

Record of Decision

for the

Implementation of 2005 Base Realignment and Closure (BRAC) Recommendations and Related Army Actions at Fort Belvoir, Virginia



August 7, 2007

RECORD OF DECISION

As the Deputy Assistant Chief of Staff for Installation Management, I have reviewed the Final Environmental Impact Statement (EIS) for *Implementation of 2005 Base Realignment and Closure Recommendations and Related Army Actions, at Fort Belvoir, Virginia*. The EIS, prepared in compliance with the Council on Environmental Quality's (CEQ) *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), adequately assesses the impacts of implementing Base Closure and Realignment (BRAC) recommendations and related actions at Fort Belvoir, Virginia, on the biological, physical, and socioeconomic environment. The EIS is hereby incorporated by reference. The Army will proceed as indicated herein.

1.0 Background

On September 8, 2005, the Defense Base Closure and Realignment Commission (BRAC Commission) recommended that certain realignment actions occur at Fort Belvoir, Virginia. The recommendations were approved by the President on September 15, 2005, and forwarded to Congress. Upon expiration of the statutory period for Congress to enact a joint resolution of disapproval on November 9, 2005, the recommendations became law and must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended. The BRAC Commission recommendations affect Fort Belvoir by relocating specified organizations and activities to the post.

Relocation of units, agencies, and activities to Fort Belvoir will result in a net increase in the workforce of approximately 19,000 personnel.¹ Accommodating these additional personnel requires updating the post's land use plan and constructing and renovating facilities.

2.0 Proposed Action

The Army proposes to implement the BRAC Commission's recommendations to realign Fort Belvoir. The implementation has two actions:

- *Land use plan.* Fort Belvoir established its Real Property Master Plan (RPMP) in 1993 and amended it in 2002. In light of the substantial requirements posed by base realignment, the Army will revise the Fort Belvoir land use plan, a component of the RPMP.
- *Base realignment.* Consistent with the BRAC Commission's recommendations, the Army has proposed to realign units, agencies, and activities to Fort Belvoir. Construction and renovation of facilities is required to accommodate the larger workforce. As shown in Table 1, six major entities will relocate to Fort Belvoir.

¹ Earlier estimates of new personnel were higher. See Table 1 for information.

Table 1 Entities relocating to Fort Belvoir	
Entity	Number of personnel
Washington Headquarters Services ("BRAC 133" ^a)	6,200
National Geospatial-Intelligence Agency	8,500
Army Lease b	3,943
U.S. Medical Command	2,069
Program Executive Office, Enterprise Information Systems	480
Missile Defense Agency, Headquarters Command Center	292
Total	21,484
Number Departing Fort Belvoir	2,500
Net Increase of Personnel	18,984
<p>Note: Realignments from Fort Belvoir include the relocation of Army Materiel Command Headquarters and U.S. Army Security Assistance Command to Redstone Arsenal, AL; Prime Power School to Fort Leonard Wood, MO; U.S. Army Criminal Investigation Division Headquarters to Marine Corps Base, Quantico, VA; Soldiers Magazine to Fort Meade, MD; Biomedical Science & Technology programs of the Defense Threat Reduction Agency to Aberdeen Proving Ground, MD; Defense Threat Reduction Agency conventional armaments research to Eglin AFB, FL; and Information Systems, Research, Development and Acquisition to Aberdeen Proving Ground, MD.</p> <p>a BRAC 133 refers to the BRAC Commission's recommendation in its report, and WHS is a component of BRAC 133.</p> <p>b This figure includes Army elements in leased space from BRAC recommendations 132 and 133.</p>	

Concurrent with the relocations directed by the BRAC Commission, the Army has proposed 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.

The figures in the chart above reflect new information that was not available when Table 2-2 of the EIS was prepared. The figure for WHS is significantly lower because 1) Navy and Air Force organizations in Pentagon Renovation space will find permanent space in accordance with the BRAC statute other than Fort Belvoir, and 2) Army Pentagon renovation leased space personnel will be going to Belvoir's Main Post. This results in an increase to 3943 for Army Lease personnel going to Belvoir's Main Post. At the same time, the number of personnel leaving Fort Belvoir due to BRAC decisions is

higher than originally thought. All of these departing personnel (2500) are currently at Main Post. This means that the net number of new employees at Main Post will be the same as analyzed in the EIS; the departure of the additional personnel from their current buildings means that the same amount of existing infrastructure is available for Main Post tenants. The impacts to main post analyzed in the EIS are still valid. Finally, the net number of new people coming to Belvoir under BRAC is approximately 19,000, rather than 22,000.

3.0 Purpose and Need for the Proposed Action

The purpose of the Proposed Action is to implement the BRAC Commission's recommendations pertaining to Fort Belvoir.

The need for the Proposed Action is to improve the ability of the nation to respond rapidly to the challenges of the 21st century. To carry out its tasks, the Army must adapt to changing world conditions and must improve its capabilities to respond to a variety of circumstances across the full spectrum of military operations. BRAC supports advancing the goals of transformation, improving military capabilities, and enhancing military value. The Army must carry out the BRAC recommendations at Fort Belvoir to achieve the objectives for which Congress established the BRAC process and to comply with the law.

4.0 Alternatives to the Proposed Action

The EIS evaluated four land use plan alternatives and the No Action Alternative in detail. For each land use plan, new administrative or medical facilities to accommodate the additional workforce were sited in areas proposed for Professional/Institutional use. Additional facilities necessary to enable Fort Belvoir to meet the needs of a larger workforce were also proposed for siting within appropriate land use classifications.

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 updated land use plan, which principally identifies areas appropriate for Professional/Institutional purposes. The EIS examines the four land use plan alternatives that serve as the surrogate for alternative means of siting of facilities to accommodate the units, agencies, and activities being relocated. The land use plan alternatives are referred to as the Preferred, Town Center, City Center, and Satellite Campuses Alternatives. The EIS also evaluates a No Action Alternative. Each alternative is discussed below.

4.1 The Preferred Alternative

Land Use Plan Update. The EIS analyzes the initial step of the Real Property Master Plan (RPMP) update process—the revision of 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 because it was being considered for public-private partnership development at that time. The Army has since determined its need to retain EPG and implement its own development plans for the site. 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 those used in the 1993 plan. The designations are Airfield, 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.
- *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, *DoD Minimum Antiterrorism Standards for*

Buildings (2007). A key effect of the standards is the requirement that buffer zones around buildings be reserved as force protection standoff areas. The buffer zones affect the amount of land needed for any one facility and may also dictate a facility's spatial relationship to other facilities.

Base Realignment. Accommodation of personnel being realigned to Fort Belvoir must take into account the needs of the six major entities shown in Table 1. The BRAC Commission also recommended realignments of certain organizations from Fort Belvoir (See Table 1). The net result of the BRAC actions is an increase of approximately 19,000 new personnel at Fort Belvoir.

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

- National Geospatial-Intelligence Agency (NGA) and elements of BRAC Commission Recommendation 133 ('BRAC 133', primarily consisting of Washington Headquarters Services [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.
- U.S. Army Medical Command (MEDCOM) facilities and a new Army community hospital would be on the South Post golf course.
- Program Executive Office, Enterprise Information Systems (PEO EIS) and Missile Defense Agency (MDA) would be on South Post at sites on Gunston Road and Belvoir Road.
- The present Troop area on North Post would be relocated to an area west of Gunston Road on South Post.

Constructing and renovating facilities to support additional personnel at Fort Belvoir would entail 20 separate facilities projects totaling about 6.2 million square feet of built space and about 7 million square feet of parking structures. The 20 facilities projects would occur for any of the four base realignment alternatives. The following identifies the facilities projects by title and project number (PN).

