

July 2005

MILITARY BASES

Analysis of DOD's 2005 Selection Process and Recommendations for Base Closures and Realignments



G A O

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Highlights of [GAO-05-785](#), a report to congressional committees

Why GAO Did This Study

On May 13, 2005, the Secretary of Defense submitted proposed base realignment and closure (BRAC) actions to an independent commission for its review. The Commission must submit its recommendations to the President by September 8, 2005, for his acceptance or rejection in their entirety. Congress has final action to accept or reject these recommendations in their entirety later this year. The law requires that GAO issue a report on the Department of Defense's (DOD) recommendations and selection process by July 1, 2005. GAO's objectives were to (1) determine the extent to which DOD's proposals achieved its stated BRAC goals, (2) analyze whether the process for developing recommendations was logical and reasoned, and (3) identify issues with the recommendations that may warrant further attention. Time constraints limited GAO's ability to examine implementation details of most of the individual recommended actions.

What GAO Recommends

GAO is making a recommendation to DOD aimed at tracking and periodically updating savings, and is highlighting issues for the BRAC Commission's consideration.

In providing oral comments on a draft of this report, DOD concurred with the recommendation to establish a system to track and periodically update BRAC savings estimates.

www.gao.gov/cgi-bin/getrpt?GAO-05-785.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Barry W. Holman at (202) 512-5581 or holmanb@gao.gov.

MILITARY BASES

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What GAO Found

DOD had varying success in achieving its 2005 BRAC goals of (1) reducing excess infrastructure and producing savings, (2) furthering transformation, and (3) fostering jointness. While DOD proposed a record number of closures and realignments, exceeding all prior BRAC rounds combined, many proposals focused on reserve bases and relatively few on closing active bases. Projected savings are almost equally large, but most savings are derived from 10 percent of the recommendations. While GAO believes savings would be achieved, overall up-front investment costs of an estimated \$24 billion are required, and there are clear limitations associated with DOD's projection of nearly \$50 billion in savings over a 20-year period. Much of the projected net annual recurring savings (47 percent) is associated with eliminating jobs currently held by military personnel. However, rather than reducing end-strength levels, DOD indicates the positions are expected to be reassigned to other areas, which may enhance capabilities but also limit dollar savings available for other uses. Sizeable savings were projected from efficiency measures and other actions, but underlying assumptions have not been validated and could be difficult to track over time. Some proposals represent efforts to foster jointness and transformation, such as initial joint training for the Joint Strike Fighter, but progress in each area varied, with many decisions reflecting consolidations within, and not across, the military services. In addition, transformation was often cited as support for proposals, but it was not well defined, and there was a lack of agreement on various transformation options.

DOD's process for conducting its analysis was generally logical, reasoned, and well documented. DOD's process placed strong emphasis on data, tempered by military judgment, as appropriate. The military services and seven joint cross-service groups, which focused on common business-oriented functions, adapted their analytical approaches to the unique aspects of their respective areas. Yet, they were consistent in adhering to the use of military value criteria, including new considerations introduced for this round, such as surge and homeland defense needs. Data accuracy was enhanced by the required use of certified data and by efforts of the DOD Inspector General and service audit agencies in checking the data.

Time limitations and complexities introduced by DOD in weaving together an unprecedented 837 closure and realignment actions across the country into 222 individual recommendations caused GAO to focus more on evaluating major cross-cutting issues than on implementation issues of individual recommendations. GAO identified various issues that may warrant further attention by the Commission. Some apply to a broad range of recommendations, such as assumptions and inconsistencies in developing certain cost and savings estimates, lengthy payback periods, or potential impacts on affected communities. GAO also identified certain candidate recommendations, including some that were changed by senior DOD leadership late in the process that may warrant attention.

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Abbreviations

BRAC	base realignment and closure
COBRA	Cost of Base Realignment Actions
DOD	Department of Defense
DLA	Defense Logistics Agency
IEC	Infrastructure Executive Council
ISG	Infrastructure Steering Group
OSD	Office of the Secretary of Defense

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July 1, 2005

Congressional Committees

It has been 10 years since the Department of Defense (DOD) last conducted a base realignment and closure (BRAC) round.¹ As a result of prior BRAC rounds in 1988, 1991, 1993, and 1995, DOD reports that it has reduced its domestic infrastructure by about 20 percent in terms of plant replacement value,² transferred hundreds of thousand of acres of unneeded property to other federal and nonfederal entities, and saved billions of dollars on an annual recurring basis for application to higher priority defense needs. Despite these infrastructure reductions, DOD recognized the need for additional closures and realignments following the 1995 closure round and made repeated efforts to gain congressional authorization for an additional closure round.

We too have frequently reported in recent years on the long-term challenges DOD faces in managing its portfolio of facilities, halting degradation of facilities, and reducing unneeded infrastructure to free up funds to better maintain enduring facilities and meet other needs. Because of these long-standing issues, DOD's management of its support infrastructure has been included in our list of high-risk areas since 1997.

Congress authorized an additional BRAC round for 2005 with the passage of the National Defense Authorization Act for Fiscal Year 2002 (the Act).³ The 2002 Act essentially extended the authority of the Defense Base Closure and Realignment Act of 1990,⁴ which had authorized the 1991, 1993, and 1995 rounds, with some modifications for the 2005 base closure round. The BRAC legislation provides for an independent Defense Base Closure and Realignment Commission to review the Secretary of Defense's realignment and closure recommendations, which were publicly announced on May 13, 2005, and present its findings and conclusions on the Secretary's recommendations, along with its own recommendations to the

¹ Definitions of closures and realignments and other BRAC-related terms are included in app. II.

² DOD defines plant replacement value as the cost to replace an existing facility with a facility of the same size at the same location, using today's building standards.

³ P.L. 107-107, Title XXX (Dec. 28, 2001).

⁴ P.L. 101-510, Title XXIX (Nov. 5, 1990); 10 U.S.C. 2687, note.

President, by September 8, 2005. The President, in turn, must either approve or disapprove the Commission's recommendations in their entirety by September 23, 2005. If approved, the recommendations are forwarded to Congress, which has 45 days or until the adjournment of Congress to disapprove the recommendations on an all-or-none basis; otherwise, they become binding.⁵ If the President disapproves the recommendations, the Commission must consider the President's objections and send a revised report back to the President no later than October 20, 2005. The President then has until November 7, 2005, to forward his approval of the revised Commission recommendations to Congress for its review.

Considering changes in the national security environment and emerging threats, along with ongoing changes in the United States defense strategy to address these threats and protect our homeland, DOD has come to realize the need to reshape its base structure to more effectively support its military forces. In establishing goals for the 2005 BRAC round, the Secretary of Defense, in a November 15, 2002, memorandum initiating the round, expressed his interest in (1) reducing excess infrastructure, which diverts scarce resources from overall defense capability, and producing savings; (2) transforming DOD by aligning the infrastructure with the defense strategy; and (3) fostering jointness by examining and implementing opportunities for greater jointness across DOD.

In the submission of his recommendations to the BRAC Commission on May 13, 2005, the Secretary reported that his recommendations, if approved, would accomplish these goals. DOD reported that its 222 recommendations, involving an unprecedented 837 closure and realignment actions—including 33 major base closures and 30 major realignments, plus numerous other closures and realignments would generate annual recurring savings of about \$5.5 billion beginning in fiscal year 2012.

Legislation authorizing the 2005 round maintained the requirement, applicable to three previous rounds, that we provide a detailed analysis of the Secretary's recommendations and the selection process. Our objectives were to (1) determine the extent to which DOD achieved its stated goals for BRAC 2005, (2) analyze whether DOD's selection process in developing

⁵ Once the recommendations become binding, DOD must initiate closure or realignment actions no later than 2 years and complete these actions within 6 years from the date the President transmits his report to Congress. P.L. 101-510, section 2904.

recommended actions was logical and reasoned, and (3) identify issues regarding the recommendations that may warrant attention by the BRAC Commission.

To analyze the selection process and the recommendations, we monitored various aspects of the process as it evolved over time leading up to and following the public release of the Secretary's recommendations. We sought to assure ourselves that DOD followed a logical, reasoned, and well-documented decision-making process leading to the proposed recommendations. Prior to the release of the recommendations, we abided by an agreement with DOD not to disclose details of the process due to the sensitivity of the information while the process evolved. With the approval of the large number of recommendations occurring in the final weeks of the process, the broad scope and complexity of the recommendations, and the limited time available for us to report our results, we generally focused greater attention following the announcement of the proposed closures and realignments on those issues affecting more than one recommendation than on issues pertaining to the implementation of individual recommendations. However, as time permitted, we visited selected installations to better gauge the operational and economic impact of the proposed recommendations. We generally experienced good access to relevant documentation and to key senior officials and staff involved in the BRAC process.

We performed our work primarily at the Office of the Secretary of Defense (OSD), the military services' base closure offices, and the offices of the seven joint cross-service groups that were established by the Secretary to propose cross-service recommendations.⁶ While we did not attend deliberative meetings, we had access to minutes of meetings and relevant documentation, as well as opportunities to meet periodically with senior leadership to provide observations or concerns we had as the process was unfolding. We relied on DOD's Office of the Inspector General, Army Audit Agency, Naval Audit Service, and Air Force Audit Agency to validate the accuracy of the data used by the military services and joint cross-service groups in their decision-making process. We met with staff members of these audit agencies periodically to discuss the results of their work as well as to observe their data validation efforts at selected locations. Based on these discussions and observations and a review of their reports, we

⁶ The seven joint cross-service groups were Education and Training; Headquarters and Support Activities; Industrial; Intelligence; Medical; Supply and Storage; and Technical.

believe the DOD data are sufficiently reliable for the purposes of this report. We conducted our work from October 2003, as DOD's process was beginning, through June 2005, shortly after the Secretary of Defense announced his proposed closures and realignments, in accordance with generally accepted government auditing standards. Further details on the scope and methodology are described in appendix I.

Results in Brief

DOD's recommendations, if approved, would have varying degrees of success in achieving goals that were set forth by the Secretary of Defense, despite producing closure and realignment actions numbering more than those of all four previous rounds combined. The department's recommendations were dominated by relatively minor closures and realignments, and many were related to the reserve components.⁷ DOD data indicate that implementing the proposed recommendations would reduce the defense infrastructure by about 5 percent based on the facilities' plant replacement value. We believe the recommendations overall, if approved, would produce savings. However, overall up-front investment costs of an estimated \$24 billion are required, and there are limitations associated with DOD's projection of nearly \$50 billion in net present value savings over a 20-year period.⁸ Most projected savings are derived from 10 percent of the 222 recommendations. Also, much of the projected net annual recurring savings (47 percent) are associated with eliminating jobs currently held by military personnel. However, rather than reducing end-strength levels, DOD indicates the positions are expected to be reassigned to other areas, which may enhance capabilities but also limit dollar savings available for other uses. Without recognition that these are not dollar savings that can be readily applied elsewhere, this could create a false sense of savings available for other purposes. Furthermore, about \$500 million of the net annual recurring savings is based on business process reengineering efforts, but some of the assumptions supporting the expected efficiency gains have not been validated; while savings are likely to be realized, the precise magnitude of savings is uncertain. For example, one of DOD's recommendations—to create fleet readiness centers in the

⁷ The reserve components consist of the Army National Guard of the United States, the Army Reserve, the Naval Reserve, the Marine Corps Reserve, the Air National Guard of the United States, the Air Force Reserve, and the Coast Guard Reserve.

⁸ In the context of BRAC, net present value is taking into account the time value of money in calculating the value of future cost and savings.

Navy by integrating different levels of maintenance to reduce repair time—is estimated to yield \$215 million in annual recurring savings as a result of overhead efficiencies, but such assumptions have not been validated and actual savings will be shaped by how the recommendations are implemented. We have previously reported on limitations in DOD’s efforts to track and update savings from prior BRAC rounds. Our concerns over this issue are heightened in this BRAC round, with the emphasis on business process reengineering efforts, because of past tendencies to reduce related operating budgets in advance of actual savings being known and fully realized. While DOD characterized many of its recommendations as transformational—whereby infrastructure would be aligned with the defense strategy—we found that the concept of transformation is not well defined, and many of the recommendations referencing it as support for the proposed BRAC actions are more appropriately categorized as efforts to improve business processes. Some proposed actions increase emphasis on jointness, such as establishing a single site for initial training for the Joint Strike Fighter aircraft. However, the extent of joint and transformational progress varied, as shown by other DOD-proposed actions reflecting preferences to consolidate functions within rather than across services, and by a lack of agreement on transformational options despite frequent references to them in support of proposed actions. We are making a recommendation to the Secretary of Defense to establish mechanisms for tracking and periodically updating savings estimates as the BRAC recommendations are implemented.

DOD’s decision-making process for developing its recommendations was generally logical, well documented, and reasoned. DOD established a structured and largely sequential process for obtaining and analyzing data that provided an informed basis for identifying and evaluating BRAC options. At the same time, initial difficulties in obtaining complete and accurate data in a timely manner often added to overlap and varying degrees of concurrency between data collection efforts and other steps in the process. That notwithstanding, DOD’s process relied on certified data,⁹ as required by the BRAC legislation, and the use of various analytical models to evaluate the data. Further, as the military services and joint cross-service groups assessed the importance of installations, facilities, and functions, they were consistent in following the key considerations set

⁹ During the BRAC process, data were certified by senior officials at DOD installations. Each official certified that the information was accurate and complete to the best of his or her knowledge and belief.

forth in the BRAC law—such as military value—although they varied somewhat in their analytical approaches based on unique aspects of the functions being evaluated. As Congress mandated, DOD updated and considered its 20-year force structure plan in completing its BRAC analysis.¹⁰ Further, DOD focused on the military value selection criteria as the predominant decision-making factor, including legislatively mandated emphasis for this BRAC round on such elements as homeland defense and surge capability. Military judgment also played a role throughout the process. While the effort to ensure the accuracy of the voluminous amounts of data used in the process proved challenging for the services and joint cross-service groups, the DOD Inspector General and the military service audit agencies played key roles in pointing out data limitations, fostering corrections, and improving the accuracy of the data used in the process through their validation efforts, and generally found the data sufficiently reliable to support BRAC decision making.

We identified various issues regarding DOD’s BRAC recommendations, as well as candidate recommendations¹¹ that were not included on DOD’s final list that may warrant further attention by the BRAC Commission. These issues include instances of lengthy payback periods, which is the time required to recoup up-front investment costs for closing or realigning a facility or function; inconsistencies in formulating cost and savings estimates; uncertainties in estimating total costs to the government for implementing recommended actions; and potential impacts on communities surrounding bases that are either losing or gaining large numbers of personnel. With respect to the latter issue, this BRAC round differs from prior rounds in that many communities will be facing increased growth with the return of thousands of forces from overseas locations and the consequent challenges of addressing increased needs in areas such as schools and housing. In a few instances, we identified implementation or operational issues related to some recommendations. We are also highlighting specific closure or realignment actions that were projected as having the potential to generate significant savings that the services or joint cross-service groups approved for further consideration,

¹⁰ P.L. 101-510, section 2912(a)(1)(A) required DOD to develop a 20-year force structure plan as the basis for its BRAC analysis.

¹¹ Candidate recommendations refer to proposed recommendations that were approved by either the military services or joint cross-service groups and forwarded for review to DOD’s Infrastructure Steering Group and Infrastructure Executive Council.

but which were either deleted or substantially revised by senior DOD leadership during the latter phases of the selection process.

In providing oral comments on a draft of this report, DOD concurred with the recommendation regarding the need for a system to track and periodically update BRAC savings estimates.

Background

As described at the beginning of this report, DOD recognized the need for additional base closures and realignments following the 1995 closure round and made repeated efforts to gain congressional authorization for an additional closure round. Congress authorized an additional round for 2005 with the passage of the National Defense Authorization Act for Fiscal Year 2002.¹² The 2002 Act essentially extended the authority of the Defense Base Closure and Realignment Act of 1990,¹³ which had authorized the 1991, 1993, and 1995 rounds, with some modifications for the 2005 base closure round.

In a memorandum dated November 15, 2002, the Secretary of Defense issued initial guidance outlining goals and a leadership framework for the 2005 BRAC round. In doing so, he noted that “At a minimum, BRAC 2005 must eliminate excess physical capacity; the operation, sustainment and recapitalization of which diverts scarce resources from defense capability.” However, specific reduction goals were not established.¹⁴ At the same time, the Secretary’s guidance for the 2005 round depicted the round as focusing on more than the reduction of excess capacity. He said that “BRAC 2005 can make an even more profound contribution to transforming the Department by rationalizing our infrastructure with defense strategy.” He further noted that “A primary objective of BRAC 2005, in addition to realigning our base structure to meet our post-Cold War force structure, is to examine and implement opportunities for greater joint activity.” Toward that end, the Secretary indicated that organizationally the 2005 BRAC

¹² P.L. 107-107, Title XXX (Dec. 28, 2001).

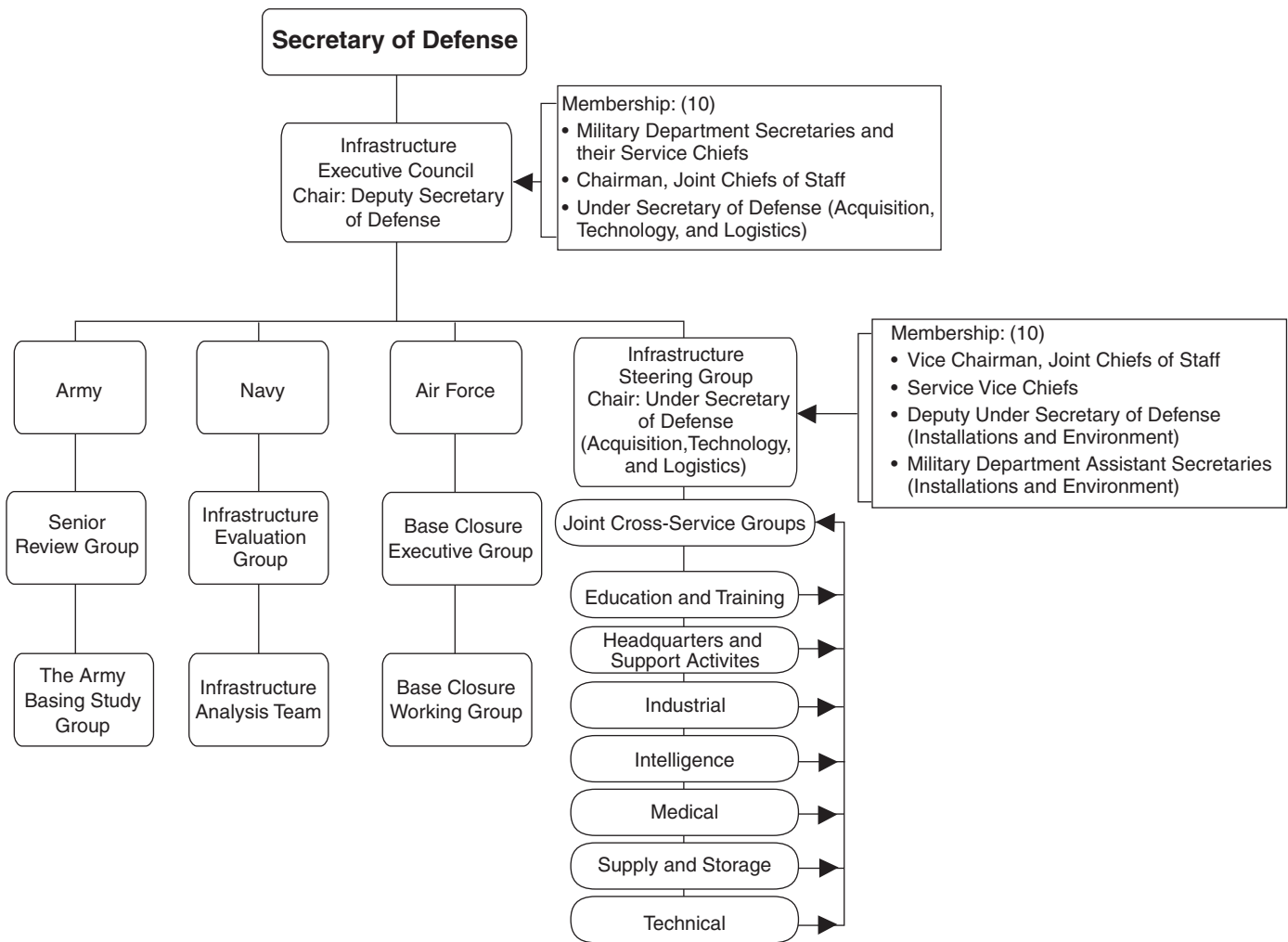
¹³ P.L. 101-510, Title XXIX (Nov. 5, 1990); 10 U.S.C. 2687 note.

¹⁴ This contrasts with secretarial guidance issued in January 1994, initiating the 1995 BRAC round, which established the goal of reducing domestic base structure by a minimum of 15 percent of DOD-wide plant replacement value. The Secretary of Defense indicated in a March 2004 report to Congress that DOD likely had about 24 percent excess facility capacity going into the 2005 BRAC round.

analysis would be two pronged. Joint cross-service teams would analyze common business-oriented functions, and the military departments would analyze service-unique functions.

The Secretary of Defense established two senior groups to oversee and guide the BRAC 2005 process from a departmental perspective. The first was the Infrastructure Executive Council (IEC), which was designated the policy-making and oversight body for the entire process, and the second, a subordinate group, was the Infrastructure Steering Group (ISG), created to oversee the joint cross-service analyses and integrate that process with the military departments' own service-unique analyses. Each of the military departments also established BRAC organizations, which had oversight from senior leaders. Likewise, each of the joint cross-service teams, under the purview of the ISG, was led by senior military or civilian officials, with representation from each of the services and relevant defense agencies. DOD's BRAC leadership structure is shown in figure 1.

Figure 1: DOD's BRAC Leadership Structure



Source: DOD.

DOD developed a draft set of 77 transformational options that once approved, were expected to constitute a minimum analytical framework upon which the military departments and joint cross-service groups would conduct their respective BRAC analyses. Because of a lack of agreement among the services and OSD, the draft options were never formally approved, but they remained available for consideration by analytical teams and were referenced by some groups in support of various BRAC

actions being considered.¹⁵ (See app. XV for a list of the draft transformational options.) To some extent, the analyses and recommendations of each of the services and joint cross-service groups were also influenced by various guiding principles or policy imperatives developed by the respective service or joint cross-service groups, such as the need to preserve a particular capability in a particular location.

The legislation authorizing the 2005 BRAC round, enacted as part of the fiscal year 2002 Defense Authorization Act, required DOD to give priority to selection criteria dealing with military value and added elements of specificity to criteria previously used by DOD in prior BRAC rounds. Subsequently, The Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005¹⁶ codified the entire selection criteria and added the word “surge” to one previously used criterion related to potential future contingencies and mobilization efforts. In large measure, the final criteria closely followed the criteria DOD employed in prior rounds, with greater specificity added in some areas, as required by Congress. Figure 2 shows DOD’s selection criteria for 2005, with changes from BRAC 1995 denoted in bold.¹⁷

¹⁵ DOD broadly defines transformation as “a process that shapes the changing nature of military competition and cooperation through new combinations of concepts, capabilities, people and organizations that exploit our nation’s advantages and protect against asymmetric vulnerabilities to sustain our strategic position, which helps underpin peace and stability in the world.” Examples of draft transformational options included (1) consolidate management at installations with shared boundaries and (2) establish regional cross-service and cross-functional ranges that will support service, collective, interoperability, and joint training, as well as test and evaluation of weapon systems.

¹⁶ P.L. 108-375, section 2832 (Oct. 28, 2004).

¹⁷ In this report, we refer to the selection criteria by the numbering method used by DOD instead of the specific statutory provisions detailing these criteria as contained in P.L. 101-510, section 2913.

Figure 2: DOD's Selection Criteria for BRAC 2005 Round

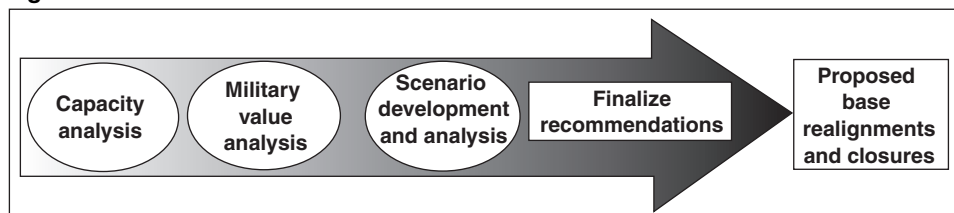
- Military value criteria.
 1. The current and future mission **capabilities** and the impact on operational readiness of the total force **of the Department of Defense, including the impact on joint warfighting, training, and readiness.**
 2. The availability and condition of land, facilities, and associated airspace **(including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions)** at both existing and potential receiving locations.
 3. The ability to accommodate contingency, mobilization, **surge**, and future total force requirements at both existing and potential receiving locations **to support operations and training.**
 4. The cost **of operations** and the manpower implications.
- Other criteria.
 5. The extent and timing of potential costs and savings, including the number of years, beginning with the date of completion of the closure or realignment, for the savings to exceed the costs.
 6. The economic impact on **existing communities in the vicinity of military installations.**
 7. The ability **of the infrastructure** of both the existing and potential receiving communities to support forces, missions, and personnel.
 8. The environmental impact, **including the impact of costs related to potential environmental restoration, waste management, and environmental compliance activities.**

Source: DOD and PL. 101-510, section 2913.

Note: Bolding denotes changes from the 1995 BRAC round.

To ensure that the selection criteria were consistently applied, OSD established a common analytical framework to be used by each military service and joint cross-service group. Each service and group adapted this framework, in varying degrees, to its individual activities and functions in evaluating facilities and functions and identifying closure and realignment options. Despite the diversity of bases and cross-service functions analyzed, each of the groups was expected to first analyze capacity and military value of its respective facilities or functions, and then to identify and evaluate various closure and realignment scenarios and provide specific recommendations. Scenarios were derived from data analysis and transformational options, as well as from goals and objectives each group established for itself as it began its work. Figure 3 depicts the expected progression of that process.

Figure 3: DOD's BRAC 2005 Process



Source: DOD.

An initial part of the process involved an overall capacity analysis of specific locations or functions and subfunctions at specific locations. The analysis relied on data calls to obtain certified data to assess such factors as maximum potential capacity, current capacity, current usage, excess capacity, and capacity needed to meet surge requirements.

The military value analysis consisted of assessments of operational and physical characteristics of each installation, or specific functions on an installation related to a specific joint cross-service group's area of responsibility. These would include an installation's or function's current and future mission capabilities, physical condition, ability to accommodate future needs, and cost of operations. This analysis also relied on data calls to obtain certified data on the various attributes and metrics used to assess each of the four military value criteria and permit meaningful comparisons between like installations/facilities with reference to the collective military value selection criteria. DOD officials used these data to develop comparative military value scores for each installation/facility or for categories of facilities serving like functions.

The scenario development and analysis phase focused on identifying various realignment and closure scenarios for further analysis. These scenarios were to be derived from consideration of the department's 20-year force structure plan, capacity analysis, military value analysis, and transformational options; applicable guiding principles, objectives, or policy imperatives identified by individual military services or joint cross-service groups; and military judgment. Each component had available for its use an optimization or linear programming model that could combine the results of capacity and military value analyses and other information to derive scenarios and sets of alternatives. The model could be used to address varying policy imperatives or objectives, such as minimizing the number of sites, minimizing the amount of excess capacity, or maximizing the average military value. A BRAC review group could also direct

variations that would, for example, eliminate as much excess capacity as possible while maintaining an average military value at least as high as the original set of sites.

OSD policy guidance has historically specified that priority consideration be given to military value in making closure and realignment decisions, but that priority was specifically mandated by the legislation authorizing the 2005 BRAC round. At the same time, historic practice and the 2005 authorizing legislation both required consideration of additional issues included in selection criteria 5 through 8, detailed below:

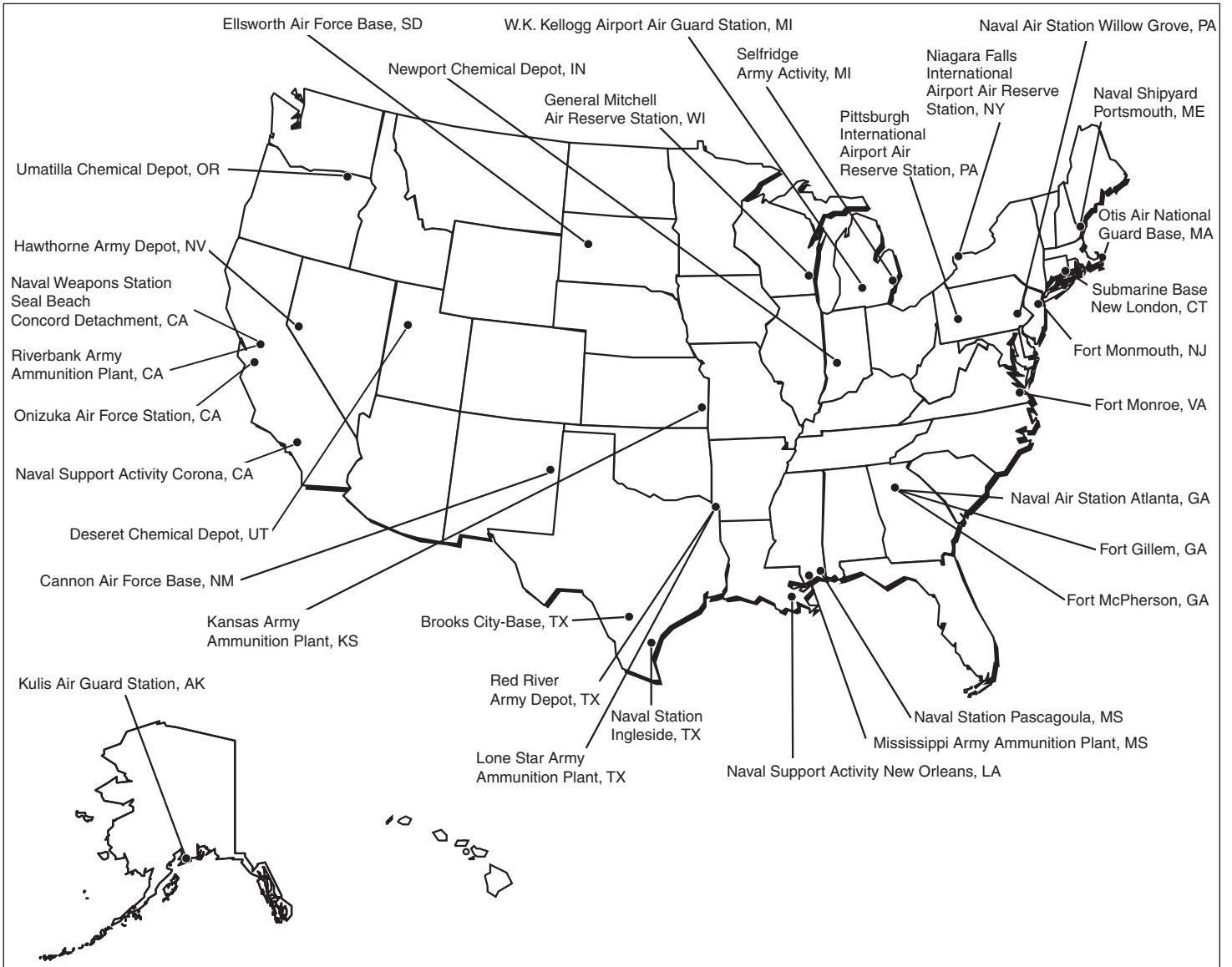
- *Criterion 5—costs and savings:* This criterion consists of measures of costs and savings and the payback periods¹⁸ associated with them. Each component assessed costs using the Cost of Base Realignment Actions (COBRA) model that was used in each of the BRAC rounds since 1988. Appendix XIII summarizes improvements that have been made to the model over time and more recently for the 2005 round.
- *Criterion 6—economic impact:* This criterion measures the direct and indirect impacts of a BRAC action on employment in the communities affected by a closure or realignment. Appendix XIV provides a more complete description of how economic impact was assessed and the changes made to improve the assessment for this round.
- *Criterion 7—community infrastructure:* Selection criterion 7 examines “the ability of the infrastructure of both the existing and potential receiving communities to support forces, missions, and personnel.” The services and joint cross-service groups considered information on demographics, childcare, cost of living, employment, education, housing, medical care, safety and crime, transportation, and public utilities of the communities impacted by a BRAC action.
- *Criterion 8—environmental impact:* Selection criterion 8 assesses “the environmental impact, including the impact of costs related to potential environmental restoration, waste management, and environmental compliance activities” of closure and realignment recommendations. In

¹⁸ Payback period is defined as the number of years, beginning with the date of completion of a closure or realignment, required for cumulative estimated savings to exceed cumulative estimated costs incurred in net present value terms as a result of implementing a BRAC action.

considering this criterion, the services and joint cross-service groups focused mainly on potential environmental impacts while acknowledging, when appropriate, known environmental restoration costs associated with an installation recommended for closure or realignment. Waste management and environmental compliance costs were factored into criterion 5. However, under OSD policy guidance, environmental restoration costs were not considered in the cost and savings analyses for evaluating individual scenarios under criterion 5. DOD is obligated to restore contaminated sites on military bases regardless of whether they are closed, and such costs could be affected by reuse plans that cannot be known at this time but would be budgeted for at a later time when those plans and costs are better identified.

Each of the military departments produced reports with closure and realignment recommendations, as did each of the joint cross-service groups, the results of which are summarized in appendixes III through XII. Figures 4 and 5 show, respectively, the 33 major closures and 30 major realignments that have been recommended by DOD where plant replacement values exceed \$100 million for major base closures and net losses of 400 or more military and civilian personnel for major base realignments.

Figure 4: Major Base Closures with Plant Replacement Values Exceeding \$100 Million



Source: GAO map based on DOD data.

Figure 5: Major Base Realignments with a Net Loss of 400 or More Military and Civilian Personnel



Source: GAO map based on DOD data.

While the 2005 BRAC round, like earlier BRAC rounds, was chartered to focus on United States domestic bases,¹⁹ DOD separately had under way a review of overseas basing requirements that had implications for the

¹⁹ Besides the 50 states, this also includes the District of Columbia; the Commonwealth of Puerto Rico; Guam; the Virgin Islands; American Samoa; and any other commonwealth, territory, or possession of the United States. P.L. 101-510, section 2910(7).

domestic BRAC process. In a September 2004 report to Congress, the Under Secretary of Defense for Policy provided an update on DOD's "global defense posture review." It noted that once completed, the changes stemming from the review would result in the most profound reordering of United States military forces overseas as the current posture has been largely unchanged since the Korean War. The report noted that over the next 10 years, it is planned that up to 70,000 military personnel would return to the United States, along with approximately 100,000 family members and civilian employees. It further noted that a net reduction of approximately 35 percent of overseas sites—bases, installations, and facilities—is planned. DOD had indicated that the domestic BRAC process would be used in making decisions on where to relocate forces returning to the United States from overseas bases.

Separately, Congress in 2003 mandated the creation of a special commission to evaluate, among other things, the current and proposed overseas basing structure of the United States military forces.²⁰ The Commission's observations are included in its May 2005 report.²¹ Among other things, the Commission cited the need for appropriate planning to ensure the availability of community infrastructure to support returning troops and to mitigate the impact on communities.

DOD's Recommendations Would Have Varying Degrees of Success in Achieving Goals for the 2005 BRAC Round

The recommendations proposed by the Secretary of Defense would have varying degrees of success in achieving DOD's BRAC 2005 goals of reducing infrastructure and achieving savings, furthering transformation objectives, and fostering joint activity among the military services. While DOD proposed a record number of closure and realignment actions, exceeding those in all prior BRAC rounds combined, many proposals focus on the reserve component bases and relatively few on closing active bases. Projected savings are almost equally as large, as all prior BRAC rounds combined, but about 80 percent of the projected 20-year net present value savings (savings minus up-front investment costs) are derived from only 10 percent of the recommendations. While we believe the recommendations

²⁰ The Commission on Review of Overseas Military Facility Structure of the United States, also known as the Overseas Basing Commission. See P.L. 108-132, section 128 (Nov. 22, 2003).

²¹ *Commission on Review of Overseas Military Facility Structure of the United States* (Washington, D.C.: May 9, 2005).

overall would achieve savings, up-front investment costs of about \$24 billion are required to implement all recommendations to achieve DOD's overall expected savings of nearly \$50 billion over 20 years. Much of these saving are related to eliminations of jobs currently held by military personnel but are not likely to result in end-strength reductions, limiting savings available for other purposes. Some proposed actions represent some progress in emphasizing transformation and jointness, but progress in these efforts varied without clear agreement on transformational options to be considered, and many recommendations tended to foster jointness by consolidating functions within rather than across military services.

BRAC 2005 Round Differs from Past Rounds

The BRAC 2005 round is different from previous base closure rounds in terms of number of actions, projected implementation costs, and estimated annual recurring savings. While the number of major closures and realignments is just a little greater than individual previous rounds, the number of minor closure and realignments, as shown in table 1, is significantly greater than those in all previous rounds combined.

Table 1: Comparison of BRAC 2005 with Previous Rounds

Dollars in billions

Round	Major bases		Minor closures and realignments	Total actions	Costs	Net annual recurring savings
	Closures	Realignments				
1988	16	4	23	43	\$2.7	\$0.9
1991	26	17	32	75	5.2	2.0
1993	28	12	123	163	7.6	2.6
1995	27	22	57	106	6.5	1.7
Total (for previous BRAC rounds)	97	55	235	387	\$22.0	\$7.2
Total (for 2005 BRAC round)	33	30	774	837	\$24.4	\$5.5

Source: DOD.

The large increase in minor closures and realignments is attributable partly to actions involving the Army National Guard, Army Reserve, Air National Guard, and vacating leased space.

The costs to implement the proposed actions are \$24.4 billion compared to a \$22 billion total from the four previous rounds through 2001, the end of the 6-year implementation period for the 1995 BRAC round.²² The increase in costs is due partly to significant military construction and moving costs associated with Army recommendations to realign its force structure, and to recommendations to move activities from leased space onto military installations. For example, the Army projects that it will need about \$2.3 billion in military construction funds to build facilities for the troops returning from overseas. Likewise, DOD projects that it will need an additional \$1.3 billion to build facilities for recommendations that include activities being moved from leased space. Time will be required for these costs to be offset by savings from BRAC actions and this in turn affects the point at which net annual recurring savings can begin to accrue.

Finally, the projected net annual recurring savings are \$5.5 billion compared to net annual recurring savings of \$2.6 billion and \$1.7 billion for the 1993 and 1995 rounds respectively. The increased savings are partly attributable to significant reductions in the number of military positions and business process reengineering efforts.

Infrastructure Would Likely Be Reduced with Some Limitations Noted

DOD projects that the proposed recommendations would reduce excess infrastructure capacity, indicating that the plant replacement value of domestic installations would be reduced by about \$27 billion, or 5 percent. However, the projected reductions in plant replacement value did not account for the \$2.2 billion in domestic military construction projects associated with relocating forces from overseas. On the other hand, reductions in leased space are not considered in the plant replacement value analysis, since leased space is not government owned. DOD estimates that its recommendations will reduce about 12 million square feet of leased space.

²² We most recently reported that these costs were \$23.3 billion through fiscal year 2003 and they excluded an estimated \$3.6 billion in costs that are needed to complete environmental cleanup at BRAC bases in future years. Also, they did not include about \$1.9 billion in costs incurred by other DOD and federal agencies to provide assistance to communities and individuals impacted by BRAC as a result of prior BRAC rounds.

DOD Projects Recommendations Would Produce Savings, but there are Limitations Associated with the Savings Estimates

DOD projects that its proposed recommendations will produce nearly \$50 billion in 20-year net present value savings, with net annual recurring savings of about \$5.5 billion. There are limitations associated with the savings claimed from military personnel reductions and we believe there is uncertainty regarding the magnitude of savings likely to be realized in other areas given unvalidated assumptions regarding expected efficiency gains from business process reengineering efforts and projected savings from sustainment, recapitalization, and base operating support.²³

Table 2 summarizes the projected one-time cost, the cost or savings anticipated during the 6-year implementation period for the closure or realignment, the estimated net annual recurring savings, and the projected 20-year net present value costs or savings of DOD’s recommendations.²⁴

Table 2: Projected Costs and Savings from BRAC 2005 Recommendations

Fiscal year 2005 constant dollars in millions

DOD component	One-time (cost)	Net implementation (cost) or savings	Net annual recurring (cost) or savings ^a	20-year net present value (cost) or savings ^b
Army	(\$9,963.4)	(\$8,519.1)	\$497.6	(\$3,038.6)
Navy	(2,099.8)	440.7	753.5	7,713.7
Air Force	(1,883.1)	2,635.5	1,248.5	14,560.3
Joint cross-service groups	(10,466.1)	1,372.8	2,985.1	29,569.1
Total	(\$24,412.4)	(\$4,070.1)	\$5,484.7	\$48,804.5

Source: GAO analysis of DOD data.

²³ Sustainment refers to recurring maintenance and repair activities necessary to keep facilities in good working order. Recapitalization refers to major renovation or reconstruction activities (including facility replacement) needed to keep facilities modern and efficient in an environment of changing standards and missions. Base operating support refers to a collection of day-to-day programs, activities, and services, such as food services, grounds maintenance, and custodial services, needed to keep the bases and installations in running order.

²⁴ These projections exclude environmental restoration costs, which historically have not been included in BRAC costs and savings analyses because restoration is a liability that exists regardless of whether a base is closed, but are included in implementation budgets once BRAC recommendations have become binding.

^aProjected annual recurring savings after the 6-year implementation period.

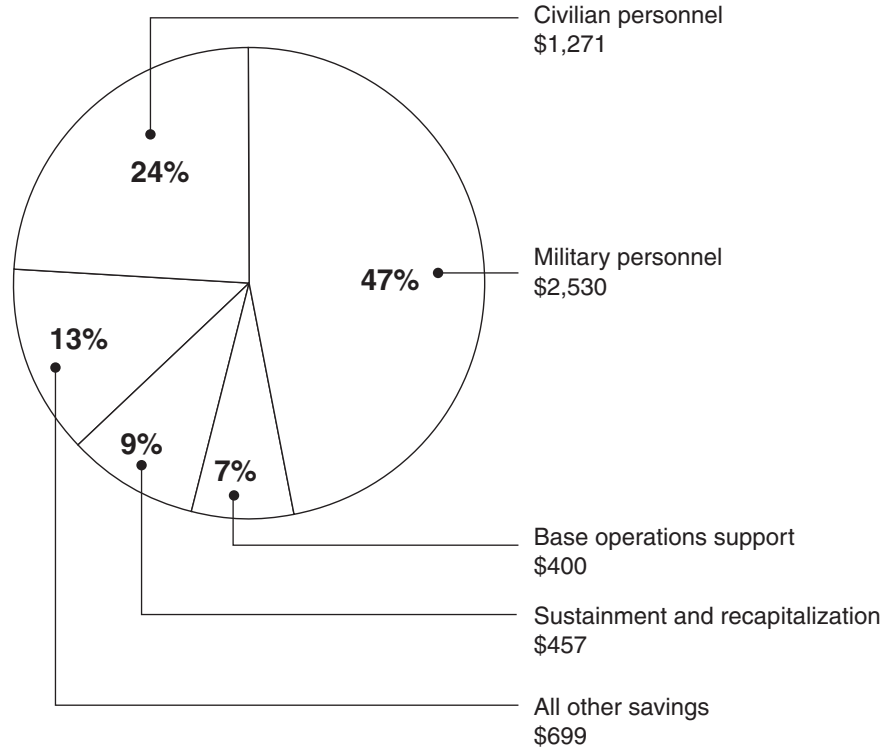
^bDOD used a 2.8 percent discount rate to calculate net present value.

Table 2 also shows the Navy, Air Force, and joint cross-service groups all projecting net savings within the 6-year implementation period, as well as significant 20-year net savings. In contrast, because of the nature of the Army's proposed actions and costs, such as providing infrastructure for troops returning from overseas and the consolidation and recapitalization of reserve facilities, the Army does not achieve net savings either during the implementation period or within 20 years, based on recommendations included in its BRAC report.

Notwithstanding these projected savings, we identified limitations or uncertainties about the magnitude of savings likely to be realized. As figure 6 shows, 47 percent of the net annual recurring savings can be attributed to projected military personnel reductions. About 40 percent (\$2.1 billion) of the projected net annual recurring savings can be attributed to savings from operation and maintenance activities, which include terminating or reducing property sustainment and recapitalization, base operating support, and civilian payroll. Furthermore, about \$500 million of the "other" savings is based on business process reengineering efforts, but some of the assumptions supporting the expected efficiency gains have not been validated.

Figure 6: Estimated Net Annual Recurring Savings

Dollars in millions



Source: GAO.

Note: Analysis does not include data from one classified recommendation.

Military Personnel Savings

Much of the projected net annual recurring savings (47 percent) are associated with eliminating positions currently held by military personnel; but rather than reducing end-strength levels, DOD indicates the positions are expected to be reassigned to other areas, limiting dollar savings available for other uses. For example, although the Air Force projects net annual recurring savings of about \$732 million from eliminating about 10,200 military positions, Air Force officials stated the active duty positions will be reinvested to relieve stress on high demand career fields and the reserve positions to new missions yet to be identified. Likewise, the Army is projecting savings from eliminating about 5,800 military positions, but it has no plans to reduce its end-strength. Finally, the Navy is projecting it will eliminate about 4,000 active duty military positions, which a Navy official noted will help it achieve the end-strength reductions already planned. As

Sustainment, Recapitalization,
and Base Operating Support
Savings

we noted during our review of DOD's process during the 1995 BRAC round, since these personnel will be assigned elsewhere rather than taken out of the force structure, they do not represent dollar savings that can be readily reallocated outside the personnel accounts.²⁵ Without recognition that these are not dollar savings that can be readily applied elsewhere, this could create a false sense of savings available for use in other areas traditionally cited as a beneficiary of BRAC savings, such as making more funds available for modernization and better maintenance of remaining facilities.

DOD is also projecting savings from the sustainment and recapitalization of facilities that are scheduled to be demolished, as well as from facilities that might remain in DOD's real property inventory when activities are realigned from one base to another. For example, the Industrial Joint Cross-Service Group is claiming about \$20 million in annual recurring savings from the recapitalization of facilities at installations responsible for destroying chemical weapons at three locations recommended for closure.²⁶ However, the Army had already expected to demolish these chemical destruction facilities upon completing the destruction of the chemical weapons at each site and the Army has not identified future missions for these installations. As a result, we do not believe it is appropriate for the Industrial Joint Cross-Service Group to claim any recapitalization savings related to these installations.

Likewise, DOD is projecting savings from the recapitalization and sustainment of facilities in cases where functions or activities would be realigned from one base to another. However, it is not clear to what extent the proposed realignments would result in an entire building or portion of a building being vacated, or if entire buildings are vacated, whether they would be declared excess and removed from the military services' real property inventory. Our analysis shows that the supply and storage group's recommendations project about \$100 million in sustainment and recapitalization savings from realigning defense distribution depots. The group estimates its recommendations will vacate about 27 million square feet of storage space. Supply and storage officials told us their goal is to

²⁵ GAO, *Military Bases: Analysis of DOD's 1995 Process and Recommendations for Closure and Realignment*, [GAO/NSIAD-95-133](#) (Washington, D.C.: Apr. 14, 1995).

²⁶ The sites are the Newport Chemical Depot, Indiana; Umatilla Chemical Depot, Oregon; and Deseret Chemical Depot, Utah.

vacate as much space as possible by re-warehousing inventory and by reducing personnel spaces, but they do not have a specific plan for what will happen to the space once it is vacated. In addition, until these recommendations are ultimately approved and implemented, DOD will not be in a good position to know exactly how much space is available or how this space will be disposed of or utilized. As a result, it is unclear as to how much of the estimated \$100 million in annual recurring savings will actually occur.

Collectively, the issues we identified suggest the potential for reduced savings that are likely to be realized in the short term during the implementation period, which could further reduce net annual recurring savings realized in the long term. The short-term impact is that these reduced savings could adversely affect DOD's plans for using these BRAC savings to help offset the up-front investment costs required to implement the recommendations and could further limit the amount of savings available for transformation and modernization purposes.

Savings Based on Business Process Reengineering

DOD projected net annual recurring savings in the "other" category as shown in figure 6 include about \$500 million that is based on business process reengineering efforts. Our analysis indicates that four recommendations—one from the Industrial Joint Cross-Service Group and three from the Supply and Storage Joint Cross-Service Group—involve primarily business process reengineering efforts. However, the expected efficiency gains from these recommendations are based on assumptions that are subject to some uncertainty and have not been validated. For example, our analysis indicates that \$215 million, or 63 percent, of the estimated annual recurring savings from the Industrial Joint Cross-Service Group recommendation to create fleet readiness centers within the Navy is based on business reengineering efforts that would result in overhead efficiencies. Although the data suggest there is the potential for savings, we believe the magnitude of the savings is somewhat uncertain because the estimates are based on assumptions that have undergone only limited testing. Realizing the full extent of the savings would depend on actual implementation of the recommended actions and modifications to the Navy's supply system. The industrial group and the Navy assumed that combining depot and intermediate maintenance levels would reduce the time needed for an item to be repaired at the intermediate level, which in turn would reduce the number of items needing to be kept in inventory, as well as the number of items being sent to a depot for repair. These assumptions, which were the major determinant of the realignment savings, were reportedly based on historical data and pilot projects and

have not been independently reviewed or verified by the Naval Audit Service, the DOD Inspector General, or us.

Furthermore, our analysis indicates that \$291 million, or about 72 percent, of the net annual recurring savings expected from the Supply and Storage Joint Cross-Service Group's three recommendations are also based on business process reengineering. In the COBRA model, the savings are categorized as procurement savings and are based on the expanded use of performance-based logistics²⁷ and reductions to duplicate inventory. Supply and storage group staff said that these savings accrue from reduced contract prices because the Defense Logistics Agency (DLA) will have increased buying power since it is responsible for purchasing many more items that before were purchased by each of the services. In addition, savings accrue from increased use of performance-based agreements,²⁸ a key component of performance-based logistics. The group estimates DLA can save 2.8 cents on each contract dollar placed on performance-based agreements. In addition, savings result from reductions in the amount of stock that must be held in inventory. Supply and storage staff said that these savings are attributable to reductions in the cost of money, cost of stock losses due to obsolescence, and cost of storage. Together the group estimates these factors save about 17 percent of the estimated value of the acquisition cost of the stock that is no longer required to be held in inventory. These savings estimates, for the most part, are based on historical documentation provided by DLA, which time did not allow us to validate. The extent to which these same savings will be achieved in the future is uncertain. As noted above, how these actions are implemented could also affect savings. We are concerned that this is another area that could lead to a false sense of savings and lead to premature reductions in affected budgets in advance of actual savings being fully realized, as has sometimes occurred in past efforts to achieve savings through business process reengineering efforts. We are also concerned that it could exacerbate a problem we have previously identified regarding past BRAC rounds involving the lack of adequate systems in place to track and update savings resulting from BRAC actions—the focus of our recommendation

²⁷ Performance-based logistics is defined as the purchase of weapon system sustainment as part of an integrated weapon system package based on output measures, such as weapon system availability, rather than input measures, such as parts and technical services.

²⁸ Performance-based agreements are defined as the negotiated agreements between the major stakeholders that formally document the performance and support expectations and resources to achieve the desired outcome.

for the Secretary of Defense. These concerns are reinforced by limitations in DOD's financial management systems that historically have made it difficult to fully identify the costs of operations and provide a complete baseline from which to assess savings.

Transformation Cited as Justification for Many Recommendations Despite Lack of Clear Agreement on Transformational Options

While furthering transformation was one of the BRAC goals, there was no agreement between DOD and its components on what should be considered a transformational effort. As part of the BRAC process, the department developed over 200 transformational options for stationing and supporting forces as well as for increasing operational efficiency and effectiveness. The OSD BRAC office narrowed this list to 77 options, but agreement was not reached within the department on these options, so none of them were formally approved. Nonetheless, each service and joint cross-service group was permitted to use the transformational options as appropriate to support its candidate recommendations. Appendix XV has a list of these 77 draft options.

Collectively, these draft options did not provide a clear definition of transformation across the department. The options ranged from those that seemed to be service specific to those that suggested new ways of doing business. For example, some transformational options included reducing the number of Army Reserve regional headquarters; optimizing Air Force squadrons; and co-locating various functions such as recruiting, military and civilian personnel training, and research, development and acquisition and test and evaluation, across the military departments. In contrast, some options suggested consideration of new ways of doing business, such as privatizing some functions and establishing a DOD agency to oversee depot-level reparable.

While the transformational options were never formally approved, our analysis indicates that many of DOD's recommendations reference one or more of the 77 transformational options. For example, 15 of the headquarters and support activities group recommendations reference the option to minimize leased space and move organizations in leased space to DOD-owned space. Likewise, 37 of the Army reserve component recommendations reference the option to co-locate guard and reserve units at active bases or consolidate guard and reserve units that are located in proximity to one another at one location.

Conversely, a number of the scenarios that were initially considered but not adopted reference transformational options that could have changed

existing business practices. For example, the education and training group developed a number of scenarios—privatizing graduate education programs and consolidating undergraduate fixed and rotary wing pilot training—based on the draft transformational options, but none were ultimately approved by the department.

Some Progress Made in Fostering Joint Basing

DOD's recommendations make some progress toward the goal of fostering joint activity among the military services, based on a broad definition of joint activity. We found that for DOD's recommendations, joint activity included consolidating some training functions within the same service, co-locating like organizations and functions on the same installation, and moving some organizations or functions closer to installations in order to further opportunities for joint training. Although the recommendations achieve some progress in fostering jointness, we found other instances where DOD ultimately adopted a service-centric solution even though the joint cross-service groups proposed a joint scenario. Table 3 shows the major recommendations that foster joint activity.

Table 3: Major Recommendations Supporting Joint Activity

Type of joint activity	Recommended action
Consolidation	<p>The education and training group is proposing to consolidate</p> <ul style="list-style-type: none"> • initial Joint Strike Fighter aircraft training for the Navy, Marine Corps, and Air Force at Eglin Air Force Base; • undergraduate navigator training for the Navy and Air Force at Naval Air Station Pensacola; and • transportation management, religious studies, and culinary training among the military services. <p>The medical group is proposing to establish</p> <ul style="list-style-type: none"> • the Walter Reed National Military Medical Center, Bethesda, Maryland, by consolidating the Walter Reed Army Medical Center and the National Naval Medical Center, and • the San Antonio Regional Military Medical Center by relocating inpatient care from Wilford Hall Medical Center to the Brooke Army Medical Center. <p>The headquarters and support activities group is proposing to consolidate the installation management functions across various bases.</p>
Co-location	<p>The Army is proposing to move the Third Army Headquarters (Army component command to Central Command) to Shaw Air Force Base to be co-located with the Air Force component of Central Command.</p> <p>The Navy is proposing to move aircraft from Willow Grove Air Reserve Station to McGuire Air Force Base, and from Naval Air Station Atlanta to Robins Air Force Base.</p> <p>The technical group is proposing to co-locate</p> <ul style="list-style-type: none"> • the services' and defense agencies' extramural funding program managers at the National Naval Medical Center, Bethesda, Maryland and • gun and ammunition research and development and acquisition to Picatinny Arsenal. <p>The headquarters and support activities group is proposing to co-locate DOD investigative agencies at Quantico Marine Corps Base.</p>
Proximity	<p>The Air Force is proposing to move A-10 aircraft to Moody Air Force Base to enhance training Army units at Fort Benning and Fort Stewart.</p> <p>The Army is proposing to move a special operations unit from Fort Bragg to Eglin Air Force Base in proximity to the Air Force's Special Operations Command headquarters at Hurlburt Field.</p>

Source: GAO analysis of DOD data.

While the proposal to create joint bases by consolidating common installation management functions is projected to create greater efficiencies, our prior work suggests that implementation of these actions may prove challenging. The joint-basing recommendation involves one service being responsible for various installation management support

functions²⁹ at bases that share a common boundary or are in proximity to one another. For example, the Army would be the executive agent for Fort Lewis, Washington, and McChord Air Force Base, Washington, combined as Joint Base Lewis-McChord. However, as evident from our recent visit to both installations and discussions with base officials, concerns over obstacles such as seeking efficiencies at the expense of the mission, could jeopardize a smooth and successful implementation of the recommendation.

In some cases, the joint cross-service groups proposed scenarios that would have merged various support functions among the services, but a service solution was adopted by DOD. For example, the Headquarters and Support Activities Joint Cross-Service Group proposed to (1) consolidate civilian personnel offices under a new defense agency as DOD implements the national security personnel system, and (2) co-locate all military personnel centers in San Antonio, Texas, in anticipation of a standard military personnel system being implemented across the department. However, in both cases, DOD decided to consolidate military and civilian personnel centers within each service. Likewise, the Education and Training Joint Cross-Service Group proposed scenarios to consolidate undergraduate fixed wing training activities between the Air Force and the Navy and rotary wing training activities between the Navy and the Army to eliminate excess capacity. However, the proposals were not adopted because the Navy and the Air Force expressed concerns that this recommendation would result in significant permanent change of station costs for the services, specifically the cost of students traveling to designated training locations.

²⁹ These functions could include such areas as real property management and maintenance, utilities, housing, emergency services, environmental services, base security, reserve component support, resource management, procurement, personal property management, transportation, equipment maintenance, retail supply, base communications, audio/visual services, personnel and professional support, personnel services, food services, laundry services, education services, personal and family services, recreation, military exchange operations, airfield operations, garrison operations, internal review, inspector general, and strategic planning.

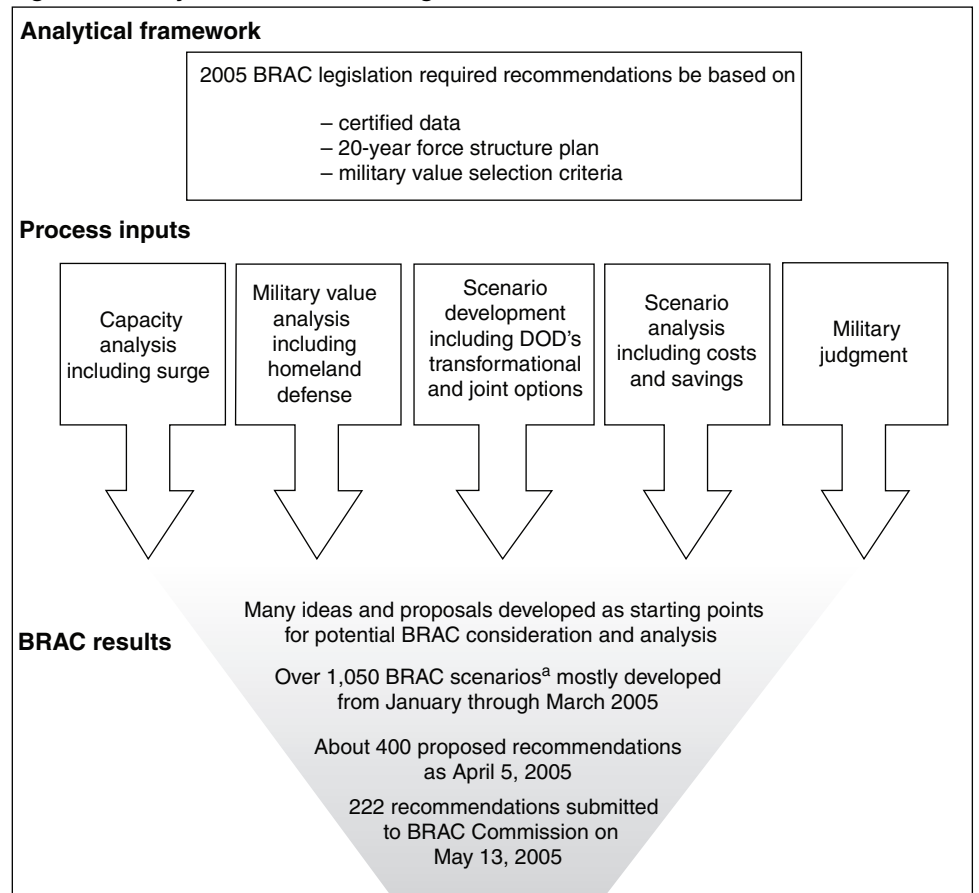
DOD Developed a Generally Logical and Reasoned Process for Making BRAC Decisions

Based on our analytical work, we believe DOD established and generally followed a logical and reasoned process for formulating its list of BRAC recommendations. The process was organized in a largely sequential manner with a strong emphasis on ensuring that accurate data were obtained and used. OSD established an oversight structure that allowed the seven individual joint cross-service groups to play a larger, more visible role in the 2005 BRAC process compared to BRAC 1995. Despite some overlap in data collection and other phases of the process, these groups and the military services generally followed the sequential BRAC process designed to evaluate and subsequently identify recommendations within their respective areas, with only the Army using a separate but parallel process to evaluate its reserve components. DOD also incorporated into its analytical process several key considerations required by the BRAC legislation, including the use of certified data, basing its analysis on its 20-year force structure plan and emphasizing its military value selection criteria, which included homeland defense and surge capabilities. In addition, DOD's Inspector General and the military service audit agencies helped to ensure the data used during the BRAC process were accurate and reliable.

BRAC Process Was Logical and Largely Sequentially Structured

DOD provided overall policy guidance for the BRAC process, including a requirement that its components develop and implement internal control plans to ensure the accuracy and consistency of their data collection and analyses. These plans also helped to ensure the overall integrity of the process and the information upon which OSD considered each group's recommendations. The BRAC recommendations, for the most part, resulted from a data-intensive process that was supplemented by the use of military judgment as needed. The process began with a set of sequential steps by assessing capacity and military value, developing and analyzing scenarios, then identifying candidate recommendations, which led to OSD's final list of BRAC recommendations. Figure 7 illustrates the overall sequential analytical process DOD generally employed to reach BRAC recommendations.

Figure 7: Analytical Process Leading to BRAC Recommendations



Source: GAO.

^aA scenario is a proposal that has been declared for formal analysis by a military department or joint cross-service group deliberative body and is officially accounted for and tracked by OSD.

