

Real Property Master Plan Digest

Fort Belvoir, Virginia

December 2009



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Introduction

1 CHAPTER



View of Fort Belvoir from U.S. Route 1 toward Potomac River

Preface

Given the complexity of its mission, its high profile location, and substantial projected growth, few other military installations in the world today can compare to Fort Belvoir, Virginia. This beautiful, historic installation, situated in one of America's most congested and notable areas – the National Capital Region (NCR), provides both logistical and administrative support to over 100 diverse agencies. The Main Post current population includes over 23,000 personnel, with approximately 7,000 residents. Within a few short years, the Defense Department's 2005 Base Realignment and Closure (BRAC) program will add another 19,000 civilian and military personnel to Fort Belvoir.

Its military mission is both diverse and global. As a strategic sustaining base for America's Army, the work done here is vital to the success of the goals and objectives of the Nation's defense strategy. Currently, Fort Belvoir is home to: one U.S. Army major command headquarters; elements of ten U.S. Army commands; 19 different agencies and direct reporting units of the Department of Army; eight elements of the U.S. Army Reserve and the Army National Guard; and 26 Department of Defense (DoD) agencies. Also located on Post are a Marine Corps detachment, a U.S. Air Force activity, and an agency from the Department of the Treasury.

Regionally, Fort Belvoir successfully provides: a creative learning environment for Army and DoD school students; military support for a variety of NCR contingency missions; regional housing for active duty military families; quality life support that includes health and recreational activities for the military community; and an environmental stewardship in concert with mission support.

Over time, historic Fort Belvoir has grown and evolved into a prominent and significant installation. Today, its heritage continues to inspire its transformation into a world-class federal urban center. An essential element of this rich and proud legacy involves its role as a dedicated steward of the environment, committed to conserving the natural beauty and resources of Fort Belvoir... ensuring its reputation as one of America's enduring "Beautiful to See" installations.

Army leadership at all levels is determined to make the planning and implementation process of this major expansion and renovation at Fort Belvoir an inclusive one, with maximum input from all stakeholders.

Purpose

The Real Property Master Plan (RPMP) provides the Installation with the direction, vision, and framework for the long-term and short-term orderly development and sustainment of its real property assets, which typically includes all land and facilities. It also incorporates the professional practice of community planning, as implemented by all DoD services and agencies.

The RPMP is authorized through Army Regulation (AR) 210-20 Real Property Master Planning for Army Installations, and adheres to the guidance outlined in the Installation Management Command's Master Planning Technical Manual (MPTM). Components of the RPMP include: the Long Range Component (LRC), the Installation Design Guide (IDG), the Capital Investment Strategy (CIS), the Short Range Component (SRC), and the Real Property Master Plan Digest (RPMPD).



View across Fort Belvoir looking Northwest

The Real Property Master Plan Digest:

- Captures the essence of the Installation's entire Real Property Master Planning process, as described in the RPMP
- Communicates a sense of place and an understanding of what is special about the Installation and region
- Provides an analysis of how the Installation is changing, and what it will look like in the future if present trends continue
- Identifies the forces of change acting on the Installation
- Reminds installation commanders, directors, soldiers, civilians, contractors, and families that no outcome is inevitable, and that the choices made by the Installation make the difference
- Expresses a compelling vision of what Post residents desire for the future Installation
- Encourages consideration for what is best for the installation as a whole, as well as current and future residents -- not just for an existing unit, organization, or individual

The information, plans, and recommendations reflected in this digest are based on the Fort Belvoir 2008 Master Plan Update.

Mission and Vision

2 CHAPTER



Mission

Fort Belvoir is the Army's premier installation in the National Capital Region (NCR). It provides a secure, safe operating environment for numerous missions and functions, including:

- Administrative, logistics, and operations support for regional and worldwide military missions
- A creative learning environment for Army and DoD school students
- Military support for a variety of NCR contingency missions
- Regional housing for active duty military families
- Quality of life support for the military community that includes health and recreation
- Environmental and cultural resources stewardship in concert with mission support

Vision

The collective vision of the future Fort Belvoir aspires to create:

- An outstanding place to work, train and live
- A federal urban center that provides the workforce with safe, secure, premium support
- A culture that welcomes change and challenges while simultaneously achieving harmony with surrounding communities and the natural environment
- A continuing legacy of a "Beautiful to See" installation

Master Plan Guiding Principles

The Master Plan Guiding Principles were developed in consultation with the garrison staff. They provide a planning road map that will shape the future development of Fort Belvoir. These principles are:

- Transform Fort Belvoir: Create a world-class installation
 - Support Fort Belvoir’s mission.
 - Become a model within the community, the region and among other military installations.
 - Support and incorporate anti-terrorism/force protection standards to provide a safe and secure environment for installation residents and customers.
 - Improve the quality of life across the Post.
 - Promote diverse and high quality neighborhoods.
 - Develop new facilities and public spaces.

- Achieve a diversity of use and activities: Enrich the program
 - Create new places of work that reinforce the spirit of community and collaboration.
 - Integrate new places for education and training.
 - Continue to support areas for recreation.
 - Encourage the creation of mixed-use activity centers.
 - Provide National Capital Soldiers with quality, cost effective military training capabilities.

- Achieve environmental brilliance: A sustainable approach in everything
 - Create energy efficiency through technology and by maximizing site potential.
 - Explore ability to maximize day-lighting in building design.
 - Optimize the use of recycled building materials.
 - Incorporate new technologies and best practices.
 - Explore alternative modes of transportation.

- Strengthen the natural habitat: Enhance creeks, wetlands and wildlife habitats and ensure all development is in concert with the natural environment

- Preserve natural systems and their functions.
- Protect and enhance natural habitats.
- Recognize and preserve existing biodiversity.
- Enable connections between the regional and on-post conservation areas.
- Incorporate 'watershed planning' principles into site planning.



- Build compact neighborhoods: Strengthen the sense of community and place

- Extend transit lines.
- Guide projected growth around transit opportunities.
- Optimize developable land.
- Preserve large land areas for potential future missions.
- Preserve open space.
- Align accessibility and transit initiatives.
- Recognize that land is a valuable and diminishing resource.
- Implement land use planning that reinforces redevelopment and strengthens existing neighborhoods.



- Improve connectivity: Consider strategies that allow people to "park once"

- Create convenient access to transit.
- Strengthen circulation connections between North and South Post.
- Investigate alternative modes of transit.
- Integrate potential shuttle connections or a "circulator" between Army neighborhoods, parking facilities and regional transit.
- Encourage the development of pedestrian and bicycle trails that connect residential neighborhoods to each other.





- Emphasize the public realm: Create walkable neighborhoods
 - Create new and exciting places for people.
 - Concentrate uses and activities that enable a walkable community.
 - Provide active and public uses at the ground floor.
 - Ensure accessibility.
 - Repair existing landscapes including streets, parklands, creeks, and streams.
 - Expand the “Town Center” to serve as a central focus for South Post development.



- Respect the history of Fort Belvoir: Continue its legacy for future generations
 - Explore the innovative reuse of older facilities.
 - Continue legacy of the landscape and natural setting.
 - Continue to uphold Fort Belvoir’s mission and responsibilities within the region.
 - Provide a clear development strategy for a long-term, sustainable development plan.
 - Recognize Fort Belvoir’s advantageous location near our nation’s capital.
 - Emphasize design standards that are respectful of the historic nature of Fort Belvoir and the surrounding region.
 - Protect Fort Belvoir’s cultural resources.



- Provide Community Benefits: Strengthen existing Army and surrounding neighborhoods
 - Identify roadway investments for continued growth of the region.
 - Explore shared amenities, such as parks and community-based facilities (for example, the hospital and Museum of the U.S. Army).
 - Align possible synergies with surrounding community development initiatives, such as the redevelopment of downtown Springfield and the U.S. Route 1 corridor.
 - Optimize the potential of existing infrastructure and shared benefits from continued investment in regional transportation.



These principles aim at creating a plan that: efficiently uses land, maximizes the use of previously developed areas, minimizes the impact on the environment, and ultimately creates a sustainable world-class installation.

Installation Profile

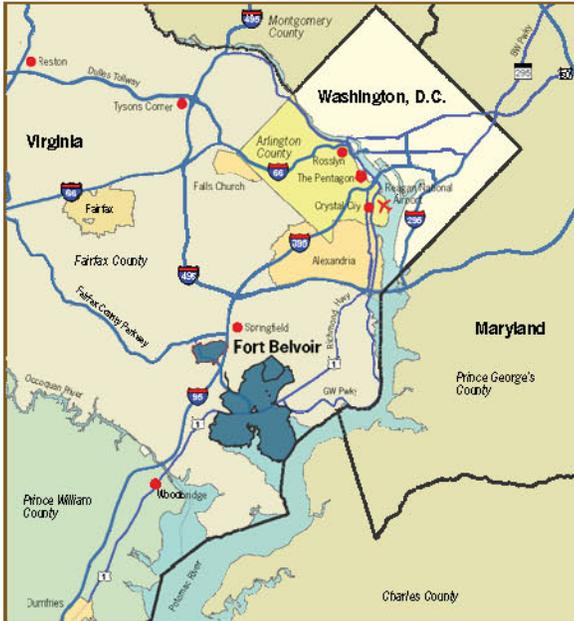


Figure 3.1 - Location Map

Location

Fort Belvoir is located along the Potomac River in Fairfax County, Virginia (Figure 3.1). It is situated 16 miles southwest of Washington, D.C. and eight miles southwest of the City of Alexandria. Fort Belvoir is located near Interstate 95, which serves the East Coast as a primary north-south transportation corridor.

Fort Belvoir stretches north and west from the banks of the Potomac River. The Main Post and Fort Belvoir North Area (FBNA) consists of approximately 8,500 acres of land. U.S. Route 1 traverses the Main Post, dividing it into North Post and South Post (Figure 3.2). Humphreys Engineer Center (HEC), located at the northeast corner of the Main Post, is not included in this study.



Figure 3.2 - Fort Belvoir Main Post and Fort Belvoir North Area (FBNA)

Functional Areas

The installation is further divided into eight sub-areas (Figure 3.3). The following is a discussion of the functions and characteristics of each of these areas. The population numbers identified within each area are estimates based on available information and discussions with Fort Belvoir Directorate of Public Works (DPW).

South Post is an approximately 2,550-acre peninsula located south of U.S. Route 1. Access is via Tulley Gate and Pence Gate from this route, and via Walker Gate from the Mount Vernon Parkway. South Post was the first functional area to be used and developed by the Army. It houses the majority of development on Post, which includes clusters devoted to Post administration and support, medical services, education, family housing, research and development, and community/recreational facilities. South Post has approximately 11,000 employees and 6,200 residents.

South Post Core represents approximately 100 acres of the total South Post acreage. It is the focal point and center of the Fort Belvoir Historic District. It contains the installation's principal administrative/educational buildings, a main parade ground, and officers/non-commissioned officers housing areas.

Lower North Post is comprised of approximately 320 acres along the northern edge of U.S. Route 1, and is accessible via South Post or Upper North Post. Additional direct access from this route can be provided via Woodlawn Gate and Lieber Gate, but both are currently closed. The development density and character on Lower North Post is similar to South Post, but these functional areas are only connected by Gunston Road. Lower North Post contains unaccompanied enlisted housing (McRee Barracks), family housing (Lewis Village), classrooms, and reserve training activities. It houses about 850 employees and 760 residents.

Upper North Post is approximately 1,930 acres located to the east of Fairfax County Parkway, between U.S. Route 1 and Interstate 95. It is accessed by the Kingman Gate on Kingman Road and by Telegraph Gate on Telegraph Road. Major tenant organizations in this functional area include: the Defense Logistics Agency (DLA), Defense Threat Reduction Agency (DTRA), Defense Communications Electronics Evaluation Testing Agency (DCEETA), and the U.S. Army Intelligence and Security Command (INSCOM). It also houses the Fort Belvoir North Post Golf Course, Post support facilities, Fort Belvoir Elementary School, as well as the community center comprised of the Post Exchange, Commissary, class VI store, convenience store, gas station, bank, and Main Post chapel. There are about 9,000 employees in this area. Woodlawn Village is a discrete residential area that is part of Upper North Post. It has its own gate and houses about 1,500 residents.

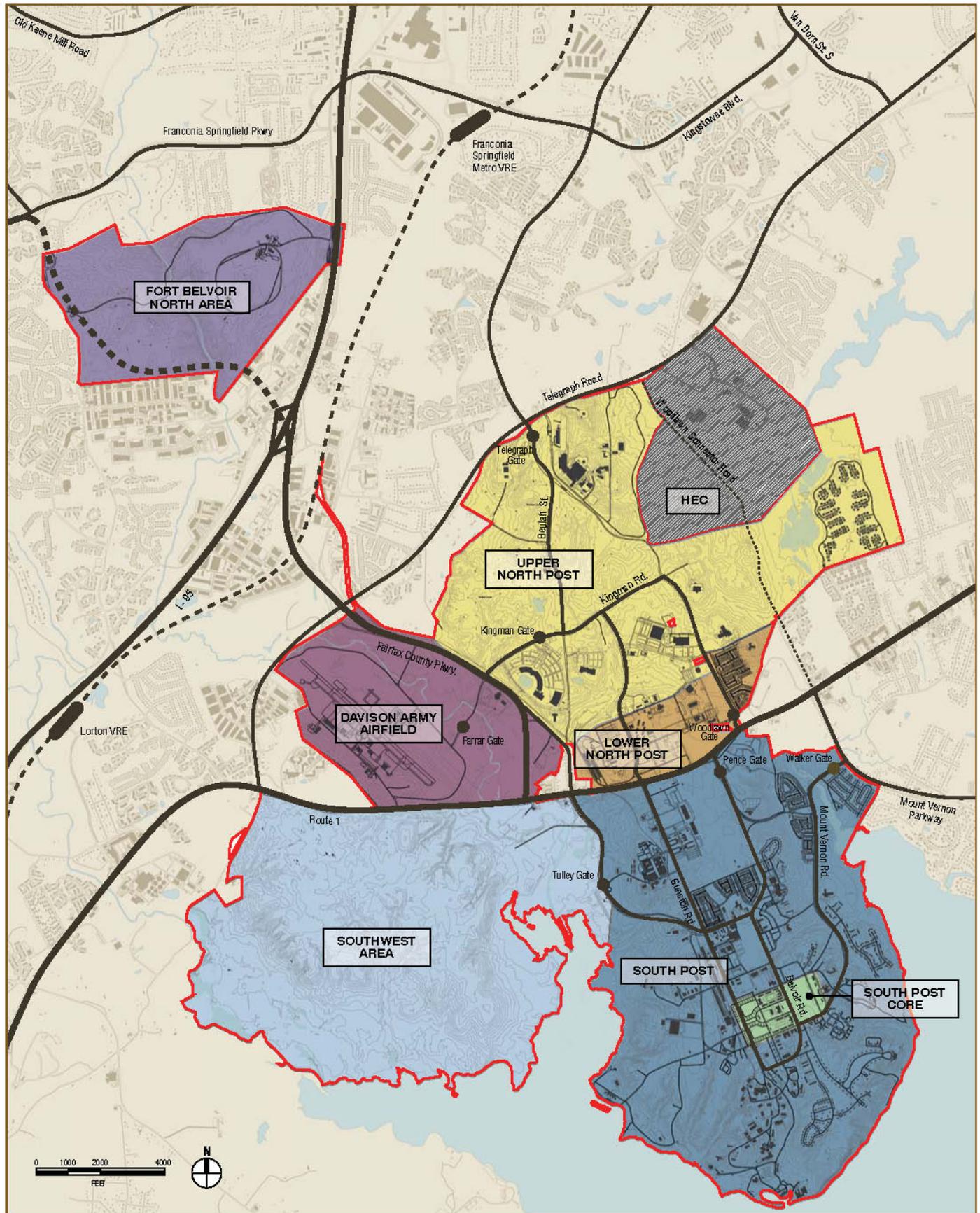
Southwest Area is roughly a 2,100-acre tract of land located to the south of U.S. Route 1 and west of South Post. Two unmanned gates allow access to this area. It encompasses most of the 1,400-acre Accotink Bay Wildlife Refuge (ABWR), as well as undeveloped wooded areas with closed and operational ranges for engineer/troop training.

Davison Army Airfield (DAA) is an 800-acre area located west of Fairfax County Parkway and between U.S. Route 1 and Interstate 95. It is accessed by Farrar Gate from the Parkway. DAA provides training and support facilities for fixed/rotary wing aircraft and houses the U.S. Army Operational Support Airlift Command (OSA COM). About 875 employees work in this area.

Fort Belvoir North Area (FBNA) is an approximately 800-acre area located about two miles northwest of the Main Post to the west of Interstate 95. It is remote from the Main Post, and accessible via an unmanned gate on Backlick Road. The gate on the western edge is currently closed. FBNA was formerly a testing area. Operations ceased when the Engineer Training Center relocated to Fort Leonard Wood, Missouri.

Humphreys Engineer Center (HEC) is an independent, 600-acre Post adjacent to Fort Belvoir. Although a separate entity with its own master plan, the two Posts collaborate as a result of an inter-Post agreement. There are about 1,200 employees in this area. This parcel is not included in this study.

Figure 3.3 - Fort Belvoir Functional Areas



History

Fort Belvoir, the land it occupies, and the surrounding region have a long and well-documented history. There are many excellent sources that describe this history, including the Fort Belvoir web site - (<http://www.belvoir.army.mil>). The following is provided as a general overview of this history. From a master planning viewpoint, history is important because the activities, artifacts, and past development all affect how we plan and build at Fort Belvoir today. Cultural resources such as archaeological sites and historic structures provide both constraints and opportunities for planners. Constraints include development restrictions such as those related to archaeological resources, while opportunities include the adaptive reuse of historic buildings and site reorganization. Some of this history is even found in place names such as Dogue Creek, Potomac River, and the name of the Post itself.

Prehistoric Antecedents

Archeologists know that the earliest Americans wandered throughout Virginia, including present-day Fairfax County. The Fort Belvoir region was first settled perhaps 11,500 years ago. Indian projectile points found in Fairfax County represent over 8,000 years of prehistoric occupation in the region.

After approximately 2750 B.C., the climate of the Northern Virginia area stabilized close to what it is today. Prehistoric peoples tended to gravitate toward the region's rivers and streams and to adopt a less nomadic existence. They settled in larger base camps and made seasonal food gathering trips to the interior. The Native Americans who greeted the first European visitors to this region engaged in agriculture. The maize, beans, and other products grown by these Indians would become the commodities that ensured the survival of Virginia's early European settlements. The three main Indian tribes along this section of the Potomac River were the Dogue, the Patawomeke, and the Piscataway. All three tribes were members of the larger Algonquin Nation.