- National Geospatial-Intelligence Agency Administrative Facility, PN 65416
- Washington Headquarters Services Administrative Facility (BRAC 133, (WHS)), PN 64234, 67846, 68521
- Missile Defense Agency Facility, PN MDA 580
- Hospital, PN 64238, 65676, 65677
- Dental Clinic, PN 64241
- North Atlantic Regional Medical Command Headquarters Building, PN 65871
- U.S. Army Corps of Engineers Temporary Project Integration Offices, N/A
- Infrastructure, PN 64097, 67487, 67959
- Emergency Services Center (EPG), PN 64076

- Network Operations Center (part of PEO EIS), PN 65448
- U.S. Army Nuclear Chemical Agency Support Facility, PN 65447
- Child Development Center (NGA), PN 55661
- Child Development Center, PN 55662
- Administrative Facility (Bldgs 211, 214, 215, 220), PN 65450
- Access Road/Control Point, PN 63571
- Army Materiel Command Relocatables, PN 66228
- PEO EIS Administrative Facility, PN 65592/67231
- Structured Parking Facility, 200 Area, PN 54347
- Modernize Barracks, PN 62892
- Morale, Welfare, and Recreation Family Travel Camp, PN 54898

4.2 Town Center Alternative

Land Use Plan Update. 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 Alternative would be redesignated for Professional/Institutional or Community uses.

Base Realignment. Accommodation of BRAC realignments under the Town Center 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.
- BRAC 133 (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 facilities, the Army community hospital, 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.

- The present Troop area on North Post would be relocated to an area west of Gunston Road on South Post.

4.3 City Center Alternative

Land Use Plan Update. 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 GSA, known as the GSA Parcel. These areas would be designated for Professional/Institutional uses. The North and South Posts at Fort Belvoir would remain available for future development.

Base Realignment. Accommodation of BRAC realignments under the City Center Alternative would result in the following major sitings:

- NGA, Army Lease, MEDCOM facilities, the Army community hospital, 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.
- BRAC 133 (WHS) would be sited at the GSA Parcel on Loisdale Road.
- The present Troop area on North Post would be relocated to an area west of Gunston Road on South Post.

Army adoption of the City Center Alternative would require measures not inherent in other alternatives. Use of the GSA Parcel would require that GSA vacate its facilities, that demolition of all existing structures and any environmental corrective action required under environmental and facility siting laws be completed, and that transfer administrative control of the property to the Army be accomplished within a time frame that would provide the Army sufficient time to construct facilities for BRAC 133 (WHS) use before 15 September 2011. Congressional authorization for transfer of the GSA parcel would also be required. This is because BRAC required relocation to Fort Belvoir, and the GSA Site is not part of Fort Belvoir.

4.4 Satellite Campuses Alternative

Land Use Plan Update. 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). Changes to land use designations would result in Professional/Institutional designations in these areas.

Base Realignment. 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.
- BRAC 133 (WHS) and MDA and associated parking structures would be sited in the North Post 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 facilities, the Army community hospital, 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.
- The present Troop area on North Post would be relocated to an area west of Gunston Road on South Post.

4.5 No Action Alternative

As required by Council of Environmental Quality (CEQ) regulations, the No Action Alternative was also evaluated in the EIS. The No Action Alternative serves as a 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 Fall 2005, with no units relocating from other locations, no new units established, and no new BRAC facilities constructed. Because the BRAC Commission's recommendations now have the force of law, continuation of the Fall 2005 Fort Belvoir mission is not possible without further Congressional action. The No Action Alternative is evaluated in detail in the EIS.

5.0 Environmental Consequences

Implementation of the Proposed Action will result in a variety of adverse and beneficial environmental effects at Fort Belvoir. The majority of effects will be direct impacts on affected resources, with many of them being long-term. The following paragraphs summarize the expected effects associated with the Proposed Action for each resource at Fort Belvoir, as determined by the EIS.

5.1 Land Use

The Preferred Alternative would be expected to have long-term minor beneficial effects by adopting an updated land use plan under all alternatives. Long-term minor beneficial and adverse effects would be expected from implementing BRAC under all the alternatives with the exception of the Satellite Campuses Alternative, under which long-term significant adverse effects would be expected due to conversion of Davison Army Airfield to administrative space. Under the No Action Alternative, no effects would result from either adopting a revised land use plan or implementing base realignment.

The Army issued a Coastal Zone Management Act (CZMA) consistency determination with the EIS that identified minor to moderate impacts to applicable enforceable policies under the CZMA. The Commonwealth of Virginia concurred that the proposed BRAC undertakings at Fort Belvoir are consistent with the Virginia Coastal Resources Management Program (VCP) provided that mitigations and best management practices (BMPs) to offset the adverse effects under the Air Pollution Control enforceable policy (see Sections 7.5 and 8.0) and other enforceable policies are implemented.

5.2 Transportation

The BRAC action would be expected to have significant adverse 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 entities 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 would place 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 various entities proposed to be located on EPG. 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 on 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. 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 Interstate 95 (I-95) and U.S. Route 1. Mitigation to address this issue under the Town Center and Satellite Campuses Alternatives is likely to require a Fairfax County Parkway cross-section in this area of eight lanes including a two-lane, reversible, high-occupancy vehicle (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 may 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, because the development is centered on Main Post and Davison Army Airfield. Slight differences in localized effects exist because of the use of Davison Army 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.

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 when most BRAC relocations would occur, 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. 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 Army's goal to have 5 to 10 percent of employees to use mass transit to get to work and another 15 to 20% rideshare..

5.3 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 have very similar effects on air quality. Each would constitute approximately the same amount of both construction and operating emissions within the region for all years. A 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 emissions 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 expected from implementing 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.²

For all the alternatives, implementing the BRAC action would decrease both the number of vehicles and the total vehicle miles traveled within the region. In turn, regional motor vehicle emissions would decrease. This decrease would be primarily from a net reduction of approximately 2,500³ personnel in 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 increases 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.

5.4 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 A-weighted decibels (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 dBA) for residential land uses.

5.5 Topography, Geology, and Soils

Topography. Long-term minor adverse effects would be expected from implementing 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 at the landscape level.

² The EIS states that, "Emission offsets are generally unavailable in this region and could be extremely expensive if they could be obtained at all."

³ This figure is higher than the net reduction of 1,700 personnel noted in Section 4.4.2.2.2 of the Final EIS.

Geology. Negligible effects would be expected from 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 minor and extremely localized on a geologic scale.

Soils. Short-term and long-term minor adverse effects on 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 areas 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 495 and 435 acres of soils, respectively, concentrated primarily in EPG. The Satellite Campuses Alternative would result in the disturbance of 457 acres, with disturbances occurring primarily in the North Post and Davison Army Airfield. The Town Center Alternative land use plan would affect 262 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 on highly erodible or otherwise unsuitable soils, such as those with steep slopes (drainages) or high water tables.

5.6 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 disturbances, as well as for a longer term as a result of increased impervious surfaces from 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 202 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 (47 acres) and floodplain (7 acres), as compared with 12 acres of disturbed RPAs and 8 acres disturbed floodplain under the Preferred and City Center Alternatives, and 14 acres of disturbed RPAs and 4 acres of 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 and the Satellite Campuses Alternatives.

5.7 Biological Resources

Long-term moderate and minor adverse effects would be expected by implementing any of the four land use plans and from implementing BRAC. These effects would be on 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 (SNAs). All the alternatives would reduce vegetated areas on the post by a substantial amount and be expected to 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. The Preferred Alternative and City Center Alternative would adversely affect natural habitat on the installation to the greatest degree, followed by the Satellite Campuses Alternative and the Town Center Alternative.
- *EPG.* Natural habitat on EPG has been reestablishing 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 concentrate development on the Main Post rather than on EPG.

Overall, the City Center Alternative would have the greatest adverse effects 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.

Following release of the FEIS, a Biological Assessment was submitted to the U.S. Fish and Wildlife Service, in accordance with Section 7 of the Endangered Species Act, analyzing potential BRAC impacts on the known location of a federally threatened small

whorled pogonia plant on EPG. The Service concurred that the Proposed Action was not likely to adversely affect the species. On the Main Post, a small whorled pogonia survey was conducted during the summer of 2007 and no occurrences of the plant were found. There is therefore no effect on the whorled pogonia on Main Post.

5.8 Cultural Resources

Long-term minor and beneficial effects would be expected from implementing 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.

