Draft
Environmental Impact Statement for Implementation of 2005 Base Realignment and Closure (BRAC) Recommendations and Related Army Actions at Fort Belvoir, Virginia

prepared by

U.S. Army Corps of Engineers, Mobile District

with Technical Assistance from

Tetra Tech, Inc.
Fairfax, Virginia 22030

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DRAFT ENVIRONMENTAL IMPACT STATEMENT

IMPLEMENTATION OF 2005 BASE REALIGNMENT AND CLOSURE (BRAC) RECOMMENDATIONS AND RELATED ARMY ACTIONS AT FORT BELVOIR, VIRGINIA

Prepared by:

U.S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT

L. DOUGLAS TURNEY, P.E.
Deputy District Engineer for Programs and Project Management

Approved by:

FORT BELVOIR, VIRGINIA

BRIAN L. LAURITZEN
Colonel, U.S. Army
Garrison Commander
Fort Belvoir, Virginia

DRAFT ENVIRONMENTAL IMPACT STATEMENT

***TITLE OF PROPOSED ACTION*:** Implementation of Base Realignment and Closure (BRAC) Recommendations and Related Army Actions at Fort Belvoir, Virginia

***LEAD AGENCIES*:** Department of the Army

***AFFECTED JURISDICTIONS*:** Fairfax County, Virginia

***PREPARED BY*:** L. Douglas Turney, P.E., Deputy District Engineer for Programs and Project Management, U.S. Army Corps of Engineers, Mobile District

***APPROVED BY*:** Brian Lauritzen, Colonel, U.S. Army, Garrison Commander, Fort Belvoir, Virginia

ABSTRACT: This Draft Environmental Impact Statement (EIS) considers the proposed implementation of the BRAC recommendations at Fort Belvoir, Virginia. The Draft EIS identifies, evaluates, and documents the effects of facility construction, maintenance, management, and renovation on the environment and economic and social conditions at Fort Belvoir that would result from the implementation of the realignment actions mandated by the BRAC Commission. A no action alternative is also evaluated.

REVIEW COMMENT DEADLINE: The Draft EIS is available for review and comment for 60 days. A Notice of Availability (NOA) of the document was published in the *Federal Register* by the U.S. Environmental Protection Agency. Publication of the NOA began the 60-day review and comment period. Copies of the Draft EIS can be obtained by contacting Mr. Patrick McLaughlin, Fort Belvoir Directorate of Public Works Environmental and Natural Resources Division, Building 1442, 9430 Jackson Loop, Fort Belvoir, Virginia, 22060-5116 (or by e-mail at environmental@belvoir.army.mil). Copies have also been provided to the libraries listed in Section 7 of the Draft EIS. Comments on the Draft EIS should be submitted to the above-noted individuals.

DRAFT ENVIRONMENTAL IMPACT STATEMENT ORGANIZATION

This Draft Environmental Impact Statement addresses the proposed action to implement the BRAC recommendations and related Army actions at Fort Belvoir, Virginia. It has been developed in accordance with the National Environmental Policy Act and implementing regulations issued by the Council on Environmental Quality (Title 40 *Code of Federal Regulations* [CFR] 1500–1508) and the Army (32 CFR 651). Its purpose is to inform decision-makers and the public of the likely environmental and socioeconomic consequences of the proposed action and alternatives.

An ***EXECUTIVE SUMMARY*** briefly describes the proposed action, environmental and socioeconomic consequences, and mitigation measures.

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SECTION 1.0: ***PURPOSE, NEED, AND SCOPE*** summarize the purpose of and need for the proposed action and describes the scope of the environmental impact analysis process.

SECTION 2.0: ***PROPOSED ACTION*** describes the proposed action to implement the BRAC Commission's recommendations at Fort Belvoir.

SECTION 3.0: ***ALTERNATIVES*** examines alternatives to implementing the proposed action.

SECTION 4.0: ***AFFECTED ENVIRONMENT AND CONSEQUENCES*** describes the existing environmental and socioeconomic settings at Fort Belvoir and identifies potential effects of implementing the proposed action.

SECTION 5.0: ***CUMULATIVE EFFECTS*** identifies potential effects of past, present, and reasonably foreseeable future actions in addition to implementing the proposed action.

SECTION 6.0: ***LIST OF PREPARERS*** identifies the preparers of the document.

SECTION 7.0: ***DISTRIBUTION LIST*** indicates recipients of this Draft Environmental Impact Statement.

SECTION 8.0: ***REFERENCES*** provides bibliographical information for cited sources.

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EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This environmental impact statement (EIS) evaluates the potential environmental and socioeconomic impacts of two proposals at Fort Belvoir: update of the land use plan of the post's real property master plan (RPMP) and implementation of base realignment.

Fort Belvoir established its RPMP in 1993 and amended it in 2002. In light of substantial changes at the post because of base realignment, the land use plan needs to be updated.

On September 8, 2005, the Defense Base Closure and Realignment Commission (BRAC Commission) recommended numerous realignment and closure actions for domestic military installations. On November 9, 2005, the recommendations became law and now must be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended. The BRAC Commission's recommendations will generate a net increase of 22,000 people in the workforce on Fort Belvoir.

ES.2 PURPOSE OF AND NEED FOR THE PROPOSED ACTIONS

The purpose of the proposed action with respect to the land use plan is to obtain a revised land use plan for allocation of functions and facilities at the post. Fort Belvoir requires a revised land use plan that will enable sound use of physical and natural resources at the post with respect to both current and future land use requirements.

The purpose of the proposed action with respect to BRAC is to realign functions as directed by the BRAC Commission's recommendations for Fort Belvoir. The need for the proposed action is to advance the goals of transformation by improving military capabilities and thereby enhancing military value. The Army must carry out the BRAC recommendations at Fort Belvoir to achieve these improvements and to comply with BRAC law.

ES.3 SCOPE

This EIS identifies, documents, and evaluates environmental effects of land use plan revision and realignment activities at Fort Belvoir in accordance with the National Environmental Policy Act of 1969 (NEPA) and implementing regulations issued by the President's Council on Environmental Quality (CEQ) and the Army.[1] The purpose of the EIS is to inform decision makers and the public of the likely environmental consequences of the proposed action and alternatives.

ES.4 PROPOSED ACTION DETAILS

The Army proposes to update Fort Belvoir's land use plan and to implement the BRAC Commission's recommendations. The BRAC realignment actions would involve constructing

[1] *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*, Title 40 of the *Code of Federal Regulations* (CFR) Parts 1500–1508, and *Environmental Analysis of Army Actions*, 32 CFR Part 651.

and renovating facilities and, consistent with the BRAC law, relocating units, agencies, and activities to the post by September 2011.

BRAC realignment would result in a net increase in workforce of approximately 22,000 personnel at Fort Belvoir. The increase in personnel and facilities requires an updated land use plan. Siting of new facilities for the base realignment action would then comport with the updated land use plan.

ES.4.1 Land Use Plan Update

The EIS pertains to the initial step of the RPMP update process–to revise the land use plan, which must happen before the Army can begin siting facilities for BRAC implementation.

Fort Belvoir developed its current master plan in 1993 to reflect the post's transition from primarily a troop support and training mission to its role as an administrative center providing support to multiple organizations in the National Capital Region (NCR). The 1993 Long Range Component (LRC) identified Fort Belvoir's role as "the major administrative and logistics center for the Northern Virginia portion" of the Military District of Washington (MDW). The Engineer Proving Ground (EPG) was not included in the 1993 plan. The 1993 Real Property Master Plan was amended in 2002 upon the adoption of a Regional Community Support Center Subarea Development Plan. The plan amendment designated a portion of the Lower North Post area as the Regional Community Support Center.

The proposed land use plan includes EPG in planning for future development. It also uses fewer, but broader, land use designations that are more flexible than the 1993 plan. The designations are Airfields, Community, Industrial, Professional/ Institutional, Residential, Training, and Troop. Principal features and elements of the proposed land use plan include the following:

- *Professional/Institutional.* The Administration & Education and Research & Development land use categories used in the 1993 land use plan would change to Professional/Institutional. The proposed land use plan increases the amount of land designated for Professional/Institutional by more than 800 acres.
- *Residential.* The proposed land use plan would increase the land area dedicated to family housing on both the North and South Posts.
- *Open Space.* Much of the area designated as Environmentally Sensitive in the 1993 land use plan would be redesignated as Community. This category also includes safety clearances, security areas, water areas, wetlands, conservation areas, resource protection areas (RPAs), forest stands, and former training areas. Environmentally constrained land areas would continue to have all regulatory protections in place.
- *South Post Golf Course.* The proposed land use plan would change the land use designation of most of the South Post golf course from Outdoor Recreation to Professional/Institutional.
- *Supply, Storage, and Maintenance.* The proposed land use plan would enable the Army to demolish outdated and inefficient warehouses; relocate most of the Supply, Storage, and Maintenance operations in the 1400 Area to the 700/1100 Areas; and redevelop the eastern portion of the 1400 Area east of Gunston Road for Professional/Institutional uses.

- *Unaccompanied Personnel Housing*. The proposed land use plan would convert North Post areas designated for Troop uses to Professional/Institutional. A new Troop land use area would be provided on South Post, west of Gunston Road.
- *Army Community Hospital.* The proposed land use plan would enable a new hospital to be sited on the South Post golf course in the southwest quadrant of the intersection of Route 1 and Belvoir Road. The present hospital site would be designated for Community uses.

The proposed land use plan has been developed to achieve compliance with force protection requirements for military facilities as set forth in Department of Defense (DoD) Unified Facilities Criteria 4-010-01, *Antiterrorism Standards for Buildings* (2003). A key effect of the standards is the requirement that buffer zones around buildings and roads be reserved as force protection standoff areas. The buffer zones affect the amount of land needed for any one facility and also dictate the facility's relationship to other facilities.

ES.4.2 Base Realignment

Accommodation of personnel being realigned to Fort Belvoir must take into account the needs of six major groups slated for realignment by the BRAC Commission. The six groups and the number of personnel (staff and contractors) to be realigned are as follows:

- Washington Headquarters Services (WHS)—9,263 personnel
- National Geospatial-Intelligence Agency (NGA) —8,500 personnel
- Army Lease—2,720 personnel
- U.S. Medical Command (MEDCOM) —2,069 personnel
- Program Executive Office, Enterprise Info Systems (PEO EIS) —480 personnel
- Missile Defense Agency, HQ Command Center (MDA) —292 personnel

These six groups total 23,324 personnel. The personnel being realigned from Fort Belvoir to other installations result in a net increase at Fort Belvoir of approximately 22,000 personnel. Realignments from Fort Belvoir include the relocation of Army Materiel Command Headquarters and U.S. Army Security Assistance Command to Redstone Arsenal, Alabama; Prime Power School to Fort Leonard Wood, Missouri; U.S. Army Criminal Investigation Division Headquarters to Marine Corps Base, Quantico, Virginia; Soldiers Magazine to Fort Meade, Maryland; Biomedical Science and Technology programs of the Defense Threat Reduction Agency to Aberdeen Proving Ground, Maryland; Defense Threat Reduction Agency conventional armaments research to Eglin Air Force Base, Florida; and Information Systems, Research, Development and Acquisition to Aberdeen Proving Ground, Maryland. Evaluation of environmental impacts associated with these realignments will be performed by the receiving locations.

Concurrent with the relocations directed by the BRAC Commission, the Army proposes to implement five discretionary moves–relocations not necessitated by BRAC Commission recommendations–of units, agencies, and activities to Fort Belvoir. The 146 personnel involved in these discretionary moves would directly support units, agencies, or activities realigned to Fort Belvoir by the BRAC Commission or join similar activities already assigned to the post.

Under the Preferred Alternative, accommodating BRAC requirements would involve siting of the incoming organizations as follows.

- NGA and WHS would be on the eastern portion of EPG.
- Army lease units, agencies, and activities would be on South Post at sites on Gunston Road and Belvoir Road.
- The new Army community hospital would be on the South Post Golf Course.
- PEO EIS and MDA would be on South Post at sites on Gunston Road and Belvoir Road.

Construction and renovation of facilities to support additional personnel at Fort Belvoir would entail 20 separate projects totaling about 6.2 million square feet of built space and about 7 million square feet of parking structures.

ES.4.3 Schedule

Implementation of the various aspects of the proposed actions would occur until approximately the end of Fiscal Year 2011. Actions with respect to the land use plan revision would begin upon issuance of the Record of Decision (ROD) and continue until further revision of the master plan. Construction and renovation of facilities in support of base realignment and other requirements of Fort Belvoir would begin in Fiscal Year 2007 and continue through Fiscal Year 2011.

ES.5 ALTERNATIVES

Section 2.2 of the EIS presents the Army's preferred land use plan. This EIS also considers three other land use plans, referred to as the Town Center, City Center, and Satellite Campuses Alternatives.

ES.5.1 Town Center Alternative

Under the Town Center Alternative, the majority of new facilities to accommodate base realignment would be sited between J.J. Kingman Road on North Post and 12th Street on South Post. Developed areas bounded by 16th and 21st Streets and Gunston Road and Belvoir Road would be available for future redevelopment. The EPG, Davison Army Airfield, and the North Post golf course would remain available for future development after 2011. For land use planning, several land parcels affected by the Town Center strategy would be redesignated for Professional/Institutional or Community uses. Accommodation of BRAC realignments under this alternative would result in the following major sitings:

- NGA and associated parking structures would be sited in the area bounded by Route 1, Belvoir Road, 9th Street, and Gunston Road.
- WHS and associated parking structures would be sited in the area bounded by Route 1, Belvoir Road, 9th Street, and Gunston Road and in the adjacent area north of Route 1 that is bounded by Constitution Drive, Route 1, and Gunston, Abbott, and Beauregard Roads.
- Army Lease activities and associated parking structures would be sited on North Post, in the southern half of the area bounded by Woodlawn, Abbott, Gunston, and J.J. Kingman Roads.
- MEDCOM and MDA and associated parking structures would be sited in the area that is bounded by Constitution Drive, Route 1, and Gunston, Abbott, and Beauregard Roads.

- PEO EIS and associated parking structures would be sited on North Post, in the southern half of the area bounded by Woodlawn, Abbott, Gunston, and J.J. Kingman Roads.

ES.5.2 City Center Alternative

Under the City Center Alternative, all new facilities to accommodate base realignment would be sited on EPG and a nearby 70-acre parcel occupied by the General Services Administration (GSA), known as the *GSA Parcel*. The North and South Posts at Fort Belvoir would remain available for future development. Accommodation of BRAC realignments under this alternative would result in the following major sitings:

- NGA, Army Lease, MEDCOM, PEO EIS, and MDA and associated parking structures would be sited at EPG.
- Portions of Army Lease would be sited in existing facilities along the east side of Gunston Road between Route 1 and 9th Street, and in the northwest quadrant of the intersection of Belvoir Road and 21st Street. Units, agencies, and activities that could not be assigned to the existing facilities would occupy EPG.
- WHS would be sited at the GSA Parcel on Loisdale Road.

Army adoption of the City Center Alternative would require measures not inherent in other alternatives. The Army would expect GSA to vacate its facilities, demolish all existing structures, conduct any environmental corrective action required under hazardous waste laws, and transfer administrative control of the property to the Army. These actions would have to occur within a time frame that would provide the Army sufficient time to construct facilities for WHS use.

ES.5.3 Satellite Campuses Alternative

Under the Satellite Campuses Alternative, new facilities to accommodate base realignment would be sited on Davison Army Airfield, North Post golf course, and North Post and South Post (from Kingman Road to 12th Street). Accommodation of BRAC realignments under this alternative would result in the following major sitings:

- NGA and associated parking structures would be sited at Davison Army Airfield.
- WHS and MDA and associated parking structures would be sited in the North Port area that is bounded by Constitution Drive, Route 1, and Gunston, Abbott, and Beauregard Roads.
- Army Lease would be sited in existing facilities along the east side of Gunston Road between Route 1 and 9th Street, and in the southwest quadrant of the intersection of Belvoir Road and 21st Street in renovated facilities.
- MEDCOM and associated parking structures would be sited on the southern portion of the North Post golf course.
- PEO EIS and associated parking structures would be sited on North Post, in the southern half of the area bounded by Woodlawn, Abbott, Gunston, and J.J. Kingman Roads.

ES.5.4 Preferred Alternative

Consideration of the Town Center, City Center, and Satellite Campuses conceptual development strategies resulted in a determination that any single strategy was inadequate to meet Fort Belvoir's base realignment needs. The Army reached this determination on the basis of giving high priority to traffic-related issues and development density; specifically, use of EPG for all base realignment units, agencies, and activities would have resulted in development densities that might not be supportable because of traffic congestion. In light of these circumstances, the Army identified another alternative for land use, referred to as the Preferred Alternative Land Use Plan. That alternative is presented in Section 2.2.2 of the EIS (and ES.4.2, above).

ES.5.5 Alternatives for BRAC Implementation

The Defense Base Closure and Realignment Act requires implementation of base realignment actions by no later than September 15, 2011, 6 years following the President's sending the BRAC Commission's recommendation to Congress. Because those recommendations became law effective November 9, 2005, the Army is required to implement them in accordance with their terms.

The implementation of base realignment at Fort Belvoir essentially centers on what facilities must be provided, where those facilities would be sited, and which personnel would be assigned to new or renovated facilities. The determinations on these matters are, in large part, guided by the post's land use plan, which identifies areas appropriate for Professional/Institutional purposes. The EIS examines four land use plan alternatives that serve as the surrogate for alternative means of accommodating the units, agencies, and activities being relocated.

ES.5.6 No Action Alternative

Inclusion of the No Action Alternative is prescribed by the CEQ regulations and serves as the benchmark against which federal actions can be evaluated. No action assumes that the Army would continue its mission at Fort Belvoir as it existed in November 2005, with no units relocating from other locations and no new facilities being constructed. Because the BRAC Commission's recommendations now have the force of law, continuation of the November 2005 Fort Belvoir mission is not possible. Although the No Action Alternative is not possible to implement without further congressional action, it serves as a baseline alternative against which other alternatives can be evaluated.

ES.6 ENVIRONMENTAL CONSEQUENCES

ES.6.1 Land Use

Preferred Alternative. Long-term minor beneficial effects would be expected upon adoption of the Preferred Alternative land use plan. Long-term minor beneficial and minor adverse effects would be expected upon implementation of BRAC.

Town Center Alternative. Long-term minor beneficial effects would be expected upon adoption of the Town Center Alternative land use plan. Long-term minor beneficial and minor adverse effects would be expected upon implementation of BRAC.

City Center Alternative. Long-term minor beneficial effects would be expected upon adoption of the City Center Alternative land use plan. Long-term minor adverse effects would be expected upon implementation of BRAC.

Satellite Campuses Alternative. Long-term minor beneficial and minor adverse effects would be expected upon adoption of the Satellite Campuses Alternative land use plan. Long-term significant adverse effects would be expected upon implementation of BRAC.

ES.6.2 Transportation

The BRAC action would be expected to have significant effects on the transportation system, regardless of the land use alternative selected. The effects of each alternative would vary because of the siting of each of the agencies affected by the BRAC action. For example, the Preferred Alternative land use plan concentrates most of the new development onto EPG, with some increases to South Post. The Town Center Alternative's land use plan places all development on the Main Post on either side of U.S. Route 1. Thus, the effects on the transportation system caused by the new developments would vary by location. For example the Preferred Alternative would affect the Fairfax County Parkway adjacent to EPG greater than the Town Center Alternative because of the locations of the various agencies. The Town Center Alternative has the greatest effect along U.S. Route 1 because more development is concentrated in that segment of the Main Post.

From a regional perspective, the alternatives are very similar. Overall, regional travel patterns would be expected to be identical, with any differences showing up only on a localized scale, depending upon the specific siting of individual BRAC elements within the immediate Fort Belvoir area. For all the alternatives, the significant transportation effects would be limited to the entrance points and the immediately adjacent transportation facilities. These significant effects would disappear into the regional traffic flow within 3 to 5 miles of Fort Belvoir. While the alternatives differ somewhat in terms of the detailed extent and location of these effects, on a regional basis, beyond the 3- to 5-mile range, the effects become negligible for all alternatives.

The alternatives placing all BRAC-related development within the Main Post area have greater effects than those that disperse the activities between the Main Post and the EPG site. The most significant of these larger effects relates to the added traffic on the segment of the Fairfax County Parkway between I-95 and U.S. Route 1. Mitigation to address this issue is likely to require a Fairfax County Parkway cross-section in this area of eight lanes, including a two-lane reversible high-occupancy vehicles (HOV) facility.

The City Center Alternative would also require additional mitigation because of the significant effect on the Franconia-Springfield Parkway by including the GSA Parcel into the BRAC planning regime. That site is relatively landlocked and would require additional access beyond what currently exists off Loisdale Road. This mitigation would include the construction of new access from the Franconia-Springfield Parkway, which would have significant costs and adverse effects on existing traffic. The Satellite Campuses Alternative is most similar to that of the Town Center Alternative, as the development is centered on Main Post and Davison Airfield. Slight differences in localized impacts exist due to the use of Davison Airfield.

An additional consideration for the Preferred Alternative is the fact that the needed transportation improvements can largely be constructed without interfering with existing traffic because the EPG site is largely undeveloped and the major access-related project would be constructing the

new segment of the Fairfax County Parkway. Constructing this segment could be accomplished with minimal effect on existing traffic. Each of the other alternatives involves more highway projects that would need to be constructed within active traffic zones.

Any significant traffic effects as a result of the BRAC action should be mitigated with transportation improvements, such that the negative effects become minor or negligible. Any development would always have some effects on the transportation system; however, the state and local agencies require, for development they can control, that the developer mitigate those effects with some improvements to the transportation system. The level of mitigation depends on the alternative selected.

The region's transportation system is already strained under existing traffic volumes (2006 conditions), and it will continue to be constrained under the No Action Alternative (2011), even with the transportation improvements proposed by Federal Highway Administration (FHWA), Virginia Department of Transportation (VDOT), and Fairfax County in their transportation improvement programs. The 2011 conditions, which represent the opening year of BRAC, were assessed and compared to the 2011 No Action Alternative to determine the level of effects caused by the development in each land use alternative. Through the analyses of the four alternative land use plans, a series of transportation improvements have been identified to mitigate the effects of each of the proposed alternatives. These improvements would be needed to maintain the transportation system's operational performance at an acceptable level of service and delay.

Order-of-magnitude costs for the mitigation actions are estimated to be as follows:

- Preferred Alternative, $458 million
- Town Center, $732 million
- City Center, $471 million
- Satellite Campuses, $742 million

For the Preferred and City Center Alternatives, the ability of transit to contribute to the mitigation is greater than for the other alternatives because these alternatives use sites that are closer to the regional rail network. Their locations make it easier to achieve the targeted 5 to 10 percent transit mode share goals.

ES.6.3 Air Quality

Short-term and long-term minor adverse effects would be expected from implementing BRAC under any of the four alternatives. Minor increases in emissions would conform to the state implementation plan (SIP); would not be expected to contribute to a violation of any federal, state, or local air regulations; and would not introduce localized carbon monoxide concentrations greater than the National Ambient Air Quality Standards (NAAQS).

Regionally, the alternatives are very similar. Each would constitute approximately the same amount of both construction and operating emissions within the region for all years. A Draft General Conformity Determination was prepared and demonstrates that the emissions associated with each of the alternatives conform to the purpose and intent of the applicable SIP. Therefore, by definition, they do not:

- Interfere with the region's ability to timely attain the NAAQS

- Cause or contribute to any new violations of an NAAQS
- Increase the frequency or severity of any existing violation of any NAAQS
- Delay timely attainment of any NAAQS or any required interim emission reductions or other milestones

For all the alternatives, both construction and operating permits for the new sources of air emission would be required. EPG and the GSA Parcel are noncontiguous with respect to the Main Post; therefore, they meet the requirements of separate facilities. Exceedence of the major source thresholds would be anticipated with the implementation of the City Center and Town Center Alternatives. For these alternatives, a Nonattainment New Source Review permit would be required, and emission offsets at a ratio of 1:1.15 would have to be located and obtained for all stationary sources that fell under this permit.

For all the alternatives, implementing the BRAC action would decrease both the number of vehicles and the total vehicle miles traveled (VMT) within the region. In turn, regional motor vehicle emissions would decrease. This decrease would be primarily due to a net reduction of approximately 1,700 personnel from the region. These are personnel leaving Fort Belvoir to areas outside the NCR. These BRAC-related reductions in emissions would constitute an ongoing net benefit to the region's air quality. Increases in localized traffic near the installation, however, would result in minor increase in traffic congestion and subsequent long-term minor increases in localized carbon monoxide concentrations at nearby intersections. For all the alternatives, these minor increases would not be expected to contribute to a violation of the carbon monoxide NAAQS. The traffic changes would not be expected to cause significant long-term increases of other criteria pollutants.

ES.6.4 Noise

Short-term and long-term minor adverse effects would be expected for all development alternatives. Minor increases in noise would not be expected to contribute to a violation of any federal, state, or local regulations or introduce areas of incompatible land use due to noise.

Each development alternative would require construction activities at the Main Post, EPG, or the GSA Parcel. Individual pieces of construction equipment typically generate noise levels of 80 to 90 dBA at a distance of 50 feet. With multiple items of equipment operating concurrently, noise levels can be relatively high during daytime periods at locations within several hundred feet of active construction sites. The zone of relatively high construction noise typically extends to distances of 400 to 800 feet from the site of major equipment operations. Locations more than 1,000 feet from construction sites seldom experience noteworthy levels of construction noise. Given the temporary nature of proposed construction activities and the limited amount of noise that construction equipment would generate, this effect would be considered minor.

Noise levels for noise-sensitive receptors (NSR) adjacent to the main traffic routes near the Main Post, EPG, and the GSA Parcel would not exceed the noise-abatement criterion (67 A-weighted decibels) for residential land uses.