It must be noted, however, that while the process largely followed the sequential process established by the department, initial difficulties associated with obtaining complete and accurate data in a timely manner added to overlap and varying degrees of concurrency between data collection efforts and other steps in the process.

During the 2005 BRAC process, the seven individual joint cross-service groups played a larger, more visible role compared to their role during the 1995 BRAC round. Our analysis indicates that many, although not all, actions proposed by these groups were accepted by OSD and the military services. Based on lessons learned, OSD empowered these groups in 2005

to suggest BRAC recommendations directly to a senior-level group that oversaw the BRAC 2005 analysis. Moreover, we noted a closer coordination between these groups, the military services, and OSD than existed during the 1995 round. OSD's efforts to integrate the process among these seven joint cross-service groups with the military services' own efforts led to increased discussions, greater visibility, and more influence for the cross-service recommendations than in prior BRAC rounds.

To assist in the process for analyzing and developing recommendations, the military services and joint cross-service groups used various analytical tools. These tools helped to ensure a more consistent approach to BRAC analysis and decision making. For example, all of the groups used the DOD-approved COBRA model to calculate costs, savings, and return on investment for BRAC scenarios and, ultimately for the final 222 BRAC recommendations. As noted in appendix XIII, the COBRA model was designed to provide consistency across the military services and the joint cross-service groups in estimating BRAC costs and savings. DOD has used the COBRA model in each of the previous BRAC rounds and, over time, has improved upon its design to provide better estimating capability. In our past and current reviews of the COBRA model, we found it to be a generally reasonable estimator for comparing potential costs and savings among various BRAC options.

Furthermore, the military services and joint cross-service groups generally used a consistent process to assess and formulate BRAC recommendations, with one minor exception involving the Army reserve components. The Army created a separate yet parallel approach in reviewing its reserve components for several reasons, although it generally followed the BRAC process. With respect to its reserve components, the Army did not perform a military value rank-ordering of these various installations across the country, but instead assessed the relative military value that could be obtained by consolidating various facilities into a joint facility in specific geographical locales to support, among other things, reserve component training, recruiting, and retention efforts. This approach provided an opportunity for the Army reserve components to actively participate in the BRAC process along with the voluntary participation of the states. The Army reported that consulting with the states was crucial to ensure the support of the state governors and staff Adjutants General for issues related to recommendations that affected the National Guard. The Army's recommendations affected almost 10 percent of the Army's 4,000 reserve components' facilities. More specifically, the Army recommended 176 Army Reserve closures with the understanding

that the state governors will close 211 Army National Guard facilities with the intent of relocating their units into 125 new Armed Forces Reserve Centers. The Army reports that 38 states and Puerto Rico voluntarily participated in the BRAC process.

The Air Force and the Navy also reviewed their reserve components' installations but did so within the common analytical structure established by OSD, yet with some differences in approach in involving affected stakeholders in the process. For example, the Air Force did not involve state officials or its State Adjutants General as it analyzed and developed its BRAC recommendations. However, senior Air National Guard and Reserve leadership were in attendance as voting members of the Air Force's Base Closure Executive Group, a senior deliberative body for the BRAC process. The Navy also reviewed its reserve components, including the Marine Corps Reserves, within the BRAC process, and worked closely with representatives from the Navy and Marine Corps reserve components to consolidate units within active duty installations or armed forces reserve centers without affecting recruiting demographics.

BRAC Process Incorporated Key Legislative Requirements

DOD also incorporated into its analytical process the legal considerations for formulating its realignment and closure recommendations. As required by BRAC legislation, DOD based its recommendations on (1) the use of certified data, (2) its 20-year force structure plan, and (3) military value criteria as the primary consideration in assessing and formulating its recommendations.

Use of Certified Data

DOD collected capacity and military value data that were certified as to their accuracy by hundreds of persons in senior leadership positions across the country.³⁰ These certified data were obtained from corporate databases and from hundreds of defense installations. DOD continued to collect certified data, as needed, to support follow-up questions, cost calculations, and to develop recommendations. In total, DOD projects that it collected over 25 million pieces of data as part of the BRAC process.³¹ Given the extensive volume of requested data from the 10 separate groups (3 military

³⁰ Each official who submitted data for BRAC analysis certified that the information was accurate and complete to the best of his or her knowledge and belief.

³¹ Noted by the Secretary of Defense in his testimony before the BRAC Commission on May 16, 2005.

departments and 7 joint cross-service groups), we noted that the data collection process was quite lengthy and required significant efforts to help ensure data accuracy, particularly from joint cross-service groups that were attempting to obtain common data across multiple military components, which, because of the diverse nature of the functions and activities, do not always use the same data metrics. In some cases, coordinating data requests, clarifying questions and answers, controlling database entries, and other issues led to delays in the data-driven analysis DOD originally envisioned. As such, some groups had to develop strategy-based proposals. As time progressed, however, these groups reported that they obtained the needed data, for the most part, to inform and support their scenarios. The DOD Inspector General and the service's audit agencies played an important role in ensuring that the data used in the BRAC analyses were accurate and certified by cognizant senior officials.

Consideration of DOD's 20-year Force Structure Plan

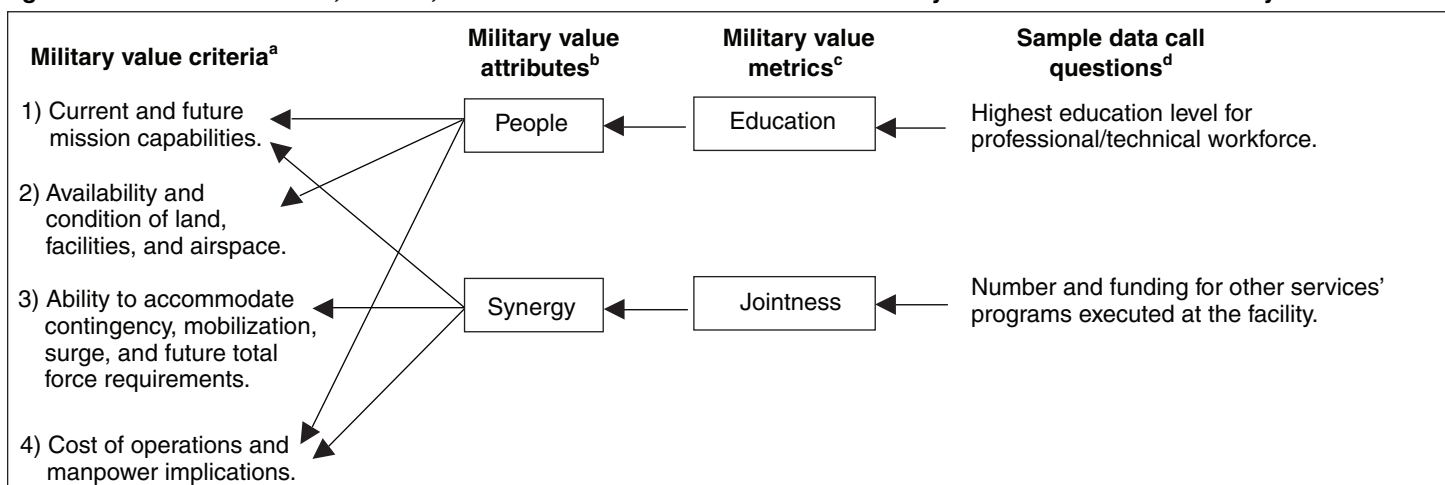
As congressionally mandated, each of the military services and the seven joint cross-service groups considered DOD's 20-year force structure plan in its analyses. DOD based its force structure plan for BRAC purposes on an assessment of probable threats to national security during a 20-year period beginning with fiscal year 2005. DOD provided this plan to Congress in March 2004, and as authorized by the statute, it subsequently updated it 1 year later in March 2005. Based on our analysis, updates to the force structure affected some ongoing BRAC analyses. For example, the Industrial Joint Cross-Service Group reassessed its data pertaining to overhauling and repairing ships based on the updated force structure outlook and decided that one of its two smaller shipyards—Naval Shipyard Pearl Harbor or Naval Shipyard Portsmouth—could close. Ultimately, the Navy decided to close the Portsmouth shipyard in Maine. In addition, the Navy told us it recalculated its capacity based on updates to the force structure plan and determined that there was no significant change to its original analysis. The other groups, such as those examining headquarters and support activities, education and training, or technical functions, considered updates to the defense 20-year force structure and determined the changes would have no impact on their ongoing analyses or the development of recommendations.

Primary Consideration of Military Value Criteria, Which Included Homeland Defense and Surge

DOD gave primary consideration to its military value selection criteria in its process. Specifically, military value refers to the first four selection criteria in figure 2 and includes an installation's current and future mission capabilities, condition, ability to accommodate future needs, and cost of operations. The manner in which each military service or joint cross-service group approached its analysis of military value varied according to

the unique aspects of the individual service or cross-service function. These groups typically assessed military value by identifying multiple attributes or characteristics related to each military value criterion, then identifying qualitative metrics and measures and associated questions to collect data to support the overall military value analysis. For example, figure 8 illustrates how the Technical Joint Cross-Service Group linked several of its military value attributes, metrics, and data questions to the mandated military value criteria.

Figure 8: Selected Attributes, Metrics, and Data Questions Used to Assess Military Value for a Technical Facility



Source: GAO analysis of Technical Joint Cross-Service Group data.

^aThe BRAC military value criteria are the first four BRAC selection criteria.

^bMilitary value attributes are characteristics of each criterion. The technical group used a total of five military value attributes.

^cMilitary value metrics are measures for the attribute. The technical group used a total of 30 military value metrics.

^dThe technical group used a total of 44 data call questions.

Quantitative scoring plans were developed by each military service or joint cross-service group assigning relative weights to each of the military value criteria for use in evaluating and ranking facilities or functions in their respective areas. Appendixes III through XII highlight the use and linkages of military value criteria by each service and joint cross-service group.

As noted earlier, based on congressional direction, there was enhanced emphasis on two aspects of military value—an installation's ability to serve

as a staging area for homeland defense missions and its ability to meet unanticipated surge.³²

- *Homeland defense:* Each of the three military services considered homeland defense roles in its BRAC analysis and coordinated with the U.S. Northern Command—a unified command responsible for homeland defense and civil support. In October 2004, the U.S. Northern Command contacted the Chairman of the Joint Chiefs of Staff, requesting to play a role in ensuring that homeland defense received appropriate attention in the analytical process. Our analysis shows that all three military departments factored in homeland defense needs, with the Air Force recommendations having the most impact. According to Air Force officials, the U.S. Northern Command identified specific homeland defense missions assigned to the Air Force, which they incorporated into its decision-making process. Navy officials likewise discussed the impact of potential BRAC scenarios on its maritime homeland defense mission with U.S. Northern Command, U.S. Strategic Command, and the U.S. Coast Guard. In this regard, the Navy decided to retain Naval Air Station Point Mugu, California, was influenced, in part, because the U.S. Coast Guard wanted to consolidate its West Coast aviation assets at this installation for homeland defense purposes. According to Army officials, most of their role in supporting homeland defense is carried out by the Army National Guard. The U.S. Northern Command reviewed the recommendations and found no unacceptable risk to the homeland defense mission and support to civil authorities.
- *Surge:* DOD left it to each military service and joint cross-service group to determine how surge would be considered in their analysis. Generally, all the groups considered surge by retaining a certain percentage of infrastructure, making more frequent use of existing infrastructure, or retaining difficult-to-reconstitute assets. For example, the Technical Joint Cross-Service Group set aside 10 percent of its facility infrastructure for surge, while the Industrial Joint Cross-Service Group factored in additional work shifts in its analysis. The military services retained difficult-to-reconstitute assets as the primary driver to satisfying the statutory requirement to consider surge capability. Both the Army and Navy gave strong consideration to infrastructure that would be difficult to reconstitute, such as large tracts of land for

³² Homeland defense and surge considerations are in the military value selection criteria 2 and 3, respectively, as reflected in P.L. 101-510, section 2913(b)(2)&(3).

maneuver training purposes or berthing space for docking ships. For example, the Navy has a finite number of ships and aircraft and would likely have to increase operating tempo to meet surge needs. The Air Force addressed surge by retaining sufficient capacity to absorb temporary increases in operations, such as responding to emergencies or natural catastrophic events like hurricane damage, and the capacity to permanently relocate all of its aircraft stationed overseas in the United States if needed.

Congress also mandated four other criteria to be considered in the analytical process: cost and savings of the BRAC recommendations, economic impact on affected communities, impact on communities' infrastructure, and environmental impact. The extent these other mandated considerations influenced recommendations varied. For example, high cost was the primary reason the Army decided not to develop a recommendation to restation troops returning from overseas to installations with large tracts of undeveloped land that could potentially accommodate these moves, such as Yuma Proving Ground, Arizona, or Dugway Proving Ground, Utah. Despite these installations having the capacity to provide large training ranges, they do not have existing infrastructure to immediately house 3,000 to 5,000 troops required for the Army's new modular combat brigades.³³ Initially, the Army assessed the possibility of building new infrastructure at these locations, but Army BRAC officials told us it would be too costly given that the Army's COBRA analysis showed that at Yuma, for example, it would cost about \$2 billion to build the required infrastructure. As a result, the Army decided to place units returning from overseas at installations currently used to base other operational units, notwithstanding limitations in existing training capacities.

Although there was heavy reliance on data for completing analyses, military judgment was also a factor throughout the entire process, starting with an analytical framework to base analysis of the 20-year force structure plan and ending with the finalized list of 222 recommendations submitted to the BRAC Commission. Military judgment also played a role in decisions on how military value selection criteria would be captured as attributes,

³³ Modularity refers to the Army Modular Force Initiative whereby the Army is transforming its force structure by increasing from 67 brigade combat teams to 77 modular brigade combat teams (43 active Army and 34 Army National Guard) with the potential for 48 active Army modular brigade combat teams.

with associated values or weights. Military judgment was also applied in deciding which proposed scenarios or actions should move forward for additional analysis. Generally, military judgment was exercised at this stage to delete or modify a potential recommendation for reasons such as strategic importance, as shown in the following examples:

- Naval Shipyard Pearl Harbor, Hawaii, which has a lower military value than other shipyards, was eliminated from closure consideration because the shipyard was considered to have more strategic significance in the Pacific Ocean area compared to other alternatives.
- Tripler Army Medical Center, Hawaii, which has a lower military value than some other bases, was eliminated from closure consideration because it is the only defense medical center of significant size in the Pacific Ocean area.
- Naval Station Everett, Washington, which has a lower military value than some other bases, was eliminated from closure consideration because of strategic reasons regarding the number and the locations of the Navy's aircraft carriers on the West Coast and in the Pacific.
- Grand Forks Air Force Base, North Dakota, which has a lower military value than some other bases, was eliminated from closure consideration because of the belief that a strategic presence was needed in the north central United States. Even though Grand Forks Air Force Base was retained for strategic reasons, Minot Air Force Base is also located in North Dakota and is not affected by any BRAC recommendations.

DOD Audit Agencies Helped to Improve the Accuracy of Data Used during the BRAC Process

The oversight roles of the DOD Inspector General and the military services' audit agency staff, given their access to relevant information and officials as the process evolved, helped to improve the accuracy of the data used in the BRAC process. The DOD Inspector General and most of the individual service audit agencies' reports generally concluded that the extensive amount of data used as the basis for BRAC decisions was sufficiently valid and accurate for the purposes intended. In addition, with limited exceptions, these reports did not identify any material issues that would impede a BRAC recommendation.

The DOD Inspector General and the services' audit agencies played an important role in ensuring that the data used in the BRAC analyses were accurate and certified by cognizant senior officials. Their frontline roles

and the thousands of staff days devoted to reviewing the massive data collection efforts associated with the BRAC process added an important aspect to the quality and integrity of the data used by military services and joint cross-service groups. Through extensive audits of the capacity, military value, and scenario data collected from field activities, these audit agencies notified various BRAC teams of data discrepancies for corrective action. The audit activities included validation of data, compliance with data certification requirements employed throughout the chain of command, and examination of the accuracy of the analytical data. While the auditors initially encountered problems with regard to data accuracy and the lack of supporting documentation for certain questions and data elements, most of these concerns were resolved. In addition, the auditors worked to ensure certified information was used for BRAC analysis. These audit agencies also reviewed other facets of the process, including the various internal control plans, the COBRA model, and other modeling and analytical tools that were used in the development of recommendations. Appendix XVI lists these organizations' audit reports related to BRAC 2005 to the extent they were available at the time this report was completed. Overall, these organizational audit agencies reported the following:

- The Naval Audit Service reported that it visited 214 sites, covering 45 data calls, and audited over 8,300 questions. It concluded that the data appeared reasonably accurate and complete and the Navy complied with statutory guidance and DOD policies and procedures.
- The Air Force Audit Agency officials told us they visited 104 installations, reviewed over 11,110 data call responses at 126 Air Force locations, 8 major commands, the Air National Guard, and Headquarters Air Force, and concluded that data used for Air Force BRAC analysis were generally reliable.
- The Army Audit Agency reported that it visited 32 installations and 3 leased facilities and reviewed for accuracy over 2,342 responses. It concluded that the data was reasonably accurate and that the Army BRAC office had a sound process in place to collect certified data.
- DOD Inspector General officials told us they visited about 1,550 sites covering 29 defense agencies and organizations and reviewed over 15,770 responses. We were told that these responses were generally supported, complete, and reasonable. The DOD Inspector General also evaluated the validity, integrity, and documentation of data used by the

seven joint cross-service groups and found they generally used certified data for the BRAC analysis.

We closely coordinated with the DOD Inspector General and the three service audit agencies to maximize our individual and collective efforts and avoid duplication. As part of this coordination, we observed their audit efforts at selected military installations to verify the scope and quality of coverage they provided throughout the process and to give us insights into potential issues having broader applicability across the entire process. We also observed the work of these audit agencies to better familiarize ourselves with the types of issues being identified and resolved, with a view toward determining their materiality to the overall process.

Several Aspects of DOD's BRAC Recommendations and Rejected Proposals May Warrant Further Attention

We identified issues regarding DOD's recommendations, and other actions considered during the selection process that may warrant further attention by the BRAC Commission. Many of the issues relate to how costs and savings were estimated while others relate to potential impacts on communities surrounding bases that stand to gain or lose missions and personnel as a result of BRAC actions. Further, we are highlighting candidate recommendations that were presented during the selection process by either the military services or the joint cross-service groups to senior DOD leadership within the IEC that were projected as having the potential to generate significant savings, and which were substantially revised or deleted from further consideration during the last few weeks or days of the selection process. Additional discussion of issues targeted more specifically to the work and recommendations of the military services and joint cross-service groups is included in appendixes III through XII.

Issues with DOD's BRAC Recommendations

We identified a number of issues, most of which apply to a broad range of DOD's recommendations, that may warrant further attention by the BRAC Commission. In addition to the issue previously discussed regarding military personnel eliminations being claimed as savings to the department, other issues include (1) instances of lengthy payback periods (time required to recoup up-front investment costs), (2) inconsistencies in how DOD estimated costs for BRAC actions involving military construction projects, (3) uncertainties in estimating the total costs to the government to implement DOD's recommended actions, and (4) potential impacts on communities surrounding bases that are expected to gain large numbers of personnel if DOD's recommendations are implemented.

Some Lengthy Payback Periods

Many of the 222 recommendations DOD made in the 2005 round are associated with lengthy payback periods, which, in some cases, call into question whether the department would be gaining sufficient monetary value for the up-front investment cost required to implement its recommendations and the time required to recover this investment. Our analysis indicates that 143, or 64 percent, of DOD's recommendations are associated with payback periods that are 6 years or less while 79, or 36 percent, of the recommendations are associated with lengthier paybacks that exceed the 6-year mark or never produce savings. DOD officials acknowledge that the additional objectives of fostering jointness and transformation have had some effect on generating recommendations with longer payback periods. Furthermore, our analysis shows that the number of recommendations with lengthy payback periods varied across the military services and the joint cross-service groups, as shown in table 4.

Table 4: Payback Periods for BRAC Recommendations by DOD Component

DOD component	Number of recommendations	Payback period			
		Immediate to 6 years	7 to 9 years	10 years and greater	Never
Army	56	26	3	22	5
Navy	53 ^a	45	2	6	0
Air Force	42	29	6	7	0
Education and training	9	5	0	3	1
Headquarters and support activities	21	14	2	5	0
Industrial	17	13	3	1	0
Intelligence	2	0	2	0	0
Medical	6	3	1	2	0
Supply and storage	3	3	0	0	0
Technical	13	5	5	3	0
Total	222	143	24	49	6
Percentage	100	64	11	22	3

Source: GAO Analysis of DOD data.

^aWhile the DOD BRAC report lists 21 Navy recommendations, several of these have multiple actions, thus bringing the total to 53 recommendations.

As shown in table 4, the Army has five recommendations and the education and training group has one recommendation that never payback, as described below:

- Army realignment of a special forces unit from Fort Bragg, North Carolina, to Eglin Air Force Base, Florida;
- Army realignment of a heavy brigade from Fort Hood, Texas, to Fort Carson, Colorado;
- Army realignment of a heavy brigade to Fort Bliss, Texas, and infantry and aviation units to Fort Riley, Kansas;
- Army reserve component consolidations in Minnesota;
- Army reserve component consolidations in North Dakota; and
- Education and Training Joint Cross-Service Group's establishment of Joint Strike Fighter aircraft training at Eglin Air Force Base, Florida.

According to Army officials, their five recommendations have no payback because, in part, they must build additional facilities to accommodate the return of about 47,000 forces currently stationed overseas to the United States as part of DOD's Integrated Global Presence and Basing Strategy initiative (see app. III for further discussion of the restationing initiative). According to the education and training group, its one recommendation with no payback period is due to the high military construction costs associated with the new mission to consolidate initial training for the Joint Strike Fighter aircraft for the Navy, the Marine Corps and the Air Force.

Similarly, the Army has nearly 50 percent of the total number of DOD recommendations with payback periods of 10 years or longer. Our analysis of Army data shows that these lengthy paybacks are attributable to many of the recommendations regarding the reserve components. These recommendations typically have a combination of relatively high military construction costs and relatively low annual recurring savings, which tend to lengthen the payback period.

We also identified some portions of DOD's individual recommendations that are associated with lengthy payback periods for certain BRAC actions but are imbedded within larger bundled recommendations. The following are a few examples:

-
- A proposal initially developed by the Headquarters and Support Activities Joint Cross-Service Group to move the Army Materiel Command from Fort Belvoir, Virginia, to Redstone Arsenal, Alabama, had more than a 100-year payback period with a net cost over a 20-year period. However, the proposal did not include some expected savings that, if included, would have reduced the payback period to 32 years. Concurrently, the group developed a separate proposal to relocate various Army offices from leased and government-owned office space onto Fort Sam Houston, Texas, which would have resulted in a 3-year payback period. The headquarters group decided to combine these two stand-alone proposals into one recommendation, resulting in an expected 20-year net present value savings of about \$123 million with a 10-year payback.
 - Many of the individual Air Force proposals involving the Air National Guard and Air Force Reserve had payback periods ranging from 10 to more than 100 years. These individual proposals were subsequently revised by combining them with other related proposals to produce recommendations that had significant savings, minimized the longer payback periods, and linked operational realignment actions. We found that this change occurred in the realignment of Lambert-St. Louis International Airport Air Guard Station, Missouri, which originally had a 63-year payback period and resulted in a 20-year net present value cost of about \$22 million. However, this realignment is now a part of the closure of Otis Air National Guard Base, Massachusetts, and the realignment of Atlantic City Air Guard Station, New Jersey. The combined recommendation results in a 20-year net present value savings of \$336 million and a 3-year payback period.

Inconsistencies in DOD's Estimated Costs for Military Construction Projects

While the military services used the COBRA model to estimate the costs for military construction projects needed to implement BRAC recommendations, we found some inconsistencies in how they estimated some costs associated with these projects. While the impact of these inconsistencies on savings is likely not as great as others noted in this report, it nevertheless contributes to the overall imprecision of the cost estimates of DOD's recommended actions.

One area of inconsistent accounting involves the relative amounts of estimated support costs—such as the cost of connecting a new facility to existing water, sewage, and electrical systems—associated with military construction projects across the services. In its estimates, the Army considered these additional support costs as one-time costs whereas the

Navy and the Air Force included them in the cost of the military construction projects for each project. By including these support costs in the cost of each project, the Navy and Air Force generally generated higher relative recurring costs than the Army for the recapitalization of facilities over time. Specifically, the Army increased its military construction cost estimates by 18.5 percent to account for the connection of the projected new facilities' utilities. The Air Force, on the other hand, increased its construction costs for support services from 8 to 40 percent, depending on the type of facility, while the Navy included support costs at only two locations. According to the Special Assistant to the Secretary of the Navy for BRAC, the Navy assigned teams to review all proposed military construction projects by location to determine any support costs necessary for connection of utilities. Our analysis shows that had the Army used the same methodology as the Navy and the Air Force, the Army would incur about \$66 million in additional recapitalization costs for all of its proposed military construction projects.

The services were also inconsistent in considering the costs associated with meeting DOD's antiterrorism force protection standards in their estimated costs for military construction projects.³⁴ The Air Force increased the expected costs of its military construction projects by 2.3 percent, or about \$18 million, to meet DOD's standards. Air Force officials noted that these funds would provide enhancements such as security barriers and blast proof windows. The Army and the Navy, on the other hand, did not include additional costs to meet the department's standards in their proposed military construction projects. If the Army and the Navy estimated costs similarly to the Air Force, the cost of their proposed military construction projects would have increased by about \$146 million and \$25 million, respectively.

Uncertainties in Accounting for All Expected Costs or Savings to the Federal Government

DOD's cost and savings estimates for implementing its recommendations do not fully reflect all expected costs or savings that may accrue to the federal government. The BRAC legislation requires that DOD take into account the effect of proposed closure or realignment on the costs of any other activity of the department or any other federal agency that may be

³⁴ DOD's antiterrorism standards, effective no later than October 2009, apply to both new and existing DOD-inhabited buildings and require, for example, minimum building standoff distances; structures that will avoid progressive building collapse; reinforced exterior walls; glazed windows, skylights, and doors; and properly secured entrances. Unified Facilities Criteria, 4-010-01 (Oct. 8, 2003).

required to assume responsibility for activities at military installations.³⁵ While the services and joint cross-service groups were aware of the potential for these costs, estimated costs were not included in the cost and savings analysis because it was unclear what actions an agency might take in response to the BRAC action. One such agency was the U.S. Coast Guard, which currently maintains some of its ships or various units at several installations that are slated to close. Navy BRAC officials briefed the U.S. Coast Guard about its recommendations prior to the list being published, but the Air Force did not meet with the Coast Guard. The U.S. Coast Guard was still in the process of evaluating various responses to take as a result of the proposed BRAC actions and did not complete its analysis in time for it to be included in this report.

Further, as noted earlier, estimated costs for the environmental restoration of bases undergoing closure or realignment are not included in DOD's cost and savings analyses. Such costs would be difficult to fully project at this point without planned reuse of the unneeded property being known. Consistent with the prior BRAC rounds, DOD excluded estimates for base environment restoration actions from its costs and savings analysis and in determining payback periods, on the premise that restoration is a liability that the department must address regardless of whether a base is kept open or closed and therefore should not be included in the COBRA analysis. Nevertheless, DOD did give consideration to such costs in addressing selection criterion 8, and included available information on estimated restoration costs as part of the data supporting its BRAC recommendations. DOD estimates that the restoration costs to implement its major closures would be about \$949 million, as shown in table 5. (See fig. 4 in the Background section for a map of DOD's major base closures.)

³⁵ P.L. 101-510, section 2913(e).

Table 5: Estimated Environmental Restoration Costs for DOD’s Recommended Major Base Closures

Dollars in millions

Military service	Number of major closures	Estimated environmental restoration costs^a
Army	14	\$723.3
Navy	9	154.5
Air Force	10	71.3
Total	33	\$949.1

Source: GAO analysis of DOD data.

^aEstimated costs include some costs not specifically reported in DOD’s May 2005 report to the Defense Base Closure and Realignment Commission. While the Army and Navy generally reported these costs, the Air Force did not but its costs were noted in supporting documentation.

Based on the data provided, the Army would incur the largest share of estimated restoration costs due to the closure of several ammunition plants and chemical depots. The largest expected costs for any one location across DOD, about \$383 million, would be for restoration at Hawthorne Army Depot, Nevada. While the DOD report does not specifically identify the potential for some additional restoration costs at its installations, available supporting documentation does identify some additional costs. For example, the Army estimated the range restoration at Hawthorne Army Depot could cost from about \$27 million to \$147 million, which is not included in the estimates in table 5. Further, the Army recognizes that additional restoration costs could be incurred at six additional locations that have ranges and chemical munitions, but these costs have not yet been determined.

Our prior work has shown that environmental costs can be significant, as evidenced by the nearly \$12 billion in total cost DOD expected to incur when all restoration actions associated with the prior BRAC rounds are completed. Service officials told us that the projected cost estimates for environmental restoration are lower, in general, because the environmental condition of today’s bases is much better than the condition of bases closed during the prior BRAC rounds, primarily because of DOD’s ongoing active base environmental restoration program. Nonetheless, our prior work has indicated that as closures are implemented, more intensive environmental investigations occur and additional hazardous conditions may be uncovered that could result in additional, unanticipated restoration and higher costs. Finally, the services’ preliminary estimates are based on restoration standards that are applicable for the current use of the base

property. Because reuse plans developed by communities receiving former base property sometimes reflect different uses for the property this could lead to more stringent and thus more expensive restoration in many cases.

Based on experiences from prior BRAC rounds, we believe other costs are also likely to be incurred, although not required to be included in DOD's cost and savings analysis but which could add to the total costs to the government of implementing the BRAC round. These costs include transition assistance, planning grants, and other assistance made available to affected communities by DOD and other agencies. DOD officials told us that such estimates were not included in the prior rounds' analyses and that it was too difficult to project these costs, given the unknown factors associated with the number of communities affected and the costs that would be required to assist them. Additionally, as we reported in January 2005,³⁶ in the prior four BRAC rounds, DOD's Office of Economic Adjustment, the Department of Labor, the Economic Development Administration within the Department of Commerce, and the Federal Aviation Administration provided nearly \$2 billion in assistance through fiscal year 2004 to communities and individuals, and according to DOD officials, these agencies are slated to perform similar roles for the 2005 round. However, while the magnitude of this assistance is unknown at this time, it is important to note that assistance will likely be needed in this round, as contrasted with prior rounds, for not only those communities that surround bases losing missions and personnel but also for communities that face considerable challenges dealing with large influxes of personnel and military missions. For example, DOD stated in its 2005 BRAC report that over 100 actions significantly affect local communities, triggering federal assistance from DOD and other federal agencies. Also, as discussed more fully later, the number of bases in the 2005 BRAC round that will gain several thousand personnel from the recommended actions could increase pressure for federal assistance to mitigate the impact on community infrastructure, such as schools and roads, with the potential for more costs than in the prior rounds.

Finally, the BRAC costs and savings estimates do not include any anticipated revenue from such actions as the sale of unneeded former base property or the transfer of property to communities through economic

³⁶ GAO, *Military Base Closures: Updated Status of Prior Base Realignments and Closures*, GAO-05-138 (Washington, D.C.: Jan. 13, 2005).

development conveyances.³⁷ The potential for significant revenue may exist at certain locations. For example, the Navy sold some unneeded property from prior round actions in California at the former El Toro Marine Corps Air Station for about \$650 million and the former Tustin Marine Corps Air Station for \$208.5 million. The extent to which sales will play a role in the disposal of unneeded property arising from the 2005 BRAC round remains to be seen.

Impact of BRAC Recommended Actions on Communities

The recommended actions for the 2005 BRAC round will have varying degrees of impact on communities surrounding bases undergoing a closure or realignment. While some will face economic recovery challenges as a result of a closure and associated losses of base personnel, others, which expect large influxes of personnel due to increased base activity, face a different set of challenges involving community infrastructure necessary to accommodate growth.

In examining the economic impact of the 222 BRAC recommendations as measured by the percentage of employment, DOD data indicate that most economic areas across the country are expected to be affected very little but a few could face substantial impact. Almost 83 percent of the 244 economic areas affected by BRAC recommendations fall between a 1 percent loss in employment and a 1 percent gain in employment.³⁸ Slightly more than 9 percent of the economic areas had a negative economic impact of greater than 1 percent, but for some of these areas, the projected impact is fairly significant, ranging up to a potential direct and indirect loss of up to nearly 21 percent. Almost 8 percent of the economic areas had a positive economic impact greater than 1 percent. Appendix XIV provides additional detail on our economic analyses.

Of those communities facing potential negative economic impact, six communities face the potential for a fairly significant impact. They include communities surrounding Cannon Air Force Base, New Mexico;

³⁷ Economic development conveyances are used to transfer unneeded property to communities for uses that promote economic recovery and job creation. The National Defense Authorization Act for Fiscal Year 2002 (P.L. 107-107, Title XXX, section 3006 (Dec. 28, 2001)) included a provision stipulating that DOD seek to obtain fair market value for BRAC-related transfers of property in the 2005 round. The effect this provision will have on the generation of revenue for DOD is unknown at this time.

³⁸ Some of the recommendations had multiple actions that affected more than one economic area.

Hawthorne Army Depot, Nevada; Naval Support Activity Crane, Indiana; Submarine Base New London, Connecticut; Eielson Air Force Base, Alaska; and Ellsworth Air Force Base, South Dakota, where the negative impact on employment as a percent of area employment ranges from 8.5 percent to 20.5 percent. Our prior work has shown that a variety of factors will affect how quickly communities are able to rebound from the negative economic consequences of closures and realignments. They include such factors as the trends associated with the national, regional, and local economies; natural and labor resources; effective planning for reuse of base property; and federal, state, and local government assistance to facilitate transition planning and execution. In a series of reports that have assessed the progress in implementing closures and realignments in prior BRAC rounds, we reported that most communities surrounding closed bases have been faring well in relation to key national economic indicators—unemployment rate and the average annual real per capita income growth rates.³⁹ In our January 2005 report for example, we further reported that while some communities surrounding closed bases were faring better than others, most have recovered or are continuing to recover from the impact of BRAC, with more mixed results recently, allowing for some negative impact from the economic downturn nationwide in recent years.

The 2005 round, however, also has the potential to significantly affect a number of communities surrounding installations, which are expected to experience considerable growth in the numbers of military, civilian, and civilian support personnel. These personnel increases are likely to place additional demands on community services, such as providing adequate housing and schools, for which the communities may not have adequate resources to address in the short term. The total gains can be much more than just those personnel with the consideration of accompanying families. Table 6 shows that 20 installations are expected to realize gains of over 2,000 military, civilian, and mission support contractor personnel for an aggregate increase of more than 106,000 personnel.

³⁹ GAO, *Military Base Closures: Updated Status of Prior Base Realignments and Closures*, [GAO-05-138](#) (Washington, D.C.: Jan. 13, 2005); GAO, *Military Base Closures: Progress in Completing Actions from Prior Realignments and Closures*, [GAO-02-433](#) (Washington, D.C.: Apr. 5, 2002); and GAO, *Military Bases: Status of Prior Base Realignment and Closure Rounds*, [GAO/NSAID-99-36](#) (Washington, D.C.: Dec. 11, 1998).

Table 6: Military Installations That Would Receive a Net Gain of Over 2,000 Personnel due to BRAC Actions

Installation	Net gain of military personnel to an installation	Net gain of civilians and mission support contractors to an installation	Total net gain of personnel to an installation
Fort Belvoir, VA	4,521	15,837	20,358
Fort Bliss, TX	11,354	147	11,501
Fort Benning, GA	9,221	618	9,839
Fort Sam Houston, TX	7,648	1,716	9,364
Fort Lee, VA	6,139	1,205	7,344
Fort Meade, MD	682	4,679	5,361
Fort Carson, CO	4,178	199	4,377
Fort Bragg, NC	4,078	247	4,325
Little Rock Air Force Base, AR	3,579	319	3,898
Fort Sill, OK	3,444	158	3,602
Defense Finance and Accounting Service, IN	114	3,381	3,495
Submarine Base Kings Bay, GA	3,245	122	3,367
Marine Corps Base Quantico, VA	446	2,567	3,013
Fort Riley, KS	2,415	440	2,855
Naval Station Norfolk, VA	3,447	(640)	2,807
Naval Air Weapons Station China Lake, CA	154	2,315	2,469
Eglin Air Force Base, FL	2,140	78	2,218
Aberdeen Proving Ground, MD	(3,411)	5,587	2,176
Naval Shipyard Norfolk, VA	177	1,859	2,036
Naval Air Station Jacksonville, FL	1,902	123	2,025
Total	65,473	40,957	106,430

Source: GAO analysis of DOD data.

As shown in table 6, most of the gaining installations are Army installations with the gains attributable to a number of actions, including the return of large numbers of personnel from overseas locations under DOD’s integrated global presence and basing strategy and the consolidation of various activities, such as combat-support related activities at Fort Lee, Virginia. Fort Belvoir, Virginia, has the largest expected growth, due in large measure to some consolidation of various activities from lease space in the Washington, D.C. area.

The challenges facing communities surrounding gaining bases can be many, including increased housing demand, increased demands for roads and utilities, and adequate schools. These challenges can be formidable as

communities may be faced with inadequate resources to address concerns in these areas as follows:

- *Housing:* If history is any indication, while some of the personnel transferring into a base may live on-base, the majority may not, as the military services are turning more to housing privatization. Installation officials at Fort Riley, Kansas, told us about concerns about the nearby availability of housing (within a 20-mile radius) to support the expected influx of military and civilian personnel and their families transferring to the base. For those installations where adequate housing is not available in the surrounding communities existing housing privatization projects would need to be revised and expedited to provide for additional units. Fort Bliss, Texas, officials told us that they expect the need to accelerate their existing housing privatization efforts, but would require additional funds to do so. Currently, housing privatization has taken place or is in the process of taking place at several of these installations and similar efforts may be needed there as well.
- *Schools:* Effects on bases with the greatest gain in personnel resulting from BRAC vary between whether dependents attend schools operated on base by DOD (Fort Benning, Fort Bragg, and Marine Corps Base Quantico as shown in table 6) or schools operated by local educational agencies. We recently reported on challenges likely to be faced by both DOD operated schools and those operated by local educational agencies in the post BRAC environment at these and other locations.⁴⁰ Recently, in visiting selected bases affected by the BRAC recommendations, installation officials told us that while local educational authorities should be able to absorb additional students into their school systems, they are more concerned about the potential shortage of teachers. Another concern is that make-shift trailers or temporary modular facilities might be used. For example, while Kings Bay, Georgia, officials told us that the local school system should be able to accommodate the increase of students, it may need to resort to the use of portable classrooms. All installations that are expected to gain more than 2,000 personnel have local community-administrated school systems with the exceptions of Fort Benning, Fort Bragg, and Marine Corps Base Quantico which have DOD-administrated school systems. If additional

⁴⁰ GAO, *DOD Schools: Limitations in DOD-Sponsored Study on Transfer Alternatives Underscore Need for Additional Assessment*, [GAO-05-469](#) (Washington, D.C.: Apr. 26, 2005).

capacity is required at these three locations, additional military constructions funds would likely be needed.

- *Other infrastructure:* Installation officials we spoke to also expressed some concern for the increased demand for various community services, such as health care, transportation, and utilities to accommodate personnel increases. Fort Carson, Colorado, officials told us that with its expected personnel increases, the local community will need more TRICARE providers to meet the expected demand. In other cases, such as at Fort Belvoir, Virginia, discussion has ensued regarding the need for increased mass transit capability, which may involve requests for millions of dollars in federal grant assistance.

As previously noted, it is likely that these concerns may increase federal governmental expenditures that are not included in the BRAC cost and savings analyses.

Candidate Recommendations That Were Deleted or Revised during the Final Weeks of the Selection Process

We also identified several candidate recommendations that were presented by the military services or joint cross-service groups to the IEC—DOD’s senior BRAC leadership group—that were substantially revised or deleted from further consideration during the last few weeks of the BRAC section process. In aggregate, based on projected savings, these actions reduced the overall potential for estimated net annual recurring savings by nearly \$500 million and estimated 20-year net present value savings by over \$4.8 billion, as shown in table 7.

Table 7: Candidate Recommendations That Were Deleted or Significantly Revised by the Infrastructure Executive Council

Dollars in millions

Candidate recommendations	Initial proposal		IEC decision		Change	
	Net annual recurring savings	20-year savings	Net annual recurring savings	20-year savings	Net annual recurring savings	20-year savings
Proposals deleted by the IEC						
Close Naval Postgraduate School, CA	\$90	\$1,120	\$0	\$0	(\$90)	(\$1,120)
Close Uniformed Services of the University of the Health Sciences, MD	58	575	0	0	(58)	(575)
Close Natick Soldier Systems Center, MA	20	114	0	0	(20)	(114)
Close Adelphi Laboratory Center, MD	166	949	144	1,026	(22)	77
Close Carlisle Barracks, PA	50	555	0	0	(50)	(555)
Close Air Force Institute of Technology, OH	8	14	0	0	(8)	(14)
Proposals changed from closure to realignment by the IEC						
Close Marine Corps Logistics Base, Barstow, CA	142	1,600	18	231	(124)	(1,369)
Close Naval Air Station, Brunswick, ME	93	841	35	239	(58)	(602)
Close Grand Forks Air Force Base, ND	226	2,656	173	1,982	(53)	(674)
Close Rome Laboratory, NY	46	230	41	357	(5)	127
Total	\$899	\$8,654	\$411	\$3,835	(\$488)	(\$4,819)

Source: GAO analysis of DOD data.

Each of the cases highlighted in the table is described in additional detail below.

- The educational and training group proposed to privatize graduate education, which enabled the Navy to recommend the closure of the Naval Postgraduate School, Monterey, California. The proposed closure supported DOD’s draft transformational option to privatize graduate-level education. Navy officials, however, stated that they believed professional military education was more important than ever given the world climate. During the IEC deliberations, Navy officials expressed concern about the loss of such a unique graduate military education facility and the effect on international students who participate in the school’s programs. Further, in the IEC meeting the Navy stated its belief that all education recommendations should be withdrawn because education is a core competency of the department and relying on the

private sector to fulfill that requirement is too risky. The IEC agreed and disapproved the recommendation.

- The Medical Joint Cross-Service Group recommended that the Uniformed Services University of the Health Sciences associated with the National Naval Medical Center in Bethesda, Maryland, be closed, citing that educating physicians at the site was more costly than alternative scholarship programs (about triple the cost) and that the department could rely on civilian universities to educate military physicians.⁴¹ We also reported previously that the university is a more costly way to educate military physicians.⁴² The IEC, subsequently disapproved the recommendation, citing that education is a core competency for the department, and therefore it was considered too risky to rely on the private sector to provide this function. Also, a DOD official indicated that, with the recommended action to realign Walter Reed Army Medical Center to Bethesda, Maryland, it would be highly desirable to have a military medical college associated with this medical facility in order for it to be a world-class medical center.
- The Technical Joint Cross-Service Group, through the Army, proposed that the Natick Soldier Systems Center, Massachusetts, be closed and technical functions relocated to Aberdeen Proving Ground, Maryland, to create an integrated command, control, communications, and computers, intelligence, surveillance, and reconnaissance center. In its presentation to the IEC, the Army noted that the cost for this recommendation was high, but it would generate greater efficiencies and faster transition from research and development through the acquisition and fielding phases of the technology. Although the ISG initially raised no concerns and approved the recommendation, the IEC disapproved it in the last week of the BRAC selection process, citing the high cost of the recommendation.

⁴¹ The medical group developed this candidate recommendation with the knowledge of a specific provision of federal law (10 U.S.C. 2112a) that could preclude closure of the university.

⁴² See GAO, *Budget Issues: Budgetary Implications of Selected GAO Work for Fiscal Year 2001*, [GAO/OCG-00-8](#) (Washington, D.C.: Mar. 31, 2000); GAO, *Budget Issues: Budgetary Implications of Selected GAO Work for Fiscal Year 2000*, [GAO/OCG-99-26](#) (Washington, D.C.: Apr. 16, 1999); and GAO, *Military Physicians: DOD's Medical School and Scholarship Program*, [GAO/HEHS-95-244](#) (Washington, D.C.: Sept. 29, 1995).

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- The closure of the Adelphi Laboratory Center, Maryland, was originally part of the recommendation to close Fort Monmouth, New Jersey, and, along with Natick Soldier Systems Center, was part of the Army's plan for an integrated command, control, communications, and computers, intelligence, surveillance, and reconnaissance center. An Army official told us that, as with the closure of Natick, no concerns were originally raised and the recommendation was approved by the ISG, but the IEC later removed it from the recommendation that includes the closure of Fort Monmouth because of high cost.
 - The proposed closure of Carlisle Barracks, Pennsylvania—home of the Army War College—was initiated by the Education and Training Joint Cross-Service Group and was aimed at creating synergy between the college and Army's Command and General Staff College at Fort Leavenworth, Kansas. The IEC approved the proposed recommendation when it was initially briefed, but later rejected it, based on the Army's argument that among other things, the Army War College's proximity to Washington, D.C., provides access to key national and international policymakers and senior military and civilian leaders within DOD.
 - The Education and Training Joint Cross-Service Group recommended the closure of the Air Force Institute of Technology at Wright-Patterson Air Force Base, Ohio. The group recommended that graduate-level education be provided by the private sector and that all other functions of the institute be relocated to Maxwell Air Force Base, Alabama. However, the IEC disapproved the recommendation based on the risk involved in relying on the private sector for education requirements, given that education is a core competency of the department.
 - The Industrial Joint Cross-Service Group recommended transferring the workload of the Marine Corps' depot maintenance facility in Barstow, California, which enabled the Department of the Navy to recommend closure of the Marine Corps Logistics Base. The Marine Corps raised concerns over the impact that the closure would have on Marine Corps deployments from the West Coast. The IEC decided to downsize the base and retain the depot, citing the Marine Corps' concerns.
 - While the Navy recommended closure of the Naval Air Station Brunswick, Maine, the IEC revised this to a realignment. Navy officials stated that the senior Navy leadership had been reluctant to give up the Navy's remaining air station in the Northeast region, but found the potential savings significant enough to recommend closure. Navy

officials stated that the IEC relied on military judgment to retain access to an airfield in the Northeast. Nonetheless, all aircraft and associated personnel, equipment, and support as well as the aviation intermediate maintenance capability will be relocated to another Navy base. The Navy is maintaining its cold weather-oriented Survival, Evasion, Resistance and Escape School, a Navy Reserve Center, and other small units at the air station.

- While the Air Force had proposed to close Grand Forks Air Force Base, North Dakota,⁴³ the IEC revised this to a realignment a week before OSD released its recommendations. The Air Force reported in its submission to the BRAC Commission that over 80 percent of the base's personnel are expected to be eliminated or realigned under the revised proposal. The revision to keep the base open was made based on military judgment to keep a strategic presence in the north central United States, with a possible unmanned aerial vehicle mission for the base. Even though Grand Forks Air Force Base was retained for strategic reasons, Minot Air Force Base is also located in North Dakota and is not affected by any BRAC recommendation.
- The closure of Rome Laboratory, New York, was originally part of a Technical Joint Cross-Service Group recommendation to consolidate the Defense Research Laboratories. No concerns were originally raised about the closure, and it was approved by the IEC. However, the IEC subsequently decided to realign rather than close the laboratory to address strategic presence and cost concerns. The realignment of Rome has a higher 20-year net present value savings than the closure proposal because the closure would have required more military construction and transfers of military and civilian personnel and equipment.

Conclusions

While we believe DOD's overall recommendations, if approved and implemented would produce savings, there are clear limitations associated with the projected savings, such as the lack of military end-strength reductions and uncertainties associated with other savings estimates. DOD's recommendations would provide net reductions in space and plant replacement value, which would reduce infrastructure costs once up-front investment costs have been recovered but the extent some projected space

⁴³ The Grand Forks Air Force Base recommendation also includes the realignment of McConnell Air Force Base, Kansas.

reductions will be realized is unclear. Other DOD savings estimates are based on what might be broadly termed business process reengineering efforts and other actions, where savings appear likely, but the magnitude of savings has not been validated and much will depend on how the recommended actions are implemented. Nevertheless, the savings could prove difficult to track over time. As a result, DOD's projections may create a false sense of the magnitude of the savings, with fewer resources available for force modernization and other needs than might be anticipated, and there may be the potential for premature budget reductions. Given problems in tracking savings from previous BRAC rounds, and the large volume of BRAC actions this round that are more oriented to realignments and business process reengineering than closures, we believe it is of paramount importance that DOD put in place a process to track and periodically update its savings estimates.

Despite a fundamentally sound overall process, we identified numerous issues regarding DOD's list of recommendations that may warrant further attention by the BRAC Commission, as noted in this report and appendixes III through XII. These include those recommendations having lengthy payback periods, some with limited savings relative to investment costs, and potential implementation difficulties. Given the large number of such items for the Commission's consideration, we are not addressing them as individual recommendations but simply referring our report in its entirety for the Commission's consideration.

Recommendation for Executive Action

We recommend that the Secretary of Defense take appropriate steps to establish mechanisms for tracking and periodically updating savings estimates in implementing individual recommendations, with emphasis both on savings related to the more traditional realignment and closure actions as well as those related more to business process reengineering.

Agency Comments

Cognizant officials of the military services and joint cross-service groups reviewed drafts of the report providing us with informal comments, permitting us to make technical changes, as appropriate, to enhance the accuracy and completeness of the report. Subsequently, we similarly provided complete drafts of the report to cognizant OSD officials, obtaining and incorporating their comments as appropriate. In providing oral comments on a draft of this report, the Deputy Under Secretary of Defense for Installations and Environment concurred with our recommendation.

We are sending copies of this report to Members of Congress; the Secretaries of Defense, the Army, the Navy, and the Air Force; the Commandant of the Marine Corps; the Director, Office of Management and Budget; and the Chairman, Defense Base Closure and Realignment Commission. We will also make copies available to others upon request. In addition, the report will be available at no charge on GAO's Web site at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me on (202) 512-5581 or holmanb@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix XVII.

A handwritten signature in black ink that reads "Barry W. Holman". The signature is written in a cursive, flowing style.

Barry W. Holman, Director
Defense Capabilities and Management

List of Congressional Committees

The Honorable John W. Warner
Chairman
The Honorable Carl Levin
Ranking Minority Member
Committee on Armed Services
United States Senate

The Honorable Ted Stevens
Chairman
The Honorable Daniel K. Inouye
Ranking Minority Member
Subcommittee on Defense
Committee on Appropriations
United States Senate

The Honorable Kay Bailey Hutchison
Chairman
The Honorable Dianne Feinstein
Ranking Minority Member
Subcommittee on Military Construction
and Veterans Affairs
Committee on Appropriations
United States Senate

The Honorable Duncan Hunter
Chairman
The Honorable Ike Skelton
Ranking Minority Member
Committee on Armed Services
House of Representatives

The Honorable C.W. Bill Young
Chairman
The Honorable John P. Murtha
Ranking Minority Member
Subcommittee on Defense
Committee on Appropriations
House of Representatives

The Honorable James Walsh
Chairman
The Honorable Chet Edwards
Ranking Minority Member
Subcommittee on Military Quality of Life and Veterans
Affairs, and Related Agencies
Committee on Appropriations
House of Representatives

Scope and Methodology

Prior to the release of the Department of Defense's (DOD) base realignment and closure (BRAC) recommendations on May 13, 2005, we monitored the BRAC process in a real-time environment beginning in October 2003. We sought to assure ourselves that DOD followed an objective and consistently applied process in which we could observe logical decision making leading to defensible and well-documented proposed closure and realignment recommendations. During this period, we abided by an agreement with DOD to not disclose details of the process due to the sensitivity of the information. Following the release of the recommendations, we continued our analyses of the process and recommendations. With the unprecedented large number of recommendations and the finalization of many of these occurring in the final weeks of the process, along with the limited time available for us to report our results following DOD's May 13, 2005, release of the recommendations, we were not able to review all recommendations in detail. We focused more of our attention on cross-cutting issues than on implementation issues of individual recommendations, but did review individual recommendations as time permitted. Further, because of time constraints, we had only limited opportunities to gain further insight into some of the recommendations from officials at bases affected by the recommendations.

We performed our work primarily at the Office of the Secretary of Defense (OSD), the military services' base closure offices, and the offices of seven joint cross-service groups¹ that were established by OSD to develop cross-service recommendations. While we did not attend deliberative meetings, we had access to minutes of meetings and relevant documentation and met periodically with key staff and senior leadership to gain an understanding of each phase of the process and to provide them with the opportunity to address our concerns as the process was unfolding. We also visited selected bases following the public disclosure of the Secretary's recommendations to gain further insights into potential issues regarding specific recommendations. Those bases included the Anniston Army Depot, Alabama; Fort Bliss, Texas; Fort Carson, Colorado; Fort Sam Houston, Texas; Fort Lewis, Washington; Fort Riley, Kansas; Lackland Air Force Base, Texas; McChord Air Force Base, Washington; Marine Corps Air Station Cherry Point, North Carolina; Naval Shipyard Portsmouth, Maine; Naval Submarine Base Kings Bay, Georgia; Naval Submarine Base New

¹ The joint cross-service groups were Education and Training, Headquarters and Support Activities, Industrial, Intelligence, Medical, Supply and Storage, and Technical.

London, Connecticut; and Red River Army Depot, Texas. We also met with officials of the U.S. Coast Guard to discuss the impact of BRAC actions on their operations since they are tenants on several bases recommended for closure or realignment. We relied on DOD's Office of the Inspector General, Army Audit Agency, Naval Audit Service, and Air Force Audit Agency to validate the data used by the military services and joint cross-service groups in their decision-making processes. We met with staff of these audit agencies periodically to discuss the results of their work as well as to observe their data validation efforts at selected locations across the country. The DOD Inspector General and service audit agencies issued reports that generally concluded that the extensive amount of data used as the basis for BRAC decisions was sufficiently valid and accurate for the purposes intended. In addition, with limited exceptions, these reports did not identify any material issues that would impede a BRAC recommendation.² Where questions existed, we made further assessments and were able to satisfy ourselves that issues raised would have limited, if any, impact on the department's recommendations. Based on the audit agencies' extensive validation efforts and our observation of their work, we believe the data are sufficiently reliable for the purposes of this report.

To determine the extent to which DOD achieved its BRAC goals, we interviewed key officials and collected and analyzed relevant documentation generated by OSD, the military departments, and the joint cross-service groups. We reviewed the Secretary of Defense's November 2002 memorandum that initiated the 2005 BRAC process and highlighted DOD's goals and obtained DOD officials' views on the degree to which the goals were accomplished. With respect to DOD's goal of reducing excess capacity, we initially reviewed the capacity analysis reports of the services and joint cross-service groups to gain insight into the relative amounts of excess capacity within the department. We subsequently reviewed major recommendations to determine the extent to which these recommended actions would reduce infrastructure and excess capacity. In this regard, we also assessed the changes in the overall defense infrastructure's plant replacement value—a measure used by the department to determine the cost to replace an existing facility with a facility of the same size at the same location, using today's standards—by reviewing supporting documentation for the recommendations. We also analyzed the aggregated estimated costs and savings associated with reducing DOD's unnecessary

² See app. XVI for a list of relevant DOD Inspector General and military service audit reports that were available at the time we completed our review.

infrastructure, as depicted in the Cost of Base Realignment Actions (COBRA) analyses for the 222 recommendations proposed by the department, and compared these estimates with similar data from the prior BRAC rounds to determine similarities and differences in sources of costs and savings and thereby identify potential areas for further review. With respect to DOD's costs and savings estimates, we examined selected supporting documentation to determine the basis for the estimates and identified key elements, such as base operating support, personnel compensation, or recapitalization of facilities, those estimates comprised.

We also performed a qualitative analysis of DOD's performance in addressing its other BRAC goals—transforming the infrastructure and fostering jointness—by examining DOD's proposed recommendations and seeking views from key officials on the relative success of achieving these initiatives. We also compared the justification narratives supporting individual recommendations for closures and realignments against draft transformation options developed by the department, although not formally adopted, that were nonetheless used by the individual military services and joint cross-service groups. Our efforts in addressing this and other objectives were facilitated by remote access to selected automated databases and tracking systems, which gave us near real-time access to relevant briefings and other documents, permitting us to broadly track the evolution of the BRAC process and identify issues for further consideration.

To address whether DOD's selection process for developing recommendations was logical and reasoned, we focused on key aspects of the BRAC process, including capacity and military value analyses. In doing so, we sought to determine whether DOD's selection process was objective and in compliance with key considerations of BRAC legislation. Our monitoring of the process from the start permitted us to assess the extent to which the process followed was logical, sequential, reasoned, and well documented. Our monitoring permitted us to determine to what extent a logical and sequential flow existed among all phases of DOD's selection process from the point at which data were collected and analyzed through the compilation of the final recommendations. We reviewed the services' determinations of which installations to consider in the BRAC process and analyzed the services' and joint cross-service groups' excess capacity analyses and military value evaluation plans and analyses to determine if they were developed in a reasoned fashion and supported by appropriate documentation. In reviewing military value analyses, we reviewed specific attributes established by the services and joint cross-service groups and

examined the linkage between the groups' methodologies and the military value selection criteria (i.e., criteria 1 through 4) to determine if these mandated selection criteria were addressed. Regarding the development of recommendations, our focus was to determine whether the recommendations were developed in a logical and reasoned manner. We reviewed, among other things, the extent to which the services and joint cross-service groups (1) considered various alternative proposals for closure or realignment, (2) assessed proposed recommendations using military value as the predominant decision-making factor, and (3) considered the remaining four selection criteria as mandated by law.

To address issues regarding DOD's recommendations, we focused more of our attention on cross-cutting issues than on implementation issues of individual recommendations, but did review individual recommendations as time permitted. We reviewed recommendation justification packages that included particulars on the benefits of implementing the recommendations from an operational perspective, the estimated costs and savings associated with implementing the recommendations, and their degree of conformity to the mandated selection criteria. We discussed perceived benefits with key officials and reviewed appropriate supporting documentation. We also examined financial aspects of the recommended actions, including expected up-front investment costs to implement the actions, length of payback periods, net present value savings or costs over a 20-year period, and annual recurring savings or costs. In examining the expected costs and savings as generated by DOD's COBRA model, we further examined assumptions and specific calculations regarding specific recommendations to determine the relative reasonableness of the estimates, given the data available to the services and the joint cross-service groups using the COBRA model. Further, we examined and discussed with DOD officials the economic and community impact for selected closure and realignment actions, including both adverse impacts associated with closing bases as well as challenges facing bases and surrounding communities that stand to receive large influxes of military personnel, civilian personnel, or both. Additionally, we reviewed potential recommendations that were approved by either the services or joint cross-service groups but ultimately rejected by senior leadership, the Infrastructure Executive Council, during the last few weeks of the BRAC process. We examined the merits of these proposals as presented by the services or joint cross-service groups in terms of addressing DOD's BRAC goals. We further reviewed the rationale offered by senior leadership in its decisions to reject or substantially revise the offered proposals. Because of time limitations and complexities introduced by DOD in weaving together

the unprecedented 837 closures and realignment actions across the country into 222 recommendations, we focused more on evaluating major issues affecting more than one recommendation than on implementation issues of individual recommendations. However, as time permitted, we did visit several selected installations, as noted above, to better gauge the operational and economic impact of the proposed recommendations. Installations visited were selected on a judgment basis because of our desire to have additional information on issues of concern, such as those related to costs and savings, potential operational implications, and potential economic impact. They included a number of bases with industrial-type activities because of concerns in prior rounds about how well the BRAC process and the COBRA model deal with such issues and other aspects of those facilities that permitted us to address other issues of concern.

We conducted our work from October 2003, as DOD's process was beginning, through June 2005, shortly after the Secretary of Defense announced his proposed base closures and realignments, in accordance with generally accepted government auditing standards.

Glossary of BRAC-Related Terms

The following terms were used by DOD during the 2005 BRAC process.

- **Annual recurring savings:** Savings that are expected to occur annually after the costs of implementing a BRAC action have been offset by savings.
- **Candidate recommendation:** A scenario that a joint cross-service group or military department has formally analyzed against all eight selection criteria and which it recommends to the Infrastructure Steering Group and Infrastructure Executive Council respectively for approval by the Secretary of Defense. A joint cross-service group candidate recommendation must be approved by the Infrastructure Steering Group, the Infrastructure Executive Council, and the Secretary of Defense before it becomes a DOD recommendation. A military department candidate recommendation must be approved by the Infrastructure Executive Council and the Secretary of Defense before it becomes a DOD recommendation.
- **Certified data:** P.L. 101-510, section 2903 (c)(5) requires specified DOD personnel to certify to the best of their knowledge and belief that information provided to the Secretary of Defense or the 2005 Defense Base Closure and Realignment Commission concerning the realignment or closure of a military installation is accurate and complete.
- **Closure:** All missions of the installation have ceased or have been relocated. All personnel positions (military, civilian, and contractor) have either been eliminated or relocated, except for personnel required for caretaking, conducting any ongoing environmental restoration, and disposing of base property.
- **COBRA:** An analytical tool used to calculate the costs, savings, and return on investment of proposed realignment and closure actions.
- **Force structure plan:** Numbers, size, and composition of the units that comprise U.S. defense forces, for example, divisions, air wings, aircraft, tanks, and so forth.
- **Infrastructure Executive Council (IEC):** One of two senior groups established by the Secretary of Defense to oversee and operate the BRAC 2005 process. The IEC, chaired by the Deputy Secretary of Defense, composed of the Secretaries of the military departments and their chiefs of services, the Chairman of the Joint Chiefs of Staff, and

Under Secretary of Defense (Acquisition, Technology, and Logistics), was the policy-making and oversight body of the entire BRAC 2005 process.