Long-term minor adverse effects would be expected from implementing any of the four alternatives for implementing BRAC. These effects would be on 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 on 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.

Fort Belvoir is fully engaged in the National Historic Preservation Act Section 106 process with interested parties. The goal of consultation is to identify historic properties potentially affected by the undertaking, assess its effects and seek ways to avoid, minimize, or mitigate any adverse effects on historic properties. The installation is developing a Programmatic Agreement (PA) in consultation with the other parties specifically to address the proposed BRAC activities. The installation is working with the Virginia State Historic Preservation Officer (SHPO) and other parties to identify measures to avoid, minimize, or mitigate these effects (i.e. construction and medical helicopter noise) on historic resources and their aesthetic qualities adjacent to the installation as well as the historic golf course on post to the maximum extent practicable. No actions may be undertaken that could cause effects on historic property until the NHPA Section 106 process is complete.

5.9 Socioeconomics

The BRAC action would have short- and long-term 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 Proposed Action projects plan for the construction and staffing of on-post facilities such as a new hospital, new emergency services center, child development 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 its available nonappropriated funds (NAF), which would be significantly reduced by BRAC actions such as loss of the South Post golf course to the proposed hospital.

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 19,000 people in the workforce on Fort Belvoir. Most of these personnel already reside within a one-hour drive of 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, specifically moving to areas along the Northern Virginia I-95 corridor including Fairfax, Prince William, and Stafford Counties, 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, service levels would be expected to decrease as the local population increases. Expansion of services would be necessary to maintain levels of service. However, the population increases due to 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 Army is conferring with the potentially affected school districts on potential student increases that could occur. Funding support for the school districts could come from the Federal Impact Aid Program. Section 4.10.2.2.2 of the EIS looks at the effects of the Preferred Alternative on schools. The Army received comments on the Final EIS from the Fairfax County Public Schools Superintendent, dated August 1, 2007. These comments were taken into account in this decision. The

effects of the Preferred Alternative on schools are addressed in Section 4.10.2.2.2 of the EIS. The Army received comments on the Final EIS from the Fairfax County Public Schools Superintendent, dated August 1, 2007. These comments were taken into account in this decision. The number and type of shopping and service businesses and community support MWR facilities and services would be expected to increase with demand as they would be market driven.

5.10 Aesthetics and Visual Resources

The BRAC actions would be expected to have short- and long-term minor to moderate adverse and beneficial effects on the aesthetic and visual resources of Fort Belvoir. The effects on aesthetics would differ across the four alternatives, with the City Center Alternative 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, 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 River. The four 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 adverse effects on aesthetics 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 adverse effect because of having developments on or near aesthetically sensitive areas of Main Post. The Preferred and Town Center Alternatives would have more adverse 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 north of 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 affect 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 adverse effect on aesthetics and visual resources of the installation.

5.11 Utilities

Long-term minor adverse and beneficial effects would be expected by 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 and to some of the utility-owned infrastructure.

For potable water and sanitary sewer, existing on-site utilities on EPG are 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 utility infrastructure, except for electricity and natural gas. Providing the required level of electricity at EPG would require substantial improvements to the existing offsite infrastructure. In addition, extending natural gas to EPG would require off-site improvements to the existing infrastructure.

In addition to the necessity for off-post improvements to utility infrastructure stated above, 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 is using only a portion of purchased capacity. Demands from the BRAC action would most likely consume all the remaining purchased treatment capacity for both systems. There is adequate local capacity to provide natural gas for the proposed development at EPG, but as mentioned above some on- and off-post infrastructure improvements would be required. Similarly, providing electricity to meet the needs of BRAC tenants moving to EPG would require substantial on- and off-site upgrades, time, and investment.

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 and the Town Center Alternatives 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.

5.12 Hazardous Substances and Hazardous Materials

Long-term minor adverse effects would be expected 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. Also, long-term minor adverse effects

would be expected in that the addition of tenants and would result in 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 and solid waste management unit 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 because the project sites would be 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 in which current tenants would relocate while the program redevelops the Main Post. The costs and logistical requirement to execute these alternatives would also be substantial.

5.13 No Action Alternative

The No Action Alternative would be expected to result in short- and long-term minor adverse effects on topography and soils. The No Action Alternative would result in no effects on any of the other resources at Fort Belvoir. The No Action Alternative is the environmentally Preferred Alternative.

5.14 Unavoidable Adverse Environmental Impacts

Implementing the Preferred Alternative would result in a variety of adverse environmental effects, as detailed in Paragraphs 5.1 through 5.12. 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:

- *Transportation.* Funding shortfalls might not allow all transportation mitigation recommendations in the EIS to be implemented, resulting in unavoidable adverse effects on traffic.
- *Biological Resources.* Unavoidable loss of approximately 310 acres of vegetated areas to accommodate incoming BRAC actions in a manner that would best serve the military mission at Fort Belvoir.
- *Water Resources.* Unavoidable loss of pervious surfaces due to development, resulting in increases in runoff and pollutant loads.
- *Utilities.* Unavoidable generation of about 10,176 tons of construction and demolition debris from the Proposed Action, which would be disposed of in various landfill sites in the area.

6.0 Cumulative Impacts

The EIS identifies 20 facilities projects to support BRAC implementation. In addition to these, the Army foresees there being another 32 projects at the installation that would occur during the BRAC implementation timeframe. 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 (Army Museum) and associated Museum Support Center, the expansion of the Information Dominance Center, and a potential Army Reserve complex. Additionally, numerous smaller projects would occur on-post as new facilities or, in several instances, as renovations of existing facilities. Each of these projects will undergo or have already undergone their own NEPA compliance. Fairfax County 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 summarizes principal conclusions with respect to potential cumulative effects.

Land Use. Negligible cumulative effects on land use would be expected from implementing non-BRAC projects at Fort Belvoir in combination with the Preferred Alternative. In general, the on-post cumulative projects would be compatible with the updated land use plan and 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 on land use from implementing the Fairfax County Comprehensive Plan over the next 5 years would be negligible if all approved/programmed roadway improvements are realized.

Transportation. Future, on-post facilities projects, taken together, would be expected to have negligible effects on Fort Belvoir area traffic. Effects on the transportation network associated with off-post projects would be mitigated through roadway improvements by the developers of the off-post road projects. The largest contributor to future impacts would be the proposed Army Museum. 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 may 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 Action would have long-term minimal adverse cumulative effects on the region's air quality. Other construction and development projects would occur within the 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 SIP. This includes all on- and off-post projects including the Army Museum. 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. Short- and long-term permanent effects would be expected on soils in the area 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. Short- and long-term adverse cumulative effects would be expected on soils throughout the EPG project area. Urban and Cut and Fill soils have already been affected by development, so in cases of redevelopment, the effects on these soil types have already occurred. With native soils, the effects related to construction would generally be expected to be minor and limited to the areas directly disturbed by those activities. The Army Museum, its Museum Support Center, and the Fairfax County Parkway extension would all result in the permanent loss of the soil resource directly under the impervious surfaces. Portions of these projects, however, would occur on soils previously affected (Urban soils) and effects on 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 effects analysis are likely to contribute to a significant cumulative effect in terms of topography or geology. Assuming that regulatory requirements are followed, the soil resource would experience localized adverse effects that would be both short and long term.

Water Resources. Long-term minor adverse effects on water resources would be expected from the 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. Watershed modeling 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 on waterbodies within these watersheds and receiving waters downstream.

Biological Resources. Long-term moderate adverse cumulative effects would be expected. Cumulative effects on natural resources from 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. The BRAC-related projects would have a minor adverse cumulative effect on the region's historic properties. When the effects on these properties and the effects that would likely occur from the expanding population and subsequent improvements to the local infrastructure are added to the effects that part development in the region has already had, the cumulative effects on cultural resources would be noticeable and moderate.