Belvoir in the Seventeenth Century

With the establishment of the Virginia colony, European settlers began arriving to claim large tracts of land for agrarian use. The Fairfax family administered the Northern Neck Proprietary, which was originally established by the exiled future king, Charles II, in 1649. Through marriage, inheritance, and land holdings, the Fairfax family gained political and financial prominence in Colonial America. This period of history marked the beginning of great plantations. The first land grant in what is now Fairfax County was issued in 1651 for property on the peninsula or "neck" immediately south of Fort Belvoir. To encourage population growth,

the colonial assembly in Jamestown adopted a system known as the "headright," which enabled a resident colonist to claim fifty acres for every new settler whose passage he paid from England to Virginia. By 1690, all waterfront property that today is included within Fort Belvoir had been patented and subdivided.

The Eighteenth Century: Fairfax County's "Golden Age"

Five major property grants comprised most of the area that today forms Fort Belvoir. Over the years, the land was owned by numerous families, and eventually sub-divided into smaller lots. During the 1730s, Colonel William Fairfax became the land agent for his cousin, Nicholas, 6th Lord Fairfax. He purchased the original 2,200 acres, and built the Belvoir Mansion plantation between 1737-41, much of which is now considered Fort Belvoir.

By 1750, navigable rivers like the Potomac were the main commercial arteries of the Virginia colony. These eighteenth century highways carried the commodities that established and maintained the great colonial fortunes: tobacco, grain, and slaves. They also wove together the social and political fabric of the colony, for those who lived along and traveled the rivers generally held positions of power.



Woodlawn

At this time four large homes were located in the area: George Mason's Gunston Hall, Colonel Dennis McCarty's Cedar Grove, William Fairfax's Belvoir Manor, and Lawrence Washington's Mount Vernon. Two of these homes, Cedar Grove and Belvoir, were located within the present boundaries of Fort Belvoir and both remain as archeological sites. The Woodlawn Plantation would eventually be built between 1800 and 1805, after 2,000 acres were gifted to Major Lawrence Custis by George Washington. Much of this land would become the grounds of the Commissary, Lewis Village, and Fort Belvoir Elementary School.

Belvoir in the Antebellum Period

George William Fairfax, eldest son of Colonel William Fairfax and a friend of George Washington, left Belvoir in 1773 to return to England to reclaim ancestral lands. Without a household to maintain the plantation, it fell into gradual decline, and was never re-occupied. After the last of the Fairfax family members died in 1820, ownership of Belvoir land changed hands many times.

All of the great eighteenth century plantations in the Fort Belvoir area changed considerably in the years before the Civil War. Soil exhaustion and inheritance prompted the sale and sub-division of these formerly massive tracts of land. As a new generation of landowners took up residence in southeastern Fairfax County, patterns of land use and ownership were altered.

Belvoir Enters the Twentieth Century

By the 1840s, entrepreneurs from Northern states saw the potential for the depleted lands in Virginia, and began purchasing land for speculative ventures. Many who resettled in the area were the Society of Friends (Quakers), and by 1850 had created a thriving community in the Accotink/Woodlawn area. The Quaker congregation is still active in the area today. During this time, the main agricultural effort changed from tobacco to subsistence crop farming. As the demographics changed, a more diverse community evolved and many trades became established. Even traditional farming saw an evolution to mechanized growing techniques. With the social and commercial changes occurring, the economy no longer relied on the massive efforts of slavery. Slaves who weren't sold or relocated to the deeper south were freed, and those who stayed in the area often prospered as hired help at local farms and businesses.

1917-1918: Establishment of Camp A. A. Humphreys

In 1915, the Engineer School began conducting summer training exercises on a government-owned parcel in Virginia, located approximately 15 miles south of Washington along the Potomac River. The federal government had acquired the 1,500-acre tract on the Belvoir peninsula in 1910 from the Otterback family for development of a children's reformatory. However, local community groups and patriotic organizations, such as the Daughters of the American Revolution, opposed the establishment of a reformatory on grounds so closely associated with George Washington and the other "founding fathers" of the country. Therefore, the reformatory never materialized. In 1912, Congress transferred the Otterback property to the War Department, following an Army request to use the land as a training site. This site was chosen by the Engineer School for its adequate water supply and challenging terrain.

America's entry into World War I in April 1917 led to the first wave of military construction at the Virginia training site. Construction of the temporary cantonment, known as Camp A.A. Humphreys, began in January 1918. Through purchase or condemnation, the Army acquired additional acreage during 1917 and 1918. Fourteen farms on the peninsula between Accotink and Pohick Creeks were transformed into target ranges; two large parcels along Dogue Creek were taken through government condemnation proceedings; and a 3,300-acre parcel that today comprises most of the North Post and Davison Army Airfield was purchased by 1918.

Transportation systems and utilities also were improved. Previously, the most direct access to the Belvoir Peninsula had been by boat down the Potomac River from Washington, District of Columbia (D.C.) The unpaved Washington-Richmond Highway (U.S. Route 1) was surfaced with concrete in 1918, and a plank road was constructed that linked the camp to the Washington-Richmond Highway. Standard gauge and narrow gauge railways followed.

To accommodate the 20,000 men anticipated at the camp, plans called for the construction of 790 temporary wood-frame buildings. Within only four months of the start of construction, Camp A.A. Humphreys was in full swing. Several schools operated here during World War I, including the Army Gas School and the School of Military Mining. At war's end in November 1918, the Camp became a demobilization center where troops were prepared for their return to civilian life.

Inter-War Period: 1919-1939

Unlike many other temporary Army installations established during World War I and that closed following the war, Camp A.A. Humphreys remained active and continued to expand. By 1919, the camp had grown from its original 1,500 acres to approximately 6,000 acres. The Army's commitment to the installation was demonstrated by the official relocation of the Engineer School from the Washington Barracks to the Camp in 1919.

Camp A.A. Humphreys was designated a permanent post in 1922 and renamed Fort Humphreys. The new designation acknowledged the Fort as an important installation that served as a prominent teaching facility. Throughout the inter-war years, the Engineer School trained new engineer officers and enlisted soldiers in the technical requirements of their duties. Programs offered included forestry, road and railroad construction, camouflage, mining, surveying, pontoon construction, photography, printing, and cooking.

In 1926, the Army initiated an ambitious, nation-wide building program designed to address growing concerns over the deplorable living conditions reported at the nation's military posts. The program, financed through the sale of 43 military posts, aimed to

replace World War I temporary wooden buildings with permanent structures. During this period, the Army spent approximately \$2.5 million on re-constructing the Fort with permanent facilities. Many of Fort Belvoir's most important buildings were constructed as a result of this nationwide rebuilding program. Most of the temporary wood-frame World War I buildings were demolished; in their place, new permanent masonry construction buildings were erected. At Fort Belvoir, the new buildings included officer and NCO housing, barracks, administrative buildings, and a hospital – all designed in a Colonial Revival style.

The landscape plan adopted for the Post also exemplified Army efforts to improve the quality of life for its personnel and the aesthetic beauty of its posts. George B. Ford, planning adviser to the War Department during the 1920s, encouraged posts to turn away from more formal, traditional planning practices, particularly the use of straight lines and rigid geometric patterns. He advocated creating useful and aesthetically pleasing environments that took advantage of natural vistas and used irregular lines. Quartermaster Corps officer, First Lieutenant Howard B. Nurse, also influenced Army planning at this time. Like Ford, he advocated the integration of natural topography in the design and layout of streets, especially in residential areas. The results of Nurse's and Ford's philosophies are most apparent in the configuration of the Fort Belvoir's historic officers' housing.

The elaborate new layout for Fort Humphreys called for separate functional areas united in a formal plan. Administrative and instructional buildings were arranged along one side of the parade ground, with the barracks, theater, gymnasium, Post Exchange (PX), and post office in two squares on the opposite side of the parade ground. Non-commissioned officer (NCO) housing was arranged in two blocks behind the barracks area, while the officers' housing was placed along a picturesque, curving road in a park-like setting. Warehouses and support buildings were located at the edge of the new Post in this plan. This plan still exists today.



Housing in Belvoir Village - Built in 1934-35

In 1935, the name of the installation was changed from Fort Humphreys to Fort Belvoir. It is said that the name change occurred after President Franklin D. Roosevelt's visit to the neighboring Gunston Hall. Louis Hertle, the owner of Gunston Hall, spoke of the vibrant history of the area, which inspired the President to initiate the new name of the Post.

World War II Period: 1940-1945

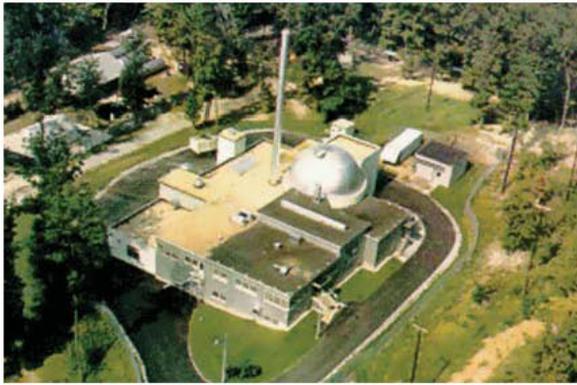
During World War II, Fort Belvoir expanded to accommodate the influx of draftees. After 1940, an additional 3,000 acres north of U.S. Route 1 were acquired to make room for the new Engineer Replacement Training Center (ERTC). At the height of World War II, the ERTC turned out 5,000 trained engineer soldiers per month. The massive influx of inductees at Fort Belvoir prompted another wave of temporary construction at the Post during World War II. Housing was constructed for approximately 24,000 enlisted men and officers. Like the temporary structures built during World War I, the World War II-era, wood-frame buildings were designed to be simple and inexpensive to construct. Unlike the World War I facilities however, these newer structures incorporated such improvements as indoor plumbing, central heating, and electricity.

Post-World War II: 1946 - Present

After World War II, Fort Belvoir served as a training facility and as a Research, Development and Testing site. Perhaps no structure on the Post illustrates more graphically Fort Belvoir's research and development phase than the SM-1 (Stationary, Medium Power, First Prototype) nuclear power plant. This facility was developed to generate electricity for commercial use, and as a prototype of a facility type that could be deployed to areas where use of fossil fuels was logistically difficult. The SM-1 Plant, which represented the first national nuclear training facility for military personnel, became operational in 1957 and remained in operation until its decommissioning in 1973.



The Original Fort Humphrey's Plan Still Exists



SM-1 Plant

The innovative initiatives pursued at Fort Belvoir during the post-war period were also illustrated in its residential architecture. In 1948, the well-known architectural firm of Albert Kahn & Associates designed and oversaw construction of the Thermo-Con House. This full-scale prototype was to exemplify a methodology for low-cost, mass-produced housing. Prospective Army residents, however, rejected the design concept, and no additional structures were built.



Thermo-Con House

Fort Belvoir's mission expanded in other directions between 1950 and 1980, when the Post began playing host to a variety of organizations. These included the DeWitt Hospital, the Defense Systems Management College, and the Defense Mapping School (DMS).

The approximately 800 acres that now constitute the Fort Belvoir North Area (FBNA) were ceded to the United States by Act of the Virginia General Assembly, approved 1 April 1940, and the deed of cession was executed by the Virginia governor on 6 November 1942. This area was first called the Engineer Board (E.B.) Test Area. The Engineer Board, predecessor of the Belvoir Research, Development and Engineering Center, was originally founded in 1870 to develop and test specialized engineering equipment. The Engineer Board moved to Fort Humphreys in 1924.

Over time, the E.B. Test Area came to be called Eebee Field, because it also contained a facility and landing strip for the testing of aircraft. The area served as a test bed for landmine warfare, mobility and counter-mobility operations, and other engineer vehicles and equipment. In July 1950, a board of officers recommended the change of title to the Engineer Proving Ground (EPG). This name remained in effect until 1963 when, through General Orders of the Engineer School and Center, the name again changed to the Fort Belvoir North Area (FBNA). This official name remains in effect.

Due to a shortage of land for training at Fort Belvoir, the Engineer School relocated in 1988 to Fort Leonard Wood in Missouri. Testing and training operations at the FBNA ended. In the early 1990s, a plan to develop the FBNA for large-scale, multi-capability, civilian/military use did not come to fruition. Thereafter, the area fell into disrepair and became overgrown.

Fort Belvoir continues to fulfill an important and valuable role within the Army today. The Post's present mission is to provide essential administrative and basic operations support to its tenant organizations. The 8,500-acre Post is one of the larger installations in the Military District of Washington, which also includes Fort Hamilton, Fort McNair, Fort Myer, Fort Meade, and Fort Ritchie. In 2003 the Post came under the supervision of the Installation Management Command (IMCOM), an organization which is tasked with standardizing and administering garrisons throughout the entire Army.

Today, Fort Belvoir houses tenants from all armed forces, as well as such DoD agencies as the Defense Acquisition University, Defense Logistics Agency, and the National Geospatial-Intelligence College. To carry out this mission effectively, Fort Belvoir has evolved from a traditional military post to a more broadly based community. In many ways, it currently functions like a small city with its own ordinances, land use plan, building codes, utilities, public parks, and academic institutions. This master plan integrates and respects this great history as the Post looks forward to the future.

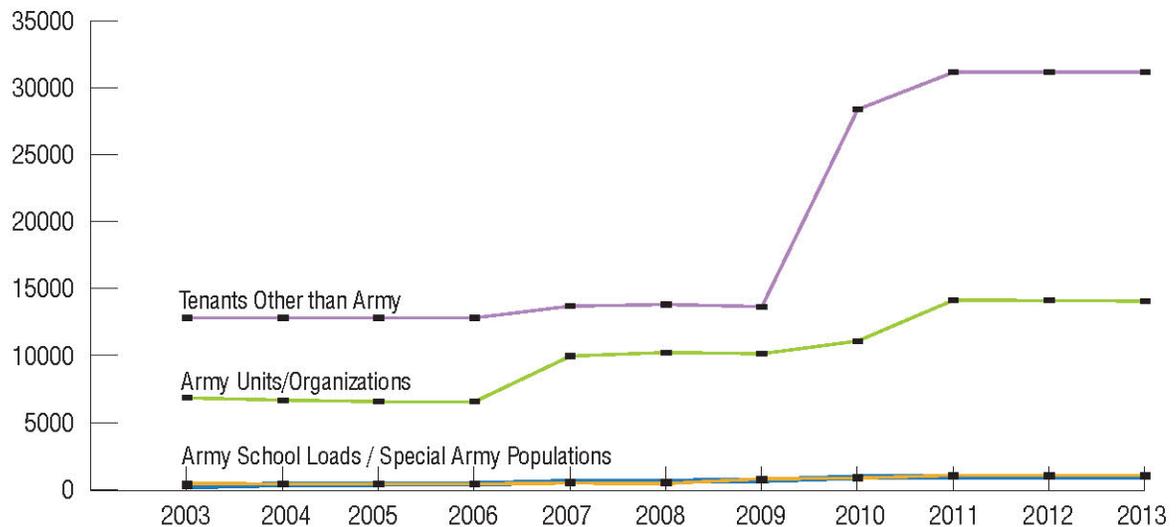


Defense Logistics Agency

Installation Population

Through the early 2000's, the population at Fort Belvoir has remained relatively constant – just over 20,000. As a result of the 2005 Defense Department's Base Realignment and Closure (BRAC) program, the Post will grow significantly over the next few years. After this spike, its population will level off to approximately 48,000 (Table 3.1). The Master Plan projects minimal growth between the years of 2013-2030.

| Table 3.1 - Employee and Residential Population* | | | | | | | | | | | |
|--|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Category | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| Army Units / Organizations: <small>Active Army, US Army Reserve, Army National Guard, MTOE, TDA, and TDA Augmentations to MTOE</small> | 6,829 | 6,668 | 6,555 | 6,549 | 9,959 | 10,227 | 10,135 | 11,085 | 14,138 | 14,106 | 14,067 |
| Army School Loads: <small>PCS, TDY, Trainees, Reception Loads</small> | 451 | 399 | 393 | 399 | 462 | 422 | 793 | 832 | 1,061 | 1,052 | 1,052 |
| Special Army Populations: <small>Non-Additive Authorizations, RC Full-time Support, AGR, Rotational Loads at Army Training Centers</small> | 202 | 367 | 398 | 398 | 582 | 598 | 664 | 906 | 909 | 909 | 909 |
| Tenants Other than Army: <small>Contractors, Other Services, DoD Agencies, Commercial Activities</small> | 12,813 | 12,813 | 12,813 | 12,813 | 13,692 | 13,811 | 13,659 | 28,392 | 31,171 | 31,171 | 31,171 |
| Total Units in Station | 20,295 | 20,247 | 20,159 | 20,159 | 24,695 | 25,058 | 25,251 | 41,215 | 47,279 | 47,238 | 47,199 |



*Source: ASIP Unit List Report provided by Fort Belvoir

Community Relationships & Planning

Regional & Local Planning

As illustrated in Figure 3.4, Fairfax County is subdivided into planning districts, of which Fort Belvoir falls within the Lower Potomac (LP) Planning District. According to the Fairfax County Comprehensive Plan, the Lower Potomac has the most potential for growth within all of Fairfax County. The Fort Belvoir North Area (FBNA) falls within the Springfield Planning District and the overlay planning area known as Franconia-Springfield Area Suburban Center. The Springfield Planning District contains several major transportation corridors, including I-95, the Capital Beltway, the Franconia-Springfield Parkway, and the Fairfax County Parkway, as well as the Norfolk Southern Railroad and CSX Transportation Railroad lines. The Blue Line of the Metrorail subway system, VRE, Amtrak, and Greyhound Bus also provide service to the Franconia-Springfield Metro station. This planning district has large commercial areas, such as the Springfield Community Business Center (CBC) and Springfield Mall, a regional shopping center.

Several planning districts reside adjacent to Fort Belvoir and reflect a suburban character. The Mount Vernon Planning District has designated U.S. Route 1 as a commercial corridor. It also recommends that vacant lots adjacent to Fort Belvoir become residential development at a density of 16-20 dwelling units per acre. The Pohick Planning District focuses on low-density development as a land use Best Management Practice (BMP) that works in conjunction with storm water management facilities. The Rose Hill Planning District is substantially developed with stable residential neighborhoods.

Also located near Fort Belvoir is the Richmond Highway Corridor, one of seven commercial revitalization districts (CRDs) defined by the Fairfax County Comprehensive Plan and Zoning Ordinance. The corridor is approximately 7.5 miles long starting at the Capital Beltway and ending at the north boundary of Fort Belvoir. A study sponsored by Fairfax County's Department of Housing and Community Development and conducted by the Urban Land Institute (ULI) identified the corridor's core strategy to: "embrace and direct residential development growth along the corridor to encourage complementary office and retail development".