ES.6.5 Topography, Geology, and Soils

Topography. Long-term minor effects would be expected upon implementation of any of the four alternatives. While the degree of impact on topography would be greater under the Town

Center and Satellite Campuses Alternatives, the overall effect would still be insignificant on the landscape level.

Geology. Negligible effects would be expected upon implementing any of the BRAC alternatives and other facilities projects within the Main Post and EPG. The geology of the area would remain unchanged, although small portions of the bedrock underlying the area could be affected by construction activities. Such effects would be inconsequential and extremely localized on a geologic scale.

Soils. Short-term and long-term minor effects to soils' productivity would be expected under all the BRAC alternatives resulting from construction activities and the installation of impervious surfaces. These effects would be minor when considered on the landscape level. Soils covering many areas within the Main Post and EPG that are amenable to construction have already been subject to previous construction and land-clearing activities; therefore, not all soils within the project area are in their undisturbed state and at maximum productivity. With the acres of disturbance being the simplest measure to compare alternatives, the Preferred Alternative and City Center Alternative land use plans would affect 353 and 298 acres of soils, respectively, concentrated primarily in EPG. The Satellite Campuses Alternative would result in the greatest extent of disturbance (471 acres), with disturbances occurring primarily in the North Post. The Town Center Alternative land use plan would affect 330 acres on the North Post and South Post. Land use categories developed in consideration of environmental constraints would confine most construction activities to areas that are most conducive to development, thereby excluding or limiting effects to highly erodible or otherwise unsuitable soils, such as those with steep slopes (drainages) or high water tables.

ES.6.6 Water Resources

Short-term and long-term minor adverse effects would be expected, regardless of the land use plan and BRAC implementation alternative selected. The effects would occur at the watershed scale, with localized effects that could be more pronounced during the implementation of proposed changes. Each alternative would have varying effects due to the siting of each of the agencies affected by the BRAC action. For example, the Preferred Alternative's land use plan concentrates most of the new development onto EPG with some increases to South Post. The Town Center Alternative's land use plan places all development on Main Post, on either side of Route 1. Thus, the effects on water resources caused by the new developments would vary to some degree by location.

Effects on water resources resulting from the BRAC action would relate to the potential for increases in storm water runoff, associated physical effects, and associated pollutants from land disturbance activities. These effects would be expected to occur during construction activities and their associated land disturbance as well as for a longer term as a result of increased impervious surfaces because of development. The number of acres of increased high- and medium-intensity development would be greatest under the Satellite Campuses Alternative (447 acres) as compared with increases of about 348 acres under the Preferred Alternative, about 316 acres under the Town Center Alternative, and about 259 acres under the City Center Alternative. Correspondingly, the amount of land area expected to be converted from pervious to impervious surface is greatest under the Satellite Campuses Alternative (207 acres), as compared with increases of about 183 acres under the Preferred Alternative, about 142 acres under the Town Center Alternative, and about 131 acres under the City Center Alternative. Similarly, the Satellite Campuses Alternative would be expected to result in the greatest disturbance to Chesapeake Bay

RPAs (40 acres) and floodplain (3 acres), as compared with 14 acres of disturbed RPAs and 3 acres disturbed floodplain under the Preferred and City Center Alternatives, and 18 acres of disturbed RPAs and no disturbed floodplain under the Town Center Alternative.

The greatest potential expected increases in total nitrogen and total phosphorous pollutant loading to surface waters would be expected to occur under the Preferred Alternative and the City Center Alternative, with five subwatersheds expected to increase their loads by more than 10 percent. This compares with an expected increase of more than 10 percent in only one subwatershed under both the Town Center Alternative and the Satellite Campuses Alternative.

ES.6.7 Biological Resources

Long-term moderate and minor adverse effects would be expected by implementing any of the four land use plans and by implementing BRAC. These effects would pertain to vegetation; wildlife; and endangered, threatened, and sensitive species.

- *Main Post*. The primary areas of biological resources concentration on the Main Post are the Southwest Area, land bordering the shores of the South Post, and the Special Natural Areas (SNA). All the alternatives would reduce vegetated areas on the post by a substantial amount and could indirectly affect vegetative communities and wildlife through habitat fragmentation and isolation and increased occurrences of invasive species, which would result in a loss of ecological integrity.

- *EPG*. Natural habitat on EPG has been re-establishing itself since the 1970s, when intensive training activities on EPG ceased. West of Accotink Creek, development has been minimal, and east of Accotink Creek, the developed areas have not been used intensively in recent years. Natural aspects of the area east of Accotink Creek—such as woody growth and the use of undisturbed open areas by breeding birds—have increased. The Preferred and City Center Alternatives have the greatest adverse effects on the biological resources on EPG because they have more project development in EPG, while the Town Center and Satellite Campuses Alternatives have less development occurring on EPG.

Overall, the City Center Alternative would have the greatest adverse effect on the biological resources of Fort Belvoir, followed by the Preferred Alternative. The Town Center and Satellite Campuses Alternatives would have the least impact on biological resources.

ES.6.8 Cultural Resources

Long-term minor and beneficial effects would be expected upon adoption of the any of the four alternative land use plans. Minor adverse effects, including direct and indirect physical effects and direct visual effects and noise, would occur to both archaeological sites and historic resources under each of the alternatives. The nature of the effects is the same from one alternative to the next. Mitigation measures common to all the alternatives would avoid or reduce the adverse effects. Specific comparison of the land use alternatives at an impact-by-impact level is not possible until certain planned studies have been completed in the areas proposed for development.

Long-term minor adverse effects would occur upon implementation of any of the four alternatives for implementing BRAC. These effects would occur with respect to archaeological sites and historic resources, with the nature of the effects being the same between alternatives and the same

mitigation measures being applied to avoid or reduce the effects. Assessment of specific adverse effects to historic properties from the proposed BRAC projects depends on the exact location of the proposed projects and the specific design details of the projects. These details include such things as building materials, construction footprint, height of buildings, and building design. Many of these project details cannot be determined until Fort Belvoir initiates the project design process. Until these details are developed, the exact nature and extent of adverse effects cannot be determined. For each of the alternatives, a broad assessment of potential effects was based on general locations and characteristics of the proposed projects, as compared with information on historic property locations.

A simple tally of the number of proposed projects under each alternative that would result in adverse effects shows that the Preferred Alternative has 10 such projects, Town Center Alternative has 11, City Center Alternative has 7, and Satellite Campuses Alternative has 13. This tally alone, however, does not provide information on the number of resources affected by each project or the type or extent of effects.

ES.6.9 Socioeconomics

The BRAC action would have minor beneficial economic effects, regardless of the land use alternative selected. The BRAC action, in general, would have the same economic effects under each alternative from construction expenditures and the increase of Fort Belvoir personnel. Estimated construction expenditures would be similar under each alternative, with variations among the alternatives for demolition and infrastructure. The construction and renovation expenditures would result in beneficial increases in region of influence (ROI) business sales volume, income, and employment. Although the proposed action's expenditures would be quite substantial, Fort Belvoir is in such an economically large and robust region that the magnitude of the expenditures relative to the regional demographic and economic forces would be considered minor. Because construction projects are, by nature, temporary, the economic stimulus from construction of the proposed BRAC and associated facilities would diminish over time as the projects reach completion in 2011.

The social effects of the BRAC action would range from short-term minor adverse to long-term significant adverse and long-term minor beneficial effects, regardless of the land use alternative selected. The siting of the BRAC facilities on Fort Belvoir would vary with each land use alternative; however, the effects on sociological resources from BRAC implementation and the effect on population and demand for housing and public services would be similar. On-post facilities would be inadequate to accommodate the incoming BRAC workforce. Additional police, fire, medical, shopping, and morale, welfare, and recreation (MWR) sponsored programs and facilities would be needed. If facilities were not improved, levels of service would decrease. The ability to provide proper service and meet customer demands would degrade because of continued use of inadequate facilities, continued fragmentation of services, and increased demand from the additional population. Long-term significant adverse effects would be expected on MWR sponsored programs, such as Soldier and family support and recreational facilities and activities, because Fort Belvoir's MWR would not have sufficient funds, facilities, or staff to support required MWR programs. Additional Fort Belvoir actions (BRAC and non-BRAC) plan for the construction and staffing of on-post facilities such as a new hospital, new emergency services center, child development centers, pool (water park), relocated/new sports fields, physical fitness centers, and Family Travel Camp area. These new or expanded facilities would be designed to adequately serve the incoming BRAC population, resulting in long-term beneficial effects. However, MWR's ability to build and operate these new recreational facilities depends

on their available nonappropriated funds (NAF), which would be significantly reduced by BRAC actions.

From a regional perspective, the social effects of the BRAC action would have short- and long-term minor adverse effects on regional services. The BRAC Commission's recommendations would generate a net increase of 22,000 people in the workforce on Fort Belvoir. Most of these personnel already reside within a one-hour drive to Fort Belvoir. It is probable that some of the affected personnel would change their home residence within the ROI to improve their commute to Fort Belvoir, in particular moving to areas along the Northern Virginia I-95 corridor including Fairfax County, Prince William County, and Stafford County, and the city of Fredericksburg. This would increase the population in these jurisdictions and the demand for services such as police, fire, and medical care; schools; social services; and shopping facilities. In the short-term, services would be expected to decrease as population increased. Expansion of services would be necessary to maintain levels of service. However, the population increases because of the BRAC action would be minor relative to projected regional population growth. In addition, population changes would occur over a number of years. The BRAC action would not be fully implemented until 2011. Over time, services (police, fire, medical, schools, social services) would adapt to the demands of the increased population base, funded by new tax revenues. The number and type of shopping and service businesses and community support morale, welfare, and recreation facilities and services would be expected to increase with demand as they would be market driven.

ES.6.10 Aesthetics and Visual Resources

The BRAC actions would be expected to have a minor to moderate impact on the aesthetic and visual resources of Fort Belvoir. There would be some difference in the effects the four alternatives have on aesthetics, with the City Center having the least impact and the other three alternatives having similar slightly larger impacts.

Throughout its history and development, Fort Belvoir has strived to take advantage of the natural topography and vegetation of the area. For this reason, it has been able to preserve a relatively high amount of aesthetic value. Potential effects on the installation's aesthetic value depend on how proposed actions affect those signature areas of the installation having high aesthetic integrity. These areas include the traditional buildings of Fort Belvoir and the landscaping that takes advantage of natural features and mature hardwoods, which are found primarily on South Post and, to a lesser extent, on North Post; the undisturbed areas of Fort Belvoir found in the Southwest Area; the wildlife corridors on North Post and western EPG; the golf courses on North and South Post; and the many vistas of the Potomac. The four proposed alternatives differ slightly on how they affect these areas.

The City Center Alternative, which concentrates the majority of its actions on eastern EPG and the GSA Parcel, would have the fewest aesthetic effects because of the lack of major construction on either North or South Post. The eastern portion of EPG, especially the area inside of Heller Loop, has low aesthetic value because of training and testing activities that have occurred there over the years. This area also contains several abandoned structures that have progressed to an advanced state of dilapidation. Both the City Center Alternative and, to a lesser extent, the Preferred Alternative make use of this area. The Preferred, Town Center, and Satellite Campuses Alternatives all have a greater impact because of having developments on or near aesthetically sensitive areas of Main Post. The Preferred and Town Center Alternatives would have more effects as a result of the hospital campus being sited on the South Post golf course. The Town Center Alternative also would situate a large amount of development on North Post above U.S.

Route 1. Similarly, the Satellite Campuses Alternative places new structures in this area north of U.S. Route 1. Although it does not impact the South Post golf course, it would site buildings on the North Post golf course. Despite their slight differences, none of the proposed alternatives would have a significant effect on aesthetics and visual resources of the installation.

ES.6.11 Utilities

Long-term minor adverse and beneficial effects would be expected upon adopting any of the four alternative land use plans and implementing BRAC.

Different alternatives for implementing the BRAC action would have varying effects on existing utility systems, extent of upgrades, additions required to utility infrastructure, associated cost investment to implement the additions and time frame required to plan and implement them. In addition, the alternatives grade differently with respect to availability of additional capacity, on- and off-site improvements required, redundancy available for ensuring reliability of service and provision of centralized service.

Under the Preferred Alternative, most of the development would be centralized around EPG where existing utility services on EPG are close to nonexistent. However, the site is in close proximity to most utility systems. The BRAC action would require expansion to the publicly owned infrastructure as well as to some of the utility owned infrastructure.

For potable water and sanitary sewer, existing on-site utilities on EPG are currently largely inadequate to support the level of proposed development. New infrastructure would be needed on EPG for all on-site utility systems. However, the proposed BRAC facilities at EPG would require little if any improvements to off-site facilities, except for electricity and natural gas. Providing the required level of electricity at EPG would require substantial improvements to the existing off-site infrastructure. In addition, extending natural gas to EPG would require off-site improvements to existing infrastructure.

Consideration should also be given to the capacity constraints of the local utility network. Fort Belvoir purchases treatment capacity for potable water and sanitary sewer services from public utilities and currently is using only a portion of purchased capacity. However, the BRAC action demands would most likely consume all the purchased treatment capacity for both systems. There is adequate local capacity to provide natural gas for the proposed development at EPG, but some on- and off-post infrastructure improvements would be required. Providing electricity to meet the needs of BRAC tenants moving to EPG would require substantial on- and off-site upgrades, time, and investment.

Redundancy is a fundamental principal in the design of all utility systems. Unified facilities criteria (UFC) recommend certain reliability and redundancy strategies designed to minimize outages from all systems; strategies include multiple feeds, looped water systems, and quick disconnects at buildings. Mission-critical activities such as NGA could have power fed from independent Dominion transmission circuits with automatic switching in addition to standby generators to support life-support and critical-data functions. It would be imperative to identify and quantify the redundancy requirements of each tenant as soon as possible because these requirements would have substantial cost effects to the utility infrastructure. Redundancy ratings for the different alternatives are comparable with one another for most utility services.

The City Center and Satellite Campuses Alternatives would be ranked the lowest in terms of providing centralized service. The centralized service provision ratings for the Preferred Alternative and the Town Center Alternative are comparable because most facilities would be concentrated on either EPG or the South Post, respectively, under these two alternatives.

Municipal solid waste and construction and demolition debris collection and disposal are comparable for all the alternatives. The sites are in close proximity to one another. As such, their impact on available landfill capacity also would be similar for all considered alternatives.

ES.6.12 Hazardous Substances and Hazardous Materials

Long-term minor adverse effects would be anticipated for each alternative with respect to the construction and operations activities associated with a development project of this size. The construction activities would involve managing, storing, and generating hazardous substances and hazardous materials. In addition, long-term minor adverse effects would be anticipated with the addition of tenants would result in the additional managing, storing, and generating hazardous substances and hazardous materials.

Although not part of the proposed action, the predevelopment preparations requirements would have a long-term beneficial effect as the unexploded ordnance (UXO) and hazardous materials release sites are investigated and remediated, which would be beneficial to both human health and the environment. The most costly alternative for corrective action predevelopment activities would be the Satellite Campuses Alternative, largely due to the project sites being located in former training ranges with costly UXO clearance and removal. The least expensive would be the Preferred Alternative. In addition, corrective action for the Preferred Alternative could be completed on a faster track than the other alternatives. The estimates for the Town Center and Satellite Campuses Alternatives do not include costs of finding and obtaining swing space for current tenants to be relocated into while the program redevelops the Main Post. The costs and logistical requirement to execute these alternatives would also be substantial.

ES.6.13 Unavoidable Adverse Environmental Impacts

Implementing the Preferred Alternative would result in a variety of adverse environmental effects, as detailed in Sections 4.2 through 4.13. Some of the effects could be minimized, avoided, or compensated for through mitigation, but others would be unavoidable. The principal unavoidable adverse effects on the environment are the following.

- *Biological Resources.* Unavoidable loss of approximately 113 acres of natural habitat, including several stands of mature oak trees, to accommodate incoming BRAC actions in a manner that would best serve the military mission at Fort Belvoir.
- *Utilities.* Unavoidable generation of about 8,410 tons of construction and demolition debris from the proposed action, which would be disposed of in various landfill sites in the area.

ES.7 CUMULATIVE EFFECTS

In addition to the 20 projects identified in Section 2.2.2, the Army foresees there being another 32 projects at the installation. These 32 *non-BRAC* projects range from small scale projects involving only renovations of existing buildings to large projects involving the construction of

new sizeable structures. Chief among this latter category would be proposals such as the National Museum of the U.S. Army and associated Museum Support Center, the expansion of the Information Dominance Center, and a potential Army Reserve complex. Additional numerous smaller projects would occur on-post as new facilities or, in several instances, as renovations of existing facilities. Each of these projects would undergo or have already undergone their own NEPA compliance. The Army has identified 187 off-post, non-Army projects planned within 3 miles of Fort Belvoir. While many of these are small in scale and would have only a negligible effect on the environment as a whole, 20 projects are at least 25 acres in size. The following summarize principal conclusions with respect to potential cumulative impacts.

- *Land Use.* Negligible cumulative effects on land use would be expected from implementing non-BRAC projects at Fort Belvoir. In general, the on-post cumulative projects would be compatible with existing land use or those associated with the proposed alternatives for BRAC actions. Negligible adverse and beneficial long-term effects on land use would be expected with respect to off-post development. Cumulative effects to land use upon implementation of the Fairfax County Comprehensive Plan over the next 5 years would be negligible if all approved/programmed roadway improvements are realized.

- *Transportation.* On-post facilities projects, taken together, would be expected to have negligible effects on Fort Belvoir area traffic. Impacts on the transportation network associated with off-post projects would be mitigated through roadway improvements by the developers. The largest contributor to future impacts would be the proposed National Museum of the U.S. Army. This could be sited at either the North Post golf course or along Route 1, east of Pence Gate. At either location, additional road improvements would be required. To quantify the effects of the museum on the transportation system, trip generation and mode split would need to be developed for site traffic.

- *Air Quality.* The proposed cumulative projects would have minimal long-term adverse effects on the region's air quality. Other construction and development projects would occur within the National Capital Region (NCR), and each of the projects would produce some measurable amounts of air pollutants. The effects of all past, present, and reasonably foreseeable projects in the region and associated emissions are taken into account during the development of the State Implementation Plan (SIP). This includes all on- and off-post projects including National Museum of the U.S. Army. Estimated emissions generated by all the alternatives would conform to the SIP. Therefore, by definition, the net effects of the BRAC action at Fort Belvoir in addition to all other collectively identified cumulative projects would not contribute to significant adverse cumulative air quality effects.

- *Noise.* No long-term cumulative effects on noise would be expected. Implementing any of the alternatives would have negligible ongoing or cumulative effects on the noise environment because of construction or changes in traffic in or around the site. The construction activities associated with the BRAC alternatives would be temporary in nature, and the current noise environment would return after the projects' completion.

- *Geology and Soils.* Past, present, and reasonably foreseeable projects proposed for Fort Belvoir and the immediate vicinity could result in localized changes to topography and minimal effects on geology. Soils in the area would undergo short- and long-term to permanent impacts depending on the nature of the disturbance. Overall, the topography

of Fort Belvoir and the surrounding area would not change as a result of any of the BRAC-related projects in concert with previous or reasonably foreseeable actions. Soils throughout the EPG project area would undergo short- and long-term adverse cumulative effects. Urban and Cut and Fill soils have already been affected by development so in cases of redevelopment the impact to these soil types has already occurred. With native soils the effects related to construction would generally be minor and generally limited to the areas directly disturbed by those activities. The Museum of the U.S. Army, its Support Center, and the Fairfax County Parkway extension would all result in the permanent loss of the soil resource directly under the impervious surfaces. However, portions of these projects would occur on soils previously affected (Urban soils) and impacts to native soils would be localized. Off-post past, present and reasonably foreseeable projects would have similar types of impacts as those described for on-post projects, except over a broader scale. None of the projects considered in the cumulative impacts analysis are likely to contribute to a significant cumulative impact in terms of topography or geology. Likewise, assuming that regulatory requirements are followed, the soil resource should experience localized effects that would be both short- and long-term.

- *Water Resources.* Long-term minor adverse effects on water resources would be expected due to cumulative actions. Various other on-post and off-post proposed development projects in the vicinity of Fort Belvoir would potentially increase storm water runoff from paved surfaces and nonpoint source pollutants (e.g., sediment, nutrients, petroleum hydrocarbons) in the area. A cumulative effects analysis was conducted using Generalized Watershed Loading Model to estimate potential changes in average annual flow volume and pollutant loads as a result of the change in impervious surface area in each watershed. The model results indicate that increases in flow volume and nutrient loadings are not expected to be significant at the watershed scale. Appropriate required storm water management designs would be expected to minimize the adverse effects of increased storm water and nonpoint source pollutants, and additional measures that permit infiltration are recommended for implementation on a watershed basis to limit cumulative effects to waterbodies within these watersheds and receiving waters downstream.

- *Biological Resources.* Long-term moderate adverse cumulative effects would be expected. Cumulative natural resource effects of the proposed on-post non-BRAC projects such as the Army Museum would generally affect the central area of the North Post, the North Post golf course, and the South Post similarly under all the alternatives. On other areas of the Main Post, cumulative projects would have a similar level of effect under the Preferred Alternative and all other alternatives. Proposed on-post non-BRAC projects and off-post non-army projects would further diminish the availability of forest and field habitats on and off the installation, and increase the possibility of occurrences of invasive species, edge effects on habitats, and habitat fragmentation under the Preferred Alternative and all other alternatives.

- *Cultural Resources.* Long-term minor adverse and beneficial effects on cultural resources would be expected. Adverse visual effects on national, state, and county registered historic properties both on- and off-post would occur under each of the alternatives. These effects would be in addition to other modern developments that have already visually affected those properties. Increasing urbanization in the surrounding cities and counties, as exhibited by past and proposed future projects surrounding Fort

Belvoir and proposed developments on Fort Belvoir, would likely contribute to more visual effects on these historic properties. Although the adverse visual effects from the individual BRAC projects would be mitigated to a minor level of significance, the additional visual effects from the BRAC projects, when added to existing and future visual effects would have long-term minor adverse cumulative effects to these historic properties.

- *Socioeconomics (Economic Development).* Short- and long-term beneficial and adverse cumulative effects would be expected. The past action of the establishment and continued operation of Fort Belvoir continues to have positive effects on the local economy. The proposed realignment action would add to these beneficial economic effects by generating employment, income, and business sales in the ROI from construction and operation of the proposed new facilities. There are numerous other projects (in progress or planned for the future) on Fort Belvoir and in the ROI that could have short- and long-term effects on the local economy. On-post projects include (but are not limited to) the National Museum of the U.S. Army, Museum Support Center, a physical fitness center in the Troop Cantonment Area and on EPG, a South Post fitness facility, modernization of the marina, expansion of the Main Post library, a shoppette on the South Post, a Soldier Support Center, an addition to the MP Station, and replacement of the South Post Fire Station. Projects in the ROI include, but are not limited to, ongoing development of the Lorton Town Center, housing development in Laurel Hill and Lorton, reconstruction of the I-95/I-395/I-495 interchange, improvements to Route 1, plus numerous other residential and commercial developments and transportation projects. These proposed projects would have short- and long-term beneficial economic effects in terms of employment, income generation, and business sales. There would be short-term beneficial effects from the construction projects and long-term beneficial effects from the continued operation, maintenance, and use of the facilities, businesses, and houses. The backfilling of office space vacated by the agencies moving to Fort Belvoir could create a change in regional employment. Adverse cumulative effects would occur because of the overlapping time frames for construction activities of the Proposed Action and ongoing and future projects, with the adverse effects resulting from possible construction labor and material shortages.

- *Socioeconomics (Sociological Environment).* Long-term beneficial and adverse effects would be expected on police, fire, and medical services, schools, housing, family support and social services, shops, services, and recreation. Long-term beneficial effects would occur on on-post police and fire services and medical services. Adverse effects could occur to off-post police, fire, and social services based on population projections that indicate continued population growth for the ROI. Long-term adverse effects would be expected to occur on off-post schools. Long-term beneficial and significant adverse effects would be expected with respect to family support, shops, services, and recreation. Fort Belvoir's increased population would increase demand for shopping, service, and recreational facilities. Long-term significant adverse effects on Fort Belvoir's MWR recreation program would occur from the construction of the Army Museum and Museum Support Center. If the museum would be constructed on the North Post golf course site, Fort Belvoir would lose a portion of this golf course, in addition to the South Post golf course as the hospital is sited there under the Preferred Alternative. Fort Belvoir could lose about 60 percent of its golf course fairways, which would result in significant losses to the MWR NAF from lost revenue and undepreciated fixed assets.

Overall, the loss of these MWR programs and facilities would reduce the quality of life for Soldiers, retirees, and their families.

- *Aesthetic and Visual Resources.* Minor adverse and beneficial effects on aesthetic and visual resources would be expected. The proposed on-post project with the largest cumulative aesthetic effect, the National Museum of the U.S. Army, has two possible sites: the North Post golf course and the Pence Gate site on the eastern side of South Post. Each site placement would have a moderate effect on aesthetics because of the size of the proposed structures, although the golf course siting would have more of an effect because of the high aesthetic integrity of the current land use. Other major changes would occur along Abbott Road on the North Post, the northeast portion of North Post, and in the Southwest Area. The building of the Operations Security Evaluation Group Training Facility on the Southwest Area would have a moderate effect on the area because of the current forested conditions of the area, although it would be relatively secluded. The proposed Woodlawn Road replacement would have a moderate effect because of the high aesthetic integrity of the land it would pass through. Short-term adverse effects resulting from construction activities from cumulative projects would be expected to be similar to that of the Preferred Alternative. In general, the smaller buildings and additions would have a negligible adverse aesthetic change once construction is complete. The larger structures would have a more noticeable effect because of their size. Despite the large number of proposed off-post cumulative projects, there would not be a significant amount of aesthetic effects. The off-post portion of Fairfax County in the vicinity of Fort Belvoir, as a whole, has a large amount of development, which includes large areas of residential and commercial development along I-95 and Route 1. The existing development makes the addition of these cumulative projects result in a minor effect on the aesthetic integrity of this portion of Fairfax County.