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 proposed projects include, but are not limited to, the Army Museum, 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 developments 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 be expected because of the overlapping time frames for construction activities associated with the Preferred Alternative and ongoing and future projects, with the adverse effects resulting from possible construction labor and material shortages. Effects from projected changes under the proposed Fort Belvoir BRAC action would be diminished by other BRAC actions occurring at the same time in the NCR. This would reduce the population impacts from the proposed Fort Belvoir BRAC action on public infrastructure and social services. Note that even though there would be a loss of personnel in the ROI due to other BRAC actions, it is anticipated that the office space vacated by BRAC personnel would be backfilled with office workers.

Socioeconomics (Sociological Environment). Long-term beneficial and adverse effects on police, fire, and medical services, schools, housing, family support and social services, shops, services, and recreation would be expected. 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 on the basis of population

projections that indicate continued population growth for the ROI. Long-term adverse effects on off-post schools would be expected. Other BRAC actions occurring in the ROI, however, would result in the transfer of 14,500 jobs out of the NCR. An estimated 12,700 school-age children would be associated with these employees and would be moving out of the region. The out-migration of these families would reduce the impact of the Fort Belvoir BRAC action on public 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, because 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. 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 Army Museum, 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 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, a significant amount of aesthetic effects would not be expected. 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. Overall, there is generally sufficient capacity to accommodate the Proposed Action in the region, although upgrades would be required in some areas. 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 2015 be reduced in comparison to the base year of 2003. The percent reduction required in 2006 is 2 percent from the baseline consumption and 20 percent in 2015. Because the facilities being constructed would be more efficient, these requirements would likely be met. 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 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 as more people would work at Fort Belvoir and the surrounding area.

7.0 Mitigation

The EIS predicts that implementing the Preferred Alternative will result in significant adverse effects on several resources. Other resources will incur minor to moderate adverse effects. The EIS identifies mitigation measures to minimize, avoid, or compensate for such effects. All practicable means to avoid or minimize environmental harm from the selected alternative have been adopted, except as otherwise indicated below.

7.1 Road Improvements

The EIS identified and evaluated 13 road improvements, listed below, that could mitigate the effects of the Preferred Alternative.

1. Reconstruct (with direct connections to the HOV lanes) the I-95/Fairfax County Parkway interchange
2. Add or improve ramps to and from I-95 for EPG
3. Widen EPG Segment of Fairfax County Parkway (beyond what is already funded)
4. Improve Fairfax County Parkway between I-95 and John J. Kingman Road
5. Create a rideshare facility (slugs)

6. Build transit center/facilities
7. Create additional EPG access
8. Improve intersections at key locations (e.g., U.S. Route 1 at Backlick Road/ Pohick Road (Tulley Gate))
9. Build additional U.S. Route 1 crossing for the Main Post
10. Improve the Fairfax County Parkway/John J. Kingman Road intersection
11. Improve the Franconia Springfield Parkway/Neuman Street interchange
12. Create access to EPG via Neuman Street
13. Improve Beulah, Telegraph, and Backlick Roads

These above projects are not being adopted. They are not practicable because of high cost and a lack of funding. They do not meet the Defense Access Roads (DAR) Program criteria for federal funding, except as noted below.

The Army will pursue implementation of the following five projects that have been certified by the Surface Deployment and Distribution Command under the Defense Access Roads (DAR) Program as important to national defense:

- An access road beginning at the existing flyover ramp on southbound I-95 just south of its interchange with Franconia-Springfield Parkway, then proceeding along the flyover over Backlick Road to southbound Backlick Road and toward the west on a new alignment to the EPG loop road—a distance of approximately 0.3 mile. This project is a part of project 2, listed above.
- An access road beginning at the existing flyover ramp connecting the northbound I-95 HOV lanes to the northbound I-95 mainline just north of its interchange with Fairfax County Parkway, then proceeding west on a new alignment over southbound I-95 and Backlick Road to the EPG loop road—a distance of approximately 0.3 mile. This project is a part of project 2, listed above.
- An access road beginning at the existing exit ramp connecting southbound I-95 to westbound Fairfax County Parkway, then proceeding toward the northwest on a new alignment to the EPG loop road—a distance of approximately 1.0 mile. This project is a part of project 2, listed above.
- An access road beginning at the intersection of Backlick Road and Barta Road at the existing entrance to the EPG, then proceeding west on a new alignment to the EPG loop road, a distance of approximately 0.1 mile; this project includes appropriate intersection work. This project is a part of project 7, listed above.
- The EIS also identifies an access road beginning at the intersection of the Franconia-Springfield Parkway and Neuman Street, then proceeding south along Neuman Street and then on a new alignment across the EPG to the EPG loop road, a distance of approximately 0.6 mile; this project includes appropriate intersection work. Implementation of this DAR-certified project is deferred pending final decision on location of BRAC 133 (WHS). This project is a part of project 12, listed above.

The remaining projects are not eligible for the DAR Program and defense funding cannot be made available for them under current DOD programs. The Army will pursue additional federal funding sources and cooperate with other concerned parties for these projects.

7.2 Transit System

The EIS identified three transportation-related mitigation projects: rideshare facility, transit center/facilities, and additional U.S. Route 1 crossing for Main Post. The rideshare facility is adopted and will be provided at EPG. The remaining two projects are not adopted at this time. Establishing a transit center/facilities will be addressed in discussions with Fairfax County and other appropriate entities (see below concerning development of bus transit services). A second crossing over Route 1 is subject to further analysis by the Fort Belvoir Installation Commander. It is expected that the Long-Range Component and Transportation Management Plan of the Real Property Master Plan will provide further analysis and justification concerning the additional crossing. After reviewing the updated Real Property Master Plan, the Fort Belvoir Installation Commander may take appropriate action to finally adopt, defer, or disapprove the additional crossing.

The Fort Belvoir Installation Commander is directed to initiate coordination with Fairfax County and other appropriate entities to develop bus transit services to support the installation.

7.3 Transportation Management Plan

The EIS identified the development and implementation of a Transportation Management Plan (TMP) at Fort Belvoir to reduce single-occupancy vehicle (SOV) trips. During the implementation phase of the TMP, the specific TMP strategies that are adopted would be applied as appropriate to each individual tenant at Fort Belvoir, while considering the requirements of their employees. A Transportation Demand Management Coordinator (TDMC) would assist each tenant in developing and implementing the TMP. Such elements of a TMP include, but are not limited to, alternative work schedules, rideshare and carpool programs, bicyclists and pedestrian accommodations, parking policy, and supporting transit services, as discussed further below. A comprehensive TMP will be developed as the design and Real Property Master Plan are carried forth.

7.4 Transportation Demand Management Coordinator

The TDMC position will oversee a program aimed at reducing the number of SOVs. The coordinator would be knowledgeable of principles, practices, and methods of transportation demand management. These would include, but not be limited to, employee rideshare and commuter programs; current regional programs regarding air quality and transportation; employer trip reduction requirements; marketing, promotion, and event planning practices; parking management practices; opportunities for walking and biking as alternative means of travel; and development of transportation feasibility studies. Appointing a TDMC before fiscal year 2009 will allow development of transportation program initiatives before BRAC relocation of personnel. The following is

a list of some of the potential transportation demand management programs that a TDMC could help implement and manage.