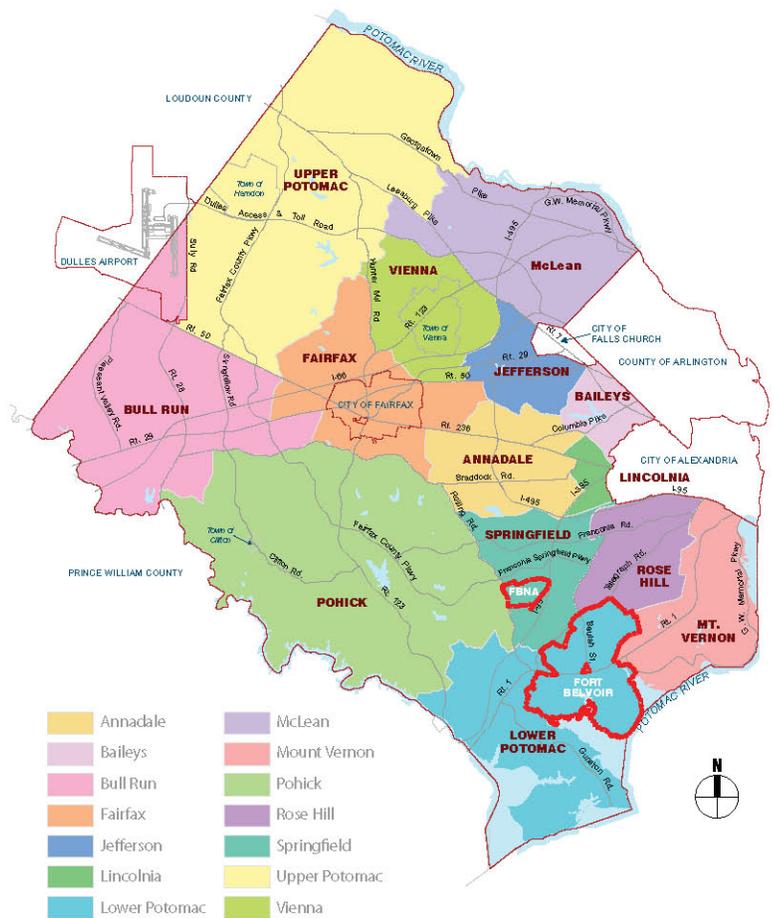
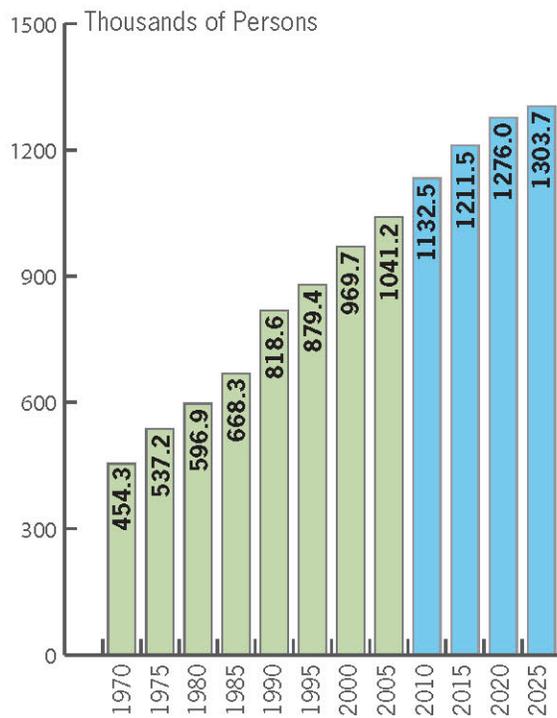


Figure 3.4 - Fairfax County Planning Districts

Located only eight miles from Fort Belvoir, Prince William County also contracted ULI to provide planning recommendations for the U.S. Route 1 corridor. Objectives of this project include building communities, reversing the job/housing imbalance, creating jobs, providing housing choices, and enhancing the environment.

In May 2006, the ULI developed a report for Springfield in Fairfax County. This report determined that, despite the proximity to many transportation routes such as the I-95/ I-495 interchange, improvements will be needed to accommodate increasing infrastructure demands. Specific recommendations include a Metrorail extension, regional express buses, and improvements to the local mass transit routes, as well as pedestrian and bicycle circulation.



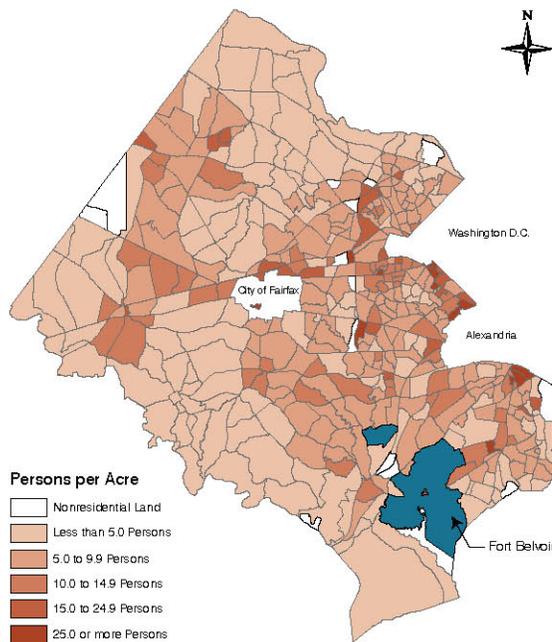
Source: Fairfax County Department of Systems Management for Human Services (population estimates). Metropolitan Washington (DC) Council of Governments (population projections).

Figure 3.5 - Fairfax County Population Estimates and Projections

Regional & Local Growth

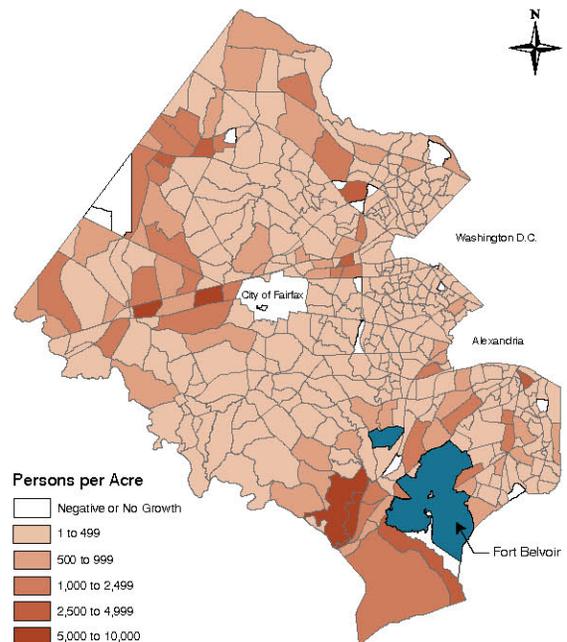
In 1742, the Virginia Assembly created Fairfax County from the northern part of Prince William County. Named after an English nobleman, it originally included Loudoun County, Arlington County, and the cities of Alexandria and Falls Church. At that time, it was then home to approximately 4,000 people. Today, Fairfax County is the most populated jurisdiction in the Washington Metropolitan Area and Virginia. Its two fastest growing segments are seniors (65 years and older) and persons under age 20. By 2025, estimates predict a burgeoning population of 1.2 million people (Figure 3.5).

Denser areas of Fairfax County are located near the City of Alexandria and Washington, D.C. (Figure 3.6). However, much of the new population growth is projected to be closer to Fort Belvoir, along the I-95 corridor, U.S. Route 1, and in the Mason Neck area (Figure 3.7).



Source: Fairfax County Department of Systems Management for Human Services. Jan 2005

Figure 3.6 - 2004 Fairfax County Population Density by Subcounty Tract

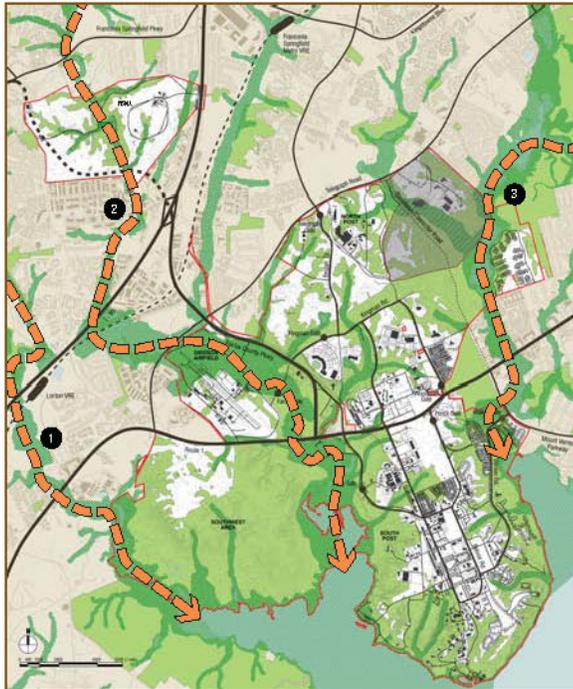


Source: Fairfax County Department of Systems Management for Human Services. Jan 2005

Figure 3.7 - 2004 Fairfax County Forecasted Population Growth by Subcounty Tract for 2025

Existing Conditions Assessment

Figure 4.1 - Regional Environmental Map



-  Conservation Areas
-  Resource Protection Areas
-  HEC (Not in Study Area)
-  1 Pohick Creek
-  2 Accotink Creek
-  3 Dogue Creek

Development Constraints and Opportunities

Environmental issues on Fort Belvoir are addressed through established programs and guidelines, including the installation's Integrated Natural Resources Management Plan (INRMP), and Integrated Cultural Resources Management Plan (ICRMP), and then coordinated through the Fort Belvoir Directorate of Public Works (DPW) and Environmental and Natural Resources Division (ENRD).

All federally funded projects must be analyzed through the National Environmental Policy Act (NEPA) process to determine potential environmental impacts. This section discusses the environmental factors (natural, cultural and operational) that must be considered during the planning process to ensure compliance with NEPA. Table 4.1 on pages 4-10 and 4-11 provides a summary of environmental features and potential mitigations if these features are impacted by development.

Natural Resources

Despite continual pressures from surrounding development, approximately 70 percent of Fort Belvoir is undeveloped. Within the metropolitan Washington, D.C. area, Fort Belvoir, along with connectivity to surrounding natural areas, represents a significant tract of native vegetation in terms of size and diversity. A map of the natural areas of Fort Belvoir and the surrounding area is shown in Figure 4.1.

Fort Belvoir's natural environment is a complex area where several ecological subregions converge, resulting in a diversity of environmental conditions, habitats, and climate. Fort Belvoir supports 17 plant communities, four of which are 'rare' to 'extremely rare', and three that are 'rare' to 'uncommon'. A large number of fish and wildlife species have been recorded or are considered likely to occur on Fort Belvoir, including 43 species of mammals, 263 species of birds, 32 species of reptiles, 27 species of amphibians, and 60 species of fish. The Post also supports 89 state-listed rare plant/animal species and 63 Partners in Flight (PIF) priority bird species.

Fort Belvoir also plays a major role on water quality, another significant environmental issue within the region. Fort Belvoir is located on the Potomac River approximately 75 miles upstream from the Chesapeake Bay. The Chesapeake Bay watershed has been the focus of an extensive restoration effort that involves the State of Maryland; the Commonwealths of Virginia and Pennsylvania; the District of Columbia; federal agencies, including the Department of Defense (DoD) and the Department of the Army (DA); universities; nonprofit organizations; and the general public. Fort Belvoir's Resource Protection Area (RPAs), covering about 23 percent of the installation, help filter storm water runoff and prevent nutrients, toxic substances, and sediments from entering streams, rivers, and, ultimately, the Chesapeake Bay. Fairfax County is developing comprehensive watershed management plans for its 30 watersheds, of which three overlap Fort Belvoir.

Future development should adhere to preserving and enhancing natural resources on the Post, including protecting the connections with the regional habitat and park system. Maps depicting Fort Belvoir's natural resources are provided in Figures 4.2 through 4.5.

Cultural Resources

Fairfax County has 340 sites listed in its historic sites inventory; several near Fort Belvoir have historically significant viewsheds. Projects that affect historic properties must be reviewed by the Virginia Department of Historic Resources. Overlay districts require conformity to the county comprehensive plan and final approval from the Fairfax architectural review board.

On-post, sites of historic significance include the Main Post Historic District, Belvoir Ruins, Thermo-Con House, Camp A.A. Humphrey's Pump House Station and Filter Building, U.S. Army Package Power Reactor, and nearly 300 other historic structures. Of these, 191 are listed, eligible, or potentially-eligible archaeological sites, including seven cemeteries.

Cultural sites occur throughout Fort Belvoir and are protected under the National Historic Preservation Act (NHPA). A map depicting the cultural resources on Fort Belvoir is provided in Figure 4.6.

Operational

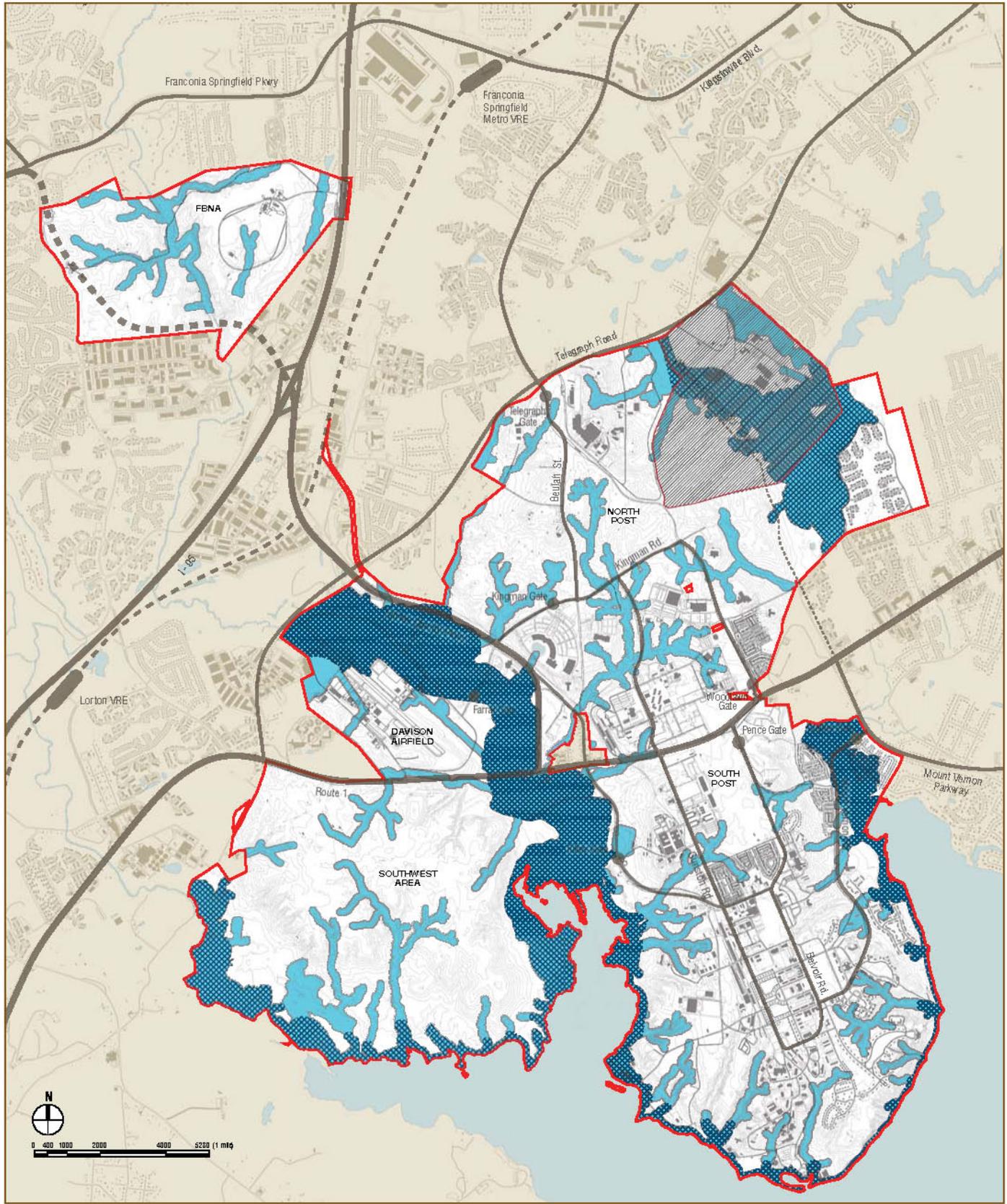
Fort Belvoir's environmental issues associated with operational activities are a result of decades of military training activities, a few of which are still ongoing. They include former training ranges, Solid Waste Management Units (SWMU), Hazardous Waste Management Units (HWMU), Petroleum Storage Areas (PSA), Petroleum Release Sites (PRS), and Areas of Potential Concern (AOPC). Several hundred individual sites are associated with these programs.

A primary difference between the operational issues mentioned above and environmental/cultural resources is the desire to remediate operational constraints (such as SWMUs) versus a desire to preserve environmental/cultural resources. Therefore, the primary concern associated with constraints resulting from some operational activities is cost and time related to mitigation. This does not apply to lands that are still active training areas, such as the Southwest Area.

The Southwest Area, designated as training lands, provides local collective and small unit training capabilities for Soldiers in the National Capital Region and as directed by the Commanding General, Military District of Washington, under the management and direction of the Fort Belvoir Director of Plans, Training, Mobilization and Security (DPTMS). These lands represent military value for the Fort Belvoir installation and, as such, prohibit development of anything outside the Installation's Training Program. Administrative training facilities/functions are not conducive with the military training purposes and use of these lands.

