found that a majority of the localities affected by BRAC actions had unemployment rates that were near to or well below the 1995 U.S. rate of 5.7 percent. It states that most communities affected by any one of the BRAC rounds “have a relatively low degree of economic vulnerability to job losses that are estimated to result from these actions.”<sup>4</sup>

As with unemployment rates, real per capita income growth rates for BRAC-affected communities compared favorably with national averages. From 1991 to 1995, 63 percent, or 31, of the 49 areas (excluding the 1995 round) had an estimated average per capita income growth rate that was

<sup>4</sup>Military Base Closures Since 1988: Status and Employment Changes at the Community and State Level, Congressional Research Service, June 17, 1996.

at or above the average of 1.5 percent for the nation.<sup>5</sup> Of the 18 communities below the national average during this period, 13 had average per capita income growth rates above zero percent, and 5 had declining income (see fig. 5.2).

Figure 5.2: 1991-1995 Average Annual Per Capita Income Growth Rates of BRAC-Affected Areas Compared to National Average



Note: The U.S. real average annual per capita income growth rate for 1991-95 was 1.5 percent.

Source: Our analysis of LMI data.

These figures show some improvement since the 1988-91 period, when the BRAC process was just beginning to take effect and the U.S. average rate of growth was only 0.2 percent. At that time, 55 percent, or 27, of the 49 communities had estimated average rates of real growth in per capita income at or above the national average. Twenty of the 49 communities showed decreases in per capita income during this period.

<sup>5</sup>The per capita income estimates for counties and metropolitan statistical areas were available only through 1995 at the time of our analysis. Therefore, we did not analyze per capita income for local communities that were affected only by the 1995 BRAC round.

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Because a less diversified economy might make smaller communities more vulnerable to the adverse effects of a base closure, we analyzed their economic performance separately.<sup>6</sup> As shown in figure 5.3, 10 of the 18 small city and rural areas, or 56 percent, had a 1997 unemployment rate above the U.S. average, compared to 32 percent of BRAC-affected communities overall. On the other hand, 10 of 14 communities (again excluding those involved only in the 1995 round), or 71 percent, had a per capita income growth rate that was greater than or equal to the national average between 1991 and 1995, a higher proportion than that of BRAC-affected communities overall (see fig. 5.4).

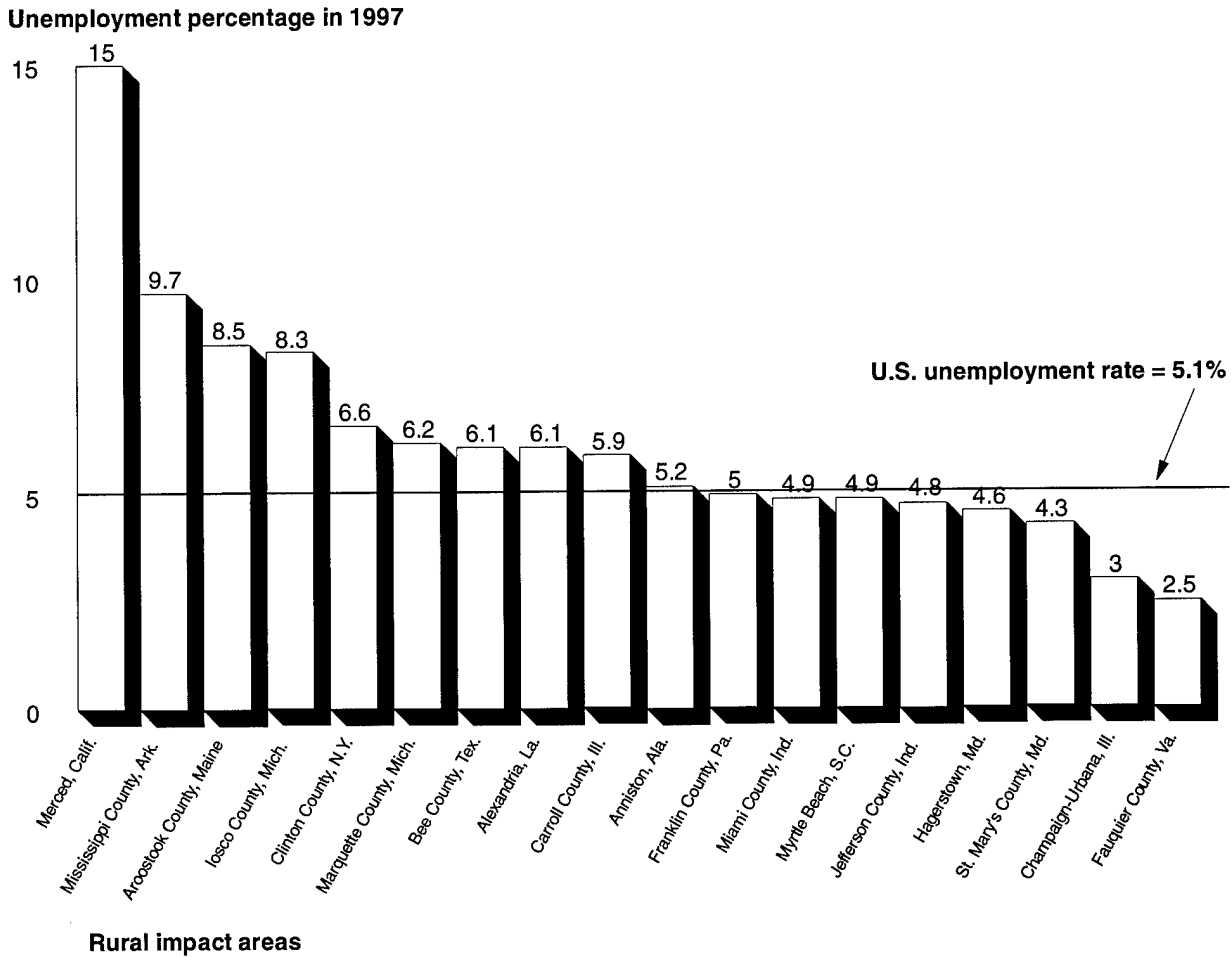
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<sup>6</sup>For the purposes of our analysis, smaller cities and rural areas were those with estimated populations of less than 200,000 from the 62 communities we identified for our overall analysis. These areas ranged in 1995 population from approximately 24,000 in Iosco County, Michigan, where Wurtsmith Air Force Base closed, to 192,000 for the Merced area in California, where Castle Air Force Base closed.



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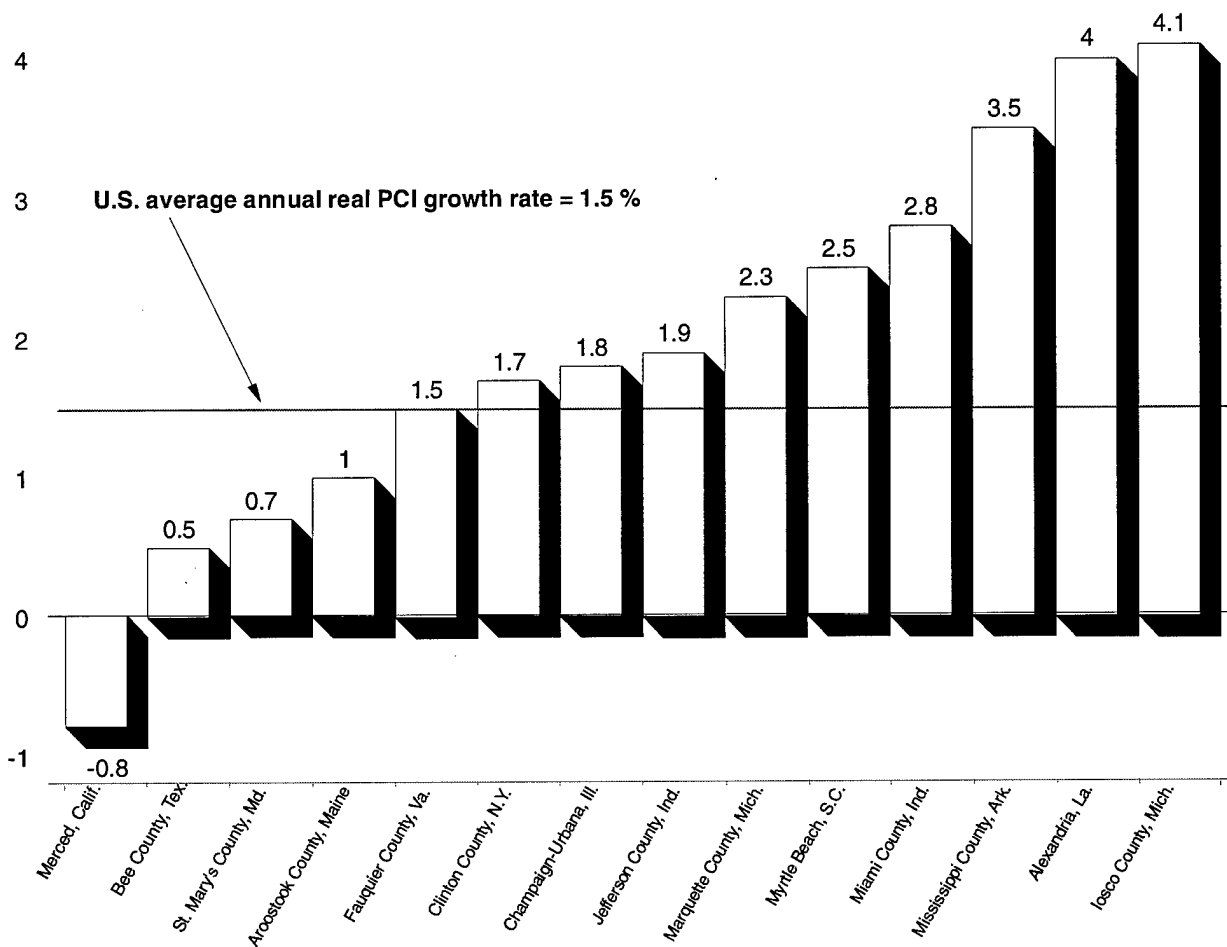
Figure 5.3: Unemployment Rates of Less Populated BRAC-Affected Areas Compared to the National Average



Source: Our analysis of LMI data.