- *Commuter information programs.* Establishing a centralized point of information on available commuter options and a means of disseminating information to employees and employers.
- *Alternative work schedules.* Using various strategies to reduce peak hour traffic including flex-time (variable work schedules so that not all employees arrive and depart at the same time) and compressed work schedules (such as working four 10-hour days rather than five 8-hour days to reduce the total number of vehicle trips).
- *Rideshare matching services.* Helping establish carpools by matching up employees with similar residential locations and schedules.
- *Ad hoc carpooling (slugging).* Establishing and managing an informal carpool area where ad hoc carpools can be assembled each day so that the drivers can take advantage of the regional HOV lanes.
- *Encouragement and promotion of commuting by bicycle.* Providing appropriate amenities to encourage bicycle commuting, such as secure bike lockers and showers.
- *Guaranteed ride home.* Providing information and assistance to commuters wishing to take part in the region's guaranteed ride home program in which carpools and transit riders have an alternative means of getting home in case of emergency or unexpected schedule change.
- *HOV priority.* Providing preferred parking or site access to carpool vehicles.
- *Transit service interface.* Providing a centralized point of contact with the regional transit service providers to help get transit information into the hands of employees and to provide feedback to the transit providers about schedules, bus stop locations, or operating problems.
- *Pedestrian accommodation.* Promoting efforts to ensure that on-post pedestrian paths are available where needed and that transit riders and others arriving on foot are appropriately accommodated.
- *Telecommuting.* Promoting programs that allow and encourage certain employees to work away from the office on occasion, thus reducing the amount of daily travel to Fort Belvoir.
- *Shuttle services.* Providing various shuttles, including on-site shuttle services, so that people can travel from one building or campus to another without needing to drive their own vehicles; shuttles connecting Fort Belvoir to the regional rail transit system; and shuttles between Fort Belvoir and other major installations such as the Pentagon.
- *Transit and ridesharing incentives.* Working with employees and employers to encourage participation in the MetroChek program, which provides tax-free fare transit and vanpool subsidies. The MetroChek program is authorized under

federal legislation that allows employers to provide employees with a tax-free or pre-tax transit benefit. The maximum amount allowable each month under this program is adjusted every few years. Such incentives encourage additional transit and vanpool usage and can help in meeting the transit mode share goals and help mitigate the traffic effects from SOV trips.

- *Air Quality Action Days.* In the event of air quality action days (code orange and red ozone days) in the metropolitan region, the TDM coordinator would use the TMP program as described above to encourage non-SOV trips. Such programs would include transit, HOV/rideshare, and telecommuting. Bus services are free during these air quality action days, including such services as WMATA Metrobus, Fairfax Connector, and OmniRide. A parking policy could be considered to further discourage SOV trips.

The Fort Belvoir Installation Commander is directed to take all necessary steps to create the position of Fort Belvoir Transportation Demand Management Coordinator. The position and all supporting personnel and resources should be in place no later than January 1, 2009. Duties and scope of the position will be essentially as described in the EIS. Fort Belvoir will continue to develop the Transportation Management Plan as part of its RPMP. The Transportation Demand Management Coordinator will consider the full range of demand management programs identified in the EIS.

7.5 Air Quality

Mitigation with respect to air quality for the Preferred Alternative is as follows.

- Tenant organizations, in consultation with Fort Belvoir Directorate of Public Works, will prepare and implement construction performance specifications with emission control measures to minimize the impact of the construction activities related to BRAC projects to include the following:
 - Limit construction on Code Orange, Red, and Purple ozone days.
 - Require all non-road diesel equipment not meeting Tier 2 or better standards to be retrofitted with emission control devices.
 - Implement anti-idling restrictions for both on-road and non-road vehicles and equipment.
 - Use Ultra-Low Sulfur Diesel fuel.
 - Limit use of off-road trucks.
 - Develop a construction performance plan (CPP) to ensure compliance with these emissions control measures (see Attachment 1).
- The EIS identified as mitigation the standard for new boilers (greater than 10 million British Thermal Units (BTU) heat input/hr) that they would emit no more than 9 ppm NO_x. This measure is not adopted; it is not practicable because of high cost and lack of funding.
- Emergency generator testing will not be conducted on Code Orange, Red, and Purple ozone days during the acceptance phase of construction. Exceptions would be assessed for emergency testing requirements.

7.6 Water Resources

Mitigation measures include development of a storm water drainage system master plan study and participation in Fairfax County's Watershed Planning Process and in Total Maximum Daily Load studies with the Virginia Department of Environmental Quality (VDEQ). These studies will identify current deficiencies (e.g. capacity problems, outfall problems, stream bank erosion) and determine infrastructure needs to meet BRAC requirements and long-term growth.

Once design studies are mature enough to quantify additional impervious cover resulting from BRAC construction at the facility level, candidate locations for removal of existing impervious cover to offset the increase would be identified.

Removal of a closed section of Woodlawn Road from Kingman to Beulah Roads and revegetation of the former roadbed in conjunction with the installation's tree replacement program is not adopted; it is not practicable because of high cost and lack of funding.

Designation of at least one new BRAC building project with a green roof component is adopted.

7.7 Biological Resources

The following mitigations address a range of BRAC-related effects to Fort Belvoir's natural resources. Specific mitigation measures include:

- Protect mature and significant trees during construction by limiting grading in wooded areas. This mitigation measure is adopted.
- Replace trees that are 4 inches or greater in diameter with two new trees. The Army will conduct tree surveys and develop a Tree Protection and Mitigation Plan for each BRAC construction project. Construction contractors will follow the installation's tree protection policies as specified in requirements in the 2001 Fort Belvoir Integrated Natural Resources Management Plan (INRMP). This mitigation measure is adopted.
- Implement an invasive/exotic vegetation control plan. The Army would develop and implement such a plan that would focus on controlling invasives in ecologically sensitive areas such as the kudzu in bald eagle habitats and *Phragmites* in wetlands. The Army would annually treat 100 acres of area impacted by invasive vegetation. The Army would remove invasive vegetation from approximately 450 acres on-post in the following areas: the forest and wildlife corridor, EPG Environmental Quality Corridor (EQC), and the installation wildlife refuges. These measures are not adopted; they are not practicable because of high cost and lack of funding. Compensate for habitat loss by repairing and restoring habitat conditions in about 2.5 miles of degraded/impacted streams on EPG and the Main Post to correct existing stormwater management problems, stabilize eroded and undercut stream channels, remove unnecessary impervious surfaces within riparian areas,

revegetate disturbed and cleared portions of riparian areas, and remove invasive and exotic vegetation from riparian areas and adjoining uplands. This measure is not adopted; it is not practicable because of high cost and lack of funding.

- Expand the boundary of the Accotink Bay Wildlife Refuge (ABWR) in the Southwest Area of the installation to the 125-foot contour to include bald eagle habitat, steep slopes, wetlands, sensitive watershed and rare species habitats. This expansion would add approximately 520 acres to the ABWR. This mitigation measure is adopted. It will be considered by the Fort Belvoir Installation Commander as part of the pending revision to the post's Real Property Master Plan (RPMP).
- Expand the boundary of the Jackson Miles Abbott Wetland Refuge (JMAWR) westward to the proposed connector road corridor to include additional watershed area and rare species habitat. This expansion adds approximately 45 acres to the JMAWR. This mitigation measure is adopted. It will be considered by the Fort Belvoir Installation Commander as part of the pending revision to the post's RPMP.
- Designate steep slopes within the T-17 training area as an additional refuge area to protect the candidate species *Stygobromus phreaticus* as recommended by the VDCR-NHP and as addressed in the 2001 Fort Belvoir INRMP. This mitigation measure is adopted. It will be considered by the Fort Belvoir Installation Commander as part of the pending revision to the post's RPMP.
- Designate area below 100-ft contour of T-17 as a new refuge area to protect bald eagle and *Stygobromus phreaticus* habitat. This designation would add about 60 acres. This mitigation measure is adopted. It will be considered by the Fort Belvoir Installation Commander as part of the pending revision to the post's RPMP.
- Formally establish and dedicate the EQC at EPG as a Special Natural Area. This mitigation measure is adopted to the extent it can be done in a manner consistent with NGA's physical security requirements.
- Establish and maintain habitat for Partners in Flight (PIF) priority species on Fort Belvoir. Compensate for approximately 300 acres of PIF priority grassland species habitat and 250 acres of PIF priority forest species habitat that would be lost to BRAC development. Maintain a 100 to 200 acre parcel in the Southwest Area (to include the Cullum Woods landfill and T-6 site) as grassland habitat. This mitigation measure is not adopted. It is impracticable due to high cost and lack of funding.
- Remove Cissna Road roadbed throughout EPG and the bridge across Accotink Creek. Revegetate the old roadbed. This mitigation measure is not adopted. It is impracticable due to high cost and lack of funding.
- Incorporate wildlife crossing structure on all road crossings of RPAs. Twelve crossings on EPG and eight culvert crossings on the Main Post are estimated. Wildlife crossing structures would include construction and installation techniques to facilitate wildlife crossing. Where feasible, include bridges instead of culverts,

and daylighting on long culverts. This mitigation measure is not adopted. It is impracticable due to high cost and lack of funding.