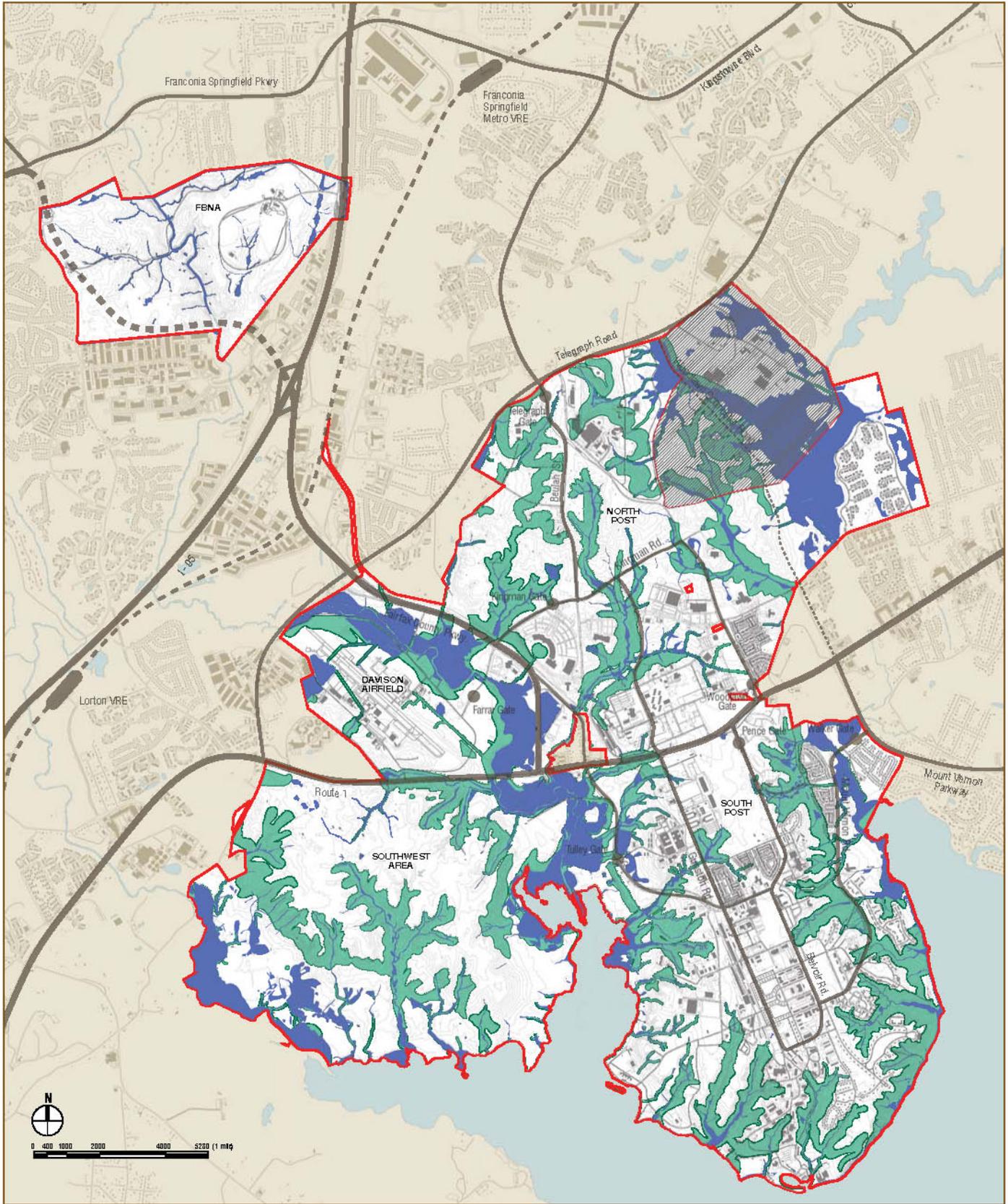
A map depicting the operational resources on Fort Belvoir is provided in Figures 4.7 and 4.8.

Figure 4.2 - Water Resources Map



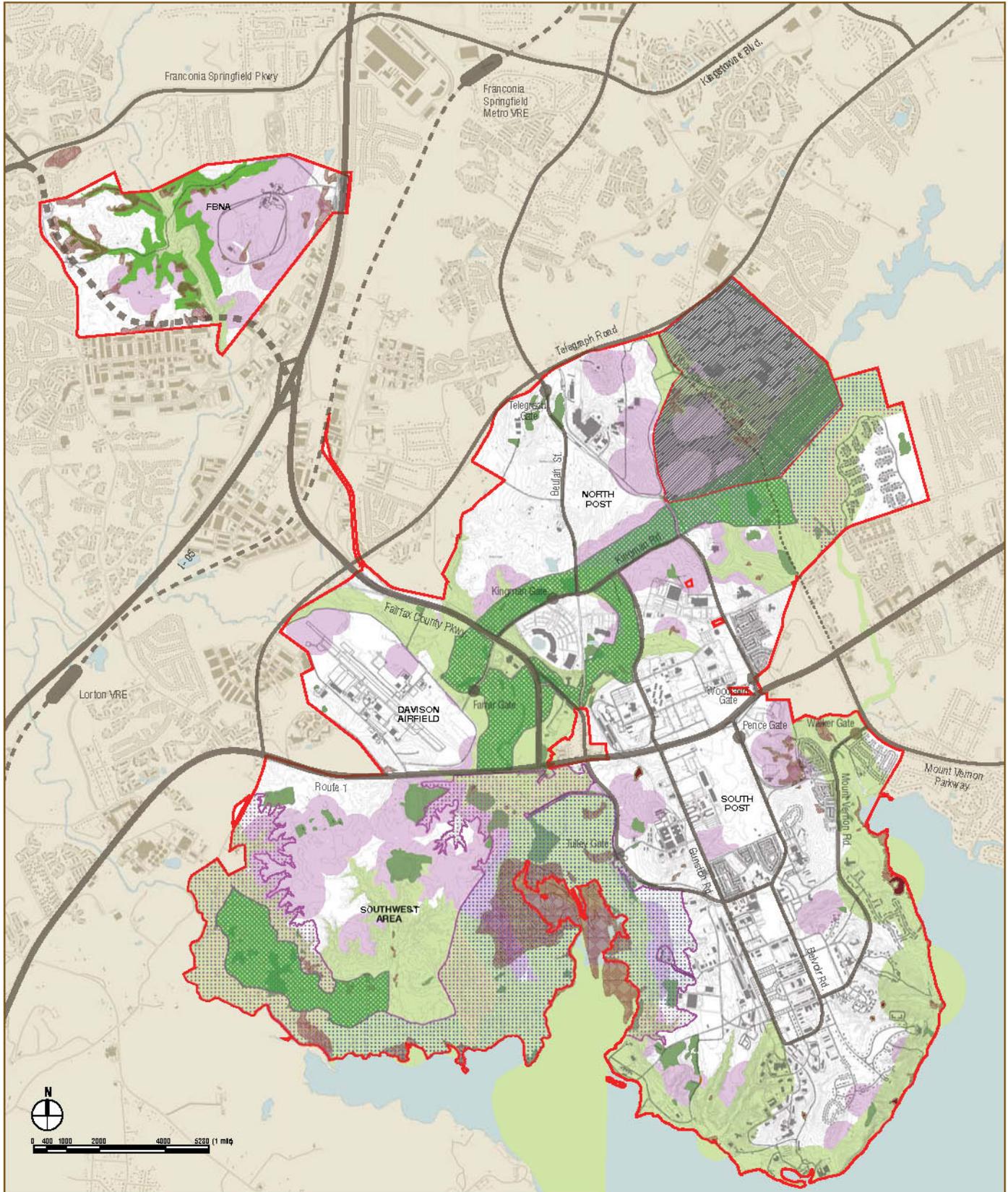
-  Resource Protection Areas
-  HEC (Not in Study Area)
-  Flood Plains

Figure 4.3 - Vegetation Map



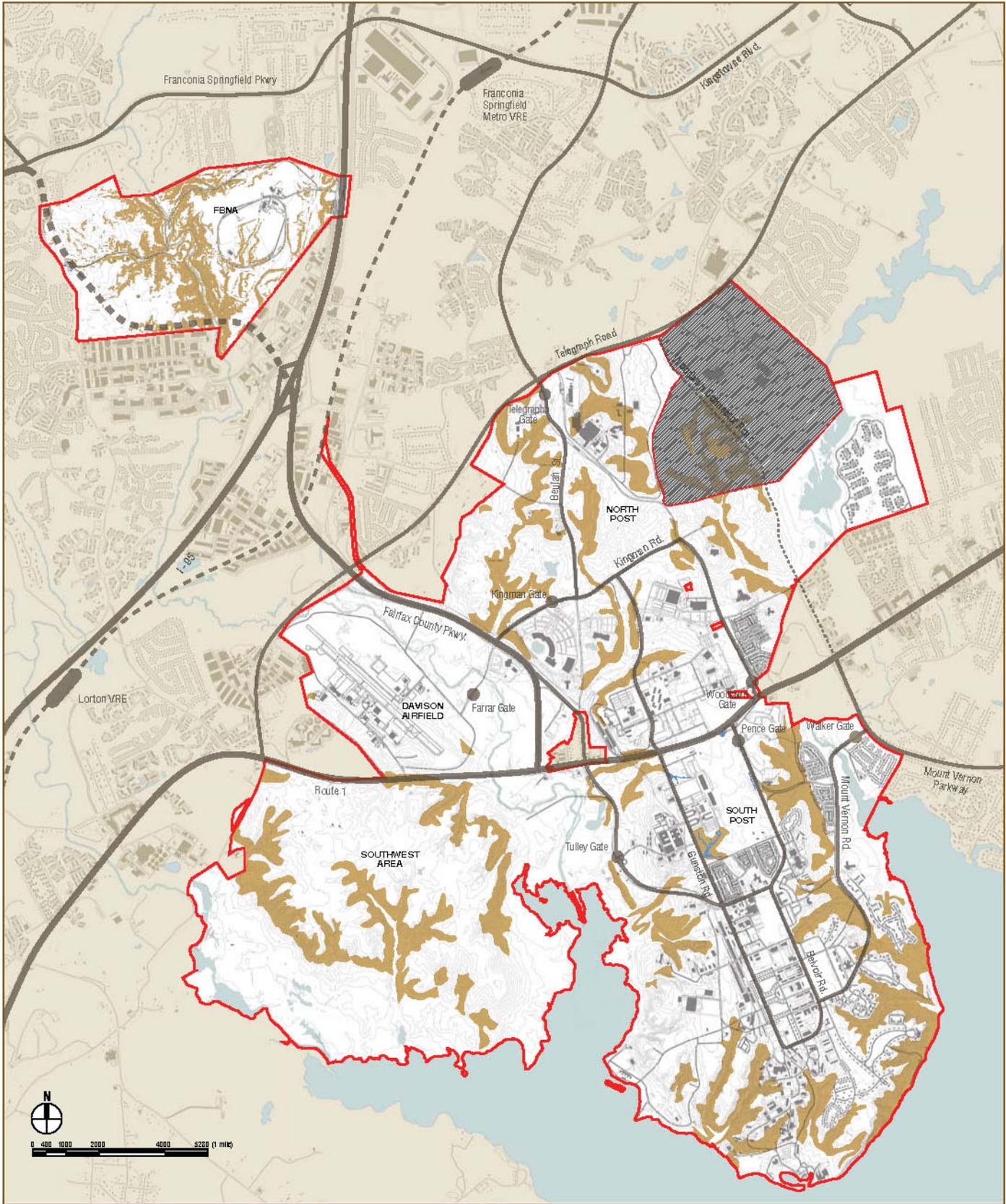
- Riparian Areas
- Wetlands
- HEC (Not in Study Area)

Figure 4.4 - Habitat Map



- | | | | |
|--|--------------------------|--------------------------------|-------------------------|
| Wildlife Corridor | ESA - Flora | Environmental Quality Corridor | HEC (Not in Study Area) |
| Wildlife Management Area (refuge area) | ESA - Fauna | Grassland Management | |
| Wildlife Management Area (wildlife area) | Partners in Flight (PIF) | | |

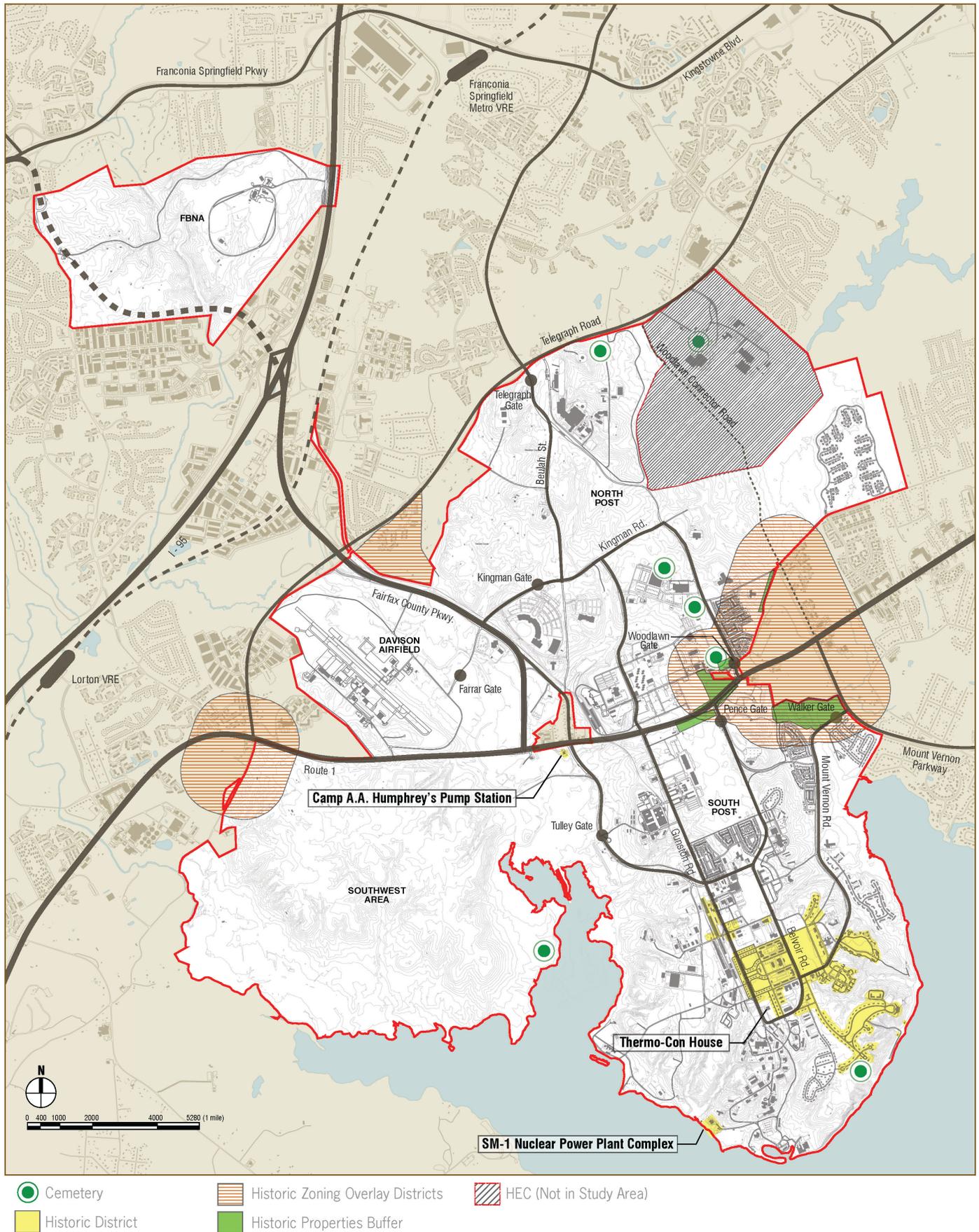
Figure 4.5 - Topography Conditions Map



Steep Slopes (>15%)

HEC (Not in Study Area)

Figure 4.6 - Cultural Resources Map



- Cemetery
- Historic Zoning Overlay Districts
- HEC (Not in Study Area)
- Historic District
- Historic Properties Buffer