Figure 5.4: Per Capita Income Growth Rates of Less Populated BRAC-Affected Areas Compared to the National Average

5 Income growth rate during 1991-95



Rural impact areas

Source: Our analysis of LMI data.

## Communities Recovering, Despite Pains of Adjustment

In general, the communities where we performed work reported suffering initial economic disruption, followed by recovery. Less tangible, but harder to correct, were social losses resulting from the departure of base personnel, such as the cultural diversity base personnel and their families brought to the local communities. As factors in economic recovery,

officials pointed to the strong national economy, diversifying local economies, government assistance, and base redevelopment. However, some local officials were dissatisfied with the pace of redevelopment, citing delays in the transfer of base property. (See ch. 2 for our discussion on DOD's progress in transferring base property.)

Through our work at the surrounding communities of six major base closures, we were able to learn how each community was unique in how it drew on local and regional strengths to recover from the job losses associated with base closures.<sup>7</sup> We also identified common economic impacts and trends across the communities. The local impact areas for Fort Benjamin Harrison, Fort Devens, and the Philadelphia Naval Base and Shipyard fell within large metropolitan regions. These areas had low 1997 unemployment rates and 1991-95 average real per capita income growth rates near or higher than the national average and past trends. The rural area around Eaker Air Force Base had a relatively high 1997 unemployment rate compared to the national average, though it was significantly lower than the 1988 rate when it was 13.5 percent, and the average real per capita income growth rate was considerably higher than the national average.

In contrast, the rural area surrounding Merced and Atwater had a high unemployment rate and declining real per capita income, though the rate of decline decreased in 1991-95 compared to 1988-91. Local officials told us that Merced and surrounding communities have a high unemployment rate because of the large seasonal employment associated with the agriculture and canning industries and the large Hmong and Punjabi populations that have migrated into the area and are still assimilating into the American culture. The other rural area that showed some economic decline was Beeville, Texas. Though its 1997 unemployment rate was relatively low compared to the 13.2 percent it experienced in 1993, the rate in per capita income growth from a healthy 2.9 percent during 1988-91 declined to a below average of 0.5 percent during 1991-95. Local officials told us that the new prisons have created many new jobs and boosted the population in the Beeville area, but the decline in income growth suggests that the level of total personal income has not kept pace with the population growth. However, prisoners are counted in the population estimates used to calculate per capita income and thus partially explain much of the decline in the rate of growth.

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<sup>7</sup>We selected the sites to ensure that we had a range of experiences. Because each community is unique, the experiences of these communities cannot be generalized. More information on how we selected the site visits is in the scope and methodology section of chapter 1.

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Table 5.1 shows preclosure and recent economic data for each of the local impact areas representing the communities we visited.

**Table 5.1: Unemployment Rates and Per Capita Income Growth Rates of Selected Communities**

Communities visited	Local impact area	Closed military base/Date of closure	Population 1995	Average per capita income 1995	Average rate of real income growth (in percent)		Unemployment rate (in percent)	
					1988-91	1991-95	1991	1997
Ayer, Shirley, Harvard, Leominster, Mass.	Worcester County (part of the Boston metropolitan area)	Fort Devens (March 1996)	716,666	\$23,712	-2.5	1.2	10.0	4.0
Indianapolis and Lawrence, Ind.	Indianapolis metropolitan area	Fort Benjamin Harrison (Sept. 1996)	1,475,925	24,664	0.8	2.2	4.5	2.6
Beeville, Tex.	Bee County	Naval Air Station Chase Field (Feb. 1993)	27,665	13,681	2.9	0.5	7.2	6.1
Philadelphia, Penn.	Philadelphia, PA-NJ metropolitan area	Philadelphia Naval Base and Shipyard (Sept. 1996)	4,952,955	26,959	0.9	1.5	6.8	4.9
Merced and Atwater, Calif.	Merced metropolitan area	Castle Air Force Base (Sept. 1995)	192,754	15,653	-1.7	-0.8	14.8	15.0
Blytheville and Gosnell, Ark.	Mississippi County	Eaker Air Force Base (Dec. 1992)	50,777	17,027	2.7	3.5	10.0	9.7

Source: LMI.

Our findings are consistent with a 1996 report by the RAND National Defense Research Institute, which studied the impact of three base closures on neighboring California communities. It concluded that "while some of the communities did indeed suffer, the effects were not catastrophic [and] not nearly as severe as forecasted."<sup>8</sup>

**Impacts on Communities**  
**Range From Temporary**  
**Setbacks to Painful Losses**

Impacts of closure that officials conveyed to us included initial economic disruption caused by the news of impending closure; decreasing retail sales at some establishments, leading businesses to close; declining residential real estate values in areas predominately populated by base personnel; and social losses felt in local schools, churches, and organizations that benefited from active, educated military personnel and

<sup>8</sup>The Effects of Military Base Closures on Local Communities: A Short-Term Perspective, RAND National Defense Research Institute, 1996. The report used a case study approach to examine the impact on nearby communities of three base closures in California: George Air Force Base, Fort Ord, and Castle Air Force Base.

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families. Examples of how a base closure affects the surrounding community and its business establishments, schools, real estate markets, and social network, as provided by local officials, are shown in figure 5.5. We did not independently verify the data.

**Figure 5.5: Reported Community Impacts Resulting From Base Closures**

<p style="text-align: center;"><b>Philadelphia, Pa.</b></p> <ul style="list-style-type: none"> <li>• The region lost its largest industrial facility--the shipyard.</li> <li>• The city government lost about \$10 million in wage tax revenues.</li> <li>• Retail stores near the shipyard lost income.</li> <li>• Vendors who supplied materials to the shipyard lost business.</li> </ul>	<p style="text-align: center;"><b>Indianapolis and Lawrence, Ind.</b></p> <ul style="list-style-type: none"> <li>• Retail businesses, such as furniture rental stores, south of the fort, suffered from lost business.</li> <li>• The rental housing market south of the fort suffered high vacancy rates.</li> <li>• The retired military population lost services provided by the fort.</li> <li>• Schools in Lawrence lost a more culturally diverse student body.</li> </ul>
<p style="text-align: center;"><b>Beeville, Tex.</b></p> <ul style="list-style-type: none"> <li>• Sales of expensive items, such as automobiles, dropped.</li> <li>• Automobile dealerships had to reduce staff, and some businesses closed, including high-end clothing stores, a discount department store, an automobile dealership, a local janitorial service, a tortilla factory, and about four convenience stores.</li> <li>• Real estate values in the residential market declined, and housing in the \$75,000+ range remains stagnant.</li> <li>• Many military families, who had brought a range of experiences to the community, left.</li> <li>• Skilled workers are now either commuting long distances to other bases, retired, unemployed, underemployed or no longer residing in the area.</li> </ul>	<p style="text-align: center;"><b>Merced and Atwater, Calif.</b></p> <ul style="list-style-type: none"> <li>• Real estate values in Atwater dropped 25 to 30 percent, partly because the government purchased departing military personnel's houses and placed them on the market. New housing construction stopped.</li> <li>• Atwater schools lost enrollment, as well as tax base. The Atwater elementary school district had to reduce budget and staff, canceling some programs.</li> <li>• Local businesses had to reduce staff; some closed, and some changed ownership. Several small businesses shut down, including restaurants, insurance vendors, and dry cleaners.</li> <li>• Atwater municipal utilities lost income from the base.</li> <li>• The community lost the military families, who contributed to local organizations, such as churches and hospitals.</li> </ul>
<p style="text-align: center;"><b>Ayer, Shirley, Harvard, and Leominster, Mass.</b></p> <ul style="list-style-type: none"> <li>• Retail stores, including electronics shops, auto dealerships, food stores, and gas stations, experienced reduced sales.</li> <li>• High apartment vacancy rates, in some cases as high as 65 percent, forced landlords to reduce rents as much as 25 to 30 percent. Home sales prices decreased as much as 30 percent, and new home construction stopped.</li> <li>• One elementary school, located on the fort, closed.</li> </ul>	<p style="text-align: center;"><b>Blytheville and Gosnell, Ark.</b></p> <ul style="list-style-type: none"> <li>• Several retail establishments lost sales initially but have since recovered.</li> <li>• The home-building business was hit hard for a couple of years after the closure, but has more recently experienced a dramatic increase in business.</li> <li>• A few used car dealers lost income.</li> <li>• Many military families, who had brought a range of experiences to the community, left.</li> <li>• The community college lost about 20 percent of its students and had to lay off teachers and close courses.</li> <li>• Gosnell closed one school and laid off 60 faculty members and 40 staff members.</li> <li>• The town lost about \$2.8 million per year in state aid due to the reduced enrollment.</li> </ul>

Local officials from each of the communities we visited described the initial reaction to the announcement of a base closure as one of anger, fear, panic, and denial. They said that people in the affected area feared the worst, in some cases predicting the dissolution of their town itself. At the very least, the loss of the base was expected to cause significant economic disruption. The rumors of a closure generated fear throughout the community, driving down consumer spending on major items and business expansion. This initial public reaction resulted in real economic impacts, such as a drop in real estate values and car sales. Officials from several communities told us that the announcement of the closure and previous threats of closure were more damaging to economic activity in the area than the actual closure. Each of the communities made an effort to reverse the decision, but eventually resigned itself to the loss and organized a base reuse authority to represent its interests in the base's redevelopment. Generally, we were told that the citizens and businesses overcame the turmoil associated with base closure and adjusted their lives to a new environment.