- *Utilities.* Short- and long-term minor adverse cumulative effects would be expected. Implementing the Preferred Alternative would result in short-term disconnections and reconnections of all buried and aboveground utility systems during the construction phase on- and off-post as required. Activities resulting from the BRAC action and other on- and off-post development projects such as office buildings, shops, and housing complexes would result in additional building space requiring utility services, thus resulting in a cumulative increase in demand on the existing utility infrastructure. This would require existing private and public providers of utility services in the area to increase the quantity of utility services provided to meet the demand from users directly and indirectly associated with Fort Belvoir and its surroundings. These entities must review and revise the existing short- and long-term projections for providing adequate and reliable utility services for the area in the future. The Energy Policy Act of 2005 (Public Law 109-58—August 8, 2005) stipulates that energy consumption per gross square foot of the Federal Buildings in fiscal years 2006 through 20015 be reduced in comparison to the base year of 2003. The percentage reduction required in 2006 is 2 percent from the baseline consumption and 20 percent in 2015. This required reduction will mitigate some of the cumulative effects of the above on- and off-post construction. The Preferred Alternative, together with on-post construction and renovation projects planned in the near term at Fort Belvoir and off-post projects would generate additional quantities of construction and demolition debris (CDD) and result in cumulative reduction of the lifespans of local area landfill sites.

- *Hazardous Substances and Hazardous Materials.* Short- and long-term minor adverse cumulative effects would be expected. Short-term cumulative effects would be expected from the increased use of petroleum during construction. Construction would adhere to federal guidelines to minimize the risk of spills. Minor long-term adverse effects would be expected from the increase in generation of hazardous and solid waste generated as more people would work at Fort Belvoir and the surrounding area.

ES.8 MITIGATION SUMMARY

Mitigation measures for the four alternatives for implementing BRAC would be expected to reduce, avoid, or compensate for most adverse impacts. Mitigation does not include legal, regulatory, or policy-driven environmental protections and best management practices (BMPs) required to comply with federal and state laws, or Army and Fort Belvoir policies. These are already part of the Proposed Action. Only those resource areas for which mitigation has been determined to be appropriate are discussed below.

ES.8.1 Transportation

Mitigation for impacts to the transportation system could occur with respect to off-post transportation improvements and mass transit expansion. Also, the Army could designate a Transportation Demand Management Coordinator.

Traffic and Transportation. The EIS examines several transportation improvements for each of the BRAC action alternatives. The following summarizes these improvements (shown in comparative format at Table 4.3-41.

- *Preferred Alternative.* Fourteen actions, costing an estimated $458 million, are identified.

- *Town Center Alternative.* Fifteen actions, costing an estimated $732 million, are identified.

- *City Center Alternative.* Fourteen actions, costing an estimated $471 million, are identified.

- *Satellite Campuses Alternative.* Fifteen actions, costing an estimated $742 million, are identified.

Mass Transit. Bus service of a high enough quality to realize a 5 to 10 percent mode share for transit could complement the road network mitigation actions and help to reduce congestion and limit vehicle delays. The EIS identifies five basic bus service areas, then proposes and examines general routes and service concepts to achieve 5 or 10 percent mode share. For all the alternatives, a 5 percent mode split would reduce by 360 the number of vehicles entering the post during peak hour. A 10 percent mode split would reduce by 725 the number of vehicles entering the post during peak hour.

Transportation Demand Management Coordinator (TDMC). To help alleviate traffic congestion, the Army could appoint a TDMC. The TDMC would be knowledgeable of principles, practices, and methods of transportation demand management. These would include, but not be limited to, employee rideshare and commute programs; current regional programs

regarding air quality and transportation; employer trip reduction requirements; marketing, promotion, and event planning practices; and parking management practices. The TDMC's principal function would be to develop and manage a transportation management plan focused on measures to reduce the number of single-occupancy vehicles. Appointing a TDMC before fiscal year 2009 would allow development of transportation program initiatives before BRAC relocation of personnel.

ES.8.2 Air Quality

Mitigation with respect to air quality would be required with the implementation of the City Center Alternative. Under the nonattainment new source review permitting requirements, oxides of nitrogen emission offsets at a ratio of 1:1.15 would have to be located and obtained for all stationary sources sited on EPG. Emission offsets are generally unavailable in this region and could be extremely expensive if they could be obtained at all.

ES.8.3 Water Resources

Depending on the alternative selected for implementation of BRAC, up to nine subwatersheds at the post would be expected to have increases of more than 10 percent in 1-year or 10-year storm event peak discharges. A potential mitigation measure would be to develop a storm water drainage system master plan study. This study would identify current deficiencies (e.g. capacity problems, outfall problems, stream bank erosion) and determine infrastructure needs to meet BRAC requirements and long-term growth.

ES.8.4 Other Resources

No specific mitigation measures are identified for affected resources. In general, actions with respect to affected resources are protected by a variety of BMPs that preserve and conserve the resources. For example, a permit would be required under the Virginia Pollutant Discharge Elimination System program for a construction project disturbing at least 2,500 square feet; as part of the permit process, the Army would have to prepare a soil erosion and sediment control plan and storm water pollution prevention plan to guide sedimentation reduction during the construction process. BMPs typically are an inherent part of project design and implementation, and their funding is included in general project costs.

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SECTION 1.0
PURPOSE, NEED, AND SCOPE

1.1 INTRODUCTION

This environmental impact statement (EIS) evaluates the potential environmental and socioeconomic impacts of two proposals at Fort Belvoir: update of the land use plan of the post's real property master plan (RPMP), and implementation of base realignment.

Fort Belvoir established its RPMP in 1993 and amended it in 2002. In light of substantial changes at the post that would occur due to the proposed base realignment activities, the land use plan needs to be updated.

On September 8, 2005, the Defense Base Closure and Realignment Commission (*BRAC Commission*) recommended numerous realignment and closure actions for domestic military installations. President Bush concurred with the 2005 BRAC Commission's report and sent it to Congress on September 15, 2005. On November 9, 2005, the recommendations became law and now must be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended. Consistent with the law, the BRAC actions at Fort Belvoir must be initiated by no later than September 15, 2007, and completed by no later than September 15, 2011. The BRAC Commission's recommendations will generate a net increase of 22,000 people in the workforce on Fort Belvoir.

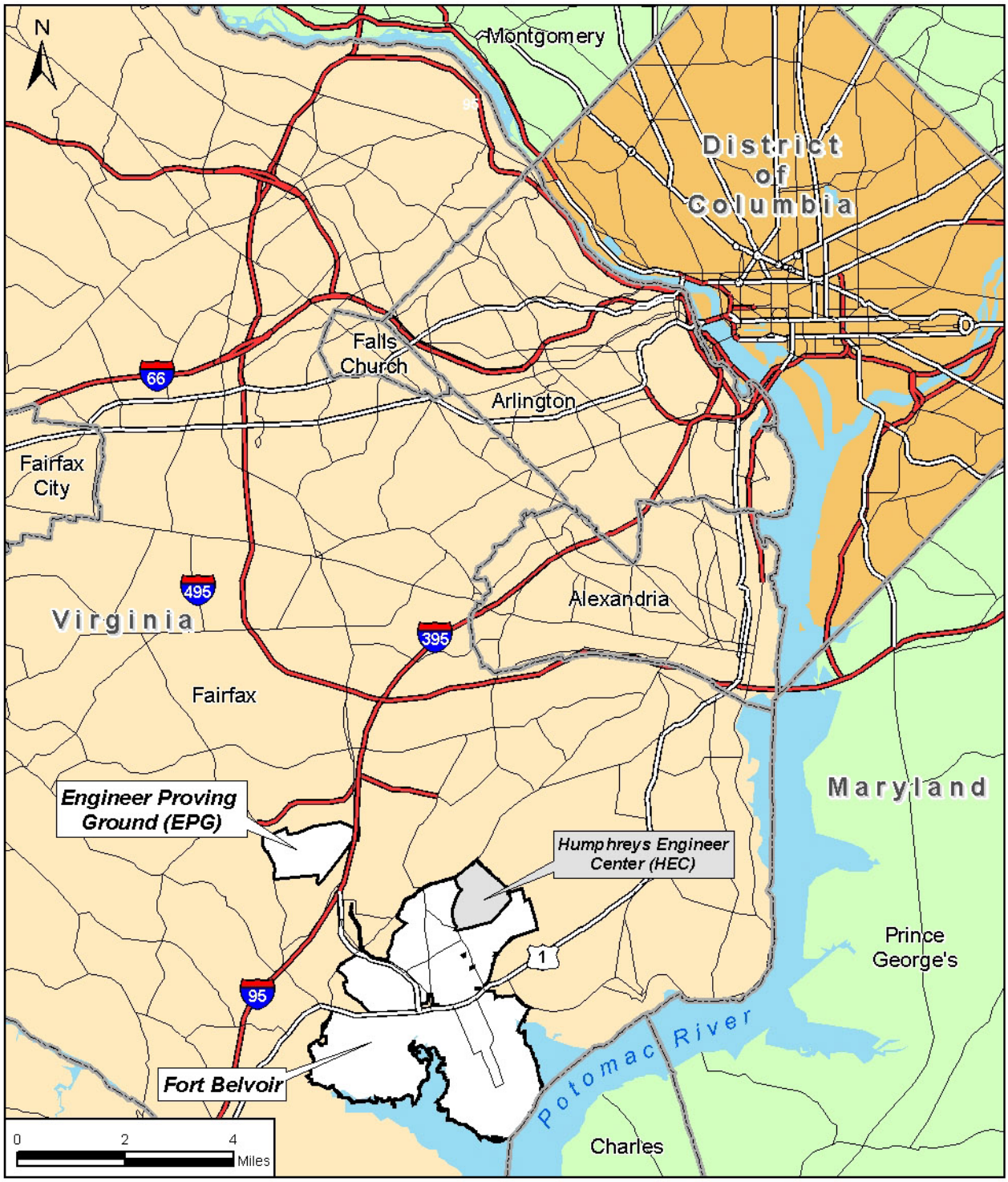
Fort Belvoir is located approximately 15 miles south of Washington, DC (Figure 1-1). The installation is the host for one major command headquarters (Army Materiel Command), two Direct Reporting Unit headquarters (U.S. Army Intelligence and Security Command and U.S. Army Criminal Investigation Command), and more than 100 other elements of the Army, Department of Defense (DoD), and Intelligence Community, including the Defense Logistics Agency headquarters, Army Management Staff College, Defense Acquisition University, and the National Geospatial-Intelligence Agency College.

1.2 PURPOSE AND NEED

The proposed actions are to provide an updated land use plan and to implement the BRAC Commission's recommendations pertaining to Fort Belvoir. The following identifies the purpose of and need for the Army's two proposals.

Land use plan update. The purpose of the proposed action with respect to the land use plan is to obtain a revised land use plan for allocation of functions and facilities at the post. Fort Belvoir requires a revised land use plan that will enable sound use of physical and natural resources at the post with respect to both current and future land use requirements. Master planning is required by Army Regulation (AR) 210-20, *Real Property Master Planning for Army Installations*.

BRAC implementation. The purpose of the proposed action with respect to BRAC is to realign functions as directed by the BRAC Commission's recommendations for Fort Belvoir. The need for the proposed action is to advance the goals of transformation by improving military capabilities and thereby enhancing military value. The following discusses major initiatives that contribute to and underlie the Army's need for the proposed action.



LEGEND

- Installation Boundary
- HEC Boundary
- County Boundary
- Interstate Highway
- US Highway

Source: Fort Belvoir GIS, 2006.

Installation Location

Fort Belvoir, Virginia

Figure 1-1

- *Base Realignment and Closure.* In previous rounds of BRAC, the explicit goal was to save money and downsize the military. In the 2005 BRAC round, DoD sought to reorganize its installation infrastructure to support its forces most efficiently, increase operational readiness, facilitate new ways of doing business, and improve force protection. Thus, BRAC represents more than cost savings. It supports advancing the goals of transformation, improving military capabilities, and enhancing the military value of its installations. The Army must carry out the BRAC recommendations at Fort Belvoir to achieve these improvements and to comply with BRAC law.
- *Installation Sustainability.* On October 1, 2004, the Secretary of the Army and the Chief of Staff issued *The Army Strategy for the Environment*. This strategy focuses on the interrelationships of mission, environment, and community. A sustainable installation simultaneously meets current and future mission requirements, safeguards human health, improves quality of life, and enhances the natural environment. A sustained natural environment is necessary to allow the Army to train and maintain military readiness.

1.3 SCOPE

This EIS identifies, documents, and evaluates environmental effects of land use plan update and realignment activities at Fort Belvoir in accordance with the National Environmental Policy Act of 1969 (NEPA) and implementing regulations issued by the President's Council on Environmental Quality (CEQ) and the Army.[1] The purpose of the EIS is to inform decisionmakers and the public of the likely environmental consequences of the proposed action and alternatives. The range of actions, alternatives, and impacts considered in this EIS are intertwined with the requirements for BRAC analysis. As further described in the EIS, the scope pertains to the geographic areas potentially affected by the realignment activities at Fort Belvoir as well as the area of potential environmental effects, which varies by resource.

The Defense Base Closure and Realignment Act of 1990 ("BRAC Law") specifies that NEPA does not apply to actions of the President, the Commission, or the Department of Defense, except "(i) during the process of property disposal, and (ii) during the process of relocating functions from a military installation being closed or realigned to another military installation after the receiving installation has been selected but before the functions are relocated" (Sec. 2905(c)(2)(A), Public Law 101-510, as amended). The law further specifies that in applying the provisions of NEPA to the process, the Secretary of Defense and the secretaries of the military departments concerned do not have to consider "(i) the need for closing or realigning the military installation which has been recommended for closure or realignment by the Commission, (ii) the need for transferring functions to any military installation which has been selected as the receiving installation, or (iii) military installations alternative to those recommended or selected" (Sec. 2905(c)(2)(B)). The Commission's deliberation and decision, as well as the need for closing or realigning a military installation, are exempt from NEPA. Accordingly, this EIS does not address the need for realignment.

Army policy calls for the environmental analysis to be proportionate to the nature and scope of the action, the complexity and level of anticipated effects on important resources, and the

[1] *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*, Title 40 of the Code of Federal Regulations (CFR) Parts 1500–1508, and *Environmental Analysis of Army Actions*, 32 CFR Part 651.

capacity of Army decisions to influence those effects in a productive, meaningful way from the standpoint of environmental quality.[2] The environmental analysis for this EIS is commensurate with the planning horizon and diverse array of actions associated with realignment at Fort Belvoir. The project site for the Army's proposed actions includes Fort Belvoir's Main Post (7,836 acres) and the Engineer Proving Ground (EPG) (807 acres).[3] Figure 1-2 provides a site map of Fort Belvoir. The region of influence (ROI) for each of the environmental and socioeconomic resource areas discussed in this EIS varies, depending on their nature and relationship to the project site. The transportation and socioeconomics resource areas have the largest ROIs, as shown in Figure 1-3.

The land use plan proposed in this EIS represents the first step in Fort Belvoir's ongoing efforts to revise its RPMP. Work on the revision is expected to take approximately 2 years, with completion of the effort projected to occur in 2008. The BRAC statutory deadline constrains the Army to complete environmental analysis of construction requirements not later than in mid-2007 in order to allow sufficient time for planning, design, construction, commissioning, and occupancy of facilities required for units, agencies, and activities relocating to Fort Belvoir. The schedule for BRAC requirements renders the RPMP completion not ripe for consideration in this EIS. Accordingly, the Army will perform separate environmental impacts analysis for the remainder of its RPMP revision.

Analysis of environmental impacts of the proposed action extends from the present to 2015. This timeframe captures reasonably foreseeable actions that might contribute to cumulative impacts associated with the proposed actions. Impacts beyond 2015 are not evaluated because their occurrence is too uncertain and their prediction would be speculative.

1.4 PUBLIC INVOLVEMENT

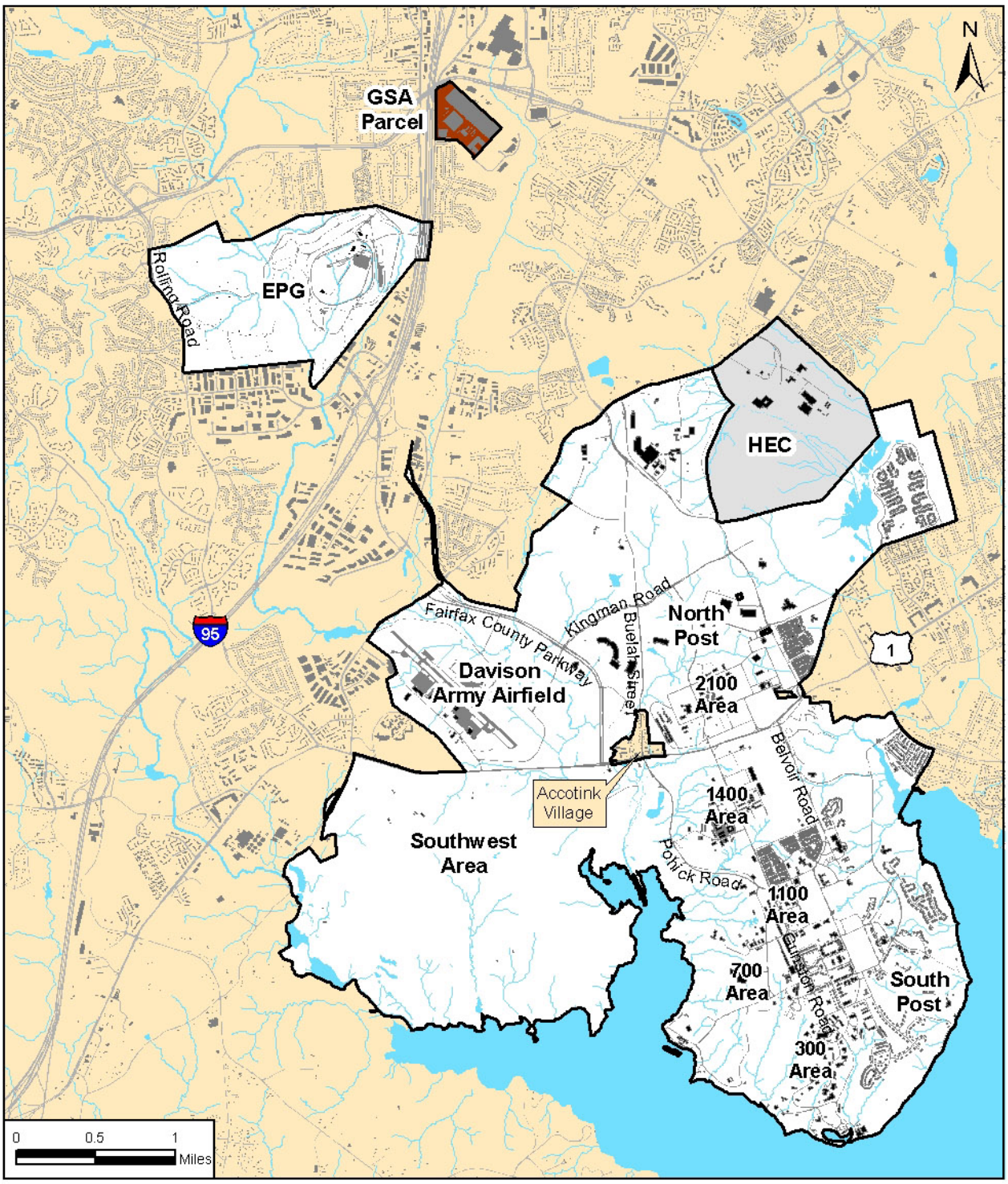
1.4.1 NEPA Public Involvement Process

The evaluation of potential environmental effects of federal actions is open to the public. Public participation in the NEPA process promotes both open communications between the public and the Army and better decisionmaking. All persons and organizations that have a potential interest in the proposed action, including minority, low-income, disadvantaged, and Native American groups, are urged to participate in the NEPA environmental analysis process.

Public participation opportunities with respect to the proposed action are guided by CEQ regulations and Army regulation. The regulations provide for five major aspects of public participation available in conjunction with preparation of this EIS: (1) notice of intent (NOI), (2) scoping, (3) 60-day public review of the draft EIS, (4) public hearing on the draft EIS, and (5) 30-day publication of the final EIS prior to issuance of the record of decision. In addition to these steps, a public information meeting was held following the scoping meeting and prior to the public hearing on the draft EIS. Each of these steps in the process provides for public involvement and is briefly discussed below. Throughout this process, the public may obtain information on the status and progress of the proposed action and the EIS through Fort Belvoir's Directorate of Public Affairs Office (PAO) by calling 703-805-5001.

[2] 32 CFR 651.5

[3] Congress has authorized the Army to convey 170 acres of the EPG to Fairfax County, Virginia for the Fairfax County Parkway and another 11.45 acres to the Commonwealth of Virginia, a parcel for which the Army previously granted an easement related to construction of Interstate 95 (Section 2836, National Defense Authorization Act for Fiscal Year 2002, Pub. L. 107-107).



LEGEND

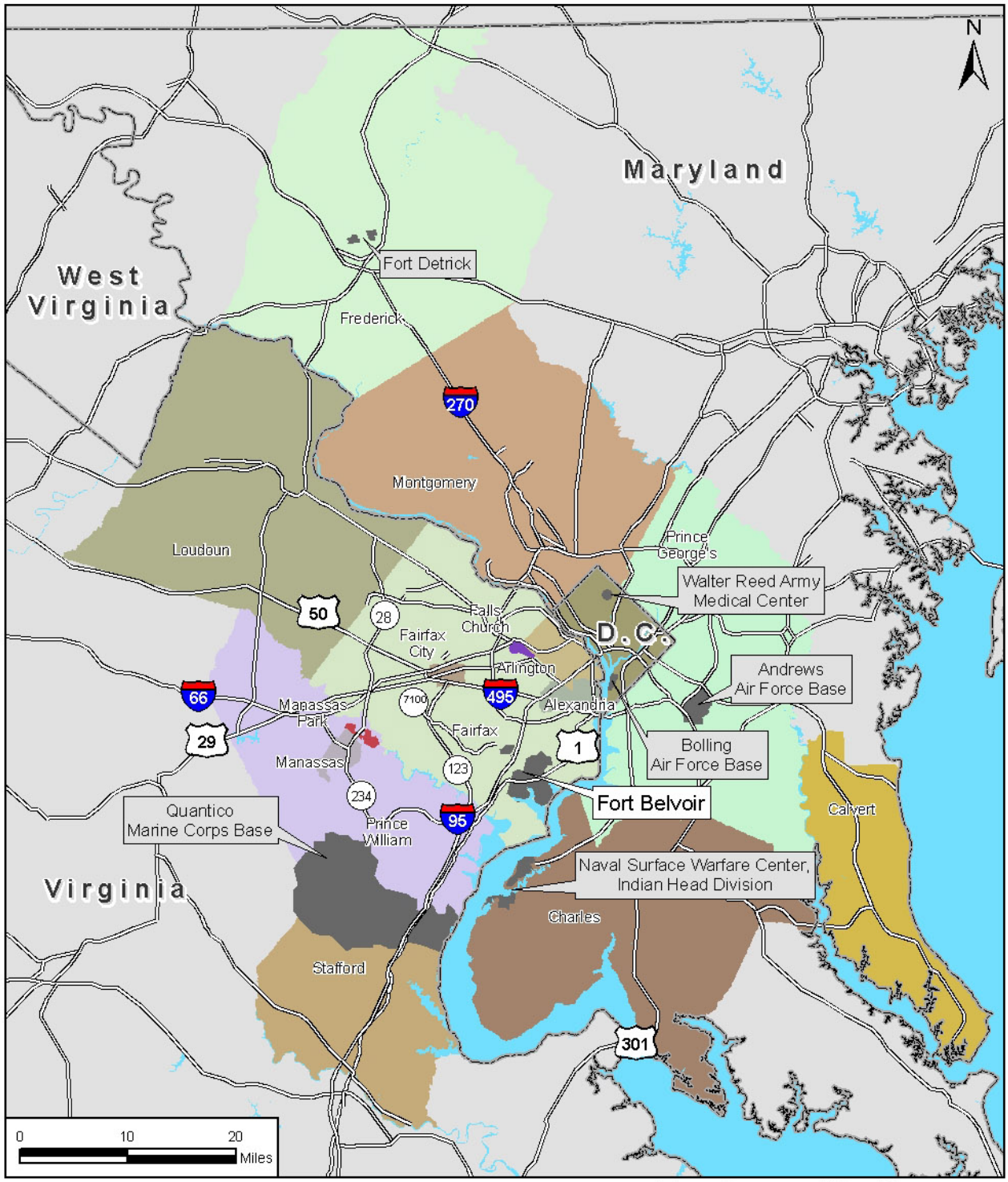
- Installation Property
- GSA Parcel
- HEC (Area not included within the scope of this EIS)

Sources: Fort Belvoir GIS, 2006; Fairfax County GIS, 2006.

Site Map

Fort Belvoir, Virginia

Figure 1-2



Region of Influence

Fort Belvoir, Virginia

Figure 1-3

Additionally, interested persons seeking more information about the BRAC NEPA process for Fort Belvoir may visit the Web site http://www.belvoirbrac-eis.net.

1.4.2 Notice of Intent

The NOI informing the public of the preparation of an EIS is the first formal step in the NEPA public involvement process. The notice is published in the *Federal Register* before the start of the scoping process by the agency proposing the action. The NOI includes a description of the proposed action and gives the name and address of an agency contact person. The NOI declaring the Army's intent to prepare an EIS for realignment of Fort Belvoir was published in the *Federal Register* on November 23, 2005. The NOI is provided in Appendix A.

1.4.3 Scoping Process

The purpose of scoping is to solicit public comment on issues or concerns that should be addressed in the EIS. Public comments are solicited through mailings, media advertisements, and both agency and public scoping meetings. While informal comments are welcome at any time throughout the process, the scoping period and the scoping meeting provide formal opportunities for public participation in and comment on the environmental impact analysis process.