- **Infrastructure Steering Group (ISG):** The subordinate of two senior groups established by the Secretary of Defense to oversee the BRAC 2005 process. The ISG, chaired by the Under Secretary of Defense (Acquisition, Technology, and Logistics), and composed of the Vice Chairman of the Joint Chiefs of Staff, the Service Vice Chiefs, Deputy Under Secretary of Defense (Installations and Environment), and the Military Department Assistant Secretaries of Defense (Installations and Environment), provided oversight to joint cross-service group analyses of common business and support functions and ensured the integration of that process with the military departments' and defense agencies' specific analyses of all other functions.
- **Losing installation:** An installation from which missions, units, or activities would cease or be relocated pursuant to a closure or realignment recommendation. An installation can be a losing installation for one recommendation and a receiving installation for a different recommendation.
- **Military installation:** A base, camp, post, station, yard, center, homeport facility for any ship, or other activity under the jurisdiction of the Department of Defense, including any leased facility. The term does not include any facility used primarily for civil works, river and harbor projects, flood control, or other projects not under the primary jurisdiction or control of the Department of Defense.
- **Military value:** Referring to one or more of the first four BRAC selection criteria, which are collectively referred to as the military value criteria and are expected to receive priority consideration in the analytical process that results in recommendations for the closure or realignment of military installations within the United States.
- **Net present value:** In the context of BRAC, net present value is taking into account the time value of money in calculating the value of future cost and savings.
- **Payback period:** The time required for cumulative estimated savings to exceed the cumulative estimated costs incurred in net present value terms as a result of implementing BRAC actions.

- **Realignment:** Includes any action that both reduces and relocates functions and civilian personnel positions, but does not include a reduction in force resulting from workload adjustments, reduced personnel or funding levels, or skill imbalances.
- **Receiving installation:** An installation to which missions, units, or activities would be relocated pursuant to a closure or realignment recommendation. An installation can be a receiving installation for one recommendation and a losing installation for a different recommendation.
- **Scenario:** A proposal that has been declared for formal analysis by a military department or joint cross-service group deliberative body. The content of a scenario is the same as the content of a proposal. The only difference is that it has been declared for analysis by a deliberative body. Once declared, a scenario was registered at the ISG by inputting it into the ISG BRAC Scenario Tracking Tool.
- **Surge:** A term incorporated in one of the military value selection criteria for the 2005 BRAC round: “the ability to accommodate contingency, mobilization, *surge*, and future total force requirements.” The term is not otherwise defined and application of the term can vary by specific operational or support categories.
- **Transformation:** According to the department’s April 2003 Transformation Planning Guidance document, transformation is “a process that shapes the changing nature of military competition and cooperation through new combinations of concepts, capabilities, people, and organizations that exploit our nation’s advantages and protect against our asymmetric vulnerabilities to sustain our strategic position, which helps underpin peace and stability in the world.”

The Department of the Army Selection Process and Recommendations

The Army generally followed the common analytical framework established by the Office of the Secretary of Defense (OSD) for reviewing its active component installations and followed a separate parallel process for its reserve components installations. Compared to prior rounds, the Army's process produced a record number of 56 recommendations, with 44 of them directed to its reserve components and 12 directed to the active component, recognizing that many of the individual recommendations contain multiple closure and realignment actions. The 44 reserve components recommendations involved realignment or closure actions that could have been approved outside of the BRAC process, but the Army and DOD decided to include them as part of DOD's efforts to aid transformation through the base realignment and closure process.¹ Unlike the other military services and joint cross-service groups, the Army's recommendations, while producing estimated net annual recurring savings of nearly \$500 million after 2011, are not expected to achieve overall net savings over the 20-year period typically used to measure net savings from BRAC actions. Over this 20-year period, the Army expects to incur a net present value cost over \$3 billion, which is due primarily to the very large up-front costs in a few recommendations that are necessary to return forces to the United States under DOD's Integrated Global Presence and Basing Strategy.² However, the financial outlook for the Army improves if joint cross-service recommendations involving Army bases are considered—these separately reported actions are expected to produce \$10.7 billion in net present value savings over a 20-year period. Payback periods—the time required for savings to offset closure costs—for the active component recommendations are projected to average 2.5 years

¹ BRAC legislation establishes specific thresholds that require decisions regarding the closure or realignment of U.S. domestic military installations to be made under the BRAC process. Accordingly, decisions to close domestic U.S. military installations with authorization for at least 300 civilian personnel or to realign domestic U.S. military installations authorized at least 300 civilian personnel that involve a reduction of more than 1,000 or 50 percent in the number of civilian personnel authorized must undergo the BRAC process. See P.L. 101-510, section 2909.

² The Integrated Global Presence and Basing Strategy (IGPBS) refers to DOD's effort to evaluate the global posture of the armed forces, which in part recommended the return of U.S. forces from Europe and Korea. The Army's BRAC 2005 report indicates that had it been able to include savings expected from closing overseas bases and restationing overseas-based personnel to the United States, its recommendations related to these actions would have achieved a net savings. However, DOD determined, and we agree, that the inclusion of such savings based on overseas base closures in BRAC is not appropriate, because the BRAC process was established to consider only the closure or realignment actions involving domestic U.S. military installations and not U.S. military installations located in foreign countries.

with a range of immediate to no payback, and average 12.3 years with a range of immediate to more than 100 years for the reserve components. We believe some of the Army's recommendations may warrant additional attention from the BRAC Commission due to the likelihood of overstated savings projections associated with military personnel eliminations, uncertainties regarding overseas restationing of forces to the United States and other ongoing force structure changes, challenges facing communities surrounding bases that are gaining large numbers of personnel, the bundling of various recommendations, various unknowns associated with implementing the reserve components' recommendations, and issues regarding the proposed closure of the Red River Army Depot in Texas. The Army Audit Agency, which performed audits of the data used in the process, concluded that the data were sufficiently reliable for use in BRAC.

Organization and Focus

The Army established a Senior Review Group, headed by the Vice Chief of Staff of the Army and the Under Secretary of the Army and comprising senior Army military and civilian personnel, responsible for assessing potential recommendations for consideration by the Secretary of the Army, who in turn was to forward recommended actions to the Infrastructure Executive Council (IEC) for approval.³ This group was supported by The Army Basing Study Group, headed by the Deputy Assistant Secretary of the Army for Infrastructure Analysis, which was responsible for collecting and analyzing data and developing recommendations. In addition, subject matter experts and representatives from the Army's major commands provided expertise and input throughout the BRAC process.

The Army's broadly stated goals for BRAC 2005 were to enhance the capabilities of a transforming Army while aligning its infrastructure to meet its post-Cold War force structure and eliminating excess physical capacity to provide ready combat power to Combatant Commanders. Some key planning and strategy documents provided guidance in the pursuit of Army goals. The Army Stationing Strategy, for example, provided an overall vision, principles, and goals relative to future basing decisions while DOD's Strategic Planning Guidance helped to define objectives regarding soldiers' well-being. In further defining its goals, the Army identified the capabilities and missions that its installations require to support its forces in the future. With these needs in mind, the Army set out numerous objectives, such as:

³ At OSD, the Infrastructure Steering Group (ISG) and the Infrastructure Executive Council (IEC) provided overall coordination and direction to the DOD-wide process.

- locate Army forces and materiel (at critical installations) to enhance deployment and redeployment;
- relocate forces in accordance with the Integrated Global Presence and Basing Strategy;
- reshape installations to support home station mobilization and demobilization;
- reshape reserve components infrastructure to improve efficiency of mobilization and demobilization; and
- provide sufficient area and facilities (with varied terrain, climate, and airspace) to support institutional training, combat development, and doctrine development.

Framework for Analysis

The Army's BRAC analysis included a review of 87 active component installations and 10 leased facilities. A separate effort was undertaken to review over 4,000 Army National Guard and Army Reserve facilities to explore infrastructure consolidation opportunities that would afford the reserve components better facilities and enhance, among other things, training and operations.⁴ Army officials indicated that differences in the objectives and the nature of facilities associated with the active and reserve components infrastructure made it impractical to use identical review and decision-making processes. As with previous BRAC rounds, capacity and military value analyses provided the starting point for the Army's decision-making process. A key focus in the Army's efforts was to preserve large maneuver areas to ensure that future training requirements could be met and to relocate missions and personnel from small, single-function installations to larger, multi-function installations. The Army Audit Agency played an important role in helping to ensure data accuracy through extensive audits of data gathered at various locations.

⁴ In a May 2003 report, we noted the challenges that the Army faces in the funding of its reserve component facilities due to budget coordination difficulties. See GAO, *Defense Infrastructure: Changes in Funding Priorities and Management Processes Needed to Improve Condition and Reduce Costs of Guard and Reserve Facilities*, [GAO-03-516](#) (Washington, D.C.: May 15, 2003). According to Army officials, BRAC provides them an opportunity to overcome these challenges.

The Army's BRAC process was made more challenging by two ongoing force structure and basing initiatives—the rebasing of thousands of Army forces and their families to the United States as a result of the Integrated Global Presence and Basing Strategy and the restructuring of the Army's forces under its modularity⁵ program—that were to be integrated into the BRAC process.

Capacity Analysis

The Army initiated its capacity analysis by collecting capacity-related data for its active duty installations (e.g., buildings, land) based on 28 capacity metrics, such as buildable acres, maneuver areas, and instructional facilities. In calculating capacity excesses or shortages through a comparison of the physical capacity data with requirements, the Army considered a surge capability to ensure that sufficient capacity existed to meet unforeseen military contingencies, future threats, and future needs as outlined in DOD's 20-year force structure plan. The Army's surge analysis also reinforced the importance of preserving assets such as maneuver land that would be difficult to reconstitute if eliminated. Table 8 shows selected Army's capacity results for 7 of 12 mission areas, as presented in the Army's BRAC 2005 report.

⁵ Modularity refers to the Army Modular Force Initiative whereby the Army is transforming its force structure by increasing from 67 brigade combat teams to 77 modular brigade combat teams (43 active Army and 34 Army National Guard) with the potential for 48 active Army modular brigade combat teams.

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Table 8: Excess Capacity Identified by the Army for Selected Mission Areas

Mission	Capacity metrics	Percentage of excess capacity (shortage)
Deployment	Fixed wing runway, surfaced	28.6
	Aircraft apron, surfaced	(17.9)
Mobilization	Vehicle maintenance shop	(20.3)
	Annual training/mobilization barracks	(56.9)
Institutional training and education	General instructional facilities	(8.4)
	Applied instructional facilities	(18.6)
Well-being	Medical center/hospital	9.2
	Dental facility	(6.9)
	Enlisted unaccompanied personnel housing	(6.3)
	Education center	(4.5)
	Nursery and child care facility	(43.5)
Joint logistics	Depot maintenance	24.7
	Armaments production	219.9
	Ammunition storage	65.9
Command, control, computers and communications/ headquarters	General administrative space	4.9
	Small unit headquarters	(41.9)
	Large unit headquarters	(11.5)
Research, development, test and evaluation	Specialized training facilities	61.9

Source: GAO analysis of the Department of the Army data.

As shown in table 8, some areas, such as armaments production and ammunition storage, had excess capacity ranging from about 5 percent to about 220 percent while other areas had shortages. Further, the Army reported that it had a service-wide excess of over 1.5 million square feet of general administrative space even though 35 installations reported shortages. While the Army's BRAC report did not indicate the overall impact the Army's proposed closure and realignment recommendations would have on reducing excess capacity, Army officials projected that its proposed actions would reduce excess general administrative space by over 1 million square feet while realigning Army units to better match the remaining capacity.

While the overall capacity excesses and shortages, identified by installation, provided insights for potential closures or realignments, the Army subsequently conducted more detailed capacity analyses that identified the types of facilities and training lands that were required to support various units (e.g., light and heavy maneuver brigades, small and large training schools). In this manner, the Army had the ability to determine which installations could handle additional missions and units and what infrastructure improvements and additional military construction might be required to support those units.

The Army did not perform a similar capacity assessment of the reserve components' facilities because of the nature of their facilities and differing objectives, but did collect and assess data related to, for example, the condition and location of facilities, as well as expected costs such as construction and force protection upgrades that may be necessary to provide for viable reserve consolidation opportunities. Prior to the collection of this data, the Army sought interest from the state Adjutant Generals of the National Guards for units in each state participating in such efforts on a voluntary basis.

Military Value Analysis

The Army's military value analysis focused on a set of 40 attributes, such as maneuver land, and housing availability for its soldiers and dependents, that are characteristics the Army considered desirable for its installations to meet Army needs. Attributes with less flexibility for change, such as the availability of maneuver land or direct fire ranges, were among those most highly valued in developing a scoring plan for evaluating the military value for each of the Army's installations. According to Army officials, this reflected their view of the criticality of possessing adequate acreage to conduct unit training, particularly in view of the expectation for an increase in the number of brigades and return of various forces from overseas locations. The Army's military value attributes also reflected consideration of its role in supporting the global war on terrorism, homeland defense, and transformation.⁶ Through a process of weighting each of the Army's attributes, the Army derived relative weights for the four

⁶ DOD defines transformation as "a process that shapes the changing nature of military competition and cooperation through new combinations of concepts, capabilities, people and organizations that exploit our nation's advantages and protect against asymmetric vulnerabilities to sustain our strategic position, which helps underpin peace and stability in the world."

legislatively-mandated military value selection criteria. As shown in table 9, three of the four criteria had relatively higher weights than the remaining criterion dealing with cost and manpower implications. Imbedded within these criteria was a key focus on the need for availability of existing land and facilities for expansion purposes to address the needs as cited in those specific criteria. In this regard, the Army placed high value on these criteria as a hedge against uncertain future requirements and to ensure that they did not dispose of assets such as large tracts of land, which would be difficult to reacquire.

Table 9: Army Military Value Criteria Weights

Figures in percentages

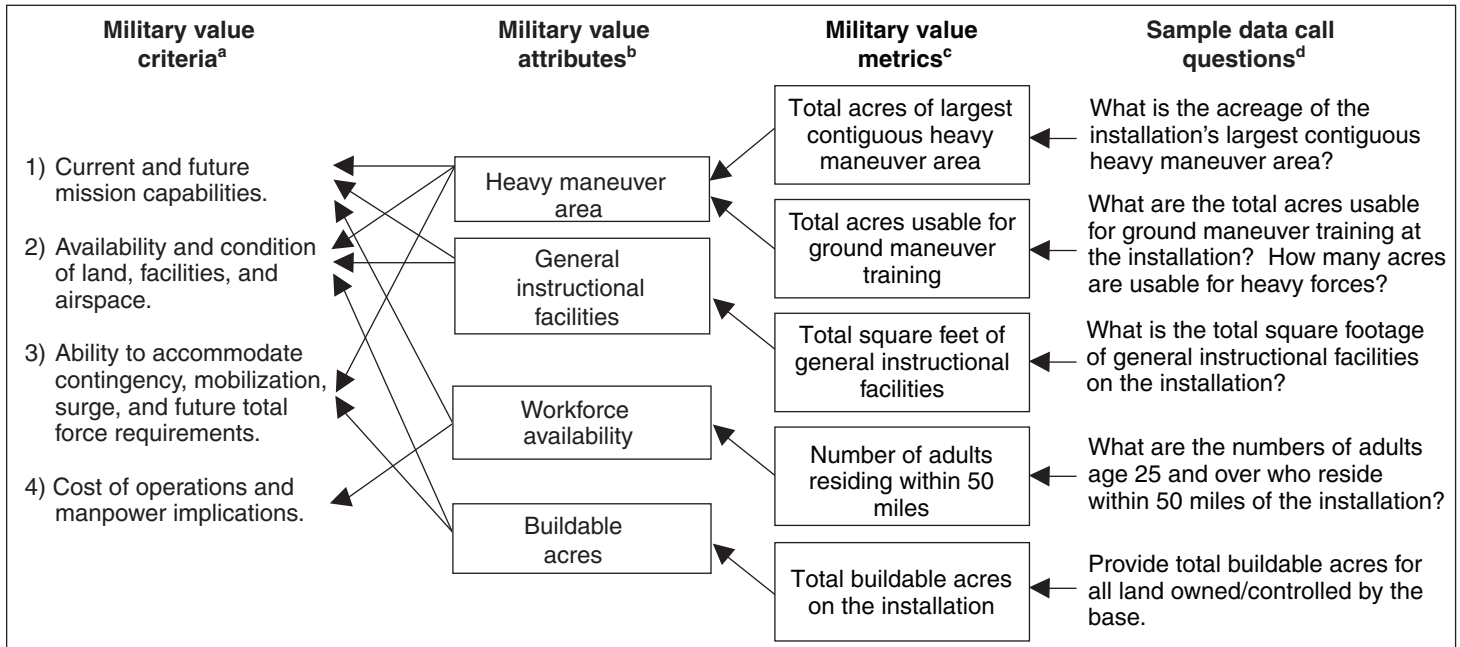
Criteria	
1. The current and future mission capabilities and the impact on operational readiness of the total force of the Department of Defense, including the impact on joint warfighting, training, and readiness.	29
2. The availability and condition of land, facilities, and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions) at both existing and potential receiving locations.	29
3. The ability to accommodate contingency, mobilization, surge, and future total force requirements at both existing and potential receiving locations to support operations and training.	32
4. The cost of operations and the manpower implications.	10
Total	100

Source: DOD and Department of the Army.

Note: The system of weights provided a basis for assigning relative value to data collected and tabulated across each military value dimension.

In performing its military value assessment, the Army assessed each active duty installation and ranked each of them across the four military value selection criteria to more fully evaluate the potential for realignment and closure actions. This contrasted with the approach the Army used in the 1995 BRAC round when it developed a military value ranking for individual installations under one of 13 mission categories, which made it more difficult to assess an installation for use in a different mission area. For this round, the Army assessed the military value of each of its installations based on a common framework that linked attributes, metrics, and data call questions to military value as shown in figure 9.

Figure 9: Selected Attributes, Metrics, and Data Questions Used to Assess Military Value of an Army Installation



Source: GAO analysis of Army data.

^aThe BRAC military value criteria are the first four BRAC selection criteria.

^bMilitary value attributes are characteristics of each criterion. The Army used a total of 40 attributes.

^cMilitary value metrics are measures for the attributes. The Army used over 80 metrics.

^dThe Army used over 80 data call questions.

During its assessment, the Army stressed multi-function capabilities for installations. To account for the unique capabilities that some Army single-function installations provided, the Army applied military judgment to modify the initial ranking of its installations to better identify installations that the Army believed were best suited to meet its current and future capabilities. For example, the Tripler Army Medical Center in Hawaii, which initially ranked low in military value, is DOD's only medical center of significant size in the Pacific and therefore was retained for strategic reasons. Ultimately, the Army moved nine installations higher in the list based on their unique capabilities.⁷ Subsequently, those installations with a

⁷ The nine installations were Holston, Radford, and Lake City Army Ammunition Plants; Watervliet Arsenal; Military Ocean Terminal Sunny Point; Forts Myer and Detrick; and Tripler and Walter Reed Army Medical Centers.

lower military value ranking became more vulnerable to closure or realignment actions.

With respect to its reserve components, the Army did not perform a military value rank-ordering of these various installations across the country, but instead assessed the relative military value that could be obtained by consolidating various facilities into a joint facility in specific geographical locales to support, among other things, the reserve components' training, recruiting, and retention efforts.

Army Audit Agency's Role in the Process

Throughout the BRAC process, the Army Audit Agency advised the Army on the development and implementation of its internal control procedures; performed audits of the Army's conduct of the process, including the validation of data and various models used to assist in decision making. During the capacity and military value data calls, the Army Audit Agency performed on-site audits of data collection efforts at various installations on a sample basis to validate the data being gathered. Instances of inaccurate data or inadequate source documentation identified during these audits were generally corrected by the Army. As a result, the auditors generally found the data to be sufficiently reliable for use in the BRAC process.

Identification and Assessment of Alternate Scenarios and Selection of Recommendations

The Army used the results of its capacity and military value analyses, along with the 20-year force structure plan, as the foundation for the development of hundreds of potential closure and realignment scenarios. Scenarios under consideration were refined using various models—primarily an optimization model and the Cost of Base Realignment Actions (COBRA) model—along with military judgment. The optimization model, using capacity data, military value scores, and other data, provided the Army with various competing, plausible alternatives associated with the restationing of various missions and forces within the infrastructure. The model provided for alternative scenarios and their impact on overall military value as functions were moved to higher ranked installations. The COBRA model, which was used by all military services and joint cross-service groups to address the fifth selection criterion regarding costs and savings, provided the Army with the relative cost and savings estimates of these various alternatives.

The Army further assessed the various scenarios in terms of the remaining selection criteria 6 through 8, regarding the economic impact on communities affected by BRAC, the ability of the infrastructure within communities to support military missions, and the environmental impact of the BRAC actions, respectively. The Army used input from various DOD-generated models in assessing its scenarios against these criteria, which, while important and mandated by the BRAC legislation, played less of a role than that of military value. However, the Army considered these criteria in order to ensure that there were no insurmountable challenges that would derail the implementation of any particular scenario. In addition, they were used to differentiate between competing scenarios. For example, the Army determined its final stationing of modular brigades based in part on its assessment of the environmental impact these brigades would have on the receiving installations.

The Army also integrated into the overall process those scenarios that had been generated for the reserve components in the parallel process referred to previously. Those scenarios were developed through a series of meetings with state officials across the country. As with the active component, the reserve component scenarios were assessed using the COBRA model and other models.

The Army also worked closely with the joint cross-service groups as they developed recommendations that affected Army installations. In some cases, the Army developed scenarios that were provided to the joint cross-service groups for further consideration. For example, the Army developed initial scenarios proposing to close three chemical demilitarization facilities, which were subsequently provided to the Industrial Joint Cross-Service Group, which ultimately developed and processed recommendations for these closures. Alternatively, some scenarios which ultimately became Army recommendations were developed in conjunction with the joint cross-service groups. For example, the Industrial Joint Cross-Service Group's scenario regarding the realignment of the depot maintenance workload out of the Red River Army Depot in Texas, was instrumental in leading to an ultimate Army recommendation to close the depot. Similarly, the Education and Training Joint Cross-Service Group developed a scenario to realign the Army's Armor Center and School from Fort Knox, Kentucky to Fort Benning, Georgia, an action that was later folded into the Army's broader realignment of Fort Knox. As the Army and cross-service group recommendations were being finalized, the Army held a series of meetings with the joint cross-service groups to ensure that all

recommended actions involving Army installations were properly integrated and corresponding impacts were considered in their entirety.

Recommendations Approved by DOD

The Army produced 56 recommendations⁸ that were approved by DOD—6 closures of active component installations, 6 realignments of active component installations, and 44 recommendations consisting of multiple reserve components closure and realignment actions grouped by state or region. These recommendations, along with other Army-related recommendations produced by the joint cross-service groups, align, for the most part, with the Army’s objectives of reducing the number of primarily single-function, smaller installations and transforming the infrastructure to better meet current and expected future Army needs. Table 10 provides the financial implications of the Army’s recommendations.

Table 10: Financial Aspects of the Army’s Recommendations

Fiscal year 2005 constant dollars in millions

Installations	DOD report page	One-time (costs)	Net implementation (costs) or savings ^a	Net annual recurring (costs) or savings	Payback period (years)	20-year net present value (costs) or savings ^b
Reserve Components ^c	Army-25 to 120	(\$2,856.8)	(\$1,557.4)	\$322.8	12.3 average	\$1,598.6
Close Fort Monmouth, NJ	Army-11	(822.3)	(395.6)	143.7	6	1,025.8
Realign Maneuver Training ^d	Army-20	(773.1)	(244.1)	123.3	5	948.1
Close Fort McPherson, GA	Army-8	(197.8)	111.4	82.1	2	895.2
Close Fort Monroe, VA	Army-19	(72.4)	146.9	56.9	1	686.6
Close Red River Army Depot, TX	Army-16	(456.2)	(216.6)	76.5	4	539.0
Close Fort Gillem, GA	Army-6	(56.8)	85.5	35.3	1	421.5
Close U.S. Army Garrison (Selfridge) MI	Army-106	(9.5)	91.4	18.1	immediate	260.9
Realign Single Drill Sergeant School ^e	Army-105	(1.8)	7.6	2.5	immediate	31.3
Realign Fort Wainwright, AK	Army-5	(0.1)	0.2	0.1	2	0.7
Realign Fort Bragg, NC	Army-10	(334.8)	(446.1) ^f	(23.8)	never	(639.2)

⁸ These recommendations represent only those produced by the Army as detailed in DOD’s 2005 BRAC report. In addition, the various joint cross-service groups produced various recommendations that affected Army installations. Those recommended actions are detailed in the appropriate appendices in this report.

**Appendix III
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(Continued From Previous Page)

Fiscal year 2005 constant dollars in millions

Installations	DOD report page	One-time (costs)	implementation (costs) or savings^a	Net annual recurring (costs) or savings	Payback period (years)	20-year net present value (costs) or savings^b
Realign Fort Hood, TX	Army-15	(435.8)	(579.5)	(45.3)	never	(980.4)
Realign Operational Army (IGPBS) ^g	Army-22	(3,946.0)	(5,229.0)	(294.7)	never	(7,826.7)
Total		(\$9,963.4)	(\$8,519.1)	\$497.6		(\$3,038.6)

Source: GAO analysis of DOD data.

^aThis represents net costs or savings within the 6-year implementation period required to implement BRAC recommendations.

^bDOD used a 2.8 percent discount rate to calculate net present value.

^cThe Army produced 44 recommendations realigning its reserve components, which are combined into one entry in the table.

^dThis recommendation primarily stations a modular brigade and some overseas forces at Fort Knox, Kentucky while realigning the Armor Center and School to Fort Benning, Georgia.

^eThis recommendation realigns the drill sergeant schools from Fort Benning, Georgia and Fort Leonard Wood, Missouri to Fort Jackson, South Carolina.

^fThe Army BRAC 2005 report mistakenly reported this figure as a savings rather than a cost. The Army subsequently issued a correction.

^gThis recommendations primarily restations some overseas forces at Fort Bliss, Texas and Fort Riley, Kansas.

As shown in table 10, the Army's recommendations are expected to produce nearly \$500 million in estimated net annual recurring savings beginning in 2012, but have a large 20-year net present value cost of about \$3 billion, rather than savings which are typically expected in that timeframe; this is due primarily to very large up-front costs, nearly \$10 billion in expected one-time costs, that are required to implement the recommendations. A few of the recommendations, particularly the one involving the redeployment of Army forces to the United States under DOD's Integrated Global Presence and Basing Strategy, are responsible for the high costs and negative returns.

The recommended closures of 6 active duty installations, which are largely installations of lower military value within the Army, have the greatest potential for savings with a combined estimated net present value savings over the next 20 years of about \$3.8 billion and payback periods of 6 years or less. Most of the expected savings from these recommendations are due to reductions in personnel costs and overhead (e.g., base operations support). Expected personnel savings from these 6 recommendations are driven by the elimination of nearly 3,500 personnel of which nearly 25 percent, or over 800, are military.

While 3 of the remaining 6 active duty base realignment recommendations as shown in table 10 also produce savings, 3 recommendations account for more than \$9.4 billion in 20-year net present value costs and will never payback. The largest of these three latter recommendations involves the rebasing of Army forces to the United States from overseas locations. The Army projected that this realignment alone has a one-time cost of about \$4 billion and annual recurring costs of almost \$300 million and will never produce savings. Army officials note that a contributory factor to these high costs is the fact that the Army could not claim the estimated savings that would accrue from the expected closure of the overseas installations and the departure of Army forces from those locations. The Army estimates that had these estimated savings been accounted for in BRAC, the recommended actions would have produced substantial net savings rather than the costs as indicated. We did not validate the Army's savings estimates for the overseas closures, and it is not clear to us that sufficient information is available at this time to fully assess the total changes in overseas basing costs since much of the detail regarding these plans has not been finalized. Further, we agree with DOD that it would not be appropriate for the Army to include these particular savings in BRAC as BRAC provisions in existing legislation do not contemplate consideration of savings from the closure or realignments that take place outside of the United States.⁹

With regard to the reserve components, the Army adopted 44 recommendations, which taken as a whole, would provide a net present value savings of over \$1.5 billion over the next 20 years but have an average payback period of over 12 years. Five of the recommendations involve the realignment of the Army Reserve's command and control structure within five regional areas. The remaining recommendations realign reserve components facilities in 38 states and Puerto Rico by constructing 125 new armed forces reserve centers while closing 176 Army Reserve centers and with the understanding that various states would close 211 National Guard armories and centers.¹⁰ These closures represent about 10 percent of the over 4,000 existing Army reserve components' facilities across the country.

⁹ For purposes of BRAC 2005 actions, the United States is defined under P.L. 101-510, section 2910(7) as the 50 states, District of Columbia, the Virgin Islands, American Samoa, Commonwealth of Puerto Rico, and any other commonwealth, territory, or possession of the United States.

¹⁰ In addition, some of these armed forces reserve centers are expected to include some reserve activities from the other services.

While most of the Army's projected savings associated with the reserve components' recommendations result from reductions in personnel costs by eliminating over 4,000 personnel, about 80 percent of these eliminations are military personnel.

Issues Identified with Approved Recommendations

Time did not permit us to assess the operational impact of each recommendation, particularly recommendations that included multiple closure and realignment actions across multiple locations. However, we offer a number of broad-based observations about the proposed recommendations. Some recommendations may warrant additional attention from the BRAC Commission based primarily on issues associated with the projected savings from military personnel reductions, uncertainties regarding the rebasing of overseas forces and modularity, potential impact of expected increase in the use of training ranges, the impact on gaining communities, uncertainties regarding the reserve component recommendations, the bundling of various recommendations, and concerns over the transfer of workload from Red River Army Depot, Texas.

Military Personnel Reductions

Our analysis showed that about \$450 million of the Army's projected annual recurring savings from its recommended closure and realignment actions are based on claimed savings from eliminating military personnel. Army officials acknowledged that a large portion of their annual recurring savings were derived from military personnel eliminations but noted that the Army's financial outlook improved if joint cross-service group recommendations involving Army bases are considered. Nevertheless, the Army does not plan to reduce its active or reserve component end-strength in implementing these recommendations. According to Army officials, these personnel are being redistributed within the Army. While we believe that the potential exists for these personnel to provide a benefit to the Army in their new positions, it represents a savings to the Army in the sense of potentially avoiding costs that otherwise might be incurred in increasing authorized end strength levels. They do not represent dollar savings that might be shifted to other appropriations to meet other priority needs such as equipment modernization or improving remaining facilities, areas typically cited as likely beneficiaries of BRAC savings. Further, because DOD envisions BRAC savings in general to be used to partially fund up-front investment costs associated with implementing BRAC actions, the Army may be forced to find other sources of funding as military

personnel savings will not likely be available for this purpose. The Commission may wish to consider this issue in evaluating the BRAC recommendations.

Uncertainties regarding the Rebasing of Army Overseas Forces to the United States and Force Structure Changes due to Modularity

Uncertainties over plans to realign thousands of soldiers and their families to the United States as a result of the Integrated Global Presence and Basing Strategy as well as the Army's modularity efforts to create new modular brigades have the potential to change the expected costs and savings associated with the Army's BRAC recommendations. The Army's BRAC recommendations incorporate about 15,000 of the 47,000 Army personnel currently expected to return as a result of the global basing study.¹¹ The Army also incorporated the stationing of five of ten brigades being created under the Army's modular restructuring effort.¹² Estimated BRAC costs and savings are typically calculated based on assumptions for specific units or missions that are expected to realign to specific installations in specific years. Changes to these assumptions can alter the costs and savings associated with the actions being undertaken. Existing Army plans for the return of overseas forces and modularity were the basis for the assumptions used to calculate estimated costs and savings and to determine potential impacts to the environment and communities surrounding the affected installations. However, our analysis identified several areas of uncertainty that could affect the assumptions contained in those recommendations:

- Army officials told us that DOD has been and is continuing to modify its overseas restationing plans, even as the Army BRAC recommendations were being finalized. Because of BRAC reporting requirements, the

¹¹ According to Army officials, the return of 15,000 soldiers was directly incorporated into the Army's BRAC recommendations, including the 1st Armored Division headquarters and three heavy maneuver brigades from Germany to Fort Bliss, the 1st Infantry Division headquarters, division support command, and aviation brigade to Fort Riley, and military police, engineer, and logistical units to Fort Knox, Kentucky. The Army also validated existing plans to restation about 10,000 soldiers to Schofield Barracks, Hawaii; Fort Lewis, Colorado; and Fort Carson, Colorado. The remaining 22,000 soldiers will return to the United States individually to be restationed as part of the Army's force restructuring effort (called modularity).

¹² The Army's current modular force restructuring plan calls for the creation of ten modular brigades within the United States by year 2006, with the possibility of an additional five modular brigades beyond then. As part of its BRAC analysis, the Army validated existing stationing decisions for five of the ten new modular brigades and incorporated the stationing of the remaining five modular brigades into four of its BRAC recommendations.

Army had to finalize its recommendations before the overseas rebasing plans were finalized. Army officials indicated that the major overseas restationing actions included in the BRAC recommendations are expected to occur as currently envisioned. However, as plans continue to evolve, the specific details regarding the rebasing could be adjusted, with corresponding adjustments in costs and savings being required.

- In a May 2005 report produced by the Commission on Review of the Overseas Military Facility Structure of the United States,¹³ the Commission recommended slowing down the Army's entire overseas restationing process. If DOD heeds this recommendation, the timing of some planned restationing actions could be affected with the potential risk of not completing BRAC closure or realignment actions within the 6-year implementation period with a 2011 completion date as established by the BRAC legislation. Further, over half of the Army's forces returning from overseas are expected to be folded into the new modular brigades being formed in the United States. Uncertainties over the timing of their return could also impact the costs and savings associated with those brigades.
- In a March 2005 congressional testimony, we reported that the design configuration of the Army's modular brigades had not been finalized at that time.¹⁴ In this regard, the Army is considering adding an additional combat battalion to each of its modular brigades and has not finalized the design of higher echelon and support units. Any such changes to the design that was used in deriving the cost and savings estimates and potential impacts to the environment and communities of the recommended actions are likely to impact the estimates and may alter the potential impacts as well.

The Commission may wish to ensure that it has the Army's latest plans regarding the overseas rebasing and modularity efforts in reviewing the Army's recommendations.

¹³ This commission, also known as the Overseas Basing Commission, was established by Congress in 2003. See P.L. 108-132, section 128 (Nov. 22, 2003). It was created to evaluate, among other things, the current and proposed overseas basing structure of the U.S. military forces. The Commission's observations are included in the *Report of the Commission on Review of the Overseas Military Facility Structure of the United States* (Washington, D.C.: May 9, 2005).

¹⁴ GAO, *Force Structure: Preliminary Observations on Army Plans to Implement and Fund Modular Forces*, [GAO-05-443T](#) (Washington, D.C.: Mar. 16, 2005).

Potential Impact on Training Ranges

The Army's BRAC recommendations provide for the stationing of returning overseas forces and new modular brigades on existing Army installations. Our review of Army documentation shows these installations are already facing environmental and encroachment issues that constrain their ability to meet unit training requirements. These issues raise concerns that currently constrained installations may face additional challenges and unexpected costs in meeting the training requirements of the additional forces the Army plans to station at these installations. As we reported in June 2005, several of the Army's training ranges already face challenges resulting from inadequate maintenance and modernization and may also require substantial investment for modernization to support the training requirements of the new brigades.¹⁵ Army officials stated they reviewed their BRAC recommendations to ensure that there were no insurmountable environmental or encroachment obstacles. They also noted that their recommendations included costs for training range upgrades. However, we have not validated whether these costs will adequately address training range limitations. Further, we have concerns as to whether the Army will need to acquire additional training range land at existing bases that are already experiencing range limitations—a potential cost not identified in the current BRAC recommendations.

Concerns over the ability of existing training ranges to meet training requirements are exacerbated by uncertainties over the final number and composition of the modular brigades as well as the potential for additional forces returning from overseas. Because of existing constraints on training ranges, the Army developed scenarios to examine the possibility of stationing operational Army units on other installations, including installations belonging to other military services and Army installations with considerable acreage such as the Yuma Proving Ground in Arizona. The Army deemed none of these scenarios feasible for various reasons, such as the configuration of other service installations and their associated training ranges did not meet Army training requirements. For other scenarios, such as use of the Yuma Proving Ground, the lack of adequate infrastructure and the associated high military construction costs that would be required essentially made them infeasible. However, Army officials told us that should the Army decide to create an additional five modular brigades or bring additional forces back from overseas, it may

¹⁵ GAO, *Military Training: Better Planning and Funding Priority Needed to Improve Conditions of Military Training Ranges*, [GAO-05-534](#) (Washington, D.C.: June 10, 2005).

become necessary to station these units at installations such as the Yuma Proving Ground, which has large tracts of land, because existing Army installations might not be able to support these additional units. The Commission may wish to review the Army's plan for addressing training range issues and the potential need to acquire additional land to mitigate likely challenges the Army faces in the probable increased use of its training ranges.

Impact on Gaining Communities

Several of the Army's recommendations involve relocating significant numbers of forces and their families to various installations, which raises concerns about the ability of local communities to adapt to these changes and absorb these personnel increases. For example, Fort Bliss, Texas is expected to receive a net gain of over 11,000 military and civilian personnel. The full impact of such increases on surrounding communities, particularly on schools, housing, and other community infrastructure, is unclear at this time. According to Army officials, its analysis for the selection criterion regarding community impact (criterion seven) provided an overall assessment of the ability of local communities impacted by a potential BRAC action to handle additional personnel and their families, including the identification of potential obstacles that could prevent a recommendation from being implemented. For example, in assessing the impact of the return of forces from overseas, the Army's review of community infrastructure for Fort Bliss and Fort Riley indicated the importance of working with these communities to assess and implement housing and schooling requirements. However, the Army concluded that these issues did not represent impediments to implementing recommendations involving these bases.

Addressing the challenges that these communities face may require significant investments, particularly with regard to available housing and schools, which would increase pressures for federal assistance from various agencies to help mitigate these needs. While such costs might be borne outside the defense budget to some extent, they would nevertheless represent additional costs to the federal government. These potential costs, although not required to be captured in DOD's cost and savings analyses for the various recommended actions, could be substantial, given the number of Army installations with expected personnel gains. Army officials stated that they expect to resolve these issues during implementation and that by staggering the movement of units being moved to these installations, they believe they will be able to reduce adverse impacts and enable communities to better prepare for their arrival. Nevertheless, some

communities may lack the infrastructure to easily absorb these forces. This could impact the timing of the movement of forces to these communities, which in turn could alter current BRAC cost and savings estimates from a governmentwide perspective. The Commission may want to review the Army's plans for addressing these issues.

Uncertainties regarding State Involvement in the Reserve Components' Recommendations

We identified a number of uncertainties associated with the Army's reserve components' recommendations. Most of these recommendations, as detailed in the Army's 2005 BRAC report, are contingent upon certain actions that have either yet to take place or be decided. For example, the Army expects to build 125 Armed Forces Reserve Centers, which are currently expected to be able to accommodate National Guard units as well as Army Reserve units and some reserve units from the other military services. However, the decision to relocate these National Guard units lies with state authorities. While the states with Guard units that are affected by BRAC recommendations have agreed, on a voluntary basis, to be included in the process, they can opt out at any time, thereby creating uncertainties over future state actions and their impact on the precision of current cost and savings estimates for these recommendations. Should state authorities decline to relocate some or all of these units, the costs and savings associated with these armed forces reserve centers could change. Some of the reserve components' recommendations have other contingencies as well. For example, the recommendation for the Texas reserve components calls, in part, for an Armed Forces Reserve Center to be located in Amarillo, Texas, if the Army is able to acquire land suitable for the construction of facilities there. Many others are like this as well. Should the land not be available, these recommendations will need to be adjusted as well as the related costs and savings estimates. While the Army's reserve components' recommendations as a whole are projected to generate more than \$1.5 billion in net savings over a 20-year period if implemented, the uncertainties regarding some of the actions these recommendations are relying on could result in increases or decreases to this estimate. The Commission may wish to seek clarifications as to the status of these state-based actions and the potential consequences if some of those actions are not executed as currently planned.

Bundling of Various Recommendations Lessens Visibility of Costs

Most of the Army's recommendations involve the bundling of multiple closure and realignment actions under one recommendation, which reduces the visibility of the estimated costs and savings as well as the payback periods of the individual actions that are embedded within the

recommendation. While the the Army only produced six recommendations for the realignment of its active component installations, most of these recommendations have several components to them. For example, one Army recommendation involves the realignment of the Armor Center and School from Fort Knox, Kentucky, to Fort Benning, Georgia; the activation of a new modular brigade at Fort Knox; the relocation of various combat service support and other units from Europe and Korea to the United States; and the relocation of a reserve training center from Fort McCoy, Wisconsin, to Fort Knox. Similarly, the Army packaged all of its proposed reserve components' realignments and closures within a state into a single recommendation for that state. As a result, there may be components within a recommendation that have relatively high costs or long pay-back periods (or never produce savings) even though the recommendation taken as a whole appears to have relatively higher savings or a shorter payback period. The Commission may therefore wish to request and examine information on the costs and savings associated with these individual actions. The following examples highlight these potential issues:

- The Army's maneuver training recommendation would realign Fort Knox by incorporating several elements of scenarios the Army and the Education and Training Joint Cross-Service Group developed over time. The DOD-approved recommendation includes the stationing of a new modular brigade at Fort Knox. However, the Army's original scenario for realigning Fort Knox, which did not include stationing the modular brigade or realigning the Armor Center and School, would have generated a 20-year net savings of almost \$225 million. The Education and Training Joint Cross-Service Group's related scenario involving the relocation of the Armor Center and School from Fort Knox to Fort Benning would have generated a 20-year net savings of over \$1.3 billion. The Army's approved recommendation combined most of the elements of these two scenarios but generated 20-year savings of about \$950 million, or about \$500 million less than one might have expected. The difference may be largely attributed to the inclusion of the new modular brigade in the Army's final recommendation.
- The Army's reserve components' transformation recommendation in Arizona is expected to have a payback period of 5 years and generate a net savings of almost \$52 million over a 20-year period. However, one action contained within this recommendation involves the creation of an Armed Forces Reserve Center at the Buckeye Training Site, Arizona. A previous scenario, which focused solely on this action, indicated that the Army would incur a net cost of almost \$9 million over the 20-year

period and that it would take more than 100 years to produce savings. By bundling this action with others, the net costs of this action are obscured by the net savings of the recommendation's other actions.

Red River Army Depot,
Texas

We are raising several issues with the recommended closure of the Red River depot and the transfer of its functions to other locations that may warrant further review by the Commission. The issues relate to the transfer of the Red River combat vehicle workload to the Anniston Army Depot, Alabama; the transfer of certain munitions to the McAlester Army Ammunition Plant, Oklahoma; and the replication of Red River's capability to remove and replace rubber pads for vehicle track and road wheels.

Potential Transformation
Opportunity for Depot
Maintenance

As discussed in appendix VIII, the Industrial Joint Cross-Service Group, when developing its maintenance proposals, completed its depot workloading analysis on the basis of one and a half shifts per workday (60 hour workweek) rather than the one shift per day (40 hour workweek) under the current system, thus increasing available capacity and allowing it to consider depot closures. Industrial group officials told us that use of more than one shift, which is a common private industrial better business practice, would enhance transformational opportunities in that it would provide for more efficient use of facilities and equipment. Industrial group officials stated that the expanded shift concept, although transformational, was only a "sizing or planning tool" to examine ways to increase depot capacity and that it would be left up to each depot to decide whether or not to employ the expanded shift concept. In other words, it was a way to see if a depot could accommodate the incoming transfer of additional workload. We were also told that no policy changes were envisioned to actually implement the expanded shift concept. Available information indicates that the closure recommendation may not be implemented based on the concept of a one and a half shift operation at the Anniston Army Depot, which is to receive the combat vehicle workload from Red River. In our visit to Anniston Army Depot, officials told us that, with additional construction to increase capacity as provided for in the supporting documentation for the recommendation, they would be able to accommodate this additional workload without much difficulty and without working under the expanded shift concept. Industrial group officials acknowledged that, while some one and a half shift operations may be implemented at other activities, only a one shift operation was envisioned at Anniston, given the uncertainty associated with future requirements and the need to minimize risk by providing for additional capacity if a contingency arises. As such, it appears that there is essentially

no substantive transformational changes occurring with the closure of the Red River Army Depot.

Uncertainties on Munitions Storage

The BRAC recommendation to close the Red River Depot also dictates the transfer of its munitions storage mission to another Army depot—McAlester Army Ammunition Plant, Oklahoma. However, officials at Red River told us they were concerned about whether storage capacity at McAlester was sufficient to handle all of Red River’s munitions. Specifically, Red River officials told us during a recent visit that available excess storage capacity at McAlester has decreased since BRAC data were gathered, thus raising concerns whether all of Red River’s munitions can be stored there. Further, Red River officials asserted that McAlester did not have sufficient storage capacity for special types of munitions without constructing new storage facilities. According to Red River officials, certain munitions (category I and II) require different storage capacity and that McAlester currently does not have enough storage capacity for Red River’s entire category I munitions. However our analysis of the closure recommendation supporting documentation does not include any provision for military construction funds. Industrial group officials told us, however, that it expects that the McAlester plant will demilitarize much of its ammunition and thus free up space for the munitions stored at Red River. However, given that some diversion of demilitarization funds for other purposes has occurred in recent years, it raises questions as to the extent of the demilitarization that will occur. Nonetheless, in their opinion, this potential issue is not of concern to them. Time did not permit us to fully resolve the conflicting information regarding the extent to which the munitions may be transferred and McAlester’s ability to sufficiently accommodate the storage of any transferred munitions.

Transfer of Rubber Production Capabilities

Red River officials also raised concerns about the complexities associated with replicating its rubber production capability, which consists of removing and replacing rubber pads for vehicle track and road wheels, at Anniston Army Depot, Alabama, and that it is currently the only source for road wheels for the Abrams M1 tank. Specifically, Red River officials told us this capability is not an easy process to reproduce, including obtaining the required certification associated with the rubber production capability and that the processes must be qualified through rigorous testing. The complexities with replicating the rubber production capability was also echoed by officials at Anniston Army Depot, Alabama—the installation which is expected to absorb most of Red River’s combat vehicle workload. Officials at Anniston told us they expect a long certification process in order to perform the required rubber repair process and that this

Appendix III
The Department of the Army Selection
Process and Recommendations

represents the most serious challenge in the workload transfer of Red River's work. As to the Abrams M1 tanks road wheels, Red River officials told us that if the capability to produce road wheels is interrupted, the ability to sustain the warfighter is diminished and overall readiness could be degraded. To mitigate this risk, officials at Red River told us that it is imperative that the Army construct a new rubber production facility at Anniston, establish its processes and qualify its product before ceasing rubber production at Red River. Industrial group officials told us that, should a problem arise in this area, that commercial sources are available to purchase rather than repair these parts. We did not independently verify their assertion.

The Commission may want to review the extent to which these concerns associated with Red River are valid and whether they were adequately considered by DOD.

The Department of the Navy Selection Process and Recommendations

The Navy followed the common analytical framework established by the Office of the Secretary of Defense (OSD) for reviewing its functions and facilities. The Navy's process produced 21 base closure and realignment recommendations, which cover 63 active and reserve installations. The Navy projects that its recommendations would realize about \$7.7 billion in net present value savings over a 20-year period. Payback periods—the time required for savings to offset closure costs—range from immediate to 15 years and average 3.5 years. At the same time, there are limitations associated with the projected savings related to the lack of planned reductions in military personnel end-strength associated with the savings. Some of the Navy's recommendations may warrant additional attention from the BRAC Commission based on projected force structure changes, decisions to realign versus close some bases, and extended payback periods. The Naval Audit Service, which performed audits of the data, concluded that the data were sufficiently reliable for use during the BRAC process.

Organization and Focus

The Navy established an organization to conduct the closure and realignment analysis similar to the one it used in the 1995 round. The Secretary of the Navy established a group of senior military officers and civilian executives, the Infrastructure Evaluation Group (IEG), chaired by the Assistant Secretary of the Navy (Installations and Environment) to conduct the process, and a related team, the Infrastructure Analysis Team, to support the IEG. The Secretary subsequently established a second senior-level group, the Department of the Navy Analysis Group, chaired by the Special Assistant to the Secretary of the Navy for BRAC, that was subordinate to the IEG, and he directed it to conduct the Navy's analysis for Navy-unique functions.¹ Another associated group, the Functional Advisory Board, consisted of the Navy and Marine Corps principal members of the seven joint cross-service groups and was responsible for ensuring that the Navy leadership was informed of matters relevant to those groups and for articulating the Navy's position on common business-oriented support functions for Navy leaders.

The Navy established numerous goals for BRAC, organized around such considerations as (1) facilitating recruitment and training, (2) providing quality of life, (3) matching force structure to national defense strategy,

¹ At OSD, the Infrastructure Steering Group (ISG) and the Infrastructure Executive Council (IEC) provided overall coordination and direction to the DOD-wide process.

(4) adequately equipping the force, (5) ensuring access to an optimally integrated logistical and industrial infrastructure, and (6) maintaining secure and optimally located installations for mission accomplishment (including homeland defense). With these and other considerations in mind, the Navy established numerous objectives corresponding to DOD's BRAC principles, examples include:

- Optimize access to critical maritime training facilities.
- Accommodate the 20-year force structure plan.
- Facilitate active/reserve integration and synchronization.
- Leverage opportunities for joint basing and training.
- Enable further installation management regional alignment.
- Optimize regional management structure for recruiting districts and reserve readiness command.
- Minimize use of long-term leased administrative space.
- Provide flexible research, development, test, and evaluation infrastructure to adapt to Navy transformational mission changes and joint operations.
- Consolidate aircraft basing to minimize sites while maintaining ability to meet operational requirements.
- Rely on private-sector support services where cost-effective and feasible.
- Retain sufficient organic capability to effectively support maritime-unique operation concepts.
- Align Navy infrastructure to efficiently and effectively support Fleet Response Plan and Sea-basing concepts.
- Realign assets to maximize use of capacity in fleet concentration areas while maintaining fleet dispersal and viable antiterrorism/force protection capability.

Framework for Analysis

In executing its BRAC process, the Navy sought to eliminate excess capacity and reconfigure its current infrastructure so that operational capacity maximized warfighting capability and efficiency. The IEG approved four major areas for analyses: operations, education and training, headquarters and support activities, and other activities. These major areas were then further divided into functions to ensure that installations performing comparable functions were compared with one another and to allow identification of total capacity and military value for an entire category of installations.

The Navy's BRAC process included a review of 889 reporting activities—765 Navy and 124 Marine Corps—of which 673 were active component and 216 reserve component activities (reserve centers, reserve forces headquarters, reserve recruiting areas, and reserve personnel centers). As with previous BRAC rounds, capacity and military value analysis provided the starting point for the Navy's BRAC process. The Naval Audit Service served an important role in ensuring the accuracy of data used in these analyses through extensive audits of data gathered at various locations.

Capacity Analysis

For its capacity analysis, the Navy universe was defined at the activity or function level, and a capacity data call was distributed to the 889 reporting activities. Capacity analysis for each activity consisted of comparing the current Department of the Navy base structure to the future force structure requirements to determine whether excess base structure capacity existed within the Department of the Navy. Current force requirements were based on the existing force structure, and future force requirements were derived from the 20-year force structure plan.

All Navy and Marine Corps bases were placed into one of four categories for capacity analysis: operations, headquarters and support activities, education and training, and other activities. Each category used a different metric to analyze capacity. Almost all of the Navy's bases were contained in the operations function category. In evaluating air operations activities the Navy used hangar modules,² while in evaluating surface/subsurface

² The hangar module is defined as the hangar space, line space, administrative space, and maintenance shop space required to house on aircraft squadron. There are two types of hangar modules used: Type I, which supports carrier-based fixed wing aircraft and helicopters, and Type II, which supports larger aircraft.

operations activities it used a cruiser-equivalent concept,³ the same measures that were used in BRAC 1995.⁴ In evaluating ground operations activities, the Navy used a battalion-equivalent concept that considered the amount of administrative space, covered storage space, and maintenance space required to support a generic Marine Corps battalion. In evaluating munitions storage and distribution, the Navy used throughput (loading and unloading) and short-term storage functions to conduct its analysis. The Navy identified excess capacity in all four categories, as shown in table 11.

Table 11: Excess Capacity Identified by the Navy, by Function

Function	Percentage of excess capacity
Aviation	19
Surface/subsurface	25
Ground	
• Administrative	0
• Storage	12
• Maintenance	11
Munitions storage and distribution (naval weapons stations)	24

Source: Department of the Navy.

In completing its capacity analysis, the Navy assumed that it would be necessary to home base all aircraft and ships at the same time. The Navy did not include additional infrastructure requirements to accommodate surge capability. According to Navy BRAC officials, the force structure—number of ships and aircraft—is finite in number, and additional ships or aircraft could not be quickly produced in the event of a contingency. The officials stated that their analysis also ensured that sufficient flexibility was

³ That concept is a single metric that considered berthing capacity for all Navy surface ships normalized to the Cruiser class of ship. They must have cold-iron, homeport capability and must meet shore power quality and quantity requirements, water and sewage requirements, and channel depth and height restrictions. For example, an aircraft carrier equals four cruiser equivalents.

⁴ The capacity analysis for surface/subsurface activities considered all naval activities that reported cruiser-equivalent berthing capability except for the Naval District of Washington, Naval Support Activity New Orleans, and the Nuclear Power Training Unit, Charleston. These activities were excluded because they have limited capability and viability to homeport naval vessels.

retained to handle surge represented by operational tempo changes or unanticipated operational requirements. For example, for surface/subsurface operations, the Navy concluded that there was sufficient berthing space available in nonoperational bases (shipyards and weapon stations) to meet surge or other unanticipated operational requirements.

Navy officials projected that their closure recommendations, if approved, would reduce excess capacity in aviation operations from 19 percent to 16 percent, in surface/subsurface operations from 25 percent to 17 percent, and in munitions storage and distribution⁵ operations from 24 percent to 16 percent, but they would not reduce excess ground operations capacity. The Navy did not recommend closing any ground operations facilities, citing cost considerations and noting that planned force structure changes would further increase its requirements.

Military Value Analysis

In completing its military value analysis, the Navy targeted military value questions to specific activities in order to rank installations in the four operational subgroups from highest to lowest in military value. Each of the four operational subgroups had overarching concepts by which military value scoring plans were then developed to measure and rank each installation. Military values were assigned to 35 Navy and Marine Corps installations under air operations, 29 surface/subsurface installations, and 11 ground operations installations. Table 12 shows how the Navy weighted military value criteria in its analyses of operational functions.

⁵ The analysis showed no excess capacity for munitions throughput and showed excess capacity for storage.

Table 12: Navy Military Value Criteria Weights

Figures in percentages

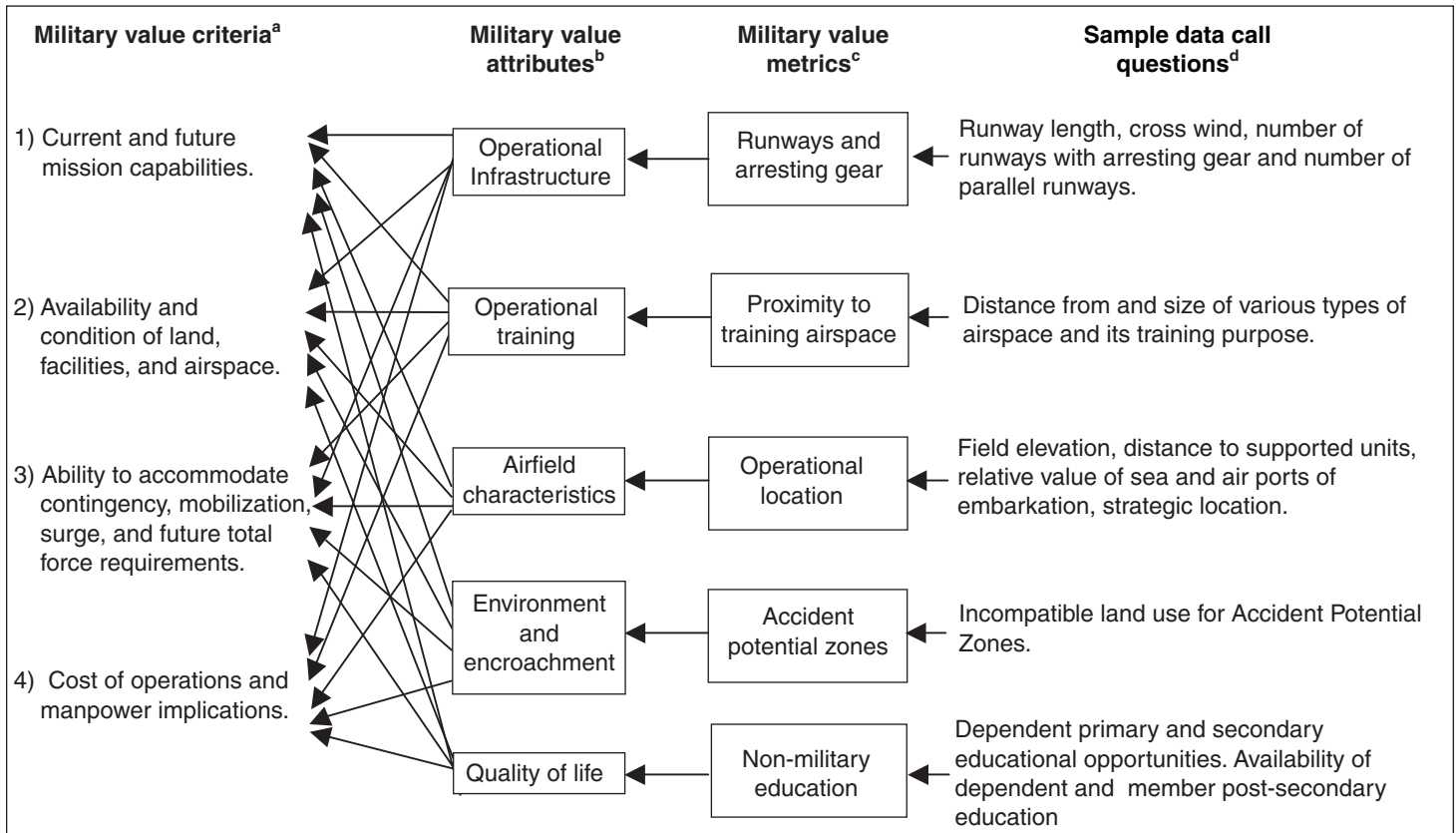
Military value criteria	
1. The current and future mission capabilities and the impact on operational readiness of the total force of the Department of Defense, including the impact on joint warfighting, training, and readiness.	50
2. The availability and condition of land, facilities, and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions) at both existing and potential receiving locations.	20
3. The ability to accommodate contingency, mobilization, surge, and future total force requirements at both existing and potential receiving locations to support operations and training.	15
4. The cost of operations and the manpower implications.	15
Total	100

Source: DOD and Department of the Navy.

Note: The system of weights provided a basis for assigning relative values to data collected and tabulated across each military value dimension.

Key factors considered in evaluating the military value of aviation operations activities included size and versatility of the facilities, proximity to training opportunities, and the strategic location of airfields. In considering surface/subsurface activities, key factors were the size and versatility of ship berthing, maintenance and support capabilities, and proximity to naval shipyards. Additional value was given for strategic nuclear submarine homeport capability and Nimitz-class nuclear powered berthing capability. Also considered was the proximity to training facilities, ranges, and operations areas as well as strategic location. Likewise, in considering ground operations activities, key factors were facilities and services, operational staff buildings, ordnance storage depots, and organic maintenance shops. Additional value was given for capability to receive and stage onward movement and integration of forces. Also considered was proximity to ranges, maneuver areas and training areas as well as proximity to aerial and seaports of debarkation. Key factors in the munitions storage and distribution operations activities were storage capability, throughput capability, strategic factors, environment and encroachment, and personnel support. Figure 10 illustrates how the Navy linked its analysis to the military value criteria for the naval aviation function.

Figure 10: Selected Attributes, Metrics, and Data Questions Used to Assess Military Value of Naval Aviation Operations



Source: GAO analysis of Navy data.

^aThe BRAC military value criteria are the first four BRAC selection criteria.

^bMilitary value attributes are characteristics of each criterion. The Navy used a total of five military value attributes.

^cMilitary value metrics are measures for the attributes. The Navy used a total of 31 military value metrics.

^dThe Navy used a total of 73 data call questions.

The same process was used to analyze military value with the other operational and functional areas.

Naval Audit Service's Role in the Process

The Naval Audit Service played an important role in ensuring that the data used in the Navy's analyses were certified. Through extensive audits of the capacity, military value, and scenario data collected from field activities,

the audit service notified the Navy of any data discrepancies for the purpose of follow-on corrective action.⁶ While the process of validating data was quite lengthy and challenging, the Naval Audit Service deemed the Navy data was sufficiently reliable for use in the BRAC process.

Identification and Assessment of Alternative Scenarios and Selection of Recommendations

The Navy used results from the capacity and military value analyses as the inputs to its optimization model to help identify initial scenarios for realignment and closure.⁷ In some circumstances, such as closure of naval reserve centers, military judgment and transformation provided the basis for scenarios and later decisions. For example, Navy officials said it was necessary to retain naval reserve centers for naval air reservists near major airline hubs and activities in order to retain the demographic profile necessary to recruit and retain personnel for these units. The Navy identified 187 scenarios for consideration; 82 involved Navy and Marine Corps reserve centers. The scenarios were then further assessed through more detailed scenario analyses, cost and savings considerations, risk assessments, and the Navy's IEG deliberations, which resulted in 53 candidate recommendations being forwarded to DOD's IEC. After some consolidation and bundling, DOD approved 21 Department of the Navy recommendations and forwarded them to the BRAC Commission.

The Navy eliminated scenarios for strategic reasons, to maintain operational flexibility, and for cost considerations. For example, various scenarios proposing to close Submarine Base San Diego, California, were dropped because a closure would have eliminated the sole capability for berthing attack submarines on the West Coast. Likewise, scenarios proposing to close Naval Station Everett, Washington, were dropped because of the strategic importance of this seaport. Various proposals to close active naval air stations were dropped because of operational

⁶ The Naval Audit Service visited 214 sites, covering 45 data calls, and audited 8,338 questions.