For the communities we visited, the closure of a military base led to a decline in retail sales, affecting some stores more than others and forcing some to close. Local officials said businesses affected the most included new and used car dealers, clubs, small personal service businesses such as barbers and some nearby "mom & pop" stores. On the other hand, some local officials emphasized that it was often difficult to determine whether the demise of a business was caused by a base closure or other economic factors. Two officials from communities outside of Fort Devens suggested that the recent growth in large discount stores and chains also hurt small retail businesses during the same period of the base closure. A local business official in Blytheville said that some businesses survived the closure of Eaker Air Force Base and were now doing better than ever, while others failed because they could not seem to adjust their business plans to serve a new environment. Some cases were more clearly attributable to the base closure. For example, officials in Beeville pointed to the demise of several small businesses, including a convenience store and a janitorial service that contracted with the base.

At the same time, we were told by local officials that the economic impact of the departure of base personnel was not as severe as had been feared. Some local officials believed that military bases tended to be closed environments where personnel spent much of their income on base to take advantage of favorable prices at the commissary and post exchange. Also, local business officials in Beeville told us that many of the Navy officers

and pilots and their families may have spent more of their disposable income in the nearby urban areas of San Antonio and Corpus Christi.

Local officials cited three events following a base closure that they believe can cause residential real estate values to decline. First, the demand for housing drops as base employees and their incomes leave an area. Second, base housing may be placed on the market, increasing the supply of housing. Third, DOD often purchases the off-base housing units of transferring base personnel and places these units back in the market for resale, also increasing supply.<sup>9</sup> The net result of these factors is an increase in supply of housing units at the same time that a community may be losing people who would most likely be buying homes. Local officials from Atwater (Castle Air Force Base area), Gosnell (Eaker Air Force Base area), and Ayer and Shirley (Fort Devens area) described how rental units that catered to single service personnel had to lower rents and perhaps offer weekly rents to stay in business. In two communities, local officials told us that the result was an influx of a less stable population, which often led to undesirable conditions, such as increased crime and disorderly conduct and a drain on public assistance resources. Several officials from Atwater mentioned that DOD's program to purchase housing from transferring military and defense personnel lowered housing values. However, officials from communities surrounding Eaker Air Force Base and Fort Devens told us that the market for single-family homes has recovered and in some cases has exceeded preclosure levels. For example, housing values have increased in the communities surrounding Eaker Air Force Base.

The communities we visited generally regretted the loss of base personnel, with whom they had good relationships. The loss was often described as a cultural loss rather than an economic one. This loss was less pronounced in the urban areas, but in the rural towns, the bases had brought in people with diverse backgrounds from various parts of the country. Officials described how local institutions benefited from these outsiders' viewpoints and experiences, particularly in communities where the military people became involved with the local government, the schools, and the arts. An official from one of the communities near Fort Devens remarked about the high quality of people that had entered the community who worked at the Army Intelligence school. In Beeville, some local

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<sup>9</sup>DOD's Homeowners Assistance Program provides assistance to eligible service members and civilian employee homeowners who have suffered losses through the depression of the real estate market resulting from actual or pending base closures. Approximately \$500 million has been appropriated through fiscal year 1998 for program funding associated with BRAC. This funding is included in the calculation of overall BRAC costs and savings estimates.

officials told us about the pride they had at being the home of Chase Field, which trained naval pilots.

Base employees were also affected by an installation's closure. While many base employees accept transfers to other facilities during a base closure, those who choose to remain in the local community may face periods of unemployment. In cases where the military base provided most of the high-paying, high-skilled jobs for the area, as was the case at Castle Air Force Base and Naval Air Station Chase Field, some former base employees who chose to remain in the area reportedly had difficulty finding a job at a comparable salary.

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**Strong National Economy  
and Diversified Local  
Economies Help  
Communities Recover**

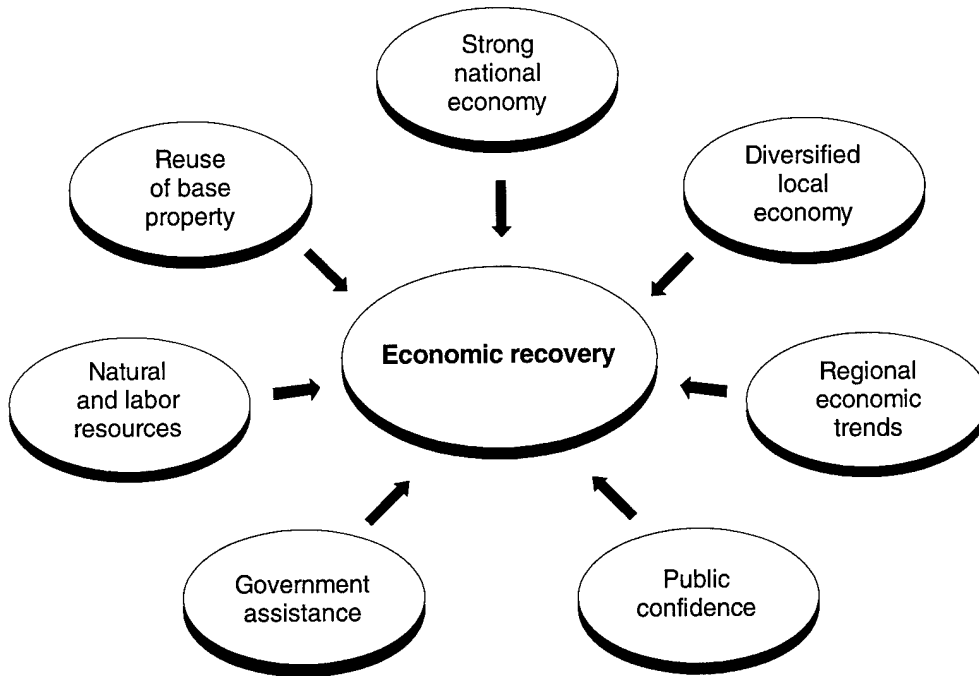
Several factors play a role in determining the fate of the economies of closure communities and the recovery of communities (see fig. 5.6). Officials from several of the communities we visited cited the strong national or regional economy as one explanation of why their communities were able to avoid economic devastation and find new areas for economic growth. The national unemployment rate for 1997 was the lowest in a generation. Officials from the communities surrounding Castle and Eaker Air Force Bases said employers are now finding their communities attractive because these rural areas have higher unemployment rates and therefore a large population looking for jobs. These observations are consistent with a 1993 report in which the Congressional Budget Office reviewed the impacts of DOD's downsizing on defense workers, stating that the best solution for displaced defense workers is a growing economy.<sup>10</sup>

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<sup>10</sup>Reemploying Defense Workers: Current Experiences and Policy Alternatives, Congressional Budget Office, August 1993.



Figure 5.6: Factors Affecting Economic Recovery From Base Closures



Source: Our analysis.

Officials from each of the communities expressed the importance of having other local industries that could soften the impact of job losses from a base closure. Urban communities, as officials from the more urban areas confirmed, are better able to absorb the job losses from a base closure because they have more diversified economies that provide a wider range of job and business opportunities. In a January 1998 report, we examined defense-related spending trends in New Mexico and the relationship between those trends and New Mexico's economy.<sup>11</sup> We reported that while defense-related spending has been declining in the state, the state's gross product and total per capita income have been increasing and that this economic growth may be due to efforts to diversify the economy away from defense.

<sup>11</sup>Defense Spending and Employment: Information Limitations Impede Thorough Assessments (GAO/NSIAD-98-57, Jan 14, 1998).

Officials also pointed to several other economic forces at work in their regions at the time of a closure, during the transition period, and at the current time. For example, officials from the communities surrounding Fort Devens said that at the time of the closure, the area was suffering from the downsizing and restructuring of the computer industry. Today, those same communities are benefiting from the economic growth in the larger Boston metropolitan area. Philadelphia has been going through deindustrialization for the past 20 years. Officials from Philadelphia said their city has been also losing job and population for many years—the closure of the shipyard was not the first big loss they have experienced. However, at the time the closure was announced, the shipyard was the largest manufacturing concern in the region, and one official said that it is difficult for any city to lose such a large employer even if the loss does not fundamentally hurt the local economy of a large metropolitan area like Philadelphia. Figure 5.7 describes the economic and regional context of the base closure for the communities we visited.