The Army held a public scoping meeting on June 7, 2006, at the Hilton Springfield Hotel on Loisdale Road in Springfield, Virginia, from 7:00 pm to 9:30 pm. More than 100 members of the public, including representatives from agencies and the press, attended the public scoping meeting. The Army provided public notice of the meeting in the *Washington Post* on May 28, 2006; *Mount Vernon Gazette* on May 25 and June 1, 2006; *Springfield Times* on June 1, 2006; and *Fort Belvoir News* on June 1, 2006. Using a mailing list compiled by Fort Belvoir, agency and public scoping letters were mailed on May 17, 2006, to about 190 individuals, organizations, tribes, and federal, state, and local agencies to inform them of the proposed action, solicit their input concerning issues that should be addressed in the EIS, and invite them to attend the public scoping meeting. Recipients of the mailing were invited to send written comments to the Fort Belvoir Directorate of Public Works (DPW) no later than July 2, 2006, or to submit written or oral comments at the public scoping meeting.

In addition to the public scoping meeting, the Army reserved a time to meet with agency officials to discuss the scope of the EIS. This meeting was conducted on June 7, before the public scoping meeting, at the Hilton Springfield Hotel at 1:30 pm. About 30 people representing approximately 15 federal, state, and local agencies attended the meeting.

Agency coordination letters and responses and the Scope of Statement scoping report are provided in Appendix B.

The following comments provided by the public and agencies are within the scope of the EIS:[4]

[4] Some comments urged a particular outcome concerning the proposed action, while others were redundant or dealt with matters deemed out of scope. All comments are contained in the *Scope of Statement Report*, available through http://www.belvoirbrac-eis.net.

Socioeconomics

- Need to know the potential impact on local schools and their capacity to accommodate the number of incoming students, both during the construction phase and after military and civilian personnel move to the post.

- Need to accurately estimate the number of school-aged children who will be coming to the Fort Belvoir area as a result of BRAC 2005.

- Local communities will not have a sufficient tax base for hiring teachers and creating additional space to accommodate the influx of students.

- Examine the real commuter, road, and air quality impacts; include the precise number of contractors serving DoD entities to be relocated and the dollar figures of contracts under which these contractors perform.

- Include precise numbers of bedrooms in the proposed housing to plan the precise number of children who will attend Fairfax County Public Schools.

Cultural resources

- Request that the Army continue to consult with the Virginia Department of Historic Resources (VDHR) on the impact that the BRAC actions will have on historic properties and archaeological sites at Fort Belvoir.

- Request that construction within sight of the Friends Meetinghouse at Woodlawn be screened from view.

- Request that Woodlawn Gate be closed and access to the Meetinghouse at Woodlawn from U.S. Route 1 be restored.

Traffic and transportation

- Need to know the potential impact on local transportation, especially the increased congestion on I-495 and I-95.

- Need to expand and improve public transportation regionally to accommodate the increase in population in the area.

- Consider the numerous additional private contractors that will be required to relocate to the immediate vicinity of Fort Belvoir.

- The Army should consider both direct and indirect transportation effects of the proposed BRAC action at Fort Belvoir, along with mitigation measures.

- Any serious analysis of the long-term Fort Belvoir transportation needs must consider more than just the final segment of the Fairfax County Parkway and the I-95 fourth lane.

- Need to consider electric bus or light rail systems for employees who commute and visitors to Fort Belvoir to minimize disruption to surrounding communities, traffic, noise, and air pollution.

- Need for better data on the number of current and future commuters coming from each ZIP Code area.

- A grade-separated intersection needs to be constructed for the Fairfax County Parkway and the street that provides access to Greenspring Village to the north and to the residential development to the south.

- Incorporate "demand management" of traffic.

- Build links to mass transit at Springfield and Huntington Metro.

- Need to evaluate the density of the project and the adequacy of infrastructure to support development; rail extension, more road construction, etc.

- Need to study the BRAC impacts on the George Washington (GW) Parkway and the GW Memorial Highway.

- Do not include the replacement of the Woodlawn Road project in the BRAC EIS.

- Request that the Army coordinate with the Virginia Railway Express (VRE) on any proposals to mitigate BRAC impacts that rely on increased use of VRE.

- The alternatives should identify approaches and mitigation that promote transportation mobility, accessibility and multi-modal transportation choices, minimizes single-occupant vehicle use and encourages transit use.

- The Metropolitan Washington Council of Government's (MWCOG) Traffic model is not appropriately scaled for use in this analysis

Land use

- The hospital should not be located at EPG because it is too difficult to find.

- Need to design development projects to minimize impacts on natural resources.

- Need to consider constructing all buildings in accordance with principles of sustainable development, including building parking areas to minimize runoff and impermeable surfaces, using green roofing and solar power, and recycling of grey water.

- Recommend conducting any in-stream activities during low- or no-flow conditions, using non-erodible cofferdams to isolate the construction area, blocking no more than 50 percent of the streamflow at any time, stockpiling excavated material in a manner that prevents reentry into the stream, restoring original streambed and streambank contours, revegetating barren areas with native vegetation, and implementing strict erosion and sediment control measures.

- Ensure that all, or at least part of, the development is Low Impact Development. Use any unoccupied buildings for expansion instead of building new structures if they are not needed.

- Request for the continued accommodation of the Mount Vernon High School Crew Team on-base.

- Request that, due to noise issues, the National Army Museum not be located near the Friends Meetinghouse at Woodlawn, that its proposed location be moved to EPG.

- Suggest use of parking garages instead of parking lots to minimize footprint.

- Eliminate free employee parking.

Natural resources

- Need to consider relocating stream channels rather than filling or channelizing.

- Need to maintain undisturbed wooded buffers of at least 100 feet in width around all on-site wetlands and on both sides of all perennial streams.

- Consider not using storm water management ponds or in-stream storm water management ponds for mitigation of wetland impacts.

- Suggest designing storm water controls to replicate and maintain the hydrographic condition of the site prior to construction.

- Consider the use of Low Impact Development practices such as bioretention areas and grass swales.

- Consider building parking decks instead of parking lots because of environmental impact studies that have been done that show the ways in which parking lots affect wetlands and runoff.

- Include a wildlife corridor at all costs to conserve what wildlife there is on and near the installation.

- Preserve wetlands to prevent damage to the river system and to preserve endangered and threatened species.

- Consider construction of stream crossings using clear-span bridges rather than culverts if possible. If not, recommend countersinking culverts below the streambed at least 6 inches, or use bottomless culverts to allow passage of aquatic organisms.

- EIS should identify all 100-year floodplains and Resource Protection Areas.

- Fort Belvoir should participate in ongoing watershed planning efforts.

- Concern with potential intensification of development in the southwest area.

- Consider installing floodplain culverts to carry bankfull discharges.
- EIS should analyze the use of Leadership in Energy and Environmental Design (LEED) certifications for all buildings and site development.
- Use green roofs.
- Evaluate all alternatives for how, and how effectively, they can achieve the compact, mixed use, pedestrian-friendly, sustainable and connected urban designs that represent a significant component of the "Belvoir New Vision Goals."
- It is essential to commit to avoidance of impacts to tidal and nontidal wetlands.
- Fort Belvoir needs to honor prior agreements concerning environmental quality corridors.
- The Accotink Bay Wildlife Refuge should not be subject to secondary development.
- The western edge of the EPG should preserve a treed buffer to screen it from the parkway.

Other

- Conduct new baseline studies that reflect the cumulative effects of the non-BRAC projects that have occurred since the 1994 master plan, including the Defense Threat Reduction Agency (DTRA), Residential Communities Initiative (RCI), Defense Logistics Agency (DLA), etc. for air quality, water quality, open space, traffic counts, child attendance in local schools.
- The EIS should include information on risk and threat assessments sufficient to identify and evaluate appropriate security measures.
- EIS should address potential need for additional utilities.

1.4.4 Public Information Meeting

The Army held a public information meeting on January 24, 2007, at the Hilton Springfield Hotel on Loisdale Road in Springfield, Virginia, from 7:00 pm to 9:30 pm. Members of the public, including representatives from agencies and the press, attended the public information meeting. The Army provided public notice of the meeting using means similar to the public scoping meeting described in Section 1.4.3. In addition, meeting announcement letters were sent to a mailing list of 1,700 interested agencies and citizens compiled by the Army's Fort Belvoir master planning team. The purpose of the meeting was to provide the public with the most current and available information regarding the progress of the EIS and to provide an open forum for discussion among members of the public and the Army about topics specific to this EIS.

1.4.5 Public Review of the Draft EIS

The Army will make a draft EIS available for public review and comment, publish a notice of availability (NOA) of the draft EIS in the *Federal Register*, and send copies of the draft EIS to federal, state, and local agencies, as well as people who requested copies. In addition, the Army

will provide copies of the draft EIS to local libraries in the vicinity of Fort Belvoir. Agencies, organizations, and individuals will be invited to review and comment on the document. Following EPA publication of the NOA, the draft EIS will be available for a period of 60 days for public review of the proposed action, the alternatives, and the adequacy of the statement.

1.4.6 Public Hearing

The Army will hold a public hearing to receive comments on the draft EIS during the 60-day review period. The Army will advertise the time and place of the meeting in local newspapers.

1.4.7 Final EIS

As provided for in CEQ regulations, the Army will consider all comments provided by the public and agencies on the draft EIS. The final EIS will incorporate changes suggested by the comments on the draft EIS, as appropriate, and will contain responses to all comments received during the review period. The Army will mail copies of the final EIS to various federal, state, and local agencies, and will place copies in local libraries.

1.4.8 Record of Decision

No earlier than 30 days following publication of the final EIS, the Army will publish a record of decision (ROD) that will provide a discussion of all alternatives and the factors the Army considered in making its decision. The ROD will also identify or incorporate by reference mitigation measures. Upon signature of the ROD, the proposed action can proceed. Notice of the approved ROD will be published in the *Federal Register*.

1.5 IMPACT ANALYSIS PERFORMED

The EIS is structured to facilitate review in a logical manner. An interdisciplinary team of environmental scientists, biologists, planners, economists, engineers, archaeologists, historians, and military technicians has analyzed the proposed action and alternatives in light of existing conditions and has identified relevant beneficial and adverse effects associated with the action. The proposed action is described in Section 2.0, and alternatives, including the No Action Alternative, are described in Section 3.0. Conditions existing as of 2005, considered to be the baseline conditions, are described in Section 4.0, Affected Environment and Environmental Consequences. The expected effects of the proposed action, also described in Section 4.0, are presented immediately following the description of baseline conditions for each environmental resource addressed in the EIS. Mitigation actions are identified for each aspect of the proposed actions, as appropriate. Section 5.0 addresses the potential for cumulative effects.

Resources and environmental conditions addressed in this EIS include land use, air quality, noise, transportation, utilities, water resources, geology, infrastructure, hazardous and toxic materials, biological resources and ecosystems, cultural resources, visual resources, and socioeconomic resources.

1.6 REGULATORY FRAMEWORK

This section introduces discussion of pertinent laws and regulations that apply to the Army's proposed actions.

1.6.1 BRAC Procedural Requirements

As noted in Section 1.3, the BRAC Law specifically addresses the applicability of NEPA to BRAC actions, the congressional waiver of the procedural elements of NEPA to the actions of DoD and the BRAC Commission in recommending bases for closure and realignment, and to the actions of the President in approving or disapproving the BRAC Commission's recommendations. The BRAC Commission procedures for identifying affected installations and bases are specified by this law and include the DoD Force Structure Plan, selection criteria (published in the *Federal Register* for public comment and described below), DoD recommendations, review and recommendations by the BRAC Commission, and review by the President. The BRAC Commission assessed the DoD's closure and realignment recommendations for consistency with the eight statutory selection criteria (see Table 1-1) and the DoD Force Structure Plan.

Table 1-1
BRAC statutory selection criteria

Military value (given priority consideration)
1. The current and future mission capabilities and the impact on operational readiness of the total force of the DoD, 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 considerations
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.

Source: BRAC Commission, 2005.

Additionally, the BRAC Law requires that all closures and realignments must be initiated no later than 2 years after the date on which the President transmits a report to Congress including the recommendations for closures and realignments (Sec. 2904 (a)(3) Pub. L. 101-510, as amended) and complete all such closures and realignments no later than the end of the 6-year period beginning on the same date (Sec. 2904(a)(4), Pub. L. 101-510, as amended). President Bush concurred with and sent the 2005 BRAC Commission's report

to Congress on September 15, 2005. Therefore, the BRAC actions at Fort Belvoir must be initiated no later than September 15, 2007, and completed no later than September 15, 2011.

1.6.2 Enhanced Use Leasing

Enhanced use leasing (EUL), authorized in 10 United States Code (U.S.C.) 2667, allows the Army to leverage private-sector expertise and financial resources to obtain maximum value from land and buildings. The EUL program enables the Army to enter into leases that result in benefits to both the Army and the private sector. Under that law, the Army can do the following:

- Lease available non-excess real property to the private sector.
- Receive cash or in-kind services, equal to no less than fair market value of the property, while retaining ownership of the property.
- Apply at least 50 percent of cash payments to the installation from which the proceeds were derived.
- Accept in-kind consideration for any property or facility under Army control, not just the installation where the leased property is located.

Potential uses for EUL include office space, warehouse and industrial buildings, laboratories and research and development facilities, energy cogeneration plants, test tracks, and hotels, temporary lodging, and conference centers. In-kind or cash consideration received by the Army is available for a variety of base operating support functions, including construction or acquisition of new facilities; alteration, repair, and improvement of real property; lease of facilities for Army use; and facilities operation support.

The Army is actively pursuing a variety of EUL projects at several installations. Future projects can be expected to occur at Fort Belvoir, but the details of those projects are not currently known with sufficient detail to enable analysis of their potential environmental and socioeconomic effects. As specific EUL proposals for Fort Belvoir arise the Army will evaluate their potential environmental effects under NEPA.

1.6.3 Defense Access Roads Program

The Defense Access Roads (DAR) program, authorized in 23 U.S.C. 210, provides a means by which the federal government may pay its fair share of the cost of highway improvements needed for adequate highway service to defense and defense-related installations. Administered jointly with the Federal Highway Administration (FHWA), the DAR program provides a means for DoD to work with state and local authorities who execute the projects. Funding for DAR projects is obtained through Military Construction Programs funds appropriated by Congress.

To initiate a DAR project, the Army would identify the access or mobility needs and bring these deficiencies to the attention of the Surface Deployment and Distribution Command (SDDC). In turn, SDDC would prepare a needs evaluation or request the FHWA to make an evaluation, in accordance with 23 CFR Part 660E (*Defense Access Roads*), for improvements that are necessary, develop a cost estimate, and determine the scope of work. The SDDC determines if the project is eligible for DAR funds and certifies the road as important to the national defense. The Army would request funding for the project through its normal budgeting process. Once the funds are provided by Congress, they are transferred to the FHWA and allocated to the agency administering the project.

1.6.4 Relevant Statutes and Executive Orders

A decision on whether to proceed with the proposed action rests on numerous factors such as mission requirements, schedule, availability of funding, and environmental considerations. In addressing environmental considerations, the Army is guided by relevant statutes (and their implementing regulations) and Executive Orders (EO) that establish standards and provide guidance on environmental and natural resources management and planning. Relevant statutes include the following:

- Clean Air Act
- Clean Water Act
- Noise Control Act
- Endangered Species Act
- National Historic Preservation Act
- Archaeological Resources Protection Act
- Resource Conservation and Recovery Act
- Comprehensive Environmental Response, Compensation, and Liability Act
- Energy Policy Act of 2005
- Coastal Zone Management Act
- Sikes Act
- Toxic Substances Control Act

EOs bearing on the proposed action include the following:

- EO 11988 (*Floodplain Management*)
- EO 11990 (*Protection of Wetlands*)
- EO 12088 (*Federal Compliance with Pollution Control Standards*)
- EO 12580 (*Superfund Implementation*)
- EO 12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*)
- EO 13045 (*Protection of Children from Environmental Health Risks and Safety Risks*)
- EO 13175 (*Consultation and Coordination with Indian Tribal Governments*)
- EO 13186 (*Responsibilities of Federal Agencies to Protect Migratory Birds*)
- EO 13423 (*Strengthening Federal Environmental, Energy, and Transportation Management*

These authorities are addressed in various sections throughout this EIS when relevant to particular environmental resources and conditions. The full text of the laws, regulations, and EOs is available on the Defense Environmental Network & Information Exchange Web site at http://www.denix.osd.mil.

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SECTION 2.0
PROPOSED ACTION

2.1 INTRODUCTION

The Army proposes to update Fort Belvoir's land use plan and to implement the BRAC Commission's recommendations. The BRAC realignment actions would involve constructing and renovating facilities and, consistent with the BRAC law, relocating units, agencies, and activities to the post by September 2011.

BRAC realignment would result in a net increase of approximately 22,000 personnel assigned at Fort Belvoir. The increase in personnel and facilities requires an updated land use plan. Siting of new facilities for the base realignment action would then comport with the updated land use plan. The master planning, facilities construction, and personnel assignment functions are closely interrelated.

Most BRAC realignment actions for the Army conform to existing, sufficient master plans that are flexible and recognize future needs. BRAC realignment at Fort Belvoir involves two important considerations. First, the post's current master plan does not encompass the EPG because of past intentions to dispose of that 807-acre area for other development. The EPG must be incorporated into the post's land use plan. Second, the proposed increase of 22,000 personnel represents the largest relocation of personnel in the BRAC 2005 round. Approximately 7 million square feet of new and renovated facilities and approximately 7 million square feet of parking must be ready for use by September 15, 2011.

2.2 PROPOSED ACTION DETAILS

2.2.1 Land Use Plan Update

Fort Belvoir's mission is to provide a secure, safe operating environment for numerous missions and functions, including the following:

- Administrative, logistics, and operations support for regional and worldwide military missions
- A creative learning environment for Army and DoD students
- Military support for a variety of National Capital Region (NCR) contingency missions
- Regional housing for active duty military families
- Quality of life support for the military community, including health and recreation
- Environmental stewardship in concert with adequate land and facilities.

RPMP Long-range Component. To support the foregoing, the Army proposes to adopt and implement an RPMP update to respond to changing conditions at the post to comply with AR 210-20, *Real Property Master Planning for Army Installations*, which mandates updating existing plans as circumstances require. This EIS pertains to the initial step of the RPMP update process, the revision of the land use plan, which is necessary to siting of facilities for BRAC

implementation. The update to the RPMP centers on the land use analysis and plan portion of the long-range component (LRC).[5] This portion of the LRC shows the current and future relationships and use of installation land by generalized areas, including such facilities as family housing, troop housing, administration, and range and training areas.

Planning Principles. The following principles embody the aspirations for the future evolution of Fort Belvoir. These principles, compiled by Belvoir New Vision Planners[6] and Fort Belvoir, provide guidance in deciding the future direction of facilities, space needs and meeting the goals of the installation, the Army, and the community. Adherence to these principles can provide the most efficient use of land, maximum use of previously disturbed areas, the least environmental impact and, ultimately, a world-class installation.

- *Transform Fort Belvoir:* Create a world-class installation.
- *Achieve a diversity of use and activities:* Enrich the program—a 24/7 environment.
- *Strengthen the natural habitat:* Protect and enhance the creeks, wetlands, and wildlife corridors.
- *Achieve environmental brilliance:* A sustainable approach in everything that is done.
- *Build compact neighborhoods:* Strengthen the sense of community and place.
- *Improve connectivity:* Foster connections to transit and consider strategies that allow people to "park once."
- *Emphasize the public realm:* Create walkable neighborhoods.
- *Respect Fort Belvoir history:* Continue the legacy for future generations.
- *Foster Community benefits:* Strengthen existing Army and surrounding neighborhoods.

Real property master planning is a continual, collaborative, and integrated process, performed primarily at the installation level. Although master planning reflects local mission requirements, it is strongly influenced by the plans, guidance, and initiatives of higher headquarters. An installation RPMP is, therefore, the principal real property management tool in support of overall installation real property operation, management, development, privatization, realignment, cleanup, and disposal.

2.2.1.1 Fort Belvoir's Existing Land Use Plan

The land use plan that is the subject of this EIS is the 1993 land use plan and a 2002 update of the Fort Belvoir RPMP. The 1993 master plan consisted of four elements*: Real Property Master Plan Long-Range Component—1993*; *Real Property Master Plan Short-Range Component—1993–2000*; a *Capital Investment Strategy*; and a *Mobilization Mission Planning Component*. Figure 2-1 illustrates the 1993 land use plan.

Fort Belvoir developed its current master plan in 1993 to reflect the post's transition from primarily a troop support and training mission to its role as an administrative center providing support to multiple organizations in the NCR. Specifically, the U.S. Army Engineer School moved to Fort Leonard Wood, Missouri, in 1988, and BRAC directives realigned the Belvoir Research and Development Engineering Center (BRDEC). BRAC directives also resulted in relocating administrative functions to Fort Belvoir.

[5] AR 210-20 provides that an RPMP is organized into five components: the RPMP digest, long-range component (LRC), installation design guide (IDG), capital investment strategy (CIS), and short-range component (SRC).

[6] The Army has contracted with Belvoir New Vision Planners, a consortium of firms having experienced planners, managers, engineers, architects, environmental, and transportation experts, for services to help plan and develop Fort Belvoir into a world-class urban federal center and flagship installation in America's national security structure.

The 1993 LRC identified Fort Belvoir's role as "the major administrative and logistics center for the Northern Virginia portion" of the Military District of Washington (MDW). Recognizing that Fort Belvoir would continue to attract military tenants, the plan attempted to determine total build-out (TBO, defined as the total daily employment when all land uses have been fully developed under the constraints and limitations of the plan). The plan recognized that TBO might never be reached and that "Progress toward TBO is mission-driven but infrastructure-constrained." The plan articulated goals, objectives, and assumptions that focused on the amount and type of development anticipated, and it attempted to limit impacts on the natural and man-made environments. The EPG was not included in the 1993 plan.

The 1993 land use plan shown in Figure 2-1 identified 3,287 acres on Main Post as developable. The TBO that could be supported was estimated to be 74,230 people housed in 30.5 million square feet of space. By comparison, in 2005 about 24,000 personnel worked at Fort Belvoir daily, housed in about 10.8 million square feet of space.

The *1993 Real Property Master Plan* was revised in 2002 upon the adoption of a Regional Community Support Center Subarea Development Plan. The plan revision addressed a desire to locate additional related activities in the portion of the Lower North Post area designated in 1993 as the Regional Community Support Center. In particular, the 2002 Subarea Plan recommended that DeWitt Hospital (now on South Post) be relocated to the Regional Community Support Center area, that the post exchange (PX) be expanded, and a chapel be developed. The amendment also decreased the amount of land classified for community facilities, designated land for medical use, and increased the amount of land classified as environmentally sensitive.

2.2.1.2 Proposed Land Use Plan Revision

The proposed land use plan revision is shown in Figure 2-2. It differs from the 1993 land use plan and 2002 revision in several important respects in that it:

- Includes the EPG in planning for future development.
- Uses fewer, but broader, land use designations that encompass compatible land uses. For example, the 1993 land use plan provided for Administration and Education and Research and Development categories; these are now included in the category titled Professional/Institutional. The new categories allow for more flexible groupings of compatible types of facilities.[7]
- Identifies additional areas for present and future Professional/Institutional and Residential uses.
- Relocates the Troop area from North Post to South Post.
- Changes land use designations for a number of areas on the basis of revised assessment of their suitability for particular uses, projection of future needs, and the desire to make land uses broader and more encompassing.

[7] Twelve land use classifications used in the 1993 master plan were Administration and Education, Airfield, Community Facility, Environmentally Sensitive, Family Housing, Industrial, Medical, Outdoor Recreation, Research and Development, Supply/Storage and Maintenance, Training/Ranges, and Troop Housing. These classifications are now aggregated and reduced to seven: Airfields, Community, Industrial, Professional/Institutional, Residential, Training, and Troop.

- Acreage formerly designated as environmentally sensitive is now subject to any of the seven current land use designations.

Table 2-1 provides a comparison of the land use areas in the 1993 master plan, as amended in 2002, to those proposed for the land use plan update.