⁷ A model developed by the Center for Naval Analysis, which was used in BRAC 1995 and updated for BRAC 2005. The model met operational requirements and policy considerations by incorporating "rules" or "constraints" for functions so that the model would not select an operationally infeasible solution. For example, if the East Coast naval bases had enough berthing capacity to handle all of the ships in the force structure plan, the model could place all the ships at those bases and suggest closure of all of the West Coast and Pacific bases, which would be unacceptable. Therefore, the surface/subsurface operations portion of the model included a constraint that at least 40 percent of the surface/subsurface ship be located on each coast.

concerns. For example, the Navy analyzed the potential to close Marine Corps Air Station Beaufort, South Carolina, and relocate its squadrons to Marine Corps Air Station Cherry Point, North Carolina. However, the Navy leadership concluded that Marine Corps Air Station Beaufort should be retained for future tactical aviation basing flexibility, especially in light of concerns about the continued viability of basing aviation units at Naval Air Station Oceana, Virginia. Due to increasing environmental and encroachment issues surrounding Naval Air Station Oceana, the Navy also analyzed various scenarios to close it. However, the analyses indicated a long payback period for achieving return on investment, high one-time costs, and operational issues at receiving sites. Therefore, the Navy determined that the closure of Naval Air Station Oceana was not feasible. Another complicating factor for basing of East Coast tactical aircraft is the Navy's attempt to purchase approximately 33,000 acres in eastern North Carolina to build a new outlying landing field to provide simulated aircraft carrier landings for aircraft stationed at Naval Air Station Oceana and Marine Corps Air Station Cherry Point. The purchase is currently being challenged in federal court over environmental concerns.

The Navy also did not pursue some scenarios because of cost considerations and extended payback periods. For example, Navy data showed a one-time cost of \$838 million to close Construction Battalion Center Gulfport, Mississippi, and relocate it to Camp Lejeune, North Carolina, and a one-time cost of \$643 million to close Marine Corps Recruit Depot San Diego, California, and relocate all recruit training to Parris Island, South Carolina. The Navy leadership determined that these costs did not justify closing either the Construction Battalion Center Gulfport or the Marine Corps Recruit Depot San Diego.

The Navy also considered alternatives to homeport an additional carrier strike group forward in the Pacific theater through the BRAC process to accommodate Integrated Global Presence and Basing Strategy decisions. The Navy analyzed moving a carrier to Pearl Harbor, Hawaii, and Guam, and found that other than cost, there was no clear BRAC preference for either the losing or the gaining base.⁸ The Navy leadership postponed any decision until the ongoing Quadrennial Defense Review is completed.

⁸ Costs associated with moving a carrier strike group to Pearl Harbor, Hawaii, were projected to be from \$2.6 to \$3.1 billion. Cost for moving it to Guam were projected to be from \$4 billion to \$6.6 billion.

The Navy worked closely with the joint cross-service groups as they developed recommendations that affected Navy installations. In some cases, a joint cross-service group recommendation or series of recommendations relocated a majority of the functions, workload, equipment, or personnel from a Department of the Navy installation, thereby enabling closure of the entire installation. Where the DAG determined that the aggregate of joint cross-service group actions were of such magnitude that it affected the “critical mass” of the installation, e.g., impact on the major mission, a substantial number of personnel, and/or a substantial amount of acreage, a Navy closure scenario was developed. The closure of Portsmouth Naval Shipyard, Maine is an example of such a closure. The ISG and IEC approved an industrial joint cross-service group recommendation to relocate the ship overhaul and repair function at Portsmouth Naval Shipyard to Norfolk Naval Shipyard, Puget Sound Naval Shipyard, and Pearl Harbor Naval Shipyard, and to relocate the Submarine Maintenance Engineering, Planning and Procurement Activity at Portsmouth Naval Shipyard to the Norfolk Naval Shipyard. This recommendation eliminated Portsmouth Naval Shipyard’s primary mission and moved or eliminated approximately 90 percent of its workforce. After conducting criteria 5-8 analyses, the Navy recommended closing Portsmouth Naval Shipyard in its entirety.

Recommendations Approved by DOD

The Navy projects that its 21 recommendations will produce about \$754 million in net annual recurring savings and, after savings have offset implementation costs, a 20-year net present value savings of \$7.7 billion. Table 13 provides a summary of the financial aspects of the Navy’s recommendations.

**Appendix IV
The Department of the Navy Selection
Process and Recommendations**

Table 13: Financial Aspects of the Navy's Recommendations

Fiscal year 2005 constant dollars in millions

Recommended actions	DOD report page	One-time (costs)	Net implementation (costs) or savings^a	Net annual recurring savings	Payback period	20-year net present value^b
Close Submarine Base New London, CT	DON-10	(\$679.6)	(\$345.4)	\$192.8	3 years	\$1,576.4
Close Naval Shipyard Portsmouth, Kittery, ME	DON-23	(448.4)	21.4	128.6	4 years	1,262.4
Close Naval Air Station Atlanta, GA	DON-13	(43.0)	289.9	66.1	immediate	910.9
Close and realign Naval Station Ingleside, TX and Naval Air Station Corpus Christi, TX respectively	DON-26	(178.4)	100.0	75.6	2 years	822.2
Close and realign Naval Air Station Willow Grove, PA and Cambria Regional Airport, Johnstown, PA respectively	DON-21	(126.3)	134.7	60.6	2 years	710.5
Close Naval Station Pascagoula, MS	DON-20	(17.9)	220.0	47.4	immediate	665.7
Close Naval Support Activity New Orleans, LA	DON-15	(164.6)	(86.1)	36.5	3 years	276.4
Realign Naval Air Station Brunswick, ME	DON-18	(147.2)	(112.6)	34.9	4 years	238.8
Close Navy Reserve Centers	DON-37	(3.2)	87.1	16.1	immediate	236.6
Realign Marine Corps Logistics Base Barstow, CA	DON-6	(26.0)	56.5	18.4	immediate	230.6
Close Navy Recruiting Districts Indianapolis, IN; Omaha, NE; Buffalo, NY; Montgomery, AL; Kansas City, MO	DON-34	(2.4)	78.3	14.5	immediate	214.5
Close Naval Weapons Station, Seal Beach, Concord, CA	DON-9	(14.0)	43.2	16.4	1 year	199.7
Realign Navy Reserve Readiness Commands	DON-44	(2.6)	30.9	6.5	immediate	91.7
Close Naval Facilities Engineering Field Division/Activity	DON-28	(37.9)	(9.1)	9.3	4 years	81.8
Close Navy and Marine Corps Reserve Centers	DON-29	(62.4)	17.0	9.9	7 years (average)	76.8
Close Marine Corps Support Activity Kansas City, MO	DON-19	(23.3)	(8.0)	5.8	3 years	49.8
Close Navy Regions	DON-35	(3.2)	8.9	2.7	1 year	34.6
Close Navy Supply Corps School Athens, GA	DON-14	(23.8)	(13.6)	3.5	7 years	21.8

**Appendix IV
The Department of the Navy Selection
Process and Recommendations**

(Continued From Previous Page)

Fiscal year 2005 constant dollars in millions

Recommended actions	DOD report page	One-time (costs)	Net implementation (costs) or savings^a	Net annual recurring savings	Payback period	20-year net present value^b
Realign Officer Training Command, Naval Air Station Pensacola, FL	DON-12	(3.6)	1.4	0.9	4 years	10.0
Realign Naval Station Newport, RI	DON-25	(11.8)	(8.3)	1.0	13 years	2.1
Close Naval Support Activity Corona, CA	DON-7	(80.2)	(65.5)	6.0	15 years	0.4
Total		(\$2,099.8)	\$440.7	\$753.5	3.5 avg.	\$7,713.7

Source: GAO analysis of DOD data.

^aThis represents net costs or savings within the 6-year implementation period required to implement BRAC recommendations.

^bDOD used a 2.8 percent discount rate to calculate net present value.

The Navy’s recommendations include 16 closures and 5 realignment actions, affecting 63 installations. Much of the projected annual recurring savings are based on military and civilian personnel reductions. The Navy has two recommendations with payback periods greater than 10 years—the realignment of Naval Station Newport, Rhode Island, and the closure of the Naval Support Activity Corona, California.

Issues Identified with Approved Recommendations

Time did not permit us to assess the operational impact of each recommendation, particularly individual recommendations that include multiple closure and realignment actions at multiple locations outside of a single geographic area. Nonetheless, we offer a number of broad-based observations about the proposed recommendations. These recommendations may warrant additional attention from the BRAC Commission based on issues associated with projected savings from military personnel reductions, force structure changes, decisions to realign versus close some bases, extended payback periods, and potential impact on the U.S. Coast Guard.

There remains uncertainty as to what the Navy’s future force structure will actually look like, particularly with battle force ships. While the Navy’s force structure plan that accompanies its BRAC report gives a range of 341 to 370 ships in the fleet in 2024, the Navy’s 30-year shipbuilding plan identifies a possible lower limit of 314 ships in 2024 (including all type surface ships and submarines). Additionally, the shipbuilding plan provides a fleet profile in the decade afterward (to the year 2035) with as few as 260

to 325 ships. This includes a decrease in aircraft carriers from the current 12 to 10 in 2035, as projected in the Navy's shipbuilding plan.

Military Personnel Reductions

Our analysis showed that about \$386 million, or about 51 percent, of the projected \$753.5 million in net annual recurring savings are based on savings from eliminating almost 4,000 active duty military personnel positions. A Navy official indicated that these reductions will help the Navy achieve the projected 21,000 active military personnel reductions already programmed between fiscal year 2006 and 2011. However, the Navy has already reduced the military personnel account to reflect the savings associated with the projected 21,000 end-strength reduction. While the projected almost 4,000 reductions associated with BRAC actions might help the Navy achieve their overall programmed end strength reductions, it will not generate any additional dollar savings that could be reallocated for other higher priority needs.

Projected Changes in Navy Force Structure

While the recommendations to close Submarine Base New London, Connecticut, and Portsmouth Naval Shipyard, Maine, project significant savings, both are based on projected decreases in the number of submarines in the future force structure. However, as mentioned earlier, there is uncertainty over the number of submarines and surface ships required for the future force.

Submarine Base New London

The proposed closure of Submarine Base New London is based on reducing existing excess capacity in the surface/subsurface category and planned reductions in the submarine force. Both the 25 percent excess capacity identified in the surface/subsurface infrastructure and the projected 21 percent reduction in the submarine force led the Navy to analyze various proposals to close submarine bases. As previously noted, the Navy's BRAC scenario analysis focused on East Coast submarine bases because attack submarines are single-sited on the West Coast. The Navy considered three alternatives: (1) moving all submarines at Naval Station Norfolk, Virginia, to New London, Connecticut; (2) moving all submarines at Submarine Base New London and the Submarine School New London to Naval Station Norfolk; and (3) moving submarines at Submarine Base New London to both Naval Station Norfolk and Submarine Base Kings Bay, Georgia, and moving the submarine school to Kings Bay or Naval Station Newport, Rhode Island. The Navy analysis showed that only the option to relocate submarines from New London to Norfolk and Kings Bay achieved a

reduction in capacity and savings resulting from a base closure. Navy officials noted that Submarine Base New London had a lower military value than both Norfolk and Kings Bay. As we also discuss in appendix XIV, this recommendation has the largest economic impact on any community in terms of the number of job losses (8,457 direct jobs and 7,351 indirect jobs). These direct and indirect job losses would result in a negative change of 9.4 percent in unemployment for the economic area around Submarine Base New London.

The majority of the projected savings would result from the elimination of about 80 percent of the civilian personnel positions at New London. Officials at New London we met with concurred with the projected number of civilian positions that could be eliminated based on coordination with both receiving locations—Kings Bay, Georgia, and Norfolk, Virginia, and on the number of personnel that would be needed to support the missions being relocated. However, a separate issue of concern relates to the proposed move of the Navy’s submarine school from New London to Kings Bay. In our discussions with officials at New London, we found while the Navy’s BRAC cost and savings analysis includes one-time costs to move the specialized equipment associated with the submarine school, the Navy analysis does not appear to have included an assessment of the time it would take to pack, move, and unpack the equipment, and the potential impact on the training pipeline and the certification of crews for submarines. In subsequent discussions with Navy headquarters officials, we were told that the submarine school would be the last activity to move from New London to ensure that facilities at Kings Bay are ready to start training. Furthermore, they noted that the implementation plan will ensure that the Navy will be able to perform crew certification and maintain the training pipeline. The BRAC Commission may want to assure itself that the Navy has developed a transition plan to satisfy the training and certification requirements until the receiving sites are able to perform this training, without unduly interrupting the training pipeline.

Portsmouth Naval Shipyard

The proposed closure of the Portsmouth Naval Shipyard assumes that the remaining three shipyards⁹ could perform all of the projected depot level maintenance workload based on planned reductions in the number of attack submarines and the Navy’s proposal to decommission an aircraft

⁹ The other shipyards that perform depot level ship refueling, modernization overhaul, and repair work are Norfolk, Pearl Harbor, and Puget Sound.

carrier.¹⁰ The Navy, with agreement from the Industrial Joint Cross-Service group, which initially had assessed depot functions, selected the Portsmouth Naval Shipyard for closure, despite Pearl Harbor Shipyard's having a slightly lower military value score, because it determined that Portsmouth was the only closure that would both eliminate excess capacity and satisfy the Combatant Commander's and Navy's strategic objective to place ship maintenance capabilities close to the fleet.

The Navy BRAC and Industrial Joint Cross-Service Groups analyzed scenarios closing each of the four shipyards, and determined that only the potential closure of Portsmouth or Pearl Harbor was feasible due to cost and capacity considerations. Initially, based on capacity data and the 20-year force structure plan submitted in March 2004, the Industrial Joint Cross-Service Group determined that there was sufficient excess capacity in the aggregate across the four shipyards to close either Pearl Harbor or Portsmouth. However, the group determined that there was insufficient excess capacity in certain commodities¹¹ in the remaining three shipyards to accept all the workload from the closing shipyard. As such, the group initially determined that no shipyard should be closed. However, based on changes in the DOD's 20-year force structure plan it submitted to Congress in March 2005—reductions in the number of submarines and the decommissioning of an aircraft carrier—the industrial group's analysis indicated that workload for all commodities at Portsmouth or Pearl Harbor could be accommodated by the remaining three shipyards. A Naval Sea Systems Command analysis of dry dock availability indicates that the three remaining Navy shipyards could handle the projected ship repair and overhauls in the future. However, the analysis indicates that within the next three years there would not be much, if any, room for unanticipated ship repairs. According to Navy officials, any unanticipated requirements would be addressed by a combination of delaying and re-prioritizing scheduled overhaul work, and authorizing additional overtime, which they noted is no different than how they manage these requirements in the current operating environment.

¹⁰ Legislation is currently pending in Congress that would not allow the Navy to decommission the U.S.S. John F. Kennedy. See H.R. 1815, 109th Congress, section 127 (2005).

¹¹ A commodity is a generic grouping of the types of depot and maintenance work associated with end items, weapons systems, or major processes, for example, cranes and rigging, electronics, forge, nuclear testing, or welding.

In selecting Portsmouth over Pearl Harbor for closure, the Navy noted that Pearl Harbor is in a fleet concentration area in the Pacific theater and is the homeport for many ships, while Portsmouth is not in a fleet concentration area or a homeport for any ships. In addition, closing Pearl Harbor would require the ships that are homeported there to transit back to the east coast, in some cases, for maintenance, which the Navy would essentially view as a deployment and, for quality of life reasons, would want to avoid if possible. Another strategic objective was to maintain dry docks for aircraft carriers on both coasts and in the central Pacific. Pearl Harbor has aircraft carrier dry-docking capability, but Portsmouth does not.

In our meeting with employees at the Portsmouth Naval Shipyard in June 2005, they raised questions about several issues regarding the cost and savings analysis developed to support the proposed action. First, they objected to the industrial group and the Navy disallowing about \$281 million in costs (\$205 million one-time and \$76 million recurring) that they believed would be incurred if the shipyard were to close. About \$52 million of the recurring costs are associated with sustainment of facilities and power plant from fiscal year 2008, when the base is projected to close, until 2011. While some of these costs are likely valid, overall they appear high in relation to the Navy's projected savings of about \$120 million over the same period from reduced base operating support and sustainment of facilities. The majority of the one-time costs are associated with closure of the buildings, historical preservation of buildings, and write-off of undepreciated assets of the working capital fund. While it is questionable whether all of these costs should be included, our analysis shows that if they are all included, the projected 20-year savings would decrease by \$192 million, or 15 percent.

Portsmouth employees were also concerned that the cost and savings analysis did not adequately capture the widely recognized efficiencies of their shipyard, which, if adopted, could translate into additional costs that the Navy would incur by shifting its workload to the remaining three Navy shipyards. The employees estimated that they perform submarine overhaul and depot maintenance work at about \$54 million per year less than the average of the other three shipyards, an efficiency which was not included in the Navy's analysis. Department of Navy officials recognized that the Portsmouth Naval shipyard is presently more efficient than the Puget Sound and Pearl Harbor shipyards, but noted that it is very difficult to quantify the impact of this efficiency. Navy officials noted that the scope of work performed is not always the same, depending on the condition of each submarine, and wages, especially in Pearl Harbor, are higher than in

Portsmouth. Navy officials told us they were reviewing the efficiency analysis developed by the Portsmouth Naval Shipyard; however, their analysis was not completed in time to be included in this report. The Commission may wish to consider the views of the shipyard employees and the results of the Navy’s review in their analysis of this recommendation.

Decisions to Realign Rather Than Close Some Bases

The Navy initially recommended the closure of Naval Air Station Brunswick, Maine, and Marine Corps Logistics Base Barstow, California. However, based on direction from the IEC, these closure recommendations were changed to realignments. As a result, the 20-year savings decreased by almost \$2 billion, as shown in table 14.

Table 14: Comparison of Alternatives to Closing and Realigning Naval Air Station Brunswick and Marine Corps Logistics Base Barstow

Dollars in millions

	Brunswick			Barstow		
	Closure	Realignment	Difference	Closure	Realignment	Difference
One-time (costs)	(\$192.9)	(\$147.2)	(\$45.7)	(\$316.6)	(\$26.0)	(\$290.6)
Net implementation (costs) or savings	\$73.4	(\$112.6)	(\$39.2)	(\$248.3)	(\$56.5)	(\$191.8)
Net annual recurring savings	\$92.7	\$34.9	\$57.8	\$141.9	\$18.4	\$123.5
Payback period	1 year	4 years		1 year	immediate	
20-year net present value savings	\$840.7	\$238.8	\$601.9	\$1,600.0	\$230.6	\$1,369.4

Source: GAO analysis of Navy data.

According to Navy BRAC officials, the senior Navy leadership was reluctant to give up the Navy’s remaining air station in the Northeast but found the potential savings significant enough to recommend closure of Brunswick. However, the judgment of the IEC changed the closure to a realignment to retain access to the strategic airfield in the Northeast. As a result, the base will become a naval air facility with an operational runway, but all aircraft and associated personnel, equipment, and support will be relocated to Naval Air Station Jacksonville, Florida, and the Aviation Intermediate Maintenance will be consolidated with Fleet Readiness Center Southeast Jacksonville, Florida. The Navy is maintaining its cold weather-oriented Survival, Evasion, Resistance, and Escape School, a Navy Reserve Center, and other small units at Brunswick. Navy officials

also stated that Brunswick would provide a base from which to carry out potential homeland defense missions should those missions not be able to be carried out from other military or civilian airfields in the Northeast.

The Industrial Joint Cross-Service Group had proposed to close the depot maintenance functions at Barstow because of its low military value and to increase opportunities for joint maintenance at Army depots doing similar work. However, the Marine Corps objected to the closure because that would eliminate its only West Coast ground vehicle depot maintenance presence and would increase repair cycle times for the Marine's West Coast equipment by increasing rail transit and customer turnaround time by 10 to 30 days. In response to the Marine Corps' concerns, the IEC directed the Industrial Joint Cross-Service Group to develop several alternative recommendations that would have closed Barstow but still realigned its workload to other West Coast activities. The Industrial Joint Cross-Service Group estimated that all of these options would result in higher net annual recurring and 20-year net present savings than would the realignment option. The Commission may want to assess DOD's rationale for changing the recommendation from a closure to realignment in light of the projected reductions in savings.

Extended Payback Periods

The Navy has two recommendations for which the payback period is greater than 10 years, much longer than typically associated with recommendations in the 1995 BRAC round, and the one-time costs are significantly greater than the projected 20-year savings by which BRAC rounds are typically measured. The Navy's proposal to realign Naval Station Newport by relocating the Navy Warfare Development Command to Naval Station Norfolk has a 13-year payback period and a projected one-time cost of about \$12 million, primarily to rehabilitate existing structures and move 111 personnel. According to Navy officials, this recommendation places the Navy Warfare Development Command closer to Fleet Forces Command and the Second Fleet Battle Lab it supports. Likewise, the Navy recommendation to close Naval Support Activity Corona has a payback period of 15 years, one-time cost of about \$80 million, and 20-year savings of about \$400,000. Navy data shows that the one-time cost is primarily to rehabilitate existing facilities and relocate personnel from Corona to Naval Air Station Point Mugu, California. Navy officials stated the closure had merit because the Corona facility was a single-function facility whose mission could be performed at other multifunction bases.

**Potential Impact on the U.S.
Coast Guard**

Several Navy recommendations to close bases could affect the U.S. Coast Guard. However, the Navy's cost and savings analysis did not consider any costs that could be incurred by the Coast Guard if the bases are closed. Navy officials recognized that the Coast Guard would be affected by several of its recommendations and considered the impact in its deliberations. However, they determined that it was unreasonable to include any cost estimates for the Coast Guard because the Navy could not assume the final disposition of the facility and how much, if any, of the facility the Coast Guard would opt to retain. Coast Guard officials stated that the Navy briefed them on their potential recommendations several months prior to the public announcement of the recommendations. The Coast Guard is in the process of developing potential basing alternatives, to include cost impacts, for each affected location. However, the Coast Guard had not completed these estimates in time for us to include them in our report.

The Department of the Air Force Selection Process and Recommendations

The Air Force followed the common analytical framework established by the Office of the Secretary of Defense (OSD) for reviewing its functions and facilities. The Air Force's process produced 42 recommendations. Most of the recommendations are devoted to reserve component bases, including several realignment actions reallocating aviation assets to multiple locations. In comparison with the other services, its recommendations contain the smallest number of closures (three) of active component bases. It had two major realignments, however, that left the bases in a reduced active duty status, and another where the base was transferred to the Army, with the Air Force retaining a limited presence as a tenant. The Air Force recommendations project the greatest savings of any of the services—\$14.6 billion in 20-year net present value savings. Payback periods—the time required for savings to offset closure and realignment costs—for active component bases range from immediate to 14 years, and average 3 years, and for reserve component bases they range from immediate to 18 years, and average 6 years. However, our analysis indicates that these projected savings in each of their categories could have some limitations, primarily due to the lack of personnel end-strength reductions associated with claimed savings. In addition, some Air Force recommendations may warrant additional attention by the BRAC Commission because of uncertainty regarding future mission requirements for adversely affected reserve component personnel, and because of lengthy payback periods associated with some recommendations having been merged with other recommendations that have shorter payback periods, thus making the former appear more acceptable. The Air Force Audit Agency, which performed audits of the data, concluded that the data were sufficiently reliable for use during the BRAC process.

Organization and Focus

The Secretary of the Air Force established a group of senior Air Force military and civilian personnel to form an executive deliberative body responsible for conducting the Air Force base closure and realignment analyses. The Base Closure Executive Group was led by a Deputy Assistant Secretary and a General Officer from Plans and Programs, who served as co-chairs. This group's working-level staff made up the Base Closure Working Group, which provided direct support for data collection, validation, and analysis in the development of base closure and realignment recommendations.¹

¹ At OSD, the Infrastructure Steering Group (ISG) and the Infrastructure Executive Council (IEC) provided overall coordination and direction to the DOD-wide process.

The Air Force 2005 BRAC goals were to transform by maximizing warfighting capability of each squadron and realigning infrastructure with future defense strategy, maximizing operational capability by eliminating excess physical capacity, and to capitalize on opportunities for joint activity. To guide the BRAC process, the Air Force developed the following principles, to be applied to both active and reserve components:

- Maintain squadrons within operationally efficient proximity to DOD-controlled airspace, ranges, military operations areas, and low-level routes.
- Optimize the size of Air Force squadrons in terms of aircraft models, aircraft assigned, and crew ratios applied.
- Retain enough domestic capacity to base the Air Force entirely within the United States and its territories.
- Retain aerial refueling bases in optimal proximity to their missions.
- Better meet the needs of the Air Force by maintaining or placing Air Reserve Component (Air National Guard or Air Force Reserve Command) units in locations that best meet the demographic and mission requirements unique to the Air Reserve Component.
- Ensure joint basing realignment actions (in comparison with the status quo) either increased the military value of a function or decreased the cost for the same military value of that function.
- Ensure that long-range strike bases provide flexible strategic response and strategic force protection.
- Support the Air Expeditionary Forces framework by keeping two geographically separate munitions sites.
- Retain enough surge capacity to support deployments, evacuations, and base repairs.
- Consolidate or co-locate legacy fleets (such as A-10, B-1, B-52, F-15, and F-16 aircraft).
- Ensure global mobility by retaining two air mobility bases and one additional wide-body-capable base on each coast.

Several of the above principles were included in an *Expeditionary Air Force Principles White Paper*,² which outlined principles to shape future force development and basing. This document, discussed the increased effectiveness and efficiency of consolidating smaller squadrons into larger units. The significant reduction in aircraft based on the future force structure plan of 2025 will reduce the Air Force infrastructure, including that of the Air Reserve and the Air National Guard to select the best combination of bases, while accommodating use of reserve components for emerging missions, such as homeland defense and unmanned aerial systems.

Framework for Analysis

The Air Force BRAC process included a review of 154 installations—70 active and 84 reserve. As with previous BRAC rounds, capacity and military value analyses provided the starting point for analysis. However, in this BRAC round the Air Force concentrated its analysis on operational aircraft and space missions, since joint cross-service groups developed capacity and military value analyses and recommendations for various commonly held business-oriented categories, such as education and training, headquarters, and technical functions. The Air Force Audit Agency performed an important role in ensuring the accuracy of data used in these analyses through extensive audits of data gathered at various locations.

Capacity Analysis

The Air Force collected information on key capacity areas, such as physical capacity (buildings and utilities), environmental issues (air emissions and water resources), encroachment (constraints and noise safety), airfields, airspace and ranges (operational capacity of runways, ramp space, and fuel storage), communications (telecommunications), and personnel. The capacity data call was designed to provide information to assess bases for current and future missions in the following mission areas: (1) airlift; (2) space operations; (3) bombers; (4) tankers; (5) command and control and intelligence, surveillance and reconnaissance; (6) unmanned aerial vehicles; (7) fighter aircraft; and (8) Special Operation Forces and Combat, Search, and Rescue. The Air Force also considered surge requirements in its capacity analysis. According to Air Force officials, surge was defined as the ability to domestically “bed down” all aircraft, including those currently

² Department of the United States Air Force, *Expeditionary Air Force Principles White Paper* (Washington, D.C.: July 14, 2004).

stationed overseas, as well as the ability to respond to natural disasters, emergencies, and runway repairs.³

Following the collection of the capacity data call, the Air Force requested that its eight major commands⁴ and the Air National Guard estimate each installation's capacity to acquire additional squadrons, taking into consideration existing conditions, facilities, additional construction requirements, and operational and environmental infrastructure.

The capacity analysis incorporated information from the 20-year force structure plan to serve as a baseline and to further define requirements in the future. Although this analysis indicated the ability of bases to bed down additional aircraft, according to Air Force officials, it did not provide a specific excess capacity percentage by installation or major command. Accordingly, an overall capacity analysis report was not made available to us, comparable to that provided by the other military departments. However Air Force officials said they considered capacity information in their assessment of installations. Air Force officials did provide limited capacity information in their final BRAC report. Table 15 provides excess capacity percentages that were calculated for two areas.

Table 15: Excess Capacity Identified by the Air Force, by Function

Function	Percentage of excess capacity
Flight line and ramp	25
Building and facilities	14

Source: Department of the Air Force.

³Air Force officials defined three types of surge, which increase operations in response to a situation or event. For example, local surge increases flying time; regional surge mobilizes and deploys military forces; and strategic surge includes large-scale return of forces from overseas or large scale mobility operations.

⁴Air Force BRAC installations fell into eight major commands: (1) Air Mobility Command, (2) Air Combat Command, (3) Air Force Space Command, (4) Air Force Materiel Command, (5) Air Force Special Operations Command, (6) Air Education and Training Command, (7) Pacific Air Force, and (8) Air Force Reserve Command. The Air National Guard was included in the analysis, although it is not considered a major command.

According to Air Force officials, their recommendations if implemented are projected to reduce excess capacity by 37 percent for flight line and ramp space and 75 percent in buildings and facilities.

Military Value Analysis

In completing its military value data calls, the Air Force evaluated each of its bases in each of the eight mission categories, regardless of the base's current use. Military value data analysis was directly linked to the four DOD military value selection criteria required by the BRAC process and legislation. As shown in table 16, the Air Force developed a weighting system for the military value criteria with the first two criteria having larger weights, or importance, than the remaining two criteria.

Table 16: Air Force Military Value Criteria Weights

Figures in percentages

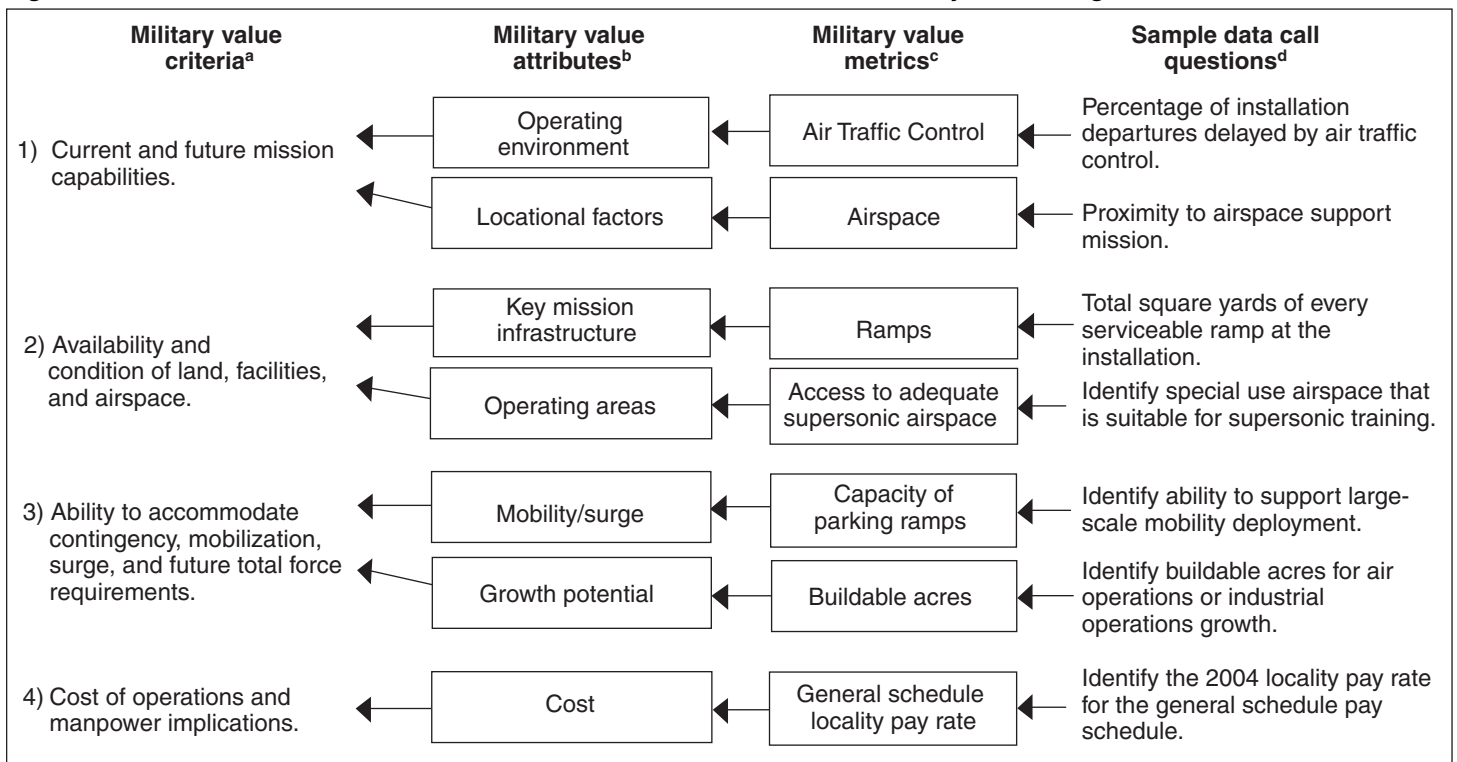
Military value criteria	
1. The current and future mission capabilities and the impact on operational readiness of the total force of the Department of Defense, including the impact on joint warfighting, training, and readiness.	46
2. The availability and condition of land, facilities, and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions) at both existing and potential receiving locations.	41
3. The ability to accommodate contingency, mobilization, surge, and future total force requirements at both existing and potential receiving locations to support operations and training.	10
4. The cost of operations and the manpower implications.	3
Total	100

Source: DOD and Department of the Air Force.

The Air Force used various military value attributes (characteristics, factors, etc), metrics (measures), and questions related to each of the four military value criteria. Key military value attributes included operating environment, geographic-location factors, key mission infrastructure, operating areas, mobility/surge, growth potential, and cost. Other installation-specific attributes included such factors as electromagnetic spectrum and bandwidth, munitions storage and handling, runway dimensions, ramp area, space launch, proximity to (and quality of) airspace and ranges, and geographical factors.

Figure 11 shows how the attributes, metrics, and military value data questions were linked to the military criteria for the fighter aircraft mission category.

Figure 11: Selected Attributes, Metrics, and Data Questions Used to Assess Military Value of Fighter Aircraft



Source: GAO analysis of Air Force data.

^aThe BRAC military value criteria are the first four BRAC selection criteria.

^bMilitary value attributes are characteristics of each criterion. The Air Force used a total of seven military value attributes.

^cMilitary value metrics are measures for the attributes. The Air Force used a total of 23 military value metrics for the fighter mission compatibility index.

^dThe Air Force used a total of 23 out of a total of 154 military value data call questions for the Fighter Mission Compatibility Index. The Air Force commonly referred to metrics as questions.

The Air Force followed a similar process for all eight mission categories. Likewise, each base was evaluated against metrics associated with each of the eight mission categories, which resulted in multiple military values for each base. Air Force officials stated that the resulting military value scores enabled them to determine which bases were best to retain and which were

less desirable. This enabled them to produce mission compatibility indexes for their bases related to each of the four military value criteria.⁵ However, the Air Force did not develop one composite score for each base across all eight mission areas, which might have allowed for a clearer distinction between lower and higher military value rankings. Instead of developing one composite score, the Air Force established an overall mission compatibility index score within each of the eight mission areas, which provided each installation with eight entirely different scores for the various mission areas. According to Air Force officials, this approach was used to apply military judgment to select the best combination of bases to retain.

Air Force Audit Agency's Role in the Process

During both the capacity and the military value data collection and analysis processes, the Air Force Audit Agency provided the Air Force with real-time evaluations of BRAC 2005 policies, procedural controls, systems, and data to ensure accurate data and analyses support for BRAC recommendations. One of its primary efforts involved three audits to verify the Air Force data call responses submitted during the BRAC process. Although the auditors found errors or inadequate source documentation, they reported that most discrepancies were subsequently corrected. In addition to these nationwide audits, the Air Force Audit Agency produced audit reports on other facets of the BRAC process, including the Air Force Internal Control Plan, COBRA data, and various modeling and analysis tools that were used in development of recommendations.⁶ The final Air Force Audit Agency reports on BRAC data concluded that overall the Air Force data were reliable for the purpose of developing recommendations.

⁵ The mission compatibility indexes list each of the 154 installations considered in the Air Force BRAC process, with its respective scores for the overall mission; current and future mission; condition of infrastructure; contingency, mobilization, and future forces; and cost of operations and manpower.

⁶ The Air Force Audit Agency performed audits on the following areas for BRAC 2005: Air Force Internal Control Plan, Installations Inventory, Installation Capacity Analysis Questionnaire, Base Realignment and Closure Data Collection System, Air Force Data Collection, Joint Cross-Service Group Data Collection, Joint Action Scenario Team Data Collection, Installation Visualization Tool Data Reliability, NOISEMAP Reliability, Air Force Analysis, Cost of Base Realignment Actions, Cueing and Analysis Tools, and BRAC Facility Analysis Capability.

Identification and Assessment of Alternate Scenarios and Selection of Recommendations

The Air Force identified over 100 scenarios, which were later reduced to 42 recommendations.⁷ The Air Force scenario teams⁸ identified potential scenario groups of like weapons systems, and then the Base Closure Executive Group selected scenarios for analysis. While the Air Force relied on certified data to identify proposed closure and realignment recommendations, other factors were instrumental in guiding decisions for closures and realignments, including changes in unit sizing, a decreased force structure, the active and reserve mix and future total force initiatives such as those discussed in the *Expeditionary Air Force White Paper*. Toward the end of the BRAC process, the Air Force eliminated and scaled back several recommendations because they did not actually result in net savings. In addition, the Air Force combined several interrelated recommendations (some that provide savings and some that do not) to present a consolidated recommendation with savings and a shorter payback period than would otherwise appear had some recommendations.

The military value data were analyzed by a computer-generated optimization model called the Air Force cueing tool. This model used the military value data and the 20-year force structure plan to create a starting point for Base Closure Executive Group deliberations by allocating aircraft to the fewest bases while conserving the greatest military value. This model also included Air Force imperatives. For example, to ensure unimpeded access to polar and equatorial earth orbits for U.S. satellites, the Air Force decided that Vandenberg Air Force Base, California, and Patrick Air Force Base, Florida, must be retained. Likewise, the Air Force retained Andrews Air Force Base, Maryland, to provide support to the President of the United States. According to Air Force officials, the cueing tool results were the starting point for analysis in allocating its inventory of aircraft. The model had various limitations, such as its inability to factor the active/reserve force mix for specific types of aircraft or the different types of aircraft at an installation. Furthermore, it assumes that all aircraft are bedded down at bases ranked highest in military value, which generally were active bases. To address these limitations, the Base Closure Executive Group relied on military judgment in some cases to overrule the results of the model to

⁷ According to the Air Force's BRAC report, it recommends 72 BRAC closures and realignments. However, it presented only 42 recommendation narratives because various realignment actions were combined.

⁸ The Air Force scenario teams in BRAC 2005 were the Combat Air Forces, Mobility Air Forces, Space, and Integration.

preserve the existing active/reserve force mix, a ratio expectation to be maintained through 2011.

In reviewing alternatives for BRAC recommendations, the Air Force went through various iterations of the BRAC recommendations (called second look, third look, and so forth) in order to provide force structure alignments that conformed to the Air Force principles and improved military capability and efficiency, consistent with sound military judgment. Air Force scenario teams analyzed the results of the analytical tools, including information to be considered with each recommendation—for example, force structure reductions from the future year force structure plan, new missions, military construction requirements, homeland defense missions, and other areas. Furthermore, the scenario teams were responsible for identifying any “showstoppers,” in terms of capacity or environmental characteristics that would make a recommendation difficult to implement. These consisted of running a potential recommendation through the COBRA model and developing the information for selection criteria 6 (economic impact), 7 (community infrastructure), and 8 (environmental impact) to help identify or evaluate possible closure and realignment actions.

The majority of the candidate recommendations had various components derived from using the optimization model; however, a few of the recommendations did not. For example, a few of the candidate recommendations involved realigning aircraft from an active base to an Air National Guard station with a lower military value score in order to achieve the appropriate mix between active and reserve forces and to increase the standard squadron size. Further, in some recommendations Air National Guard aircraft were realigned to other Air National Guard stations with a lower military value to align common versions of weapon system types, and for strategic interests.⁹

Four other recommendations were not derived from an optimization model because the model primarily focused on the bedding down of aircraft rather than specific functional areas, such as repair facilities. These recommendations involved logistics support centers, standard air

⁹ For example, Bangor Air Guard Station, Maine, is a receiver in the realignment of Birmingham Air Guard Station, Alabama, although it has a lower military value score for the tanker Mission Compatibility Index than Birmingham Air Guard Station. However, the Bangor Air Guard Station is used by the Air Force as a host base for the Northeast Tanker Task Force in order to support transatlantic air operations.

munitions packages (munitions storage), and avionics intermediate repair and maintenance facilities. Air Force officials told us they had requested that the Industrial Joint Cross-Service Group consider the above candidate recommendations in its process, but the group declined and deferred to the Air Force because it was considering scenarios at a joint operational level rather than at the installation level. As a result, Air Force officials told us that they applied either a Mission Compatibility Index approach to these scenarios in deliberative session to assess installations for future missions or they recommended certain functions to follow the placement of aircraft in other Air Force recommendations.

Recommendations Approved by DOD

The Air Force recommended closing 10 installations (3 active, 3 Air Reserve, and 4 Air National Guard bases) and realigning 62 other installations.¹⁰ In total, the Air Force projected its BRAC recommendations to result in 20-year net present value savings of over \$14 billion—the largest projected savings of any service or Joint Cross-Service Group—and net annual recurring savings of \$1.2 billion. Table 17 shows the financial aspect of the Air Force recommendations.

Table 17: Financial Aspects of the Air Force’s Recommendations

Fiscal year 2005 constant dollars in millions

Installation	DOD report page	One-time (costs)	Net implementation (costs) or savings ^a	Net annual recurring savings	Payback period	20-year net present value savings ^b
Realign Eielson Air Force Base, AK	AF-6	(\$141.4)	\$594.0	\$229.4	immediate	\$2,780.6
Close Cannon Air Force Base, NM	AF-32	(90.1)	815.6	200.5	immediate	2,706.8
Realign Pope Air Force Base, NC ^c	AF-35	(218.1)	652.5	197.0	immediate	2,515.4
Realign Grand Forks Air Force Base, ND	AF-37	(131.5)	322.5	173.3	1 year	1,982.0
Close Ellsworth Air Force Base, SD	AF-43	(299.1)	316.4	161.3	1 year	1,853.3
Realign Mountain Home Air Force Base, ID	AF-18, 47	(74.2)	21.2	37.8	immediate	389.0
Close Otis Air National Guard Base, MA	AF-25	(103.0)	12.2	33.6	3 years	336.1
Close Onizuka Air Force Station, CA	AF-12	(123.7)	(45.3)	25.9	5 years	211.0

¹⁰ According to the Air Force’s BRAC report, it recommends 72 BRAC closures and realignments. However, the Air Force presented only 42 recommendation narratives because various realignment actions were combined.

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Fiscal year 2005 constant dollars in millions

Installation	DOD report page	One-time (costs)	Net implementation (costs) or savings^a	Net annual recurring savings	Payback period	20-year net present value savings^b
Close Niagara Falls Air Reserve Station, NY	AF-33	(65.2)	5.3	20.1	2 years	199.4
Realign Robins Air Force Base, GA	AF-16	(6.7)	31.9	15.0	immediate	175.1
Close W.K. Kellogg Air Guard Station, MI	AF-27	(8.3)	46.7	12.7	immediate	166.8
Close Kulis Air Guard Station, AK	AF-7	(81.4)	(20.6)	17.3	4 years	146.7
Realign New Castle Air Guard Station, DE	AF-15	(15.5)	29.1	9.6	1 year	120.1
Realign Nashville Air Guard Station, TN	AF-44	(25.4)	(16.7)	13.7	2 years	120.0
Realign Portland Air Guard Station, OR	AF-41	(85.5)	(36.2)	14.0	7 years	100.2
Realign Martin State Air Guard Station, MD	AF-24	(9.4)	13.7	8.7	1 year	97.1
Close Mansfield –Lahm Air Guard Station, OH	AF-39	(33.4)	3.1	8.7	3 years	86.2
Realign Hill Air Force Base, UT	AF-47	(28.2)	8.2	8.1	4 years	85.9
Realign Andrews Air Force Base, MD	AF-23	(21.7)	12.2	7.5	2 years	83.1
Realign Naval Air Station New Orleans Air Reserve Station, LA	AF-22	(50.2)	(32.5)	11.3	5 years	80.7
Establish Air Force logistics support centers	AF-53	(9.3)	19.2	6.1	1 year	77.0
Close General Mitchell Air Reserve Station, WI	AF-52	(38.4)	(14.3)	6.5	5 years	50.2
Realign Lackland Air Force Base, TX	AF-46	(8.1)	4.7	2.9	2 years	32.4
Realign Bradley Air Guard Station, CT	AF-14	(3.2)	6.1	2.0	2 years	25.2
Realign Reno-Tahoe Air Guard Station, NV	AF-31	(22.9)	(12.2)	3.6	9 years	22.7
Realign Great Falls Air Guard Station, MT	AF-30	(9.3)	0.7	1.8	4 years	18.1
Realign March Air Reserve Base, CA	AF-11	(10.8)	(1.9)	1.8	5 years	15.5
Realign Richmond Air Guard Station, VA	AF-50	(24.2)	(11.6)	2.5	10 years	13.2
Realign Hector Air Guard Station, ND	AF-38	(1.8)	3.3	1.0	2 years	12.9
Realign Fairchild Air Force Base, WA	AF-51	(6.4)	(1.6)	1.0	7 years	8.3
Establish centralized intermediate repair facility – F-15 Avionics (Langley Air Force Base, VA)	AF-49	(1.8)	1.5	0.7	3 years	8.3
Realign Duluth Air Guard Station, MN	AF-28	(2.1)	0.2	0.8	5 years	7.8
Establish F100 engine centralized intermediate repair facilities	AF-55	(9.2)	(3.8)	1.1	9 years	7.1
Realign Beale Air Force Base, CA	AF-10	(45.4)	(34.6)	3.9	14 years	6.4

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Fiscal year 2005 constant dollars in millions

Installation	DOD report page	One-time (costs)	Net implementation (costs) or savings^a	Net annual recurring savings	Payback period	20-year net present value savings^b
Realign Capital Air Guard Station, IL	AF-20	(19.9)	(13.3)	2.0	13 years	6.3
Realign Ellington Air Guard Station, TX	AF-45	(1.6)	0.1	0.4	5 years	3.6
Realign Key Field Air Guard Station, MS	AF-28	(10.7)	(6.9)	0.9	13 years	2.5
Realign Schenectady Air Guard Station, NY	AF-34	(3.5)	(3.3)	0.6	8 years	2.4
Realign Fort Smith Air Guard Station, AR	AF-8	(17.6)	(12.4)	1.4	16 years	2.0
Realign Boise Terminal Air Guard Station, ID	AF-17	(2.5)	(1.6)	0.3	8 years	1.7
Realign Springfield-Beckley Air Guard Station, OH	AF-40	(11.4)	(8.4)	0.9	17 years	0.7
Realign Birmingham Air Guard Station, AL	AF-5	(11.0)	(7.7)	0.8	18 years	0.5
Total		(\$1,883.1)	\$2,635.5	\$1,248.5		\$14,560.3

Source: GAO analysis of DOD data.

^aThis represents net costs or savings within the 6-year implementation period required to implement BRAC recommendations.

^bDOD used a 2.8 percent discount rate to calculate net present value.

^cThe Pope Air Force Base recommendation includes the closure of Pittsburgh Air Reserve Station and the realignment of Yeager Air Guard Station and Little Rock Air Force Base.

Over 80 percent of the projected 20-year savings are based on the first 5 recommendations shown in table 17, which involve closing two and realigning three active bases and have payback periods of 1 year or less. Conversely, the one-time costs of over \$1.8 billion to implement all recommendations are primarily comprised of new military construction to implement the recommendations. Most of the Air Force's recommendations involve realignment of Air Guard facilities with limited savings. For example, the Air Force is proposing to realign five Air National Guard stations, with payback periods greater than 10 years and \$12 million in 20-year savings, with onetime costs of about \$71 million. According to Air Force officials, these proposals were necessary because the Air Force recommendations are interwoven, depending on realignment actions from other recommendations. For example, 72 realignment and closure recommendations involving active and reserve installations were combined to create 42 candidate recommendations. At least one segment

of all but 3 of the 42 Air Force recommendations that were combined¹¹ affects the Air Force Reserve Command or Air National Guard.

Based on our analysis we noted that the majority of the net annual recurring savings (60 percent) are cost avoidances from military personnel eliminations. However, eliminations are not expected to result in reductions to active duty, Air Reserve and Air National Guard end strengths, limiting savings available for other purposes.

None of the recommendations included in the Air Force's report involve consolidation or integration of activities or functions with those of another military service.¹² However, the Air Force believes that its recommendations to realign Pope Air Force Base, North Carolina, and Eielson Air Force Base, Alaska, and to move A-10 aircraft to Moody Air Force Base, Georgia, will provide an opportunity for joint close air support training with Army units stationed at Forts Benning and Stewart, Georgia. Furthermore, the Air Force's recommendations support transformation efforts by optimizing (increasing) squadron size for most fighter and mobility aircraft.¹³ According to the Air Force BRAC report, the recommendations maximize warfighting capability by fundamentally reshaping the service, effectively consolidating older weapons systems into fewer but larger squadrons, thus reducing excess infrastructure and improving the operational effectiveness of major weapons systems. We have previously reported that the Air Force's could not only reduce

¹¹ The three recommendations that do not affect the reserve component include the closure of Onizuka Air Force Station, California; the realignment of Langley Air Force Base, Virginia; and the Air Force logistics support centers recommendation.

¹² Joint cross-service groups and other service recommendations do, however, allow for increased jointness with the Air Force. For example, Eglin Air Force Base, Florida, will host Joint Strike Fighter pilot training and will also host the Army's Seventh Special Forces Group in conjunction with Education and Training Joint-Cross Service Group and Army recommendations, creating substantial joint training opportunities. Additionally, the Air Force enables Army closures and realignments by turning over property ownership of Pope Air Force Base to the Army, though an active/Air Reserve unit will permanently be based at Fort Bragg, North Carolina, to assist with the aerial port and tactical airlift capabilities needed by the Army's Airborne Corps.

¹³ Based on senior military judgment reflected in the *Expeditionary Air Force Principles White Paper*, fighter squadrons will be optimally sized to 24 aircraft per squadron, and 18 is the acceptable size per squadron for stand-alone reserve installations. Sixteen is the optimum size for C-130s (airlift aircraft) and KC-135s (tanker refueling aircraft), and 12 is the acceptable size for stand-alone reserve installations.

infrastructure by increasing the number of aircraft per fighter squadron but could also save millions of dollars annually.¹⁴

Issues Identified with Approved Recommendations

Time did not permit us to assess the operational impact of each recommendation, particularly where recommendations involve multiple locations. Nonetheless, we offer a number of broad-based observations about the proposed recommendations and selected observations on some individual recommendations. Our analysis of the Air Force recommendations identified some issues that the BRAC Commission may wish to consider, such as the projected savings from military personnel reductions; impact on the Air National Guard, impact on other federal agencies; and other issues related to the realignments of Pope Air Force Base, North Carolina; Eielson Air Force Base, Alaska; and Grand Forks Air Force Base, North Dakota and the closure of Ellsworth Air Force Base, South Dakota.

Military Personnel Savings

Our analysis showed that about \$732 million, or about 60 percent, of the projected \$1.2 billion net annual recurring savings are based on savings from eliminating military personnel positions. Initially, the Air Force counted only military personnel savings that resulted in a decrease in end strength. However, at the direction of OSD, the Air Force included savings for all military personnel positions that were made available through realignment or closure recommendations. The Air Force was unable to provide us documentation showing at the present time to what extent each of these positions will be required to support future missions. According to Air Force officials, they envision that most active slots will be needed for formal training, and all the Air Reserve and Air National Guard personnel will be assigned to stressed career fields and emerging missions. Furthermore, Air Force officials said that positions will also be reviewed during the Quadrennial Defense Review, which could decrease end strength. Either way, claiming such personnel as BRAC savings without reducing end strength does not provide dollar savings that can be reapplied outside personnel accounts and could result in the Air Force having to find other sources of funding for up-front investment costs needed to implement its BRAC recommendations.

¹⁴ GAO, *Air Force Aircraft: Consolidating Fighter Squadrons Could Reduce Costs*, GAO/NSIAD-96-82 (Washington, D.C.: May 6, 1996).

Impact on the Air National
 Guard and Reserve
 Components

At least one segment of all but 3 of the 42 Air Force recommendations that were combined¹⁵ affects the Air Force Reserve Command or Air National Guard. The Air Force BRAC report lists 7 closures and 35 Air Reserve and Air National Guard realignments.¹⁶ Overall, 68 Reserve Command (12) and Air National Guard (56) installations were affected by a closure or realignment, or they received aircraft or missions from these actions. According to Air Force officials, its BRAC recommendations have resulted in a reduction of 29 installations with flying missions. Of these reduced installations with flying missions, over 75 percent, or 22, are from the Air National Guard. If implemented the BRAC recommendations will affect over 30 percent of the 70 Air National Guard and 13 Air Reserve installations with air flying units, respectively. Table 18 shows the reduction of flying units in the BRAC process by active force, Air Force Reserve Command, and the Air National Guard.

Table 18: Impact of Air Force BRAC Recommendations on Installations with Flying Missions, by Component

Component	Installations with flying missions		Change	
	Pre-BRAC	Post-BRAC	Number	Percentage ^a
Active	59	56	3	2
Air Force Reserve	13	9	4	3
Air National Guard	70	48	22	15
Total	142	113	29	20

Source: Department of the Air Force.

^aAll percentage changes were calculated by using the change in number of installations with air flying units divided by the pre-BRAC total installation number of 142.

Based on our analysis of COBRA data, we estimate that more than 1,419 positions in the Air Reserve and 5,700 positions in the Air National Guard

¹⁵ The three recommendations that do not affect the reserve component include the closure of Onizuka Air Force Station, California; the realignment of Langley Air Force Base, Virginia; and the Air Force logistics support centers recommendation.

¹⁶ *The Department of the Air Force Analysis and Recommendations BRAC 2005*, volume 5, part 1 of 2, page iii, lists 31 Air National Guard and 4 Air Reserve installations that were realigned. The Willow Grove Air Reserve Station realignment action is located in the Department of the Navy section of DOD's BRAC report.

will be affected by the proposed recommendations, in terms of military personnel and civilians eliminated and realigned. In recommendations affecting active installations, over 26,000 positions are affected (eliminated and realigned); however, since the Air Force has combined active and reserve component actions in some recommendations those positions also include additional Air National Guard and Air Reserve personnel.¹⁷ Also the Air Force recognizes that in moving Air National Guard and Air Reserve units, part-time military (commonly referred to as drill) personnel will also be affected since they will not be moved.¹⁸ A significant portion of the personnel associated with these units must be replaced at the gaining installation and will require training. At Air National Guard installations with flying units, over 30 percent have been recommended for realignment or retirement; many of the personnel positions associated with the units do not have missions. Air Force officials said they plan to use these positions for emerging missions in such areas as homeland security, unmanned aerial vehicles, and intelligence, which they expect to further refine as part of the ongoing Quadrennial Defense Review.

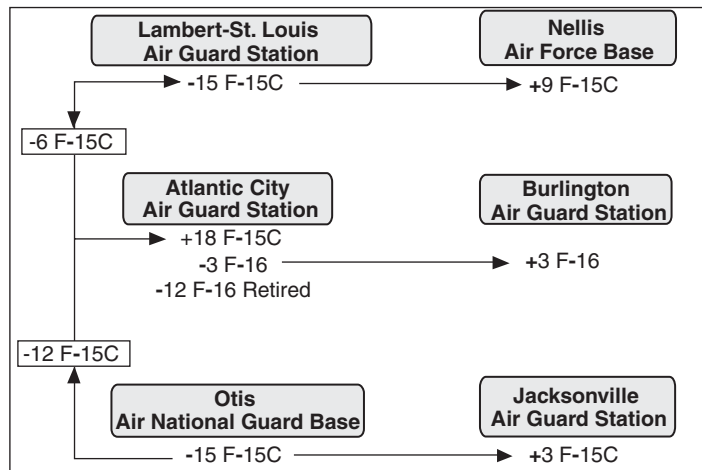
Initially, many of the Air Force proposals involving the Air National Guard and Air Force Reserve with payback periods ranging from 10 to more than 100 years were stand-alone recommendations. Those recommendations linked by related operational realignment actions were grouped together to produce recommendations that had significant savings and minimized the longer payback periods. We found that this occurred in the realignment of Lambert-St. Louis International Airport Air Guard Station, Missouri, which originally had a 63-year payback period and resulted in a 20-year net present value cost of \$22 million. However, this realignment is now a part of the closure of Otis Air National Guard Base, Massachusetts, and the realignment of Atlantic City Air Guard Station, New Jersey because of related operational realignment actions. The current combined recommendation results in a 20-year net present value savings of \$336 million and a 3-year payback period. Figure 12 shows the various BRAC actions in this recommendation. For example, 18 F-15 fighter aircraft are

¹⁷ For example, the Pope Air Force Base recommendation, which primarily affects active duty units, also includes the closure of Pittsburgh Air Reserve Station, realignment of Yeager Air Guard Station and Little Rock Air Force Base, thus affecting active, Air Reserve, and Air National Guard personnel.

¹⁸ The Air Force presented further information regarding the impact of BRAC recommendations on manpower including full time and drill personnel in the Air Force reserve component document titled, *State-by-State Installation View*, May 13, 2005.

realigned from Otis Air National Guard Base and Lambert-St. Louis Air Guard Station to Atlantic City Air Guard Station. Furthermore, all three Air Guard Stations also realign other aircraft to three separate installations, Nellis Air Force Base, Nevada; Burlington Air Guard Station, Vermont; and Jacksonville Air Guard Station, Florida.

Figure 12: Realignment of Fighter Aircraft at Lambert-St. Louis Air Guard Station and Otis Air National Guard Base



+ Denotes receiving fighter aircraft
 - Denotes losing fighter aircraft

Source: Department of the Air Force.

Finally, questions have been raised by various state officials whether the Secretary of Defense is authorized to close or realign Air National Guard bases without the consent of the state governor. DOD's Office of General Counsel has not issued a legal opinion on this issue. According to an Air Force official, as of the date of this report, there have been no legal challenges brought against DOD regarding this issue.

Impact on the Coast Guard

The Air Force recommendation to close Otis Air National Guard Base could impact the U.S. Coast Guard.¹⁹ While the Air Force officials recognized the

¹⁹ The U.S. Coast Guard has eight helicopters at Otis Air National Guard Base, Massachusetts.

Coast Guard could be affected if the base was closed, their cost and savings analysis did not consider any costs that could be incurred by the Coast Guard. Air Force officials stated they didn't have access to credible cost data during the BRAC process since cost estimates would have been speculative; the Air Force could not assume the final disposition of the facility and how much, if any, of the facility the Coast Guard would opt to retain. The Coast Guard is in the process of developing potential basing alternatives, to include costs impacts, for each affected location. Subsequent to the recommendations being made public, the Coast Guard estimated that they would incur about \$17 million in additional annual operating costs to remain at Otis Air National Guard Base.

Realignment of Selected Active Bases

The realignment of Pope Air Force Base²⁰ involves the transfer of 100 percent of the acres and facilities to the Army to become part of Fort Bragg, with a C-130 active/reserve associate unit remaining to support the Army. Our analysis indicates that there is a significant difference between the savings claimed by the Air Force and the costs projected by the Army regarding base operations support, recapitalization, and sustainment for facilities on Pope Air Force Base. For example, the Air Force claimed total net annual recurring savings of about \$36 million for not providing base operations support and recapitalization and sustainment of facilities on Pope Air Force Base. However, the Army estimated total annual recurring costs for these areas to be about \$19.5 million. This estimated cost comprises over \$13 million from the Army as well as over \$5.5 million from the Air Force to remain as tenant at Fort Bragg. According to Army officials, their estimated costs included taking ownership for all facilities on Pope Air Force Base.

The Air Force is also proposing to realign Eielson Air Force Base by moving all active duty units, leaving the Air National Guard units, and hiring contractors to provide base operating support and maintenance and repair of the facilities. The Air Force projects this action would produce a 20-year net present value savings of \$2.8 billion, the most of any Air Force recommendation. Air Force officials said the decision to realign Eielson was made because of the high cost of operating the base and its value as major training site. The officials noted that the realignment will enable the Air Force to expand an annual training exercise as well as provide

²⁰ The Pope Air Force Base recommendation includes the closure of Pittsburgh Air Reserve Station and the realignment of Yeager Air Guard Station and Little Rock Air Force Base.

opportunities for increase use of the training area by other Air Force units. However, we have some question about the facilities that need to be retained to support the training mission and Air National Guard units. While the Air Force plans to give up the base family housing, it appears that all other base facilities would be retained. For example, Air Force COBRA data indicates that there will be no reduction in the square feet of facilities. The data also indicates that 64 percent of the facilities will be sustained at current funding.

The Air Force proposed to close Grand Forks Air Force Base²¹ but this was changed to a realignment by the Infrastructure Executive Council a week before the recommendations were finalized within the department. As a result, the projected savings were significantly reduced, as shown in table 19.

Table 19: Comparison of Alternatives to Closing or Realigning Grand Forks Air Force Base

Fiscal year 2005 constant dollars in millions

	Closure recommendation	Realignment recommendation	Difference
One-time costs	(\$128.6)	(\$131.5)	(\$2.9)
6-year net savings	\$490.0	\$322.5	\$167.5
Net implementation (costs) or savings	\$226.6	\$173.3	\$53.3
Payback period	immediate	1 year	1 year
20-year net present value savings	\$2,656.3	\$1,982.0	\$674.3

Source: GAO analysis of Air Force data.

The decision to realign rather than close the base did not affect the need to move current aircraft and associated personnel to other bases to achieve the active and reserve mix. According to the Air Force BRAC report, this change to a realignment was based on military judgment to keep a strategic presence in the north central United States and on the fact that Grand Forks Air Force Base ranked high for acquiring a possible unmanned aerial

²¹ The Grand Forks Air Force Base recommendation also includes the realignment of McConnell Air Force Base.

vehicle mission.²² Even though Grand Forks Air Force Base was retained for strategic reasons, Minot Air Force Base is also located in North Dakota and is not affected by any BRAC recommendation. Furthermore, Minot Air Force Base scored only 3.4 points less than Grand Forks Air Force Base in the unmanned aerial vehicle mission area.