7.8 Cultural Resources

The following specific mitigation measures would compensate for the impacts to the historic and cultural resources at Fort Belvoir lost through BRAC development.

- Fort Belvoir would update the existing conditions survey of all of the National Register-eligible buildings on Fort Belvoir, excluding family housing. Based on survey results, Fort Belvoir would rehabilitate the exterior of all historic buildings that would be affected by BRAC in accordance with the Secretary of the Interior's Standards and Guidelines for the Rehabilitation of Historic Properties. This mitigation measure is not adopted; it is not practicable because of high cost and lack of funding.
- Fort Belvoir would update the Fort Belvoir Historic District National Register eligibility form to capture changes to the district that have occurred since it was first identified in 1986. This mitigation measure is not adopted; it is not practicable because of high cost and lack of funding.
- The proposed mitigation for the National Register-eligible South Post golf course is photo-documentation prior to its demolition for development as the site for the hospital. This will be the subject of National Historic Preservation Act (NHPA) Section 106 consultation. This mitigation measure is adopted.
- Fort Belvoir will continue to negotiate a NHPA Section 106 Programmatic Agreement. No actions will be undertaken that could cause effects on historic property until the NHPA Section 106 process is complete.

7.9 Socioeconomic Resources

The EIS identifies completion of the National Scenic Trail on Fort Belvoir to offset loss of recreational opportunities due to BRAC realignment. This measure is not adopted; it is not practicable because of high cost and lack of funding.

7.10 Aesthetics and Visual Resources

Vegetated buffers at least 200 feet in width where possible would be retained along the northern boundary of EPG, to be supplemented with additional landscaping as needed, to provide an effective transition to off-post residential areas and other development. This mitigation measure is not adopted; it is not practicable because of high cost and lack of funding. In addition, ambient lighting due to BRAC projects would be maintained at or below requirements similar to those outlined in the Fairfax County Public Facilities Manual as it pertains to residential units. Design of facilities would account for these requirements. This mitigation measure is adopted, with the exception of lighting needed for security and personal safety.

7.11 Utilities

Mitigation measures for utilities include the following:

- The Army would require that at least two of the three major projects institute rainwater catchment systems for use in landscape irrigation. This mitigation measure is adopted.
- All BRAC construction would be designed to meet Executive Order 13423 total operational reduction goals for energy and water conservation. Compliance with the Executive Order will be treated as a best management practice.
- At least one building project would be designed for gray water reuse, one with a Leadership in Energy and Environmental Design (LEED) Gold standard building, and one with a LEED Platinum standard building. These mitigation measures are not adopted; they are not practicable because of high cost and lack of funding.
- Army policy is to build new construction to the LEED Silver standard. Fort Belvoir would assess the long-term cost effectiveness of this program by constructing one major LEED Gold building on-post. This mitigation measure is not adopted; it is not practicable because of high cost and lack of funding.
- The Installation Recycling Program, loading docks, and compost facility would be expanded by fifty percent by 2012. This mitigation measure is not adopted; it is not practicable because of high cost and lack of funding.

7.12 Other Resources

No specific mitigation measures for the BRAC action are identified for other affected resources. In general, actions with respect to affected resources are protected by a variety of BMPs that preserve and conserve those 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.

The Army will minimize effects on all environmental and socioeconomic resources by implementing best management practices, including those listed in Table ES-1 of the EIS, as appropriate for the affected resource.

8.0 Decision

On behalf of the Department of the Army, I have decided to proceed with the Preferred Alternative. Specifically deferred from the present decision, however, is that portion of the Preferred Alternative that would locate and construct facilities for BRAC 133 (WHS) units, agencies, and activities at EPG and approval of the MWR Family Travel Camp. A decision on these portions of the Proposed Action will be announced through additional NEPA documentation.

I have considered the results of the analyses presented in the EIS, supporting studies, and comments provided during formal comment and review periods. These factors as well as the description of the purpose and need for the Proposed Action guided my decision on whether to approve the Preferred Alternative. I gave special consideration

to the effect of the Proposed Action on traffic, air quality, natural resources, and cultural resources. I also took into account the fact that the No Action Alternative would not meet the Army's purpose and need for the Proposed Action. This was critical because the BRAC realignment is required by Congress and needed for Army transformation to be effective. On the basis of this review, I have determined that implementing the Preferred Alternative reflects a proper balance between initiatives for protection of the environment, appropriate mitigation, and actions to achieve the Army's requirements (e.g., force protection). Consistent with this decision and the Proposed Action and analyses described in the EIS, the Army will:

- Incorporate into its Fort Belvoir RPMP the preferred land use plan identified in the EIS.
- Subject to the availability of funding,⁴ implement the facilities projects listed in Section 4.1 above, except for BRAC 133 (WHS) and the MWR Family Travel Camp. As described in Section 4.1 above, structured parking will be provided in support of major facilities projects.
- Realign Fort Belvoir by relocating approximately 19,000 additional personnel to the post as indicated by the 2005 BRAC Commission.
- Implement the five discretionary move relocations identified in Section 2.0 above.

My decision to adopt the preferred land use plan alternative, and deferring the construction location for BRAC 133 (WHS) from the Preferred Alternative for BRAC realignment is based on my view that these alternatives are, on balance, the environmentally preferable course compared to other action alternatives. The No Action Alternative is the most environmentally preferable, but does not meet the purpose and need of the Proposed Action. Consideration of the effects on traffic and attendant costs to relieve congestion are substantial components of my decision. With respect to these, the preferred land use plan and Preferred Alternative for BRAC implementation provide the best solutions to the influx of approximately 19,000 additional personnel to the post. I find substantial potential for the Town Center Alternative to concentrate development in the central portion of Main Post and, thereby, concentrate traffic congestion. The City Center Alternative would place nearly all BRAC units, agencies, and activities at EPG and the GSA Parcel. Utilization of the GSA parcel, or other suitable locations for the implementation of the BRAC 133 (WHS) requires additional evaluation and a supplement to this decision. The Satellite Campuses Alternative, like the Town Center Alternative, would concentrate development on Main Post. This alternative fails to use the EPG, a reasonably available resource. Like the Town Center Alternative, the Satellite Campuses Alternative is estimated to require more than \$700 million to mitigate traffic impacts.

The Army did not perform specific additional analysis of the change in impacts due to the elimination of the BRAC 133 (WHS) element and the Travel Camp from the Preferred Alternative. For purposes of my decision, however, I assumed that all

⁴ The Anti-Deficiency Act (31 U.S.C. 1341 (a)(1)), provides that an officer or employee of the United States government may not (a) make or authorize an expenditure or obligation exceeding an amount available in an appropriation or fund for the expenditure or obligation or (b) involve the government in a contract or obligation for the payment of money before an appropriation is made unless authorized by law.

impacts across the board would be lesser, not greater. Therefore, the analysis in the EIS is adequate to support the decision I have made.

Road improvements identified with respect to the Preferred Alternative for BRAC implementation, which are not addressed above are not now being adopted as part of the Army's action because of a lack of certification under the Defense Access Road program to enable their funding. The Army will continue to work with the FHWA, VDOT, and Fairfax County and the DAR program to accomplish construction of road improvements in support of activities at Fort Belvoir. During the period of construction, Fort Belvoir will work with local transportation authorities to avoid, to the greatest extent practicable, traffic issues related to construction activities.

I note that the Proposed Action complies with the requirements of the General Conformity Rule (40 CFR Part 93) (see next paragraph). Mitigations for air quality are presented in Section 7.5.

I note that the Proposed Action complies with Coastal Zone Management Act of 1972 (16 U.S.C. Section 1451, et seq., as amended). The Commonwealth of Virginia concurred that the proposed BRAC undertakings at Fort Belvoir are consistent with the Virginia Coastal Resources Management Program, provided that:

- The Construction Performance Plan/Air Quality Mitigation Plan dated June 28, 2007 and approved by VDEQ, be included in this Record of Decision (see Attachment 1) and be fully implemented.
- Any substantial changes in the Proposed Action contemplated by the Army must undergo a new analysis and General Conformity Determination.
- The Army provides periodic status reports on implementation of the Construction Performance Plan/Air Quality Mitigation Plan to VDEQ on a semi-annual basis.