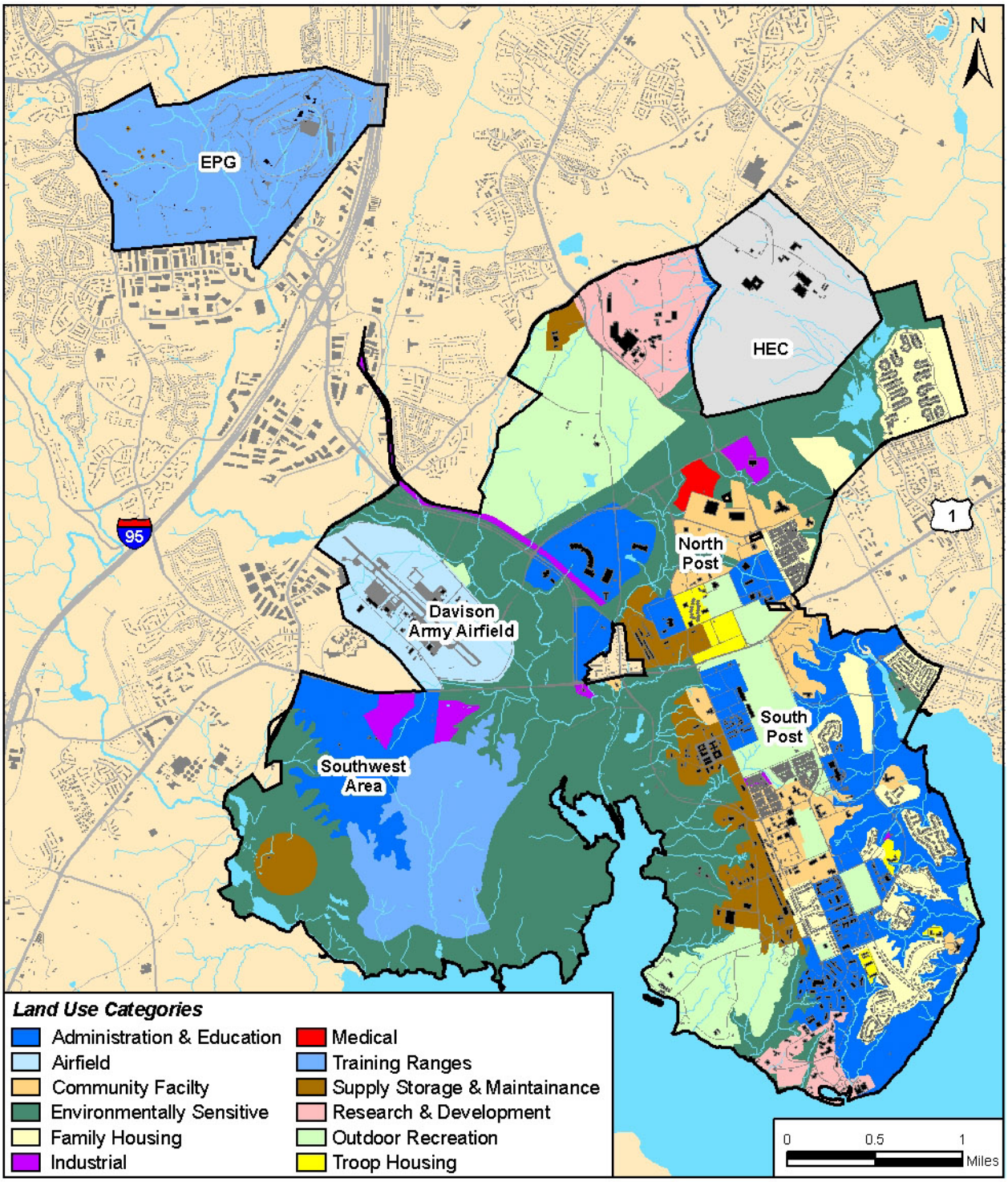
Table 2-1
Comparison of 1993 and 2011 land use allocations

1993 master plan		Proposed land use plan	
Land use	**Acres**	**Land use**	**Acres[a]**
Administration & Education	724	Airfield	697
Airfield	391	Community	2,950
Community Facilities	452	Industrial	213
Family Housing	576	Professional/Institutional	2,132
Industrial	126	Residential	1,116
Medical	97	Training	1,287
Outdoor Recreation	1,006	Troop	101
Research & Development	340		
Supply, Storage, & Maintenance	378		
Training Range	462		
Troop Housing	72		
Environmentally Sensitive	3,063		
Total	**7,687**		**8,508**

[a] All proposed land use designation acreages were calculated in GIS, and the totals may differ from the official acreages for the installation.

The difference between the total number of acres for the 1993 land use plan as amended in 2002 (7,687) and the total for the proposed land use plan (8,484) is the result of including the EPG and several land areas being added or recognized as belonging to Fort Belvoir since 1993. These include 4 acres of islands in Accotink Bay and Gunston Cove; 16 acres west of Colchester Road that became part of Fort Belvoir following realignment of Colchester Road; a net increase of 16 acres resulting from the swap of the McNaughton ballfields. The U.S. Army Corps of Engineers operates HEC, which is considered a separate entity for land use planning purposes and is not evaluated in this EIS.

The proposed land use plan aggregates land uses into larger, more flexible areas than did the 1993 plan (compare Figure 2-1 and Figure 2-2). Reflecting the evolution in Fort Belvoir's mission, the land use categories gaining land are those which support its regional mission as an administrative, logistics, and operations center; military support center; classroom center; housing center; military community support center; and a leader in environmental stewardship. The Airfield land use would gain in acreage land because adjacent areas formerly designated as Environmentally Sensitive around the airfield would be re-designated for Airfield uses. Land use categories losing land—particularly Training Range and Supply, Storage & Maintenance—reflect Fort Belvoir's earlier missions which require fewer resources and less land today.



LEGEND

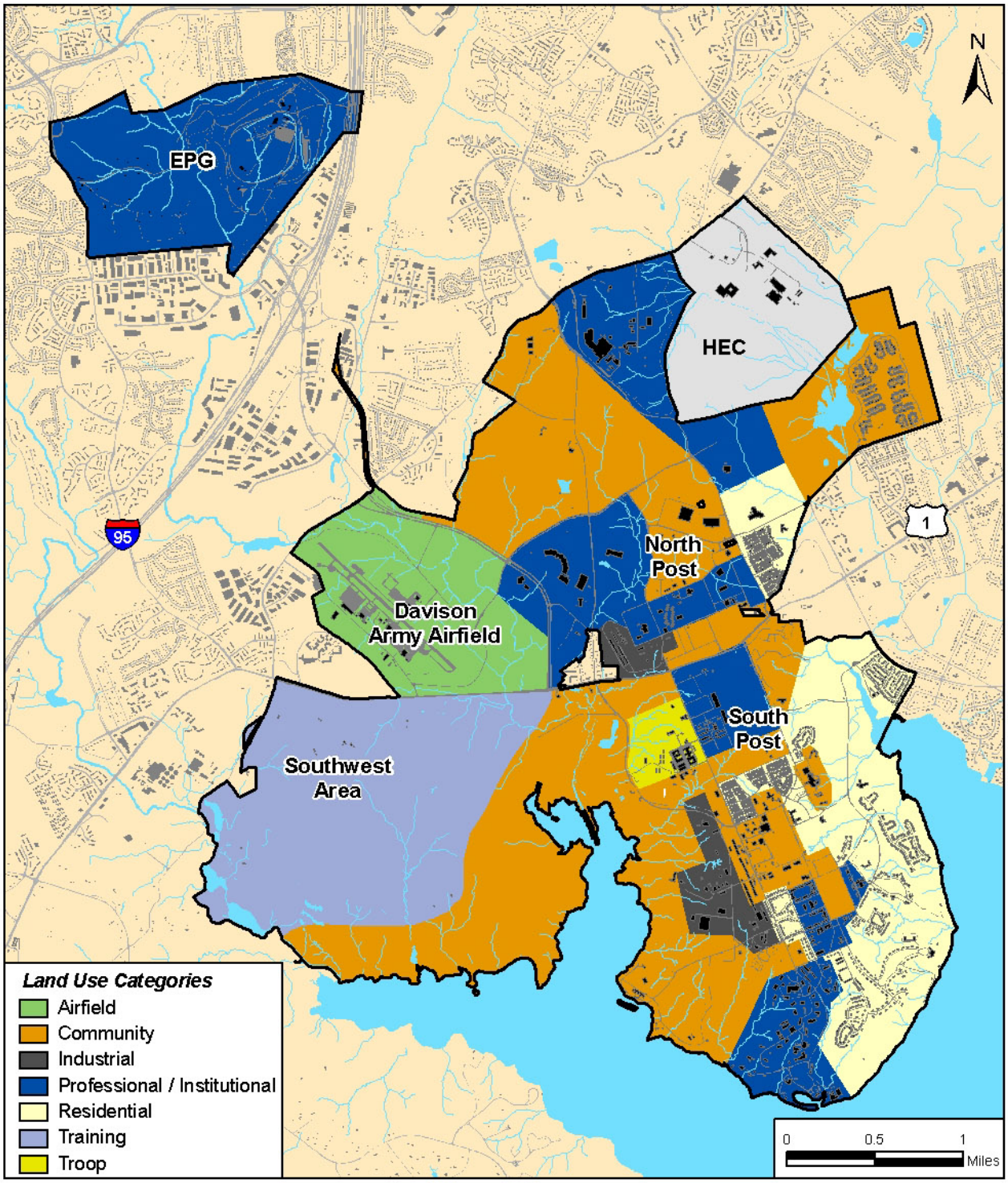
Installation Property

Existing Land Use Designations

Fort Belvoir, Virginia

Sources: Fort Belvoir GIS, 2006; Fairfax County GIS, 2006.

Figure 2-1



LEGEND
Installation Property

Proposed Land Use Plan

Fort Belvoir, Virginia

Sources: Fort Belvoir GIS, 2006; Fairfax County GIS, 2006.

Figure 2-2

Principal features and elements of the proposed land use plan include the following:

- *Professional/Institutional.* The Administration & Education and Research & Development land use categories used in the 1993 land use plan would change to Professional/Institutional. The proposed land use plan increases the amount of land designated for Professional/Institutional use. A substantial part of the increase is due to the inclusion of EPG as well as medical facilities in the Professional/Institutional category.
- *Residential.* The proposed land use plan would increase the land area dedicated to family housing on both the North and South Posts. Fort Belvoir Residential Communities, the program through which family housing has been privatized, is in the process of building and rehabilitating 2,070 family housing units. A portion of the land designated for Residential would be reserved for future development related to long-term growth on the installation.
- *Open Space.* Much of the area designated as Environmentally Sensitive in the 1993 land use plan would be redesignated as Community. This category includes safety clearances, security areas, water areas, wetlands, conservation areas, resource protection areas (RPAs), forest stands, and former training areas. These lands could be used for recreation, conservation, outdoor training, and general uses not involving the construction of facilities. Environmentally constrained land areas would continue to have all regulatory protections in place.
- *McNaughton Ballfields Land Swap.* The three McNaughton ballfields along Pole Road on the southern border of Woodlawn Village are pending exchange for the *Berman Tract* immediately east of Woodlawn Village, which will result in a net increase of 16 acres for Fort Belvoir. This area would be designated as Community land use.
- *South Post Golf Course.* The proposed land use plan would change the land use designation of most of the South Post golf course from Outdoor Recreation to Professional/Institutional.
- *Supply, Storage, and Maintenance Facilities.* The proposed land use plan would enable demolition of outdated and inefficient warehouses; relocation of most of the Supply, Storage, and Maintenance Operations in the 1400 Area to the 700/1100 Areas; and redevelopment of the eastern portion of the 1400 Area east of Gunston Road for Professional/Institutional uses.
- *Unaccompanied Personnel Housing.* The proposed land use plan would change the land use designation from Troop Housing to Troop and convert North Post areas designated for Troop uses to Professional/Institutional. A new Troop land use area would be provided on South Post, west of Gunston Road.
- *DeWitt Army Community Hospital.* In the 2002 master plan amendment, Fort Belvoir planned to site a new Army Community Hospital on a parcel of land south of Kingman Road on North Post. The proposed land use plan now enables the new hospital to be sited on the South Post Golf Course in the southwest quadrant of the intersection of U.S. Route 1 and Belvoir Road. The present DeWitt hospital site would be designated for Community use.

In the proposed land use plan, a new Troop Area would be established on South Post on approximately 75 acres west of Gunston Road in the western portion of the 1400 Area. Industrial

uses in that area would relocate to other designated Industrial sites on post. The present Troop Area in the 2100 Area, consisting of approximately 50 acres generally bounded by Gunston, Abbott, Beauregard, and Goethals Roads on North Post, would become available for Professional/Institutional uses upon relocation of Soldier billeting (living quarters) and activities to the new Troop Area. Notwithstanding the proposed changes in land use classifications of these two areas, current land uses would continue until such time as the Army constructs and occupies necessary troop facilities at the new location on South Post.

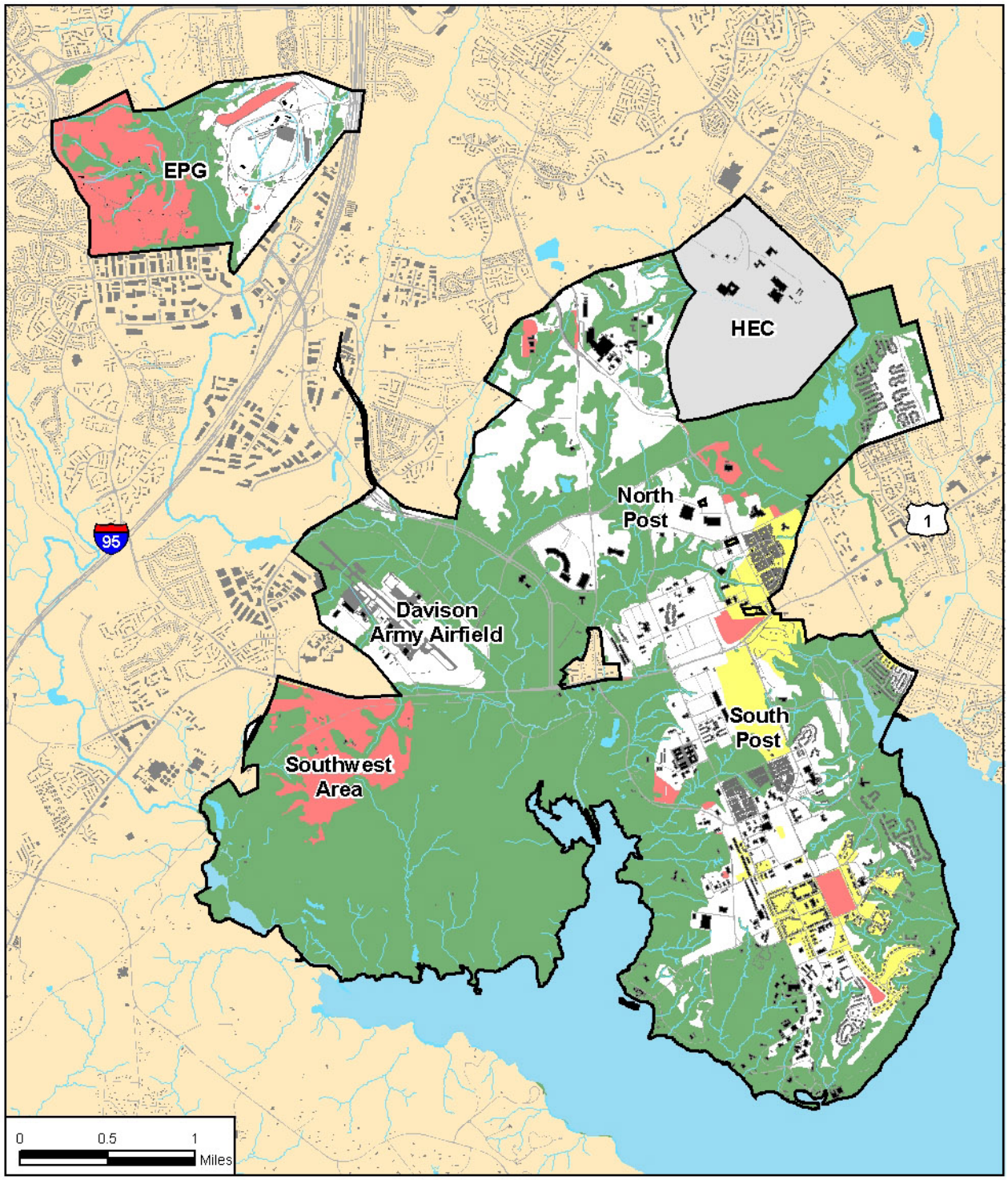
In several cases the change in land use designations from the 1993 plan would allow Fort Belvoir to prepare for potential changes to its mission in the future even though, except to accommodate BRAC realignment actions, no specific uses for the sites are under consideration. For example, this is the case for the area that would be designated Community at the site now occupied by Woodlawn Village.

The proposed land use plan has been structured so that only the best development sites are identified for growth. The best sites are those that have the fewest environmental, operational, cultural resource, and constructability constraints. Figure 2-3 ("Constraints on Development") shows the areas on post that would pose difficulties for development either because of environmental (e.g., RPAs), cultural resource (e.g., historic districts), or operational (e.g., airfield flight paths) constraints. About 5,900 acres (70 percent) of the installation have some form of development constraint. Much of the constrained area has been incorporated into Community, but some is found in other land uses. Therefore, not all of a designated land use area is suitable for the proposed type of development. Figure 2-4 ("Proposed Land Use Plan with Constrained Land Overlay") shows the proposed land use plan with the constraints overlaid. The areas with no constraints could be most easily developed.

Force Protection Standards. The proposed land use plan has been developed to achieve compliance with force protection requirements for military facilities as set forth in DoD Unified Facilities Criteria 4-010-01, *Antiterrorism Standards for Buildings* (2007). The effect of the standards on the master plan is to require that buffer zones around buildings and roads be reserved as force protection standoff areas. The buffer zones affect the amount of land needed for any one facility and also dictate the facility's relationship to other facilities. Future military construction projects will be required to adhere to force protection setbacks. Although buildings already built are exempt, it is strongly recommended that the requirements be implemented to the fullest extent possible. Any major investment requiring renovations or modifications where costs exceed 50 percent of the replacement cost of the building require that the entire building be in compliance with the standards.

Buildings affected by the standoff requirements include those routinely occupied by 50 or more personnel (designated as a primary gathering structure) or buildings inhabited by 11 or more personnel and with a population density of greater than one person per 430 gross square feet (gsf). The standoff buffer for inhabited structures is 33 feet minimum; for primary gathering structures, it is 82 feet minimum, and some facilities require much greater distances than the minimum. Standoff distances from uncontrolled roads (such as U.S. Route 1) are to be 148 feet minimum, and for controlled roads, 82 feet minimum.

The standards recommend that a vulnerability assessment be conducted for existing buildings and that changes be made as necessary to improve building security. These changes can take varying form, from procedures and planning to physical changes to the buildings, such as replacing glass windows with reinforced glass in key areas.



LEGEND

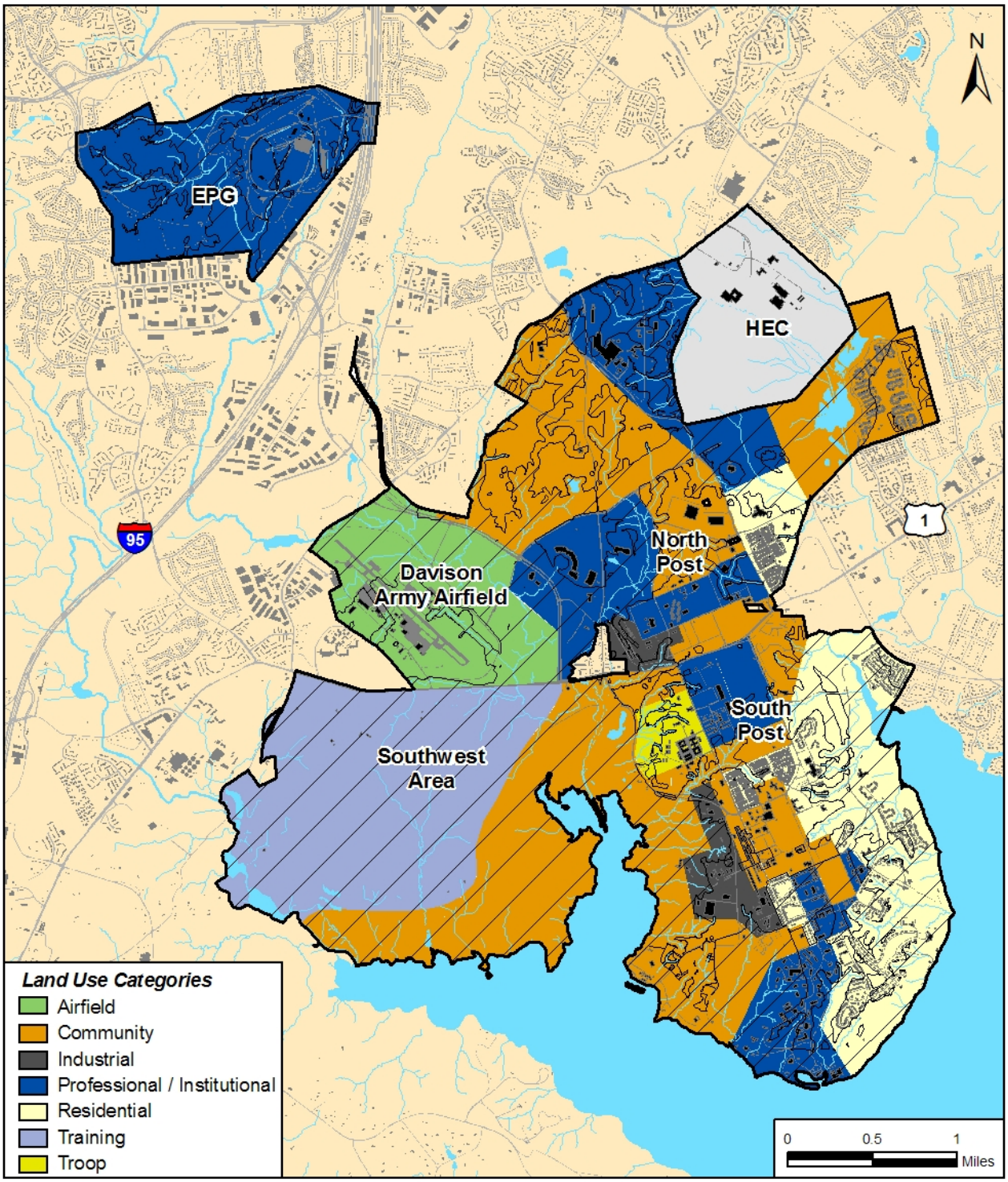
- Installation Property
- Operational Constraints
- Natural Constraints
- Cultural Constraints

Sources: Fort Belvoir GIS, 2006; Fairfax County GIS, 2006.

Constraints on Development

Fort Belvoir, Virginia

Figure 2-3



LEGEND
- Installation Property
- Development Constraint

Proposed Land Use Plan with Constrained Land Overlay

Fort Belvoir, Virginia

Sources: Fort Belvoir GIS, 2006; Fairfax County GIS, 2006.

Figure 2-4

2.2.2 Base Realignment

2.2.2.1 Introduction

In July 2006 the Army considered three conceptual development strategies to address the question of where facilities could be sited to accommodate a net increase of 22,000 personnel being assigned to Fort Belvoir.[8] That review process resulted in identifying a preferred land use strategy that reflected the best aspects of each of the three conceptual development strategies.[9] The preferred land use strategy was then used as the basis for the proposed amendment to Fort Belvoir's land use plan.

Accommodation of personnel being realigned must take into account the needs of six major groups slated for realignment by the BRAC Commission: Washington Headquarters Services (WHS), consisting of WHS and elements of the Office of the Secretary of Defense and defense agencies; National Geospatial-Intelligence Agency (NGA); various Army entities moving from leased space in the NCR ("Army Lease"); U.S. Army Medical Command[10] (MEDCOM); Program Executive Office, Enterprise Information Systems (PEO EIS); and Missile Defense Agency Headquarters Command Center (MDA HQCC). The numbers of personnel associated with each of these groups are shown in Table 2-2. Details of the BRAC Commission's recommendation can be found at http://www.brac.gov.

Concurrent with the relocations directed by the BRAC Commission, the Army proposes to implement five "discretionary" moves of units, agencies, and activities to Fort Belvoir.[11] Principal among these would be 90 personnel of the Information Technology, E-Commerce, and Commercial Contracting Center (ITEC4), a group the BRAC Commission directed to be relocated from the Washington, DC area to Fort Sam Houston, Texas. The ITEC4 function employs 97 personnel, 7 of whom are E-Commerce specialists who would move to Fort Sam Houston in order to be co-located with their principal customers. The remaining 90 personnel support Program Executive Office, Enterprise Information Systems, consolidation of which the BRAC Commission directed to occur at Fort Belvoir. In support of the BRAC objective of having supporting functions be co-located with supported functions, the Army proposes that these 90 ITEC4 personnel relocate to Fort Belvoir instead of Fort Sam Houston. Other proposed discretionary moves to Fort Belvoir would involve 37 personnel of the Physical Disability Agency (now at Walter Reed Army Medical Center), 15 personnel of the Physical Evaluation Board (now at Walter Reed Army Medical Center), 3 personnel of the Acquisition Support Center, Northeast Region (now at Fort Monmouth), and 1 person at the Veterinary Activity, U.S. Army Garrison, Selfridge, Michigan. The 146 personnel involved in these five discretionary moves would directly support units, agencies, or activities realigned to Fort Belvoir by the BRAC Commission or join similar activities already assigned to the post. In light of this, the Army has not considered alternative installations for their relocations.

[8] The three conceptual development strategies—Town Center, City Center, and Satellite Campus—are discussed in detail in Section 3.0, Alternatives.

[9] Chief considerations in evaluating the conceptual development strategies included transportation needs, environmental constraints, utilities and infrastructure requirements and availability, security, existing and future development potential, constructability, implementation (schedule and risk), and cost.

[10] This group essentially involves relocations of functions and personnel from Walter Reed Army Medical Center to a new DeWitt Army Community Hospital proposed at Fort Belvoir.

[11] Realignment actions other than those specifically identified by the BRAC Commission or required to implement BRAC Commission recommendations are consider discretionary-location moves.

Table 2-2
Personnel realigning to Fort Belvoir

Agency	Staff	Contractors	Total
Washington Headquarters Services	7,759	1,504	9,263
National Geospatial-Intelligence Agency	4,400	4,100	8,500
Army Lease	2,720	0	2,720
U.S. Medical Command	2,069	0	2,069
Program Executive Office, Enterprise Info Systems	480	0	480
Missile Defense Agency (HQ Command Center)	137	155	292
Total	**17,565**	**5,759**	**23,324**

Note: Personnel being realigned from Fort Belvoir to other installations result in a net increase at Fort Belvoir of approximately 22,000 personnel. Realignments from Fort Belvoir include the relocation of Army Materiel Command Headquarters and US Army Security Assistance Command to Redstone Arsenal, Alabama; Prime Power School to Fort Leonard Wood, Missouri; US Army Criminal Investigation Division Headquarters to Marine Corps Base, Quantico, Virginia; Soldiers Magazine to Fort Meade, Maryland; Biomedical Science and Technology programs of the Defense Threat Reduction Agency to Aberdeen Proving Ground, Maryland; Defense Threat Reduction Agency conventional armaments research to Eglin Air Force Base, Florida; and Information Systems, Research, Development and Acquisition to Aberdeen Proving Ground, Maryland. Evaluation of environmental impacts associated with these realignments will be performed by the receiving locations.