Closure of Ellsworth Air Force Base

The Air Force is proposing to close Ellsworth Air Force Base, South Dakota, and move its 24 B-1 bomber aircraft to Dyess Air Force Base, Texas to achieve operational efficiencies at one location. Ellsworth Air Force Base ranked lower in the military value than Dyess Air Force Base. In the 1995 BRAC round,²³ the Air Force considered but chose not to close Ellsworth Air Force Base out of concern over placing all B-1 aircraft at a single location. In contrast, one of the Air Force principles which guided the BRAC 2005 process emphasized consolidating or co-locating legacy fleets such as the B-1 aircraft. Air Force officials stated that they no longer had concerns about consolidating the B-1 fleet in one location because it does not have the same operational mission requirements it had 10 years ago.

²² The Infrastructure Executive Council examined the strategic presence of Grand Forks Air Force Base in the central United States after all the service and Joint Cross-Service Group candidate recommendations were evaluated as an aggregate.

²³ GAO, *Military Bases, Analysis of DOD's 1995 Process and Recommendations for Closure and Realignment*, [GAO/NSIAD-95-133](#) (Washington, D.C.: Apr. 14, 1995).

Education and Training Joint Cross-Service Group Selection Process and Recommendations

The Education and Training Joint Cross-Service Group followed the common analytical framework established by the Office of the Secretary of Defense (OSD) for reviewing its functions and facilities. The group produced a relatively small number of recommendations (nine) compared with the amount of excess capacity it identified. The group reported that the Infrastructure Steering Group (ISG) or the Infrastructure Executive Council (IEC) had each disapproved two recommendations for various reasons, and four recommendations were rolled into military department recommendations and are discussed in appendixes related to these groups. The group's recommendations are projected to produce \$1.3 billion in net present value savings over a 20-year period. For these recommendations, the length of time required for the savings to offset closure costs varied widely, with two recommendations expected to take just 1 year, two other recommendations requiring 13 and 16 years, respectively, and one never having any payback. We identified issues regarding the projected savings and extended payback periods with some recommendations that may warrant further attention by the BRAC Commission. The DOD Inspector General and service audit agencies, which performed audits of the data used in the process, concluded that the data were sufficiently reliable for use during the BRAC process.

Organization and Focus

The overarching goal of the Education and Training Joint Cross-Service Group was to pursue those educational and training economies and efficiencies that enhance readiness and promote academic synergies for more joint or interservice education. The group was chaired by the Principal Deputy Under Secretary of Defense (Personnel and Readiness), with senior-level members from Air Force Manpower and Reserve Affairs, Marine Corp Training and Education Command, Army and Naval Personnel, and the Joint Staff. This cross-service group was organized into four subgroups,¹ focusing on (1) flight training, (2) specialized skill training, (3) professional development education, and (4) ranges.

The group identified five principles that were used to provide focus to its work:

- Advance jointness: Declare jointness paramount for specific functions. Establish Joint National Training Capability.

¹ At the Office of the Secretary of Defense, the ISG and the IEC provided overall coordination and direction to the DOD-wide process.

- **Achieve synergy:** Jointly construct, co-locate or put in close proximity multiple functions that are mutually supportive. Increase cross-functional use of training and testing ranges.
- **Capitalize on technology:** Leverage distance learning capability to significantly reduce residential requirements.
- **Exploit best practices:** Establish centers of excellence. Outsource to alternative providers.
- **Minimize redundancy:** Identify common functional areas and eliminate duplication, reduce or avoid costs, standardize instruction, and increase efficiency.

The organizational structure and the above guiding principles provided a framework to evaluate the potential of a broad series of transformational options to improve DOD education and training.

Framework for Analysis

Capacity and military value analysis became the starting point for the group's analyses. The DOD Inspector General and service audit agencies performed an important role in ensuring the accuracy of data used in these analyses through selective audits of data gathered at various locations.

Capacity Analysis

To form the basis for its analyses, the group developed metrics in each of the functional areas to measure capacity and subsequently collected certified data linked to these metrics from various defense activities whose missions resided within these categories. Each subgroup developed metrics to analyze capacity and to compare the various functions. The major standards used by each subgroup are described below:

- For undergraduate fixed and rotary flight training, runway and airspace capacity were the primary metrics used to analyze capacity. Runway capacity for fixed wing aircraft was calculated using Federal Aviation Administration standards to define the number of runway operations that could be conducted during daylight hours for 244 training days, at 12 hours per day. This approach accounted for weather conditions, the number and configuration of runways, the mix of aircraft, and the percentage of touchdown/takeoff operations. Other metrics included

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Education and Training Joint Cross-Service
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the amount of ramp (apron) space and ground-training facilities, such as classrooms and simulators.

- For professional development education, capacity was based on classroom equivalent hours available on a 6-hour training day basis for 244 days a year. Classroom equivalent hours represent the number of 1-hour classes (15 students per class) that can be held in designated facilities, and they are based on available classroom space and instructor office space.
- For specialized skill training, capacity was measured by the student population that can be sustained by the number of available dormitory rooms, dining facilities, and classrooms. This figure was based on an 8-hour training day for 244 days per year.
- For ranges, capacity was based on the volume and time for training and open air testing at ground, air, and sea levels.

Each subgroup focused its capacity analysis on the existing capability to perform specific functions. Surge requirements, where applicable, were determined by military judgment. Excess capacity was defined as current capacity less current usage plus surge capacity. As seen in table 20, significant excess capacity was identified across all education and training functions except for the ranges subgroup.

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Table 20: Excess Capacity Identified by the Education and Training Joint Cross-Service Group

Subgroup/function	Capacity metric	Percentage of excess capacity (shortage)
Flight training Undergraduate fixed wing	Runway	45
	Airspace	51
	Ramp space	23
	Classrooms	62
	Simulator	48
Undergraduate rotary wing	Runway	76
	Ramp space	52
	Classrooms	73
	Simulator	71
Undergraduate navigator/naval flight officer	Runway	57
	Airspace	35
	Ramp space	48
	Classrooms	84
	Simulator	55
Professional development education	Classroom equivalent hours	58
Specialized skill training	Dormitory rooms	10
	Dining facilities	(45)
	Classrooms	42
Ranges Training	Ground acreage	0
	Air nautical miles	0
	Sea nautical miles	28
Test and evaluation	Open air testing	9

Source: Education and Training Joint Cross-Service Group.

The percentage of excess capacity includes consideration of surge requirements for all functions except professional development education.²

² Since there was no standard definition, three of the subgroups identified surge requirements on a judgmental basis as a percentage of capacity ranging from 10 to 25 percent. The professional development education subgroup did not identify a surge requirement.

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According to service officials, in the event of a mobilization, postgraduate educational institutions and facilities would cease to operate and the students would revert back to their warfighting duties. The surge requirements for the remaining functions were based on military judgment. For example, the flight and specialized skill training subgroups used a 20 percent surge factor based on a review of current planning documents and military judgment. Likewise, a 25 percent surge factor was used for training ranges and a 10 percent factor for test and evaluation ranges, based on military judgment. According to service officials, a higher surge factor was used for training ranges to meet anticipated training needs for contingencies and mobilization, while test and evaluation are more measured and predictable and less likely to generate large surge loads on test and evaluation missions.

The group did not analyze the extent to which its proposed recommendations would reduce excess capacity across all education and training functions. Nonetheless, the Air Force estimated that the recommendation to consolidate undergraduate pilot training would reduce excess capacity by 2 percent. At the same time, the excess capacity identified will remain in undergraduate rotary wing training because the Navy could not agree on a scenario to consolidate training. Since there were no recommendations involving training ranges, there was no reduction in excess capacity in the sea and open air testing areas.

Military Value Analysis

Each subgroup developed military value scoring plans to analyze and rank each training facility using DOD's four military value selection criteria. The subgroups assigned weighted values to each of the four criteria based on relative importance in assessing the military value of a site under each subgroup and related functions. Table 21 shows the weights for each subgroup.

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Table 21: Education and Training Joint Cross-Service Group Military Value Criteria Weights

Figures in percentages

Military value criteria	Flight training	Specialized skill training	Professional development education	Ranges
1. The current and future mission capabilities and the impact on operational readiness of the total force of the Department of Defense, including the impact on joint warfighting, training, and readiness.	40	44	40	25
2. The availability and condition of land, facilities, and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions) at both existing and potential receiving locations.	35	32	25	50
3. The ability to accommodate contingency, mobilization, surge, and future total force requirements at both existing and potential receiving locations to support operations and training.	5	9	10	15
4. The cost of operations and the manpower implications.	20	15	25	10
Total	100	100	100	100

Source: DOD and Education and Training Joint Cross-Service Group.

Note: The system of weights provided a basis for assigning relative value to data collected and tabulated across each military value dimension.

Some key assumptions used by the subgroups in developing scoring plans for military value include the following:

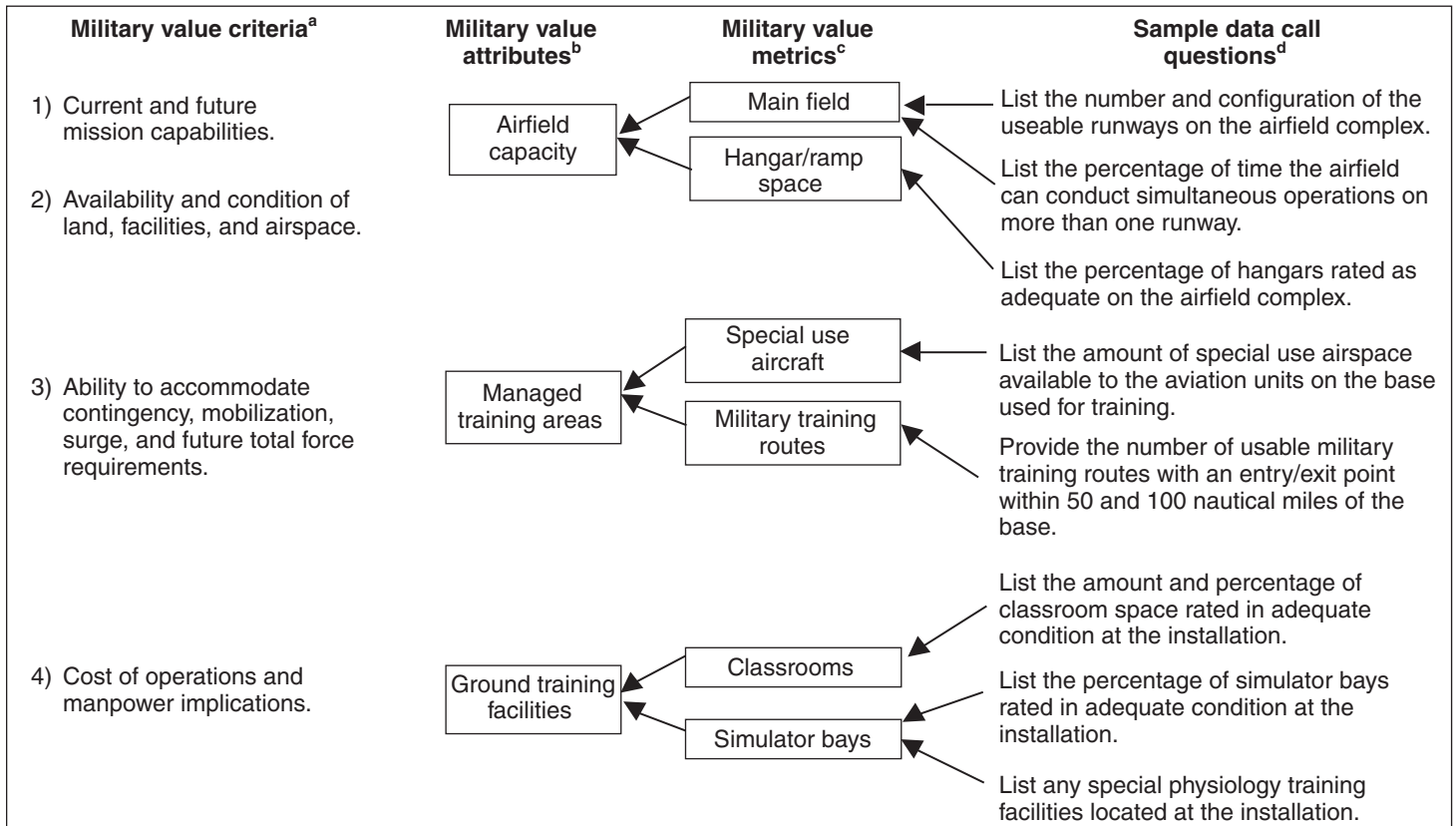
- Installations with larger capacities are of comparatively greater military value for flight training and specialized skill training.
- Managed training areas (particularly airspace) would be extremely hard to reconstitute if lost due to the BRAC process.
- Existing service qualitative training requirements must be maintained.
- Retain unique, one-of-a-kind assets or capabilities.

Attributes varied by subgroup. For example, the flight training subgroup identified six attributes that included airfield capacity, weather, environmental constraints (air quality, noise abatement, and encroachment), quality of life, managed training areas, and ground training facilities. The professional development subgroup applied location (access to senior political and military decision makers), educational output,

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facilities, educational staff, and quality of life. The specialized skill training subgroup attributes included location, quality of life issues, training facilities/resources (number of classrooms and available housing), support for other missions, training mission/throughput, and environmental constraints/expansion potential. Finally, the attributes for the ranges subgroup included personnel (experience and education), workload, physical plant (available space and range features), synergy with other ranges, and encroachment. Figure 13 gives an example of how the flight training subgroup was linked to the military value criteria.

Figure 13: Selected Attributes, Metrics, and Data Questions Used to Assess Military Value of Flight Training



Source: GAO analysis of Education and Training Joint Cross-Service Group data.

^aThe BRAC military value criteria are the first four BRAC selection criteria.

^bMilitary value attributes are characteristics of each criterion. The flight training subgroup used a total of six military value attributes.

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^cMilitary value metrics are measures for the attributes. The flight training subgroup used a total of 22 military value metrics.

^dThe flight training subgroup used a total of 70 data call questions.

The specialized skill training, professional development education, and ranges subgroups used similar approaches of attributes, metrics, and data call questions to link analysis back to the military value criteria.

DOD Inspector General’s
and Service Audit Agencies’
Roles in the Process

The DOD Inspector General and service audit agencies reviewed the data and processes used by each subgroup to develop their recommendations. The overall objective was to evaluate the validity, integrity, and documentation of the data used by the subgroups. The DOD Inspector General and service audit agencies used real-time audit coverage of data collection and analyses processes to ensure that the data used in the Education and Training Joint Cross-Service Group capacity analysis and military value analysis were reliable and certified. Through extensive audits of the data collected by each subgroup from field activities during the process, the Inspector General and service audit agencies notified the group about identified data discrepancies for the purpose of follow-on corrective action. While the process for validating data was quite lengthy and challenging, the Inspector General and the service audit agencies ultimately determined the education and training-related data to be sufficiently reliable for use in the BRAC process once the subgroups made corrections to all the discrepancies.

Identification and
Assessment of
Alternate Scenarios
and Selection of
Recommendations

Although corrections were later made, the group did not have accurate and complete capacity and military value data when it started developing potential closure and realignment scenarios, and therefore, it had to rely on incomplete data, military judgment, and transformation options³ in developing initial scenarios for consideration. However, certified capacity and military value data and results of COBRA analyses were subsequently used to support the group’s final candidate recommendations. The group initially identified 64 scenarios and selected 17 candidate

³ Some of the transformation options included privatizing graduate-level education, establishing centers of excellence for joint or interservice education and training by combining or co-locating like schools, establishing joint officer and enlisted specialized skill training, and consolidating or co-locating at a single installation all services’ primary phase of pilot training that uses the same aircraft.

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recommendations that were forwarded to the ISG. Four of the recommendations were rejected by the ISG and IEC and 4 of the group's recommendations were integrated into military service recommendations. Ultimately, 9 recommendations were approved by the IEC.

Generally, scenarios were eliminated because they were alternatives to a recommendation that was selected or because the services objected to the scenario and the group leadership decided to delete it. For example, the professional development education subgroup developed three scenarios to streamline graduate education courses—two to consolidate these functions at existing military facilities and another to obtain graduate-level education at civilian colleges and universities. The group selected the privatization option because of the significant savings; however, it was rejected by the IEC, as discussed later. The professional development education subgroup also developed nine scenarios to realign the senior-level education courses provided by the service war colleges. The group elected to relocate the service war colleges under the National Defense University as the “best choice” option because it establishes a joint strategic center of excellence in the National Capitol Region. However, the IEC rejected this option, as discussed later. Finally, the flight subgroup developed eight alternatives to consolidate undergraduate pilot training. However, the Navy and the Air Force objected to these scenarios because they believed they would result in too much disruption to the pilot production pipeline.

The flight training subgroup was the only subgroup that used an optimization model in its scenario analysis. The subgroup used it to identify potential locations to consolidate undergraduate fixed wing pilot training functions among 11 installations. According to flight subgroup officials, the model was not used for rotary wing pilot training because there are only two locations where this training is conducted. Likewise, they noted that it was not used to select sites for the Joint Strike Fighter and Unmanned Aerial Vehicle training because there were limited sites selected for this training. Officials from the other three subgroups stated they did not use the model because of the limited number of facilities or functions reviewed. For example, the professional development education subgroup compared from two to six locations within each scenario, so the team manually developed scenarios by maximizing military value and capitalizing on excess capacity.

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Recommendations Approved by DOD

The group estimated that its recommendations will produce \$1.3 billion in 20-year savings and \$236 million in net annual recurring savings. Table 22 provides a summary of the financial aspects of the group's recommendations, all of which are realignment actions.

Table 22: Financial Aspects of the Education and Training Joint Cross-Service Group's Recommendations

Fiscal year 2005 constant dollars in millions

Recommended actions	DOD report page	One-time (costs)	Net implementation (costs) or savings	Net annual recurring (costs) or savings	Payback period^a (years)	20-year net present value (costs) or savings^b
Realignment to establish Combat Service Support Center at Fort Lee	E&T-6	(\$754.0)	\$352.4	\$131.8	6	\$934.2
Realignment to relocate Air Defense Artillery Center and School to Fort Sill	E&T-12	(247.0)	(93.0)	42.6	6	319.1
Realignment to establish Joint Strike Fighter initial joint training site at Eglin Air Force Base	E&T-10	(199.1)	(209.6)	(3.3)	never	(226.3)
Realignment of various installations to consolidate undergraduate pilot and navigator training	E&T-14	(71.7)	(1.6)	18.3	4	174.2
Realignment to relocate Aviation Logistics School to Fort Rucker	E&T-5	(492.3)	(348.1)	42.9	13	77.4
Realignment to establish Joint Center of Excellence for consolidated transportation management training at Fort Lee	E&T-7	(1.5)	(5.8)	1.3	1	18.0
Realignment to establish Joint Center of Excellence for culinary training at Fort Lee	E&T-8	(5.4)	(2.6)	1.4	2	15.7
Realignment to establish Joint Center of Excellence for religious training and education at Fort Jackson	E&T-9	(1.0)	4.0	0.8	1	11.9
Realignment to relocate Army Prime Power School training to Fort Leonard Wood	E&T-13	(6.0)	(3.9)	0.5	16	0.8
Total		(\$1,778)	(\$308.2)	\$236.3		\$1,325

Source: GAO analysis of DOD data.

^aPayback period refers to the length of time required for the savings to offset closure costs.

^bDOD used a 2.8 percent discount rate to calculate net present value.

Our analysis indicates that \$1.3 billion, or over 95 percent, of the group's projected 20-year savings results from two recommendations that involve only the Army—the combat service support center and the air defense artillery center. The greater part of the projected savings from these two recommendations is based on military personnel reductions.

While five of the nine recommendations would foster jointness, they have limited projected savings. For example, the three recommendations that would establish joint centers of excellence for training (culinary, transportation management, and religious studies) are projected to produce only \$45.6 million, or less than 1 percent, of the projected 20-year savings. Furthermore, the recommendation to consolidate the Joint Strike Fighter training has a payback period of never and a 20-year net present value cost of \$226 million.

Issues Identified with Approved Recommendations

Time did not permit us to assess the operational impact of each of the Education and Training Joint Cross-Service group's recommendations, particularly where operations proposed for consolidation extend across multiple locations outside of a single geographic area. While available data supporting the recommendations suggest that their implementation should provide for more efficient operations within DOD, the BRAC Commission may wish to consider the basis for the group's assumptions about military personnel reductions, because these have a significant impact on the recommendations' annual recurring savings and the potential benefits in relation to the investment costs for recommendations with longer payback periods.

Military Personnel Reductions

Significant portions of the savings in three recommendations—combat service support, air defense, and aviation logistics—are related to military personnel reductions. These recommendations represent \$217 million, or 92 percent of the Education and Training Joint Cross-Service Group's projected net annual recurring savings. Our analysis indicates that about \$174 million of the net annual recurring savings is based on eliminating over 2,000 military positions within the Army. However, the Army does not plan to reduce its end strength by 2,000 in implementing these actions. These projected revenues do not represent dollar savings that can be readily reallocated to other accounts and applied to other priorities such as modernization, an area typically cited as a potential beneficiary of BRAC savings. Our analysis shows that without the savings from the military

personnel reductions, the payback for the combat service support recommendation increases to 35 years, and for both the air defense and aviation logistics recommendations there would be no payback.

Extended Payback Periods

The group has proposed one recommendation that has no expected payback period and two others that have payback periods that exceed 10 years, far longer than the average payback typically associated with recommendations in the 1995 BRAC round. The recommendation to establish an integrated training center for the Joint Strike Fighter at Eglin Air Force Base, Florida, has no expected payback period, one-time cost of \$199 million (\$168 million is for military construction), and annual recurring cost of \$3.3 million. This recommendation calls for the realignment of nearly 800 military positions—675 maintenance and 115 pilot—from five military installations to Eglin Air Force Base to train entry-level aviators and maintenance technicians from the Navy, Marine Corps, and Air Force in how to operate and maintain the new Joint Strike Fighter aircraft when produced and deployed. According to the chairman of the flight training subgroup, the recommendation does not provide the opportunity to generate savings through the consolidation and alignment of similar personnel because it is a new mission. However, this recommendation would establish a baseline program in a consolidated/joint school with a curriculum that brings a joint perspective to the learning process.

The two recommendations with payback periods greater than 10 years affect the Army. For example, the recommendation to relocate the Army Prime Power School from Fort Belvoir, Virginia to Fort Leonard Wood, Missouri, has a 16-year payback period, onetime cost of \$6 million, and a 20-year net present value savings of less than \$1 million. According to the DOD BRAC report, implementation of this recommendation consolidates engineer courses at Fort Leonard Wood, since the common-core phase of engineer courses are already taught at Fort Leonard Wood. Likewise, the recommendation to realign Fort Eustis, Virginia by relocating the Aviation Logistics School and consolidating it with the Aviation Center and School at Fort Rucker, Alabama has a 13-year payback period, one-time cost of \$492.3 million, and a 20-year net present value savings of only \$77.4 million. According to the DOD BRAC report, consolidating aviation logistics training with the Aviation Center and School fosters consistency, standardization, and training proficiency.

**Proposals Eliminated from
Consideration**

The proposed recommendations do little to reduce the significant excess capacity (see table 20) that was identified in undergraduate pilot training for both fixed and rotary wing aircraft. The Education and Training Joint Cross-Service group identified several scenarios to consolidate undergraduate pilot training that could have enabled some base closures, but the group was unable to get the military services to agree to a joint solution. As a result, the Air Force made a proposal to realign its undergraduate pilot training and consolidate its navigator training with the Navy, which DOD adopted. However, the approved recommendation did not include rotary wing flight training. According to the chairman of the flight training subgroup, the capacity and military value analysis clearly showed that sufficient space is available at Fort Rucker for the Navy undergraduate rotary wing program to relocate from Naval Air Station Whiting Field, Florida, to Fort Rucker with limited renovation or military construction. However, the chairman noted that his group could not get the Navy to agree to the consolidation because of the Navy's concerns over how such actions would affect other training schedules, so it was not pursued.

The Education and Training Joint Cross-Service group also developed a proposal to privatize graduate education that was conducted at the Naval Postgraduate School at Monterey, California, and the Air Force Institute of Technology at Wright-Patterson Air Force Base, Ohio. The group estimated that the proposal would produce \$14 million in 20-year savings, with payback in 13 years, and enable the closure of the Monterey location. However, the IEC removed this recommendation late in the process because they believed that relying on the private sector to fulfill this requirement is too risky. According to the Navy's Special Assistant for BRAC, the Chief of Naval Operations did not want to lose the synergy and interaction between U.S. and foreign students who attended the postgraduate school, and there were questions over whether all graduate-level courses would be available at civilian institutions.

The group also developed a recommendation to consolidate all the military services' senior war colleges at Fort McNair, Washington, D.C., making them one college of the National Defense University. The group estimated that the proposal would produce \$213 million in 20-year savings, with payback in 2 years. All of the military services voiced concerns about this recommendation. The Air Force believed that this recommendation would significantly degrade its Center of Excellence for Professional Military Education that includes extensive curriculum for air centric studies located at Maxwell Air Force Base, Alabama. The Navy believed that the existing

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system already has joint educational forums to address executive-level interchange, and it is unclear what would be gained by creating a single senior war college. Finally, the Army opposed the recommendation because it would move senior leaders and their families to the National Capital Region for 10 months. Based on the services' concerns, the IEC rejected the proposal. However, the group, with the Army's concurrence, developed a recommendation to move the Army War College, Pennsylvania, to Fort Leavenworth, Kansas, and consolidate it with the Army Command and General Staff College at a single location. This proposal would have enabled the closure of Carlisle Barracks in Pennsylvania, with projected 20-year savings of \$555 million and a 2-year payback period. However, the IEC rejected this proposal because it wanted to maintain the proximity to Washington, D.C. that provides access to key national and international policy makers as well as senior military and civilian leaders.

Finally, the group developed eight scenarios to promote joint management of the military services' training ranges. These options included utilizing a joint national urban operations training center and establishing three joint regional range coordination centers. The group ultimately proposed one recommendation to establish three regional joint range coordination centers, which it projected would have a 20-year cost of \$138 million and no payback. The ISG rejected this recommendation because it deals with a program action as opposed to a BRAC-related issue.

Headquarters and Support Activities Joint Cross-Service Group Selection Process and Recommendations

The Headquarters and Support Activities Joint Cross-Service Group followed the common analytical framework established by the Office of the Secretary of Defense (OSD) for reviewing its functions and facilities. The group produced 21 recommendations, each of which resulted in multiple closures or realignments of activities, mostly from leased space onto military bases intended to consolidate commands, reduce costs, and enhance force protection. Nine other recommendations were referred to other joint cross-service groups or military services for inclusion in their reports. The group's 21 recommendations are projected to realize \$9.5 billion in net present value savings over 20 years. The payback period, or length of time required for the savings to offset closure costs for the recommendations discussed here, varied widely, from immediate to up to 16 years. We have identified some issues that suggest uncertainty about the level of savings likely to be realized, which the BRAC Commission may want to consider in its analysis of the proposed recommendations. The DOD Inspector General and service audit agencies, which performed audits of the data, concluded that the data were sufficiently reliable for use during the BRAC process, but did raise issues of concern impacting some recommendations.

Organization and Focus

The Headquarters and Support Activities Joint Cross-Service Group comprised six senior-level principal members, representing each service, the Office of the Secretary of Defense, and the Joint Chiefs of Staff. The group was chaired by the Army Assistant Deputy Chief of Staff for Programs, and principal members included the Commandant, Naval District Washington; the Marine Corps Assistant Deputy Commandant for Manpower and Reserve Affairs; the Administrative Assistant to the Secretary of the Air Force; the Office of the Secretary of Defense Deputy Director for Administration and Management; and the Chief of the Forces Division, Joint Staff.¹ The group analyzed common headquarters-, administration-, and business-related functions across DOD, covering the military services, and defense agencies and activities. The group's objectives were to

- improve jointness;
- eliminate redundancy, duplication, and excess capacity;

¹ At OSD, the Infrastructure Steering Group (ISG) and the Infrastructure Executive Council (IEC) provided overall coordination and direction to the DOD-wide process.

- enhance force protection;
- utilize best business practices;
- increase effectiveness, efficiency, and interoperability; and
- reduce costs.

Framework for Analysis

The group organized itself into three subgroups: (1) major administrative and headquarters activities, (2) geographic clusters and functional, and (3) mobilization. The major administrative and headquarters activities subgroup focus included headquarters activities in leased and DOD-owned space within and outside a 100-mile radius of the Pentagon, combatant, service component, and supporting commands, and reserve and recruiting headquarters. The geographic clusters and functional subgroup examined installation management within geographic clusters,² Defense Finance and Accounting Services headquarters and field offices, correctional facilities, and civilian and military personnel centers. The mobilization subgroup looked at the potential for joint mobilization sites. Capacity analysis identified the current inventory of administrative space, while the military value analysis became the starting point for developing recommendations as they applied to the four military value selection criteria. The DOD Inspector General and service audit agencies performed an important role in ensuring the accuracy of data used in these analyses through extensive audits of data gathered at various locations.

Capacity Analysis

To form the basis for its analyses, the group developed metrics in each of the functional areas to measure capacity and subsequently collected certified data from the military services and defense agencies and activities. In most cases, the group used a single metric, a standard factor of 200 gross square feet per person in analyzing existing administrative space requirements.³ The group also used fiscal year 2003 inmate population and current and maximum operational capacities for

² These are installations having shared boundaries or that are located in proximity to each other.

³ The group used 200 gross square feet as the standard factor as a compromise to account for the different standards used by each of the military services and defense agencies.

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correctional facilities, and it used fiscal year 2004 personnel processing numbers and peak processing capacities at military installations serving as reserve component mobilization sites to estimate mobilization excess capacity figures.

The capacity analysis identified excess capacity across all functions analyzed—even when surge requirements were considered. As shown in table 23, excess capacity ranged from 14 percent to 87 percent across various capacity metrics in functional categories after applying a surge factor to figures for major administrative and headquarters installations and facilities and correctional facilities. The table provides the amount of the aggregate excess capacity for each of the functional categories; however, the amount of excess capacity varies by individual installation and activity.

Table 23: Excess Capacity Identified by the Headquarters and Support Activities Joint Cross-Service Group

Figures in gross square feet

Subgroup	Category	Maximum potential capacity	Current usage	Surge	Excess capacity	Percentage of excess capacity
Major administrative and headquarters activities	Installations	112,006,087	87,566,988	362,760	24,076,339	22
	Activities	26,576,615	20,269,800	6,350	6,300,465	24
Geographic clusters and functional	Installation management	9,381,190	8,009,278	0	1,371,912	15
	Defense Finance and Accounting Service	3,245,808	2,530,240	0	715,568	22
	Correctional facilities	2,975	2,141	410	424	14
	Civilian personnel centers	1,278,040	969,000	0	309,040	24
	Military personnel centers	2,293,495	1,748,400	0	545,095	24
Mobilization	Mobilization/demobilization	106,929	13,592	0	93,337	87

Source: Headquarters and Support Activities Joint Cross-Service Group.

Note: Group officials noted the high percentage of excess capacity for mobilization is due to differences in the required maximum potential capacity and the different service standards for mobilizations.

In calculating excess capacity estimates for each of the eight categories, the group analyzed the data call responses pertaining to current capacity, maximum potential capacity, current usage, and space required for surge,

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using a standard factor of 200 gross square feet per employee. Subtracting current usage and surge space requirements from maximum potential capacity resulted in the excess capacity estimates. The group used a variety of approaches to consider surge requirements. For example, the major administrative and headquarters activities subgroup determined surge requirements through specific data call questions and then used these requirements in the capacity analysis in terms of requirement and space evaluations. The correctional facilities function within the geographic clusters and functional subgroup considered surge as a function of demand against maximum potential capacity. At the same time, the geographic clusters and functional subgroup determined that military personnel centers had been operating in a surge mode for the past several years and did not require additional surge capacity to be retained. The group did not determine the aggregate impact its recommendations had on reducing excess capacity.

Military Value Analysis

The group's military value analysis was directly linked to the four military value selection criteria, as required by the BRAC legislation. The group assigned military values to 25 civilian personnel offices, 10 military personnel centers, 17 correctional facilities, 26 Defense Finance and Accounting Service sites, 65 installation management sites, 334 major administrative and headquarters installations and activities, and 66 mobilization sites. Each functional group developed weighted values for each selected criteria by first asking each group member to assess weights across the military value selection criterion, ranking them from highest to lowest in importance to military value. Once the rankings were determined, the weights generated for each group member were compared and, if they were close, the weights were adopted. If not, the group discussed the differences and reached agreement. Table 24 shows the various weights assigned to each of the four military value selection criteria.

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Table 24: Headquarters and Support Activities Joint Cross-Service Group Military Value Criteria Weights

Figures in percentages

Military value criteria	Major administrative and headquarters activities	Geographic clusters and functional^a	Mobilization
1. The current and future mission capabilities and the impact on operational readiness of the total force of the Department of Defense, including impact on joint warfighting, training, and readiness.	40	37	11
2. The availability and condition of land, facilities, and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions) at both existing and potential receiving locations.	44	20	7
3. The ability to accommodate contingency, mobilization, surge, and future total force requirements at both existing and potential receiving locations to support operations and training.	11	20	77
4. The cost of operations and the manpower implications.	5	24	5
Total	100	100^b	100

Source: DOD and Headquarters and Support Activities Joint Cross-Service Group.

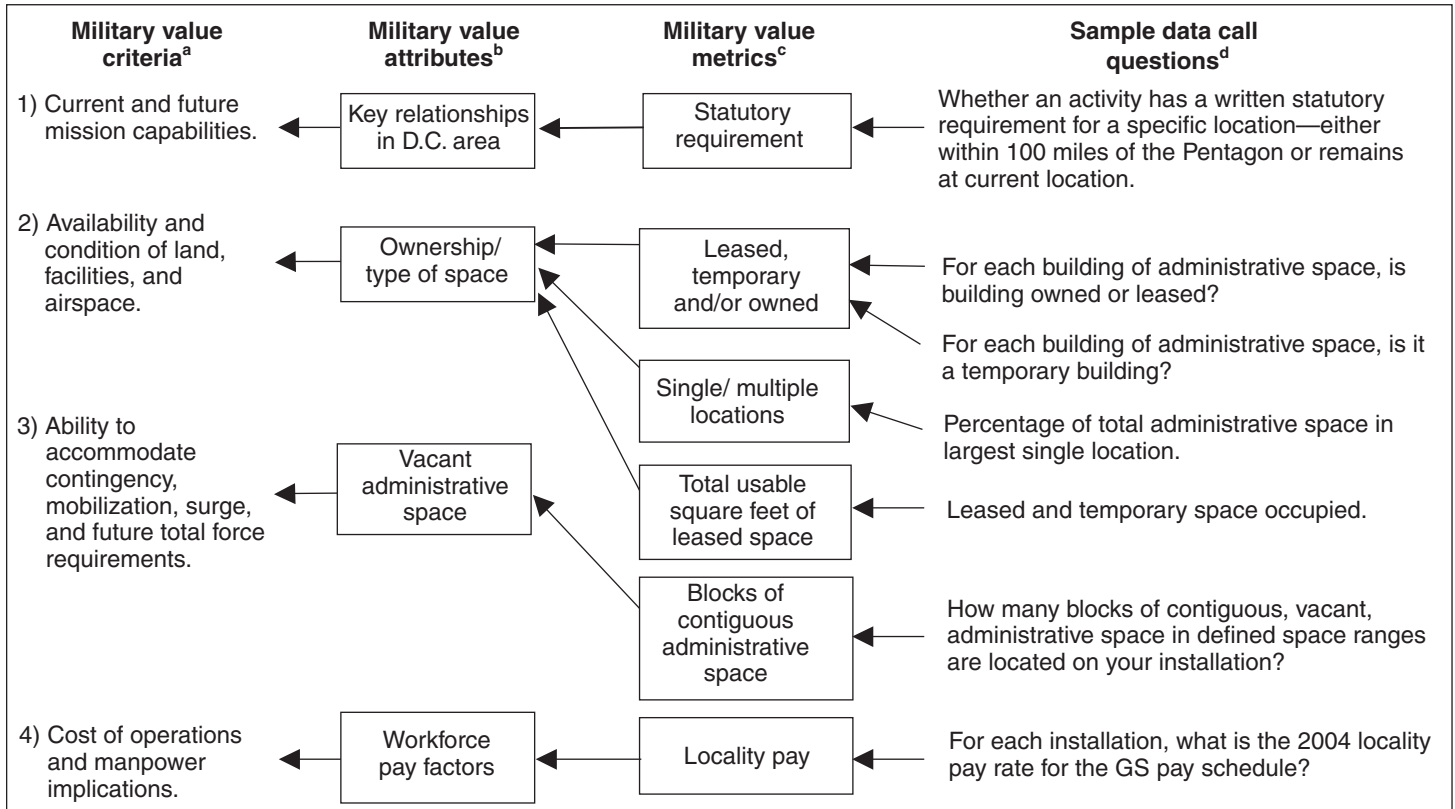
^aThe geographic clusters and functional subgroup military value scorings are a cumulative average of its five functional areas, including civilian personnel, military personnel, correctional facilities, Defense Finance and Accounting Service, and geographic clusters. The system of weights provided a basis for assigning relative value to data collected and tabulated across each military value dimension.

^bIndividual entries do not sum to total because of rounding.

The group’s assessment of military value included development of attributes (characteristics, facts, etc.), metrics or measures, and data call questions for each of the three subgroups. Figure 14 demonstrates an example of how attributes, metrics, and data call questions were linked back to the BRAC military value selection criteria for the major administrative and headquarters activities subgroup.

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Figure 14: Selected Attributes, Metrics, and Data Questions Used to Assess Military Value of Major Administrative and Headquarters Activities



Source: GAO analysis of Headquarters and Support Activities Joint Cross-Service Group data.

^aThe BRAC military value criteria are the first four BRAC selection criteria.

^bMilitary value attributes are characteristics of each criterion. The major administrative and headquarters activities subgroup used a total of 14 military value attributes.

^cMilitary value metrics are measures for the attributes. The major administrative and headquarters activities subgroup used a total of 20 military value metrics.

^dThe major administrative and headquarters activities subgroup used a total of 31 data call questions.

The geographic clusters and functional subgroup and the mobilization subgroup used similar approaches of attributes, metrics, and data call questions to link the analysis back to the military value selection criteria. For example, the geographic clusters and functional, and major administrative and headquarters subgroups developed metrics and data call questions addressing force protection issues.

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Using mostly certified data, the headquarters group examined the capabilities of each function from questions developed to rank activities from most valued to least valued. Exceptions occurred where military value responses were slow in arriving, contained obvious errors, or were incomplete, and in these cases judgment-based data were used. For example, in about 30 cases, activities in leased space did not respond to particular data call questions addressed to the leased space building manager nor did they identify what entity managed the building. After numerous follow-ups with the activities and meetings with representatives of the Washington Headquarters Service and Army Corps of Engineers—property agents for DOD—the group decided to use judgment-based data derived from functional subject matter experts, in consultation with the military departments and defense agencies. In an October 2004 memorandum to the Infrastructure Steering Group describing military value scoring plan changes, the Headquarters and Support Activities Joint Cross-Service Group concluded that based on an analysis of the effect of the missing, wrong, and incomplete data on proposals, there were some data issues that could affect the generation and comparison of proposals by the group members. However, improvements to the data occurred over time, and as of May 2005, when the military value analysis was completed, the group reported that a vast majority of its data were certified. We were told by a group operations research analyst that 99 percent of the analysis was determined by certified data and less than 1 percent by judgment-based data.

**DOD Inspector General’s
and Service Audit Agencies’
Role in the Process**

The DOD Inspector General and service audit agencies reviewed the data and processes used by each subgroup to develop their recommendations; the military service audit agencies reviewed data inputs from the services, and the Inspector General reviewed data inputs from defense agencies and activities. Their objectives were to validate the data and the adequacy of the supporting documentation. The process for detecting and correcting data errors was quite lengthy and challenging. Through their audits of the data collected from field activities during the process, audit agencies notified the group as data discrepancies were discovered so that follow-on corrective actions could be initiated. The military service audit agencies concluded that the information was sufficiently reliable for its intended purpose. Assessments by the DOD Inspector General’s office of the data it reviewed were more mixed. In its June 10, 2005 draft report on the Headquarters and Support Activities Joint Cross-Service Group’s data

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integrity and internal control process for BRAC,⁴ the DOD Inspector General's office concluded that after corrections were made, the group generally used certified data and created an adequate audit trail for its capacity, military value, and cost of base realignment actions. However, the Inspector General's office raised issues involving estimated one-time savings associated with vacating leased space and consistency in rounding to estimate personnel savings. According to group officials, the Inspector General's issues were discussed with group leadership, and they decided in deliberative session that the approaches taken by the group were the most fair and accurate approaches available and should be retained.

Our analysis indicates that the two issues identified by the Inspector General would reduce projected savings. Our analysis shows that if the one-time cost savings associated with antiterrorism and force protection are excluded, the 20-year net present value savings would be reduced by \$268.4 million, the payback periods for 7 of the 15 affected recommendations would be extended by 1 year, and 3 years for one recommendation. Also, for the two recommendations⁵ identified by the Inspector General as using abnormal rounding techniques⁶ to estimate personnel reductions, the projected 20-year net present value savings in one case would be reduced from \$13.5 million to a \$749,000 cost, and for the other recommendation, the 20-year net present value savings drops from approximately \$4.9 million to \$ 2.6 million.

⁴ Department of Defense, Office of Inspector General Audit Report, *Headquarters and Support Activities Joint Cross-Service Group Data Integrity and Internal Control Processes for Base Realignment and Closure 2005*, Report No. D2003-D000CG-0135.000 (Arlington, Va.: *forthcoming*).

⁵ The recommendations are to co-locate defense and military adjudication activities at Fort Meade, Maryland, and to consolidate Defense Commissary Agency offices at Fort Lee, Virginia.

⁶ A DOD Inspector General representative told us that the group rounded all personnel reductions to the next highest number, rather than the normal practice of rounding up only when the calculated number was .5 or higher.

Identification and Assessment of Alternate Proposals and Selection of Recommendations

The Headquarters and Support Activities Joint Cross-Service Group developed proposals without receiving all the data they had requested from numerous activities. As such, the group relied on transformational goals and military judgment to develop its initial proposals. The group also used certified data to support or reject its proposals, data which the DOD Inspector General audited for accuracy. The group used the optimization model on a limited basis for a few functional areas because potential for those functional realignment possibilities was generally slight.

The following transformation options helped guide the group in developing initial proposals:

- Consolidate management at installations with shared boundaries and in geographic clusters.
- Consolidate or co-locate civilian and military personnel offices.
- Consolidate Defense Finance and Accounting Service central and field offices.
- Establish and consolidate mobilization sites and establish joint deployment processing sites.
- Justify locations for headquarters, commands, and activities within 100 miles of the Pentagon.
- Eliminate leased space.
- Consolidate multi-location headquarters at single locations, and eliminate stand-alone headquarters.
- Consolidate corrections facilities.
- Co-locate reserve and active component recruiting headquarters, and eliminate reserve force management organizations.
- Regionalize common headquarters, administrative, and business-related common support activities.

The group initially developed 117 proposals, based on these transformational options and military judgment, to include alternative

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proposals being requested by the Infrastructure Steering Group (ISG). The group settled on 50 recommendations that were initially forwarded to the ISG. Seventeen of them were subsequently consolidated with other recommendations; 2 were rejected by the ISG and one by the Infrastructure Executive Council. Also, 9 recommendations were transferred to other cross-service groups or military departments for inclusion in their reports.⁷ That left 21 recommendations that the group addressed in its report and accordingly are addressed in this appendix.

**Recommendations
Approved by DOD**

The Headquarters and Support Activities Joint Cross-Service Group projects that its 21 recommendations will produce a 20-year net present value savings of \$9.5 billion, net annual recurring savings of about \$914 million, and payback, or length of time required for the savings to offset closure costs for the recommendations, that varies widely from immediate to up to 16 years. Table 25 provides a summary of the financial aspects of the group’s recommendations.

Table 25: Financial Aspects of the Headquarters and Support Activities Joint Cross-Service Group’s Recommendations

Fiscal year 2005 constant dollars in millions

Recommended actions	DOD report page	One-time (costs)	Net implementation (costs) savings^a	Net annual recurring savings	Payback period	20-year net present value savings^b
Joint basing	H&SA-41	(\$ 50.6)	\$601.3	\$183.8	immediate	\$ 2,342.5
Consolidate/co-locate active and reserve personnel and recruiting centers for Army and Air Force	H&SA-33	(119.3)	463.0	152.8	immediate	1,913.4
Defense Finance and Accounting Service	H&SA-37	(282.1)	158.1	120.5	immediate	1,313.8
Consolidate transportation command components	H&SA-31	(101.8)	339.3	99.3	immediate	1,278.2
Consolidate Defense Information Systems Agency	H&SA-27	(220.0)	(102.1)	59.4	2 years	491.2

⁷ The group’s recommendations transferred to the military departments allowed the departments to recommend closure of Fort Monroe, Virginia, Fort McPherson, Georgia, Naval Supply Activity New Orleans, Louisiana, Marine Corps Support Center Kansas City, Missouri, and Brooks City-Base, Texas.

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Recommended actions	DOD report page	One-time (costs)	Net implementation (costs) savings^a	Net annual recurring savings	Payback period	20-year net present value savings^b
Co-locate Missile and Space Defense agencies	H&SA-15	(178.2)	13.0	36.1	1 year	359.1
Co-locate miscellaneous Army leased locations	H&SA-10	(44.1)	59.5	27.8	1 year	322.0
Co-locate miscellaneous Air Force leased locations and National Guard Headquarters leased locations	H&SA-3	(90.5)	(10.8)	30.8	1 year	308.3
Co-locate miscellaneous OSD, defense agency, and field activity leased locations	H&SA-12	(539.0)	(376.9)	63.3	9 years	257.6
Consolidate civilian personnel offices within military department and defense agencies	H&SA-19	(97.5)	(46.4)	24.4	4 years	196.7
Co-locate military department investigation agencies with DOD Counterintelligence and Security Agency	H&SA-8	(174.0)	(88.0)	26.3	7 years	172.7
Relocate miscellaneous Department of the Navy leased locations	H&SA-49	(61.9)	(12.8)	18.0	1 year	164.0
Consolidate Army Test and Evaluation Command Headquarters	H&SA-18	(7.1)	44.0	8.7	immediate	125.7
Relocate Army headquarters and field operating activities	H&SA-46	(199.9)	(111.8)	23.9	10 years	122.9
Consolidate media organizations into new agency for media and publications	H&SA-30	(42.0)	(2.9)	9.5	4 years	89.0
Create joint mobilization sites	H&SA-35	(0.1)	30.9	0.8	immediate	37.9
Co-locate Navy Education and Training Command and Navy Education and Training Professional Development and Technology Center	H&SA-17	(33.3)	(23.6)	3.7	10 years	14.4
Co-locate defense and military department adjudication activities	H&SA-5	(67.1)	(47.5)	5.7	13 years	11.3
Relocate Air Force Real Property Agency	H&SA-44	(4.5)	(0.9)	0.9	5 years	7.9
Consolidate Defense Commissary Agency Eastern and Midwestern Regions, and Hopewell, VA, offices	H&SA-26	(47.2)	(35.4)	3.9	14 years	4.9
Consolidate correctional facilities into joint regional correctional facilities	H&SA-22	(178.8)	(149.4)	14.6	16 years	2.3
Total		(\$2,539.0)	\$700.6	\$914.2		\$9,535.8

Source: GAO analysis of DOD data.

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Note: After DOD released its BRAC recommendations on May 13, 2005, the Headquarters and Support Activities Joint Cross-Service Group discovered errors in cost and savings data for 6 of its 21 recommendations. At the time of this report, the impact resulting from these recommendations increased the 20-year net present value savings by \$34.6 million. For 3 of the recommendations, 20-year net present value savings increased, while the remaining 3 decreased. The issue was still in the process of being corrected at the time of this report.

^aThis represents net costs or savings within the 6-year implementation period required to implement BRAC recommendations.

^bDOD used a 2.8 percent discount rate to calculate net present value.

In total, the group estimates that its recommendations will require a total investment of \$2.5 billion, primarily for new military construction and moving personnel from leased space onto military bases, and will ultimately result in net annual recurring savings of \$914.2 million. Our analysis indicates that about 92 percent of the annual recurring savings results from reductions in military and civilian employment levels (about \$270 million, and about \$267 million respectively) and the elimination of future lease payments for administrative office space (\$300 million). Eighteen of the group's recommendations are expected to realize savings within 10 years of completing the BRAC realignment and closure actions, while 3 have a payback period greater than 10 years.

**Issues Identified with
Approved
Recommendations**

Time did not permit us to assess the operational impact of each recommendation, particularly where operations are proposed for consolidation across multiple locations outside a single geographic area. However, we offer a number of broad-based observations about the proposed recommendations. While available data supporting the recommendations suggest that their implementation should provide for more efficient operations within DOD, the BRAC Commission may wish to consider the basis of the group's assumptions for personnel reductions because they have a significant impact on the recommendations' savings; the assumptions regarding vacating leased facilities because including antiterrorism and force protection savings also has an impact on the recommendations' savings; challenges to implementing joint basing; cases where realignment actions with long payback periods were combined with actions with shorter durations; stand-alone actions where the payback period exceeded 10 years; and proposals eliminated prior to release of the final recommendations.

Personnel Reductions

Approximately \$537 million, or about 59 percent, of the group's projected net annual recurring savings are based on reductions in the number of

military and civilian personnel eliminated as a result of the BRAC actions.⁸ The process used raises questions about the projected savings. The group initially used generic savings factors to estimate the number of personnel positions that could be eliminated when organizations were co-located or consolidated. These factors were developed on the basis of comments from subject matter experts and research of various databases available through the Pentagon library or the Internet. The group found that personnel reductions from 14 percent to 30 percent resulted from consolidation of organizations and 7 percent to 15 percent when they were co-located. The group adopted these personnel savings factors because the information it did collect on the number of personnel performing common support functions within the affected organizations could not be used and believed it did not have sufficient time to perform more precise manpower studies. The group used these savings factors consistently as starting points in negotiating the number of personnel reductions with the military departments and defense agencies and activities. In most cases the negotiated estimates were accepted, but in some cases the group imposed a personnel reduction percentage when negotiations failed. For example, in analyzing the costs and savings associated with relocating the Army Materiel Command from temporary lease space on Fort Belvoir, Virginia, to Redstone Arsenal, Alabama, the group leadership decided to impose a 7 percent personnel elimination based on expected economies of scale from co-locating the command with one of its major subordinate activities. Our analysis showed that the percentage factor used to estimate personnel reductions for all recommendations ranged from zero percent to about 42 percent.

A separate area of concern involves savings reported for military personnel. Our analysis indicates that the group's recommendations propose to eliminate 2,479 military positions, which would result in about \$270 million in net annual recurring savings. However, service officials indicate that they do not plan to reduce their end-strength based on these proposed eliminations but rather reallocate these positions elsewhere within the force structure. Since these military personnel will be assigned elsewhere rather than removed from the force structure, the projected savings do not represent dollars that can be readily allocated outside the personnel accounts to other purposes.

⁸ Approximately \$270 million, of the projected net annual recurring savings are from the elimination of military personnel and approximately \$267 million from the elimination of civilian employees.

Leased Space

Fifteen of the group's recommendations include a one-time savings of over \$300 million from moving activities from leased space onto military installations. For example, these recommendations, if approved, would reduce total DOD leased space within the National Capital Region⁹ from 8.3 million square feet to about 1.7 million square feet, or by 80 percent. While our prior work generally supports the premise that leased property is more expensive than government owned property, the recommendations related to vacating leased space also raises questions about a limitation in projected savings and impact on local communities.

The one-time cost savings represents costs expected to be avoided in the future by moving from leased facilities onto government owned and protected facilities rather than upgrading existing leased space to meet DOD's antiterrorism and force protection standards.¹⁰ According to a DOD official, the department put together a task force after the June 1996 Khobar Tower bombing incident in Dhahran, Saudi Arabia, of mostly engineers to develop minimum force protection standards for all DOD-occupied locations. The official also stated that application of the standards in BRAC was not the result of a threat or vulnerability assessment of the affected facilities. The Pentagon Force Protection Agency will shortly begin a 10-month antiterrorism and force protection vulnerability assessment of about 60 DOD-occupied leased buildings in the National Capital Region. This assessment will provide DOD with information to estimate the costs and feasibility of upgrading leased facilities to the antiterrorism and force protection standards. The force protection standards for leased buildings apply only where DOD personnel occupy at least 25 percent of the net interior usable area; only to the portion of the building occupied by DOD personnel; and to all new leases executed on or after October 1, 2005, and to leases renewed or extended on or after October 1, 2009. Initially, the group prepared military value data call questions that could determine whether a leased location met the force protection requirements. However, group officials stated that most of these questions were discarded because of inconsistencies in how the questions

⁹ The National Capital Region includes Washington, D.C.; the Maryland counties of Montgomery and Prince George's; and the Virginia counties of Fairfax, Loudoun, and Prince William and the City of Alexandria, Virginia.

¹⁰ Unified Facilities Criteria: DOD Minimum Antiterrorism Standards for Buildings (UFC 4-010-01, 8 Oct. 2003).

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were answered except for the percentage of DOD personnel occupying buildings.

The group applied the cost avoidance factor consistently to all leased locations but did not collect data that would indicate whether existing leases met the standards, which could possibly result in application of the factor at locations meeting the force protection requirements. For example, the group applied over \$2 million in one-time force protection cost avoidance to relocate a Navy human resources service center from the Stennis Space Center, Mississippi, to the Naval Support Activity, Pennsylvania, even though the Stennis Space Center may be as secure as any military installation. If these one-time savings, as shown in the final recommendations forwarded to the BRAC Commission, are not considered in the cost and savings analysis, our analysis shows that the projected 20-year net present value savings decrease by 3 percent (\$268.4 million), the payback period increases by 1 year for 7 of 15 recommendations, and by 3 years for one recommendation as shown in table 26. After the final recommendations were released to the BRAC Commission, the group found errors in some recommendations, affecting one-time estimated savings and other costs and savings, which were still in the process of being corrected at the time of this report.

Table 26: Impact of One-time Antiterrorism and Force Protection Savings on Recommendations Involving Leased Space

Fiscal year 2005 constant dollars in millions

Recommended action	DOD proposed recommendation		GAO analysis without antiterrorism and force protection savings	
	20-year net present value savings	Payback period	20-year net present value savings	Payback period
Consolidate transportation command components	\$ 1,278.2	immediate	\$ 1,273.4	immediate
Consolidate/co-locate active and reserve personnel and recruiting centers for Army and Air Force	1,909.0 ^a	immediate	1,880.7	immediate
Consolidate Army Test and Evaluation Command Headquarters	125.7	immediate	122.8	immediate
Co-locate Missile and Space Defense agencies	359.1	1 year	282.6	4 years
Co-locate miscellaneous Army leased locations	322.0	1 year	300.3	2 years
Co-locate miscellaneous Air Force leased locations and National Guard Headquarters leased locations	308.2 ^a	1 year	294.7	2 years
Relocate miscellaneous Department of the Navy leased locations	164.0	1 year	151.2	2 years

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Recommended action	DOD proposed recommendation		GAO analysis without antiterrorism and force protection savings	
	20-year net present value savings	Payback period	20-year net present value savings	Payback period
Co-locate military department investigation agencies with DOD Counterintelligence and Security Agency	172.7	7 years	161.6	7 years
Consolidate Defense Information Systems Agency	491.2	2 years	475.1	3 years
Consolidate civilian personnel offices within military department and defense agencies	196.7	4 years	189.6	4 years
Consolidate media organizations into new agency for media and publications	89.0	4 years	86.5	4 years
Co-locate miscellaneous OSD, defense agency, and field activity leased locations	257.6	9 years	200.1	10 years
Relocate Army headquarters and field operating activities	122.9	10 years	115.4	10 years
Consolidate Defense Commissary Agency Eastern and Midwestern Regions, and Hopewell, VA, offices	4.9	14 years	2.3	15 years
Co-locate defense/military department adjudication activities	13.5 ^a	13 years	10.0	14 years
Total	\$5,814.7		\$5,546.3	
Difference			\$268.4	

Source: GAO analysis of DOD data.

^aThe 20-year net present value savings for these proposed recommendations differ from the amount in the final BRAC report because of errors found in the COBRA reports after release of the final BRAC report.

Furthermore, four of the Headquarters and Support Activities Joint Cross-Service Group's recommendations involve moving personnel from leased space to Fort Belvoir, Virginia, mostly at the engineering proving ground, increasing Fort Belvoir's population by about 10,700.¹¹ The recommendations include military construction projects to build facilities for these personnel on Fort Belvoir. In addition, the recommendations include a \$55 million Army estimate to improve roads and other infrastructure in the area surrounding the fort. However, it is uncertain at this time whether this will be sufficient to fully support the impact on the surrounding community's infrastructure, or the likelihood that federal assistance is likely to be sought by local governments to help communities

¹¹ The other joint cross-service groups are also proposing to move about 9,600 personnel to Fort Belvoir for a total of over 20,300 personnel.

reduce the impact—costs that will have the effect of increasing one-time costs and offsetting short-term savings from the recommendations.

Implementation Challenges

While the proposal to create joint bases by consolidating common installation management functions is projected to create greater efficiencies, our prior work suggests that implementation of these actions may prove challenging. The joint-basing recommendation involves one service being responsible for various installation management support functions¹² at bases that share a common boundary or are in proximity to one another. For example, the Army would be the executive agent for Fort Lewis, Washington, and McChord Air Force Base, Washington, combined as Joint Base Lewis-McChord. However, as evident from our recent visit to both installations and discussions with base officials, concerns over obstacles such as seeking efficiencies at the expense of the mission, could jeopardize a smooth and successful implementation of the recommendation. Further, Air Force officials stated that most military personnel at McChord are mission critical and deployable, increasing the difficulty to identify possible Air Force military personnel reductions. The group projects 20-year net present value savings of about \$2.3 billion, with net annual recurring savings of about \$184 million. More than 90 percent of the recurring savings reported represent military (54 percent) and civilian (37 percent) personnel reductions. The group applied personnel reductions ranging from 1 to 10 percent for each of the 12 locations included in the joint basing recommendation. The actual percentage used for each location was negotiated between the group and the military departments based on the size of base populations and the kind of services provided.

In our June 2005 report¹³ we noted that DOD and the military services' ability to forecast base operations support requirements and funding needs has been hindered by the lack of a common terminology for defining base

¹² The functions include such activities as real property management and maintenance, utilities, housing, emergency services, environmental services, base security, reserve component support, resource management, procurement, personal property management, transportation, equipment maintenance, retail supply, base communications, audio/visual services, personnel and professional support, personnel services, food services, laundry services, education services, personal and family services, recreation, military exchange operations, airfield operations, garrison operations, internal review, inspector general, and strategic planning.

¹³ GAO, *Defense Infrastructure: Issues Need to Be Addressed in Managing and Funding Base Operations and Facilities Support*, [GAO-05-556](#) (Washington, D.C.: June 15, 2005).

support functions, as well as by the lack of a mature analytic process for developing base support requirements. We also reported challenges in maintaining adequate funding to meet base operating support requirements and facility upkeep. We concluded that until such problems are resolved, DOD will not have in place the management and oversight framework needed for identifying total base support requirements and ensuring adequate delivery of services, particularly in a joint environment. In its comments to a draft of our June report, DOD indicated that it expects to release a new facilities operation model by December 1, 2005, and use it to develop the fiscal year 2008 program and budget. DOD stated that it is also conducting a cross-department initiative to develop definitions for the common delivery of installation services and expects to complete this effort by December 2005. However, regarding modeling efforts, a Senior Joint Basing Group¹⁴ official expressed doubt during our review whether there would be a single funding model because base operating support, as it currently exists, has too many diverse activities to model. He indicated that it is more likely that a suite of tools will evolve over time.

Bundling Lessens Visibility of Costs

The headquarters group consolidated some recommendations with more than 10-year payback periods, far longer than typical payback periods in the 1995 BRAC round, with other proposals having shorter returns on investment. In total, 8 of the 21 final recommendations were actually packages that consolidated two or more recommendations approved by the joint cross-service group as stand-alone candidate recommendations. We found that in 7 instances, the more than 10-year payback periods of initially stand-alone proposals tended to be masked after they were combined in such packages. For example, the group developed a proposal to move the Army Materiel Command from Fort Belvoir, Virginia, to Redstone Arsenal, Alabama, which showed a 20-year net present cost and a 100-year payback period by not having to spend about \$71 million to construct a permanent facility for the headquarters at Fort Belvoir. Had the construction savings been included in the recommendation, the payback period would have been 32 years. Concurrently, the group developed a separate proposal to relocate various Army offices from leased and government-owned office space mostly onto Fort Sam Houston, Texas, which would result in a 20-year net present value savings of about \$277.4 million and a 3-year payback period. The group decided to combine these two stand-alone proposals so

¹⁴ In late 2004, a Senior Joint Basing Group was created by DOD to address installation management issues at joint bases.

that all Army headquarters related activities were addressed in one recommendation with an estimated 20-year net present value savings of about \$123 million with a 10-year payback.

Extended Payback Periods

The group proposed three recommendations that have an estimated payback period exceeding 10 years and one-time costs for implementation that greatly exceeds the expected 20-year net present value savings. The cost, savings, and expected benefits for these recommendations are described below:

- The recommendation to co-locate military department and DOD security clearance adjudication and appeals activities to Fort Meade, Maryland, has an estimated payback of 13 years, one-time cost exceeding \$67 million, and 20-year net present value savings of only \$11.3 million. According to the DOD final BRAC report, implementation of this recommendation would co-locate adjudication activities, reduce lease costs, and enhance security.
- The recommendation to consolidate the Defense Commissary Agency Eastern and Midwestern regions and a leased site in Hopewell, Virginia, to Fort Lee, Virginia, has an estimated 14-year payback period, one-time cost exceeding \$47 million, and 20-year net present value savings of only \$4.9 million. According to the DOD BRAC report, implementation of this recommendation would consolidate headquarters operations at single locations, enhance security, and reduce lease costs.
- The recommendation to establish joint regional correctional facilities has an estimated 16-year payback period, one-time cost of almost \$179 million, and 20-year net present value savings of only \$2.3 million. For example, the recommendation would establish the Midwest Joint Regional Correctional Facility by relocating correctional functions currently located at Lackland Air Force Base, Texas; Fort Knox, Kentucky; and Fort Sill, Oklahoma, to Fort Leavenworth, Kansas. According to the DOD BRAC report, implementation of this recommendation would improve jointness, centralize corrections training, and eliminate or significantly reduce old inefficient facilities.