Figure 4.7 - Ranges Map

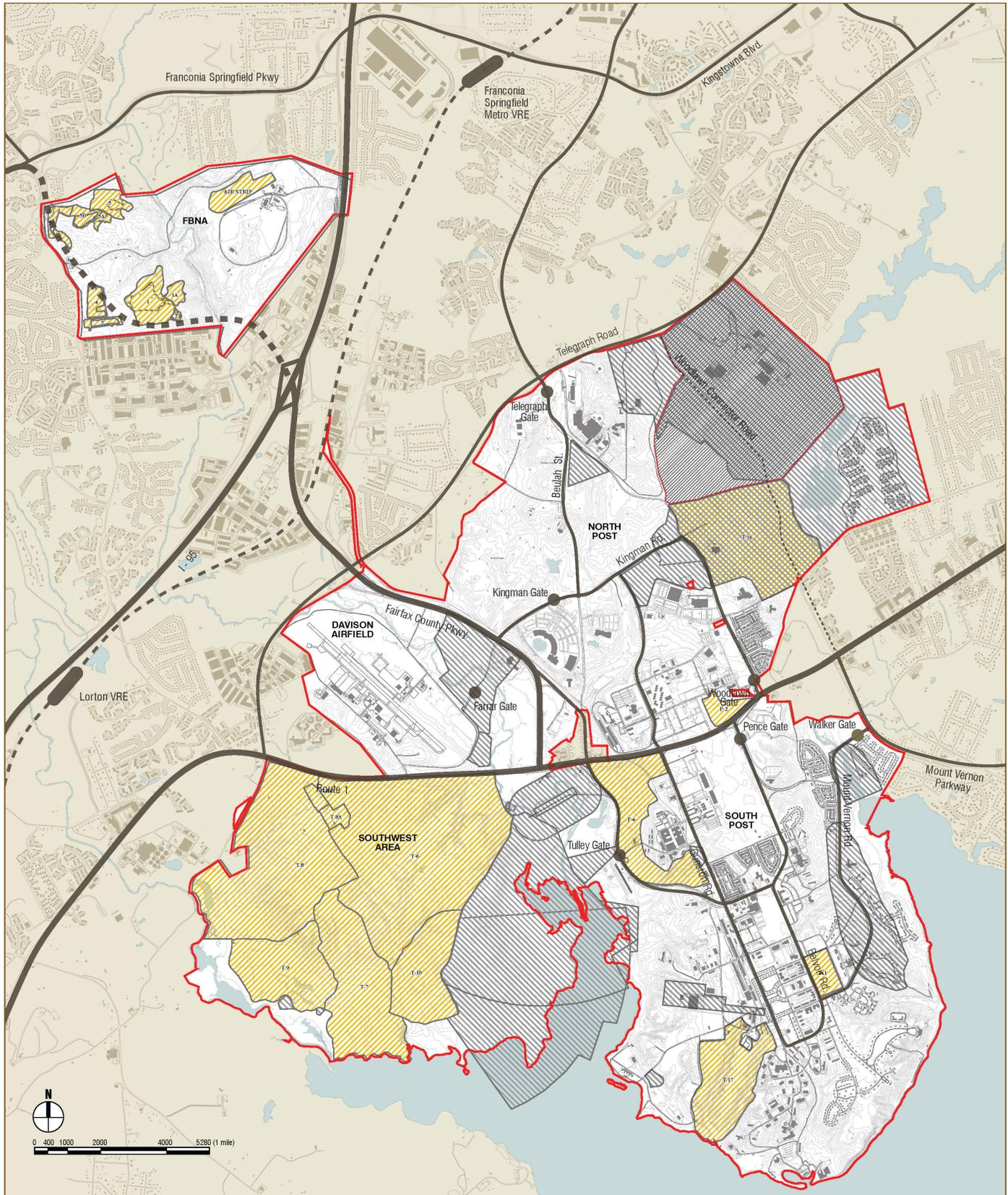
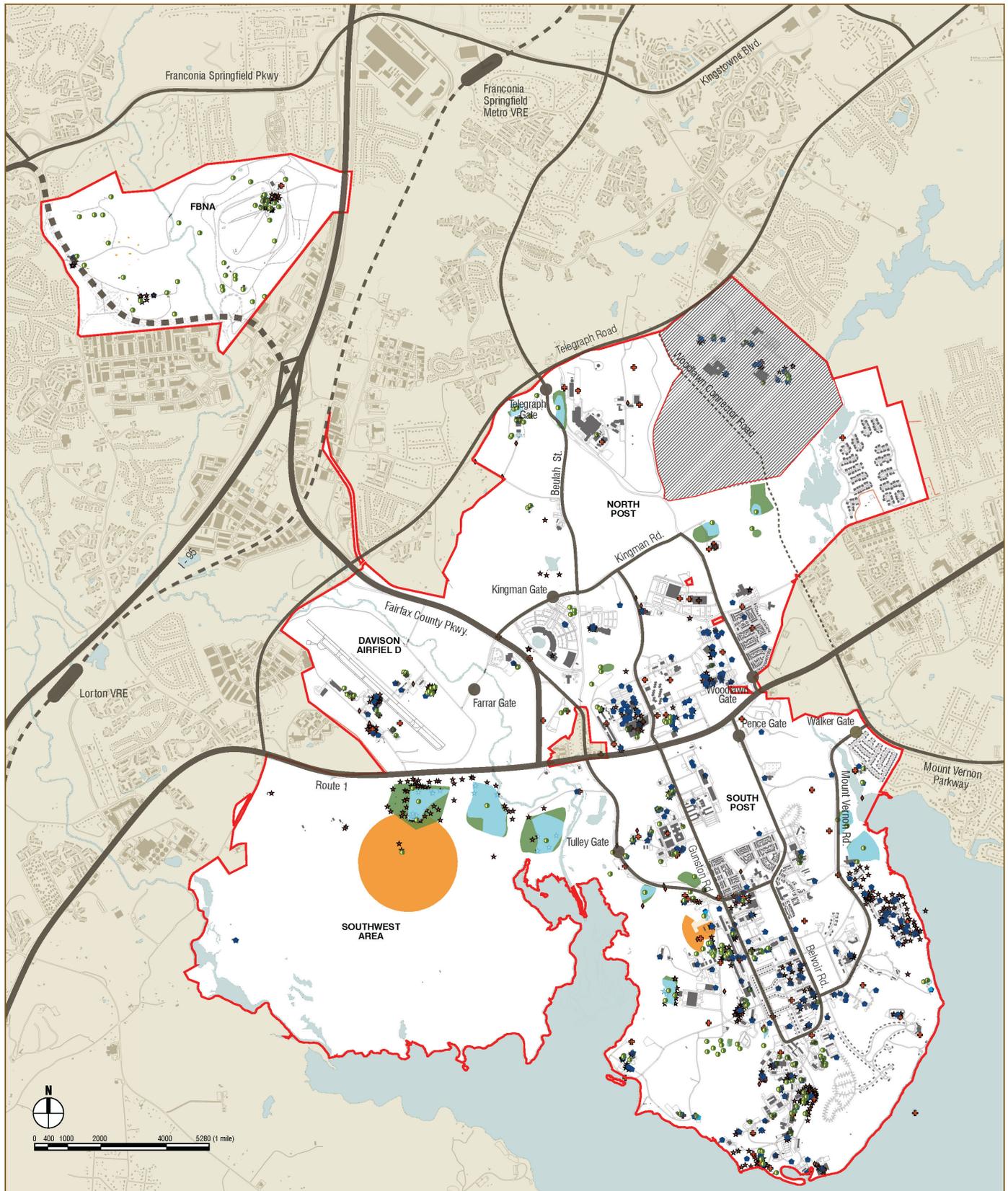


Figure 4.8 - Operational Resources Map



- | | | |
|----------------------------|------------------------|-------------------------|
| Quantity Distance Arcs | Pollution Source | Restoration Site |
| Areas of Potential Concern | Wells | SWMUs |
| Landfill | Spill Response Feature | HEC (Not in Study Area) |

Table 4.1 - Summary of Environmental Resources on Belvoir Main Post and FBNA

| Resource | Description | Mitigation |
|--|---|--|
| Natural Resources: Water Resources | | |
| Water Quality | Water quality on Fort Belvoir's 128 miles of streams protected by Chesapeake Bay Program and Virginia sediment and erosion control regulations. | Implement state-required erosion control measures and recommended LID practices. |
| Resource Protection Areas (RPAs) | About 2,600 acres of RPAs on Fort Belvoir. | Avoid where possible. If avoidance is not possible, field review required to determine type of encroachment permitted. |
| Flood Zones | About 1,500 acres of 100-year flood zones on Fort Belvoir. | Avoid where possible. If avoidance is not possible, field review required to determine type of encroachment permitted (habitable structures not permitted). |
| Natural Resources: Vegetation | | |
| Riparian Areas | About 2,600 acres of riparian areas on Fort Belvoir. | Avoid where possible. If avoidance is not possible, mitigation measures (such as LID) would be required. |
| Wetlands | About 1,200 acres of wetlands on Fort Belvoir. | Avoid where possible. If avoidance is not possible, wetland banking is possible. |
| Natural Resources: Habitat | | |
| Wildlife Management Areas | About 2,300 acres of wildlife management areas on Fort Belvoir. | Avoid. Development not permitted in wildlife refuges. |
| Forest and Wildlife Migration Corridor | 730-acre corridor bisecting the North Post. | Avoid where possible. If not possible, adequate contiguous set-aside areas would be considered as mitigation. Potential development limited to transportation corridors, stormwater management facilities, and open space recreation facilities. |
| Environmental Quality Corridor (EQC) | 204-acre conservation area along Accotink Creek on FBNA. | Avoid where possible. If not possible, adequate contiguous set-aside areas would be considered as mitigation. Potential development limited to transportation corridors, stormwater management facilities, security setbacks, and open space recreation facilities. |
| Other Conservation Areas | About 2,800 acres of grassland management areas and wetland conservation areas. | Development may be permitted, however, similar areas elsewhere on Fort Belvoir should be set aside. |
| Partners in Flight (PIF) | About 3,700 acres of sighting buffers around 61 identified PIF species on the installation. | Development may be permitted, however, similar areas elsewhere on Fort Belvoir should be set aside. |
| Threatened and Endangered Flora and Fauna | About 4,000 acres of habitat for sensitive species on Fort Belvoir. | Avoid where possible. Development may be permitted in fringe habitat, however, similar areas elsewhere on Fort Belvoir should be set aside. |
| Natural Resources: Topography and Soil Conditions | | |
| Topography and Soil Conditions | About 20 percent of Fort Belvoir has steep slopes. | Construction activities on severe or unstable slopes are generally prohibited. If unavoidable, appropriate engineering practices would be incorporated into site design. |
| Natural Resources: Air Quality | | |
| Air Quality | Fort Belvoir is in a non-attainment area for ozone and fine particles. | All new air emissions contribute to an already existing regional air quality problem. New emissions from proposed actions may exceed air quality thresholds that trigger applicability of stringent regulatory programs, such as Nonattainment New Source Review. If new emissions were analyzed and expected to cause an exceedence of a National Ambient Air Quality Standard, the associated project would not be allowed to continue. A potential mitigation of regulatory requirements imposed on new emissions sources includes employing state-of-the-art emission controls on all new emission sources. An entire New Source Review process could take up to two years. |
| Cultural Resources | | |
| Viewsheds | Fort Belvoir falls within the viewshed of a number of historic properties located outside the boundaries of the installation. Fort Belvoir has conducted a historic viewshed study for the Woodlawn Historic District and agreed to develop procedures to guide development on Fort Belvoir within the historic viewshed as defined by that study. Additionally, there is a Programmatic Agreement that restricts development on specific areas adjacent to Woodlawn Village and the Friends Meeting House. | Development within these viewsheds is permitted. However, if a proposed action on Fort Belvoir results in a determination of adverse effect to historic property due to the proposed actions effect on the historic properties viewshed, the installation is required by the National Historic Preservation Act (NHPA) to minimize and/or mitigate the effect. Example measures include tree buffers, building height restrictions so that the structure cannot be seen from the resource, and development and design themes matching the theme of the historic property. Consultation with representatives of the historic property, interested parties, and the State Historic Preservation Office must occur as required by Section 106 of the NHPA, which can take several months. |

Table 4.1 - Summary of Environmental Resources on Belvoir Main Post and FBNA

| Resource | Description | Mitigation |
|--|--|--|
| Historic Properties | The Fort Belvoir Historic District, which is eligible for listing on the National Register (NR) of Historic Places, includes over 200 properties, three of which are individually eligible for NR listing. Also eligible or potentially eligible within this district are over 175 archaeological sites, including seven cemeteries. | Development of NR eligible buildings or within the Fort Belvoir historic district should respect and consider the design and history of the resource being affected. Development should avoid encroachment upon NR eligible archaeological sites. Should development encroach upon potentially eligible archaeological sites, site eligibility evaluations will have to be performed, which can take several months to complete. Ineligible archaeological sites can be developed. Any development that has the potential to affect historic properties must be coordinated with the State Historic Preservation Office, Tribal Historic Preservation Offices and other interested parties in accordance with Section 106 of the National Historic Preservation Act (NHPA). |
| Operational Resources | | |
| Former Training Ranges | About 400 acres on FBNA; additional ranges have been identified on Main Post. | Munitions and explosives of concern (MEC) is cleared and removed under an Army approved Explosive Safety Submission (ESS). While removal is costly, MEC clearance and removal can be accomplished concurrently with other site preparations as long as standoff distances are respected. |
| Solid Waste Management Units (SWMUs) | 248 SWMUs in Fort Belvoir's SWMU Program. | Specific corrective action measures would need to be determined following detailed site investigations. |
| Hazardous Waste Management Units (HWMUs) | 27 HWMUs on Fort Belvoir; all have been closed. | Any disturbance to the subsurface soil at these sites could require reopening the case. Construction through the areas will require developing a work plan, sampling, monitoring, reporting of site conditions, and waste generation. Disturbance of HWMU sites can be mitigated by further characterizing the impacted area through sample and analysis and employing a Health and Safety Program. Additional investigation could identify whether residual impacted soils exists and where they are located so that plans and cost estimates to excavate and remove the impacted soils can be developed. |
| Petroleum Storage Areas (PSAs) | Several hundred PSAs formerly existed or currently exist at Fort Belvoir. | PSAs located within a proposed building envelope could be aggressively addressed as part of the site preparations. A closure process involving administrative and decontamination processes will be required. Confirmation samples collected beneath USTs and potentially some ASTs will likely be required to demonstrate no release has occurred. On average, one in three underground storage tanks (USTs) at Fort Belvoir is an old single-walled steel UST. While these tanks meet current regulatory requirements for spill, overflow prevention and corrosion protection; it can be expected that some USTs will have had a release previously undiscovered. Site investigations at each release are approximately \$35,000 each and require approximately one month to complete. Mitigation measures could be integrated into the construction phase of the project in concert with the site preparation and earthwork features for minimal impact to the overall construction schedule. |
| Petroleum Release Sites (PRS) | Over 1,200 sites have been identified and a majority have been cleaned up. | Any disturbance to the subsurface soil at these sites could require reopening the case. PRSs located within a proposed building envelope could be aggressively addressed as part of the site preparations. Mitigation measures could be integrated into the construction phase of the project in concert with the site preparation and earthwork features for minimal impact to the overall construction schedule. Excavation and sampling of petroleum impacted soils areas will likely be the most effective manner to address these PRSs within the required time frame. |
| Areas of Potential Concern (AOPC) | Additional previously unidentified AOPCs could be found during environmental remediation of contaminated sites. | The size and extent of newly identified AOPCs would be expected to be relatively small compared to previously identified sites, and therefore should not significantly impact the investigation costs or schedules. |
| Other Operational Constraints | Easements (i.e. utilities), Residential Communities Initiative (RCI) leased areas, noise zones, environmental justice. | Easements and RCI leased areas should be avoided. Zone III noise areas should be avoided; Zone II noise areas are not recommended for typical habitable structures. For environmental justice, if minority or low income communities were to bear a disproportionate share of the environmental consequences resulting from the proposed action, the action may require reevaluation. |

Developable Areas

Protecting and preserving the environment at Fort Belvoir is of paramount importance. As previously mentioned, the Installation has vast natural, cultural, and historic resources, as well as operational considerations that limit the areas on Post that can be developed.

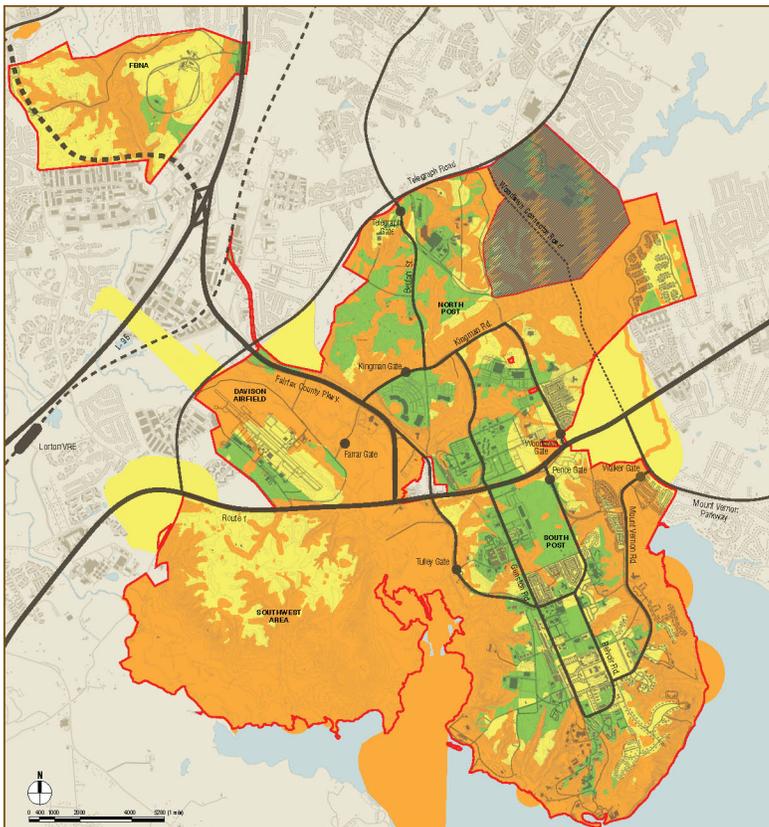
Constraints differ in criteria and requirements regarding encroachment. Therefore, not all resources are equally impacted by development or require the same level of mitigation. Some constraints are federally mandated and require significant mitigation. Others are simply Best Management Practices (BMPs), requiring no or minimal mitigation. Table 4.2 depicts the level of constraint for the resources on Fort Belvoir.

The Environmental Composite Constraints Map shows that constraints cover more than 65 percent of the Main Post and FBNA (Figure 4.9). At first glance, it appears that Fort Belvoir cannot be developed without significant impacts to the environment. However, some constraining factors are more easily mitigated than others. Additionally, certain operational constraints might actually benefit from development, due to the environmental clean-up efforts required for making the area suitable for construction.

The areas designated as “Ideal for Development” have no environmental constraints and are recommended for development. The “Restricted Development” areas have some constraints associated with them that require mitigation before development can occur. The “Limited Development” areas have constraints that may require significant mitigation measures (for example, a sensitive natural area). Sites within the “Limited Development” areas should only be developed as a last resort, such as when the need for contiguous land or roadway access is paramount. Before proposing development within these areas, the value of the environmental feature and the potential to mitigate its disruption should be considered carefully.

Figure 4.10 (essentially a composite of the Ideal and Restricted Development areas from Figure 4.9) shows the developable areas on Fort Belvoir.