2.2.2.2 Allocation of Facilities and Personnel

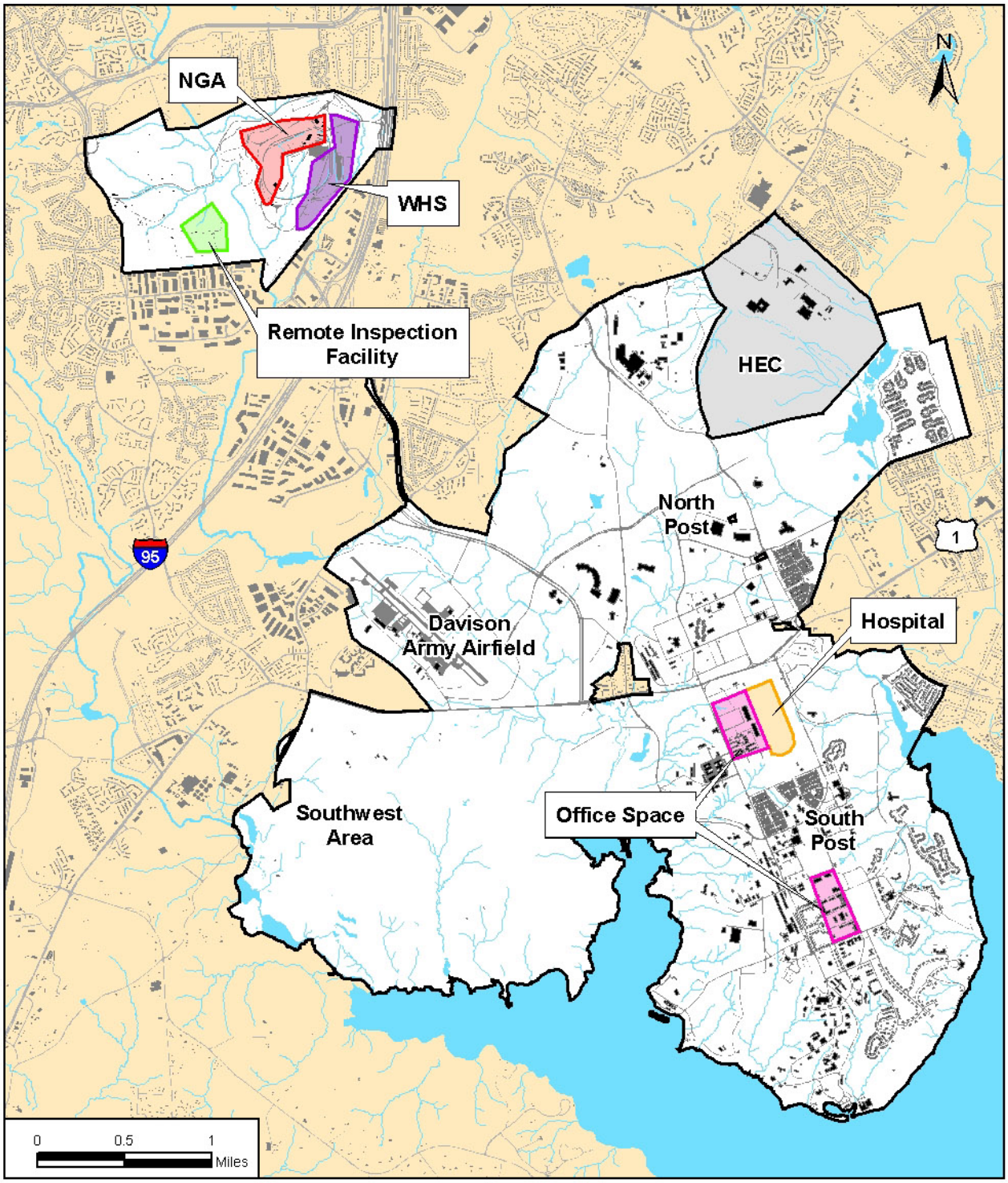
The July 2006 preferred land use strategy translates to a preferred siting plan for major BRAC tenants as shown in Figure 2-5. Accommodations of BRAC requirements would involve the following siting of facilities:

- NGA and WHS would be on the eastern portion of EPG.
- Army lease units, agencies, and activities would be on South Post at sites on Gunston Road and Belvoir Road.
- The new army community hospital would be on the South Post Golf Course.
- PEO EIS and MDA HQCC would be on South Post at sites on Gunston Road and Belvoir Road.

2.2.2.3 Construction and Renovation

Construction and renovation of facilities to support additional personnel at Fort Belvoir would result in approximately 6.2 square feet of additional built space and about 7 million square feet of parking structures.

Fort Belvoir would require essentially two types of construction projects. First, Fort Belvoir must construct or renovate facilities to create working space or other types of special use space for the proposed additional workforce. Second, Fort Belvoir must expand its general support capabilities to meet the needs of a larger on-post population. Table 2-3 identifies these projects, and Figure 2-6 shows where they would be sited. Figure 2-7 presents a conceptual building layout for some of the major BRAC facilities on-post.



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Installation Property

Proposed EPG Roadway

Preferred Sitings for Major BRAC Tenants

Fort Belvoir, Virginia

Figure 2-5

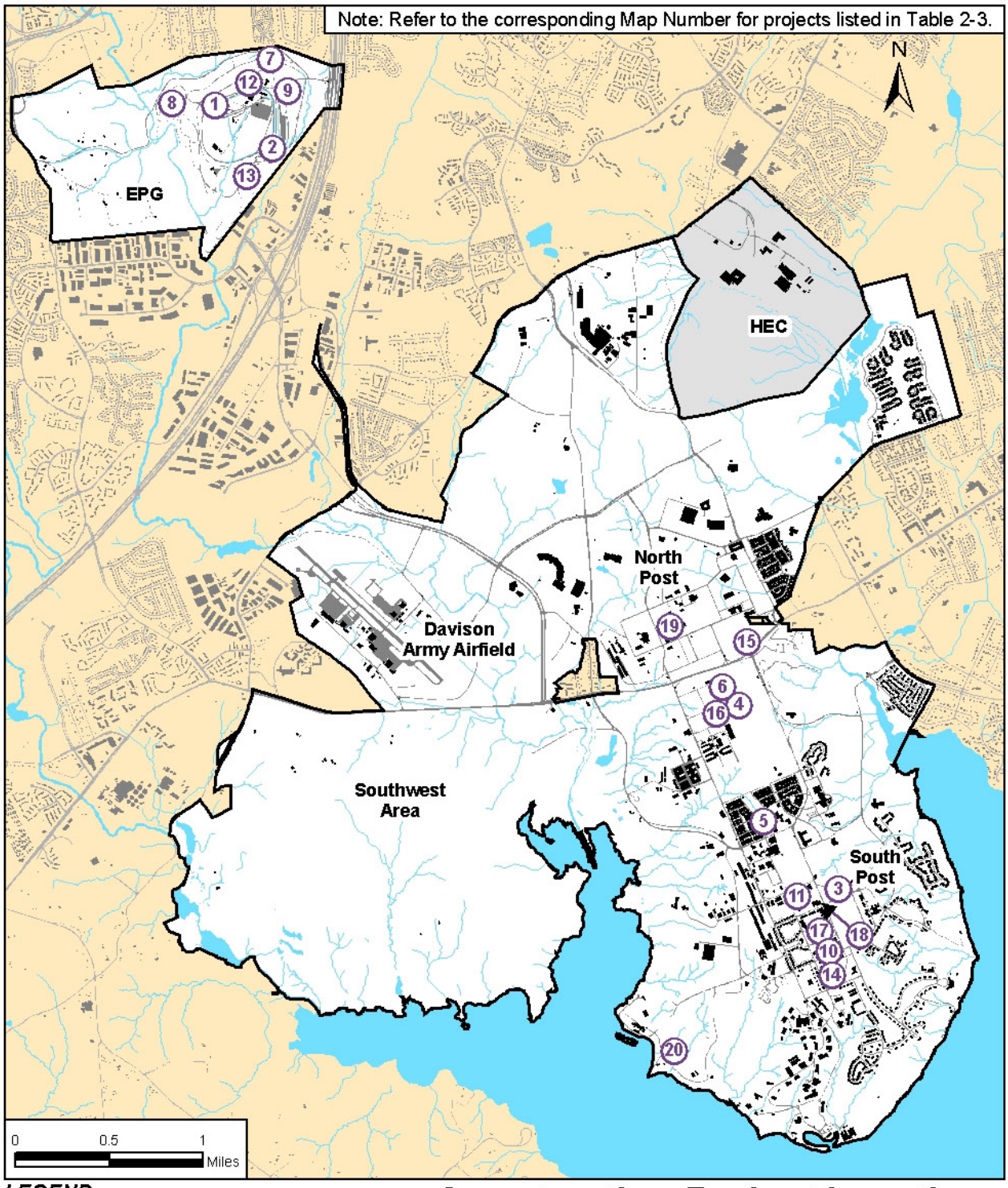
Sources: Fort Belvoir GIS, 2006; Fairfax County GIS, 2006.

Table 2-3
Proposed construction and renovation projects

Map number	Project number	Project title	Fiscal year	Building size (ft^2)	Estimated impervious acreage
1	65416	NGA Administrative Facility	2007–2011	2,419,000	20.3
2	64234	WHS Administrative Facility	2008–2010	2,219,000	22.8
3	MDA 580	MDA Facility	2008–2009	107,000	1.3
4	64238	Hospital	2008	868,800	7.5
4	65676	Hospital	2009	-	-
4	65677	Hospital	2010	-	-
5	64241	Dental Clinic	2010–2011	16,000	0.2
6	65871	NARMC[a] Headquarters Building	2009	50,000	1.0
7	n/a	Corps of Engineers Project Integration Offices	2008	58,600	n/a
8	64097	Infrastructure	2008	n/a	n/a
8	67487	Infrastructure	2009	n/a	n/a
8	67959	Infrastructure	2010	25,000	0.6
9	64076	Emergency Services Center (EPG)	2008	14,700	3.4
10	65448	Network Operations Center (part of PEO EIS)	2010	21,525	0.3
11	65447	USANCA[b] Support Facility	2008	20,000	n/a
12	55661	Child Development Center (NGA)	2011	19,590	0.5
13	55662	Child Development Center	2011	24,036	0.6
14	65450	Administrative Facility (Bldgs 211, 214, 215, 220)	2011	133,000	0.0
15	63571	Access Road/Control Point	2009	280	8.2
16	66228	AMC[c] Relocatables	2007	230,000	0.0
17	65592/67231	PEO EIS Administrative Facility	2008	290,000	2.2
17	67231	PEO EIS Administrative Facility	2008	157,400	1.2
18	54347	Structured Parking Facility, 200 Area	2011	n/a	1.0
19	62892	Modernize Barracks	2011	171,000	n/a
20	54898	MWR[d] Family Travel Camp	2007–2010	1658	1.5

Notes: Project number is the construction project number assigned by the Army. Estimated impervious footprint acreage column was calculated based on the estimated number of building floors and adjacent parking spaces for each project. Parking garages were assumed for the larger projects. See Table 2-4 for additional infrastructure impervious surfaces (i.e. pavement) that would be constructed.

[a]North Atlantic Regional Medical Center
[b]U.S. Army Nuclear and Chemical Agency
[c]Army Materiel Command
[d]Morale, Welfare, and Recreation



LEGEND

Installation Property

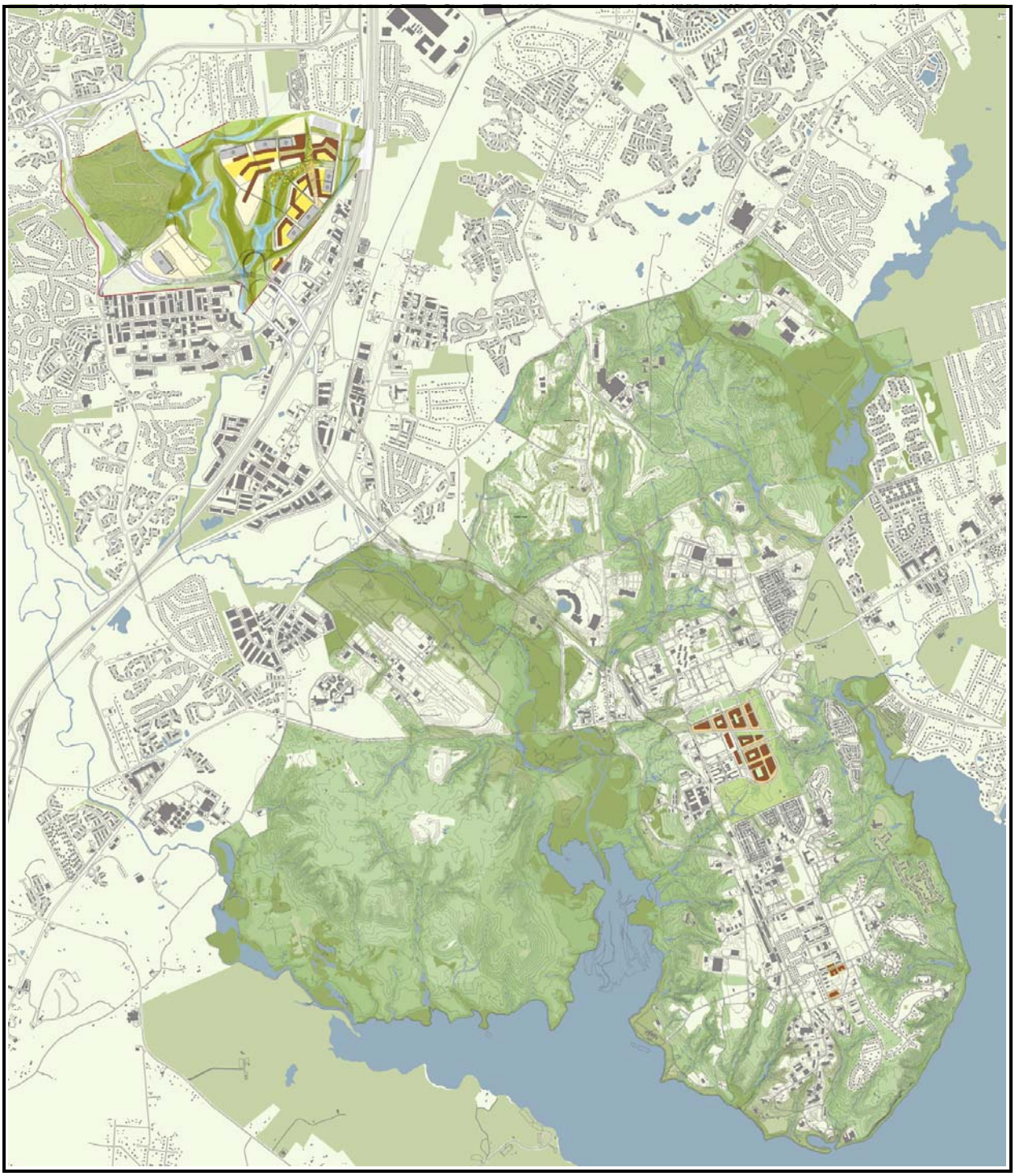
(8) Map Number

Construction Project Locations

Fort Belvoir, Virginia

Sources: Fort Belvoir GIS, 2006; Fairfax County GIS, 2006.

Figure 2-6



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Potential Structure

Conceptual Building Layouts

Fort Belvoir, Virginia

Figure 2-7

Siting of facilities takes into consideration numerous factors. The following discusses chief factors considered in siting facilities.

- *Effects on traffic*. Facilities housing large numbers of employees, predominantly in Professional/Institutional areas, require adequate roadways for movement of personnel to and from those sites.
- *Access.* Certain activities, such as medical care or community services (e.g., PX and commissary) should be placed so that patients or patrons can have suitable access.
- *Security.* The Unified Facilities Criteria (UFC) 4-010-01 (*DoD Minimum Antiterrorism Standards for Buildings*) establishes standards for construction and location of buildings. Several of the standards relate to site planning and require minimum standoff distances for buildings and functional areas, unobstructed space around buildings, design of delivery areas, configuration of access roads, and parking restrictions. The standards for minimum standoff distances also take into account building populations for inhabited or uninhabited buildings, primary gathering buildings, and billeting structures. As a general rule, the standards impose new requirements for significant separations between buildings, between buildings and parking, and between buildings and roads.
- *Consolidation of functions.* Multiple facilities of one unit, activity, or agency should be in close proximity to each other. Such geographic proximity enhances control and promotes the ability of all personnel within the function to work together.
- *Preservation of quality of life.* Siting of facilities should provide a pleasant atmosphere for employees, visitors, and residents. This objective is enhanced through siting and design that respect the existing natural systems of topography, vegetation, and drainage and that minimize ground works and aboveground utilities. The sense of community can be heightened with improved and linked open spaces, strategic tree locations, trail systems, activity areas, and street layouts to enhance the quality of outdoor life.
- *Flexibility for future mission requirements.* Additional missions could be assigned to Fort Belvoir in the future. Facilities siting and planning must take into account the potential for further facilities requirements.
- *Land use compatibilities.* Siting of facilities should adhere to the proposed land use plan, Fort Belvoir's principal tool for enhancing compatibilities among adjacent uses.
- *Preservation of environmental and cultural resources values.* Siting of facilities should avoid, where possible, loss of natural, ecological, and cultural resources such as wetlands, listed or sensitive species or their habitat, wildlife species' travel corridors, archaeological sites, and structures eligible for the National Register of Historic Places.

The following paragraphs provide details on facility construction and renovation projects listed in Table 2-3 that are proposed to occur through fiscal year 2011.

- *NGA Administrative Facility* (Project number 65416, FY 2007-2011, Map number [MN] 1 in Figure 2-6). This project would provide a 2,419,000-square-foot Sensitive Compartmented Information Facility (SCIF) for use by the NGA. This project is required to implement the BRAC 2005 recommendation to consolidate NGA intelligence and training operations; provide a secure facility to enhance command and control; promote acquisition, assimilation, and analysis of real-time intelligence; and enhance organizational productivity and intra-agency connectivity and operability. NGA elements are currently

housed in numerous government-owned and leased facilities in and around the NCR. Their physical separation negatively affects their intelligence mission. There are no existing facilities at Fort Belvoir sufficient to support consolidation of all NGA intelligence operations, administrative functions, and training programs.

- *WHS Administrative Facility* (64234, FY 2008–2010, MN 2). This project would provide 2,219,000 square feet of secure administrative space for various units, agencies, and activities relocating to Fort Belvoir from leased facilities in the NCR. The project would include uninterruptible power supply and standby power generation. It would provide facilities on a secure installation, thereby improving force protection. This project would consolidate a number of similar activities with a resultant improvement in coordination, information exchange, and productivity. Various DoD offices are in leased facilities, primarily in Arlington and Alexandria, Virginia. Most of these facilities do not meet minimal DoD antiterrorism/force protection (AT/FP) construction standards for setbacks, progressive collapse, laminated windows, and so on. The facilities are dispersed throughout the NCR, negatively affecting direct coordination.
- *MDA Facility* (MDA 580, FY 2008–2009, MN 3). This project would provide a 107,000 square-foot administrative facility to serve as the MDA Headquarters Command Center for approximately 292 personnel. The project would consist of a multistory reinforced concrete or structural steel building on concrete footings. Functional areas that would be provided include administrative space, command suite, security operations center, sensitive compartmentalized information facilities, special access areas, and meeting rooms. AT/FP measures would include building standoff distances, structural preventive collapse, laminated glass, lighting, bollards, and control gates.
- *Hospital* (64238, 65676, and 65677, FY 2008–2010, MN 4). This project would provide a new hospital. Primary facilities would include the hospital (868,800 square feet), special foundations, central energy plant, helipad, ambulance shelter (2,200 square feet), vehicle parking garage, and building information systems. This project is required to provide a hospital to support BRAC 2005 restationing actions within the NCR affecting Walter Reed Army Medical Center (WRAMC) in Washington, DC; National Naval Medical Center (NNMC) at Bethesda; Malcolm Grow Medical Center (MGMC) at Andrews Air Force Base; and Dewitt Army Community Hospital at Fort Belvoir. This project is required for integrating WRAMC and NNMC and for establishing the new Walter Reed National Military Medical Center at Bethesda and a large Army community hospital at Fort Belvoir. The NCR medical service market supports care for more than 439,000 beneficiaries. A robust Army community hospital is required to support the relocation of nontertiary patient care functions consequent to the BRAC 2005 restationing actions, which include the closure of WRAMC and closure of inpatient care at MGMC. The restationing actions result in a growth of the NCR South Submarket (supported by a new Army community hospital) of more than 76,000 eligible beneficiaries to a total of 220,803 beneficiaries; a tripling of inpatient workload to more than 9,500 annual admissions; and a doubling of outpatient care, most of which is specialty care. The existing DeWitt Army Community Hospital at Fort Belvoir was constructed in 1957 as a 250-bed inpatient facility and still has the original heating, ventilating, and air conditioning system; plumbing system; medical gas system; and electrical distribution system. The building structure remains intact and usable, but the facility and its major utility systems fall far short of meeting the requirements of a modern medical treatment facility. Outpatient care must be performed in areas designed for inpatient care, resulting in personnel and space inefficiency and patient inconvenience. There are asbestos-containing materials in the existing pipe insulation,

floor tile, and mastic at various locations, which significantly delays and escalates the cost of projects to upgrade and improve the facility.

- *Dental Clinic* (64241, FY 2010-2011, MN 5). This project would provide renovation of, and construction to add to, Building 1099 for a 16,000-square-foot dental clinic. The project is required to provide a quality dental clinic to support BRAC 2005 restationing actions of assigned troops working and living on or near Fort Belvoir. The existing facility, Building 1099, is not large enough to provide 40 dental treatment rooms, the necessary number to serve the larger population at Fort Belvoir. There is no available capacity elsewhere to support the increase in dental workload generated by the projected increase at Fort Belvoir of 4,200 active duty Soldiers as directed by the BRAC 2005 restationing actions.

- *NARMC HQ Building* (65871, FY 2009, MN 6). This project would construct a 50,000-square-foot general administration building for the North Atlantic Regional Medical Command (NARMC), as well as other Office of the Secretary of Defense Supporting Units and regional support offices, such as the North Atlantic Regional Dental Command, North Atlantic Regional Veterinary Command, and the North Atlantic Regional Contracting Office. The project is required to provide administrative and operational space for activities to be relocated to Fort Belvoir in accordance with the recommendations of BRAC 2005. Related medical administrative activities are currently located at the WRAMC and leased space in Virginia (Hoffman Building complex). Currently, there is no adequate, permanent administrative space available at Fort Belvoir to accommodate proposed relocations of medical activities. This project would accommodate such activities by constructing a new, permanent multi-story administrative facility at Fort Belvoir within the proposed hospital campus.

- *Corps of Engineers Project Integration Offices (Temporary)* (FY 2007, MN 7). This project would place temporary facilities for personnel of the Baltimore District Corps of Engineers Integration Office, which would provide integration of BRAC construction management for facilities being developed to accommodate realigned units, agencies, and activities. There would be approximately 22,500 square feet of temporary facilities (relocatable buildings) on EPG, north of Cissna Road and northwest of Building 5073. There would be another 36,100 square feet of temporary facilities on the northwest portion of the South Post golf course. These facilities would be in use for the duration of facilities construction in support of BRAC requirements.

- *Infrastructure* (64097, 67487, and 67959, FY 2008–2010, MN 8). These three projects would provide a 25,000-square-foot communications center, access control facilities, one 10,000-square-foot heating plant building, one 10,000-square foot refrigeration and air conditioning unit, and water, sewer, and electrical services for the EPG. The projects include demolishing 57,000 square feet of existing space. They are required to provide necessary infrastructure for units, agencies, and activities relocating to EPG and to maintain adequate levels of infrastructure support at Main Post. Current infrastructure at EPG is minimal. There is no access control, and heating and air conditioning is provided through self-contained systems adequate to support only past or current use requirements. Communications are virtually nonexistent. The road network consists of a two-lane road in poor condition. The Bailey Bridge over Accotink Creek is structurally compromised and is closed to vehicular traffic. The projects would provide replacement of the present bridge over Accotink Creek, as well as an additional bridge over Accotink and replacement of the bridge over Dogue Creek (South Post). Water, sanitary sewer, and electrical support are

sized to the one occupied building. The perimeter fencing is in such poor condition that it affords little impediment to unauthorized access. Table 2-4 identifies the principal elements of infrastructure included in these projects, as well as infrastructure that would be constructed or installed in support of Main Post requirements.

Table 2-4
Major proposed infrastructure elements

Project element	Element description
Hot/chilled water lines	6,800 linear feet (LF)
Sanitary sewer	13,900 LF (20, 12, and 8 inch lines)
Potable water distribution	32,400 LF (24, 12, and 8 inch lines)
	2 stream crossings (lines attached to bridge)
Perimeter fencing	25 acres clear/grub
	25,000 LF chain link fence
Storm sewer	103,900 LF (24 inch)
Electrical service	25,000 LF underground electrical lines
	2 creek crossings (utilities lines attached to bridge)
	400,000 LF electrical cabling
	375 light poles (30-foot)
	400-watt lights (x 375)
	93,750 LF trench and backfill
Surfaced roads	92 acres clear/grub
	810,000 ft^2 pavement demolition (18.6 acres)
	3,465,000 ft^2 road surfaces (80 acres)
	1 bridge (Accotink Creek)
	2 bridge replacements (Dogue Creek, Accotink Creek)
Access control facilities	5 guardhouses
	5 overwatch booths
	15 guard booths
	Visitor Control Center (2,000 ft^2)
	3 identification checkpoint canopies
	3 vehicles search canopies
Communications center	25,000 ft^2 facility at EPG

- *Emergency Services Center* (64076, FY 2008, MN 9). This project would provide 14,700 square feet of space and 15,000 square yards of maintenance apron for emergency services functions at EPG. The project is required to provide military police, Enhanced 911, hazardous materials response, and fire prevention and protection services at EPG in support of the facilities proposed to be constructed to implement BRAC 2005. The project would provide a combined police and fire station to provide traffic control and law enforcement in support of the agencies and activities on EPG and to provide rapid response to structural fires and medical emergencies. Currently, there is no police or fire station at EPG. There are three fire stations at Fort Belvoir—Building 191 constructed in 1934 and in

poor condition, Building 2119 constructed in 1993, and Building 3242 constructed in 2003 at Davison Army Airfield. The military police station, Building 2124, was constructed in 2002. Because of their physical separation, none of these facilities is adequate to support EPG with emergency services. The fire stations are too far away to meet minimum response times. The police station is capable of supporting EPG with patrols but is too distant to effectively deliver any other law enforcement services.