Proposals Eliminated from Consideration

Three recommendations were initially approved by the group; two were later rejected by the ISG and another by the IEC. The ISG rejected the recommendation to relocate U.S. Southern Command, Miami, Florida, from

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its leased space to a state-owned leased space also in Miami with no explanation. Group officials stated the ISG rejected the U.S. Southern Command recommendation because costs associated with the relocation were too high. The ISG also rejected the relocation of U.S. Army Pacific Headquarters from Fort Shafter, Hawaii, to Pearl Harbor, Hawaii, because of Pacific Command Combatant Commander and the Army concerns regarding future requirements of U.S. Army Pacific Headquarters. The recommendation rejected by the IEC to co-locate military department and DOD medical activities to the National Medical Center, Bethesda, Maryland was discarded because of cost and long payback issues.

In other cases, Headquarters and Support Activities Joint Cross-Service Group members considered proposals that could have fostered jointly operated support activities, but they were later dropped on the basis of cost considerations and perceived operational risks. For example, the group considered co-locating all military personnel offices at one location. However, in analyzing this proposal, the group determined that implementing the joint proposal would be very costly, while also citing concerns about the uncertain availability of skilled employees at a single location to operate the joint facility. Therefore, the group concluded that it was better to co-locate or consolidate personnel centers within the individual military departments. Similarly, for civilian personnel centers the group developed a proposal to consolidate 25 offices that are currently operated by the military departments and defense agencies into 10 DOD “joint” offices. However, the proposal was dropped after concerns were raised by one military department that the risks associated with implementing joint personnel offices concurrently with processing paperwork supporting other BRAC-related personnel moves and implementing a new standardized personnel data system were too high. Consequently, the IEC directed the group to revise its proposal. The group revised its proposal to provide for consolidating the 25 current offices into 12 offices—4 to be operated by the Army, 4 by the Navy, 1 by the Air Force, and 3 by a single agency providing support to the defense agencies. While DOD did not recommend the creation of joint military personnel offices or joint civilian personnel offices, it is important to note that each of the initial proposals included justifications citing ongoing efforts within the department to establish standardized personnel processes and systems.

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The recommendation to co-locate components of the U.S. Transportation Command¹⁵ does not include the Navy Military Sealift Command, one of the service component organizations. The group developed a proposal to move the Army and Navy component of the Transportation Command to Scott Air Force Base, Illinois. While the Army agreed to the proposal, the Navy did not believe that the group should be proposing to move the Military Sealift Command because it was considered an operational headquarters and not an administrative function under the purview of the Headquarters and Support Activities Joint Cross-Service Group. The ISG agreed with the Navy and deleted the Military Sealift Command from the recommendation, which reduced projected 20-year net present value savings from \$1.30 billion to \$1.28 billion.

¹⁵ Scott Air Force Base is the current home of the U.S. Transportation Command headquarters and the Air Force Air Mobility Command, one of the combatant command's subordinate component commands.

Industrial Joint Cross-Service Group Selection Process and Recommendations

The Industrial Joint Cross-Service Group followed the common analytical framework established by the Office of the Secretary of Defense (OSD) for completing its review. The group initially produced 34 candidate recommendations; 3 were disapproved by the Infrastructure Executive Council (IEC); and several were subsequently integrated into larger military service recommendations. As a result, the group had 17 remaining recommendations that are addressed in this appendix. These 17 recommendations represent a mixture of closures and realignments with the realignments often encompassing the consolidation of various types of industrial workloads at fewer locations. Although some of the recommendations may be considered transformational, limited progress was made in recommending major actions to foster greater interservicing among the services. Industrial group officials said this was due to economic and military value considerations as well as the downsizing of maintenance facilities in prior BRAC rounds. Altogether, DOD projects these recommendations to produce about \$7.6 billion in net present value savings over a 20-year period; nearly all are projected to have short payback periods (time required to recoup up-front investment costs) with expected savings offsetting expected implementation costs either immediately or within a few years. One recommendation has a payback period exceeding 10 years. However, uncertainty exists about the precision of the savings estimates because many estimates are based on efficiency gains that are yet to be validated and other factors. Further scrutiny by the BRAC Commission of this and other recommendations may be warranted to assess the impact of reductions against future force structure needs or capacity constraints. The DOD Inspector General and the military service audit agencies, which performed audits of the data, concluded that the data were sufficiently reliable for use during the BRAC process.

Organization and Focus

The industrial group was composed of senior-level principal members from the installations directorates for each service, the Defense Logistics Agency (DLA), and the Joint Chiefs of Staff and was supported by staff from these organizations. The Under Secretary of Defense (Acquisition, Technology and Logistics) chaired the group, which in turn forwarded its proposed recommendations to the Infrastructure Steering Group (ISG) for its review and approval.¹ The group organized its BRAC analyses around three subgroups: (1) maintenance, (2) ship overhaul and repair, and

¹ At the Office of the Secretary of Defense, the ISG and the IEC provided overall coordination and direction to the DOD-wide process.

(3) munitions and armaments. All of the subgroups focused their work similarly on identifying opportunities for reducing excess capacity.

Framework for Analysis

The industrial group's analytical process included a review of nine distinct industrial areas across each of the military services. They included: (1) ground vehicles, aircraft, and other depot maintenance; (2) ground vehicles, aircraft, and other intermediate maintenance; (3) ship depot maintenance; (4) ship intermediate maintenance; (5) munitions production; (6) munitions storage; (7) munitions demilitarization; (8) munitions maintenance; and (9) armaments production. As per the BRAC process outlined by OSD, capacity analysis and military value analysis provided the starting point for the cross-service group's work. The DOD Inspector General and service audit agencies performed an important role in ensuring the accuracy of data used in these analyses through extensive audits of data gathered at various locations.

Capacity Analysis

To form the basis for its analysis, the group developed metrics in each of the nine industrial areas to measure current capacity and subsequently collected certified data linked to these metrics from various defense activities across the country whose missions resided within these categories. While the most predominate metric was direct labor hours—used by both the maintenance and ship overhaul and repair subgroups exclusively and by the munitions and armaments subgroup in some instances—the munitions and armaments subgroup also used other metrics for measuring capacity. For example, for measuring munitions production, the subgroup used pounds and units, and for measuring munitions storage, the subgroup used square feet and short tons. The disparate nature of the functions analyzed by the group did not lend itself to a “one size fits all” analytical approach and each of the three subgroups conducted its own capacity analysis.

The munitions and armaments and ship overhaul and repair subgroups defined excess capacity as the difference between current capacity and current usage. For depot maintenance, the maintenance subgroup defined excess capacity as the difference between current capacity and the larger of current usage or core requirements. Core requirements are those workload needs that must be performed in organic rather than contractor facilities. For intermediate maintenance, the maintenance subgroup defined excess capacity as the difference between current capacity and

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current usage. The cross-service group’s capacity analysis showed that excess capacity existed within many of functional areas it examined, especially in those of munitions and armaments functions. As shown in table 27, the estimates of excess capacity ranged from 7 percent to 91 percent among individual functional categories.

Table 27: Excess Capacity Identified by the Industrial Joint Cross-Service Group

Subgroup	Function	Capacity measure	Percentage of excess capacity
Maintenance	Ground vehicles, aircraft, and other depot maintenance	Direct labor hours	7
	Ground vehicles, aircraft, and other intermediate maintenance	Direct labor hours	16
Ship overhaul and repair	Ship depot maintenance	Direct labor hours	20
	Ship intermediate maintenance	Direct labor hours	17
Munitions and armaments	Munitions production	Pounds/units	36
	Munitions storage	Square feet/short tons	40
	Munitions demilitarization	Short tons	91
	Munitions maintenance	Direct labor hours	35
	Armaments production	Direct labor hours	44

Source: Industrial Joint Cross-Service Group.

Note: These excess capacity figures are based on one eight-hour shift and current capacity.

The three subgroups addressed surge requirements in their capacity analyses to varying degrees. For the maintenance subgroup, the excess percentages represent excess capacity above surge requirements, because the collected core requirements data included surge requirements and the excess capacity calculations were based on the larger of current usage or core requirements. For the munitions and armaments subgroup, the excess capacity percentages represent the capacity available to meet surge requirements. According to munitions and armaments subgroup officials, there are no over-arching, quantified, DOD-wide surge requirements for munitions and armaments. Instead, surge becomes a factor of how much excess capacity is available and can be addressed through multiple work shifts. Conversely, the percentages for ship repair and overhaul do not

address surge requirements. According to ship overhaul and repair subgroup officials, because the Navy's surge requirements are dictated by emergent deployments or ship repair requirements and because shipyards are normally workloaded to their workforce capacity, surge capability is limited to the use of overtime and delaying previously planned work.

As table 27 shows, the data indicate that there was not much excess capacity in the ground vehicles, aircraft, and other depot maintenance area. Therefore, in that area the group focused much of its attention on minimizing sites by redistributing and consolidating workload. On the other hand, while many of the group's ship overhaul and repair and munitions and armaments recommendations were directed toward reducing excess capacity, group officials did not calculate a percentage for the reduction in excess capacity made possible by implementing the recommendations.

Military Value Analysis

The military value of activities within the group played a predominant role in formulating recommendations. In completing its military value assessment, the industrial group assessed each activity across the four established military value criteria to more fully evaluate the potential for realignment and closure actions. As was the case with capacity analysis, the disparate nature of the industrial areas analyzed by the group precluded a uniform analytical approach among the three subgroups. As a result, the subgroups differed in the methodology they used to develop relative weights for the military value criteria for each of their functions. Table 28 shows the various weights assigned to each of the four military value criteria by the subgroups for their functions.

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Table 28: Industrial Joint Cross-Service Group Military Value Criteria Weights

Figures in percentages

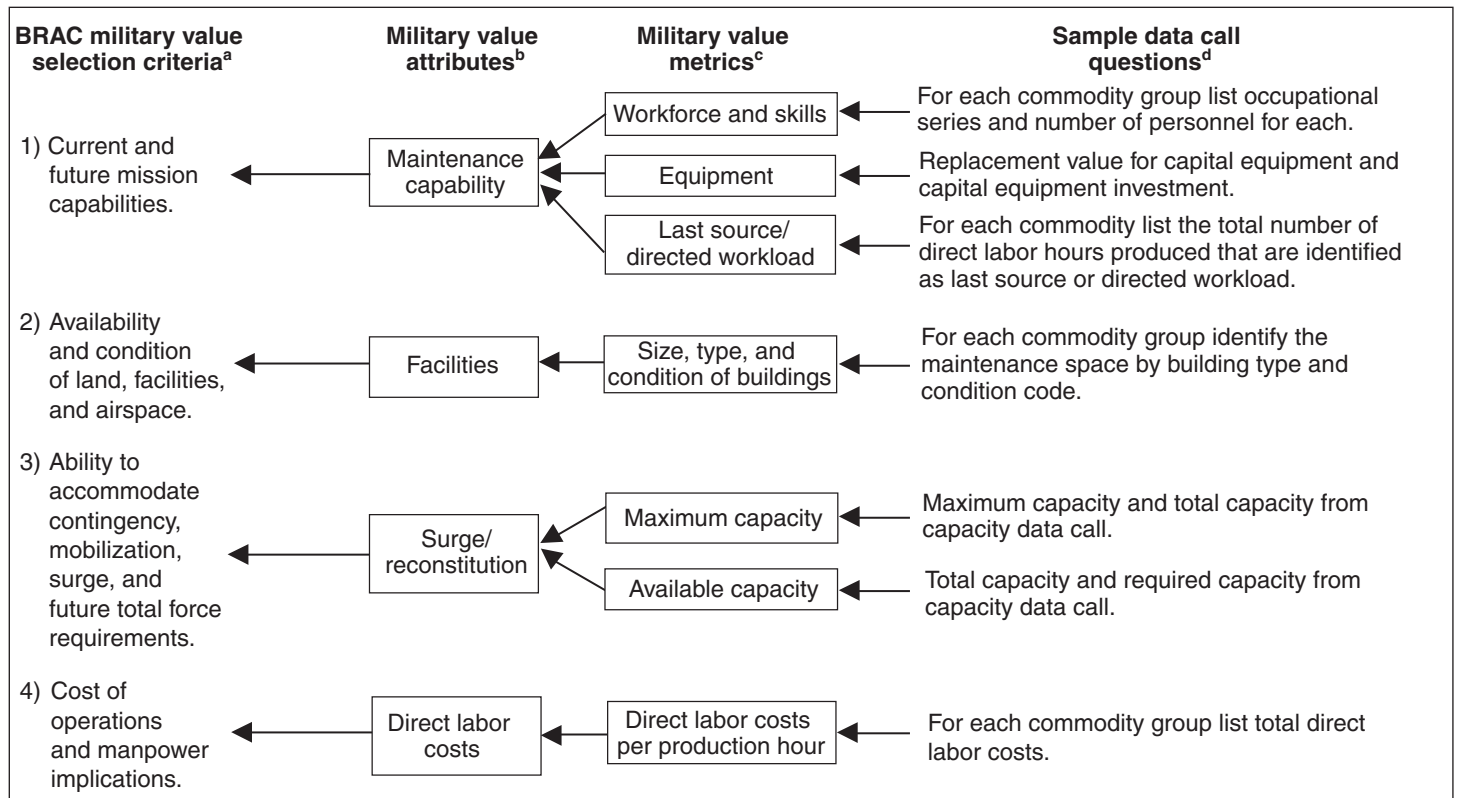
Military value criteria	Maintenance weight		Ship overhaul and repair weight		Munitions and armaments weight		
	Depot	Intermediate	Depot	Intermediate	Munitions production	Munitions maintenance, storage, and demilitarization	Armaments manufacturing and production
1. The current and future mission capabilities and the impact on operational readiness of the total force of the Department of Defense, including impact on joint warfighting, training, and readiness.	39	50	25	50	35	25	45
2. The availability and condition of land, facilities, and associated air space (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions) at both existing and potential receiving locations.	30	30	25	15	15	20	15
3. The ability to accommodate contingency, mobilization, surge, and future total force requirements at both existing and potential receiving locations to support operations and training.	21	15	30	25	45	50	35
4. The cost of operations and the manpower implications.	10	5	20	10	5	5	5
Total	100	100	100	100	100	100	100

Source: DOD and the Industrial Joint Cross-Service Group.

Note: The system of weights provided a basis for assigning relative value to data collected and tabulated across each military value dimension. The munitions maintenance, storage and demilitarization functions were combined because the munitions and armaments subgroup applied the same weights for these functions.

The group’s military value analysis also included the development of attributes, metrics, and data call questions for each of the nine functional areas represented in the categories in the chart above which were linked back to the four military criteria. Figure 15 provides examples of these attributes, metrics, and data questions and shows how each of these was linked back to the criteria.

Figure 15: Selected Attributes, Metrics, and Data Questions Used to Assess Military Value of Depot Maintenance Activities



Source: GAO analysis of Industrial Joint Cross-Service Group data.

^aThe BRAC military value criteria are the first four BRAC selection criteria.

^bMilitary value attributes are characteristics of each criterion. The industrial group used a total of 27 military value attributes.

^cMilitary value metrics are measures for the attributes. The industrial group used a total of 58 military value metrics.

^dThe industrial group used a total of 89 data call questions.

Because of the disparate nature of the industrial areas analyzed by the industrial group, the subgroups also differed in the way they assigned military value scores to their respective activities. For instance, the maintenance subgroup determined military value by commodity² only and

² A commodity is a generic grouping of the types of depot and maintenance work associated with end items, weapons systems, or major processes, such as engines, combat vehicles, and calibration.

did not develop an overall military value score for activities in the depot and intermediate maintenance functions. Because military value scores were only determined for activities by commodity, activities were only ranked within their respective commodities. For example, Rock Island Arsenal, Illinois, received a military value score for its combat vehicle maintenance workload and was ranked accordingly against all the other depot level activities that perform combat vehicle maintenance. In addition, because most activities involve multiple commodities, such as major maintenance functions like aircraft engines, electronics, etc., many of the activities received multiple military value scores. In the case of Rock Island Arsenal, it not only received a military value score for its combat vehicle maintenance work but also for its tactical vehicle maintenance work and its other equipment maintenance work. These military value scores were then used in an optimization model to determine the best locations to consolidate various like commodities among the three services. In all cases, the subgroup examined redistributing the workload to activities with a higher military value score for that commodity. According to the maintenance subgroup, determining military value by commodity allowed for more opportunities to create interservicing³ and consolidations of workload among the services. The maintenance subgroup's process was focused on military value and available capacity without regard to service. The final recommendations were tempered by financial and operational considerations. However, as we discuss later, our analysis shows that while some interservicing may be achieved, most of the group's recommendations remained relatively service-centric. The ship overhaul and repair and munitions and armaments subgroups, on the other hand, developed overall military value scores for activities within their respective functions and ranked their activities within those functions accordingly. For example, all shipyards were ranked together under the depot maintenance function, and all industrial activities that perform munitions production were ranked together under the munitions production function.

DOD Inspector General's and Service Audit Agencies' Role in the Process

The DOD Inspector General and the service audit agencies played important roles in ensuring that the data used in the industrial group's data analyses were certified and properly supported. Through extensive audits of the data collected from field activities during the process, these audit

³ The term interservicing is used here to refer to the consolidation of common workloads of more than one service under a single military service.

agencies notified the group regarding any identified data discrepancies for the purpose of follow-on corrective action. While the process for detecting and correcting data errors was quite lengthy, the audit agencies ultimately deemed the industrial data to be sufficiently accurate for use in the BRAC process.

Identification and Assessment of Alternate Scenarios and Selection of Recommendations

The industrial group did not have complete capacity or military value data when it initiated the development of potential closure and realignment scenarios. Therefore, it had to rely on incomplete data as well as military judgment to determine which industrial areas had excess capacity and which could receive new workloads. As time progressed, however, the group obtained the needed data to inform and support its scenarios. The DOD Inspector General validated the data.

The maintenance and munitions and armaments subgroups used an optimization model to help facilitate scenario development, while the ship overhaul and repair subgroup, which had similar data problems, also relied on incomplete data as well as military judgment to help formulate scenarios for consideration. This subgroup did not rely on the optimization model as extensively as the other subgroups due to the relatively small number of activities analyzed. Collectively, the subgroups initially developed 120 proposals and scenarios and with the maturation of the data, completion of Cost of Base Realignment Actions (COBRA) analyses, and elimination of alternative scenarios, the industrial group settled on 34 recommendations that were forwarded to the ISG with all but 3 being ultimately approved by the IEC.

Despite having incomplete data, the maintenance subgroup began its scenario development by generating several ideas as potential scenarios. In testing the feasibility of these ideas, the maintenance subgroup found it useful to use an optimization model, because the subgroup was dealing with a universe of 57 commodities across 28 depot level activities and 11 commodities across over 200 intermediate level activities which made it extremely difficult to determine where workload could be consolidated or redistributed. For realignment considerations, officials told us the preferred method was to consolidate workload at the highest military value sites that remained open in the optimization results, but military judgment also played a role in finalizing the sites. In some instances, military judgment was used to override the results of the optimization model. For example, the subgroup chose not to realign the rotary aircraft workload from the Naval Air Depot at Cherry Point, North Carolina, to the Corpus

Christi Army Depot, Texas, even though it was proposed for realignment under the optimization model because of concerns about establishing a single point of failure or vulnerability for DOD's rotary aircraft workload.

One issue that the maintenance subgroup dealt with during its scenario development was that the current DOD capacity baseline for its maintenance work was based on a single shift 40 hours per week workload. According to the subgroup, when using the optimization model, it found that existing capacity as measured on this basis would constrain its ability to identify options for achieving more economical operations. Further, recognizing that such a baseline was inconsistent with industry practice, the subgroup modified the capacity baseline to one and a half shifts with a 60 hours weekly workload, thus increasing available capacity at its industrial activities and the potential for consolidating work at fewer locations. As we reported after the 1995 BRAC round, a capacity baseline of a single shift 40 hours per week workload is a conservative projection of capacity because the private sector frequently uses a capacity baseline of two or two and a half shifts.⁴ In addition, based on more current information of private sector capacity utilization, we still believe that a single shift is a conservative projection of capacity, since many firms today work multiple shifts.

Like the maintenance subgroup, the munitions and armaments subgroup also used the optimization model to test the feasibility of its ideas and to facilitate its scenario development and analysis. Its emphasis was on increasing multi-functional activities, (i.e., those activities that have the capability to do more than one munitions and armaments function). During scenario development, the subgroup's preference was to eliminate excess capacity through closure versus realignment.

The ship overhaul and repair subgroup, on the other hand, used mostly capacity and military value data in combination with military judgment in developing and analyzing its scenarios. Due to the small number of activities analyzed—22 depot and intermediate level ship overhaul and repair activities—the subgroup did not have to rely on the optimization model to determine where workload could be potentially consolidated or redistributed. While it did use the model primarily to check the feasibility and rationalization of scenarios, military judgment was required because

⁴ GAO, *Army Depot Maintenance: Privatization without Further Downsizing Increases Costly Excess Capacity*, [GAO/NSIAD-96-201](#) (Washington, D.C: Sept. 18, 1996).

most of the subgroup’s scenarios were influenced by Navy force structure changes and planned changes in the homeports of ships. According to industrial group officials, expected out-year changes in Navy force structure—specifically expected reductions in the number of ships—allowed them to recommend the closure of a shipyard. Expected changes in the homeports of ships also influenced the subgroup’s intermediate level scenarios because the Navy’s intermediate level maintenance is generally performed where ships are homeported.

Recommendations Approved by DOD

The industrial group’s 17 recommendations are estimated to produce an estimated \$7.6 billion in 20-year net present value savings. Table 29 provides a summary of the financial aspects of the group’s recommendations.

Table 29: Financial Aspects of the Industrial Joint Cross-Service Group’s Recommendations

Fiscal year 2005 constant dollars in millions

Recommended action	DOD report page	One-time (costs)	Net implementation (costs) or savings ^a	Net annual recurring (costs) or savings	Payback period (years)	20-year net present value (costs) or savings ^b
Realign to establish Navy Fleet Readiness Centers	Ind-19	(\$298.1)	\$1,528.2	\$341.2	immediate	\$4,724.2
Close Hawthorne Army Depot, NV	Ind-12	(180.3)	59.2	73.4	immediate	777.7
Close Umatilla Chemical Depot, OR	Ind-14	(15.5)	89.1	61.0	immediate	681.1
Close Newport Chemical Depot, IN	Ind-8	(7.1)	95.6	35.7	immediate	436.2
Close Deseret Chemical Depot, UT	Ind-17	(4.4)	65.1	30.3	immediate	356.4
Close Lone Star Army Ammunition Plant, TX	Ind-16	(29.0)	(4.7)	17.3	immediate	164.2
Realign Ship Intermediate Maintenance Activity Norfolk, VA	Ind-18	(10.6)	26.8	8.2	1	104.3
Close Kansas Army Ammunition Plant, KS	Ind-9	(25.2)	2.1	10.3	2	101.4
Realign Sierra Army Depot, CA	Ind-6	(33.4)	(7.2)	7.5	7	66.7
Close Riverbank Army Ammunition Plant, CA	Ind-5	(25.2)	(10.4)	6.5	3	53.3
Close Mississippi Army Ammunition Plant, MS	Ind-11	(32.4)	(10.8)	5.1	7	38.6
Realign Lackland Air Force Base, TX	Ind-15	(10.2)	0.1	2.9	3	28.0
Realign Lima Army Tank Plant, OH	Ind-10	(0.2)	5.9	1.7	immediate	22.3
Realign Naval Shipyard Detachments	Ind-26	(12.5)	0.9	2.3	4	20.7

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(Continued From Previous Page)

Fiscal year 2005 constant dollars in millions

Recommended action	DOD report page	One-time (costs)	Net implementation (costs) or savings ^a	Net annual recurring (costs) or savings	Payback period (years)	20-year net present value (costs) or savings ^b
Realign Naval Weapons Station Seal Beach, CA	Ind-4	(4.1)	2.3	1.6	1	17.7
Realign Rock Island Arsenal, IL	Ind-7	(27.0)	(16.2)	3.1	9	13.8
Realign Watervliet Arsenal, NY	Ind-13	(63.7)	(46.8)	5.2	18	5.2
Total		(\$778.9)	\$1,779.2	\$613.3		\$7,611.8

Source: GAO analysis of DOD data.

^aThis represents net costs or savings within the 6-year implementation period required to implement BRAC recommendations.

^bDOD used a 2.8 percent discount rate to calculate net present value.

Most of the projected savings from the group's recommendations are concentrated in relatively few recommendations and nearly all have an immediate or moderately short payback period where projected savings are anticipated to offset the implementation costs either immediately or within a few years. The recommendation regarding the establishment of Navy fleet readiness centers is by far the largest in terms of overall savings, accounting for about \$341 million, or about 56 percent, of the total estimated net annual recurring savings. As discussed later, only one recommendation—the realignment of the Watervliet Arsenal, New York, has a lengthy payback period exceeding 10 years.

Of the industrial joint cross-service group's 17 recommendations, 8 are closures and 9 are realignments. However, contained within these recommendations are 40 smaller, individual realignment actions and several recommendations involve installations with less than 300 personnel that could be but were not required to be proposed under BRAC. The following summarizes some of our overall observations about the group's recommendations.

- *Interservicing*: Despite setting up its military value scoring for maintenance by commodity to foster opportunities for interservicing, the industrial group actually developed few recommendations that proposed greater interservicing. Of the 9 realignment recommendations, we consider only three to involve interservicing—(1) realigning the Air Force's depot maintenance workload at Lackland Air Force Base, Texas, to Tobyhanna Army Depot, Pennsylvania, (2) realigning the Navy's depot

maintenance at Naval Weapons Station Seal Beach, California to several other service depots, and (3) realigning Lima Army Tank Plant, Ohio, to support, in part, the future manufacturing of the Marine Corps expeditionary force vehicle. DOD has stated recently that there is some interservicing of ground maintenance work already being performed at the major depots. However, while there is significant interservicing of electronics work at Tobyhanna Army Depot, Pennsylvania and of rotary work at Corpus Christi Army Depot, Texas, our analysis shows that interservicing at the major ground vehicle maintenance depots is very limited. For example, in fiscal year 2003, only 3 percent of Anniston Army Depot's total workload was for the Marine Corps and only 3 percent of Marine Corps Logistics Base Barstow's and Marine Corps Logistics Base Albany's workloads was for the Army. Moreover, out of 17 major maintenance depots across the services, the group only proposed the closure of three—Portsmouth Naval Shipyard, Maine, Red River Army Depot, Texas and Marine Corps Logistics Base Barstow, California—with Barstow ultimately becoming a realignment. No recommendations were developed regarding the Air Force's three relatively large air logistics centers and only Navy-centric recommendations were developed regarding the Navy's three naval air depots, despite that the industrial group had registered scenarios consolidating similar types of work from a naval air depot into air logistics centers. According to group officials, they decided not to propose these as recommendations because of the Navy's desire to combine its aircraft depot and intermediate work into fleet readiness centers and because this recommendation offered greater financial benefits. As a result, this essentially removed the naval air depots from the BRAC analysis in considering opportunities for more interservicing. While not considered an industrial group recommendation or otherwise addressed in this appendix, the industrial group's work also helped the Navy develop a recommendation realigning some of the workload at Marine Corps Logistics Base Barstow to Army depots. This recommendation is discussed in appendix IV.

- *Closures:* Regarding eight closures, four involve underutilized Army ammunition facilities, and three are chemical demilitarization facilities where the primary mission is slated to disappear in the coming years.
- *Savings:* Essentially all of the projected savings from the group's recommendations are based on reducing overhead and eliminating civilian and military personnel as installations are closed and functions are realigned between installations. For example, 63 percent of the

group's total projected net annual recurring savings is from reductions in overhead and 37 percent is from personnel eliminations with civilians making up 21 percent of total net annual recurring savings and military personnel 16 percent.

Taken individually, the recommendation that the industrial group expects will generate the greatest amount of savings is the establishment of the Navy's fleet readiness centers, which is estimated to produce net annual recurring savings of \$341 million or 56 percent of the group's total net annual recurring savings and an estimated 20-year net present value savings of \$4.7 billion or 62 percent of the group's estimated total net present value savings. This realignment recommendation differs from the other realignments in that it proposes a significant business process reengineering effort to integrate the Navy's non-deployable, intermediate and depot level aircraft maintenance rather than a consolidation or realignment of workload. While the changes proposed would appear to have the potential for significant savings, as explained below, some uncertainty exists about the full magnitude of the savings estimate for this recommendation because most of the group's projected savings are based on efficiency gains that have yet to be validated. For example, based on our analysis, over 63 percent of the estimated net annual recurring savings for this recommendation are miscellaneous recurring savings projected to accrue from overhead efficiencies, such as reduced repair time and charges, while 12 percent of the annual recurring savings is produced from reductions in military personnel and 24 percent of the savings is derived from reductions in civilian personnel. These efficiencies are expected to be gained from integrating intermediate and depot levels of maintenance and not having to ship as many items to faraway depots for repair. In addition, 34 percent of the group's net implementation savings for this recommendation is derived from other one-time unique savings accrued from one-time reductions in spare parts inventories.

Issues Identified with Approved Recommendations

Time did not permit us to assess the operational impact of each of the industrial group's recommendations that was approved by DOD, particularly those with minimal financial impact and where minimal realignment and consolidation of workload was proposed. At the same time, however, we offer a number of broad-based observations about selected proposed recommendations regarding high payback periods and uncertain savings that the BRAC Commission may want to consider in its review.

Navy's Fleet Readiness Centers

The recommendation on fleet readiness centers is essentially a Navy business process reengineering effort to transform the way the Navy conducts aircraft maintenance by integrating existing, non-deployable, intermediate and depot maintenance levels into a single, seamless maintenance level. The fleet readiness center construct focuses on the philosophy that some depot level maintenance actions are best accomplished at or near the operational fleet. Although the data suggests the potential for savings, we believe there is some uncertainty regarding the magnitude of the industrial group's expected savings for these readiness centers because its estimates are based on assumptions that have undergone limited testing, and full savings realization depends upon the transformation of the Navy's supply system. In determining the amount of savings resulting from the establishment of the fleet readiness centers, the industrial group and the Navy made a series of assumptions that focused on combining depot and intermediate maintenance in a way that would reduce the time an item is being repaired at the intermediate level, which in turn, would simultaneously reduce the number of items needed to be kept in inventory and the number of items sent to a depot for repair. These assumptions, which were the major determinant of realignment savings, were based on historical data and pilot projects and have not been independently reviewed or verified by the Naval Audit Service, DOD Inspector General, or us. Moreover, how well these actions, if approved, are implemented will be key to determining the amount of savings realized.

According to the group, two types of savings account for the majority of the projected savings from the fleet readiness center recommendation. First, one-time savings are projected to accrue from reductions in inventory maintained at several Navy shore locations because item repair cycle time for components is reduced with more depot level maintenance being performed at or near the fleet, generally at an intermediate facility. According to group officials, this reduction is accomplished by stationing several depot level repair personnel at an intermediate facility to assist in repairing an item on site rather than spending time re-packing and shipping the item to a depot for repair. By reducing the turnaround time for an item—that is, time spent in transit to and from a depot level repair facility, group officials estimate that the average time an item is in the repair pipeline will decrease from 28 hours to 9 hours, with nearly all that time spent on the actual repair. The industrial group maintains this reduction in turnaround time will allow for savings since fewer items will need to be kept in the shore based aviation consolidated inventory because

items will be getting repaired quicker and returned to the inventory faster.⁵ The second type of savings is recurring overhead savings that are projected to accrue from fewer items being sent to depots for repair. According to group officials, establishing fleet readiness centers will result in fewer items being sent to a depot to be repaired, thus reducing per item maintenance costs. These savings are captured in the COBRA model under overhead as miscellaneous recurring savings. As explained by group officials, when an item is sent to a depot, two charges are applied to the cost to repair the item—a component unit price and a cost recovery rate. So, if fewer items are sent to a depot, then fewer repair charges are incurred and less overhead costs are incurred.

However, according to an industrial group official, since the depots will have fewer items to repair, they will have fewer opportunities to generate revenue to support their working capital fund operations.⁶ This situation, in turn, could create an incentive for the depot to increase its cost recovery rate for items it does repair to make up for reduced revenues. If this were to occur, then the projected savings would not materialize because most of the fleet readiness center savings are based on a reduction in the number of items sent to depots and are contingent on the supply system not drastically raising the cost recovery rate. According to industrial group officials, it will be important to overall transformation efforts that DOD follow through on eliminating management structures and duplicate layers of inventory in the supply system. Also, according to these officials, some of this supply-side transformation is already underway at the retail level in the form of a partnership between fleet industrial supply centers and the naval air depots where material management for the depots was handed over to the supply centers to standardize supply chain processes, improve material availability, and reduce the material excesses that have been a difficult problem for the naval air depots. In addition, group officials stated that the supply and storage joint cross-service group's recommendation to realign supply, storage, and distribution management should also further this transformation by eliminating unnecessary redundancies and

⁵ The shore based aviation consolidated allowance list inventory is a consolidated list of components, repair parts, and consumable items and depot and field level repairable items required to support planned operational and maintenance missions at designated naval and Marine Corps air stations.

⁶ The Navy working capital fund is a revolving fund that relies on sales revenue rather than direct appropriations to finance its operations. Activities under the fund are supposed to generate sufficient revenues to recover expenses incurred in their operations and are expected to operate on a break-even basis over time.

duplication and by streamlining supply and storage processes, which will reduce costs and help prevent a large increase in the cost recovery rate.

In addition, we believe there is some potential risk in properly accounting for depot level work to meet legislatively mandated reporting requirements on the percentage of depot workload performed in government and contractor facilities,⁷ absent efforts to ensure adequate differentiation of work completed for intermediate and depot level maintenance. We previously reported on similar difficulties in 2001 involving a consolidation of intermediate and depot level work at Pearl Harbor Naval Shipyard, Hawaii.⁸ We noted that, prior to consolidation, the Navy's determination of depot and intermediate maintenance work was based on which facility performed it—the former Pearl Harbor shipyard performed depot work, and the former intermediate maintenance facility performed intermediate work. However, because Pacific Fleet and Pearl Harbor officials asserted that all work was considered and classified the same at the consolidated facility, the management and financial systems did not differentiate between depot and intermediate categories of work. As a result, the lines between what was considered intermediate and depot maintenance became blurred, making it harder to report what was intermediate and depot maintenance. The industrial group maintains that during the first few years of implementing the fleet readiness center recommendation, the Navy will continue to operate depot maintenance within the working capital fund (setting up a separate holding account) and perform intermediate maintenance with mission funding. During this period, depot maintenance will be reported as depot maintenance and intermediate maintenance will be reported as intermediate maintenance. While this should mitigate the accounting issue in the short-term, it is unclear to what extent longer term measures will be needed to ensure proper reporting of depot work to meet statutory requirements.

⁷ Under 10 U.S.C. 2466, not more than 50 percent of annual depot maintenance funding provided to the military departments and defense agencies can be used for work accomplished by private-sector contractors. Section 2466 also requires annual reporting to the congress on the distribution of depot maintenance funding between the public and private sectors.

⁸ GAO, *Depot Maintenance: Key Financial Issues for Consolidations at Pearl Harbor and Elsewhere Are Still Unresolved*, [GAO-01-19](#) (Washington, D.C: Jan. 22, 2001).

Savings for Chemical
Depots after
Implementation

The net annual recurring savings may be overstated for the three chemical depots recommended for closure—Newport, Umatilla, and Deseret—and it is unclear whether such facilities are appropriately included in the BRAC process.⁹ The industrial group estimated net annual recurring savings of \$127 million for the three chemical demilitarization facilities, \$20 million of which is from anticipated savings by not recapitalizing these closed BRAC installations. However, the current missions of each of these installations are focused on the destruction of existing chemical weapons stockpiles, and after the stockpiles are destroyed, the destruction facilities themselves are scheduled to be dismantled and disposed of in accordance with applicable laws and agreements with the governors of the states in which they are located. With the exception of the recommended transfer of storage igloos and magazines from Deseret to Tooele Army Depot, Utah, Army officials have not identified any existing plans for future missions at these depots once the chemical destruction mission is complete. Consequently, it is unclear how the closure of the depots will result in recapitalization savings. Additionally, given the general delays in the Army's chemical weapons destruction program¹⁰ it is uncertain that it will be able to complete the chemical weapons destruction mission and close these depots within the 6-year BRAC statutory implementation period.

Hawthorne Army Depot

There is uncertainty surrounding the Army's ability to close the Hawthorne Army Depot, Nevada, by 2011, the final year as prescribed by the BRAC legislation for implementing BRAC actions. The Army may be unable to demilitarize all the unserviceable munitions stored at the depot by 2011, thereby placing the Army at risk for closing the depot by that date. Army officials told us that demilitarization funds have not been fully used for demilitarization purposes in recent years, but for other purposes. As a

⁹Pueblo Chemical Depot was removed from the BRAC closure list two weeks before the recommendations were released. During the BRAC process, we expressed our concerns that Pueblo would not be able to successfully demilitarize its stockpiles within the statutory BRAC timeframe because a plant has yet to be built.

¹⁰GAO, *Chemical Weapons: Destruction Schedule Delays and Cost Growth Continue to Challenge Program Management*, [GAO-04-634T](#) (Washington, D.C.: Apr. 1, 2004), GAO, *Nonproliferation: Delays in Implementing the Chemical Weapons Convention Raise Concerns About Proliferation*, [GAO-04-361](#) (Washington, D.C.: Mar. 31, 2004), and GAO, *Chemical Weapons: Sustained Leadership, Along with Key Strategic Management Tools, Is Needed to Guide DOD's Destruction Program*, [GAO-03-1031](#) (Washington, D.C.: Sept. 5, 2003).

result, the stockpile of unserviceable munitions is growing. The funding situation is of such concern that an Army official told us they intend to request the DOD Comptroller issue a memorandum that would administratively “fence” funding in the demilitarization account to better ensure that the funds will be used for reducing the stockpiles of unserviceable munitions. This official also told us that this funding situation could be further exacerbated with the potential for the return to the United States of additional unserviceable munition stockpiles that are currently stored in Korea, even though the group considered these stocks in its analysis. This official stated that if these unserviceable munitions are returned for demilitarization to Hawthorne, there will be added pressure to finish the demilitarization process in time to close the facility by 2011.

Closure of Ammunition Plants

Currently, the Army leases some property at its ammunition plants through the Army’s program called the Armament Retooling and Manufacturing Support Initiative. DOD has recommended for closure four ammunition plants that are part of this initiative—Mississippi, Kansas, Lone Star, and Riverbank. We previously reported that, while this initiative has offset some of the Army’s maintenance costs, maintaining ammunition plants in an inactive status still represents a significant cost to the federal government.¹¹ Through this initiative, the Army contracts with an operating contractor that conducts maintenance, repair, restoration, and remediation in return for use of the inactive part of the facility. The operating contractor, in turn, locates and negotiates with tenants regarding lease rates, facility improvements, and contract terms. However, the effect on these tenants of closing the four ammunition plants involved with the initiative is currently unknown. Army officials responsible for the initiative told us that past transfers of such property outside of the BRAC process have been handled poorly in that the General Services Administration or Army Corps of Engineers, the agencies responsible for transferring excess property, evicted the tenants and then sold the property separately, as was the case in past closures such as the Indiana Army Ammunition Plant. Army officials said that property transfers conducted in this manner could be costly because the government must incur some costs that were paid by the tenants, such as for security and maintenance. For example, an Army analysis showed that retaining the ARMS tenants on Indiana Army Ammunition plant rather than evicting them would have saved about

¹¹GAO, *Military Bases: Cost to Maintain Inactive Ammunition Plants and Closed Bases Could be Reduced*, GAO/NSIAD-97-56 (Washington, D.C.: Feb. 20, 1997).

\$41 million. Additionally, DOD may incur some costs if leases are terminated early. An industrial group official told us that the group included termination costs for leases that extended past the proposed closure date but only for tenants performing DOD work, not for other tenants. We believe that lease termination costs should have been included for any tenant's lease that extends past the proposed closure date, since there may be a cost incurred for breaking the lease early. However Army officials said that it would be difficult to estimate such potential costs at this time.

Watervliet Arsenal, New York

Despite having a payback period of 18 years, the industrial group proposed the realignment of Watervliet Arsenal, New York, because it has considerable excess capacity and DOD will no longer require some of its capabilities. The group had originally considered either moving the entire workload of the arsenal to Rock Island Arsenal, Illinois, or moving the entire workload of Rock Island Arsenal to Watervliet Arsenal. However, according to industrial group officials environmental issues regarding potential chromium discharges into the Mississippi River and costs associated with moving heavy industrial equipment precluded a cost-effective realignment of moving the work at Watervliet Arsenal to Rock Island Arsenal. Similarly, air quality issues regarding sulfur dioxide emissions along with the costs to move equipment precluded a cost-effective realignment of moving the work at Rock Island Arsenal work to Watervliet Arsenal, since the Northeast region already exceeds allowable limits for sulfur dioxide emissions. As shown in the table 29, the Watervliet recommendation has a payback period of 18 years, with about \$63.7 million in one time unique costs and only \$5.2 million in net annual recurring savings. According to industrial group officials, these one-time costs reflect the costs of "shrinking the footprint," (i.e., moving out of buildings and eliminating and moving excess equipment at both the arsenal and the accompanying research laboratories also located at the arsenal).

Intelligence Joint Cross-Service Group Selection Process and Recommendations

The Intelligence Joint Cross-Service Group followed the common analytical framework established by the Office of the Secretary of Defense (OSD) in reviewing its functions and facilities. The Intelligence Joint Cross-Service Group produced two recommendations that it projects will yield about \$588 million in 20-year net present value savings, with a payback period of 8 years for each recommendation. The majority of savings in the two recommendations result from lease terminations. Unlike the services or other groups, there is little savings projected from personnel reductions because, according to officials, almost all of the personnel will relocate and end strength is projected to increase as a result of program growth. The DOD Inspector General and service audit agencies, which performed audits of the data, concluded that the data were sufficiently reliable for use during the BRAC process.

Organization and Focus

The intelligence group was responsible for reviewing intelligence functions throughout DOD. Previous BRAC rounds did not involve the participation of any joint cross-service group dedicated to analyzing intelligence functions. The intelligence group was chaired by the Deputy Under Secretary of Defense (Counterintelligence & Security).¹ The Group's principals included senior members from the Defense Intelligence Agency, National Geospatial-Intelligence Agency, National Reconnaissance Office, National Security Agency, each military department, and the Joint Staff Directorate for Intelligence, along with representation from the offices of the Director, Central Intelligence Community Management Staff, and the Department of Defense Inspector General.

The intelligence group formed four functional subgroups: Sources and Methods; Correlation, Collaboration, Analysis, and Access; Management Activities; and National Decisionmaking and Warfighting Capabilities. The first three subgroups each created an analytical construct for measuring defense intelligence capacity that resulted in a capacity data call. These subgroups were eventually replaced by a single Core Team that included membership from each organization represented in the Intelligence Joint Cross-Service Group. This team created a single, consolidated analytical construct for measuring the military value of defense intelligence facilities. The team also performed detailed capacity and military value analysis,

¹ At the Office of the Secretary of Defense, the Infrastructure Steering Group (ISG) and the Infrastructure Executive Council (IEC) provided overall coordination and direction to the DOD-wide process.

evaluated scenario ideas, executed scenario data calls, and prepared Intelligence Joint Cross-Service Group candidate recommendations for deliberation.

The overarching intelligence principle the group worked to support was that DOD needs intelligence capabilities to support the National Military Strategy by delivering predictive analyses, warning of impending crises, providing persistent surveillance of our most critical targets, and achieving “horizontal” (that is, interagency) integration of networks and databases. To do so, the group focused on four key objectives:

- Locating and upgrading facilities on protected installations as appropriate.
- Reducing vulnerable commercial leased space.
- Realigning selected intelligence functions/activities and establishing facilities to support continuity of operations and mission assurance requirements.
- Providing infrastructure to facilitate robust information flow between analysts, collectors, and operators at all echelons and achieve mission synergy.

The group conducted an assessment of defense intelligence for buildings, facilities, and personnel performing the intelligence function. The objective was to project an alignment of present capabilities, with current organizational compositions and business processes, to desired future operational capabilities, using DOD’s transformational concepts and preferred organizational construct.

Framework for Analysis

The intelligence group initially identified five broad functions to analyze in defense intelligence: Sources and Methods (Acquisition and Collection); Analysis; Dissemination; Management Activities; and Sustainability. Based on subsequent Infrastructure Steering Group guidance, these five broad functions were consolidated into a single function—defense intelligence—in the final military value scoring plan. Capacity analysis and then military value analysis were the starting points for the BRAC analytical process. The DOD Inspector General and service audit agencies performed an important role in ensuring the accuracy of data used in these analyses through extensive audits of data gathered at various locations.

Capacity Analysis

To assess capacity, the intelligence group identified buildings and facilities performing the intelligence function and developed related attributes, metrics, and questions for analysis. Data calls were issued to the defense intelligence community to gather certified data on intelligence buildings and facilities. The capacity analysis identified limited excess capacity in some organizations, but no overall excess capacity, as shown in table 30.

Table 30: Excess Capacity Identified by the Intelligence Joint Cross-Service Group

Organization	Percentage of excess capacity (shortage)
Air Force	0.01
Army	(3)
Marine Corps	(20)
Navy	(4)
Under Secretary of Defense, Intelligence	(17)
Counter Intelligence Field Agency	2
Joint Staff (Combatant Commands)	(58)
Defense Intelligence Agency	(24)
National Geospatial-Intelligence Agency	11
National Reconnaissance Office	2
National Security Agency	0.3
Total	(1.9)

Source: Intelligence Joint Cross-Service Group.

Note: Excess capacity measured in square feet.

The negative excess capacity shown in table 30 differs from the group’s initial capacity data results, which showed an overall excess capacity of 18 percent. However, after reviewing the initial data, the intelligence group made two adjustments. First, the group removed buildings with no direct intelligence mission, such as barracks, pump houses, tunnels, or warehouses. Then the group increased its estimate of the area of square feet required for personnel temporarily working at another intelligence

entity and for contractor personnel by 50 percent.² The group did not identify any known documented requirements for the defense intelligence community to set aside space or facilities for surge. The intelligence community has historically handled surge operations by reassigning and reallocating existing resources within the current square footage.

Military Value Analysis

All BRAC 2005 selection criteria were applied by the intelligence group across the defense intelligence functional support area and used with the force structure plan and infrastructure inventory to perform analyses. Priority consideration was given to military value by evaluating and scoring activities based on the first four selection criteria. Table 31 below shows the weighted value the intelligence group gave to the criteria, based on a 100-point scale.

Table 31: Intelligence Joint Cross-Service Group Military Value Criteria Weights

Figures in percentages	
Military value criteria	
1. The current and future mission capabilities and the impact on operational readiness of the total force of the Department of Defense, including the impact on joint warfighting, training, and readiness.	40
2. The availability and condition of land, facilities, and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions) at both existing and potential receiving locations.	30
3. The ability to accommodate contingency, mobilization, surge, and future total force requirements at both existing and potential receiving locations to support operations and training.	20
4. The cost of operations and the manpower implications.	10
Total	100

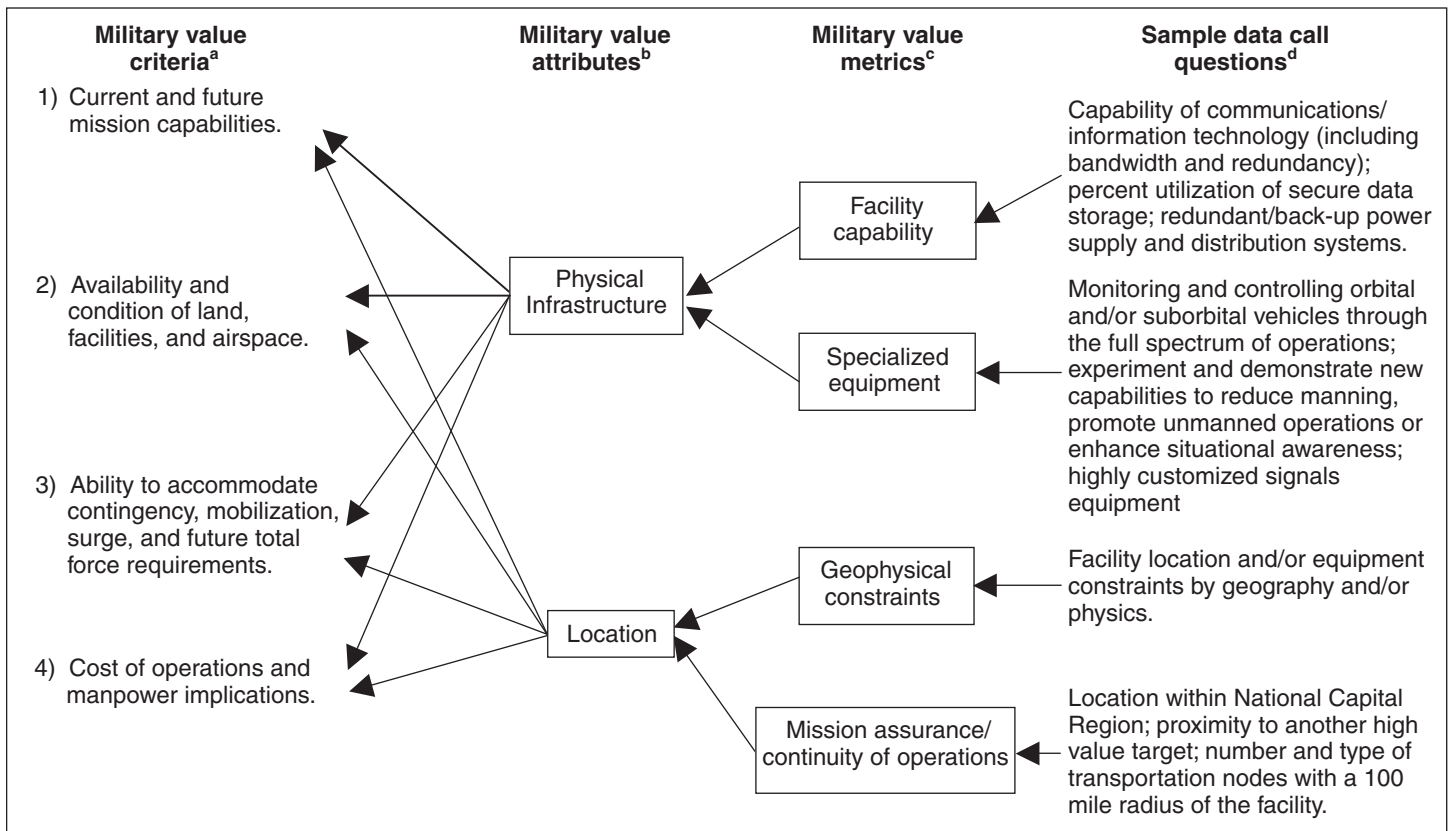
Source: DOD and the Intelligence Joint Cross-Service Group.

Note: The system of weights provided a basis for assigning relative value to data collected and tabulated across each military value dimension.

² Initially, the group developed a space allowance of 100 square foot for detailees and contractors. However, the group subsequently found out that detailees and contractors consisted of all levels of personnel, including high ranking liaisons, managers, and analysts. As a result, the group raised the space allowance 150 square foot per person, which they believe more accurately reflects the intelligence community average for government, military and civilian personnel.

The intelligence group assessed the military value of its facilities based on those facilities' capabilities to support the intelligence function. A single scoring plan measured the value of both the infrastructure and the personnel performing the defense intelligence function at a given facility. Attributes and weighted metrics were used to compute the military value of a building by assessing the facility's physical infrastructure and locations as they related to selection criteria 1 through 4. After computing military value scores, a rank-ordered listing of the 267 intelligence facilities was developed for the defense intelligence function. Subsequently, strategy-driven scenarios were validated by analyses of military value data and military judgment. Figure 16 illustrates how the military value attributes, metrics, and data questions were linked to the military value criteria using selected attributes, metrics, and questions.

Figure 16: Selected Attributes, Metrics, and Data Questions Used to Assess Military Value of an Intelligence Facility



Source: GAO analysis of Intelligence Joint Cross-Service Group data.

^aThe BRAC military value criteria are the first 4 BRAC selection criteria.

^bMilitary value attributes are characteristics of each criterion. The Intelligence Joint Cross-Service Group used a total of 2 military value attributes.

^cMilitary value metrics are measures for the attributes. The Intelligence Joint Cross-Service Group used a total of 12 military value metrics.

^dThe Intelligence Joint Cross-Service Group used a total of 59 data call questions.

A similar process was followed for all of the 267 intelligence facilities.

DOD Inspector General’s and Service Audit Agencies’ Role in the Process

The DOD Inspector General and service audit agencies reviewed the data and processes used by the Intelligence Joint Cross-Service Group to develop its recommendations. The overall objective was to evaluate the validity, integrity, and documentation of data used by the subgroups. The DOD Inspector General and service audit agencies used real-time audit coverage of data collection and analysis processes to ensure that the data used in the groups’ capacity analysis, military value analysis, and use of optimization models was certified and was used as intended. Through extensive audits of the data collected from field activities during the process, the DOD Inspector General notified the group of data discrepancies for the purpose of follow-on corrective action. The DOD Inspector General ultimately determined, once the corrections to all the discrepancies were noted, the intelligence data to be sufficiently reliable for use in the BRAC process.

Identification and Assessment of Alternate Scenarios and Selection of Recommendations

The Intelligence Joint Cross-Service Group developed 13 scenarios, which after further analysis led to 6 candidate recommendations being presented to the Infrastructure Steering Group and the Infrastructure Executive Council, the latter of which approved 3 candidate recommendations. One of these 3 approved candidate recommendations was subsequently incorporated into a recommendation proposed by the headquarters group.

Some scenarios were eliminated because they were alternatives to a proposed recommendation. Other scenarios were eliminated because of concerns over high implementation costs and long payback periods—that is, the length of time required for the savings to offset closure costs. For example, the group developed a scenario to establish selected continuity of operations and mission assurance functions at White Sands Missile Range, New Mexico, but it was disapproved by the Infrastructure Executive Council because it had a one-time cost of \$1.8 billion and a projected payback period of never.

Recommendations Approved by DOD

The Intelligence Joint Cross-Service Group projects that its two recommendations will produce almost \$588 million in 20-year net present value savings, and almost \$138 million in net annual recurring savings. Table 32 below provides a summary of the financial aspects of the group's recommendations.

Table 32: Financial Aspects of the Intelligence Joint Cross-Service Group's Recommendations

Fiscal year 2005 constant dollars in millions

Recommended actions	DOD report page	One-time (costs)	Net implementation (costs) savings ^a	Net annual recurring savings	Payback period (years)	20-year net present value savings ^b
Close National Geospatial-Intelligence Agency leased locations, relocate to Fort Belvoir, VA	Int-4	(\$1,117.3)	(\$796.7)	\$127.7	8 years	\$535.1
Realign Defense Intelligence Agency functions	Int-3	(96.7)	(48.8)	10.1	8 years	52.8
Total		(\$1,214.0)	(\$845.5)	\$137.8		\$587.9

Source: GAO analysis of DOD data.

^aThis represents net costs or savings within the 6-year implementation period required to implement BRAC recommendations.

^bDOD used a 2.8 percent discount rate to calculate net present value.

The majority of the net annual recurring savings in the two recommendations is from the avoidance of future leased cost when activities move from leased space to military installations. Intelligence Joint Cross-Service Group officials noted that about one-half of the estimated \$1.1 billion one-time costs for the National Geospatial-Intelligence Agency move will be paid from National Intelligence Program funds.

Issue Identified with Approved Recommendations

The recommendation to move the National Geospatial-Intelligence Agency from various leased sites to Fort Belvoir, Virginia, will have a significant impact on the local community when added to other proposals to move activities to Fort Belvoir.³ This one proposal would move about 8,500 personnel to Fort Belvoir from Bethesda, Maryland, Washington, DC and the northern Virginia area. The BRAC Commission may wish to consider the impact on the local community infrastructure, such as roads and public

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Intelligence Joint Cross-Service Group
Selection Process and Recommendations

transportation, when evaluating this and other proposals affecting Fort Belvoir.

³ The headquarters group has several recommendations that propose to move activities to Fort Belvoir.

Medical Joint Cross-Service Group Selection Process and Recommendations

The Medical Joint Cross-Service Group followed the common analytical framework established by the Office of the Secretary of Defense (OSD) for reviewing the military health care system. It produced 22 candidate recommendations; one was disapproved late in the process by the Infrastructure Executive Council (IEC), and one was integrated with a service recommendation. The remaining 20 recommendations were combined into 6 recommendations that were ultimately approved by DOD. These 6 recommendations are projected to produce about \$2.7 billion in estimated net present value savings over a 20-year period. The expected payback period, or length of time for the savings to offset costs associated with the recommendations, varies from immediately to 10 years. We have identified various issues regarding the recommendations that may warrant further attention by the BRAC Commission. These include the likelihood that some estimated savings could be less than projected, lengthy or no payback periods for certain proposed actions imbedded within the more complex recommendations, and uncertainties about future requirements and their impact on the viability of the recommendations. While the group encountered some challenges in obtaining accurate and consistent certified data on a cross-service basis, the DOD Inspector General and the military service audit agencies ultimately concluded that the data used by the medical group were sufficiently reliable for use in the BRAC process.

Organization and Focus

The medical group was chaired by the Surgeon General of the Air Force and included the Surgeon General of the Navy, the Deputy Surgeon General of the Army, the Medical Officer of the Marine Corps, and the Acting Deputy Assistant Secretary for Health Budgets and Financial Policy. In carrying out its BRAC analyses, the medical group established functional area working groups and subgroups consisting of subject matter experts and analysts from each of the military services and the OSD Health Affairs.¹ The group's objectives were to develop recommendations to:

- support the warfighters and their families,
- maximize military value while reducing infrastructure and maintaining an adequate surge capability,

¹ At OSD, the Infrastructure Steering Group (ISG) and the IEC provided overall coordination and direction to the DOD-wide process.

- maintain and improve access to care for all beneficiaries, including military retirees,
- enhance jointness,
- identify and maximize synergies from co-location or consolidation, and
- examine outsourcing opportunities, such as increasing the use of civilian care providers, to allow DOD to leverage its efforts across the overall United States health care system.

Framework for Analysis

The medical group organized and conducted its BRAC analyses of DOD's military health care system focusing on three broad functions: (1) health care services; (2) health care education and training; and (3) medical and dental research, development, and acquisition. As with other military services and joint cross-service groups, capacity and military value analyses were the starting points for the group's analyses. The DOD Inspector General and service audit agencies performed an important role in ensuring the accuracy of data used in these analyses through extensive audits of data gathered at various locations.

Capacity Analysis

In establishing the analytical framework for developing its recommendations, the medical group analyzed the military health system's capacity in terms of services, workloads, and facilities. The group developed specific functional area metrics for measuring capacity and collected certified data associated with these metrics from military installations across the country. It used a range of metrics, depending on the functional area being assessed, such as military health care population and workloads, number of hospital beds, available and currently used building space, length and frequency of education and training programs, personnel requirements, and equipment usage, to measure capacity.

Based on the group's capacity analysis, the military health system was found to have excess capacity within two of the three functional areas it reviewed. As shown in table 33, the excess capacity resides predominantly in the health care services and education and training functions. Within the health care services function, the analysis showed that dental care has virtually no excess capacity because of the use of contract providers and substantial infrastructure adjustments since previous BRAC rounds. The

group’s capacity analysis report acknowledged that even though adjustments have been made to the health care system since the BRAC 1995 round, the medical system infrastructure is still generally based on a Cold War strategy with minimal reliance on civilian health care providers.

Table 33: Excess Capacity Identified by the Medical Joint Cross-Service Group

Functional areas^a	Percentage of excess capacity
Health care services	
Health care - primary care	38
Health care - specialty care	14
Health care inpatient	48
Health care dental	0
Health care education and training	
Laboratories	77
Clinical	15
Classrooms	56
Health care research, development, and acquisition	
Personnel	3

Source: Medical Joint Cross-Service Group data.

^aA variety of metrics was used depending on the functional areas being assessed. For example, the number of procedures was used for assessing health care services while the number of full-time equivalents was used in assessing health care research, development, and acquisition functions.

The group developed surge factors for its analysis of inpatient and research, development, and acquisition functions, which are part of the percentages in table 33. It determined that the high operational tempo would be maintained for 30 days. However, the group determined that surge factors were not necessary for other functional areas because of their inherent surge capabilities to handle potential workload increases. It assumed that potential workload surge requirements could be handled through various sources, such as the use of civilian providers in the

TRICARE network,² civilian medical education and training programs, and extended operations.

According to DOD medical officials, the Department of Health and Human Services, rather than DOD, is responsible for domestic homeland medical support, but defense medical personnel and infrastructure could be used to assist in handling domestic medical emergency situations. According to DOD officials, since this support is not part of DOD's defined mission, it was not included in the medical group's analysis. However, DOD officials also told us that the Joint Chiefs of Staff and the OSD had coordinated the BRAC analysis with major commands that would be impacted by BRAC proposals, including the U.S. Northern Command, which is responsible for the homeland defense mission.

DOD is in the process of reviewing the military health care system's ability to meet future medical readiness requirements, including an evaluation of medical infrastructure at various levels of operations from contingencies to full operational surges. DOD intends to include Department of Homeland Security policies in this review. According to DOD officials, the results of this ongoing assessment were not included in the medical group's capacity analysis because the assessment is not expected to be completed until after the BRAC recommendations are finalized, following reviews by the BRAC Commission, the President, and Congress. Nevertheless, the medical group made a determination that the current medical force size³ was adequate to meet the requirements of various war plans, and after reviewing the fiscal year 2006 program objective memorandum and the 20-year force structure plan, it decided to use the current force structure for its analysis. Further, the group concluded that deployment force sizing, a readiness issue, did not have direct influence on determining excess facility capacity.