Figure 4.9 - Environmental Composite Constraints Map



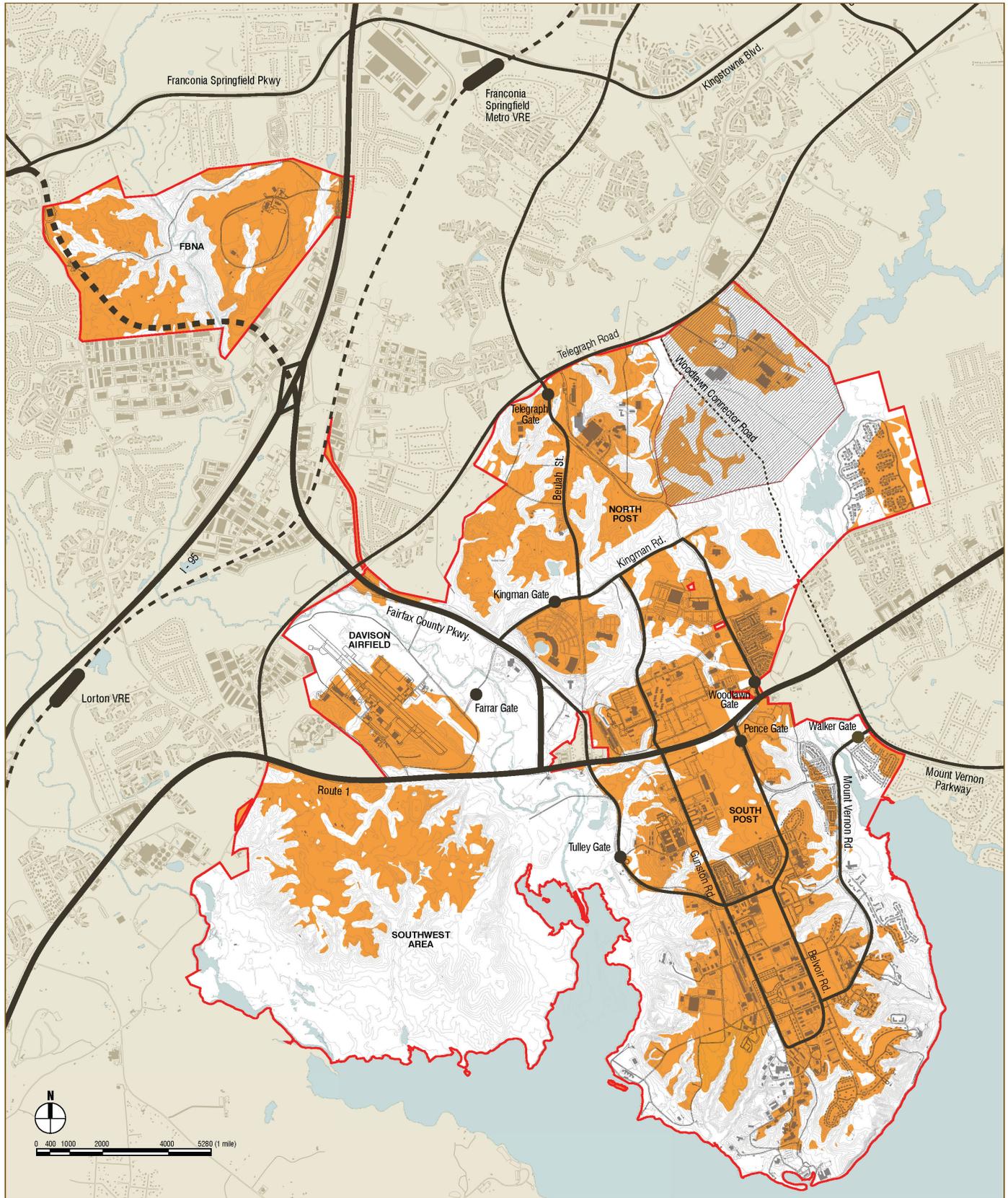
- Ideal for Development
- Restricted Development
- Limited Development
- HEC (Not in Study Area)

Table 4.2 - Level of Environmental Constraint

| Limited Development |
|--|
| Natural Resources |
| Resource Protection Areas (RPAs) |
| 100-year Flood Zones |
| Riparian Areas |
| Wetlands |
| Wildlife Management Areas |
| Forest and Wildlife Corridor |
| FBNA Environmental Quality Corridor (EQC) |
| Sensitive Flora Species |
| Sensitive Fauna Species |
| Cultural Resources |
| Archaeological Sites |
| Cemeteries |
| Historic Properties Buffer |
| Restricted Development |
| Natural Resources |
| Grassland Management Areas |
| Wetland Conservation Areas |
| Partners in Flight (PIF) Breeding Bird Buffers |
| Steep Slopes |
| Other Conservation Areas |
| Cultural Resources |
| Historic Zoning Overlay Districts |
| Historic Structures |
| Historic Districts |
| Operational Resources |
| Ranges* |
| Solid Waste Management Units (SWMUs)** |
| Hazardous Waste Management Units (HWMUs)** |
| Petroleum Storage Areas (PSAs)** |
| Petroleum Release Sites (PRSs)** |
| Easements |

Notes: * Require OE clearance or removal
 ** Require investigation and remediation

Figure 4.10 - Developable Areas Map



Developable Areas
 HEC (Not in Study Area)

Existing Land Use

The Land Use Map developed in this study (Figure 4.11) is based on the new system recently adopted by the Army that classifies land use into seven categories:

Professional/Institutional

Fort Belvoir's current administrative land uses are generally organized into seven areas. There are four pockets of administration and education facilities located along the central north-south axis of the Post, and there are three larger research and development (R&D) areas that connect to this core but extend outward toward the Post boundaries. These R&D areas have restricted access and security in addition to the Post security.

Community

Most of the commercial-based activities – shopping, dining, and services – are located along the primary north-south axis of the Post. There are three main areas set aside for outdoor recreation: two golf course areas and the Tompkins Basin Recreation Area. Other small areas for outdoor recreation are dispersed throughout the Post, and include ball fields, tennis courts, racquetball courts, a skateboard park, and football fields.

Troop

The primary troop land use on Post is located between Abbott and Goethals Roads. There are some individual student and unaccompanied housing buildings in other areas of the Post. These are located: adjacent to the Officer's Club; South of 23rd Street on Forney Loop (primarily used for student housing); at Knadle Hall on Gaillard Road; adjacent to DeWitt Army Hospital; at the corner of Peterson Loop and Belvoir Road; at the corner of Petrarcha Road and Farrel Road; and at McRee Barracks on North Post.

Residential

Family Housing consists of twelve villages primarily situated along the southeast and east edges of the Post. Under the U.S. Army's Residential Communities Initiative (RCI), Clark Pinnacle and the Department of the Army (DA) formed a 50-year public-private partnership to develop, rehabilitate, and construct 2,070 homes on 576 acres of the Post. Prior to the RCI, all of Fort Belvoir housing was in poor condition and was built at low to medium densities. The RCI project commenced operations on December 1, 2003. The development plan, spanning eight to ten years, includes the demolition and replacement of 1,900 homes and the renovation of 170 historically significant homes.

Airfield

Davison Army Airfield (DAA) is located on the Post's western periphery just north of U.S. Route 1. It serves the Army's aviation needs as an operational and training facility in the National Capital Region with an average of 20 missions (takeoffs and landings)

per day. Within the Washington/National Capital Region Military District, five operational flying units are primarily responsible for supporting Post-related missions and operations. DAA, one of these units, serves multiple functions and plays a key role in the National Emergency Response plan. The District of Columbia Air National Guard also has a training unit at DAA. Airfield operators project an increase in takeoffs and landings. As a result, DAA operations are to remain an integral component of the future envisioned Fort Belvoir. However, its facilities are in poor condition and facility upgrades must occur in order for it to maintain its mission.

Industrial

There are two primary industrial areas on the Post. They are organized along the former rail line and consist primarily of warehousing functions. Additionally, there are utility plants and waste disposal facilities scattered throughout the Post. These generally fall within their surrounding, broader land use categories and are categorized as such.

Ranges and Training

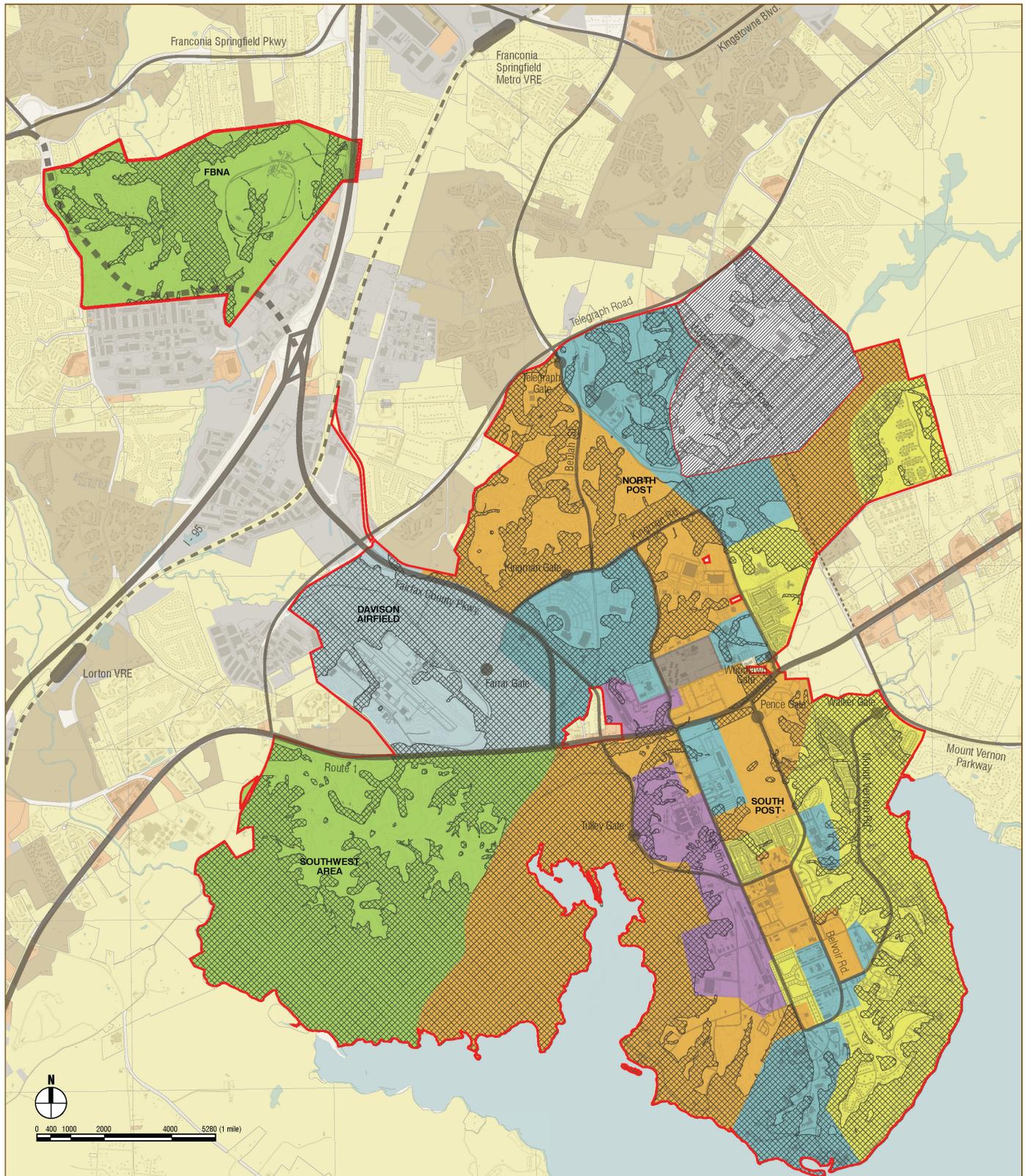
There are two large range and training areas designated on Fort Belvoir: the Southwest Area and FBNA. In addition to these, the Fort Belvoir Range Plan maintains range designations at numerous areas throughout the Post. Collective, small unit training is conducted on the Southwest Area training lands and plans are underway to expand and enhance training capabilities within this area. The FBNA training lands are not used for training purposes at this time. There are 15 operational ranges and 19 Military Munitions Response Program (MMRP) range sites on Fort Belvoir.

Developable Acreages

To better understand the land currently available for development, a "constrained development" layer was created (the inverse of the "developable areas") and overlaid onto the Existing Land Use Map (Figure 4.11). Actual acreages for each land use category, for both the gross and net (developable) land, are shown in Table 4.3.

| | Total Acres | Constrained Acres | Developable Acres |
|------------------------------|-------------|-------------------|-------------------|
| Professional / Institutional | 1233 | 673 | 560 |
| Residential | 1306 | 786 | 520 |
| Troop | 46 | 0 | 46 |
| Community | 2602 | 1662 | 940 |
| Range/Training | 2227 | 1297 | 930 |
| Airfield | 707 | 469 | 238 |
| Industrial | 379 | 103 | 276 |
| TOTAL | 8500 | 4990 | 3510 |
| TOTAL PERCENTAGES | 100 | 59 | 41 |
| MAIN POST TOTAL | 7700 | 4705 | 2995 |
| FBNA TOTAL | 800 | 285 | 515 |

Figure 4.11 - Land Use Map



Existing Infrastructure

Real Property Inventory (RPI)

Each item of real property is defined as a facility. The Army uses four facility types for analysis purposes:

- Land (L) - Land (in acres) comprises whole, or part, of a military installation owned in fee by the Federal Government and/or under custody and accountability of the Army.
- Building (B) - Buildings (in square feet) are constructed on a space of land that is completely enclosed by a roof, walls, and usually flooring. It normally serves the purpose of occupancy.
- Utility (U) - A utility (in capacity) is a distribution system, commodity source, or commodity collection point that provides a service or commodity to more than one building or structure. (*The Fort Belvoir Real Property Inventory lists this type as LS.*)
- Structure (S) - A structure is any real property facility that is not classified as a building, utility system, or land by the previous definitions. Typical examples are airfield pavements, roads, firing ranges, and athletic fields.

Source:
1. Department of the Army, Pamphlet 415-28. Guide to Army Real Property Category Codes, 11 April 2006

Building Quantity

On the Main Post and FBNA, Fort Belvoir has approximately 1,600 buildings totaling over 12 million GSF. Table 4.4 shows the distribution of facilities by functional area.

| Functional Area | Buildings GSF (approximate) | Buildings (approximate) |
|--------------------------------------|-----------------------------|-------------------------|
| South Post (including Historic Core) | 6,750,000 | 1,050 |
| Lower North Post | 1,180,000 | 235 |
| Upper North Post | 3,720,000 | 235 |
| Southwest Area | 17,000 | 10 |
| Davison Army Airfield | 380,000 | 50 |
| Fort Belvoir North Area (FBNA) | 120,000 | 35 |
| TOTAL | 12,167,000 | 1615 |

Table Source: Real Property Inventory downloaded on July 13, 2007.

The sheer number of facilities is sizable, with considerable effort invested in maintenance and upkeep. As funding decreases and maintenance budgets tighten, it is becoming increasingly more difficult to maintain buildings at minimum habitable standards. Often, older buildings require the most effort and cost, due to their advanced age and rate of deterioration.

Building Quality

The Installation Status Report (ISR) communicates installation conditions by using Q-ratings for facilities. The Q-ratings are based on a ratio of restoration cost estimates ("cost to fix") to facility plant replacement value (PRV). Restoration cost is based on facility condition assessments conducted by facility occupants. These Q-Ratings are used to derive an installation-wide Quality Rating at the Facility Class level. All military services report Q-ratings using the same DoD methodology. The four Q-Ratings are defined in Table 4.5.

This rating system is used to model and justify funding levels for the installation. It also indicates where facilities and infrastructure are inadequate and may negatively affect the Army's overall mission. The ISR rating provides a standard, Army-wide system to support decision-making processes as they relate to operations, sustainment, modernization, revitalization, and re-stationing.

Figure 4.12 displays facility conditions based on the Installation Status Report (ISR) ratings downloaded on March 5, 2007. Based on the Fort Belvoir Real Property Inventory, approximately 35 percent of the buildings on the Post are fifty years old or older. Many qualify for historic designation, due to their symbolic importance or structural character. Other facilities may not warrant preservation, as their current function is better served in modernized facilities with upgraded infrastructure and utilities.

| Rating | Definition |
|--------------|--|
| Q-1 (Green) | Minor facility condition deficiencies and no significant facility configuration deficiencies, with negligible impact on the capability to support the tenant organizations' required missions. |
| Q-2 (Yellow) | Some facility condition deficiencies and/or configuration deficiencies that have limited impact on the capability to support the tenant organizations' required missions. |
| Q-3 (Red) | Significant facility condition deficiencies and/or configuration deficiencies that impair the capability to support some of the tenant organizations' required missions. |
| Q-4 (Black) | Major facility condition deficiencies and/or configuration deficiencies that present significant obstacles to the tenant organizations' accomplishment of required missions. |

Table Sources:
1. Military Planning Technical Manual
2. U.S. Army Installation Management Agency, Public Works Digest Vol. XVIII No. 1, Jan/Feb 2006, downloaded from http://www.ima.army.mil/sites/pwd/digest/pwd_janfeb06.pdf

Figure 4.12 - Facilities Condition Map

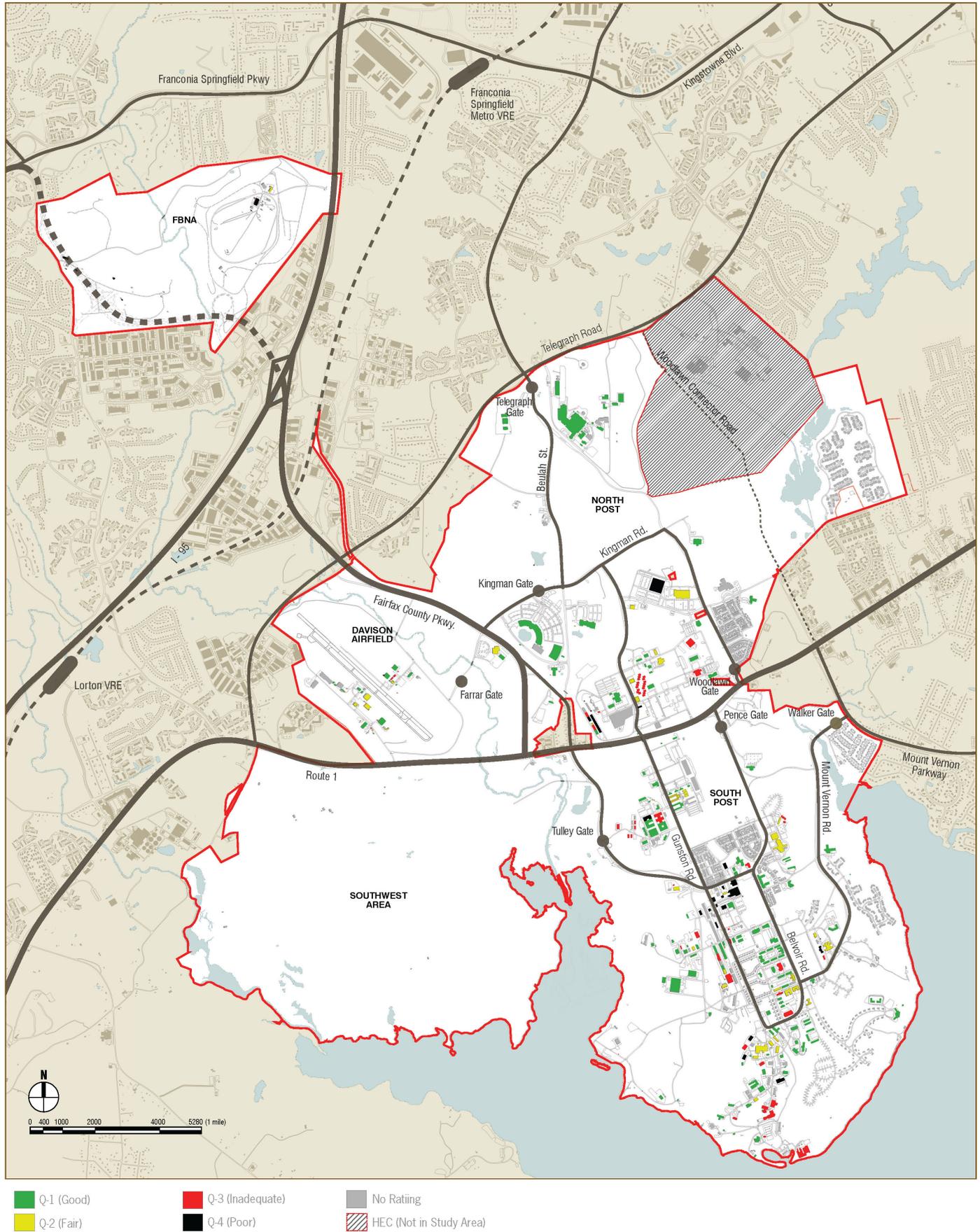
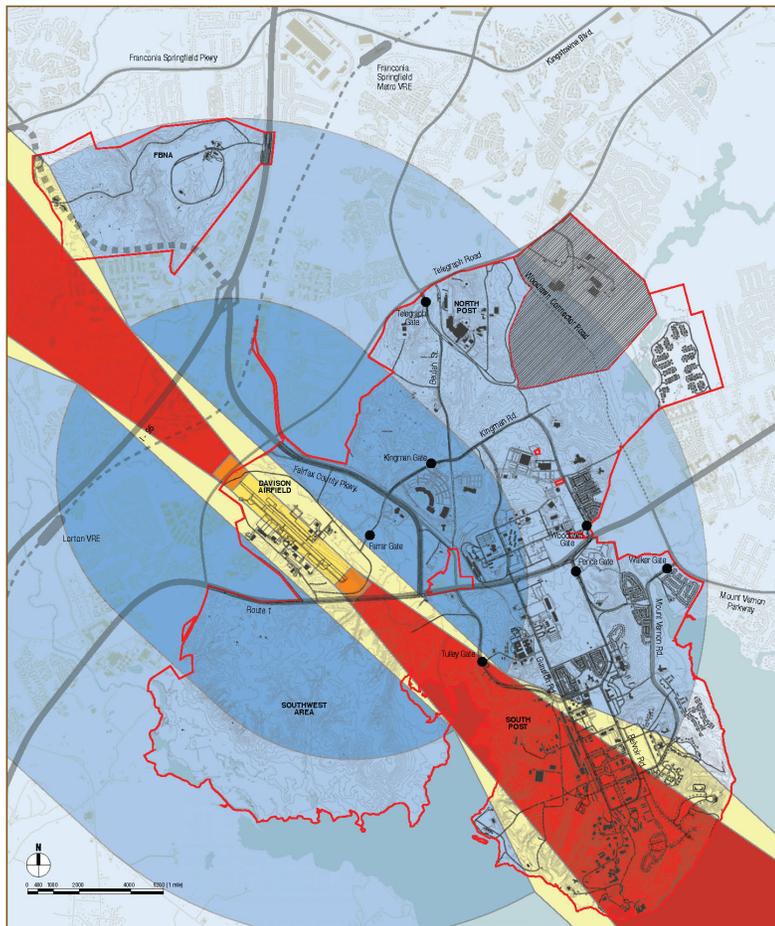