**Chapter 5  
Most Communities Are Recovering From the  
Economic Impacts of Base Closures**

**Figure 5.7: Economic and Regional Context of Selected Communities**

<p align="center"><b>Philadelphia, Pa.</b></p> <p>The shipyard, the largest heavy manufacturing plant in the region, closed in September 1996. The yard was initially going to be mothballed based on the 1991 BRAC decision, but the 1995 round closed it, allowing the city to ultimately take ownership and attract businesses. The Navy will remain active on portions of the naval base.</p> <p>Philadelphia is part of the nation's fourth largest metropolitan area. While downtown Philadelphia, "Center City," is growing, the city as a whole is losing people and jobs and is unable to compete with the suburbs. Its high labor taxes, high utility costs, high worker salaries, and surplus of old industrial buildings discourage economic growth.</p>	<p align="center"><b>Indianapolis and Lawrence, Ind.</b></p> <p>The 1991 BRAC Commission chose to close the Defense Finance and Accounting Service center, along with the rest of the fort, but a later DOD consolidation plan found in favor of retaining the center, saving many of the base's jobs. The rest of the fort closed in September 1996.</p> <p>Lawrence is an autonomous municipality within Indianapolis. Its early development was tied to the fort. In the 1950s, Chrysler, Ford, and Western Electric located plants in Lawrence; these became the center of the town's activity. In the 1980s, the Western Electric and Chrysler plants closed, resulting in the loss of 11,000 jobs, from which parts of Lawrence still have not recovered.</p>
<p align="center"><b>Beeville, Tex.</b></p> <p>Naval Air Station Chase Field closed in February 1993. The station had fostered Beeville's growth, and other industries had become secondary to the Navy's operations at Chase Field.</p> <p>Bee County and its surrounding counties are generally rural. A historical economic dependence on nonrenewable fuels, for which price and demand fluctuate, has had a detrimental effect on the regional economy. Agriculture and ranching are other industries found in the area. Beeville was economically depressed in the 1980s due to an oil and gas bust, as well as a decline in uranium mining. The largest sectors in Bee County are now local government, trade, and services. The Texas Department of Criminal Justice selected Beeville as the site of a prison in 1989. The prison opened in October 1992, bringing hundreds of jobs to the area.</p>	<p align="center"><b>Merced and Atwater, Calif.</b></p> <p>The base, located in mostly residential Atwater, closed in September 1995. A statewide recession was in progress at the time.</p> <p>Merced County is a rural area largely dedicated to agriculture and related industries, with much of its labor force seasonally employed in farming and canning. The county is ranked third out of California's 58 counties in percentage of population living in poverty. Even during seasons of "full employment," the unemployment rate remains high, around 14 percent; during the off season, the rate can rise to between 19 and 22 percent. The area is home to large Hmong and Punjabi populations, many of whom are first-generation immigrants who cannot speak English.</p>
<p align="center"><b>Ayer, Shirley, Harvard, and Leominster, Mass.</b></p> <p>The fort closed in March 1996, but a portion remains active for an Army Reserve enclave. From 1988 through the early 1990s, a recession hit the area. Along with the base closure, Desert Storm, cutbacks in the personal computer industry along Boston's technology corridor, and the restructuring of the banking industry all contributed to this downturn. The economic outlook began to improve in early 1995. Plastics and paper are major industries in the area, but service industries are beginning to grow in the strong economy.</p> <p>The three towns bordering the closed portions of the fort are Ayer, which has a strong, diverse industrial and retail base; Shirley, with a modest commercial base and large residential community; and Harvard, an upscale bedroom community. Leominster is a larger town nearby that was home to many base employees.</p>	<p align="center"><b>Blytheville and Gosnell, Ark.</b></p> <p>The base closed in December 1992. Gosnell is a bedroom community adjacent to the base, and many of the base employees lived within Gosnell's city limits. Nevertheless, Gosnell continues to be a desirable residential community because of its excellent school district.</p> <p>In the 1950s, Blytheville was dominated by agriculture. The first industrial park appeared in the early 1960s and the area began to diversify. Now, it is half industrial and half agricultural. The Blytheville area historically has had double-digit unemployment rates, partly due to seasonal employment related to agriculture. The first steel mill to come into the area was announced in November of 1987. The steel industry has invested over \$100 million per year in the area over the last 10 years, and is still expanding. Mississippi County is now the number two steel-producing county in the United States.</p>

The rural areas we visited, where agriculture has historically dominated the economy, have benefited from their efforts to diversify. In Blytheville, Arkansas, for example, where Eaker Air Force Base closed, the steel industry found a foothold in the late 1980s before the announcement of the base closure and has been a growing presence ever since. The Blytheville area is attractive to the steel companies because of its access to the Mississippi river and a major interstate as well as an available labor pool. Beeville, Texas, where Chase Field closed, has a long history of farming and ranching, but has recently benefited from an expanding state prison industry. In these cases, the emergence of major employers was coincidental with the base closure, but officials in both towns stated the importance of these employers to recovery.

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**Local Officials Stated That  
Base Reuse and  
Government Assistance  
Contribute to Economic  
Recovery**

The redevelopment of base property is widely viewed as a key component of economic recovery for communities experiencing economic dislocation due to jobs lost from base closures. The closure of a base makes buildings and land available for a new use that can generate new economic activity in the local community. DOD's Office of Economic Adjustment surveys the local reuse authorities representing base closures from all four rounds on the number of jobs that have been created from redevelopment of bases. As of March 1998, the Office of Economic Adjustment reported that reuse of base property from closed bases had generated almost 48,000 new jobs (compared with approximately 100,000 government civilian and contractor estimated job losses from BRAC actions). Table 5.2 shows the number of jobs created from redevelopment of base property at the six closed bases we visited.

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**Table 5.2: Job Creation From Base Reuse at Selected Bases**

<b>Closed military base</b>	<b>Estimated no. of civilian jobs lost</b>	<b>No. of jobs created from base reuse</b>	<b>Examples of base reuse</b>
Fort Devens, Mass.	2,178	1,470	Gillette has located a major distribution facility at the fort, with plans to expand operations. As of November 1997, more than 30 leases had been signed, and 7 sales had been completed. The Federal Bureau of Prisons will use the base hospital as a medical facility specializing in cardiology and dialysis. The recreational facilities, including the health club and ball fields, are being used by local youth and community organizations.
Fort Benjamin Harrison, Ind.	4,240 <sup>a</sup>	563	The Defense Finance and Accounting Service center has been retained in the largest building on the base. The state of Indiana obtained 1,700 acres through a public benefit conveyance for a state park. Other uses of base property include a medical facility with diagnostic and radiology laboratories and a growing YMCA. Officials also cited plans to reuse some of the base housing.
Naval Air Station Chase Field, Tex.	956	1,290	The Texas Department of Criminal Justice has located a prison complex on the former naval air station. The off-base housing complex is being reused, primarily as housing for department personnel.
Philadelphia Naval Base and Shipyard, Penn.	8,119	528	The Philadelphia Industrial Development Corporation has leased space at the shipyard to 18 companies. Norway's Kvaerner, a shipbuilding company, will be reusing the shipyard's drydocks, bringing in several hundred jobs and creating many more subcontractor jobs. Other firms include tugboat companies and steelworks.
Castle Air Force Base, Calif.	1,149	1,881	Pacific Telesis refurbished the base commissary for a customer service call center, employing hundreds of people. Other companies on site include a trailer manufacturing firm and a company that makes modular classrooms. Educational activities using base facilities include the Aviation Challenge and the Challenger Learning Center.
Eaker Air Force Base, Ark.	777	416	The former base now hosts a Federal Express truck-driving school, a pediatric care facility, and a YMCA. The airport is used by a delivery service during the holiday surge. The Presbyterian Development Corporation is creating a retirement community using some of the housing on site. The base includes some farmland which is being leased out, as well as some archaeological sites.

<sup>a</sup>The estimate of civilian jobs lost for Fort Harrison includes the closure of the Defense Finance and Accounting Service center. In a process following BRAC 1991, DOD selected building one on Fort Harrison to continue housing the center, in effect saving many of the jobs estimated to be lost.

From our meetings with local officials, publicizing redevelopment goals and efforts for former bases is a key strategy for attracting industry and helping communities gain confidence in recovery from the closure. For example, Philadelphia officials recently closed a deal with Kvaerner Shipbuilding of Norway that will bring several hundred shipbuilding jobs back to the shipyard. Though this deal will not replace about 7,000 shipyard lost jobs from the closure, it has helped to allay fears that the

shipyard would stay idle in the long term. Officials from other communities stressed the importance of successful base redevelopment to their communities' long-term economic health.

We did not attempt to assess the extent that government assistance programs speeded economic recovery of communities experiencing base closures. However, some officials emphasized that federal assistance in the form of planning and infrastructure grants helps communities overcome many barriers to redevelopment, such as the complex property disposal process and deteriorating or outdated infrastructure. Specifically, local officials told us that Office of Economic Adjustment grants helped them plan for redeveloping base property and Economic Development Administration grants provided funding for infrastructure improvements to integrate base property into the community's infrastructure. A recent study requested by the Economic Development Administration and prepared by a research team led by Rutgers University evaluated the success of the Economic Development Administration's defense adjustment grants in helping local communities diversify away from dependence on former military bases or defense contractors.<sup>12</sup> The study concluded that the assistance succeeded in aiding job creation and economic recovery from base closures and defense downsizing.

In helping base employees adjust to closures, the communities took advantage of federal, state, and local programs to provide displaced workers with career transition counseling, job retraining, and placement services. One major effort to assist displaced workers occurred in Philadelphia. According to Navy data, about 8,000 civilian jobs were eliminated by the shipyard's closure from 1991 to 1996. Of these 8,000 employees, about 1,400 were laid off, 2,000 accepted separation incentives, and almost 2,000 transferred to other military installations while hundreds left through retirement, disability separation, and resignation. The Philadelphia base created a career transition center that provided one-on-one counseling to over 4,000 workers, as well as skills assessments, workshops, on-site retraining, and information on career choices. The center formed partnerships with the Private Industry Council, state employment office, and local colleges to ensure that every opportunity for retraining and assistance was used. The shipyard developed flexible training plans for the employees with the Navy reassigning people to new positions that supported their training. One official expressed frustration that more shipyard workers did not use the training opportunities and suggested that a barrier to assisting workforces

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<sup>12</sup>Defense Adjustment Program Performance Evaluation, Rutgers University et al., November 1997.

similar to the one at the Philadelphia shipyard is the older age of this workforce. Most of the shipyard work force had been doing shipyard work all their working lives and did not want to start at the bottom again or learn a new trade despite the fact that the Philadelphia area has a lot of jobs, such as in construction, that would be suitable with some retraining.

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### Property Transfer Process Continues to Frustrate Local Leaders

The most consistent major concern cited by the officials in the six communities we visited was that the transfer of property to the reuse authority was slow. (See ch. 2 for a discussion on DOD's progress in transferring base property.) In the case of Eaker Air Force Base, some of the property was conveyed to the reuse authority through an economic development conveyance just this past September. The Bee Development Authority still does not have title to a large portion of Chase Field. The local reuse authority for Castle Air Force Base is in the process of obtaining an economic development conveyance. In each of these cases, the base had been closed sometime between 1993 and 1996. However, both Fort Benjamin Harrison and Fort Devens reuse authorities have title to base property, and the Fort Devens authority has been especially successful in turning over property to commercial enterprises.

One problem caused by transfer delays is the increased cost of rehabilitating the facilities, which continue to deteriorate from the time of closure to the transfer of title.<sup>13</sup> This situation is occurring in Beeville, Texas, despite the fact that a large portion of the base was transferred to the state of Texas through a public benefit conveyance for state prison facilities. Officials from the Bee Development Authority said they wish to diversify the local economy by attracting manufacturing to the area; they see the remaining base property as an asset to attract such development. However, a large hangar and office facility is deteriorating because the reuse authority does not have the money to maintain it, nor can it attract businesses that would supply maintenance funds without title to the facility. Two Beeville officials suggested the absence of a DOD base transition coordinator, an on-site official who serves as an advocate for the community and a local point of contact with the federal government, may have contributed to the local authority's problems.