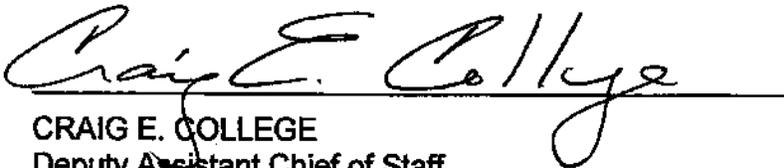
The Proposed Action complies with the requirements of the Endangered Species Act. The U.S. Fish and Wildlife Service concurred that the Proposed Action was not likely to adversely affect known threatened and endangered species.

Although certain potential effects to cultural resources might not become known until later in the project design process, the Army is committed to continuing consultation with appropriate parties to develop measures to mitigate adverse effects to historic properties/resources by avoidance, reduction of or compensation for such adverse effects as they are identified. Analysis in the EIS found no significant adverse impacts with respect to cultural resources due to the ongoing consultations with the other parties, which are anticipated to result in measures to avoid, reduce, or mitigate adverse effects on historic properties. These measures would be identified as the design process progresses and the exact location of proposed projects and specific design details (e.g., building materials, construction footprint, height of buildings, and building design). The measures would be included in the programmatic agreement, currently under negotiation. The Fort Belvoir Installation Commander is directed to continue consultation with appropriate parties through the National Historic Preservation Act Section 106 process and to take appropriate steps to conduct additional assessments of effects on historic properties as circumstances warrant and if adverse, develop the measures to avoid, reduce, or mitigate adverse effects. No actions will be undertaken

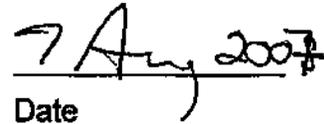
that could cause effects on historic properties until the NHPA Section 106 process is complete.

The Army will minimize effects on all environmental resources and socioeconomic resources by implementing BMPs as appropriate to the affected resources as identified in the EIS.

The mitigation measures involving the rideshare facilities, development of bus transit services, and establishment of a Transportation Demand Management Coordinator do not require enforcement or effectiveness monitoring as described in Appendix C of 32 CFR Part 651. Other mitigation measures will be subject to enforcement monitoring by the Fort Belvoir Installation Commander. Implementing the actions affected by my decision will be subject to the availability of funds, which the Army will seek in good faith.



CRAIG E. COLLEGE
Deputy Assistant Chief of Staff
for Installation Management



Date

Attachment 1

**Final Construction Performance Plan for the Reduction of Air Emissions for
Implementation of 2005 Base Realignment and Closure (BRAC)
Recommendations and Related Army Actions at Fort Belvoir, Virginia**

FINAL

***Construction Performance Plan for the Reduction of Air Emissions for
Implementation of 2005 Base Realignment and Closure (BRAC)
Recommendations and Related Army Actions at Fort Belvoir, Virginia***



Prepared for

Fort Belvoir, Virginia

by the

U.S. Army Corps of Engineers, Mobile District

July 2007

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1.0 Introduction

The U.S. Army has developed design and construction standards for equipment and vehicles that reduce air emissions through use restrictions on critical ozone days, diesel oxidation catalysts (DOCs), ultra-low sulfur diesel fuel (ULSD), idling restrictions, and cleaner vehicle options. This construction performance contract plan outlines policy and procedures for complying with emissions reduction requirements and air quality laws of the Commonwealth of Virginia during the period of construction for the Base Realignment and Closure (BRAC) and related activities at Fort Belvoir. This construction performance plan will be enacted during years that the project is expected to exceed the applicability threshold levels for air emissions in the National Capital Interstate Air Quality Control Region.

2.0 Code Red and Purple Ozone Days

Requirements

Contractors and sub-contractors shall not operate diesel powered non-road construction equipment with engine horsepower (HP) ratings of 60 HP and above on predicted Code Red and predicted Purple Ozone days. This restriction will be in effect between 7am to 5pm on the first two predicted Code Red or predicted Purple Ozone days during the period beginning June 1 and ending on August 31 of each calendar year.

Exemptions

The following activities are exempt from this requirement:

1. Operations for mandatory for testing, servicing, repairing, or diagnostic purposes;
2. Operations when verifying that the equipment is in safe operating condition as required by law and that all equipment is in good working order, either as part of a daily vehicle inspection or as otherwise needed, provided that such engine operation is mandatory for such verification;
3. Operation of authorized emergency vehicles while in the course of providing services for which the vehicle is designed; or
4. Operation for loading or offloading deliveries scheduled more than one day in advance.

Reporting Requirements

There are no special reporting requirements under the Code Red and Purple Ozone Days policy.

3.0 Code Orange Ozone Days

Requirements

Contractors and sub-contractors shall not operate diesel powered non-road construction equipment with engine horsepower (HP) ratings of above 600 HP unless equipped with selective catalytic reduction emission controls on predicted Code Orange days. This restriction will be in effect between 7am to 5pm on predicted Code Orange Ozone days during the period beginning June 1 and ending on August 31 of each calendar year.

Exemptions

The following activities are exempt from this requirement:

1. At the contractor's discretion, operations on the 3rd consecutive predicted Code Orange days, and subsequent consecutive predicted Code Orange days are exempt from this requirement;
2. This requirement is limited to a total of 10 days per year of limited operations;
3. Operations for mandatory for testing, servicing, repairing, or diagnostic purposes;
4. Operations when verifying that the equipment is in safe operating condition as required by law and that all equipment is in good working order, either as part of a daily vehicle inspection or as otherwise needed, provided that such engine operation is mandatory for such verification;
5. Operation of authorized emergency vehicles while in the course of providing services for which the vehicle is designed; or
6. Operation for loading or offloading deliveries scheduled more than one day in advance.
7. The use of cranes after the period when clearing and grading would occur.

Reporting Requirements

The contractor must include the dates which they enforce this requirement in their monthly report.

4.0 Limited Off-Road Trucks or Use of New Emission Standard Vehicles

Requirements

Contractors and sub-contractors shall not operate trucks that do not meet the on road emission standards for the National Capital Region. This restriction will be in effect beginning June 1 and ending on August 31 of each calendar year.

Exemptions

The following activities are exempt from this requirement:

1. The use of tier 2, 3 or 4 compliant nonroad trucks;
2. The use of nonroad trucks that have been retrofitted with selective catalytic reduction control technology;
3. The limited use of nonroad trucks that have prior approval from the ACO and Fort Belvoir ENRD; or
4. The use of nonroad trucks required ensuring safe and OSHA compliant construction operations.

Reporting Requirements

Construction shall not proceed until the contractor submits a list of the non-road and onroad diesel powered trucks that will be used onsite during the initial month of onsite work. The list shall include (1) the equipment number, type, make, and contractor/sub-contractor name; (2) the emission control device make, model and EPA verification number; (3) the type and source of fuel to be used; and (4) total cumulative number of days the equipment is expected to be on the site. No diesel-powered trucks may be brought onsite until this information has been submitted. Within 5 days of the end of each month, the contractor shall submit a report detailing the actual usage of the trucks during the previous month and the required information about trucks expected to be used during the current month.

5.0 Diesel Retrofit

Requirements

All Contractor and sub-contractor diesel powered non-road construction equipment with engine horsepower (HP) ratings of 60 HP and above that are assigned to the contract for a period in excess of 30 cumulative calendar days over the life of the project shall be retrofitted with Emission Control Devices in order to reduce diesel emissions. The Retrofit

Emission Control Devices shall consist of oxidation catalysts, or similar retrofit equipment control technology that (1) is included on the Environmental Protection Agency (EPA) *Verified Retrofit Technology List* and (2) is verified by EPA or certified by the manufacturer to provide a minimum emissions reduction of 20% PM₁₀, 40% CO, and 50% HC.