Figure 4.13 - Airfield Constraints Map



- Outer Horizontal Surface (500')
- Conical Surface
- Inner Horizontal Surface (150')
- Transitional Surface
- Approach/Departure Clearance Surface
- Primary Surface
- Clear-Zone Surface
- HEC (Not in Study Area)



Airfield Facilities

Davison Army Airfield

Davison Army Airfield (DAA) is an operational and training facility. DAA accommodates five operational flying units within the Washington/National Capital Region Military District and a training unit of the District of Columbia Air National Guard. The five operational flying units are:

- 12th Aviation Battalion - Rotary
- Operational Support Airlift Agency (OSAA/OSACOM) - Fixed wing
- DC Air National Guard - Rotary
- Aviation Night Vision Lab - Rotary/Fixed wing
- Civil Air Patrol - Fixed wing

The operational units are primarily responsible for supporting Post-related missions and operations. Currently DAA supports training and operations by both helicopter and fixed wing aircraft. The monthly activity records of the DAA Air Traffic Services Staff show that there were a total of 50,181 fixed wing and helicopter operations from April 2005 to April 2006. Helicopter operations account for approximately 60 percent of total annual flight operations.

DAA is required to comply with guidelines and regulations to meet a Class A airfield as outlined in the Unified Facilities Criteria (UFC) 203-260-01, Airfield and Heliport Planning and Design. The maximum aircraft size that can be safely accommodated at DAA is UC-35 (Citation 560). Operations at the DAA accommodate a helicopter fleet ranging from small OH-6s to large UH-60 Blackhawks and CH-53 Stallions, while fixed wing aircraft operations range from small Cessna 182s to large C-130 Hercules aircraft. Although C-130 operations exceed the design weights and pavement geometry parameters of this Class A regulated airfield, they have occurred frequently and resulted in the rapid deterioration of the airfield pavements. Additionally, the existing facility layout often results in the interaction of helicopter and fixed wing aircraft operations, which reduces the operational safety and capacity of the airfield.

Figure 4.13 maps the imaginary surfaces associated with the runway at DAA. No manmade structures or natural features are allowed on the primary surface and within clear zones. Development and landscape features are permitted under imaginary surfaces, but stringent height restrictions are imposed. The DAA runway elevation is +74 ft MSL, and associated imaginary surfaces are calculated based on this level.

Maximum allowed height for development on any given parcel is determined by the height of its topography and level of associated imaginary surface. Figure 4.14 depicts the maximum allowed height for development surrounding the airfield.

Planning Considerations

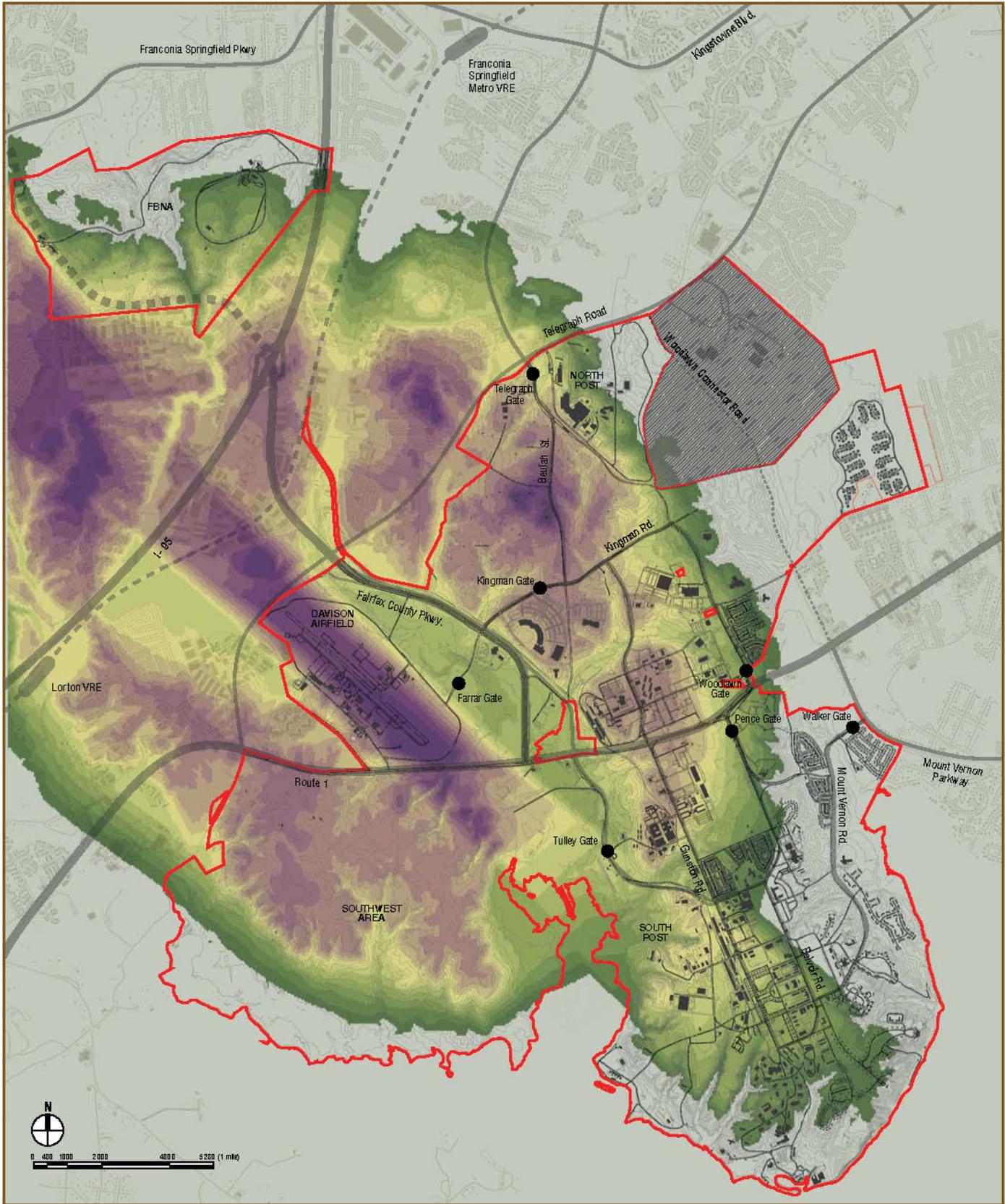
Current and future facilities should not penetrate the imaginary surfaces detailed in Figure 4.13, so that DAA may operate at its full capacity. Table 4.6 lists the existing facilities that conflict with the imaginary surfaces. While height restrictions apply to the entire Post and FBNA, restrictions of 100 feet or lower only apply to parts of the North Post and Southwest Area (Figure 4.14). Severe restrictions of 40 feet or lower apply to small areas within the North Post Golf Course and the eastern portion of the Southwest Area. It is extremely important that existing obstructions are removed and potential future obstructions are prohibited. This will help DAA regain lost operational capacity and protect against further loss of overall airfield functionality.

DAA plays a key role in the National Emergency Response plan. In the event of a National Emergency, Andrews Air Force Base (AFB) will be used to launch fighter aircraft and the Presidential Command Control Berth. Andrews AFB will be locked down to all other operations. DAA will provide for simultaneous operations, such as evacuation of the Secretary of Defense and other key personnel. DAA's assets will be used primarily within the DC Beltway area. During a National Emergency, DAA will be in "lockdown", restricting personnel from leaving or accessing the airfield until the Emergency has passed. These National Emergency Response plans must be considered during land-use development planning.

| Imaginary Surface | Definition | Development Impacts and Existing Obstructions* |
|-------------------------------|--|--|
| Primary Surface | A surface longitudinally centered on the runway and extending 200 feet beyond each runway end. The width of the primary surfaces varies depending on the class of runway and coincides with the lateral clearance distance. | No manmade or natural features are allowed. Obstructions include building nos. 3136, 3137, 3138, 3140, 3141, 3230, 3231, 3233, 3234, 3237, and 3239. |
| Clear Zone (graded area only) | Areas on the ground, located at the ends of each runway. They possess a high potential for accidents and their use is restricted to be compatible with aircraft operations. Runway Clear Zones are required for the runway and should be owned or protected under a long term lease. | No manmade or natural features are allowed. No obstructions identified. |
| Approach-Departure Surface | An inclined plane arranged symmetrically about the extended runway centerline. The beginning of the inclined plane starts at the end of the primary surface and the elevation of the centerline at the runway end. The surface flares outward and upward from these points at a uniform slope. | No structure must puncture this surface. No obstructions identified. |
| Inner Horizontal Surface | An imaginary plane that is oval in shape, and is located at a height of 150 feet above the established airfield elevation. | No structure must puncture this surface. Obstructions include building no. 2462. |
| Conical Surface | An imaginary surface that extends from the periphery of the inner horizontal surface outward and upward at a slope of 20 to 1 for a horizontal distance of 7,000 feet and a height of 500 feet above the established airfield elevation. | No structure must puncture this surface. Obstructions include building nos. 2901, 2902, 2903, 2905, and 2907. |
| Outer Horizontal Surface | An imaginary plane located at a height of 500 feet above the established airfield elevation, extending outward from the edge of the conical surface at a horizontal distance of 30,000 feet. | No structure must puncture this surface. No obstructions identified. |
| Transitional Surface | An imaginary surface that extends outward and upward at right angles to the runway centerline at a slope of 7 to 1, and connects the primary and approach departure surfaces to the inner horizontal, conical, and outer horizontal surfaces. | No structure must puncture this surface. No obstructions identified. |

Note: * Existing Obstructions were calculated based on Fort Belvoir GIS data provided. Field investigations are required to verify these conclusions.

Figure 4.14 - Maximum Building Heights based on Airfield Imaginary Surfaces Restrictions



Transportation

The northern Virginia transportation network is already greatly strained from rapid development and significant employment growth. The I-95 corridor is one of the busiest, most congested transportation corridors in the country. Even if no further growth results from Fort Belvoir's BRAC action, area traffic would substantially increase over the next two decades.

In the vicinity of Fort Belvoir Main Post (Figures 4.15 and 4.16), the Northern Virginia highway system primarily consists of the major roadways that serve as commuter routes:

- Interstate 95 (I-95)
- Interstate 395 (I-395 Shirley Highway)
- Interstate 95/495 (I-95/I-495 Capital Beltway)
- U.S. Route 1 (Richmond Highway)
- Virginia Route 7100 (Fairfax County Parkway)
- Virginia Route 611 (Telegraph Road)
- Virginia 613 (Beulah Street/Van Dorn Street)
- Virginia Route 235 (Mount Vernon Memorial Highway)
- Virginia 641 (Pohick Road)
- Virginia 642 (Lorton Road)
- George Washington Memorial Parkway

The roadway system on Main Post (Figure 4.16) includes:

- John J. Kingman Road on North Post – provides access from Fairfax County Parkway to a number of sites, including the Andrew T. McNamara Headquarters Complex, Mosby Reserve Center, and Davison Army Airfield.
- Beulah Street – provides access to North Post from Telegraph Road and connects to Kingman Road.
- Woodlawn, Meade, Goethals, Abbot, Gorgas and Meeres Roads – provide internal circulation within North Post from Gunston and J.J. Kingman Roads.
- Gunston Road – provides the major north-south roadway connection between North and South Posts, and is the only roadway that crosses over U.S. Route 1.
- Pohick Road – provides access to South Post from U.S. Route 1 via Tulley Gate, where all Post visitors enter and are processed at the Post Visitor Center.
- Belvoir Road – provides access to South Post from U.S. Route 1 via the Pence Gate.
- Mount Vernon Road – provides access to South Post from Mount Vernon Memorial Highway via the Walker Gate.
- 9th, 12th, 16th, 18th, 21st and 23rd Streets – provide east-west movement on South Post, and connect Gunston Road with Belvoir Road.

Figure 4.15 - Regional Transportation Map

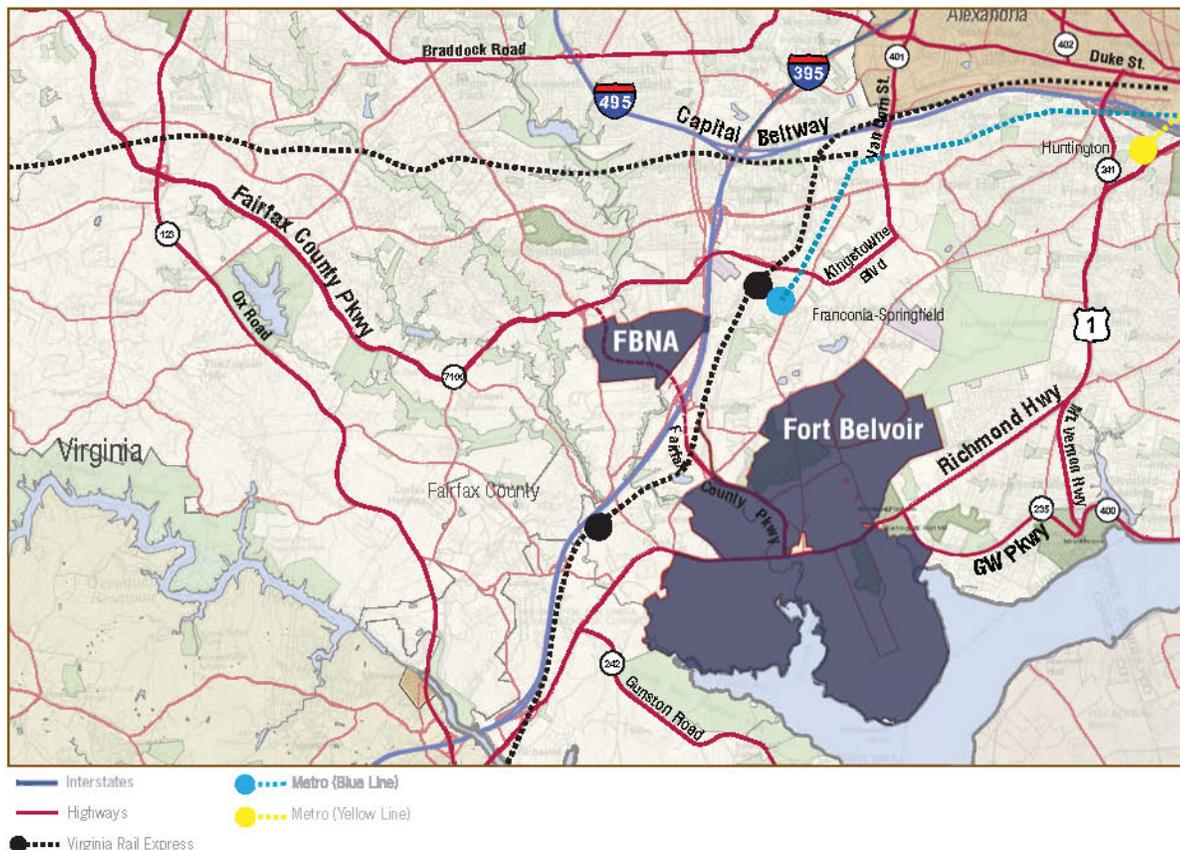
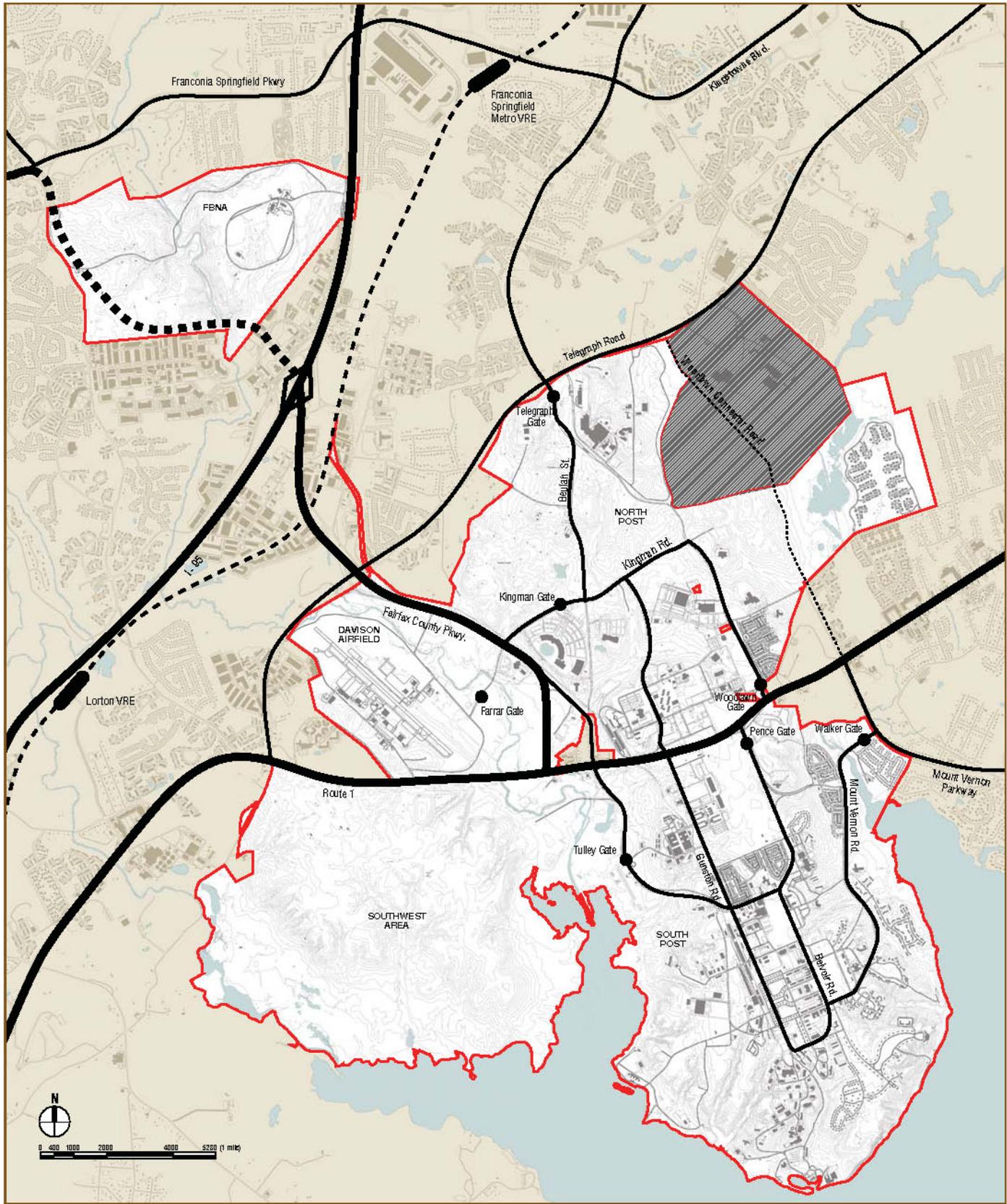


Figure 4.16 - Local Road Map (existing)



Utilities (Existing)

The Fort Belvoir utility system can be generally characterized as aging and moderately well maintained. Parts of the Post infrastructure date from the 1930's and 40's, and as such are nearing the end of their useful life.