Local officials stated that DOD officials responsible for property disposal do not seem to understand that delaying property conveyance is bad for business. Some local officials told us they do not think that responsible

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<sup>13</sup>Military Bases: Update on the Status of Bases Closed in 1988, 1991, and 1993 (GAO/NSIAD-96-149, Aug. 6, 1996).

offices have enough real estate expertise. For example, some officials told us that property appraisals did not consider the cost of bringing a building up to local health and safety codes and therefore overvalued the property. Consistent with DOD statements in chapter 2, local officials acknowledged that some of the delay is due to property disposal process requirements. In addition, some local officials said transition delays are due to the lengthy environmental cleanup process.

DOD officials agreed that the property disposal process can be frustrating to base reuse and economic recovery efforts but explained that DOD was using all available policy options to speed the process and remain within the boundaries of the law. A DOD official also noted that 1991 base closures may not have benefited as much from initiatives begun in 1993 to speed the process of transferring property to communities. These initiatives included the creation of economic development conveyances and base transition coordinators. Many officials said that once the transition is completed, they will be able to attract tenants, and they believed that in the long run, the community could generate more economic activity and accrue other quality of life dividends such as parks and recreation facilities than when the base was active.

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## Conclusions

A majority of base closure communities have been able to absorb the economic loss without a significant economic decline. A growing national economy and a diverse regional economy play significant roles in economic recovery, making it easier for communities to absorb job losses and generate new business activity. However, some communities are not economically strong based on economic indicators and may have incurred deeper and longer economic impacts from base closures.

Local officials said the impact from base closure was not as bad as they had feared. Though some communities encountered negative economic impacts during the transition from the announcement of base closure to recovery, local officials said they are optimistic about the long-term outlook for their communities. They told us they now view a base closure as an opportunity for their community to craft a new identity for itself and diversify the local economy. To the extent that redevelopment of the base may play a role in economic recovery, the speed of the property disposal process remains a local concern.



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## Agency Comments

DOD agreed that most base closure communities have been able to absorb the economic loss associated with closures and show positive economic growth at or above national averages. DOD cited this as a tribute to the initiative and persistence of local and state redevelopment officials who take advantage of the regional opportunities that an expanding national economy can offer. DOD stated it will continue to support the base redevelopment efforts of local and state officials as they transition to a more diversified economy.



# Federal Cash Grants Given to Facilitate Base Reuse for the Four Base Realignment and Closure Rounds

The loss of a military base can cause economic distress to the locally affected communities. To support dislocated workers and help communities plan and implement their economic redevelopment objectives, the federal government provides assistance through numerous programs. Among the major sources of assistance are the Department of Defense's (DOD) Office of Economic Adjustment, the Federal Aviation Administration, the Department of Commerce's Economic Development Administration, and the Department of Labor. Grants are awarded to communities for activities such as reuse planning and job training, as well as infrastructure improvements and community economic development. In addition to this federal assistance, there are other federal, state, and local resources available to assist with the retraining of workers and the redevelopment of closed bases.

Base	Total OEA grants <sup>a</sup>	Total FAA grants <sup>b</sup>	Total EDA grants <sup>c</sup>	Total DOL grants <sup>d</sup>	Total all grants
Adak Naval Air Facility	0	200,000	120,000	0	\$320,000
Alameda Naval Air Station and Naval Aviation Depot	\$4,048,039	0	\$8,734,605	\$2,500,000	15,282,644
Annapolis Naval Surface Warfare Center	75,000	0	0	0	75,000
Anniston Army Depot	0	0	1,382,500	0	1,382,500
Barbers Point Naval Air Station	1,308,855	0	0	0	1,308,855
Bayonne Military Ocean Terminal	695,022	0	1,500,000	0	2,195,022
Blackstone Army Airfield	0	72,000	0	0	72,000
Bergstrom Air Force Base	200,000	129,104,128	0	1,228,260	130,532,388
Camp Bonneville	126,341	0	0	0	126,341
Camp Pedricktown	25,030	0	0	0	25,030
Carswell Air Force Base	478,855	380,000	0	1,800,000	2,658,855
Castle Air Force Base	1,491,907	1,615,000	7,537,500	0	10,644,407
Cecil Field Naval Air Station	1,399,052	0	2,472,150	0	3,871,202
Chanute Air Force Base	1,154,866	936,500	7,622,250	3,000,000	12,713,616
Charleston Naval Station and Naval Shipyard	3,991,049	0	14,464,460	17,975,755	36,431,264
Chase Field Naval Air Station	1,105,411	140,000	4,162,500	875,151	6,283,062
Columbus Defense Distribution Center	0	0	0	746,186	746,186
Dallas Naval Air Station	667,815	0	0	0	667,815
Davisville Naval Construction Battalion Center	133,000	0	0	0	133,000
Dayton Defense Electronics Support Center	1,250,252	0	0	0	1,250,252
Detroit Arsenal	100,000	0	0	0	100,000
Eaker Air Force Base	2,673,608	0	8,450,100	0	11,123,708
El Toro Marine Corps Air Station	1,651,933	5,503,335	0	0	7,155,268

(continued)

**Appendix I  
Federal Cash Grants Given to Facilitate  
Base Reuse for the Four Base Realignment  
and Closure Rounds**

<b>Base</b>	<b>Total OEA grants<sup>a</sup></b>	<b>Total FAA grants<sup>b</sup></b>	<b>Total EDA grants<sup>c</sup></b>	<b>Total DOL grants<sup>d</sup></b>	<b>Total all grants</b>
England Air Force Base	2,652,115	1,362,500	6,411,800	500,000	<b>10,926,415</b>
Fitzsimons Army Medical Center	1,303,780	0	469,240	0	<b>1,773,020</b>
Ft. Benjamin Harrison	1,895,329	0	4,045,000	4,592,752	<b>10,533,081</b>
Ft. Chaffee	348,434	0	3,188,000	1,250,000	<b>4,786,434</b>
Ft. Devens	3,126,039	0	4,425,000	2,000,000	<b>9,551,039</b>
Ft. Dix	67,000	0	4,408,000	1,150,000	<b>5,625,000</b>
Ft. Greely	442,725	0	0	0	<b>442,725</b>
Ft. Indiantown Gap	0	0	0	1,192,000	<b>1,192,000</b>
Ft. McClellan	1,200,020	0	510,000	0	<b>1,710,020</b>
Ft. Meade	0	126,350	0	0	<b>126,350</b>
Ft. Monmouth	175,000	0	0	0	<b>175,000</b>
Ft. Ord	3,916,543	155,700	63,514,880	800,000	<b>68,387,123</b>
Ft. Pickett	400,436	0	0	0	<b>400,436</b>
Ft. Polk	135,000	0	2,553,750	500,000	<b>3,188,750</b>
Ft. Ritchie	1,167,717	0	1,000,000	825,000	<b>2,992,717</b>
Ft. Sheridan	534,964	0	0	0	<b>534,964</b>
Ft. Totten	65,965	0	0	0	<b>65,965</b>
Gentile Air Force Base	0	0	2,500,000	285,317	<b>2,785,317</b>
George Air Force Base	533,648	2,219,088	6,525,000	1,000,000	<b>10,277,736</b>
Glenview Naval Air Station	798,943	300,000	2,971,125	598,468	<b>4,668,536</b>
Grand Forks Air Force Base	0	0	1,000,000	0	<b>1,000,000</b>
Griffiss Air Force Base	2,665,383	0	6,000,000	2,600,000	<b>11,265,383</b>
Grissom Air Force Base	1,685,661	0	3,649,500	612,500	<b>5,947,661</b>
Guam Naval Complex	2,568,767	26,046,248	100,000	2,750,000	<b>31,465,015</b>
Hill Air Force Base	0	0	1,500,000	1,954,211	<b>3,454,211</b>
Homestead Air Force Base	1,739,420	418,630	16,125,000	0	<b>18,283,050</b>
Indiana Army Ammunition Plant	0	0	3,152,650	750,000	<b>3,902,650</b>
Indianapolis Naval Air Warfare Center	1,620,775	0	0	0	<b>1,620,775</b>
Jefferson Proving Ground	358,600	0	850,000	875,000	<b>2,083,600</b>
K. I. Sawyer Air Force Base	2,028,026	2,893,543	2,277,600	1,045,000	<b>8,244,169</b>
Kelly Air Force Base	4,074,181	0	8,632,400	14,500,000	<b>27,206,581</b>
Key West Naval Air Station	135,000	0	0	0	<b>135,000</b>
Letterkenny Army Depot	1,663,092	0	2,300,000	3,261,759	<b>7,224,851</b>
Lexington-Bluegrass Army Depot	100,000	0	1,007,778	0	<b>1,107,778</b>
Long Beach Naval Station and Naval Hospital	5,503,284	0	0	0	<b>5,503,284</b>
Long Beach Naval Shipyard	0	0	8,030,000	6,120,000	<b>14,150,000</b>
Loring Air Force Base	2,935,012	17,300,000	4,567,000	2,100,000	<b>26,902,012</b>
Louisville Naval Surface Warfare Center	822,223	0	0	0	<b>822,223</b>

(continued)