Exemptions

This requirement does not apply:

1. If the vehicle or equipment is either EPA Tier 2, 3 or 4 Rule compliant; or
2. To on-road vehicles and equipment. However, Contractors, Subcontractors and Suppliers that transport materials regularly to and from the project sites are encouraged to follow these requirements to the best of their ability.

Reporting Requirements

Construction shall not proceed until the contractor submits a list of the non-road diesel powered construction equipment that will be used onsite during the initial month of onsite work. The list shall include (1) the equipment number, type, make, and contractor/sub-contractor name; (2) the emission control device make, model and EPA verification number; (3) the type and source of fuel to be used; and (4) total cumulative number of days on the site. The contractor shall submit monthly summary reports, updating the same information stated above. The addition or deletion of non-road diesel equipment shall be included on the monthly report.

6.0 Anti-Idling Restrictions

Requirements

No contractor will allow any diesel-fueled commercial motor vehicles or diesel non-road construction equipment to idle for a period greater than 5 minutes.

Exemptions

The following activities are exempt from this requirement:

1. Idling when the vehicle must remain motionless due to traffic conditions, an official traffic control device, or an official traffic control signal over which the driver has no control, or at the direction of a police officer;
2. Idling of the primary engine or operating when forced to remain motionless due to immediate adverse weather conditions affecting the safe operation of the vehicle or due to mechanical difficulties over which the driver has no control;

3. Idling of the primary engine or operating a diesel-fueled is mandatory for testing, servicing, repairing, or diagnostic purposes;
4. Idling to verify that the vehicle is in safe operating condition as required by law and that all equipment is in good working order, either as part of a daily vehicle inspection or as otherwise needed, provided that such engine idling is mandatory for such verification;
5. Idling of the primary diesel engine outside of the hours of 7 AM – 5 PM when it is necessary to power a heater, air conditioner, or any ancillary equipment during sleeping or resting in a sleeper berth while on the project site;
6. Idling of the primary engine or operating a diesel-fueled authorized emergency vehicles while in the course of providing services for which the vehicle is designed; or
7. Idling during periods when ambient temperatures are less than 30 degrees Fahrenheit.

Reporting Requirements

There are no special reporting requirements under the anti-idling policy.

7.0 Use of Ultra Low Sulfur Diesel Fuel

Requirements

The contactor and subcontractor shall fuel all onroad construction and non-road diesel vehicles and equipment with only ultra low-sulfur diesel fuel with sulfur content of 15 ppm or lower. It should be noted that ULSD fuel is readily available in the project area. In addition, it should be noted that the requirements stated herein are compatible with current Federal requirements for the use of ULSD fuel for on-road vehicles, but in advance of the 2010 Federal requirements for the use of ULSD fuel for off-road vehicles.

Exemptions

This requirement does not apply to fueling activities outside the National Capital Region unless required by law.

Reporting Requirements

The contactor and/or subcontractor shall record and maintain onsite record of all fuel deliveries to the site. Documentations shall include information suitable for verification of the ULSD requirements.

8.0 Required By Law

Requirements

All construction should be accomplished in full compliance with the Virginia Regulations for the Control and Abatement of Air Pollution, particularly 9 VAC 5, Chapter 40, Part II. Articles of particular relevance are:

- Article 1, Visible Emissions and Fugitive Dust/Emissions (9 VAC 5-40-60 to 120);
- Article 39, Asphalt Paving Operations (9 VAC 5-40-5490 to 5590);
- Article 40, Open Burning (9 VAC 5-40-5600 to 5645);
- Article 42, Portable Fuel Containers Spillage Control (9 VAC 5-40-5700 to 5770);
- Article 49, Architectural and Industrial Maintenance Coatings (9 VAC 5-40-7120 to 7230); and
- Article 50, Consumer Products (9 VAC 5-40-7240 to 7360).

This listing is not all-inclusive; contractors should ensure compliance with all applicable Virginia air pollution control regulations.

Exemptions

There are no exemptions. Mandatory compliance with all laws of the Commonwealth of Virginia is required.

Reporting Requirements

There are no special reporting requirements.

9.0 Compliance Plan and Affirmative Commitment

Requirements

Construction shall not proceed until the contractor submits a plan outlining policies, procedure and systems to ensure compliance with this guidance to the ACO to be approved by Fort Belvoir ENRD. Included in the plan will be a Certificate of Intention to Comply signed by a responsible contractor representative. An example has been attached to this plan.

Exemptions

1. Outside the ozone season (April 1 through October 31) construction may begin without an approved plan to comply. However, a plan must be approved within 30 days of notice to proceed is given or April 1st which ever comes first.

Reporting Requirements

There are no special additional reporting requirements.

10.0 Enforcement

During the construction phase of the Fort Belvoir BRAC action, Administrative Contracting Officers (ACO) and their agents are anticipated to number 100 or more. One of their primary responsibilities will be to monitor and inspect the activities of the contractors and subcontractors performing the work and they will have the authority and responsibility to insure compliance with the policies and procedures outlined in this plan. All work shall be conducted under the general direction of the ACO and is subject to Government inspection at all places and at all reasonable times to ensure strict compliance (FAR 52.246-12).

The contractor holds an affirmative obligation to maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to these requirements. The Contractor shall maintain complete inspection records and make them available to the Government.

The Administrative Contracting Officer maintains the authority, by written order to the Contractor, to require the Contractor to stop all, or any part, of the work (FAR 52.242-15). When the ACO, or their agent, determines a violation of policies and procedures outlined in this guidance exists, he/she will notify the Contractor in writing within one business day, and direct the Contractor to correct the deficiency within a specified timeframe. The specified timeframe, which begins upon Contractor notification, will be from immediately to 24 hours long, based on the urgency of the situation and the nature of the deficiency. The ACO or their agent shall be the sole judge of these conditions. Upon receipt of the order, the Contractor shall, at their own expense, immediately comply with its terms and take all reasonable steps to come into compliance with policies and procedures outlined in this guidance.

If a Contractor or sub-contractor accumulates three (3) violations for the same issue, all Contractor operations will be shut down at their own expense until the deficiency is corrected and additional systems and controls are put in place to ensure future compliance.

Attachment 1 - Equipment Worksheet(s)

**FORT BELVOIR BRAC ACTION AND ASSOCIATED PROJECTS
CONTRACTOR EQUIPMENT LISTING**

Construction Air Quality – Diesel Vehicle Emissions Control

Month, Year: _____

Machine #	Description	Unit #	Serial #	Year	Horsepower Rating	Tier	Date Retrofitted (if applicable)	Number of Days on Site (Cumulative)	On Road Truck (Y/N)	Off Road Truck (Y/N)
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										

Certify the above information is accurate.

Company _____
 Print Name _____
 Title _____
 Signature _____
 Date _____

Dates Code Orange Limitation was enacted _____

REVIEWED BY: _____

Attachment 2 - Certificate of Intention to Comply

CERTIFICATE OF INTENTION TO COMPLY
FOR

***Construction Performance Plan for the Reduction of Air Emissions for
Implementation of 2005 Base Realignment and Closure (BRAC)
Recommendations and Related Army Actions at Fort Belvoir, Virginia***

I, authorized signatory for _____,
whose principal place of business is at _____,
do hereby certify our intent to comply with the Construction Performance Plan for the
Reduction of Air Emissions for Implementation of 2005 Base Realignment and Closure
(BRAC) Recommendations and Related Army Actions at Fort Belvoir, Virginia. The
requirements herein included but are not limited to:

- Limiting construction on Code Orange, Red and Purple ozone days;
- Limiting the use of off-road trucks on the project site;
- Requiring all non-road diesel equipment not meeting Tier 2 or better standards be retrofitted with emission control devices;
- Implementing anti-idling restrictions for both onroad and non-road vehicles and equipment;
- The use of Ultra-Low Sulfur Diesel (ULSD), alternate fuels or fuel additives; and
- Meeting new engine standards for nonroad vehicles.

I acknowledge that this certificate is being furnished as a requirement under this contract, and is subject to applicable, State and Federal Laws, both criminal and civil.

Date

Signature

Printed Name and Title