The medical group estimates that its recommendations, if adopted, would result in a 12 percent reduction in excess inpatient medical capacity and an approximately 7.4 million square feet net reduction in overall facility space.

² Medical care under TRICARE is provided by DOD personnel in military treatment facilities or through civilian providers in civilian facilities. During the 1990s, DOD restructured its health care system into TRICARE to improve beneficiaries' access to health care while maintaining quality and controlling costs.

³ The DOD health care system included about 163,000 medical personnel worldwide in fiscal year 2004, some of whom are active duty military personnel assigned to deployable units that may rotate back to military treatment facilities.

Military Value Analysis

The medical group's assessment of military value, like its excess capacity assessment, focused on the same three functional areas: (1) health care services; (2) health care education and training; and (3) medical and dental research, development, and acquisition.

The military value analysis helped to establish the basis for realigning medical functions across the various installations or closing specific activities within the medical infrastructure. It also helped to gauge the impact of the group's proposed scenarios on the overall DOD health care system. The military value methodology for this BRAC round was similar, in many respects, to the one used in the 1995 round, especially for medical functions. For example, both rounds identified affected populations and local civilian providers within catchment areas.⁴ In both rounds, military value played a predominant role in formulating recommendations. Moreover, during the 2005 round, the medical group considered the impact on local beneficiaries, such as military retirees, from downsizing or eliminating medical facilities, which included input from a DOD-chartered military health benefit working group.⁵ This working group included independent members who represented TRICARE regions throughout the United States.

The medical group's functional military value analysis assessed the relative capabilities of various activities and facilities supporting the military health care system's mission and operational needs. Its military value analysis was directly linked to the four military value criteria required by the BRAC legislation. For example, the military value analysis gave greater weight to services supporting active duty members in order to emphasize force readiness. Table 34 shows the relative weights that the group developed for each of the four selection criteria that relate to military value.

⁴ Catchment areas are geographic areas determined by the Assistant Secretary of Defense for Health Affairs that are defined by five-digit zip codes, usually within an approximate 40-mile radius of military treatment facilities with inpatient care.

⁵ The National Defense Authorization Act of Fiscal Year 2004 (P.L. 108-136, Section 726 [Nov. 24, 2003]) required the Secretary of Defense to consult with the working group in developing recommendations in the 2005 BRAC round. The working group is expected to provide a plan to the Secretary of Defense in order to provide health care services to persons who are entitled to and are receiving health care and whose accessibility to it will be affected by 2005 BRAC actions.

Appendix X
Medical Joint Cross-Service Group Selection
Process and Recommendations

Table 34: Medical Joint Cross-Service Group Military Value Criteria Weights

Figures in percentages

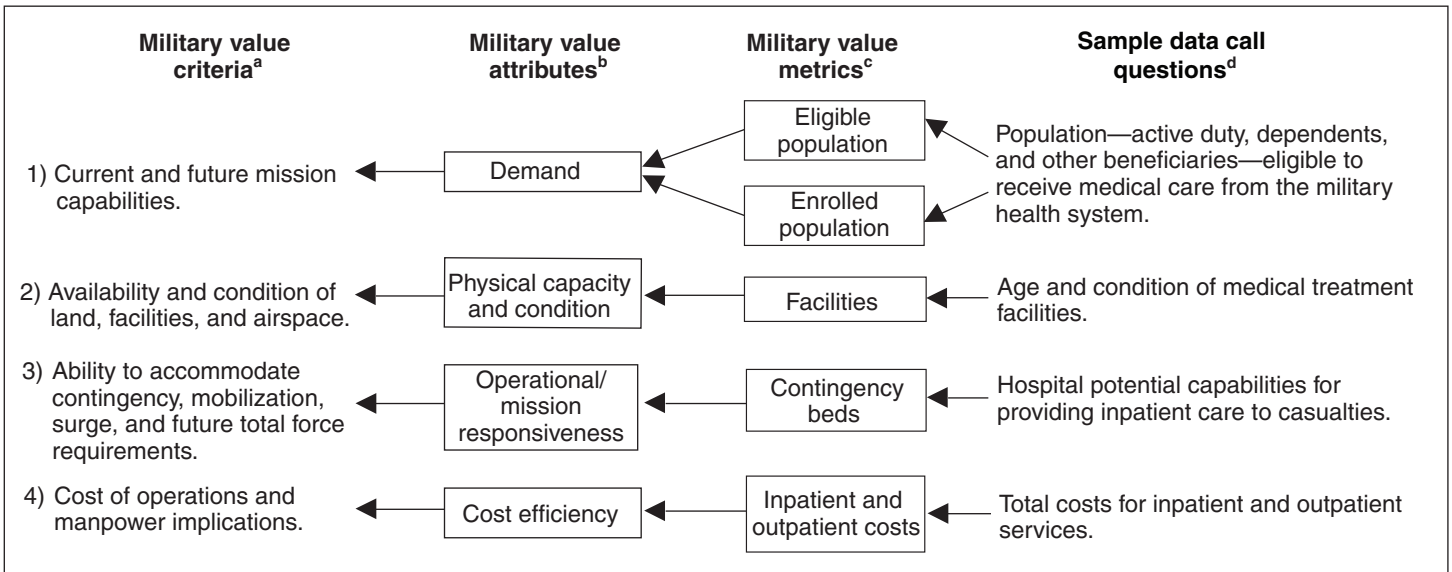
Military value criteria	Health care services weight	Health care education and training weight	Medical and dental research, development, and acquisition weight
1. The current and future mission capabilities and the impact on operational readiness of the total force of the Department of Defense, including the impact on joint warfighting, training, and readiness.	45	45	55
2. The availability and condition of land, facilities, and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions) at both existing and potential receiving locations.	25	20	5
3. The ability to accommodate contingency, mobilization, surge, and future total force requirements at both existing and potential receiving locations to support operations and training.	10	25	23
4. The cost of operations and the manpower implications.	20	10	17
Total	100	100	100

Source: DOD and Medical Joint Cross-Service Group.

Note: The system of weights provided a basis for assigning relative value to data collected and tabulated across each military value dimension.

In developing its analysis in accordance with the criteria above, the group developed specific functional area attributes, metrics, and data call questions to assist in assessing military value. Figure 17 provides an example of such analysis for the health care services functional area and its linkage to the BRAC legislation.

Figure 17: Selected Attributes, Metrics, and Data Questions Used to Assess Military Value of Health Care Services



Source: GAO analysis of Medical Joint Cross-Service Group data.

^aThe BRAC military value criteria are the first four BRAC selection criteria.

^bMilitary value attributes are characteristics of each criterion. The medical group used a total of six military value attributes in its health care services functional area analysis.

^cMilitary value metrics are measures for the attributes. The medical group used a total of 16 military value metrics in its military value analysis of health care services functions.

^dThe medical group used a total of 24 data call questions in its health care services military value analysis.

DOD Inspector General’s and Service Audit Agencies’ Roles in the Process

The DOD Inspector General and the service audit agencies played important roles in ensuring that the data used in the medical group’s analyses were certified and properly supported. The involvement of these audit groups included validation of data submitted by the military services, compliance with data certification requirements, the integrity of the group’s databases, accuracy of the analytical process in terms of calculations, and the adequacy of supporting documentation. These audit groups conducted extensive audits of the data collected from the military installations, and in some instances data discrepancies were identified for follow-on corrective actions. While the process for detecting and correcting data errors was quite lengthy, the DOD Inspector General and audit agencies determined that the medical-related data were sufficiently reliable for use in the BRAC process.

Identification and Assessment of Alternate Scenarios and Selection of Recommendations

The medical group's study objectives, military judgment, and capacity and military value analyses helped to identify closure and realignment scenarios for consideration. Identification and evaluation of scenarios was also facilitated by use of an optimization model to identify recommendations that could aid in optimizing medical health care workloads and infrastructure.⁶ The group also developed scenarios that included establishing a minimum level of average daily patient workload for inpatient facilities and by reducing excess capacity in multiservice markets to achieve efficiencies.⁷ It also used the Cost of Base Realignment Actions (COBRA) model to estimate the potential net costs or savings for its scenario proposals. The group also considered the scenarios' impact on the local economy, the DOD medical beneficiary population and graduate medical education requirements, and the environment.

The medical group submitted 22 recommendations to the IEC, which disapproved one of the recommendations—the proposal to close the Uniformed Services University of the Health Sciences at Bethesda, Maryland. This matter is discussed further in the next section of this appendix. Further, another recommendation was integrated with a service realignment and closure action. The remaining 20 recommendations were combined into 6 recommendations that were ultimately approved by DOD.

Recommendations Approved by DOD

The group produced 6 recommendations which they reported will yield an estimated \$2.7 billion in 20-year net present value savings and \$412 million in net annual recurring savings. Table 35 below provides a summary of the financial aspects of the group's recommendations. However, the group acknowledges that it incorrectly reported certain financial data for its recommendation involving the Walter Reed Army Medical Center. Based on our analysis, the revised estimates are shown as a note to table 35.

⁶ The medical group used a DOD-approved optimization model developed by the Navy. Depending on the assumptions used in the model and level of capacity reduction, the model provided a set of potential closure or realignment alternatives for further consideration by decision makers.

⁷ Multiservice markets exist where two or more service military treatment facilities are co-located geographically with shared beneficiary populations. The medical group concluded that a substantial portion of total inpatient excess capacity was in multiservice markets.

**Appendix X
Medical Joint Cross-Service Group Selection
Process and Recommendations**

Table 35: Financial Aspects of the Medical Joint Cross-Service Group’s Recommendations

Fiscal year 2005 constant dollars in millions

Recommended actions	DOD report page	One-time (costs)	Net implementation (costs) or savings^a	Net annual recurring (costs) or savings	Payback period (years)	20-year net present value (costs) or savings^b
Close Brooks City-Base, San Antonio, TX, by relocating functions to Randolph Air Force Base, Wright-Patterson Air Force Base, Lackland Air Force Base, Fort Sam Houston, and Aberdeen Proving Ground	Med-6	(\$325.3)	(\$45.9)	\$102.1	2	\$ 940.7
Realign various activities by converting inpatient services to clinics at Marine Corps Air Station Cherry Point, Fort Eustis, U.S. Air Force Academy, Andrews Air Force Base, MacDill Air Force Base, Keesler Air Force Base, Scott Air Force Base, Naval Station Great Lakes, and Fort Knox	Med-12	(12.9)	250.9	60.2	immediate	818.1
Establish San Antonio Regional Medical Center at Fort Sam Houston, Brooke Army Medical Center; and realign basic and specialty enlisted medical training to Fort Sam Houston	Med-10	(1,040.9)	(826.7)	129.0	10	476.2
Realign Walter Reed Army Medical Center (all tertiary care to Bethesda National Naval Medical Center and primary and specialty care to Fort Belvoir) ^c	Med-4	(988.8)	(724.2)	99.6	10	301.2
Realign McChord Air Force Base by relocating all medical functions to Fort Lewis	Med-9	(1.1)	55.1	11.6	immediate	164.4
Realign various activities to create joint centers of excellence for chemical, biological, and medical research, development, and acquisition (at Fort Sam Houston, Walter Reed Army Medical Center—Forrest Glen Annex, Wright-Patterson Air Force Base, Fort Detrick, and Aberdeen Proving Ground)	Med-15	(73.9)	(45.9)	9.2	7	46.0
Total		(\$2,442.9)	(\$1,336.7)	\$411.7		\$2,746.6

Source: GAO analysis of DOD data.

^aThis represents net costs or savings within the 6-year implementation period required to implement BRAC recommendations.

^bDOD used a 2.8 percent discount rate to calculate net present value.

^cThe medical group acknowledges inaccuracies in calculating its reported estimates. Our analysis indicates that the revised estimated net annual recurring savings are about \$145 million, the payback year is 6 years, and the 20-year net present value savings is about \$831 million.

The payback period, or length of time for the savings to offset implementation costs for these recommendations, ranged from immediately to 10 years. Four of the six recommendations are expected to

result in nearly all of the expected savings—over 90 percent of the total estimated 20-year net present value savings of about \$2.7 billion, and of the net annual recurring savings of about \$411.7 million. Two of the six recommendations have high one-time upfront costs—about \$2 billion, or over 80 percent of the total one-time costs for the six recommendations.

Two multiservice market area recommendations—the establishment of the San Antonio Regional Medical Center in Texas and realignment of the Walter Reed Army Medical Center in Washington, D.C.—are ultimately expected to (1) produce over 50 percent of the net annual recurring savings and (2) incur most of the up-front costs for the recommendations as a whole. The group’s primary motivation for these recommendations was to transform the existing medical infrastructure into premier modernized joint operational medical centers. In the case of the Walter Reed Medical Center recommendation, the group also justified the recommendation based on a shift in the beneficiary population from the northern tier of the Washington, D.C., area to the southern tier near Fort Belvoir, Virginia.

Another recommendation with substantial estimated net annual recurring savings is the closure of the Brooks City-Base in Texas, which is projected to achieve efficiencies in research, development, and acquisition by relocating similar functions to a single location. However, as discussed below, a significant portion of the savings from this as well as other recommendations involve claimed military personnel savings, which are somewhat uncertain. The recommendation that involves the downsizing of inpatient facilities at nine locations is expected to achieve efficiencies and reduce personnel as well as provide enhanced training opportunities for medical personnel transferring to other locations.

The medical group included within its recommendations various realignments that were described or partially justified as promoting jointness, such as those in the centers of excellence for chemical, biological, and medical research, development, and acquisition. Our review of the documentation showed that the supporting analysis was not always clear with respect to how these actions would result in jointness. For example, the group anticipated that jointness would emerge from recommendations that co-located but did not integrate research, development, and acquisition functions among services at an installation. It appears that they primarily will result in the co-locating of similar military services’ functional areas rather than creating integrated joint medical operations with joint management structures. However, according to a DOD official, the co-location of military services with similar functions on a

base will help foster jointness in the long term. Based on our analysis, it is not obvious whether some of these proposed realignments will truly result in joint military operations.

Issues Identified with Recommendations

Time did not permit us to assess the operational impact of each of the medical group's recommendations, particularly where operations proposed for consolidations or realignments extend across functional areas, geographical areas, or both. At the same time, we offer a number of broad-based observations about some of the proposed recommendations as they relate to military medical personnel savings, payback periods, jointness, and medical wartime requirements that may warrant further review by the BRAC Commission.

Military Medical Personnel Savings

Our analysis shows that military personnel savings account for about \$201 million or nearly 50 percent of the group's estimated net annual recurring savings. However, the amount of projected dollar savings is uncertain because the medical group indicated that reductions in end strength are not planned. Indirectly, some savings could occur based on the group's expectation that medical personnel would be reassigned on an individual basis to specific and varied locations, depending on where the need exists for military medical specialists. In some cases, the group noted that these military personnel reassignments could displace civilian and/or contractor medical providers. When or to what extent these reallocations would occur has not yet been determined. At the time of the group's analysis, these specific moves had not been identified and thus the group did not estimate costs related to such potential moves in its cost and savings analysis.

Bundling of Recommendations

Some of the earlier proposed recommendations with lengthy or no payback periods were integrated with ones having shorter paybacks, therefore concealing the amount of time it would take for the savings to offset costs. For example, the group developed a stand alone recommendation co-locating initial enlisted medical education and training to Fort Sam Houston, Texas, which, by itself, had a payback period of 21 years. However, the group later bundled it with the recommendation establishing the San Antonio Regional Medical Center that downsized inpatient care at Lackland Air Force Base also in Texas and expanded medical facilities at nearby Fort Sam Houston. This recommendation had a payback period of 11 years. When the two recommendations were combined, the payback

period was determined to be 10 years. The common linkage of the two recommendations is location, with the expectation that the enlisted medics will benefit from the location of the Brooke Army Medical Center in Texas, which has a trauma center suited for combat casualty training. Another example is the initial realignment of medical research, development, and acquisition functions at Brooks City-Base, which had no payback before DOD combined this recommendation with other related recommendations to close the base.

Future Wartime Medical Requirements

DOD's ongoing assessment of its future wartime medical requirements, as mentioned earlier, will not be completed until after BRAC decisions are finalized, following reviews by the BRAC Commission, the President, and Congress; therefore, this assessment was not included in the medical group's analysis. Without having such requirements available during the BRAC process, it is difficult for DOD to identify the appropriate medical infrastructure changes that are needed or to determine the appropriate size of the military health care system. Also, the group recognized that medical operations are changing with casualties rapidly moved to medical facilities outside the theater of operations and that these changes may affect the future sizing of medical forces.

Nevertheless, the group expressed belief that the current medical force size was adequate to meet the requirements of the various war plans despite the group's recommendations that will reduce system-wide excess inpatient capacity by 622 beds.

Use of Veterans' Hospitals

While the medical group examined the capacity and proximity of Department of Veterans Affairs' (VA) hospitals to existing military medical facilities in its analysis, it did not coordinate with VA to determine whether military beneficiaries who normally receive care at military medical facilities could also receive care at VA hospitals in the vicinity. During the scenario development phase, the group intended to develop a recommendation for a partnership involving VA facilities, but group officials noted that the BRAC nondisclosure agreements and the need to negotiate costs under such a partnership made it difficult to seriously plan for VA involvement prior to the announcement of the recommendations. However, a DOD official told us that during the BRAC implementation phase, negotiations with VA at the local levels are possible regarding the potential use of its services for military beneficiaries in various locations, especially those locations where DOD intends to eliminate inpatient care in

existing medical facilities.⁸ While the official told us that VA involvement had the potential for providing services and benefiting the department, another official added that the group's analysis indicated that sufficient capacity exists, without VA support, within the private sector to accommodate military beneficiaries in those locations where inpatient care at the military facilities is being eliminated. However, we were unable to verify the results of this analysis because the group did not fully document its analysis.

Closure of the Uniformed Services University of the Health Sciences Rejected by IEC

The medical group had initially developed a candidate recommendation to close DOD's medical school, known as the Uniformed Services University of the Health Sciences, which is located on the grounds of the National Naval Medical Center in Bethesda, Maryland.⁹ The group had concluded that it was more costly than alternative scholarship programs, and that the department could rely on civilian universities to educate military physicians. The group projected the closure will yield net annual recurring savings of about \$58 million, and 20-year net present value savings of approximately \$575 million. In a series of reports from 1995 through 2000, we also concluded at the time that the university was a more costly way to educate military physicians.¹⁰

However, late in the deliberative process, the IEC rejected this candidate recommendation citing education as a core competency for the department and therefore it was considered too risky to rely on the private sector to provide this function. A DOD official indicated that with the recommendation to realign Walter Reed Army Medical Center to Bethesda, Maryland, it would be highly desirable to have a military medical college

⁸One of the medical group's recommendations includes disestablishing the inpatient mission at 9 military treatment facilities. A VA hospital was located near inpatient facilities at Andrews Air Force Base, Maryland; Fort Eustis, Virginia; Fort Knox, Kentucky; Keesler Air Force Base, Mississippi; MacDill Air Force Base, Florida; Naval Station Great Lakes, Illinois; and Scott Air Force Base, Illinois.

⁹The medical group developed this candidate recommendation with the knowledge of a specific provision of federal law (10 U.S.C. 2112a) that could preclude closure of the university.

¹⁰GAO, *Budget Issues: Budgetary Implications of Selected GAO Work for Fiscal Year 2001*, GAO/OCG-00-8 (Washington, D.C.: Mar. 31, 2000); GAO, *Budget Issues: Budgetary Implications of Selected GAO Work for Fiscal Year 2000*, GAO/OCG-99-26 (Washington, D.C.: Apr. 16, 1999); and GAO, *Military Physicians: DOD's Medical School and Scholarship Program*, GAO/HEHS-95-244 (Washington, D.C.: Sept. 29, 1995).

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associated with this medical facility in order for it to be a world-class medical center. According to another official, DOD will need to make investments in the university in order to elevate its status and attract leading medical scholars who could make the university more competitive.

Supply and Storage Joint Cross-Service Group Selection Process and Recommendations

The Supply and Storage Joint Cross-Service Group followed the common analytical framework established by the Office of the Secretary of Defense (OSD) for reviewing the supply, storage, and distribution system within DOD. The group initially produced five recommendations that were presented to the Infrastructure Steering Group (ISG) and the Infrastructure Executive Council (IEC). Three of the five recommendations were merged into one recommendation by the IEC. If adopted, the three approved recommendations are projected to generate about \$5.6 billion in estimated 20-year net present value savings and \$406 million in net annual recurring savings for the department with an immediate payback (i.e., time required to recoup up-front investment costs) on the cost of implementing these recommendations. While the number of recommendations is small, each encompasses multiple realignment actions of workloads affecting many locations. Our analysis shows that the anticipated savings would result primarily from business process reengineering—expanded use of performance-based logistics¹—, infrastructure and inventory reductions, and reduced civilian personnel costs. We identified a number of issues associated with several recommendations that may warrant additional attention by the BRAC Commission. The group encountered some challenges in obtaining accurate and consistent certified data, but the DOD Inspector General and the military service audit agencies, which performed audits of the data, ultimately concluded that the data were sufficiently reliable for use during the BRAC process.

Organization and Focus

The supply and storage group consisted of six senior-level principal members from the logistics directorates for each service, the Defense Logistics Agency (DLA), and the Joint Chiefs of Staff, and was supported by staff from these organizations.² The Director, DLA, chaired the group, following the retirement of the original chairman from the Joint Staff. The group's overarching goal was to identify potential closures, realignments, or both that would enhance economies and efficiencies in operations as traditional military forces and logistics processes become more joint and increasingly take on expeditionary characteristics.

¹ Performance-based logistics is defined as the purchase of weapon system sustainment as part of an affordable integrated weapon system package based on output measures, such as weapon system availability, rather than input measures, such as parts and technical services.

² At OSD, the ISG and the IEC provided overall coordination and direction to the DOD-wide process.

Framework for Analysis

The group organized its BRAC efforts around the three core logistics functions of supply, storage, and distribution. These functions are inherent in the military services' operations as well as for DLA, whose mission is to provide wholesale-level support in these functions for the services in common supply classes. In collecting and analyzing data to formulate its recommendations, the group sought to assess the supply and storage infrastructure in the following four distinct activity areas: (1) military service and DLA inventory control points (2) defense distribution depots, (3) defense reutilization and marketing offices and (4) other activities such as installation-level supply operations. As with other military services and joint cross-service groups, capacity and military value analyses served as starting points for the group's analyses. While the group initially tried to analyze both the wholesale³ and retail supply and storage activities, it later terminated most retail-level efforts because of difficulties in collecting reliable data and a desire by the group's principals to not impact the retail support to operational and other deploying units. The DOD Inspector General and service audit agencies performed an important role in ensuring the accuracy of data used in these analyses through extensive audits of data gathered at various locations.

Capacity Analysis

To form the basis for its analysis, the group developed metrics in each of the functional areas (supply, storage, and distribution) to measure capacity and subsequently sought to collect certified data linked to these metrics from various defense activities whose missions resided within these functional categories. The group developed 14 separate reporting metrics within these categories that included, for example, special indoor storage space and technical labor work hours, and measured excess capacity under normal demand as well as under surge conditions of 10 and 20 percent. Because of its general inability to collect reliable retail-level data and a desire not to impact operational support to deploying units whose support comes from the retail area, the group dropped this area, with one

³ DOD maintains supply within a two-tiered system typically referred to as the wholesale and retail levels. Wholesale generally includes activities that procure, hold, and manage materiel not specific to individual operating units, and is also referred to as "above installation activities." Retail refers to activities that support organizational level needs for supplies and materiel and is also referred to as "installation and below activities."

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exception,⁴ from further consideration in the succeeding analyses leading to recommended actions.

The group’s capacity analysis showed that excess capacity⁵ exists, even when surge factors were considered, within three of the four supply and storage activity areas it examined. As shown in table 36, the excesses ranged from 20 percent to 75 percent under normal demand conditions across various capacity metrics in the functional areas, with the excesses somewhat less under surge conditions.

Table 36: Excess Capacity Identified by the Supply and Storage Joint Cross-Service Group

Functional/activity category	Capacity metric	Percentage of excess capacity		
		Normal demand	10 percent surge	20 percent surge
Supply/inventory control points	Purchasing labor (FTE) ^a	29	22	14
	Supply labor (FTE)	35	29	22
	Technical labor (FTE)	75	72	69
	Work space (square feet)	47	42	37
Storage and distribution/defense distribution depots	Regular covered storage (cubic feet)	32	25	19
	Special covered storage (cubic feet)	37	31	24
	Open storage (square feet)	43	38	32
	Distribution capacity (number of loading bays)	39	33	27
Supply and storage/defense reutilization and marketing offices	Wage grade labor (FTE)	46	40	35
	Supply labor (FTE)	40	34	28
	Work space (square feet)	53	48	44
	Regular covered storage (cubic feet)	57	52	48
	Special covered storage (cubic feet)	20	12	4
	Open storage (square feet)	58	54	50

Source: Supply and Storage Joint Cross-Service Group.

^a FTEs are full-time equivalents and are used as measures of work hours performed. One FTE is equivalent to 2,080 hours of work per year.

⁴ Limited retail-level data were collected with the cooperation of the Industrial Joint Cross-Service Group to support one recommendation that contained some service retail supply consolidations with DLA wholesale supply activities.

⁵ The group defined excess capacity as the difference between current capacity and current usage. Under increased surge conditions, excess capacity will be reduced.

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According to the group’s staff, its recommendation regarding restructuring of defense distribution depots, if approved and implemented, is expected to reduce current covered storage of about 51 million square feet (both regular and special) by over 50 percent, or about 27 million square feet. In addition, the recommendation regarding inventory control points is expected to increase infrastructure by about 4,700 square feet because the inventory control points would be absorbing more space than they would be vacating. The group has no recommendations that would affect the capacity of DLA’s defense marketing and reutilization offices.

Military Value Analysis

The supply and storage group’s assessment of military value, like its excess capacity assessment, focused on the same three core logistics functions of supply, storage, and distribution. By linking its military analysis directly to OSD’s four military selection criteria required by the BRAC legislation, the group established a sound basis for developing its recommendations. As shown in table 37, the group developed a weighting system for the military value criteria with the first and third criteria having relatively larger weights, or importance, than the remaining two criteria.

Table 37: Supply and Storage Joint Cross-Service Group Military Value Criteria Weights

Figures in percentages

Military value criteria	
1. The current and future mission capabilities and the impact on operational readiness of the total force of the Department of Defense, including impact on joint warfighting, training, and readiness.	35
2. The availability and condition of land, facilities, and associated airspace in (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions in) at both existing and potential receiving locations.	20
3. The ability to accommodate contingency, mobilization, surge, and future total force requirements at both existing and potential receiving locations to support operations and training.	35
4. The cost of operations and the manpower implications.	10
Total	100

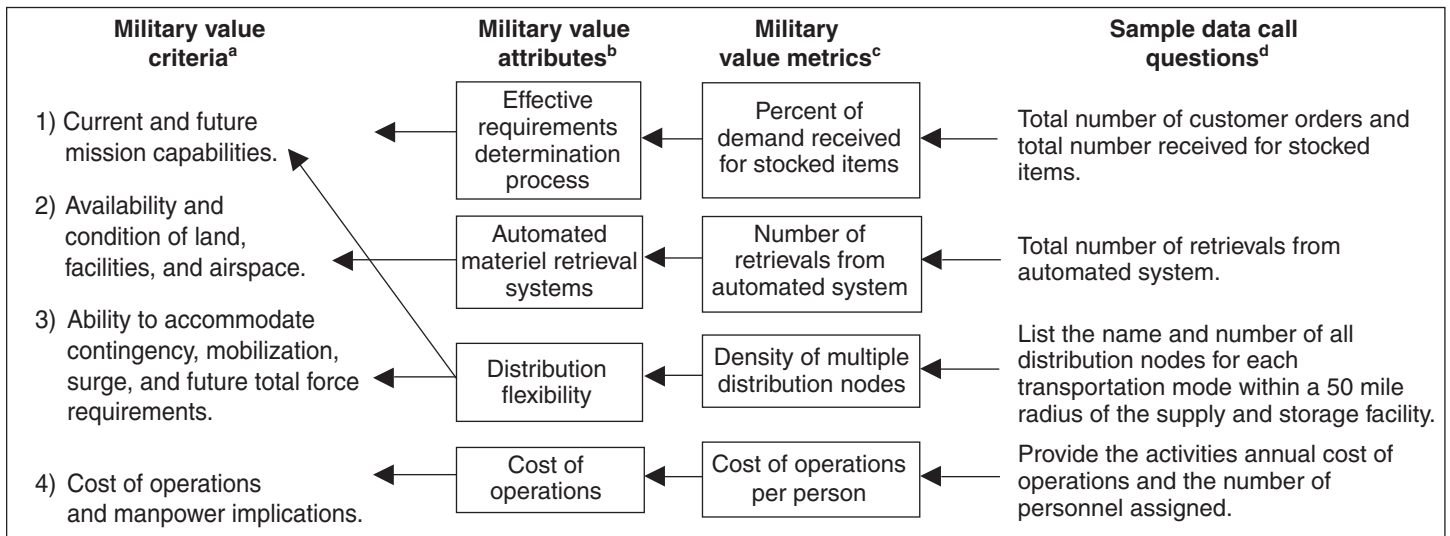
Source: DOD and Supply and Storage Joint-Cross-Service Group.

Note: The system of weights provided a basis for assigning relative value to data collected and tabulated across each military value dimension.

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As with the capacity analysis, the group’s assessment of military value included development of attributes and metrics in each of the core functional areas to measure military value, and it subsequently sought to collect certified data linked to these metrics from various defense activities whose missions resided within these categories. The group developed 55 individual metrics within the three functional areas, addressing information such as the percentage of demand for stocked items and cost of operations per person. The attributes and metrics were linked back to the military value selection criteria, as illustrated in figure 18.

Figure 18: Selected Attributes, Metrics, and Data Questions Used to Assess Military Value of Supply and Storage Activities



Source: GAO analysis of Supply and Storage Joint Cross-Service Group data.

^aThe BRAC military value criteria are the first four BRAC selection criteria.

^bMilitary value attributes are characteristics of each criterion. Four of 28 military value attributes used by the group.

^cMilitary value metrics are measures for the attributes. Four of 55 military value metrics used by the group.

^dFour of 55 military value data call questions used by the group. Many of these questions have multiple parts.

Using certified data collected during the BRAC process and applying the weighting system, the group developed military value scores and rankings for 16 inventory control points, 19 defense distribution depots, and 67 defense reutilization and marketing offices. As with the capacity analysis, the group was generally unable to develop sufficient reliable data at the

retail level to complete a military value analysis at that level. In many respects, the military value methodology for this round was comparable to that used in the 1995 BRAC round, particularly for DLA activities. In both BRAC rounds, the military value ranking of an activity played a predominant role in formulating recommendations.

DOD Inspector General's and Service Audit Agencies' Roles in the Process

The DOD Inspector General and the service audit agencies played important roles in helping to ensure that the data used in the group's data analyses were certified and properly supported and that decision-making models (e.g., military value and optimization) were logically designed and operating as intended. Through extensive audits of the data collected from field activities during the process, these audit agencies notified the group when they identified data discrepancies for follow-on corrective action. While the process for detecting and correcting data errors was quite lengthy and challenging, the audit agencies ultimately deemed the supply and storage-related data to be sufficiently reliable for use in the BRAC process.

Identification and Assessment of Alternate Scenarios and Selection of Recommendations

The Supply and Storage Joint Cross-Service Group did not have accurate and complete capacity and military value data when it initially started developing potential closure and realignment scenarios and, therefore, had to rely on incomplete data, as well as military judgment based on the group's collective knowledge of the supply and storage area, to formulate its initial closure and realignment scenarios for evaluation. Although the data improved as additional information was requested and received from field locations, the lack of useable data initially limited the use of an optimization model to help identify and analyze scenarios. As time progressed, however, the group obtained the needed data, for the most part, to inform and support its scenarios. The DOD Inspector General validated the data. The group also focused on a number of OSD supplied transformational options, as outlined below, to guide its efforts in the recommendation development process:

- Establishing a consolidated multi-service supply, storage, and distribution system focused on creating joint activities in areas with heavy DOD concentration.
- Privatizing the wholesale storage and distribution processes.

- Migrating oversight and management of all service depot-level reparables to a single DOD agency/activity.⁶
- Establishing a single inventory control point within each service or consolidate into a joint activity.
- Examining the effect of reducing functions by 20, 30, and 40 percent from the existing baseline, or reducing excess capacity by an additional 5 percent beyond the analyzed excess capacity.

The group developed a total of 51 scenarios based on these transformational options. With the maturation of the data and the application of the COBRA model to estimate costs and savings, along with military judgment, the group was able to narrow its proposals to five candidate recommendations that were forwarded to the ISG and ultimately approved by the IEC. Further integration of three of these recommendations into a single recommendation left the group with three approved recommendations.

Recommendations Approved by DOD

The group's recommendations are projected to produce substantial savings—about \$406 million in estimated net annual recurring savings and about \$5.6 billion in estimated net present value savings for DOD over the next 20 years. All are realignment actions, even though one of the recommended actions will close two defense distribution depots at Columbus, Ohio, and Texarkana, Texas and another one will close four inventory control points at Fort Huachuca, Arizona; Fort Monmouth, New Jersey; Rock Island, Illinois; and Lackland Air Force Base, Texas, while, at the same time, opening a new one at Aberdeen Proving Ground, Maryland. The group's recommendations also helped facilitate the closures of Fort Monmouth, New Jersey, and Red River Army Depot, Texas, both of which are reported in the Army's BRAC report. Table 38 provides a summary of the financial aspects of the group's three DOD-approved recommendations.

⁶ Depot level reparables are supply items that are designed to be repaired at the depot level.

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Table 38: Financial Aspects of the Supply and Storage Joint Cross-Service Group’s Recommendations

Fiscal year 2005 constant dollars in millions

Recommendations	DOD report page	One time (costs)	Net implementation (costs) or savings ^a	Net annual recurring (costs) or savings	Payback period (years)	20-year net present value (costs) or savings ^b
Realign supply, storage, and distribution management	S&S-13	(\$192.7)	\$1,047.3	\$203.2	immediate	\$2,925.8
Realign inventory control points and consolidate depot-level reparable procurement management	S&S-7	(127.0)	369.8	159.3	immediate	1,889.6
Realign management of select commodities	S&S-5	(6.4)	333.7	43.8	immediate	\$735.9
Total		(\$326.1)	\$1,750.8	\$406.3		\$5,551.3

Source: GAO analysis of DOD data.

^aThis represents net cost or savings within the 6-year implementation period required to implement BRAC recommendations.

^bDOD used a 2.8 percent discount rate to calculate net present value.

Most of the projected net annual recurring savings—about \$291 million or nearly 72 percent of the total—are expected to result from business process reengineering improvements in the form of expanded use of performance-based logistics and reductions to duplicate inventory. Most of the remaining net annual savings are expected to materialize from reductions to infrastructure costs at the wholesale supply and storage level (about \$100 million annually) and from reductions in civilian personnel costs (about \$68 million annually), with adjustments of about \$54 million in annual recurring costs to reflect additional contract support costs. Further, the recommendations are expected to have immediate paybacks with relatively low up-front costs and savings over the 6-year implementation period. We believe that implementation of these recommendations could result in more efficient operations within DOD, and we consider the recommendation involving DLA management of the inventory control points and depot-level reparable to be transformational because it advances DOD’s goal of having one DOD activity manage these activities, although, as discussed later, the full magnitude of savings likely to be realized is somewhat uncertain.

The recommendation regarding the realignment of supply, storage, and distribution management creates four support regions across the country. Each region will have one strategic distribution site that will supply the region and multiple forward distribution points that will solely support

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industrial customers, such as maintenance depots, shipyards, and air logistics centers. The strategic distribution sites are located at Susquehanna, Pennsylvania; Warner Robins, Georgia; Oklahoma City, Oklahoma; and San Joaquin, California. It is also designed to realign service retail supply and storage functions along with personnel and infrastructure for these industrial customers in an “in-place, no-cost transfer” to DLA. This recommendation supports the closures of the defense distribution depots at Columbus, Ohio, and Texarkana, Texas, and realigns each of the remaining 17 defense distribution depots.

The recommendation regarding the realignment of the inventory control points transfers certain inventory control point functions, such as contracting, budgeting and inventory management, to DLA and allows further consolidation of service and DLA inventory control points by the supply chains they manage.⁷ In addition, it supports the movement of the management of essentially all service consumable items⁸ and the procurement management and related support functions for the procurement of essentially all depot level repairables from the military services to DLA. This recommendation realigns all 16 of the current DLA and service inventory control points and closes 4 through consolidation—Fort Huachuca, Arizona; Fort Monmouth, New Jersey; Rock Island, Illinois; and Lackland Air Force Base, Texas—while opening a new inventory control point at Aberdeen Proving Ground, Maryland. The recommendation also supports the Army’s closure of Fort Monmouth by moving supply and storage functions to other locations.

The recommendation regarding the realignment of commodity management disestablishes the wholesale supply, storage, and distribution functions within the department for all tires; packaged petroleum, oils, and lubricants; and compressed gases used by DOD. As a result, these commodities will be supplied directly by private industry, which will free up space and personnel used to manage these items. It realigns all of the remaining defense distribution depots by disestablishing all storage and distribution for the commodities.

⁷ The Defense Supply Center Columbus Ohio, manages the maritime and land supply chain. The Defense Supply Center Richmond Virginia, manages the aviation supply chain, and the Defense Supply Center Philadelphia Pennsylvania, manages the troop support supply chain.

⁸ Consumable items are either not repairable or not economically repairable.

Issues Identified with Approved Recommendations

Although time did not permit us to fully assess the operational impact of each recommendation, particularly where operations proposed consolidation across multiple and varied locations, available information suggests these recommendations have the potential for more efficient operations within DOD. At the same time, there are some issues we identified that we believe the BRAC Commission may wish to consider during its review process because of potentially overstated savings estimates. In this regard, the supply and storage group claimed savings for future cost avoidances for sustainment and facilities' recapitalization related to the facilities' space that is expected to be vacated under the recommended actions. However, as discussed below, it is uncertain whether these savings will actually materialize if these facilities are not closed and remain open—even with reduced usage of the space. Additionally, the group did not develop recommendations for several areas within the scope of its responsibility that may have further contributed to the accomplishment of DOD's BRAC objectives, such as additional consolidations in DLA and service inventory control points.

Estimated Savings Related to Business Process Improvements Are Uncertain

The largest portion of the supply and storage group's savings—about \$291 million out of total net annual recurring savings of \$406 million—comes from business process reengineering improvements in the form of expanded use of performance-based logistics and reductions to duplicate inventory. According to supply and storage staff, these savings accrue from reduced contract prices because DLA will have increased buying power since it is responsible for purchasing many more items that had been purchased by each of the services. In addition, savings accrue from increased use of performance-based agreements,⁹ a key component of performance-based logistics. The group estimates DLA can save 2.8 cents on each contract dollar placed on performance-based agreements. In addition, savings come from reductions in the amount of stock that must be held in inventory. Supply and storage staff said that the savings component for the cost to hold this inventory has three parts: (1) cost of money, (2) cost of stock losses due to obsolescence, and (3) cost of storage. The group estimates that together these three factors save about 17 percent of the estimated value of the acquisition cost of the stock that is no longer

⁹ Performance-based agreements are the negotiated agreements between the major stakeholders that formally document the performance and support expectations and resources to achieve the desired outcome.

required to be held in inventory. Although the group had some supporting documentation for its assumptions, time did not allow us to fully evaluate the documentation. Nevertheless, the full magnitude of savings likely to be realized will depend on how well the actions, if approved, are implemented in line with the assumptions made.

Estimated Savings Related to Vacated Facility Space May Be Overstated

All of the supply and storage group's recommendations taken together show significant projected savings from expected reductions to excess or unnecessary infrastructure. According to the group's estimates, it is claiming BRAC savings on about 27 million square feet of vacated space—an estimated savings of about \$100 million annually or about 25 percent of the group's total net annual recurring savings. In developing its costs and savings estimates, the group assumed that all of the excess infrastructure that was made possible by the recommendations would generate BRAC savings because it was further assumed that the infrastructure would no longer be used and therefore would not require sustainment and recapitalization funding. However, we believe these assumptions are not necessarily valid because it is not clear that the freed-up infrastructure will be eliminated and could potentially be occupied by other users following the BRAC process. At present the group does not have plans for this space. Under the BRAC process, if these vacated facilities or portions thereof are reoccupied by other defense organizations, there is a corresponding cost for this reoccupation. Likewise, additional BRAC costs are required for facilities that remain empty to minimally maintain them, and costs are incurred if buildings are demolished. Supply and storage officials told us they were aware of this issue and said that their goal is to vacate as much space as possible by re-warehousing inventory and by reducing personnel spaces, but they do not have a specific plan for what will happen to the space once it is vacated. In addition, until these recommendations are ultimately approved and implemented, it will not be known exactly how much space is available or how this space will be disposed of or utilized. As a result, it is unclear as to how much of the estimated \$100 million net annual recurring savings will actually occur.

Potential for Additional Savings Exists

The recommendation that was approved by the IEC to consolidate some service inventory control point functions within DLA will move about 1,345 of the services' staff performing inventory control point functions to DLA and is estimated by the supply and storage group to save about \$1.9 billion over the next 20 years. However, the group also analyzed a scenario that would have moved more inventory control point functions and more than

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6,500 service staff to DLA and was estimated by the group to save \$2.9 billion over the same 20-year period. The latter scenario would leave nearly 3,900 service technical and engineering support personnel of the more than 10,300 service staff at existing service inventory control points. Senior-level principal members of the supply and storage group consider the technical and engineering support personnel positions to be more closely related to weapon system readiness and support to the warfighter than other inventory control point functions, such as contracting, budgeting, and inventory management, which are being transferred to DLA. These officials were not willing to suggest transferring the technical positions to DLA because of the perceived additional risk involved of not being able to supply the critical parts to the warfighter when needed. Therefore, they approved the recommendation that generated less savings, but also less risk to weapon system readiness and moved fewer inventory control point functions and fewer service staff to DLA. The Commission may wish to further examine the potential for greater savings regarding the transfer of more inventory control point functions versus the potential risk of not being able to supply critical parts when needed.

The group also did not pursue the development of recommendations regarding the defense reutilization and marketing office activities, even though considerable excess capacity exists, as shown in table 36, in that area. Group officials told us that these activities, which are managed by DLA, are considered follower organizations¹⁰ that are currently undergoing an extensive A-76¹¹ initiative outside the BRAC process that is expected to either close or consolidate several activities and reduce staff levels at others. DLA data indicate that 61 of the 67 reutilization and marketing office activities analyzed by the supply and storage group are involved in the effort and that the agency expects to save about \$36 million through 2011 with the A-76 effort.

¹⁰ Follower organizations exist only because there is a larger organization that they serve at their locations.

¹¹ A-76 is competitive sourcing where the federal government determines whether functions described as “commercial in nature” are best provided by the private sector, by government personnel, or by another agency through a fee-for-service agreement.

Technical Joint Cross-Service Group Selection Process and Recommendations

The Technical Joint Cross-Service Group followed the common analytical framework established by the Office of the Secretary of Defense (OSD) in reviewing its functions and facilities. The group included in its report 13 recommendations that it projects would generate about \$2.2 billion in 20-year net present value savings for DOD. These 13 recommendations incorporate a total of 6 closures, 62 realignments, and 1 disestablishment action. Additionally, the technical group transferred parts of nine recommendations to other joint cross-service groups or military services, which combined with other actions resulting in three additional closures.¹ The majority of the projected annual recurring savings result from eliminating civilian and contractor personnel and vacating leased space. The recommendations have payback periods—the time required for savings to offset closure and realignment costs—ranging from 1 to 26 years. Limited progress was made to foster greater jointness and transformation. The DOD Inspector General and the military service audit agencies, which performed audits of the data used in the process, concluded that the data were sufficiently reliable for use during the BRAC process. While available data supporting the recommendations suggest their implementation should provide for more efficient operations within the department, we believe there are some issues that the BRAC Commission may wish to examine more closely during its review process.

Organization and Focus

The technical group was chaired by the Director, Defense Research and Engineering; it consisted of senior members from each military department and the Joint Chiefs of Staff.² The group created five subgroups to evaluate the technical facilities: (1) Command, Control, Communications, and Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR); (2) Air, Land, Sea, and Space Systems; (3) Weapons and Armaments; (4) Innovative Systems; and (5) Enabling Technologies. In addition, the group also created a Capabilities Integration Team and an Analytical Team to support the efforts of the subgroups.

¹ These additional closures are Fort Monmouth, New Jersey, which is included in the Army section of DOD's report; Naval Support Activity Corona, California, which is included in the Navy section; and Brooks City-Base, Texas, which is included in the Medical Joint Cross-Service Group section.

² At OSD, the Infrastructure Steering Group (ISG) and the Infrastructure Executive Council (IEC) provided overall coordination and direction to the DOD-wide process.

Framework for Analysis

The technical group established two principles to guide its analysis and recommendation development: (1) provide efficiency of operations by consolidating technical facilities to enhance synergy and reduce excess capacity and (2) maintain competition of ideas by retaining at least two geographically separated sites. The group analyzed three functional areas within DOD: research, development and acquisition, and test and evaluation.³ It focused its analysis of the 3 functions across 13 technical capability areas—air platforms; battlespace environments; biomedical; chemical and biological defense; ground vehicles; human systems; information systems; materials and processes; nuclear technology; sea vehicles; sensors, electronics, and electronic warfare; space platforms; and weapons and armaments.⁴ Each of the military services and some defense agencies perform work in the functions and technical capability areas. The group developed a strategic framework based on its two principles that focused on establishing multifunctional and multidisciplinary centers of excellence,⁵ which served as the starting point for developing scenarios. These strategy-driven scenarios were later confirmed by capacity and military value data and military judgment. The DOD Inspector General and service audit agencies performed an important role in ensuring the accuracy of data used in these analyses through extensive audits of data gathered at various locations.

Capacity Analysis

The technical group's analysis of DOD's technical infrastructure across each of the 3 functions and 13 technical capability areas resulted in a total of 39 "technical facility categories" around which the group focused its analysis.⁶ The group used two capacity measures—work years, as quantified by the number of full-time staff, and the number of test hours—

³ Test ranges were in the technical group's domain; open-air ranges were analyzed by the Education and Training Joint Cross-Service Group with input from the technical group.

⁴ The 13 technical capability areas are based on the Defense Technology Area Plan 2003, which lists 12 areas; however the technical group separated ground vehicles and sea vehicles into two technical capability areas for subgroup review and analysis.

⁵ Multifunctional refers to combining activities across the three functions of research, development and acquisition, and test and evaluation. Multidisciplinary refers to combining activities across 1 or more of the 13 technical capability areas.

⁶ The group defined a technical facility category as a collection of people and physical infrastructure that performs a technical function (or functions) in a specific technical capability area at a specific location.

and subsequently collected certified data on these measures from the technical facilities performing work in each of the technical facility categories. Excess capacity was defined as the difference between current usage plus a surge factor and peak capacity. Current usage was defined as the average usage for fiscal years 2001 through 2003, and peak capacity was defined as the maximum capacity for the measure. The group set the surge factor at 10 percent of current capacity, based on military judgment of how the technical community has approached surge in the past.

The group calculated excess capacity for each of the 39 technical facility categories; however, the aggregated data provide more insight into the amount of excess capacity. Table 39 shows the excess capacity that the technical group found through its analysis.

Table 39: Excess Capacity Identified by the Technical Joint Cross-Service Group

Figures in work years

Function	Peak capacity	Current usage plus surge	Excess capacity	Percentage of excess capacity
Research	31,168	28,069	3,099	11.0
Development and acquisition	106,944	101,208	5,736	5.7
Test and evaluation	44,852	40,319	4,533	11.2
Total	182,964	169,596	13,368	7.9

Source: Technical Joint Cross-Service Group.

The group reported that the current required capacity, including surge, across all technical capability areas and functions is 169,596 work years. The group found the equivalent of 13,368 work years, or 7.9 percent, excess capacity across the three functions. The group reports that its recommendations eliminate approximately 3,000 work years. Based on these calculations, approximately 6 percent excess capacity would remain if all of the group’s recommended actions are implemented. The work year reductions include the reductions made through the technical group’s 13 recommendations. The work year reductions do not include reductions in technical excess capacity through the closure of Fort Monmouth, New Jersey, and Brooks City-Base, Texas, for example, which are included in the Army and Medical Joint Cross-Service Group recommendations, respectively.

Military Value Analysis

As with capacity analysis, the technical group’s assessment of military value included an assessment of the technical infrastructure across the 39 technical facility categories. The group weighted each of the four military value criteria based on the importance of the criterion to the technical function. The group used the same weights for the research and development and acquisition functions, but different weights for the test and evaluation function due to differences in the type of work conducted at these facilities. Table 40 shows the weights for the three functions.

Table 40: Technical Joint Cross-Service Group Military Value Criteria Weights

Figures in percentages

Military value criteria	Research, development and acquisition	Test and evaluation
1. The current and future mission capabilities and the impact on operational readiness of the total force of the Department of Defense, including impact on joint warfighting, training, and readiness.	53	53
2. The availability and condition of land, facilities, and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions) at both existing and potential receiving locations.	12	18
3. The ability to accommodate contingency, mobilization, surge, and future total force requirements at both existing and potential receiving locations to support operations and training.	25	19
4. The cost of operations and the manpower implications.	10	10
Total	100	100

Source: DOD and the Technical Joint Cross-Service Group.

Note: The system of weights provided a basis for assigning relative value to data collected and tabulated across each military value dimension.

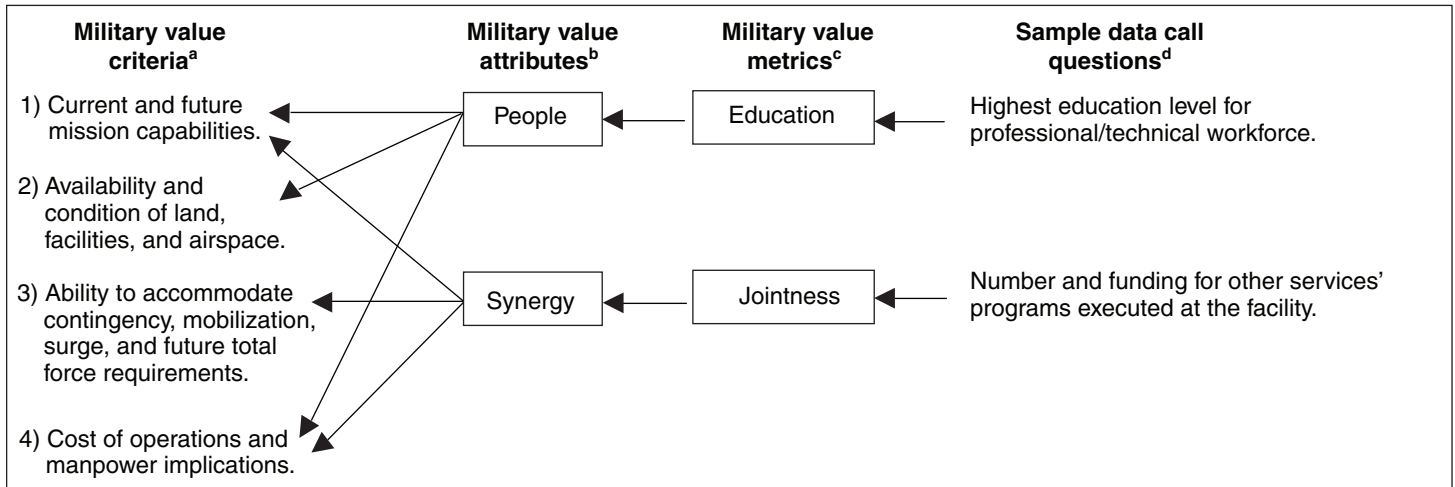
The group developed attributes and metrics across each of the four military value criteria to measure military value and subsequently collected certified data for these capacity measures from the technical facilities performing work in each of the technical facility categories. The group examined the capabilities of each technical facility based on five attributes:

- people, which measures intellectual capital;
- physical environment, which measures special features of technical facilities;
- physical structures and equipment, which measure the presence of physical structures unique within DOD and the value, condition, and use of these structures;
- operational impact, which measures the output of the three functional areas (research, development and acquisition, and test and evaluation); and
- synergy, which measures working on multiple technical capability areas and functions and jointness.

The technical group developed weights for the 5 attributes that were applied to each of the criteria and 30 metrics divided among the 5 attributes. While the group allowed the evaluative weights for the metrics to vary across its subgroups, it used the same weights for the five attributes. The evaluative weight assigned to attributes varied among the three functions because a particular attribute could have greater importance for one function than another. For example, the technical group weighted the people attribute for criterion 1 at 17 percent of the total military value score for research, 13 percent for development and acquisition, and 16 percent for test and evaluation. While the attribute weights were the same for activities across subgroups, the metric weights varied by subgroup. For example, the Air, Land, Sea, and Space Systems subgroup weighted the patents, publications, and awards metric of criterion 1 for the research function at 30 percent of the total for the people attribute, while the Weapons and Armaments subgroup weighted the same metric at 18 percent.

Figure 19 provides an example of the technical group's military value attributes, metrics, data sources, and their link to the four BRAC military value criteria.

Figure 19: Selected Attributes, Metrics, and Data Questions Used to Assess Military Value of a Technical Facility



Source: GAO analysis of Technical Joint Cross-Service Group data.

^aThe BRAC military value criteria are the first four BRAC selection criteria.

^bMilitary value attributes are characteristics of each criterion. The technical group used a total of five military value attributes.

^cMilitary value metrics are measures for the attributes. The technical group used a total of 30 military value metrics.

^dThe technical group used a total of 44 data call questions.

All technical facilities were analyzed using the technical group's military value approach, regardless of whether the recommendation ended up with the technical group's 13 recommendations or in another services' or joint cross-service groups' recommendations. For example, part of the Army's recommendation to close Fort Monmouth relocates the information systems research and development and acquisition to Aberdeen Proving Ground, Maryland. The technical group followed the same process in gathering data and calculating a military value score for these functions as they did all other technical functions.

DOD Inspector General's and Service Audit Agencies' Role in the Process

The DOD Inspector General and the service audit agencies played important roles in ensuring that the data used in the technical group's data analyses were certified. To determine the validity of the group's data, the DOD Inspector General examined (1) whether the group used certified data and created an adequate audit trail for capacity and military value analyses and (2) whether the group created an adequate audit trail for inputting data into the Cost of Base Realignment Actions (COBRA) model. The DOD

Inspector General found that certified data were used for the group's capacity and military value analyses, and there was an adequate audit trail for the capacity and military value analyses, and COBRA input data. Through extensive audits of the data collected from technical facilities during the process, the service audit agencies notified the technical facility of identified data discrepancies and the technical facility was to take corrective action. While the process for detecting and correcting data errors was quite lengthy and challenging, the DOD Inspector General and service audit agencies deemed the technical data to be sufficiently reliable for use in the BRAC process.

Identification and Assessment of Alternate Scenarios and Selection of Recommendations

The technical group used its strategic framework to identify 69 potential closure or realignment scenarios and then select 23 candidate recommendations. The group confirmed its scenarios and recommendations with its capacity and military value data and military judgment. In most cases, each scenario that did not become a candidate recommendation was one of several alternatives for moving the same work to different locations. The ISG and IEC accepted 22 of the technical group's candidate recommendations. One recommendation, which realigned technical functions at Naval Support Activity Corona, California, to several different bases, was disapproved by the ISG because the Navy wanted to keep these functions together, according to a technical group official. The official said that the ISG allowed the Navy to construct a different recommendation, which moved these functions to Naval Air Station Point Mugu, California, and this recommendation was approved and is presented with the Navy's recommendations.⁷ Nine of the group's recommendations were transferred to the services or other joint cross-service groups, which left the technical group with 13 recommendations. The 13 recommendations included in the group's report result in a total projected net savings of \$2.2 billion over 20 years, with net annual recurring savings of \$265.5 million per year and payback periods ranging from 1 to 26 years. Personnel savings account for over half of the group's projected annual recurring savings, three-quarters of which comes from civilian personnel savings. While available data supporting the recommendations suggest

⁷ The group also provided a recommendation to relocate Naval Support Activity Corona to March Air Reserve Base. According to technical group officials, when the closure of Naval Support Activity Corona is included in the data, both their original recommendation and alternative had shorter payback periods and higher 20-year net present value savings than the Navy's final recommendation.

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 Technical Joint Cross-Service Group
 Selection Process and Recommendations**

their implementation should provide for more efficient operations within the department, we believe there are some issues that the BRAC Commission may wish to examine more closely during its review process.

**Recommendations
 Approved by DOD**

The technical group’s proposed recommendations result in a total projected net savings of \$2.2 billion over 20 years, with net annual recurring savings of \$265.5 million per year. Table 41 provides a summary of the financial aspects of the group’s recommendations, most of which are realignment actions.

Table 41: Financial Aspects of the Technical Joint Cross-Service Group’s Recommendations

Fiscal year 2005 constant dollars in millions

Recommended actions	DOD report page	One-time costs	Net implementation (costs) or savings^a	Net annual recurring (costs) or savings	Payback period (years)	20-year net present value (costs) or savings^b
Realign and close to co-locate extramural research program managers (at the National Naval Medical Center, Bethesda) ^c	Tech-5	(\$153.5)	\$107.1	\$49.4	2	\$572.7
Realign to consolidate maritime C4ISR RDAT&E (at Naval Amphibious Base, Little Creek; Naval Surface Warfare Center, Dahlgren Division; Naval Station Newport; Naval Submarine Base Point Loma; Naval Weapons Station Charleston; and Naval Station Norfolk)	Tech-9	(106.1)	88.6	38.7	1	455.1
Realign to create a naval integrated weapons and armaments RDAT&E center (at Naval Air Weapons Station China Lake, Naval Surface Warfare Center Indian Head, and Naval Surface Warfare Center Dahlgren)	Tech-15	(358.1)	(148.7)	59.7	7	433.4
Realign and close to consolidate defense research service-led laboratories (at Wright-Patterson Air Force Base, Kirtland Air Force Base, Hanscom Air Force Base, and Aberdeen Proving Ground)	Tech-22	(164.6)	(45.0)	41.1	4	357.3
Realign to consolidate air and space C4ISR RDAT&E (at Hanscom Air Force Base and Edwards Air Force Base)	Tech-6	(254.4)	(115.3)	36.2	8	238.0
Realign to consolidate Navy strategic T&E (at Strategic Weapons Facility Atlantic, Kings Bay)	Tech-12	(86.4)	(76.7)	13.4	7	61.4

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(Continued From Previous Page)

Fiscal year 2005 constant dollars in millions

Recommended actions	DOD report page	One-time costs	Net implementation (costs) or savings^a	Net annual recurring (costs) or savings	Payback period (years)	20-year net present value (costs) or savings^b
Realign to create an integrated weapons and armaments specialty site for guns and ammunition (at Picatinny Arsenal)	Tech-19	(116.3)	(81.2)	11.3	13	32.6
Realign to establish centers for fixed wing air platform RDAT&E (at Wright-Patterson Air Force Base and Naval Air Weapons Station China Lake)	Tech-24	(17.7)	(7.9)	2.7	9	17.9
Realign to create an air integrated weapons and armaments RDAT&E center (at Eglin Air Force Base)	Tech-18	(2.7)	4.9	1.4	2	17.9
Realign to consolidate ground vehicle D&A in a joint center (at Detroit Arsenal) ^d	Tech-7	(3.8)	(1.9)	1.9	2	17.1
Realign to create a Navy sensors, electronic warfare, and electronics RDAT&E center (at Naval Air Warfare Center, Weapons Division, China Lake)	Tech-28	(72.7)	(50.9)	6.7	12	16.9
Realign to consolidate sea vehicle D&A (at Naval Surface Warfare Center Carderock and Naval Sea Systems Command, Washington Navy Yard)	Tech-13	(1.5)	(0.1)	0.2	7	2.0
Realign to establish centers for rotary wing air platform DAT&E (at Patuxent River and Redstone Arsenal)	Tech-26	(49.4)	(40.2)	2.8	26	(11.8)
Total		(\$1,387.2)	(\$367.4)	\$265.5		\$2,210.5

Source: GAO analysis of DOD data.

Notes: R denotes the research functions, D&A denotes the development and acquisition functions, and T&E denotes the test and evaluation functions. C4ISR denotes command, control, communications, and computers, intelligence, surveillance, and reconnaissance.

^aThis represents net costs or savings within the 6-year implementation period required to implement BRAC recommendations.

^bDOD used a 2.8 percent discount rate to calculate net present value.

^cWe identified an additional \$12.8 million that was included as a one-time savings but should have been an annual recurring savings for the recommendation to co-locate extramural research program managers. If this amount were included, the annual recurring savings increases to \$62.2 million and the 20-year net present value increases to a savings of \$698.6 million.

^dWe identified errors, including antiterrorism force protection savings listed as a recurring, rather than a one-time, savings, that overstated the annual recurring savings for the recommendation to consolidate ground vehicle development and acquisition in a joint center. When these errors are corrected, there is an annual recurring cost of \$59,000, a 20-year net present value a cost of \$4.3 million, and the recommendation never pays back.

The majority of the projected net annual recurring savings are based on eliminating civilian and contractor personnel (\$167.7 million) as functions are realigned between installations and vacating leased space (\$51.8 million). On the other hand, the majority of the projected costs are for constructing new facilities (\$644.6 million) and moving personnel and equipment (\$326.7 million) to the gaining installations. The group's 13 recommendations include 6 closures, 62 realignments, and 1 disestablishment for a total of 69 actions. For example, the group's recommendation to consolidate maritime C4ISR research, development and acquisition, and test and evaluation includes 16 realignment actions and 1 disestablishment action.

The technical group's recommendations support, to a limited extent, the goals of maximizing jointness and furthering transformation efforts within the department. Eight of the group's 13 recommendations move functions from one service or defense agency's installation to another service's installation. For example, the recommendation to create an integrated weapons and armaments specialty site for guns and ammunition moves seven Navy functions to an Army installation. While the chairman of the group's Capabilities Integration Team told us that all of the group's recommendations were transformational, the supporting information often suggested the recommendations were more focused on combining like work at a single location without a clear indication of how it provided for transformation. Two of the group's recommendations specifically mention transformation in their justification statements, but the transformational effects are not clear in the documentation. For example, the recommendation to create an air integrated weapons and armaments research, development and acquisition, and test and evaluation center states that it supports transformation because it moves and consolidates smaller weapons and armaments efforts into high military value integrated centers and leverages synergy among the three functions; however, the documentation does not discuss how these actions are transformational.