**Appendix I  
Federal Cash Grants Given to Facilitate  
Base Reuse for the Four Base Realignment  
and Closure Rounds**

<b>Base</b>	<b>Total OEA grants<sup>a</sup></b>	<b>Total FAA grants<sup>b</sup></b>	<b>Total EDA grants<sup>c</sup></b>	<b>Total DOL grants<sup>d</sup></b>	<b>Total all grants</b>
Louisville Naval Ordnance Station	0	0	1,000,000	0	<b>1,000,000</b>
Lowry Air Force Base	2,637,932	0	12,338,500	800,000	<b>15,776,432</b>
MacDill Air Force Base	137,000	0	2,550,000	0	<b>2,687,000</b>
Malmstrom Air Force Base	0	0	750,000	0	<b>750,000</b>
March Air Force Base	1,684,770	0	75,000	0	<b>1,759,770</b>
Mare Island Naval Shipyard	3,263,983	0	8,050,000	10,448,000	<b>21,761,983</b>
Mather Air Force Base	630,500	1,692,688	9,794,451	1,750,000	<b>13,867,639</b>
McClellan Air Force Base	2,803,511	0	0	11,670,000	<b>14,473,511</b>
Memphis Defense Distribution Depot	858,637		0	1,400,000	<b>2,258,637</b>
Memphis Naval Air Station	1,461,983	2,311,330	1,252,000	0	<b>5,025,313</b>
Mobile Naval Air Station	200,000	0	93,750	0	<b>293,750</b>
Moffett Field Naval Air Station	0	0	0	5,010,678	<b>5,010,678</b>
Myrtle Beach Air Force Base	1,408,264	23,832,303	3,500,000	925,000	<b>29,665,567</b>
New London Naval Underwater Warfare Center	187,500	0	0	0	<b>187,500</b>
Newark Air Force Base	800,602	0	0	2,750,000	<b>3,550,602</b>
Norfolk Naval Aviation Depot	108,561	0	0	0	<b>108,561</b>
Norfolk Naval Shipyard	0	0	1,000,000	0	<b>1,000,000</b>
Norton Air Force Base	741,000	10,424,638	9,383,660	2,916,000	<b>23,465,298</b>
Ogden Defense Distribution Depot	1,056,805	0	75,000	0	<b>1,131,805</b>
Orlando Naval Hospital	0	0	735,000	0	<b>735,000</b>
Orlando Naval Training Center	1,658,536	0	118,875	3,392,374	<b>5,169,785</b>
Pease Air Force Base	859,790	20,617,344	8,475,000	0	<b>29,952,134</b>
Pensacola Naval Aviation Depot	341,546	0	0	5,300,000	<b>5,641,546</b>
Philadelphia Defense Personnel Supply Center	321,306	0	0	4,500,000	<b>4,821,306</b>
Philadelphia Naval Station, Naval Hospital and Naval Shipyard	105,015,640	0	14,273,850	45,970,000	<b>165,259,490</b>
Plattsburgh Air Force Base	2,159,844	0	4,843,000	1,296,684	<b>8,299,528</b>
Point Molate	149,901	0	0	0	<b>149,901</b>
Port Hueneme Naval Construction Engineering Lab	159,900	0	2,306,395	0	<b>2,466,295</b>
Portsmouth Naval Station, ME	0	0	500,000	0	<b>500,000</b>
Portsmouth Naval Station, N.H.	0	0	4,450,000	2,700,000	<b>7,150,000</b>
Presidio of San Francisco	0	0	0	500,000	<b>500,000</b>
Pueblo Army Depot	194,000	0	70,000	0	<b>264,000</b>
Puget Sound Naval Station (Sand Point	120,000	0	850,000	1,188,000	<b>2,158,000</b>
Red River Army Depot	631,247	0	0	0	<b>631,247</b>
Reese Air Force Base	919,980	0	2,584,250	1,268,622	<b>4,772,852</b>
Richards-Gebaur Air Reserve Station	241,985	3,817,235	0	0	<b>4,059,220</b>

(continued)

**Appendix I  
Federal Cash Grants Given to Facilitate  
Base Reuse for the Four Base Realignment  
and Closure Rounds**

<b>Base</b>	<b>Total OEA grants<sup>a</sup></b>	<b>Total FAA grants<sup>b</sup></b>	<b>Total EDA grants<sup>c</sup></b>	<b>Total DOL grants<sup>d</sup></b>	<b>Total all grants</b>
Rickenbacker Air Guard Base	111,000	4,456,060	0	684,545	<b>5,251,605</b>
Sacramento Army Depot	436,010	0	75,000	1,750,000	<b>2,261,010</b>
San Diego Naval Training Center	1,783,996	0	389,000	0	<b>2,172,996</b>
Savanna Army Depot	525,852	0	0	0	<b>525,852</b>
Seneca Army Depot	1,189,730	0	2,706,250	0	<b>3,895,980</b>
Sierra Army Depot	626,734	0	0	0	<b>626,734</b>
South Weymouth Naval Air Station	422,000	0	120,000	925,000	<b>1,467,000</b>
St. Louis Aviation Troop Command	341,587	0	0	5,850,000	<b>6,191,587</b>
Staten Island Naval Station	527,244	0	0	636,000	<b>1,163,244</b>
Stratford Army Engine Plant	615,553	0	0	0	<b>615,553</b>
Suffolk Naval RadioTransmission Facility Driver	90,000	0	0	0	<b>90,000</b>
Tooele Army Depot	562,260	0	2,575,000	3,244,000	<b>6,381,260</b>
Treasure Island Naval Station	0	0	735,000	0	<b>735,000</b>
Trenton Naval Air Warfare Center	134,902	0	0	850,000	<b>984,902</b>
Tustin Marine Corps Air Station	1,392,543	200,000	0	0	<b>1,592,543</b>
Vint Hill Farms Station	1,355,564	0	0	0	<b>1,355,564</b>
Warminster Naval Air Warfare Center	1,583,558	0	2,000,000	3,030,000	<b>6,613,558</b>
Watertown Army Materials Technology Laboratory	185,000	0	1,762,500	0	<b>1,947,500</b>
Williams Air Force Base	1,869,702	14,253,961	7,057,250	2,000,000	<b>25,180,913</b>
Woodbridge Air Reserve Facility	50,000	0	0	0	<b>50,000</b>
Wurtsmith Air Force Base	1,997,015	139,500	9,717,500	1,250,000	<b>13,104,015</b>
Other <sup>e</sup>	15,516,542	0	0	7,008,152	<b>22,524,694</b>
<b>Total</b>	<b>\$231,310,632</b>	<b>\$270,518,081</b>	<b>\$334,366,019</b>	<b>\$210,400,414</b>	<b>\$1,046,595,146</b>

<sup>a</sup>Office of Economic Adjustment; data through Feb. 17, 1998.

<sup>b</sup>Federal Aviation Administration; data through Sept. 30, 1997.

<sup>c</sup>Economic Development Administration; data through Sept. 30, 1997.

<sup>d</sup>Department of Labor; data through Dec. 30, 1997.

<sup>e</sup>These funds went to California Community Colleges, East Bay Pilot Project, California Community Assistance, Oakland Military Complex, Virginia Defense Project, San Francisco Complex and Hamilton Military Complex.

# Civilian Jobs Lost and Created at Major Base Realignment and Closures During the Four Rounds

The closure and realignment of military bases creates job losses at these facilities, but subsequent redevelopment of the former bases' property affords opportunities for the creation of new jobs. DOD estimates that, for major closures and realignments for the four rounds, the number of civilian job losses will exceed 135,000 (as shown in the following table); this number was derived from estimates made during the base realignment and closure (BRAC) decision-making process for each round. As of March 31, 1998, DOD reports that the number of jobs actually created at these activities exceeded 49,000. Over time, the number of jobs created will increase as more bases are closed or realigned and additional redevelopment occurs. As a result, the recovery rate, which provides a rough indicator of how base reuse is contributing to the economic recovery of BRAC-affected communities, will also increase. The data presented in the table do not include the job losses from base closures that may have occurred elsewhere in a community, nor do they capture jobs created from other economic activity in the area.

Base	Estimated civilian jobs lost	Jobs created	Recovery (percent)
Alameda Naval Air Station and Naval Aviation Depot	3,228	598	18.53
Army Materials Technology Lab (Watertown)	540	0	0
Barbers Point Naval Air Station <sup>a</sup>	618	0	0
Bayonne Military Ocean Terminal <sup>a</sup>	2,015	0	0
Bergstrom Air Force Base	927	53	5.72
Carswell Air Force Base	869	688	79.17
Castle Air Force Base	1,149	1,881	163.71
Cecil Field Naval Air Station <sup>a</sup>	995	0	0
Chanute Air Force Base	1,035	1,416	136.81
Charleston Naval Complex	6,272	3,087	49.22
Chase Field Naval Air Station	956	1,290	134.94
Eaker Air Force Base	777	416	53.54
El Toro Marine Corps Air Station	979	0	0
England Air Force Base	682	1,527	223.90
Fitzsimons Army Medical Center <sup>a</sup>	1,612	54	3.35
Ft. Benjamin Harrison	4,240	563	13.28
Ft. Devens	2,178	1,470	67.49
Ft. Dix	2,186	0	0
Ft. Greely <sup>a</sup>	291	0	0
Ft. McClellan <sup>a</sup>	2,156	0	0

(continued)

**Appendix II  
Civilian Jobs Lost and Created at Major Base  
Realignments and Closures During the Four  
Rounds**

Base	Estimated civilian jobs lost	Jobs created	Recovery (percent)
Ft. Ord	2,835	1,135	40.04
Ft. Pickett	245	61	24.90
Ft. Ritchie <sup>a</sup>	1,373	21	1.53
Ft. Sheridan	1,681	20	1.19
Gentile Air Force Station	2,804	1,819	64.87
George Air Force Base	506	673	133.00
Glenview Naval Air Station	389	52	13.37
Griffiss Air Force Base	1,191	1,175	98.66
Grissom Air Force Base	792	402	50.76
Guam Naval Complex	980	705	71.94
Homestead Air Force Base	136	388	285.29
Indianapolis Naval Air Warfare Center	2196	2,010	91.53
Jefferson Proving Ground	387	10	2.58
Kelly Air Force Base <sup>a</sup>	10,912	144	1.32
K.I. Sawyer Air Force Base	788	657	83.38
Lexington Army Depot	1,131	379	33.51
Long Beach Naval Complex	4,487	200	4.46
Loring Air Force Base	1,311	588	44.85
Louisville Naval Surface Warfare Station	1,435	501	34.91
Lowry Air Force Base	2,275	1,490	65.49
March Air Force Base	997	443	44.43
Mare Island Naval Shipyard	7,567	1,038	13.72
Mather Air Force Base	1,012	1,807	178.56
McClellan Air Force Base <sup>a</sup>	8,828	0	0
Memphis Defense Distribution Depot	1,289	185	14.35
Memphis Naval Air Station	250	39	15.60
Myrtle Beach Air Force Base	784	926	118.11
Newark Air Force Base	1,760	887	50.40
Norton Air Force Base	2,133	2,490	116.74
Oakland Naval Complex <sup>ab</sup>	2,834	0	0
Ogden Defense Distribution Depot	1,105	130	11.76
Orlando Naval Training Center <sup>a</sup>	753	1,125	149.40
Pease Air Force Base	400	1,385	346.25
Philadelphia Defense Personnel Supply Center <sup>ab</sup>	1,485	300	20.20
Philadelphia Naval Complex	8,119	528	6.50
Plattsburgh Air Force Base	352	249	70.74
Presidio of San Francisco	3,150	1,779	56.48