- *Network Operations Center* (part of PEO EIS) (65448, FY 2010, MN 10). This project would provide a 6,525-square-foot operations center, a 10,000-square-foot storage area, and a 14,000-square-yard satellite yard. The project is required to provide satellite test facilities in support of the BRAC 2005 recommendation to station Project Manager Defense Communications and Army Transmission Systems (PM DCATS) at Fort Belvoir. There are no facilities at Fort Belvoir to support satellite testing and stationing of PM DCATS.

- *USANCA Support Facility* (65447, FY 2008, MN 11). This project, which would approximately 20,000 square feet of renovated spaced in Building 238 required to support additional U.S. Army Nuclear and Chemical Agency (USANCA) personnel as part of BRAC 2005. The project would provide replacement facilities for the USANCA facilities on EPG, thereby allowing construction of multimillion-square-foot campuses for units, agencies, and activities relocating to EPG. USANCA is the unit charged with providing the Army's core critical nuclear and chemical expertise. Primary USANCA missions include enhanced force survivability in nuclear, biological, and chemical (NBC) environments; communication of the impact of nuclear and other weapons of mass destruction on military operations; enhanced interoperability of forces in NBC environments; planning Army employment of and assessing vulnerability to nuclear weapons; safe and secure storage and demilitarization of the DoD chemical weapons stockpile; and safe and secure operation and maintenance of Army nuclear reactors, active or deactivated. USANCA now occupies Building 5073, a 13,618-square-foot facility constructed in 1954 at the EPG. Building 5073 is in the center of the most developable portion of EPG. Its location and associated access and force-protection issues significantly reduce possible development in support of BRAC 2005.

- *Child Development Center (NGA)* (55661, FY 2011, MN 12). This project would provide a child development center with 19,590 square feet of space and a 24,430 square-foot outdoor area for 244 children. The project is required to provide a safe, healthy, and affordable developmental environment for dependent children of eligible personnel assigned to EPG. This project would improve morale and performance by providing affordable, on-site developmental services, thereby improving employees' peace of mind and reducing the time of daily commutes. There are currently three child development centers at Fort Belvoir. They are in Buildings 1028, 1745, and 2468, which were constructed in 1988, 1992, and 1997, respectively. Though in relatively good condition, the facilities are at or near capacity, with waiting lists for some categories of services.

- *Child Development Center* (55662, FY 2011, MN 13). This project would provide a child development center with 24,000 square feet of space and a 40,300-square-foot outdoor area for 303 children. See the description for the similar project MN 12 above.

- *Administrative Facility* (Buildings 211, 214, 215, and 220) (65450, FY 2011, MN 14). This project is required to implement BRAC 2005 by modernizing existing facilities to

provide 133,000 square feet of general and secure administrative space and structured parking for various units, agencies, and activities relocating to Fort Belvoir from leased facilities in the NCR. This project would provide facilities on a secure installation, thereby improving force protection. It would consolidate a number of similar activities, improving coordination, information exchange, and productivity. Currently, the following are in leased facilities, primarily in Arlington and Alexandria, Virginia: administrative assistants to the Secretary of the Army (SA); Office of the Assistant SA Financial Management and Comptroller; Office of the Chief of Chaplains; Communication and Electronics Command; Defense Finance and Accounting Service; Defense Human Resource Activities; Defense Technology Security Administration; Department of Defense Education Activity; Deputy Under SA—Operations Research; DoD Inspector General; MDA HQCC; Office of the Secretary of Defense; Project Manager Acquisition, Logistics, and Technology Enterprise Systems and Services; Senior Executive Public Affairs Training; U.S. Army Audit Agency; U.S. Army Environmental Policy Institute; U.S. Army G1/Army Research Institute; U.S. Army G1/Civilian Personnel Office; U.S. Army G3/Army Simulation; U.S. Army G6; U.S. Army G8/Force Development; U.S. Army Network Enterprise Technology Command; U.S. Army Office of Environmental Technology; U.S. Army Office of the Chief of Army Reserve; U.S. Army Safety Office; U.S. Army G1/Personnel Transformation; and U.S. Army Legal Services Agency. The majority of these facilities do not meet minimal DoD AT/FP construction standards for setbacks, progressive collapse, laminated windows and the like. The facilities are dispersed throughout the NCR, negatively affecting direct coordination.

- *Access Road/Control Point* (63571, FY 2009, MN 15). This project would construct an access control point (ACP) with vehicle inspection station; access control building (280 square feet); booth, and canopy, vehicle turnarounds; security lighting; backup generator; two-lane access road (306,000 square feet) with sidewalks/bike path; street lighting; drainage; traffic signal; and Richmond Highway (U.S. Route 1) left and right turns. The ACP, directly across Richmond Highway from Pence Gate, is required to provide safe force protection-compliant controlled access from Richmond Highway onto Fort Belvoir North Post. It would provide an ACP meeting DoD AT/FP construction standards with sufficient marshalling area and an adequate vehicle inspection station. This project is required to provide a second access onto North Post reducing congestion on Gunston Road and providing alternate access during periods of force protection conditions Charlie and Delta. The only access point from U.S. Route 1 onto North Post is Woodlawn Gate (Route 618). Woodlawn Gate is currently closed. The existing ACP is inadequate. Constructed after the September 11, 2001, terrorist attack, the ACP meets minimal DoD criteria for an ACP; however, the staging area is inadequate, the vehicle inspection station is temporary, the guard post is not hardened, and there is no overhead cover. The configuration of the ACP places the guard force at risk of being hit by vehicles while performing their force protection duties. If this project is not provided, the level of service on U.S. Route 1 would be such that there would be a breakdown in traffic flow resulting in extreme congestion during peak periods. AT/FP would not be provided in accordance with DoD standards. Traffic flow would be degraded, control and inspection of vehicles and personnel entering the installation would be inadequate, and military and contract law enforcement personnel would continue to be at risk from inadequate separation from vehicles and inadequate protective facilities.

- *AMC Relocatables* (66228, FY 2007, MN 16). This project would purchase the facilities at Fort Belvoir that were leased to house the headquarters function of the U.S. Army Materiel

Command (AMC). The facilities consist of two modular, two-story office buildings having a total of 230,000 square feet of space. The buildings include open and closed office space, along with special-purpose areas like an Emergency Operations Center (EOC), SCIF, auditorium, secure and nonsecure conference rooms, video teleconference center, technical library, data process center, and office support space. The facilities, located along Gunston Road, will be vacated upon the tenant's relocation to Redstone Arsenal, Alabama, as required by BRAC 2005. Several Fort Belvoir tenants occupy buildings that do not meet minimum requirements. Inadequate office space negatively affects individual job performance, as does lack of special use space such as training and conference rooms, on-site storage, video conferencing, and so on. In addition, one-tenth of the general-purpose administrative space inventory is inadequate and exacerbates space deficit impacts. Fort Belvoir anticipates that its working population increase will place a further strain on the capacity of the general-purpose administrative space inventory. The two two-story, contractor-owned buildings are available for purchase.

- *PEO EIS Administrative Facility* (65592 and 67231, FY 2007, MN 17). Project Number 65592 would provide 290,000 square feet of general administrative space and a parking garage, and Project Number 67321 would provide an additional 157,400 square feet of secure administrative space. The projects are required to accommodate elements of PEO EIS relocating to Fort Belvoir as a consequence of BRAC 2005 and to consolidate operations to enhance operational efficiencies and to reduce total square footage requirements. Approximately 370 personnel assigned to PEO EIS are at the post in Building 1445 (a converted barracks and dining facility constructed in 1969) and Buildings 322 and 323 (World War II facilities originally constructed as vehicle maintenance shops). Another 454 personnel are at Fort Monmouth, and 802 personnel are in leased space in the NCR. Overall mission performance is degraded by the physical separation of activities, and the lack of adequate space negatively affects mission readiness.

- *Structured Parking Facility, 200 Area* (54347, FY 2011, MN 18). This project would construct a parking structure with a capacity of 400 parking spaces in the 200 Area of Fort Belvoir. The structure would be constructed of reinforced concrete with structural steel framing, and it would have parking decks and a sloped interior ramp system. It is estimated that the parking structure would be three decks in height. Fort Belvoir is required to provide parking for both its military personnel and civilian workforce. Based on 60 percent of the working population in this area, 1,730 parking spaces are required to accommodate vehicle parking. The 200 Area is extensively used by Defense Systems Management College and numerous administrative activities. Parking in this area is extremely inadequate. All land suitable for parking is being used, and there is no room for expansion. The only means of accommodating the shortfall of parking spaces is to construct a parking structure on the existing area. If the project is not provided, the lack of adequate parking will continue to adversely affect the morale and efficiency of personnel who work or conduct business the 200 Area.

- *Modernize Barracks* (62892, FY 2011, MN 19). This project would provide renovations to 171,000 square feet of space in six barracks buildings in the McRee Barracks Complex. Renovation work would extend to living modules, hallways, stairwells, utilities, fire alarms and suppression systems, and building information systems. The existing barracks do not meet current standards for privacy, space, or amenities. The barracks are severely deteriorated. Inadequate heating, air conditioning, and ventilation systems contribute to mold growth and unhealthy living conditions.

- *MWR Family Travel Camp* (54898, FY 2007–2010, MN 20). This project would provide a Family Travel Camp with 52 recreational vehicle (RV) campsites, a camp support facility, 15 cabins, and 12 tent sites in four phases, each of which would be usable upon completion. The camp support facility would include a laundry section, camper's lounge space, restrooms and showers, and vending machine space. The project would also include relocating the existing Johnson Road to provide better camp circulation and space, landscaping, site lighting, sewage lift stations, and utility upgrades. Provisions for persons with disabilities would be provided. This project is required to provide adequate outdoor camping opportunities for the Belvoir/NCR customers. The project would provide for the high demand for RV camp sites, and for those looking for cabin camping opportunities. This project would enhance the morale and quality of life of Soldiers, family members, retirees, and DoD civilians. Currently, there are no family travel campgrounds on-post for customers assigned to or supported by Fort Belvoir, or for those visiting the area. Customers are forced to seek service from commercially operated facilities that are overcrowded in the peak travel times, have higher cost, and are an average of 45 minutes from Washington, DC.

2.3 SCHEDULE

Implementation of the various aspects of the proposed actions would occur until approximately the end of fiscal year 2011. Actions with respect to the land use plan revision would begin upon issuance of the ROD and continue until further revision of the master plan. Construction and renovation of facilities in support of base realignment and other requirements of Fort Belvoir would begin in fiscal year 2007 and continue through fiscal year 2011.

SECTION 3.0
ALTERNATIVES

3.1 INTRODUCTION

A bedrock principle of NEPA is that an agency should consider reasonable alternatives to a proposed action. Considering alternatives helps to avoid unnecessary impacts and allows analysis of reasonable ways to achieve the stated purpose. To warrant detailed evaluation, an alternative must be reasonable. To be considered reasonable, an alternative must be "ripe" for decisionmaking (any necessary preceding events having taken place), affordable, capable of implementation, and satisfy the purpose of and need for the action. The following discussions identify alternatives considered by the Army and whether they are feasible and, hence, subject to detailed evaluation in this EIS. The section also describes the No Action Alternative.

3.2 DEVELOPMENT OF ALTERNATIVES

3.2.1 Means to Accommodate Realignments

Realignment of units, agencies, and activities involves ensuring that the installation has adequate physical accommodations for personnel and their operational requirements. The Army considers four means of meeting increased space requirements: use of existing facilities, modernizing or renovating existing facilities, leasing of off-post facilities, and constructing new facilities.

Army Regulation 210-20, *Master Planning for Army Installations*, establishes Army policy to maximize use of existing facilities. New construction is not authorized when support for a new mission can be achieved by using existing underused adequate facilities, provided that using such facilities does not degrade operational efficiency. Selection and use of facilities to support mission requirements adheres to the foregoing four choices in the order in which they are listed. That is, if there are adequate existing facilities to accommodate requirements, and absent other overriding considerations, further examination of renovation, leasing, or construction alternatives is not required. Similarly, if a combination of using existing facilities and renovation satisfies the Army's needs, leasing or new construction need not be addressed. New construction may proceed only when using existing facilities, renovation, leasing, or a combination of such measures is inadequate to meet mission requirements.

3.2.2 Siting of New Construction

The Army considers new construction of facilities when using existing facilities, renovation, or leasing would fail to provide for adequate accommodations of realigned functions. The Army considers both general and specific siting criteria for construction of new facilities.

General siting criteria include consideration of compatibility between the functions to be performed and the installation's land use designation for the site, adequacy of the site for the function, proximity to related activities, distance from incompatible activities, availability and capacity of roads, efficient use of property, development density, potential future mission requirements, and special site characteristics including potential environmental incompatibilities.

Specific siting criteria include consideration of location of the workforce and efficient, streamlined management of functions. Co-locating similar types of functions, as opposed to dispersing them, generally permits more efficient use of equipment, vehicles, and other assets.

3.2.3 Schedule

Alternatives for scheduling of proposed realignment actions are principally affected by three factors: the availability of facilities to house realigned personnel and functions, efforts to minimize potential disruption of mission activities on the basis of the number of personnel involved in the relocation or the amount of work to be performed, and early realization of benefits to be gained by completion of the realignments. In most cases, minor shifts in schedule would not produce different environmental results.

3.3 ALTERNATIVE LAND USE PLANS

In June and July 2006, the Army considered three conceptual development strategies for accommodating the increase in units, agencies, and activities associated with base realignment at Fort Belvoir. The strategies, named in a manner suggesting the principal concept of each, were identified as *Town Center*, *City Center*, and *Satellite Campuses*. Each strategy had two alternative plans for allocating land to specific functions (e.g., NGA, Army Lease) being realigned to Fort Belvoir; thus, the Army originally considered six different ways to meet base realignment requirements. The following sections present one alternative related to and representative of each of the strategies. Also presented is the Preferred Alternative which emerged as a hybrid of the three conceptual development strategies. Accordingly, this EIS evaluates four land use plan alternatives and four alternatives for implementation of BRAC realignments.

3.3.1 Town Center Alternative

Under the Town Center Alternative, the majority of new facilities to accommodate base realignment would be sited between J.J. Kingman Road on North Post and 12th Street on South Post. Developed areas bounded by 16th and 21st Streets and Gunston Road and Belvoir Road would be available for future redevelopment. The EPG, Davison Army Airfield, and the North Post golf course would remain available for future growth after 2011. Figure 3-1 shows the Town Center Alternative. For land use planning, several land parcels affected by the Town Center strategy would be redesignated for Professional/Institutional or Community uses.

Accommodation of BRAC realignments under this alternative would result in the following major sitings:

- NGA and associated parking structures would be sited in the area bounded by U.S. Route 1, Belvoir Road, 9th Street, and Gunston Road. This would be facilitated by changing the South Post golf course land use designation from Community to Professional/ Institutional.

- WHS and associated parking structures would be sited in the area bounded by U.S. Route 1, Belvoir Road, 9th Street, and Gunston Road and in the adjacent area north of U.S. Route 1 that is bounded by Constitution Drive, U.S. Route 1, and Gunston, Abbott, and Beauregard Roads. This would be facilitated by changing the South Post golf course land use designation from Community to Professional/Institutional and by changing the land

use designations north of U.S. Route 1 from Community and Troop to Professional/Institutional.

- Army Lease and associated parking structures would be sited on North Post, in the southern half of the area bounded by Woodlawn, Abbott, Gunston, and J.J. Kingman Roads. This would be facilitated by changing the present land use designations from Community to Professional/Institutional. Army Lease would also be located in the 200 area, in the northwest quadrant of the intersection of Belvoir Road and 21st Street.

- Medical Command and MDA and associated parking structures would be sited in the area that is bounded by Constitution Drive, U.S. Route 1, and Gunston, Abbott, and Beauregard Roads. This would be facilitated by changing the land use designations north of U.S. Route 1 from Community and Troop to Professional/Institutional.

- PEO EIS and associated parking structures would be sited on North Post, in the southern half of the area bounded by Woodlawn, Abbott, Gunston, and J.J. Kingman Roads. This would be facilitated by changing the present land use designations from Community to Professional/Institutional.

Figure 3-2 shows the proposed locations for facilities projects (see Section 2.2.2.3 and Table 2-3). Since EPG would not be developed in order to accomplish BRAC realignment actions, the proposed emergency services center project and much of the infrastructure project would not be required and would not proceed at EPG. Under this alternative, areas of EPG west of Accotink Creek would be designated for Community use, and areas east of the creek would be designated for Professional/Institutional use to support future development.

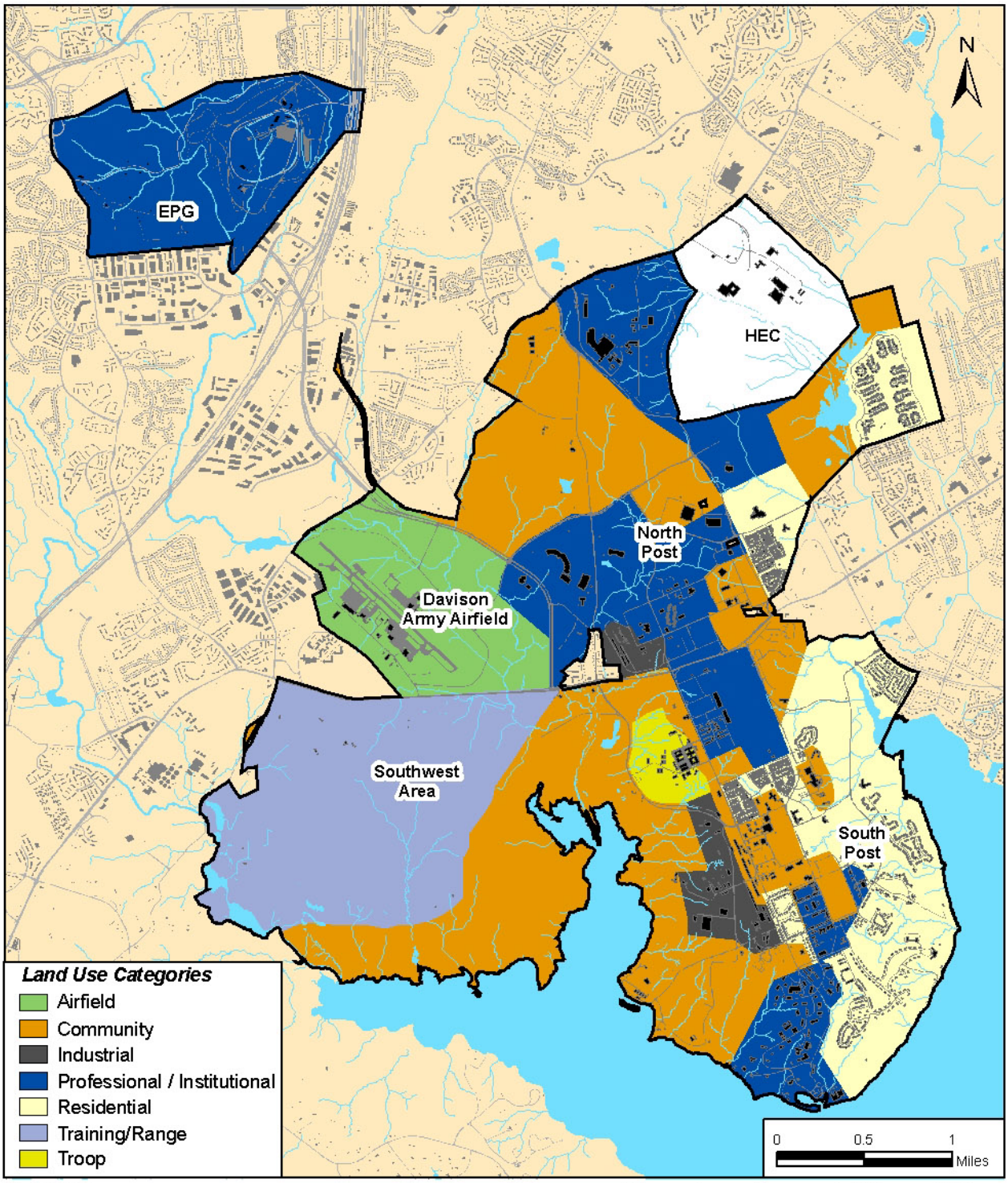
Table 3-1 shows the allocation of land use designations under the Town Center Alternative, compared to the 1993 land use plan as amended in 2002.

The Town Center Alternative contains two sub-alternatives with respect to the present and proposed Troop Area. The proposed plan would change the Troop Area on North Post to Professional/Institutional uses and create a new Troop Area on South Post in an Industrial area (the western portion of the 1400 area) along Gunston Road. Availability of funding, however, might cause current uses in the present and proposed Troop Areas to continue for an indeterminate period. Accordingly, this EIS evaluates both situations: first, relocation of the Troop Area to South Post, with the present Troop Area parcel becoming Professional/Institutional (proposed action) and, second, to continue uses of the North Post and South Post parcels for Troop Area and Industrial purposes, respectively (status quo; delayed implementation).

3.3.2 City Center Alternative

Under the City Center Alternative, all new facilities to accommodate base realignment would be sited on EPG and a nearby 65-acre parcel currently occupied by the General Services Administration (GSA), known as the "GSA Parcel." The North and South Posts at Fort Belvoir would remain available for future growth. Figure 3-3 shows the City Center Alternative. For land use planning, parcels affected by the City Center Alternative would be redesignated for Professional/Institutional use.

Accommodation of BRAC realignments under this alternative would result in the following major sitings:



LEGEND

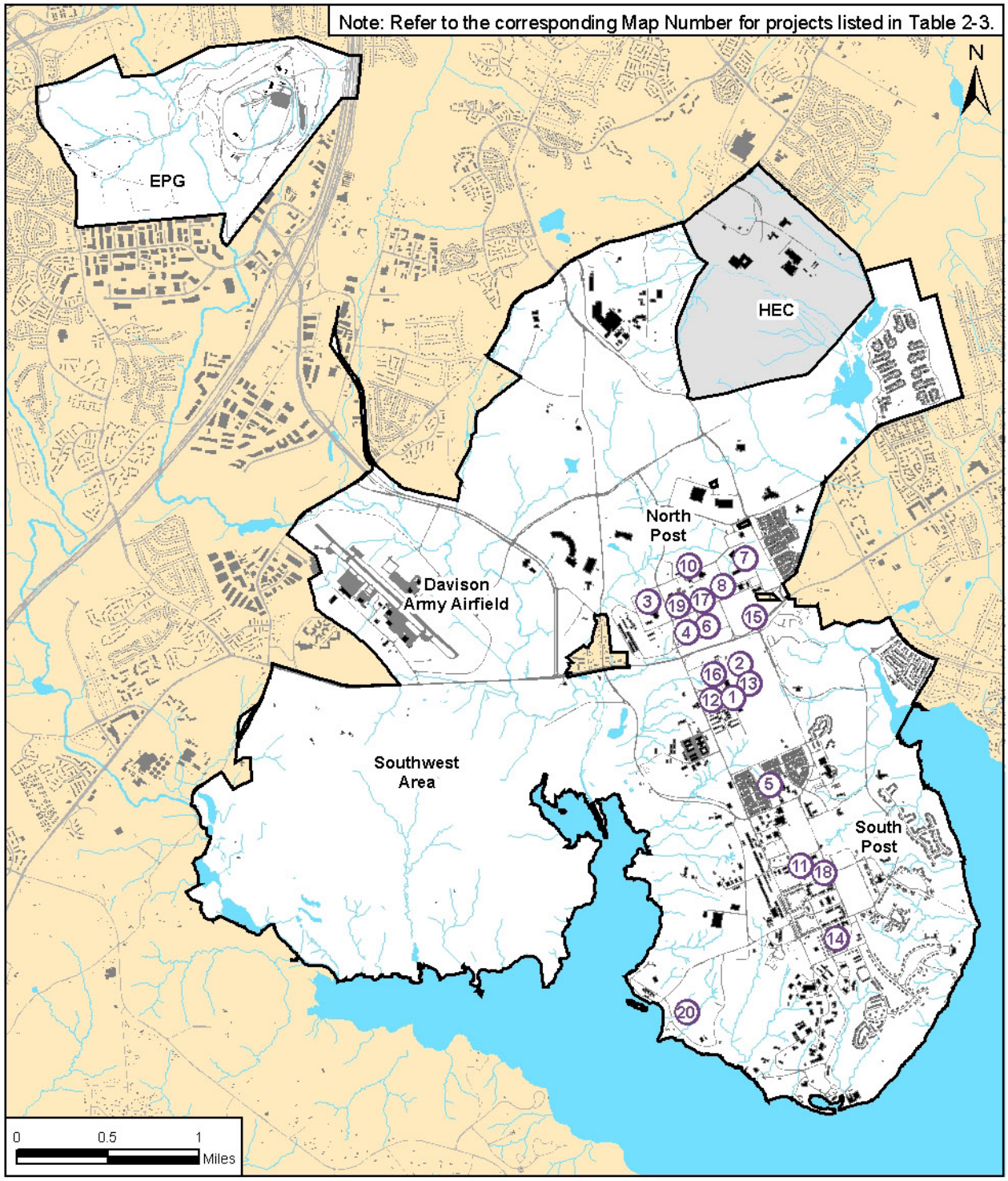
Installation Property

Town Center Land Use Plan

Fort Belvoir, Virginia

Sources: Fort Belvoir GIS, 2006; Fairfax County GIS, 2006.