Issues Identified with Approved Recommendations

Time did not permit us to assess the operational impact of each of the technical group's recommendations, particularly where operations proposed for consolidation extend across multiple locations outside of a single geographic area. At the same time, we offer a number of broad-based observations about the proposed recommendations.

While available data supporting the recommendations suggest their implementation should provide for more efficient operations within DOD,

there are some issues that the BRAC Commission may wish to consider during its review process. Specifically, the Commission may want to consider whether the level of personnel reductions is attainable, issues related to projected savings from vacating leased space, the long payback period and relatively small savings for some recommendations, and the economic impact of one recommendation.

Personnel Reductions

The technical group developed a standard assumption to eliminate 15 percent of military and civilian personnel affected by the recommendation for consolidation and joint actions based on personnel eliminations at technical facilities in previous BRAC rounds.⁸ The group used a different assumption (5.5 percent reduction in affected military and civilian personnel) for co-location actions because it is believed that there are likely to be fewer efficiency gains for co-locations than consolidations or joint actions. A technical group official told us that in some cases the group used higher personnel reduction estimates than the standard because the military department provided for higher estimated personnel reductions in the certified data, and the military services agreed with all personnel eliminations in the group's recommendations. We believe there is some uncertainty regarding the magnitude of the group's expected savings for these personnel reductions because its estimates are based on assumptions that have undergone limited testing and full savings realization depends upon the attainment of these personnel reductions. Eight of the group's 13 recommendations eliminate at least 15 percent of military and civilian personnel positions affected by the recommendation. Personnel savings account for at least 40 percent, and as much as 100 percent, of the group's projected annual recurring savings for each of these 8 recommendations. Almost three-quarters of all personnel savings come from civilian personnel eliminations.

⁸ The group found that the Navy's 1995 BRAC recommendations projected that the Navy would eliminate 4,000 technical positions. Comparable information was not available for the Air Force and Army; however, the group assumed that the Air Force and Army eliminated the same number of personnel, for an approximate 12 percent reduction of the technical workforce through BRAC 1995. The group rounded this up to 15 percent for a standard assumption for military and civilian personnel reductions. Based on our analysis of the 1995 BRAC recommendations, it is unlikely that the Air Force and Army reduced their technical workforces by 4,000 positions because neither had BRAC recommendations that closed significant technical facilities.

Similar to military and civilian personnel, the technical group developed a standard assumption that the subgroups could eliminate 15 percent of contractor personnel and could take \$200,000 in recurring savings for each contractor position eliminated. It is unclear from the data what percentage of contractor positions were eliminated because the total number of contractor personnel is not included in the COBRA data. Seven of the group's recommendations include savings from eliminating contractor personnel, for a total of \$53.9 million in net annual recurring savings.⁹ In contrast, the data on economic impact (criterion 6 of the BRAC selection criteria) show a net loss of 508 contractor personnel in 10 recommendations, which would have totaled \$101.6 million in net annual recurring savings. Technical group officials told us that both sets of numbers are based on certified data from the services; however, they added that the contractor data were difficult to collect because they were provided by the services through the scenario data calls, rather than as standard data in the COBRA model.

It is unclear to what extent the personnel reductions assumed in the group's recommendations will be attained, largely because of uncertainties associated with the group's assumptions. For example, the group's recommendation to create a naval integrated weapons and armaments research, development and acquisition, and test and evaluation center includes the reduction of 15 percent of military and civilian personnel. As mentioned above, the technical group assumed a standard 15 percent reduction in military and civilian personnel for consolidation and joint actions and a 5.5 percent reduction in military and civilian personnel for co-location actions. Because we are uncertain whether the 15 percent reduction in military and civilian personnel for consolidations and joint actions is attainable, we determined the costs and savings of the recommendation with the 5.5 percent personnel reduction for co-locations. Table 42 shows the financial aspects of DOD's original recommendation with a 15 percent reduction in military and civilian personnel, our analysis of the recommendation with a 5.5 percent reduction in military and civilian personnel, and the difference between the two recommendations.

⁹ We identified an additional \$12.8 million savings for eliminating contractors for the recommendation to co-locate extramural research program managers that was included as a one-time savings but should have been an annual recurring savings. The total annual recurring savings for eliminating contractors would increase to \$66.7 million if this error is corrected.

Table 42: Comparison of Alternatives to Personnel Reductions for the Recommendation to Create a Naval Integrated Weapons and Armaments Research, Development and Acquisition, and Test and Evaluation Center

Fiscal year 2005 constant dollars in millions

Recommendation	Net annual recurring savings	Payback period (years)	20-year net present value savings (cost)
DOD's recommendation	\$59.7	7	\$433.4
GAO's analysis (5.5 percent military and civilian personnel reduction)	42.0	10	201.8
Difference	\$17.7	(3)	\$231.6

Source: GAO analysis of DOD data.

Leased Space

Our analysis identified some inconsistencies in projecting annual recurring savings and one-time savings in three recommendations¹⁰ to move activities from leased space.¹¹ The technical group used two different methodologies to project annual recurring savings from vacating leased space. In one recommendation, the group projected annual recurring savings based on future leased costs¹² while in the other two, the group used actual lease costs data provided by the military services and defense agencies. Furthermore, the recommendation to co-locate the extramural research program managers also includes \$2.7 million in annual recurring savings for the Defense Threat Reduction Agency vacating leased space; however, the agency is already scheduled to move to Fort Belvoir, Virginia, in January 2006.

¹⁰ The recommendations are the co-location of extramural research program managers, consolidation of ground vehicle development and acquisition, and co-location of the Defense research service-led laboratories.

¹¹ The eight locations are the Air Force Research Laboratory, Mesa City, Arizona; United States Marine Corps Direct Reporting Program Manager Advanced Amphibious Assault facilities, Virginia; Office of Naval Research, Virginia; Air Force Office of Scientific Research facility, Virginia; Army Research Office, North Carolina; Army Research Office, Virginia; Defense Advanced Research Project Agency facility, Virginia; and Defense Threat Reduction Agency, Fort Belvoir, Virginia, which is currently in leased space in Virginia.

¹² The projected savings were determined using the Headquarters and Support Activities Joint Cross-Service Group's methodology of a savings of \$37.29 per square foot of space being vacated within the Washington, D.C. area. The group assumed that 160 square feet would be vacated for each person moved or eliminated.

The technical group also included \$14.5 million in one-time savings for seven of the eight activities¹³ vacating leased space for the cost of upgrading existing leased space to meet DOD's antiterrorism and force protection standards.¹⁴ The group did not collect data that would indicate whether existing leases met the antiterrorism and force protection standards. Our analysis indicates that excluding these one-time savings would have minimal impact on the overall projected savings of the technical group's recommendations.

Limited Savings during Implementation Period

Only 3 of the 13 recommendations achieve savings during the 6-year implementation period, and 3 of the group's recommendations take longer than 10 years to achieve savings, far longer than typically occurred in the 1995 BRAC round. According to a technical group official, the recommendation to establish a center for rotary wing air platform research, development and acquisition, and test and evaluation, which has a 26-year payback, was retained because it realigns the technical-related work away from a test range at Fort Rucker, Alabama, which will provide for expanded training space. An Army official agreed that a potential benefit of realigning the test range at Fort Rucker is that it would make available hangars, facilities, and airspace for trainers. For example, the Army said that the vacated hangar space could potentially be used to accommodate the Aviation Logistic School's proposed move to Fort Rucker and the reduced demand for airspace will make additional airspace available to meet the current and future needs for manned and unmanned aviation training.

The group's recommendation to create an integrated weapons and armaments specialty site for guns and ammunition, which has one-time costs of \$116.3 million and a 20-year net present value savings of \$32.6 million, has a payback of 13 years. Technical group officials told us that this recommendation was determined to be worth the costs and longer payback period because it provides synergy and jointness, as well as eliminating some duplication, in research and development and acquisition of guns and ammunition for the Army and Navy.

¹³ The technical group did not take a one-time savings for the Defense Threat Reduction Agency because, according to an agency official, the agency is scheduled to move to Fort Belvoir in January 2006.

¹⁴ See app. VII for further discussion of antiterrorism and force protection standards.

According to a group official, the group's recommendation regarding Navy sensors, electronic warfare, and electronics research, development and acquisition, and test and evaluation, which has a 12-year payback period, is beneficial because it consolidates similar work currently performed at locations that are in proximity to each other and clears out laboratory space at Naval Air Station Point Mugu, California, that is needed for personnel moving in from Naval Support Activity Corona, California, through a Navy recommendation. The official added that while the payback for this recommendation is long, it should be put into perspective with the savings from closing Naval Support Activity Corona because the savings from closing that facility (net annual recurring savings of \$6.0 million and a 20-year net present value of \$0.4 million) would be smaller had the laboratory space not been available at Point Mugu.¹⁵

Economic Impact

One of DOD's BRAC selection criteria, criterion 6, required the department to consider the economic impact on existing communities in the vicinity of military installations when determining realignments and closures. In most cases, the group's recommendations had a cumulative impact on communities of less than 1 percent as measured by direct and indirect job loss as a percentage of employment for the economic area of the military installation. However, the exception is the recommendations that realign activities from Naval Surface Warfare Center Crane, Indiana, which would result in an economic impact of 9.3 percent. A technical group official stated that realigning the technical infrastructure to respond to defense needs over the next 20 years took priority over the economic impact of the proposed recommendation. Two of the group's recommendations realign or eliminate approximately 460 military and civilian personnel and 80 contractor personnel from Naval Surface Warfare Center Crane, for a cumulative reduction of 9.3 percent of employment in Martin County, Indiana, when direct and indirect jobs are considered.¹⁶

¹⁵ As previously mentioned, the technical group originally provided other options for the Navy's recommendation to close Naval Support Activity Corona, which were disapproved by the ISG.

¹⁶ When the impact of other joint cross-service group and service recommendations is included, this increases to 683 direct jobs lost and an 11.6 percent reduction in direct and indirect jobs in Martin County.

Personnel Realignments
from Point Mugu

There is some uncertainty on the number of civilian personnel that would be realigned in the technical group's recommendation to create a naval integrated weapons and armaments research, development and acquisition, and test and evaluation center. The recommendation proposes to realign about 1,400 civilian employees from Naval Air Station Point Mugu, California, to Naval Air Weapons Station China Lake, California. However, in its data call submission, Naval Air Station Point Mugu identified 505 civilian employees that operate or support an outdoor range that it believes should remain at Point Mugu; however the technical group's recommendation proposes to move these personnel to China Lake.¹⁷ A Navy official said that if the recommendation is approved the Navy will decide the best way to manage the range, including the appropriate number of employees to retain at Point Mugu, during implementation. Our analysis indicates that if the 505 civilian employees remain at Point Mugu, the 20-year net present value savings decreases by about \$87.4 million but the payback period remains at 7 years.

Scenario Eliminated from
Consideration

The technical group developed a scenario that would have allowed the Air Force to close Los Angeles Air Force Base, California, which may have further contributed to the accomplishment of BRAC objectives; however, the Air Force Base Closure Executive Group did not approve this scenario due to the base's relatively high military value and perceived operational risk due to a potential for schedule and performance disruption. Table 43 provides a summary of the financial aspects of this scenario.

¹⁷ A Navy official said that most Navy activities asked to exclude large numbers of personnel from consideration in recommendations and the technical group was consistent in disregarding these exclusions.

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Table 43: Estimated Costs and Savings for the Rejected Closure of Los Angeles Air Force Base

Fiscal year 2005 constant dollars in millions

Scenario	One-time costs	Net implementation (costs) or savings ^a	Net annual recurring (costs) or savings	Payback period (years)	20-year net present value (costs) or savings ^b
Close Los Angeles Air Force Base and do not provide work space for contractors at Peterson Air Force Base	(\$305.1)	(\$161.1)	\$52.9	6	\$358.5

Source: DOD.

^aThis represents net costs or savings within the 6-year implementation period required to implement BRAC recommendations.

^bDOD used a 2.8 percent discount rate to calculate net present value.

The technical group developed a scenario to realign space development and acquisition from Los Angeles Air Force Base, California, to Peterson Air Force Base, Colorado, among other actions, which would allow the Air Force to close the base. However, the group deleted the scenario based on military judgment before it finished its analysis. While the group’s meeting minutes do not provide the specific reason that the scenario was deleted, the minutes say moving the Space and Missile Center from Los Angeles Air Force Base to Peterson Air Force Base would involve the movement of the federally funded research and development center,¹⁸ there was no compelling reason to move the Space and Missile Center to Peterson Air Force Base, and the Air Force did not support the scenario. Toward the end of the process the ISG requested that the technical group finish its analysis. The group completed its analysis and presented the information to the Air Force Base Closure Executive Group.¹⁹ The Air Force Base Closure Executive Group decided not to close Los Angeles Air Force Base because (1) Los Angeles Air Force Base has the highest military value in space

¹⁸ Federally funded research and development centers are nonprofit entities sponsored and funded by the government that typically assist government agencies with scientific research and analysis, systems development, and systems acquisition. The Aerospace Corporation is the federally funded research and development center that works with the Space and Missile Systems Center at Los Angeles Air Force Base.

¹⁹ The Air Force considered three options for closing Los Angeles Air Force Base. One option used a city-base construct, which had a 2-year payback and a \$99.0 million 20-year net present value savings. Another allowed for office space for the contractors with the federally funded research and development center and had a 9-year payback and a \$228.3 million 20-year net present value savings.

development and acquisition—its military value in space development and acquisition is four times higher than that of Peterson—and (2) the closure has a near-term operational risk due to a potential for schedule and performance disruption to development and acquisition programs and activities, intellectual capital, and synergy with industry based in Los Angeles and surrounding areas.

Technical group officials told us that there are several reasons to close Los Angeles Air Force Base in addition to the net recurring savings (\$52.9 million) and relatively high 20-year net present value savings (\$358.5 million). Los Angeles Air Force Base is a single-service installation that primarily performs one function in one technical capability area—development and acquisition of space platforms. The technical group sought to identify opportunities to consolidate smaller single-function locations to larger multifunction facilities, so closing Los Angeles Air Force Base would meet this goal. The group proposed to move the functions at Los Angeles Air Force Base to Peterson Air Force Base to co-locate the development and acquisition function with the operational user. Other alternatives could achieve other goals. For example, moving the space development and acquisition function from Los Angeles Air Force Base to Kirtland Air Force Base, New Mexico, which performs research on space platforms, could expedite the transition of technology from the research phase to development and acquisition. Alternatively, there could be increased jointness among the services if the functions at Los Angeles Air Force Base were moved to Redstone Arsenal, Alabama, where much of the Army's space platform development and acquisition work is done.

Cost of Base Realignment Actions Model

DOD used a quantitative model, known as the Cost of Base Realignment Actions (COBRA) model, to provide consistency across the military services and the joint cross-service groups in estimating the costs and savings associated with BRAC recommendations. DOD has used the COBRA model in all previous BRAC rounds and over time has made improvements designed to provide better estimating capability. Similarly, DOD has continued to improve the model for its use in the 2005 BRAC round. We have examined COBRA in the past and during this review and have found it to be a generally reasonable estimator for comparing potential costs and savings among candidate alternatives. As with any model, the quality of the output is a direct function of the input data. Also, as in previous rounds, the COBRA model, which relies to a large extent on standard factors and averages, does not represent budget quality estimates that will be developed once BRAC decisions are made and detailed implementation plans are developed. The COBRA model also does not include estimated costs of environmental restoration as DOD considers these costs a liability that must be addressed whether or not an installation is closed.

COBRA Used as Tool to Estimate Costs and Savings Associated with BRAC Recommendations

DOD used the COBRA model to address the BRAC 2005 selection criterion related to costs and savings associated with the various proposed BRAC recommendations.¹ It was designed to model the estimated costs and savings associated with actions that are necessary to implement BRAC recommendations over the 6-year implementation period set by the BRAC statute,² and recurring costs or savings thereafter.³ COBRA provides for several key outputs that may influence the decision-making process, including (1) estimated costs for such factors as personnel severance, moving costs, or military construction over the implementation period; (2) estimated savings for personnel reductions or eliminations, or reduced operations and maintenance costs over that same period; (3) the “payback” time required for estimated cumulative savings to outweigh cumulative

¹ P.L. 101-510, section 2913 (c)(1) requires DOD to consider the extent and timing of potential costs and savings, including the number of years until savings exceed costs, in its BRAC selection process.

² BRAC legislation provides for a 6-year implementation period following the approval of recommended BRAC actions. Thus the final year for implementation of a closure or realignment action for the 2005 BRAC round is 2011. P.L. 101-510, section 2904 (a)(5).

³ For BRAC 2005, costs and savings are in fiscal year 2005 constant dollars.

costs for the actions; (4) annual recurring savings; and (5) the net present value of BRAC actions, calculated over a 20-year time frame.⁴ Collectively, this financial information provides important input into the selection process as decision makers weigh the financial implications for various BRAC actions along with military value and other factors (for example, military judgment) in arriving at final decisions regarding the suitability of BRAC recommendations.

The COBRA model uses a set of formulas, or algorithms, that rely on standardized data as well as base- and scenario-dependent data to perform its calculations. Standard factors are common to a class of bases and are applicable for all recommendations that involve those bases. Some standard factors apply only to one DOD component or a subset of a component's bases, while others are applicable to all bases DOD-wide. Typical standard factors include, for example, average personnel salaries and costs per mile and per ton for moving personnel and equipment. Base- and recommendation-specific data, which were to be certified in accordance with the BRAC statute, include, for example, the number of authorized personnel on a base, the size of the base, and annual sustainment costs. As with any model, the quality of the output is a direct function of the quality of the input data. For this reason, the data used in COBRA were to be certified, in a manner similar to that employed for the capacity and military value data, as to their accuracy.

COBRA Improvements over Time

The COBRA model has been used in the base closure process since 1988, and in the intervening years it has been consistently revised to address the problems we and others have identified after each round. DOD has once again made improvements to the model, as shown in table 44, that are designed to further refine its estimating capability.

⁴ In the context of BRAC, net present value is taking into account the time value of money in calculating the value of future cost and savings. For fiscal year 2005, DOD used a 2.8 percent discount rate to calculate net present value.

**Appendix XIII
Cost of Base Realignment Actions Model**

Table 44: Major Improvements to COBRA for the BRAC 2005 Round

BRAC 1995 shortcomings	BRAC 2005 improvements
Inconsistencies across services in developing BRAC-related facility construction cost estimates	Consistency for construction cost estimates established through use of DOD-wide standards for facility categories and costs per square foot ^a
Facility maintenance cost estimates often overstated because actual maintenance was typically underfunded	Facility maintenance (sustainment) cost estimates adjusted to reflect historical service-specific funding of maintenance accounts
Facility rehabilitation cost estimates did not specify existing facility condition	Facility condition included as a factor in developing rehabilitation cost estimates
Facility recapitalization costs and cost avoidances limited to the short term	Facility recapitalization costs and cost avoidances considered over the longer term using average service-specific base recapitalization costs
Estimated costs for operating and maintaining retained reserve enclaves on closing bases were not identified	Provisions to consider reserve enclave-related estimated costs were included
Average civilian personnel pay cost estimates excluded locality pay differentials	Locality pay was included in median civilian pay costs
Civilian housing-related relocation cost estimates were based on adjusted national median housing costs	Housing-related relocation cost estimates were targeted to local housing costs associated with base-specific actions
Algorithms for base operating support costs were not properly supported	Algorithms were revised, based on service-specific factors for base operating support
Limited consideration was given to overall medical costs for the government upon closure of military treatment facilities	Increased consideration was given to medical-related costs through use of base-specific data related to medical beneficiary costs
No specific consideration was given to storage-in-transit costs or information technology costs for personnel-related moves	Standard factors were developed for storage and information technology costs

Source: GAO analysis of DOD data.

^aSquare footage requirements were service specific for areas such as administrative office space.

The improvements were made by a COBRA Joint Process Action Team that was established early in the 2005 BRAC round process. The Joint Process Action Team, consisting of officials from the Office of the Secretary of Defense, the military services, and representatives from the joint cross-service groups, met frequently over several months in late 2003 to improve the model. We also attended most of these meetings as observers in an oversight role, and we shared our observations and raised issues of concern as appropriate. The Joint Process Action Team, on many occasions, addressed our concerns by making appropriate changes to the model. For example, we reported in June 2003 that COBRA did not include estimated costs for operating and maintaining the reserve component

enclaves created during the prior BRAC rounds,⁵ thereby having the effect of overstating the savings for those particular BRAC actions. Consequently, the Joint Process Action Team provided for the inclusion of these costs in the COBRA model. In another case, the Joint Process Action Team developed an approach to incorporate longer term estimated facility recapitalization costs in COBRA, thus overcoming a COBRA shortcoming that we identified in our 1997 report on lessons learned from the prior BRAC rounds.⁶

As was done in the 1995 BRAC round, the Army Audit Agency examined the improved COBRA model to determine whether the model accurately calculated cost and savings estimates as described in the user's manual. The Army Audit Agency assumed this responsibility at the request of The Army Basing Study Group since the Army serves as the executive agent for the COBRA model. The Army Audit Agency tested all 340 algorithms in the model as presented in the user's manual and reported in September 2004 that COBRA accurately calculated costs and savings as prescribed in the manual.⁷ Following the audit, however, multiple revisions were made to the model to include changes to the TRICARE and privatization algorithms because of programming errors in the model. The Army Audit Agency subsequently reexamined the revisions where these algorithms were modified and concluded in a similar fashion that the model accurately calculated the estimates. In addition, the Army Audit Agency validated the certified data and documentation supporting the standard factors used in the model.

Application of COBRA in the 2005 BRAC Round

Although the COBRA model serves as a common tool with many standardized features across DOD for analyzing costs and savings for alternative recommendations, its actual application and results depend heavily on the DOD guidance on what constitutes costs or savings,

⁵ GAO, *Military Base Closures: Better Planning Needed for Future Reserve Enclaves*, GAO-03-723 (Washington, D.C.: June 27, 2003). An enclave is a section of a military installation that remains intact after the installation is closed or realigned, and that will continue with its current role and functions, subject to specific modifications.

⁶ GAO, *Military Bases: Lessons Learned from Prior Base Closure Rounds*, GAO/NSIAD-97-151 (Washington, D.C.: July 25, 1997).

⁷ U.S. Army Audit Agency, *Cost of Base Realignment Actions (COBRA) Model*, Audit Report A-2004-0544-IMT (Alexandria, Va.: Sept. 30, 2004).

accuracy of the input data, and the flexibility provided to users of the model to consider additional input data that can affect cost and savings estimates. The following are examples of cases where the specific application of the model can have an effect on the estimates:

- The COBRA model generates a dollar amount attributable to the reduction or elimination of military personnel at realigning or closing bases. While it has been DOD's practice to classify these reductions or eliminations as recurring savings, we have consistently taken the view that these actions should not be counted as savings that can be used outside the military services' personnel accounts unless commensurate reductions are made in the affected military services' end strengths. We acknowledge that these actions may afford DOD the opportunity to redirect these personnel to serve in other roles that would benefit DOD. Our analysis of DOD data indicate that about 47 percent—about \$2.6 billion—of the expected net annual recurring savings of nearly \$5.5 billion for the 2005 round are attributable to these military personnel actions, for which reductions in the military personnel end-strength levels are not planned.
- The COBRA model provides users with considerable flexibility in estimating one-time and miscellaneous recurring costs or savings of various recommendations by allowing them to consider what actions might constitute a cost or savings and what the expected dollar amounts should be. Validating the level of projected savings is less clear-cut for recommendations that, instead of closing facilities, realign workloads from one location to another, or that estimate savings in overhead or other consolidation efficiencies. The dollar amounts could be based on specific assumptions as well as certified data but nonetheless be subject to greater degrees of uncertainty pending implementation than would be actions resulting in facility closures where expected reductions are more clear-cut. Our analysis of the BRAC recommendations showed inconsistencies across some of the services and joint cross-service groups in applying COBRA in this area.
- The COBRA model uses authorized base personnel levels in its calculations to estimate costs and savings arising from DOD's recommendations. DOD decided to use authorized rather than actual personnel levels because of difficulties in collecting data on actual levels. This decision could create more imprecision in the estimates; for example, in cases where the actual personnel levels are higher or lower than those authorized for bases that are closing, the savings estimates

would be either understated or overstated. Time did not permit us to determine the extent to which this might be the case in the proposed recommendations.

Comparability of COBRA Estimates and Actual Costs and Savings

Although COBRA has provided DOD with a standard quantitative approach enabling it to compare the estimated costs and savings associated with various proposed BRAC recommendations, it should be noted that it does not necessarily reflect with a high degree of precision the actual costs or savings that are ultimately associated with the implementation of a particular BRAC action. COBRA is not intended to produce budget-quality data and is not used to develop the budgets for implementing BRAC actions, which are formulated following the BRAC decision-making process. COBRA estimates may vary from the actual costs and savings of BRAC actions for a variety of reasons, including the following:

- COBRA estimates, particularly those based on standard cost factors, are imprecise and are later refined during implementation planning for budget purposes. The use of averages has an effect on precision. For example, as noted previously, COBRA uses authorized, rather than actual, base civilian personnel figures in its calculations. Our work has shown that the actual number of personnel may be lower or higher than that which is authorized. The authorized personnel levels are documented estimates, which can be readily audited. COBRA also uses a median national civilian personnel salary figure (adjusted by locality pay), rather than average pay at a particular base, in its calculations. Further, COBRA estimates are expressed in constant-year dollars, whereas budgets are expressed in then-year dollars.
- Some costs are not fully captured in COBRA. For example, COBRA estimates do not include the cost of environmental restoration for BRAC-affected bases, in keeping with DOD's long-standing policy of not considering such costs in its BRAC decision making.⁸ We reported in January 2005 that these costs can be substantial,⁹ accounting for about

⁸ This policy is based on the fact DOD is obligated to restore contaminated sites on military bases regardless of whether they are closed. We agree with DOD's position that such costs are a liability to DOD regardless of its base closure recommendations. While such costs are not included in COBRA, they are included in developing BRAC implementation budgets.

⁹ GAO, *Military Base Closures: Updated Status of Prior Base Realignments and Closures*, GAO-05-138 (Washington, D.C.: Jan. 13, 2005).

36 percent, or \$8.3 million, of the \$23.3 million in costs incurred through fiscal year 2003 for implementing BRAC actions for the previous four BRAC rounds. Further, COBRA does not include estimates for some other costs to the federal government, particularly those related to other federal agencies or DOD providing assistance to BRAC-affected communities. That is because assistance costs depend on specific implementation plans that are unknown at the time COBRA estimates are developed. In our January 2005 report on the previous BRAC rounds, we noted that about \$1.9 billion in such costs had been incurred through fiscal year 2004.

- Some savings are not fully captured in COBRA as well. COBRA does not include estimates, for example, for anticipated sales of BRAC surplus property or other revenue that may be collected in the future through property leasing arrangements with BRAC-affected entities. These revenues can help offset some of the costs incurred in implementing BRAC actions. While such estimates had been included in COBRA in the previous rounds, the Joint Process Action Team decided not to include any such estimates for the 2005 round because of the difficulty in estimating the amount of these revenues.

Nonetheless, while COBRA estimates do not necessarily reflect the actual costs and savings ultimately attributable to BRAC, we have recognized in the past and continue to believe that COBRA is a reasonably effective tool for the purpose for which it was designed: to aid in BRAC decision making. It provides a means for comparing cost and savings estimates across alternative closure and realignment recommendations.

Economic Impact Assessments

One of the eight selection criteria used to make BRAC decisions was the economic impact on existing communities in the vicinity of military installations coming from BRAC recommendations. DOD measured the economic impact of BRAC recommendations on the affected community's economy in terms of total potential job change—measured both in absolute terms (estimated total job changes) and relative terms (total job changes as a percentage of the economic area's total employment). This approach to measuring economic impact is essentially the same approach DOD used in the 1995 BRAC round. In a series of reports, that examine the progress in implementing closures and realignments in prior BRAC rounds,¹ we examined how the communities surrounding closed bases were faring in relation to key national indicators. In our last status report,² we observed that most communities surrounding closed bases were faring well economically in relation to key national economic indicators. While some communities surrounding closed bases were faring better than others, most have recovered or are continuing to recover from the impact of BRAC, with more mixed results recently, allowing for some negative impact from the 2001 recession.

While there will be other economic impacts from 2005 BRAC actions that DOD did not consider, such as changes in the value of real estate or changes in the value of businesses in the economic area, we believe that the magnitude of job changes would be correlated with the changes in these other dimensions of economic impact. Although not a precise predictor of the economic impact, we and an independent panel of experts assembled by DOD agree that the methodology used by DOD makes a reasonable attempt to measure economic impact of BRAC actions, both in terms of communities losing and gaining jobs as a result of BRAC actions.³

¹ GAO, *Military Base Closures: Updated Status of Prior Base Realignments and Closures*, [GAO-05-138](#) (Washington, D.C.: Jan. 13, 2005); GAO, *Military Base Closures: Progress in Completing Actions from Prior Realignments and Closures*, [GAO-02-433](#) (Washington, D.C.: Apr. 5, 2002); and GAO, *Military Bases: Status of Prior Base Realignment and Closures Rounds*, [GAO/NSAID-99-36](#) (Washington, D.C.: Dec. 11, 1998).

² GAO, *Military Base Closures: Updated Status of Prior Base Realignments and Closures*, [GAO-05-138](#) (Washington, D.C.: Jan. 13, 2005).

³ An independent review panel of four members, three Ph.D. economists and one policy analyst, who were all experienced in conducting local economic impact studies and who were not otherwise associated with the BRAC 2005 process was formed to review the methodology and to determine if it conformed to accepted economic practices.

Economic Impact Methodology

DOD assessed the economic impact of realignments and closures using a methodology that sought to estimate the total direct and indirect job changes. To perform its assessment, DOD established the Economic Impact Joint Process Action Team with members of the services and the Office of the Secretary of Defense (OSD) to develop an economic impact model for the services and joint cross-service groups to use as they considered potential recommendations. The team met many times to develop the economic methodology. We attended and observed those meetings as the methodology was developed. DOD also retained a private firm, Booz Allen Hamilton, to provide technical assistance in developing the methodology and computer database used by the military services and joint cross-service groups in calculating economic impacts in communities for which they were considering closure or realignment actions.

Using a list of candidate bases provided by the representatives from each service and OSD, the primary counties in which the bases were located were derived and the regions of economic influence (economic areas) for those bases were determined from those counties.⁴ The economic area for each base was defined as the Metropolitan Statistical Area (MSA) or Micropolitan Statistical Area in which the base's primary county or counties lie.⁵ For bases in MSAs that are divided into Metropolitan Divisions, the economic area is defined as the Metropolitan Division in

⁴ Based on the primary counties in which bases were located, the Federal Information Processing Standards (FIPS) codes were determined. A mapping of the county FIPS codes to Statistical Areas as determined by OMB was done to establish the economic area.

⁵ Metropolitan Statistical Area (MSA) is a core based statistical area associated with at least one urbanized area that has a population of at least 50,000. A core based statistical area is a statistical geographic entity consisting of the county or counties associated with at least one core (urbanized area or urban cluster) of at least 10,000 population, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties with the counties containing the core. The MSA comprises the central county or counties containing the core, plus adjacent outlying counties having a high degree of social and economic integration with the central country as measured through commuting. While a MSA has at least 50,000 people, a Micropolitan Statistical Area has at least one urban cluster that has a population of at least 10,000 but less than 50,000. The Micropolitan Statistical Area comprises the central county or counties containing the core, plus adjacent outlying counties having a high degree of social and economic integration with the central county as measured through commuting.

which the base's primary county or counties lie.⁶ For bases in counties not in a MSA, Micropolitan Statistical Area, or a Metropolitan Division the economic area was defined as the county itself.

The economic impact of a potential action on an area was measured in terms of direct and indirect job changes estimated from 2006 through 2011 as shown below.

$$\text{Estimated Total Job Changes} = \text{Direct Job Changes} \times (1 + \text{indirect multiplier} + \text{induced multiplier}).$$

Direct job changes are the estimated net addition or loss of jobs for military personnel, military students, civilian employees, and contractor mission support employees.⁷ The indirect job changes are the estimated net addition or loss of jobs in each economic area that could potentially occur as a result of the direct job changes. DOD considered two types of indirect job changes: (1) indirect job changes that are associated with the production of goods or the provision of services that are direct inputs to a product, such as a subcontractor producing components for a weapon system and (2) induced job changes that are affected as a result of local spending by direct and indirect workers, such as retail sales.

DOD used multipliers to estimate the indirect and induced job changes. Employment multipliers for various civilian industry sectors were obtained from the Minnesota IMPLAN Group, Inc. (MIG) for each MSA, Micropolitan Statistical Area, Metropolitan Division, and county in which a candidate

⁶ A Metropolitan Division is used to refer to a county or group of counties within a MSA that has a population core of at least 2.5 million people.

⁷ Contractor mission support employees perform one or more of the military missions on the base, and whose work tasks are virtually identical to government civil servants or military personnel. Examples include intelligence analysts; technicians; aircraft, ship, vehicle, or weapon system maintenance staff; and information technology specialists.

base was located.⁸ Indirect multipliers were estimated by mapping Military Occupational Specialties (MOSes) to economically similar civilian sectors.⁹ Each of these similar economic sectors multipliers were weighted by the number of military personnel mapped to each sector divided by the total number of employees in the sector. Examples of these economically similar sectors are educational services, administration and support services, scientific research and development services, aerospace product and parts manufacturing, and electronic repair and maintenance. Judgment was used to place all MOSes into one of the industrial sectors. A weighted average of the indirect multipliers, based on the weights discussed above, for each base was used to estimate the indirect job changes from military personnel. This weighted average of indirect multipliers used to estimate the military indirect multiplier for each base was used to estimate the indirect job changes from civilian personnel job changes, as well as the indirect job changes for mission-support contractors for each base.

Estimating the induced job changes from military and civilian job changes was more straightforward. For each economic area, MIG used one induced multiplier for military personnel job changes and one for nonmilitary government jobs changes. These multipliers were used to estimate the induced job changes for each base in that economic area. Summing the products of the weights for each of the civilian industries calculated for the military indirect multipliers, and the induced multipliers for each of the industries from MIG, produced the induced multiplier used for mission support contractor job changes.

⁸ MIG are the developers of the IMPLAN economic impact modeling system. The firm provides tools, data, and support to perform in-depth examinations of state, county, or multi-county regions. Over 1,000 public and private institutions use its tools. MIG does not have data for Puerto Rico or Guam. Based on recommendations of the Independent Review Panel of the BRAC economic impact methodology, MIG experts, and the Chief Economist of the Guam Department of Labor, multipliers for Key West-Marathon Florida Micropolitan Statistical Area (Monroe County, Florida) were assigned to the San Juan – Caguas – Guaynabo, Puerto Rico Metropolitan Statistical Area. Multipliers for the Honolulu, Hawaii MSA were assigned to the Guam economic area.

⁹ MOSes are specific military occupations performed by military personnel. Examples of some of the many MOSes within the military include administrative clerk, rifleman, logistics specialist, machinist, and ammunition technician. To aid in the crosswalk from MOSes to industry sectors (represented by codes from the North American Industrial Classification (NAICS)), the MOSes were mapped to the Standard Occupational Classification, which were in turned mapped into the NAICS codes.

Because of a concern about the lower spending of military trainees at recruit training facilities, an adjustment was made to reduce the values of the induced multipliers used for job changes of military trainees at recruit training bases. The Economic Impact Joint Process Action Team was also concerned about overestimating induced job changes for military trainees at recruit training bases and thought that military trainees at such bases have a smaller economic impact than civilian employees and regular military personnel, including those military personnel who receive more advanced training. The team thought this because such students receive a relatively smaller income and are generally transient. Student multipliers for bases with recruit training programs were estimated by multiplying the military induced multiplier for an economic area by the ratio of basic training wages to average military wages (slightly more than a third). Student induced multipliers for bases without basic training programs were set equal to the military induced multiplier for the base's economic area. The team thought that these more advanced students were likely to have incomes and spending habits similar to the average military in the economic area.

Some of the joint cross-service groups subsequently considered a small number of bases (leased spaces or Reserve/Guard centers) that were not included in the initial set of defined economic areas. For these economic areas, a generic set of multipliers was developed by averaging each of the multipliers of the five categories (military, civilian, contractor, student, and recruit training student) over the existing economic areas.¹⁰

The calculation of job change either positive or negative could be performed in three ways:

- by individual actions for one specific action for a base,
- by base (net result of multiple actions for a base), and

¹⁰ Most of these new economic areas appeared to have populations smaller than the average of the existing populations. Generally, it is expected that the larger the population for an area, the larger the multipliers, and vice-versa. An area with a larger population would be expected to have more of its expenditures remaining in the area and have fewer of its expenditures leak out to other areas. As a result, the multipliers of areas with larger populations would be expected to be larger than average and vice-versa. Thus, these economic areas would be expected to have multipliers smaller than the average. Using the average multipliers would tend to overestimate the indirect/induced job impact on these economic areas.

- by economic area (net result of all actions for the economic area).

The total potential job change and the total potential job changes as a percentage of total in an economic area were to be considered in the context of historical economic data. For historical context, the services and the joint cross-service groups considered the following for each economic area:

- total employment: 1988 to 2002,
- annual unemployment rates: 1990 to 2003, and
- real per capita income: 1988 to 2002.

In addition, the latest available numbers on population would be provided. These dates were chosen to reflect the latest available data from federal sources.

In the 1995 BRAC round, DOD developed a separate method of assessing cumulative economic impact because some of the closures and realignments from the prior rounds had not been fully implemented, so special consideration was given to the economic impacts that were yet to occur. However in 2005, given the passage of time since all four of the previous BRAC rounds, which extended from 1988 to 1995, and other factors contributing to changing economic conditions in the interim period, DOD decided not to consider the cumulative economic impact of the prior BRAC rounds in assessing the impact of the current round. We believe DOD's decision not to assess a cumulative economic impact for the 2005 round has merit.

DOD had extensive documentation controls to protect how documents for economic impact were prepared, handled, and processed. Procedures were used to ensure that the inputs, such as the values of the multipliers, used to make calculations on job changes were correct. A review by qualified analysts who did not participate in the initial calculations was also conducted.

Methodology Has Limitations but Is Reasonable for BRAC Purposes

DOD's approach to measuring economic impact did not measure all the dimensions of the economic impact coming from a BRAC action. There will be other economic impacts on the economic area, such as changes in the value of real estate or the value of businesses in the area. The DOD approach did not estimate these effects, but it is reasonable to assume that the magnitude of job losses would be correlated with the changes in these values.

DOD's methodology does have some limitations. Specifically, it tended to overstate the employment impact for economic areas. One of DOD's goals for the methodology was to produce credible estimates but to err on the side of overstating the actual impacts in order to prevent others from arguing that DOD was underestimating economic impact. The Joint Process Action Team was aware that the methodology had factors that might offset the estimated job losses. For example, the methodology assumed that that jobs are lost all at once and does not recognize that employees may be released over the 6-year implementation period and be reemployed in other local businesses or outside the economic area, which would reduce the estimated job loss. The methodology does not recognize the possible civilian reuse of the affected base and the resulting reemployment of workers, which would reduce the estimated job losses.

In examining the construction of the indirect multipliers, it is possible to question how they were created. The indirect multiplier being used to estimate job changes from military job changes for a base is constructed as a weighted average multiplier where the weights are the fraction of total base personnel being judged to be similar to a particular civilian industry. Questions could be raised about judgments made to map particular Military Occupation Specialties to activities in civilian industries. In some cases, the mapping from military jobs to industries was easier, such as military jobs in the medical area being mapped to the medical industry. However, in other areas where the jobs are uniquely military, such as infantry, the mapping would be more problematic. If a mistake was made in mapping a job that is uniquely military to a civilian sector, the result would depend on the relative size of the multiplier of the correct civilian sector versus the civilian sector used. It could lead to overestimation or underestimation of the indirect job change. Time did not permit us to examine this mapping. Nonetheless, we believe the overall approach seemed to be a sound attempt to produce a credible multiplier.

Finally, in using the ratio of estimated job losses from 2006 through 2011 to total employment as of 2002 (the latest figure for total employment) as a measure of economic impact, the economic impact was likely overstated. This occurs because total employment is likely to grow for many economic areas over the 2006-2011 implementation period as local economies grow, which would reduce the overall percentage of job losses.

DOD's methodology for assessing economic impact was reviewed by an independent panel of four economists and policy analysts from the private and academic sectors in August 2004.¹¹ DOD formed the panel of four members to review the methodology and to determine if it conformed to accepted economic practices. Three of the panel members were Ph.D. economists and the other was a policy analyst. All four were experienced in conducting local economic impact studies and were not otherwise associated with the BRAC process. The panel found the methodology to be reasonable. The experts agreed that the use of direct and indirect job changes was a logical method to characterize the impact of proposed closures and realignments. The reviewers also concluded that DOD's methodology represents a "worst-case" estimate of economic impact. We contacted each member of the panel to discuss their review of the methodology to ensure that DOD had adequately summarized the results of the panel meeting and that they agreed that the methodology was sound. We and the experts agreed that DOD had adequately summarized the review meeting and agreed that the methodology was reasonable to use.

Economic Areas Most Impacted and Least Impacted by BRAC Recommendations

In examining the economic impact of the 222 proposed recommendations as measured by the percent of employment, most economic areas were affected very little. Almost 83 percent of the 244 economic areas affected by BRAC recommendations fell between a one percent loss and a one percent gain in employment.¹² Slightly more than 9 percent of the economic areas had a negative economic impact of greater than one percent. Almost 8 percent of the economic areas had a positive economic impact greater than one percent. Tables 45 and 46 show the five economic areas with the

¹¹ The methodology for the 1995 BRAC process, which was similar to the methodology used for the 2005 BRAC process, was also reviewed by an independent panel comprised of 6 members.

¹² Some of the recommendations had multiple actions that affected more than one economic area.

greatest negative employment change and the greatest positive employment change.

Table 45: Five Economic Areas with the Greatest Negative Impact on Employment

Economic area	Changes as percentage of employment	Reason for change
Clovis, NM Micropolitan Statistical Area	-20.5	Closure of Cannon Air Force Base, NM
Martin County, IN	-11.6	Realignment of Naval Support Activity Crane, IN
Norwich-New London, CT Metropolitan Statistical Area	-9.4	Closure of Submarine Base New London, CT
Fairbanks, AK Metropolitan Statistical Area	-8.6	Realignment of Eielson Air Force Base, AK
Rapid City, SD Metropolitan Statistical Area	-8.5	Closure of Ellsworth Air Force Base, SD

Source: DOD.

Note: Subsequent to the issuance of the recommendations, DOD identified an error with the economic impact reported for Hawthorne Army Depot, Nevada. The revised economic impact is -13.6 percent of employment and not -0.1 percent as DOD initially reported.

Table 46: Five Economic Areas with the Greatest Positive Economic Impact on Employment

Economic area	Changes as percentage of employment	Gaining installation
St. Mary's, GA Micropolitan Statistical Area	21.9	Submarine Base Kings Bay, GA
Lawton, OK Metropolitan Statistical Area	9.0	Fort Sill, OK
Columbus, GA-AL Metropolitan Statistical Area	8.5	Fort Benning, GA
Enterprise-Ozark, AL Micropolitan Statistical Area	7.4	Fort Rucker, AL
Manhattan, KS Micropolitan Statistical Area	6.5	Fort Riley, KS

Source: DOD.

As noted in prior reports, we examined how the communities surrounding closed bases were faring in relation to two key national economic indicators—the national unemployment rate and the average annual real per capita income growth rate. In our last status report, we observed that most communities surrounding closed bases were faring well economically in relation to these key national economic indicators. While some communities surrounding closed bases were faring better than others, most have recovered or are continuing to recover from the impact of BRAC, with more mixed results recently, allowing for some negative impact from the 2001 recession.

Draft DOD Transformational Options Recommended for Approval



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THE UNDER SECRETARY OF DEFENSE

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WASHINGTON, DC 20301-3010

SEP 8 2004

MEMORANDUM FOR INFRASTRUCTURE STEERING GROUP MEMBERS CHAIRMEN, JOINT CROSS SERVICE GROUPS

SUBJECT: Transformational Options for BRAC 2005

The Secretary of Defense, in his November 15, 2002, memorandum initiating the BRAC process, asked for a broad series of options for stationing and supporting forces and functions to increase efficiency and effectiveness. The memo tasked the Infrastructure Steering Group to provide options to the Infrastructure Executive Council (IEC) for the Secretary's final approval. Once approved by the Secretary, these options will constitute a minimum analytical framework upon which the Military Departments and Joint Cross-Service Groups (JCSGs) will conduct their respective BRAC analyses.

In my June 21, 2004, memorandum, I asked for a review of previously submitted options and/or for your suggested modifications, additions, or deletions. The BRAC Deputy Assistant Secretaries (DASs) participated in refining these submissions to eliminate duplications and to array them as transformational options recommended for approval or deletion based on whether the proposed option could be readily translated into scenarios, was actionable within the BRAC 2005 process, or possessed an identifiable effect on infrastructure.

The attachment provides the list of transformational options categorized with a recommendation for approval or deletion to forward to the IEC. I would appreciate receiving your formal concurrence and comments on these lists by September 17, 2004. Please provide your input to Mr. Peter Potochney, Director, Base Realignment and Closure in Room 3D814.

A handwritten signature in black ink, appearing to read "Michael W. Wynne".

Michael W. Wynne
Acting USD (Acquisition, Technology & Logistics)
Chairman, Infrastructure Steering Group

Attachment
As stated

Transformational Options

Recommend Approval:

1. Consolidate Management at Installations with Shared Boundaries. Create a single manager for installations that share boundaries. Source & Application: H&SA
2. Regionalize Installation Support. Regionalize management of the provision of installation support activities across Military Departments within areas of significant Department of Defense (DoD) concentration, identified as Geographic Clusters. Option will evaluate designating organizations to provide a range of services, regionally, as well as aligning regional efforts to specific functions. For example, a possible outcome might be designation of a single organization with the responsibility to provide installation management services to DoD installations within the statutory National Capital Region (NCR). Source and Application: H&SA
3. Consolidate or collocate Regional Civilian Personnel Offices to create joint civilian personnel centers. Source and Application: H&SA
4. Consolidate active and Reserve Military Personnel Centers of the same service. Source and Application: H&SA
5. Collocate active and/or Reserve Military Personnel Centers across Military Departments. Source and Application: H&SA
6. Consolidate same service active and Reserve local Military Personnel Offices within Geographic Clusters. Source and Application: H&SA
7. Collocate active and/or Reserve local Military Personnel Offices across Military Departments located within Geographic Clusters. Source and Application: H&SA
8. Consolidate Defense Finance and Accounting Service (DFAS) Central and Field Sites. Consolidate DFAS business line workload and administrative/staff functions and locations. Source and Application: H&SA
9. Consolidate Local DFAS Finance & Accounting (F&A). Merge/consolidate local DFAS F&A within Geographic Clusters. Source and Application: H&SA
10. Consolidate remaining mainframe processing and high capacity data storage operations to existing Defense Mega Centers (Defense Enterprise Computing Centers). Source and Application: H&SA

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11. Establish and consolidate mobilization sites at installations able to adequately prepare, train and deploy service members. Source and Application: H&SA
12. Establish joint pre-deployment/re-deployment processing sites. Source and Application: H&SA
13. Rationalize Presence in the DC Area. Assess the need for headquarters, commands and activities to be located within 100 miles of the Pentagon. Evaluation will include analysis of realignment of those organizations found to be eligible to move to DoD-owned space outside of a 100-miles radius. Source and Application: H&SA
14. Minimize leased space across the US and movement of organizations residing in leased space to DoD-owned space. Source and Application: H&SA
15. Consolidate HQs at Single Locations. Consolidate multi-location headquarters at single locations. Source and Application: H&SA
16. Eliminate locations of stand-alone headquarters. Source and Application: H&SA
17. Consolidate correctional facilities into fewer locations across Military Departments. Source and Application: H&SA
18. Collocate Reserve Component (RC) Headquarters. Determine alternative facility alignments to support RC headquarters' administrative missions. Alternatives could consider collocation and/or movement of RC headquarters to operational bases. Source: H&SA; Application: MILDEPS
19. Collocate Recruiting Headquarters. Analyze alternative Recruiting Headquarters alignments. Consider co-location of RC and Active Component (AC) Recruiting headquarters. Source and Application: H&SA
20. Establish a consolidated multi-service supply, storage and distribution system that enhances the strategic deployment and sustainment of expeditionary joint forces worldwide. Focus the analysis on creating joint activities in heavy (US) DoD concentration areas, i.e. locations where more than one Department is based and within close proximity to another. Source: Supply & Storage; Application: Supply and Storage and Industrial
21. Privatize the wholesale storage and distribution processes from DoD activities that perform these functions. Source and Application: Supply & Storage

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22. Migrate oversight and management of all service depot level reparable to a single DoD agency/activity. Source and Application: Supply & Storage
23. Decentralize Depot level maintenance by reclassifying work from depot-level to I-level. Source and Application: Industrial
24. Centralize I-level maintenance and decentralize depot-level maintenance to the existing (or remaining) depots.
 - Eliminate over-redundancy in functions.
 - Consolidate Intermediate and Depot-level regional activitiesSource and Application: Industrial
25. Regionalize severable and similar work at the intermediate level. Source and Application: Industrial
26. Partnerships Expansions. Under a partnership, have government personnel work in contractor owned/leased facilities and realign or close facilities where personnel are currently working. Source and Application: Industrial
27. Collocate depots: Two Services use the same facility(s). Separate command structures but shared common operations. Source and Application: Industrial
28. Consolidate similar commodities under Centers of Technical Excellence. Source and Application: Industrial
29. Implement concept of Vertical Integration by putting entire life cycle at same site to increase synergies, e.g. production of raw materials to the manufacture of finished parts, co-locating storage, maintenance and demil. Source and Application: Industrial
30. Implement concept of Horizontal Integration by taking some of the most costly elements of the M&A processes and put them at the same site to increase efficiencies, e.g. put Load, Assemble and Pack (LAP) of all related munitions at same site. Source and Application: Industrial
31. Maintain a multi-service distribution and deployment network consolidating on regional joint service nodes. Source and Application: Industrial
32. Evaluate Joint Centers for classes and types of weapons systems and/or technologies used by more than one Military Department:
 - Within a Defense Technology Area Plan (DTAP) Capability Area
 - Across multiple functions (Research; Development & Acquisition; Test & Evaluation)

- Across multiple DTAP capability areas. Source and Application: Technical
33. Evaluate Service-Centric concentration, i.e. consolidate within each Service:
 - Within a Defense Technology Area Plan (DTAP) capability area
 - Across multiple functions (Research; Development & Acquisition; Test & Evaluation)
 - Across multiple DTAP capability areas. Source and Application: Technical
 34. Privatize graduate-level education. Source and Application: Education & Training
 35. Integrate military and DoD civilian full-time professional development education programs. Source and Application: Education & Training
 36. 36. Establish Centers of Excellence for Joint or Inter-service education and training by combining or co-locating like schools (e.g., form a “DoD University” with satellite training sites provided by Service-lead or civilian institutions). Source and Application: Education & Training
 37. Establish “joint” officer and enlisted specialized skill training (initial skill, skill progression & functional training). Source and Application: Education & Training
 38. Establish a single "Center of Excellence" to provide Unmanned Aerial Vehicle initial (a.k.a. undergraduate) training. Source and Application: Education & Training
 39. Establish regional Cross-Service and Cross-Functional ranges that will support Service collective, interoperability and joint training as well as test and evaluation of weapon systems. Source and Application: Education & Training
 40. Integrate selected range capabilities across Services to enhance Service collective, interoperability and joint training, such as Urban Operations, Littoral, training in unique settings (arctic, mountain, desert, and tropical). Source and Application: Education & Training
 41. Combine Services' T&E Open Air Range (OAR) management into one joint management office. Although organizational/managerial, this option could engender further transformation. Joint management of OAR resources could encourage a healthy competition among OARs to increase efficiency and maximum utility DoD-wide. Source and Application: Education & Training
 42. Consolidate or collocate at a single installation all services' primary phase of pilot training that uses the same aircraft (T-6). Source and Application: Education & Training

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43. Locate (division/corps) UEx and (corps/Army) UEy on Joint bases where practical to leverage capabilities of other services (e.g., strategic lift to enhance strategic responsiveness). Source and Application: Army
44. Locate (brigades) Units of Action at installations DoD-wide, capable of training modular formations, both mounted and dismounted, at home station with sufficient land and facilities to test, simulate, or fire all organic weapons. Source and Application: Army
45. Collocate Army War College and Command and General Staff College at a single location. Source: Army; Application: Education & Training
46. Locate Special Operations Forces (SOF) in locations that best support specialized training needs, training with conventional forces and other service SOF units and wartime alignment deployment requirements. Source and Application: Army
47. Collocate or consolidate multiple branch schools and centers on single locations (preferably with MTOE units and RDTE facilities) based on warfighting requirements, training strategy, and doctrine, to gain efficiencies from reducing overhead and sharing of program-of-instruction resources. Source and Application: Army
48. Reshape installations, RC facilities and RC major training centers to support home station mobilization and demobilization and implement the Train/Alert/Deploy model. Source and Application: Army
49. Increase the number of multi-functional training areas able to simultaneously serve multiple purposes and minimize the number of single focus training areas for the Reserve Components where possible. Source and Application: Army
50. Collocate institutional training, MTOE units, RDTE organizations and other TDA units in large numbers on single installations to support force stabilization and enhance training. Army
51. Locate units/activities to enhance home station operations and force protection. Source and Application: Army
52. Consolidate aviation training with sister services for like-type aircraft to gain efficiencies. Source: Army; Application: all services.
53. Collocate functions and headquarters in “Joint Campuses” to enhance interoperability and reduce costs. Source: Army; Application: H&SA

54. Consolidate Army RDT&E organizations to capitalize on technical synergy across DoD, academia and industry. Source: Army; Application: Technical
55. Reduce the number of USAR regional headquarters to reflect Federal Reserve Restructuring Initiative (FRRRI). Source and Application: Army
56. Consolidate RDT&E functions on fewer installations through inter-service support agreements to enable multidisciplinary efforts to increase efficiencies and reduce redundancy within DoD. Source: Army; Application: Technical, MilDeps.
57. Establish a single inventory control point (ICP) within each Service or consolidating into joint ICPs. Application: Supply and Storage
58. Expand Guard and Reserve force integration with the Active force. Examples:
 - (1) Blended organizations.
 - (2) Reserve Associate, Guard Associate, and Active Associate
 - (3) Sponsored Reserve.
 - (4) Blending of Guard units across state lines to unify mission areas, reduce infrastructure, and improve readiness.Application: MilDeps
59. Consolidate National Capital Region (NCR) intelligence community activities now occupying small government facilities and privately owned leased space to fewer, secure DoD-owned locations in the region. Application: Intel
60. Collocate Guard and Reserve units at active bases or consolidate the Guard and Reserve units that are located in close proximity to one another at one location if practical, i.e., joint use facilities. Application: MilDeps
61. Consolidate the Army's five separate Active Component recruit training sites and the Marine Corps' two Active Component recruit training sites into one recruit training installation each. Source: Education and Training; Application: Army & Marine Corps
62. Privatize Household Goods and Personal Property Shipping function. Source: BENS; Application: Supply and Storage, MilDeps
63. Privatize long-haul communications in the Defense Information Systems Agency (DISA). Source: BENS; Application: H&SA
64. Collocate Joint Strike Fighter graduate flight training and maintenance training.
65. Collocate Joint Strike Fighter graduate flight training.

66. Collocate Joint Strike Fighter maintenance training.
67. Consolidate aviation assets of two or more Military Services on the same base. Application: MilDeps
68. Collocate Service special operations units where they further reduce infrastructure requirements and enable improved training opportunities.
69. Collocate Service Professional Military Education (PME) schools at the intermediate and senior levels. Application: E&T
70. Consolidate/Collocate Service specific test pilot schools. Application: MilDeps
71. Collocate ground and signals intelligence systems. Application: Intel & MilDeps
72. Collocate ground and airborne intelligence systems. Application: Intel & MilDeps
73. Consolidate pilot training and maintenance training for rotary wing and fixed wing aircraft using Executive Agency. Application: Education and Training.
74. Each Military Department and Joint Cross Service Group will look at the effects of either reducing their functions by 20%, 30%, and 40% from the current baseline, or reducing excess capacity by an additional 5% beyond the analyzed excess capacity, whichever is greater. The objective of this analysis is to uncover ways in which additional gains could be achieved, rather reasons why they could not. Source: DON; Application: MilDeps and JCSGs
75. Establish a “space test range” for satellite ground testing, threat assessment, and tactics development. Elements of the “range” should be networked using a minimum number of ground facilities to virtually simulate on-orbit operations. Source and Application: Air Force
76. Establish an Army Joint Network Science Technology and Experimentation Center to fully realize the transformational capabilities of interdependent Joint Network Centric Warfare. Source: Army; Application: Technical
77. Air Force use optimum flying squadron sizing and organizational constructs to disproportionately increase combat capability and transform the capability of its AEFs. Source and Application: Air Force

Key GAO and Other Defense Audit Agency Products Related to DOD's 2005 Base Realignments and Closures

Government Accountability Office

Military Base Closures: Observations on Prior and Current BRAC Rounds. [GAO-05-614](#). Washington, D.C.: May 3, 2005.

Military Base Closures: Updated Status of Prior Base Realignments and Closures. [GAO-05-138](#). Washington, D.C.: January 13, 2005.

Military Base Closures: Assessment of DOD's 2004 Report on the Need for a Base Realignment and Closure Round. [GAO-04-760](#). Washington, D.C.: May 17, 2004.

Military Base Closures: Observations on Preparations for the Upcoming Base Realignment and Closure Round. [GAO-04-558T](#). Washington, D.C.: March 25, 2004.

Military Base Closures: DOD's Updated Net Savings Estimate Remains Substantial. [GAO-01-971](#). Washington, D.C.: July 31, 2001.

Military Bases: Lessons Learned from Prior Base Closure Rounds. [GAO/NSIAD-97-151](#). Washington, D.C.: July 25, 1997.

Military Bases: Analysis of DOD's 1995 Process and Recommendations for Closure and Realignment. [GAO/NSIAD-95-133](#). Washington, D.C.: April 14, 1995.

Department of Defense
Office of Inspector General

Infrastructure and Environment: Technical Joint Cross-Service Group Data Integrity and Internal Control Processes for Base Realignment and Closure 2005. D-2005-086. Washington, D.C.: June 17, 2005.

Defense Infrastructure: Education and Training Joint Cross-Service Group Data Integrity and Internal Control Processes for Base Realignment and Closure 2005. D-2005-084. Arlington, Va.: June 10, 2005.

Defense Infrastructure: Industrial Joint Cross-Service Group Data Integrity and Internal Control Processes for Base Realignment and Closure 2005. D-2005-082. Arlington, Va.: June 9, 2005.

Infrastructure and Environment: Washington Headquarters Services Data Call Submissions and Internal Control Processes for Base Realignment and Closure 2005. D-2005-079. Arlington, Va.: June 8, 2005.

Appendix XVI
Key GAO and Other Defense Audit Agency
Products Related to DOD's 2005 Base
Realignments and Closures

Defense Infrastructure: Supply and Storage Joint Cross-Service Group Data Integrity and Internal Control Processes for Base Realignment and Closure 2005. D-2005-081. Arlington, Va.: June 6, 2005.

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DOD Inspector General plans to issue reports on the Defense Logistics Agency, the Headquarters and Support Activities Joint Cross-Service Group, and the Medical Joint Cross-Service Group.

Department of the Army
U.S. Army Audit Agency

Reserve Component Process Action Team, The Army Basing Study 2005. A-2005-0165-ALT. Alexandria, Va.: April 29, 2005.

The Army Basing Study 2005 Process. A-2005-0164-ALT. Alexandria, Va.: April 22, 2005.

Validation of Army Responses for Joint Cross-Service Group Questions. A-2005-0169-ALT. Alexandria, Va.: April 22, 2005.

Army Military Value Data, The Army Basing Study 2005. A-2005-0083-ALT. Alexandria, Va.: December 21, 2004.

Army Capacity Data, The Army Basing Study 2005. A-2005-0056-ALT. Alexandria, Va.: November 30, 2004.

Cost of Base Realignment Actions (COBRA) Model. A-2004-0544-IMT. Alexandria, Va.: September 30, 2004.

Department of the Navy
Naval Audit Service

The Department of the Navy's Implementation of the FY 2005 Base Realignment and Closure Process. N2005-0046. Washington, D.C.: June 10, 2005.

Risk Assessment of the Department of the Navy Base Realignment and Closure 2005 Information Transfer System. N2005-0042. Washington, D.C.: April 25, 2005.

Base Realignment and Closure Optimization Methodology. N2004-0058. Washington, D.C.: June 16, 2004.

Appendix XVI
Key GAO and Other Defense Audit Agency
Products Related to DOD's 2005 Base
Realignments and Closures

Department of the Air Force
Air Force Audit Agency

BRAC Cueing and Analysis Tools. F2005-0007-FB2000. Washington, D.C.: June 22, 2005.

2005 Base Realignment and Closure-Installation Visualization Tool Data Reliability. F2005-0004-FB4000. Washington, D.C.: June 16, 2005.

Base Realignment and Closure Data Collection System. F2004-0008-FB4000. Washington, D.C.: September 27, 2004.

2005 Base Realignment and Closure: Installation Capacity Analysis Questionnaire. F2004-0007-FB4000. Washington, D.C.: August 24, 2004.

2005 Base Realignment and Closure: Installations Inventory. F2004-0005-FB4000. Washington, D.C.: April 12, 2004.

2005 Base Realignment and Closure: Air Force Internal Control Plan. F2004-0001-FB4000. Washington, D.C.: December 29, 2003.

The Air Force Audit Agency plans to release 7 additional reports on the Air Force and joint cross-service group data collection, the Air Force analysis, and the use of various BRAC tools.

GAO Contact and Staff Acknowledgments

GAO Contact

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