(continued)



**Appendix II  
Civilian Jobs Lost and Created at Major Base  
Realignments and Closures During the Four  
Rounds**

<b>Base</b>	<b>Estimated civilian jobs lost</b>	<b>Jobs created</b>	<b>Recovery (percent)</b>
Reese Air Force Base	1,238	104	8.40
Red River Army Depot <sup>a</sup>	386	5	1.30
Sacramento Army Depot	3,164	5,000	158.03
San Diego Naval Training Center	402	8	1.99
Savanna Army Depot <sup>a</sup>	436	0	0
Seneca Army Depot <sup>a</sup>	273	0	0
Sierra Army Depot <sup>a</sup>	374	44	11.76
Staten Island Naval Station	1,001	50	5.00
Stratford Army Engineering Plant	1,400	5	0.36
St. Louis Aviation Troop Command	4,263	0	0
Tooele Army Depot	1,942	577	29.71
Treasure Island Naval Station	454	1,703	375.11
Tustin Marine Corps Air Station <sup>a</sup>	348	0	0
Vint Hill Farms Station	1,472	30	2.04
Warminster Naval Air Warfare Center	2,311	277	11.99
Williams Air Force Base	728	1,418	194.78
Wurtsmith Air Force Base	690	1,070	155.07
<b>Total</b>	<b>135,259</b>	<b>49,075</b>	<b>36.28</b>

Note: The number of "estimated civilian jobs lost" is a projection of DOD civilian and contractor personnel losses at the major BRAC bases for the four rounds, even though such losses may not have actually occurred as yet, particularly at BRAC bases that have not yet completed realignment or closure. The number of "jobs created" included only civilian jobs created at major BRAC locations as of March 31, 1998.

<sup>a</sup>These are remaining base closures and realignments that have not been completed; the estimated jobs lost for these bases are 34,624 and the jobs created are 1,393.

<sup>b</sup>The Oakland Naval Complex includes Oakland Naval Hospital, Oakland Army Base, and Oakland Fleet Industrial Supply Center. Philadelphia Defense Personnel Supply Center includes the Philadelphia Clothing Factory and Philadelphia Defense Personnel Supply Center.

Source: DOD's Office of Economic Adjustment, as of March 31, 1998.

# Status of Property Disposition at Selected Bases Visited

We performed work at seven BRAC bases to gain a sense of the property transfer mechanisms—public benefit transfers, economic development conveyances, or sales—being used to dispose of unneeded property. The bases selected for visits represent a mix of military service and BRAC round closures or realignments, as follows:

- Mather Air Force Base, California—a 1988 round base closing in 1993;
- Lowry Air Force Base, Colorado—a 1991 round base closing in 1994;
- Cameron Station, Virginia—a 1988 round base closing in 1995;
- Defense Distribution Depot Ogden, Utah—a 1995 round base closing in 1997;
- Vint Hill Farms Station, Virginia—a 1993 round base closing in 1997;
- Tooele Army Depot, Utah—a 1993 round base realigning in 1997; and
- Mare Island Naval Shipyard, California—a 1993 round base closing in 1996.

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## Mather Air Force Base

Mather Air Force Base, located on 5,716 acres near Sacramento, California, enjoyed a long history as a military installation. The base was first activated in 1918 as an airfield and combat pilot training school, then placed on inactive status from 1922 until 1930 and again from 1932 until 1941. The base was used for pilot and navigator training activities during World War II and continued as a training center after the war. It was selected for closure in the 1988 BRAC round and closed in September 1993.

**Property Disposition:** The Air Force and Sacramento County are in negotiations for the sale of 329 acres containing 1,271 housing units and 176 acres containing a golf course. The county is acquiring another 771 acres through an economic development conveyance at a cost of about \$8 million with no down payment and no payment during the first 5 years. As of June 1998, about 55 acres of the property requested under the economic development conveyance had been transferred by title and the remaining property was under lease. Specifically, the Air Force executed one deed under the early transfer deed for the remaining acreage. Public benefit conveyances included 2,875 acres for an airport, 1,470 acres for local parks, 34 acres for homeless services and a housing center; and 43 acres for schools and churches. The balance is used by federal and state agencies, including 31 acres for a California National Guard unit.

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**Appendix III  
Status of Property Disposition at Selected  
Bases Visited**

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**Lowry Air Force Base**

Lowry is located on 1,866 acres in a suburban area between Denver and Aurora. The base was originally established in 1937 as an Army Air Corps technical school. It was selected for closure in the 1991 round and closed in September 1994.

**Property Disposition:** The Lowry Redevelopment Authority, representing the cities of Denver and Aurora, is the lead agency for redeveloping the former military base. It is pursuing about 755 acres through an economic development conveyance and about 580 acres through a negotiated sale. As of June 1998, about 310 acres had been deeded. The sale price was \$32.5 million, with a 15-year repayment schedule. Parcels totaling about 115 acres are being retained by the Air Force. Several public benefit transfers are planned for educational (220 acres), recreational (175 acres), and homeless (25 acres) use. The homeless service providers agreed to accept 10 percent of existing base housing and a federal grant (plus local matching funds) to purchase about 200 units in a five-county area.

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**Cameron Station**

Cameron Station, located in Alexandria, Virginia, provided logistical and administrative support to the local military district. It was selected for closure in the 1988 BRAC round and closed in 1995.

**Property Disposition:** Plans were to make 165 excess acres available to the community for redevelopment. Accordingly, 64 acres were granted to the city of Alexandria through a public benefit transfer, and a competitive bid sale of 101 acres to a developer provided the Army with \$33.3 million in revenue.

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**Defense Distribution Depot Ogden**

Defense Depot Ogden was established in Ogden, Utah, in 1941 and was used to store, maintain, and ship a variety of materials for DOD and other agencies. The site encompasses about 1,128 acres and is located 35 miles north of Salt Lake City. The depot was selected for closure in the 1995 BRAC round and closed in September 1997.

**Property Disposition:** Army plans indicate that the local reuse authority has requested about 1,020 acres through an economic development conveyance. The remaining property will be divided between a military enclave and a public benefit conveyance for a nature center. Although no property had been transferred as of June 1998, an interim master lease was in place.

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**Vint Hill Farms Station**

Vint Hill Farms Station is located in northern Virginia, about 40 miles from Washington, D.C. It includes 721 acres of land, of which 148 acres are developed. The Army purchased the land in 1942 and used it as a signal school, signal training center, and refitting station. After World War II, the installation engaged in communication intelligence activities. It was selected for closure in the 1993 BRAC round and closed in September 1997.

**Property Disposition:** An application for an economic development conveyance was submitted to the Army in April 1997. Negotiations are complete and as of July 1998, the Army was awaiting final agreement by the local reuse authority. Payment terms are \$925,000 for the real property and some personal property. Payments are to be made in equal amounts beginning in year 8 and concluding in year 15, at an interest rate of 7.625 percent commencing upon transfer of the property, expected sometime during spring 1999. Although no property has been formally transferred, the Army has approved several interim leases to the reuse authority. Following final approval of the economic development conveyance, the Army intends to execute a lease in furtherance of conveyance for land to support development of a golf course.

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**Appendix III  
Status of Property Disposition at Selected  
Bases Visited**

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**Tooele Army Depot**

Tooele Army Depot is a 25,172-acre installation located 35 miles west of Salt Lake City. Originally established and constructed as an ordnance depot in 1942, it began operating as a storage, supply, and repair depot in 1947. By 1993 there were three main missions at the depot: ammunition operations, ammunition equipment design and development, and the overhaul of military locomotives and rail-mounted generators. Although the base is remaining open, a 1993 BRAC recommendation to close and transfer the ammunition operations and overhaul missions has led to actions to dispose of 1,707 acres, completed in September 1997.

**Property Disposition:** The local reuse authority requested approximately 1,700 acres via a rural no-cost economic development conveyance. The first portion of the excess property, about 42 acres, which includes a 400,000-square foot state-of-art consolidated maintenance facility, was transferred in June 1996 to the local reuse authority, which later sold it to Penske Corporation. Subsequent to the economic development conveyance application, the local reuse authority and the Army began discussions of expediting the property transfer using the section 334 early transfer authority. Nine leases were executed in 1996 at the local reuse authority's request to facilitate initial reuse of the property. Additionally, a lease in furtherance of conveyance for 1,447 acres was completed in September 1997.

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**Mare Island Naval Shipyard**

Mare Island occupies a 4,895-acre peninsula at the northeastern edge of San Francisco Bay and includes approximately 1,400 acres adjacent to the city of Vallejo. From the mid-1800s until its closure, it operated as a naval shipyard, conducting numerous industrial activities. It was selected for closure in the 1993 BRAC round and closed in March 1996.

**Property Disposition:** The city applied for an economic development conveyance of 1,412 acres, which covers most, but not all, of the land excessed in January 1996. It is expected to be approved in February 1999. While the Navy continues to hold title to the property, it has agreed to an interim lease that allows the city to sublease facilities. The ultimate plan for the property (mostly wetlands) covers 8 years and includes a \$26-million loan from the Navy for infrastructure improvements. Under the agreement, about 3629 acres will revert to California and DOD will retain about 35 acres. About 170 acres will be divided among three federal agencies: the Fish and Wildlife Service, the Forest Service, and the Coast Guard. Approximately 50 percent of Mare Island is subject to the Tidelands Trust. Most of this land will revert to the state. However, some of this land is to be conveyed to the local reuse authority and the Tidelands Trust would restrict development and conflicts with some elements of the reuse plan. The city and the State Lands Commission are working to resolve these issues.