Figure 3-1



LEGEND

Installation Property

(8) Project Location

Town Center Project Locations

Fort Belvoir, Virginia

Sources: Fort Belvoir GIS, 2006; Fairfax County GIS, 2006.

Figure 3-2

Table 3-1
Comparison of 1993 and Town Center Alternative land use allocations

1993 Land Use Plan		Proposed Land Use Plan	
Land use	**Acres**	**Land use**	**Acres [a]**
Administration & Education	724	Airfield	690
Airfield	391	Community	2,652
Community Facilities	452	Industrial	212
Family Housing	576	Professional/Institutional	2,242
Industrial	126	Residential	1,315
Medical	97	Training	1,280
Outdoor Recreation	1,006	Troop	106
Research & Development	340		
Supply, Storage, & Maintenance	378		
Training Range	462		
Troop Housing	72		
Environmentally Sensitive	3,063		
Total	**7,687**		**8,497**

[a] All proposed land use designation acreages here and in Tables 3-4 and 3-6 were calculated in GIS, and the totals may differ from the official acreages for the installation.

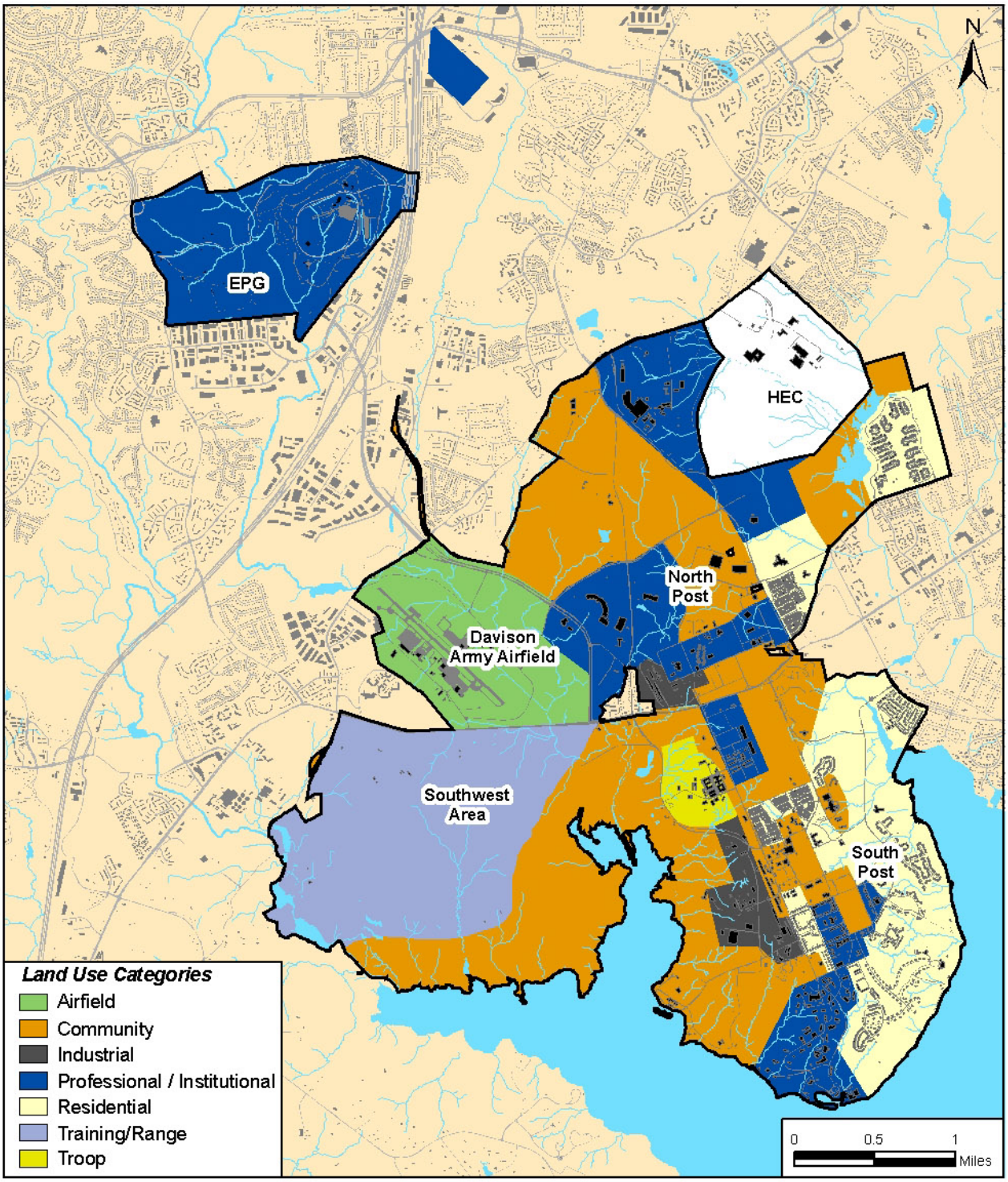
- NGA, Army Lease, Medical Command, PEO EIS, and MDA and associated parking structures would be sited at EPG.

- Portions of Army Lease would occupy existing facilities along the east side of Gunston Road between U.S. Route 1 and 9th Street, and in the southwest quadrant of the intersection of Belvoir Road and 21st Street. Units, agencies, and activities that could not be assigned to the existing facilities would occupy EPG.

- WHS would be sited at the GSA Parcel on Loisdale Road.

Army adoption of the City Center Alternative would require measures not inherent in other alternatives. The Army would expect GSA to vacate its facilities, relocate GSA functions to Fort Belvoir or another location,[12] demolish all existing structures, ensure compliance with applicable laws governing remediation, and transfer administrative control of the property to the Army. These actions would have to occur within a timeframe that would provide the Army sufficient time to construct facilities for WHS use. Location of the WHS element on the GSA parcel would require a change in law; at present, the BRAC recommendations require WHS to relocate to Fort Belvoir, and the GSA parcel is not part of Fort Belvoir. Figure 3-4 shows the proposed locations for facilities projects (see Section 2.2.2.3 and Table 2-3) involved in the City Center Alternative.

[12] The Army estimates that relocation of GSA warehouse functions would require a site of 40 to 60 acres in an area classified for Industrial use. In the event GSA functions relocated to Fort Belvoir, the GSA would prepare appropriate documentation pursuant to NEPA.



LEGEND

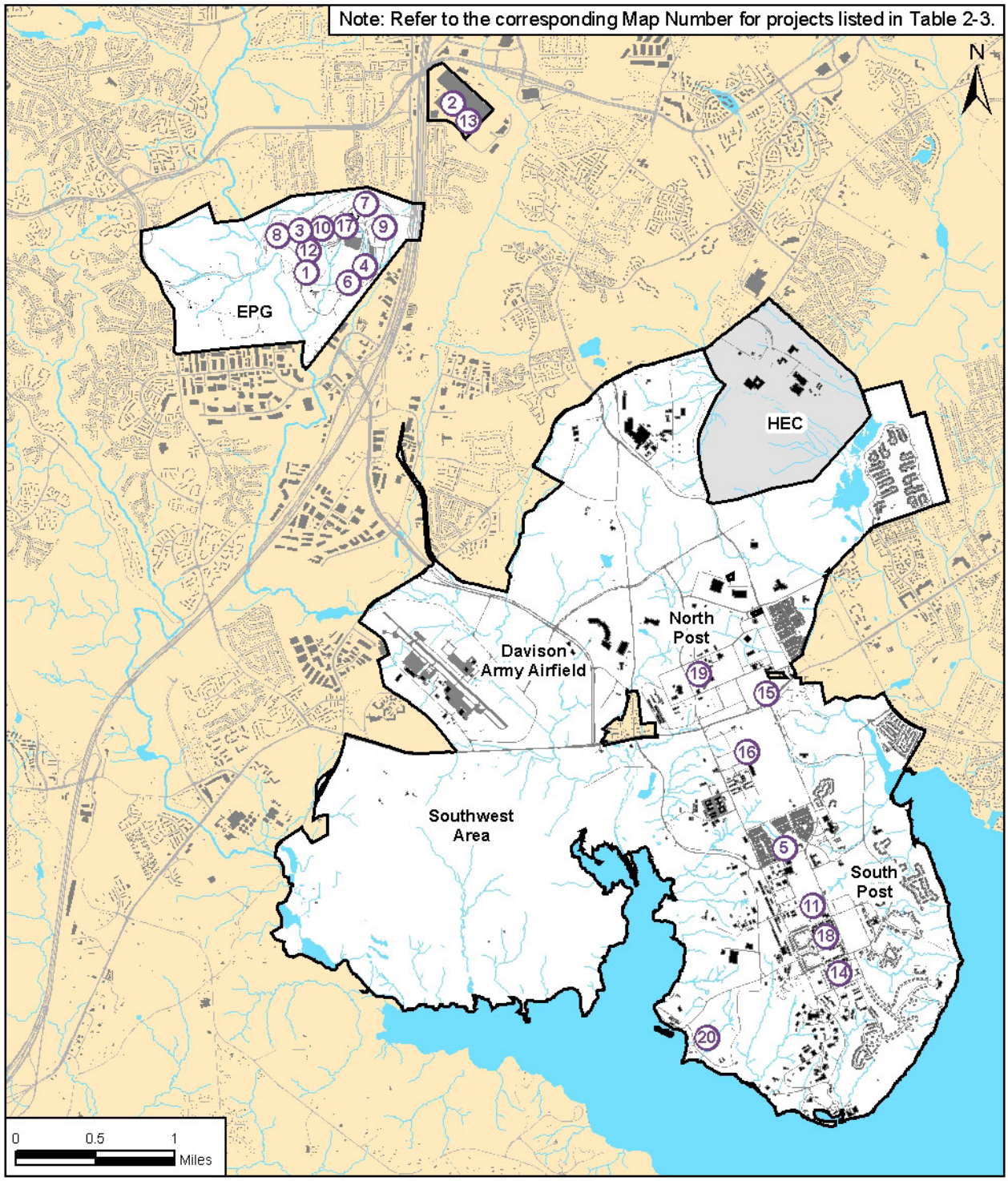
Installation Property

City Center Land Use Plan

Fort Belvoir, Virginia

Sources: Fort Belvoir GIS, 2006; Fairfax County GIS, 2006.

Figure 3-3



LEGEND

Installation Property

(8) Map Number

City Center Project Locations

Fort Belvoir, Virginia

Sources: Fort Belvoir GIS, 2006; Fairfax County GIS, 2006.

Figure 3-4

Table 3-2 shows the allocation of land use designations under the City Center Alternative, compared to the 1993 land use plan as amended in 2002.

Table 3-2
Comparison of 1993 and City Center Alternative land use allocations

1993 master plan		Proposed land use plan	
Land use	**Acres**	**Land use**	**Acres**
Administration & Education	724	Airfield	700
Airfield	391	Community	2,806
Community Facilities	452	Industrial	219
Family Housing	576	Professional/Institutional	2,125
Industrial	126	Residential	1,316
Medical	97	Training	1,282
Outdoor Recreation	1,006	Troop	116
Research & Development	340		
Supply, Storage, & Maintenance	378		
Training Range	462		
Troop Housing	72		
Environmentally Sensitive	3,063		
Total	**7,687**		**8,564**

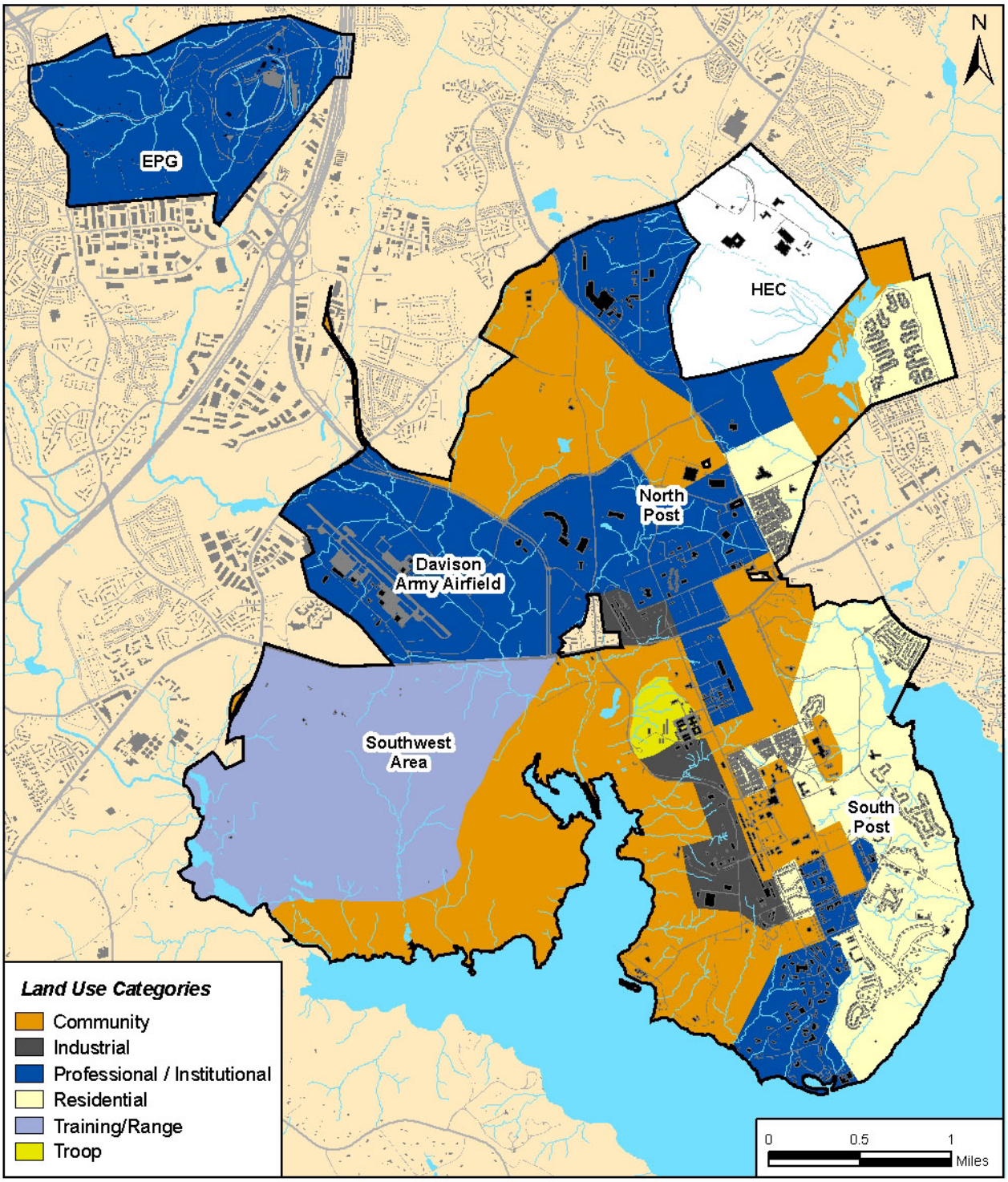
The City Center Alternative contains two sub-alternatives with respect to the present and proposed Troop Area. The proposed plan would change the Troop Area on North Post to Professional/Institutional uses and create a new Troop Area on South Post in an Industrial area (the western portion of the 1400 area) along Gunston Road. Availability of funding, however, might cause current uses in the present and proposed Troop Areas to continue for an indeterminate period. Accordingly, this EIS evaluates both situations: first, relocation of the Troop Area to South Post, with the present Troop Area parcel becoming Professional/Institutional (proposed action) and, second, to continue uses of the North Post and South Post parcels for Troop Area and Industrial purposes, respectively (status quo; delayed implementation).

3.3.3 Satellite Campuses Alternative

Under the Satellite Campuses Alternative, new facilities to accommodate base realignment would be sited on Davison Army Airfield, North Post golf course, and North Post and South Post (from Kingman Road to 12th Street). Figure 3-5 shows the Satellite Campuses Alternative. For land use planning, land parcels affected by the Satellite Campuses strategy would be redesignated for Professional/Institutional or Community uses.

Accommodation of BRAC realignments under this alternative would result in the following major sitings:

- NGA and associated parking structures would be sited at Davison Army Airfield (which would be closed). This would be facilitated by changing the present land use designations from Airfield to Professional/Institutional.



LEGEND

Installation Property

Satellite Campuses Land Use Plan

Fort Belvoir, Virginia

Sources: Fort Belvoir GIS, 2006; Fairfax County GIS, 2006.

Figure 3-5

- WHS and MDA and associated parking structures would be sited in the North Post area that is bounded by Constitution Drive, U.S. Route 1, and Gunston, Abbott, and Beauregard Roads. This would be facilitated by changing the land use designations north of U.S. Route 1 from Community and Troop to Professional/Institutional.

- Army Lease would be sited in existing facilities along the east side of Gunston Road between U.S. Route 1 and 9th Street, and in the northwest quadrant of the intersection of Belvoir Road and 21st Street in renovated facilities.

- Medical Command and associated parking structures would be sited on the southern portion of the North Post golf course. This would be facilitated by changing the land use designation from Recreation to Community.

- PEO EIS and associated parking structures would be sited on North Post, in the southern half of the area bounded by Woodlawn, Abbott, Gunston, and J.J. Kingman Roads. This would be facilitated by changing the present land use designations from Community to Professional/Institutional.

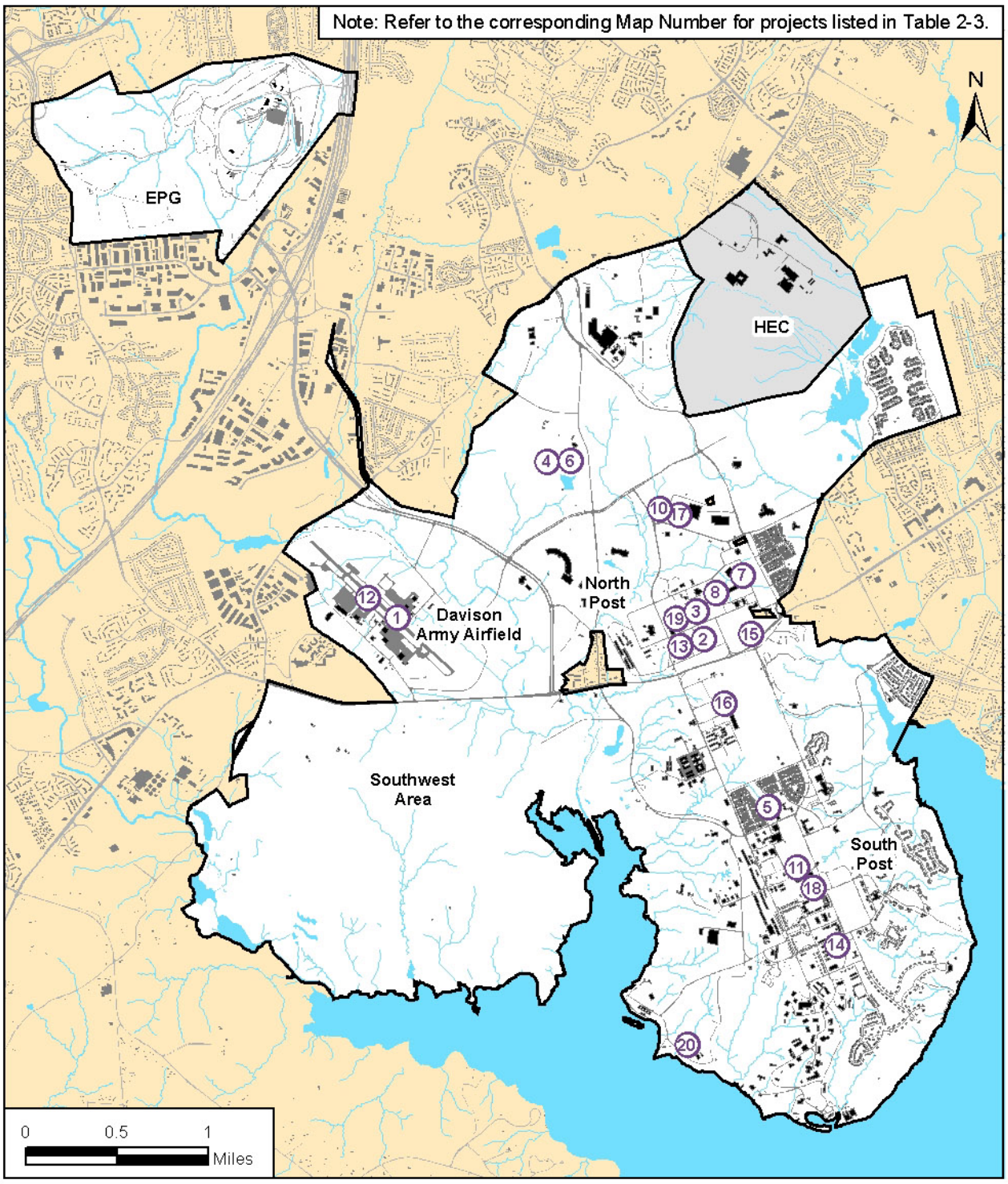
Areas of EPG west of Accotink Creek would be designated as for Community use, and areas east of the creek would be designated for Professional/Institutional use to support future development.

Figure 3-6 shows the proposed locations for facilities projects (see Section 2.2.2.3 and Table 2-3). Since EPG would not be developed in order to accomplish BRAC realignment actions, the proposed emergency services center project and much of the infrastructure project would not be required and would not proceed at EPG.

Table 3-3 shows the allocation of land use designations under the Satellite Campuses Alternative, compared to the 1993 land use plan as amended in 2002.

Table 3-3
Comparison of 1993 and Satellite Campuses Alternative land use allocations

1993 master plan		Proposed land use plan	
Land use	**Acres**	**Land use**	**Acres**
Administration & Education	724	Airfield	0
Airfield	391	Community	2,712
Community Facilities	452	Industrial	257
Family Housing	576	Professional/Institutional	2,874
Industrial	126	Residential	1,298
Medical	97	Training	1,282
Outdoor Recreation	1,006	Troop	73
Research & Development	340		
Supply, Storage, & Maintenance	378		
Training Range	462		
Troop Housing	72		
Environmentally Sensitive	3,063		
Total	**7,687**		**8,496**



LEGEND

- Installation Property
- (8) Map Number

Satellite Campuses Project Locations

Fort Belvoir, Virginia

Sources: Fort Belvoir GIS, 2006; Fairfax County GIS, 2006.

Figure 3-6

The Satellite Campuses Alternative contains two sub-alternatives with respect to the present and proposed Troop Area. The proposed plan would change the Troop Area on North Post to Professional/Institutional uses and create a new Troop Area on South Post in an Industrial area (the western portion of the 1400 area) along Gunston Road. Availability of funding, however, might cause current uses in the present and proposed Troop Areas to continue for an indeterminate period. Accordingly, this EIS evaluates both situations: first, relocation of the Troop Area to South Post, with the present Troop Area parcel becoming Professional/Institutional (proposed action) and, second, to continue uses of the North Post and South Post parcels for Troop Area and Industrial purposes, respectively (status quo; delayed implementation).

3.3.4 Preferred Alternative

Consideration of the Town Center, City Center, and Satellite Campuses conceptual development strategies resulted in a determination that any single strategy was inadequate to meet Fort Belvoir's base realignment needs. The Army reached this determination based on giving high priority to traffic-related issues and development density; specifically, use of EPG for all base realignment units, agencies, and activities would have resulted in development densities that might not be supportable because of traffic congestion. In light of these circumstances, the Army identified a seventh alternative for land use, referred to as the Preferred Alternative Land Use Plan. That alternative is presented in Section 2.2.2.

The Preferred Alternative Land Use Plan contains two sub-alternatives with respect to the present and proposed Troop Area. The proposed plan would change the Troop Area on North Post to Professional/Institutional uses and create a new Troop Area on South Post in an Industrial area (the western portion of the 1400 Area) along Gunston Road. Availability of funding, however, might cause current uses in the present and proposed Troop Areas to continue for an indeterminate period. Accordingly, this EIS evaluates both situations—first, relocation of the Troop Area to South Post, with the present Troop Area parcel becoming Professional/Institutional (proposed action) and, second, continued use of the North Post and South Post parcels for Troop Area and Industrial purposes, respectively (status quo; delayed implementation).

3.4 ALTERNATIVES FOR BRAC IMPLEMENTATION

The BRAC Law requires implementation of base realignment actions by not later than September 15, 2011, 6 years following the President's sending the BRAC Commission's recommendation to Congress. Because those recommendations became law effective November 9, 2005, the Army is required to implement them in accordance with their terms. Consideration of alternatives such as not relocating personnel or relocating them to other installations is not legally permissible.

The implementation of base realignment at Fort Belvoir essentially centers on what facilities must be provided, where those facilities would be sited, and which personnel would be assigned to new or renovated facilities. The determinations on these matters are, in large part, guided by the post's land use plan, which identifies areas appropriate for Professional/Institutional purposes. This EIS examines four land use plan alternatives that serve as the surrogate for alternative means of accommodating the units, agencies, and activities being relocated. No other alternatives to BRAC implementation are evaluated in this EIS.

3.5 NO ACTION ALTERNATIVE

Inclusion of the No Action Alternative is prescribed by the CEQ regulations and serves as the benchmark against which federal actions can be evaluated. No action assumes that the Army would continue its mission at Fort Belvoir as it existed in the fall of 2005, with no units relocating from other locations and no new facilities being constructed. Because the BRAC Commission's recommendations now have the force of law, continuation of the fall 2005 Fort Belvoir mission is not possible. Although the No Action Alternative is not possible to implement without further Congressional action, it serves as a baseline alternative against which other alternatives can be evaluated.