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# Selected Environmental Laws and Regulations Pertinent to Cleanup at BRAC Bases

Property disposals resulting from BRAC rounds are governed by various laws and regulations relating to the disposal of unneeded government property, environmental cleanup, and the protection of natural and cultural resources. DOD must comply with these laws and regulations shown below in order to put BRAC property back into reuse by either federal or nonfederal users.

Title	Summary
<b>Primary sources of authority</b>	
Base Closure and Realignment Act of 1988 (P.L. 100-526, 102 Stat. 2627) and the Defense Base Closure and Realignment Act of 1990 (P.L. 101-510, 104 Stat. 1808), 10 U.S.C. 2687 Note	Requires DOD to comply with a variety of laws—including the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Environmental Policy Act—to effect federal real property disposal at most BRAC installations.
CERCLA, section 120, 42 U.S.C. 9620	Defines the roles for the Environmental Protection Agency, state agencies, and DOD components. Section 120 compliance is required for all federal facilities, including BRAC bases. Generally requires that all remedial action necessary to protect human health and the environment has been taken prior to property transfer. Also requires the federal government to assume financial responsibility for any additional cleanup of DOD-caused pollution discovered in the future.
National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. part 300	Sets criteria for an installation's inclusion on the National Priorities List (NPL). Establishes procedures for conducting response actions.
Executive Order 12580	Authorizes DOD components to conduct site investigations and cleanups.
Superfund Amendments and Reauthorization Act, section 211, 10 U.S.C. 2701	Used as the basis for the Defense Environmental Restoration Program. Authorizes removal of unexploded ordnance and unsafe buildings and debris on BRAC bases.
National Environmental Policy Act, 42 U.S.C. 4331	Defines the process for examining potential impacts to the environment that may result from disposition of BRAC installation property. Requires that reuse alternatives are identified and characterized and that the environmental impacts associated with each are disclosed.
State laws and other statutes	CERCLA section 120(a)(4) states that "State laws concerning removal and remedial actions, including State laws regarding enforcement, shall apply to removal and remedial action at facilities owned or operated by a department, agency, or instrumentality of the United States when such facilities are not included in the National Priorities List."
<b>Other relevant federal environmental laws</b>	
Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq.	Establishes the framework for managing solid and hazardous wastes. Applies to both NPL and non-NPL installations.
Toxic Substances Control Act, 15 U.S.C. 2601, et seq.	Regulates specific chemical substances, including polychlorinated biphenyls and asbestos.

(continued)

**Appendix IV  
Selected Environmental Laws and  
Regulations Pertinent to Cleanup at BRAC  
Bases**

<b>Title</b>	<b>Summary</b>
Federal Water Pollution Control Act ("Clean Water Act"), 33 U.S.C. 1251, et seq.	Regulates discharges of pollutants into waters. Requires the establishment of criteria and standards to protect water quality. Requires federal permits for dredge and fill operations.
Safe Drinking Water Act, 42 U.S.C. 300f, et seq.	Establishes regulations to protect human health from contaminants in drinking water.
Clean Air Act 42, U.S.C. 7418	Regulates releases of pollutants into the air.
Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. 135, et seq.	Establishes a registration program for pesticides. Governs disposal of pesticides.
<b>Other selected federal laws affecting land use</b>	
American Indian Religious Freedom Act, 42 U.S.C. 1996	Protects and preserves access to religious sites of Native Americans.
Archaeological and Historic Preservation Act, 16 U.S.C. 469	Protects historic or archaeological resources threatened by federal dams or construction projects.
Bald and Golden Eagle Protection Act, 16 U.S.C. 668	Governs activities and facilities that may threaten protected birds.
Coastal Zone Management Act, 16 U.S.C. 1451-1464	Requires federal agencies to observe state Coastal Zone Management Plans for activities near shorelines.
Endangered Species Act, 16 U.S.C. 1531-1544	Protects threatened and endangered species and their habitats.
Fish and Wildlife Coordination Act, 16 U.S.C. 663	Requires federal agencies to consider the effect of their land and water use activities on fish and wildlife.
National Historic Preservation Act, 16 U.S.C. 470	Establishes a program for the preservation of designated historic properties throughout the nation.
Water Resources Development Acts, 33 U.S.C. 2283 and 2317	Establishes a national goal of no net loss of wetlands. Provides for mitigation of negative effects of water resource projects on fish and wildlife.
Wild and Scenic Rivers Act, 16 U.S.C. 1271	Preserves and protects the free-flowing condition of designated rivers.

# Comments From the Department of Defense



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OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON  
WASHINGTON DC 20301-3000



October 27, 1998

Mr. David R. Warren  
Director, Defense Management Issues  
National Security and International Affairs Division  
United States General Accounting Office  
Washington, DC 20548

Dear Mr. Warren:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) Draft report "MILITARY BASES: Status of Prior Closure and Realignment Rounds," dated September 22, 1998, (GAO Code 709278/OSD Case 1694).

The report found that recommended BRAC actions are on track, but that property disposal is progressing slowly. In implementing BRAC closures, it is DoD's goal to convey the property as quickly as possible to advance both the local communities' economic recovery and to accelerate DoD savings by eliminating costs associated with maintaining the property. However, property transfer is a complex process involving many challenges, including the time needed to clean up BRAC property. DoD supports a variety of initiatives, such as early transfer authority, that accelerate, refine, or simplify the process.

The report found that cost and savings estimates are not precise. Savings estimates, while difficult to track and update, are important because they help measure the value of the BRAC process. While the Department does not maintain a separate system to account precisely for savings, we share the report's conclusion that BRAC savings will be substantial once implementation costs have been offset. In addition, we are making efforts to improve the accuracy of our savings estimates. In a May 1998 memorandum to the Military Services, the DoD Comptroller reiterated the requirement to update savings estimates in annual budget submissions as much as practical. While our estimate of savings may be imprecise, audits by both GAO and DoD IG have affirmed that BRAC actions will result in substantial savings, and we continue to believe that savings in the magnitude of the DoD estimates will be achieved. DoD has estimated \$14 billion net savings by 2001 with \$5.6B of recurring annual savings from the four BRAC rounds.

The report found that environmental cleanup is progressing, but is costly and time-consuming. The time and cost associated with cleanup at BRAC bases are driven by the regulatory framework. Still, DoD's Fast-Track Cleanup initiative has accelerated cleanup through partnerships with state and federal regulatory agencies as well as with local communities. These partnerships produce more cost effective cleanups with consideration to future reuse and community concerns.

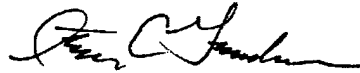


Appendix V  
Comments From the Department of Defense

The report found that most communities where bases closed are recovering. We agree that a wide majority of the base closure communities have been able to absorb the economic loss and show positive economic growth at or above national averages. This is a tribute to the initiative and persistence of local and state redevelopment officials as they take advantage of the regional opportunities that an expanding national economy can offer. We will continue to support the base redevelopment efforts of local and state officials as they transition to a more diversified economy.

Technical comments from DoD and the Military Services were previously forwarded. The Department appreciates the opportunity to comment on the draft report.

Sincerely,



Steven C. Grundman  
Acting Deputy Under Secretary  
(Industrial Affairs & Installations)



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# Related GAO Products

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Military Bases: Review of DOD's 1998 Report on Base Realignment and Closure (GAO/NSIAD-99-17, Nov. 13, 1998).

Military Base Closures: Issues Related to Fiscal Year 1999 Budget Request (GAO/NSIAD-98-169, July 30, 1998).

Defense Infrastructure: Challenges Facing DOD in Implementing Reform Initiatives (GAO/T-NSIAD-98-115, Mar. 18, 1998).

Military Bases: Lessons Learned From Prior Base Closure Rounds (GAO/NSIAD-97-151, July 25, 1997).

Military Base Closures: Detailed Budget Requests Could Improve Visibility (GAO/NSIAD-97-170, July 14, 1997).

Navy Depot Maintenance: Cost and Savings Issues Related to Privatizing-in-Place at the Louisville, Kentucky, Depot (GAO/NSIAD-96-202, Sept. 18, 1996).

Military Base Closures: Reducing High Costs of Environmental Cleanup Requires Difficult Choices (GAO/NSIAD-96-172, Sept. 5, 1996).

Military Bases: Potential Reductions to the Fiscal Year 1997 Base Closure Budget (GAO/NSIAD-96-158, July 15, 1996).

Military Bases: Closure and Realignment Savings Are Significant, but Not Easily Quantified (GAO/NSIAD-96-67, Apr. 8, 1996).

Military Bases: Analysis of DOD's 1995 Process and Recommendations for Closure and Realignment (GAO/NSIAD-95-133, Apr. 14, 1995).

Military Bases: Challenges in Identifying and Implementing Closure Recommendations (GAO/T-NSIAD-95-107, Feb. 23, 1995).

Military Bases: Environmental Impact at Closing Installations (GAO/NSIAD-95-70, Feb. 23, 1995).

Military Bases: Reuse Plans for Selected Bases Closed in 1988 and 1991 (GAO/NSIAD-95-3, Nov. 1, 1994).

Military Bases: Analysis of DOD's Recommendations and Selecting Process for Closures and Realignments (GAO/NSIAD-93-173, Apr. 15, 1993).

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**Related GAO Products**

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Military Bases: Varied Processes Used in Proposing Base Closures and Realignments (GAO/NSIAD-91-133, Mar. 1, 1991).

Military Bases: Process Used by Services for January 1990 Base Closure and Realignment Proposals (GAO/NSIAD-91-109, Jan. 7, 1991).

Military Bases: An Analysis of the Commission's Realignment and Closure Recommendations (GAO/NSIAD-90-42, Nov. 29, 1989).

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