Water

Fairfax Water delivers potable water to Fort Belvoir supplied from the Occoquan reservoir and treated at the Frederick P. Griffith Water Treatment Plant. The Griffith Plant is a state-of-the-art facility with a 120 mgd treatment capacity. The Griffith Plant is one of several supply points that feed the overall Fairfax Water system, providing redundancy and reliability to Fort Belvoir. The Post has purchased capacity of 4.6 mgd (peak flow) from Fairfax Water. When the demand reaches 80 percent of the purchased capacity, Virginia Department of Health (the regulating Authority) requires a plan to be submitted for complete system upgrade. The purchased capacity only covers the Main Post, not FBNA or HEC. Fairfax Water also supplies water to FBNA. Privatization of the Fort Belvoir water system is scheduled for FY 2008. Figure 4.17 indicates the Post primary distribution system.

Sewer

There are Fairfax County trunk lines traversing both the FBNA site and Main Post of Fort Belvoir that feed the Lower Potomac Treatment facilities. The Lower Potomac Treatment facility has a plant capacity of 67 mgd and receives an average daily flow of 45 mgd. From Fairfax County the Post purchased collection/treatment capacity to handle flows of 3 mgd (average) and 6 mgd (peak). This excludes FBNA and HEC. The capacity is based on a quarterly running average with a "not to exceed" peak limit of 6 mgd. The Post reportedly uses only 1.1 mgd of the purchased capacity. Preliminary estimates of new loads from BRAC tenants indicate that the total flow at FBNA will approach 1 mgd; total flow from Main Post will approach 2 mgd. As the design progresses, monitoring of the proposed loads will be necessary so that additional capacity can be purchased in a timely fashion, if required. Privatization of the Fort Belvoir sanitary sewer system is scheduled for FY 2008. Figure 4.18 indicates the Post's primary collection system.

Figure 4.17 - Water Distribution System Map

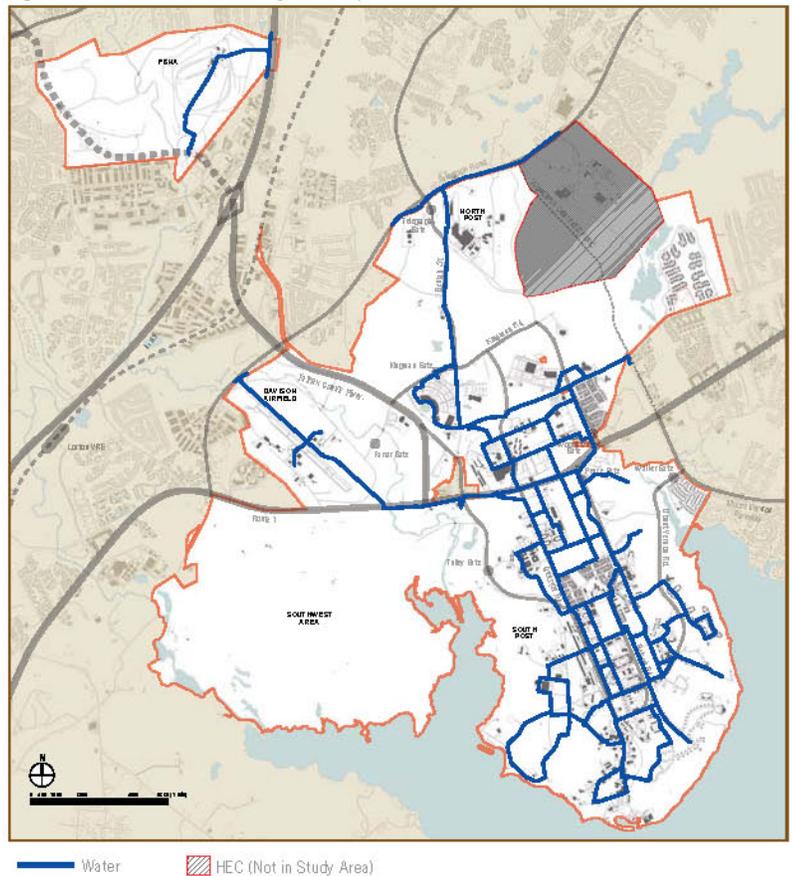


Figure 4.18 - Waste Water Collection System Map

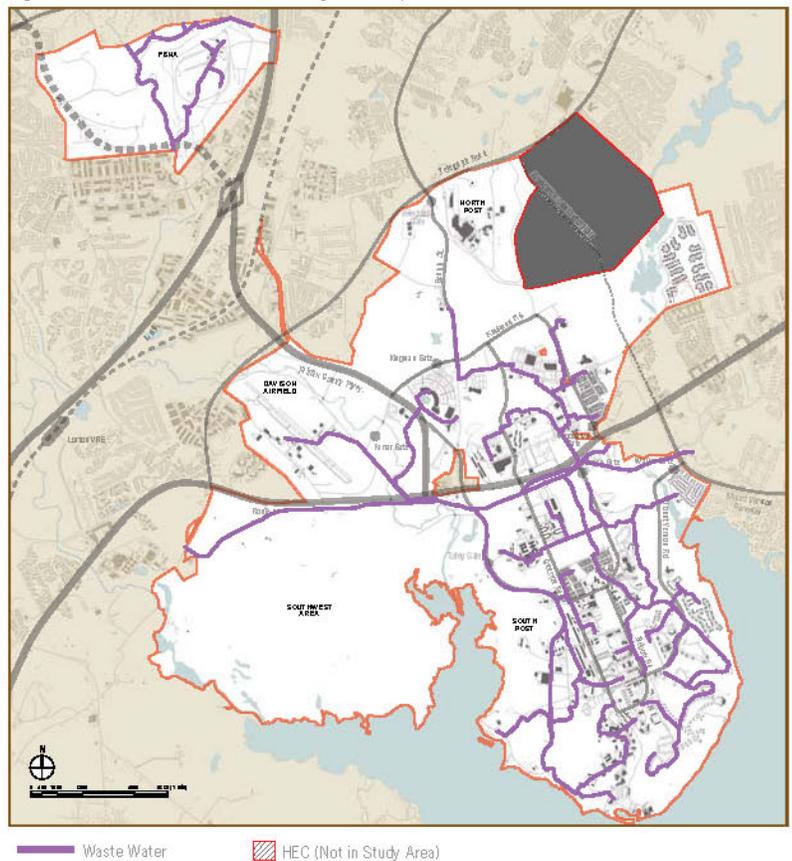
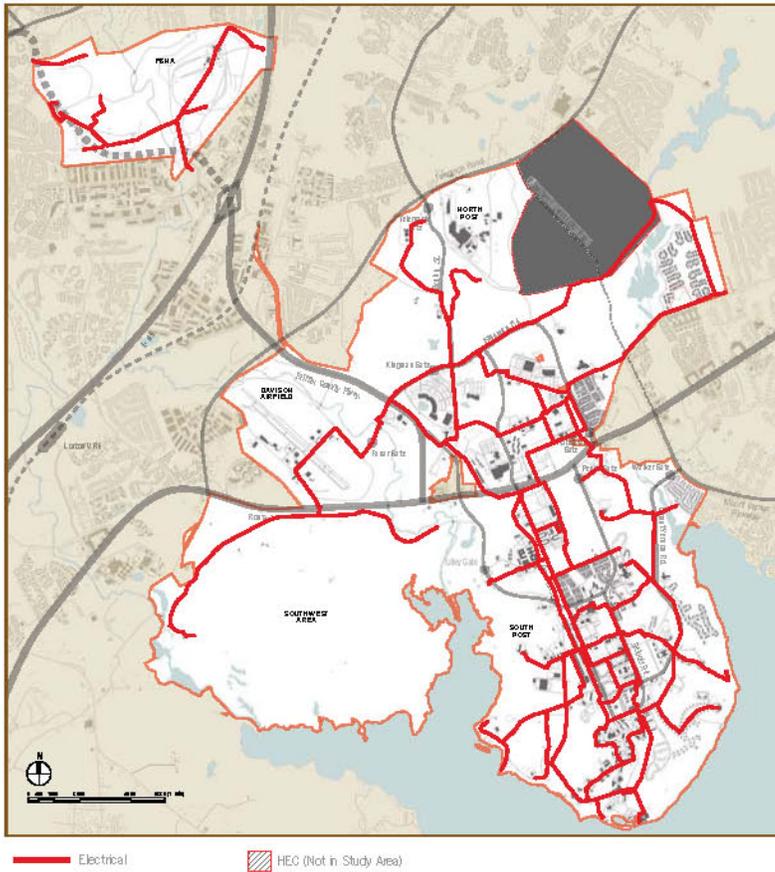


Figure 4.19 - Electrical Distribution System Map



Electric Power

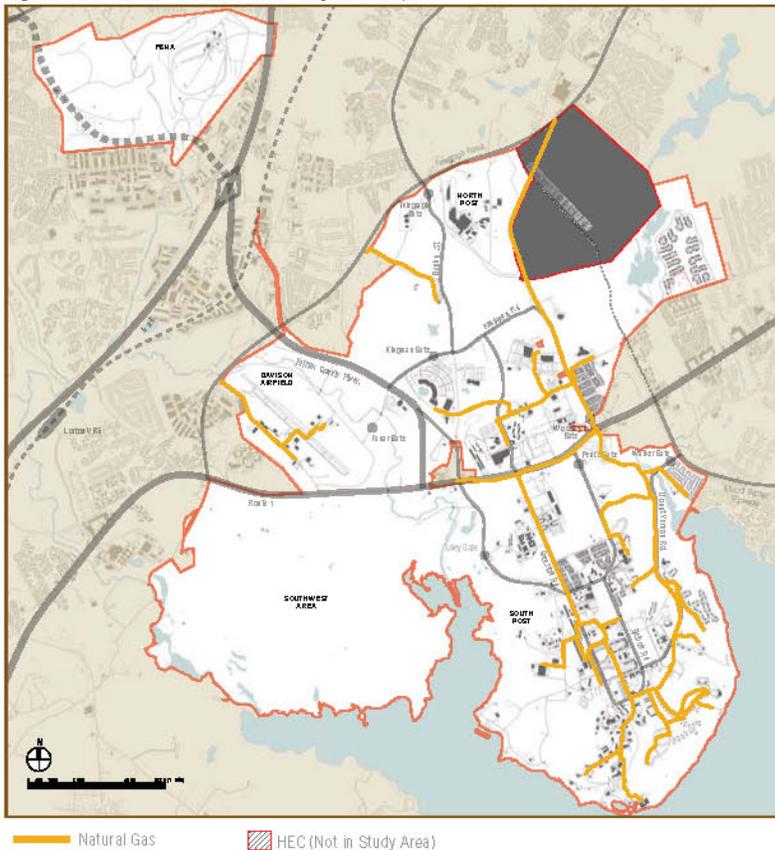
The Main Post of Fort Belvoir is supplied power by Dominion Virginia Power (DVP) under the rate schedule MS – Federal Government Installations. The power is delivered from a single main substation (Belvoir Substation) at 34.5 kV to four 34.5 kV feeders. FBNA is served by medium voltage to a point along Backlick Road. This distribution main is fed from the Franconia substation located a half-mile south of FBNA. Figure 4.19 indicates the Post’s primary distribution system.

The power supply on Fort Belvoir has always been privatized. In September 2006, the Installation and DVP signed a contract to also privatize the distribution system on Post. DVP assumed control of this system on August 2, 2007.

Natural Gas

Washington Gas supplies natural gas to Fort Belvoir and the surrounding community. The gas company has a robust distribution system in the area that appears capable of providing adequate natural gas, regardless of the BRAC scenario selected. Figure 4.20 indicates the Post’s primary distribution system.

Figure 4.20 - Natural Gas Distribution System Map



Long Range Component

According to Army Regulation (AR) 210-20, the Long Range Component (LRC) of the Real Property Master Plan (RPMP) establishes “the environmental baseline, basic framework, and specific options for developing and managing real property on the Post”. It provides development options in accordance with the installation’s mission and the Real Property Vision, Goals and Objectives. The LRC serves as the planning baseline for the other components of the master plan.

Scope

This current master plan addresses approximately 8,500 acres including both the Main Post (7,700 acres) and Fort Belvoir North Area (FBNA) (800 acres) (Figure 5.1). It does not include the adjacent property of the Humphreys Engineer Center (HEC) which is operated by the Army Corps of Engineers and considered as a separate entity for land planning purposes. Also, this plan does not include Rivanna Station, a remotely located portion of Fort Belvoir.



Figure 5.1 - Fort Belvoir: Main Post and Fort Belvoir North Area (FBNA)

The following assumptions, developed by the master planning team and Fort Belvoir provided the point of departure for development of the current master plan.

- Within a few years due to Base Realignment and Closure Commission (BRAC), the population and intensity of activity at Fort Belvoir will nearly double. Belvoir currently has 23,000 personnel working on Post. Current planning (BRAC and non-BRAC) envisions an additional 19,000 new people working at Fort Belvoir by 2015. Minimal continued growth will add another 3,000 by 2030. The total projected employee population for 2030 is 45,000.
- Fort Belvoir will provide more regional services in support of the National Capital Region (NCR). Examples of these expanding services include administrative support, regional outdoor recreation, logistical support, and expanded support to the retiree population.
- Fort Belvoir family housing assets are now transferred to private ownership under a 50-year lease. As housing neighborhoods are being redeveloped, the number of housing units provided (2,070) is projected to remain constant for the planning period of this master plan. (This plan is also a key tool in ensuring that the Post’s housing requirement is accommodated, while still allowing development opportunities for other important missions at Fort Belvoir.)
- The Museum of the United States Army is planned to be constructed on Fort Belvoir.
- Fort Belvoir is expected to continue its current mission of regional support for office and housing. Therefore, all planning will be aimed at supporting this mission.

These current planning assumptions, along with the mission and vision of Fort Belvoir, set the direction of its growth to the year 2030, while providing a long-range flexible plan that can accommodate its existing, currently planned, and future needs and requirements.

Spatial Relationships

The current master plan assessed the existing physical development on Fort Belvoir, including building conditions, site layouts, visual character, and open space. This assessment helped determine what type of development or redevelopment is best suited on each land parcel. Spatial relationships on the Post were evaluated separately for the following sub-areas: South Post, Lower North Post, Upper North Post, Southwest, FBNA, and the Airfield. Table 5.1 summarizes the spatial analysis presented in the current master plan. It indicates:

- There is a need for significant redevelopment on the Post, because of under-utilized sites and aging facilities.
- The northern part of the Main Post and FBNA have better access to the regional transportation network.
- The Southwest Area is not a prime development area, due to a lack of infrastructure and accessibility and height restrictions imposed by airfield operations.
- The southern part of Main Post and lower North Post have large developable areas, but require better access to regional roads (adding another overpass to connect South-North Post would help alleviate this problem).

Proposed Land Use

The Land Use Plan (Figure 5.2) classifies all land on the installation into one of seven categories. Table 5.2 indicates the changes in land use based on acreage. When comparing this land use plan to existing land use, notable changes include:

- 1 Industrial land use is reduced to a smaller acreage, which will be compensated by constructing more efficient modern facilities for these functions.
- 2 A Troop village is established on South Post near the Town Center. This includes troop housing and support facilities.
- 3 The open area north of the Parade Field is changed to a Professional/Institutional land use in anticipation of an office development here. An appropriately scaled development will complete the definition of and provide a good backdrop for views across the Parade Field.
- 4 On the upper South Post the Professional/Institutional land use is expanded east and north. This then connects the smaller existing administration areas on North Post into this one larger contiguous land use category, forming an area able to accommodate a significant amount of Professional/Institutional and associated uses.
- 5 Woodlawn Village, a neighborhood (440 units) that is too removed from Main Post, is relocated on to the Main Post and its land is categorized as Community. The proposed Community land use would allow future designation of this land as park or recreation area for the local community; however, an official future use for this land has not been determined.
- 6 FBNA is changed from Range/Training to primarily Professional/Institutional.

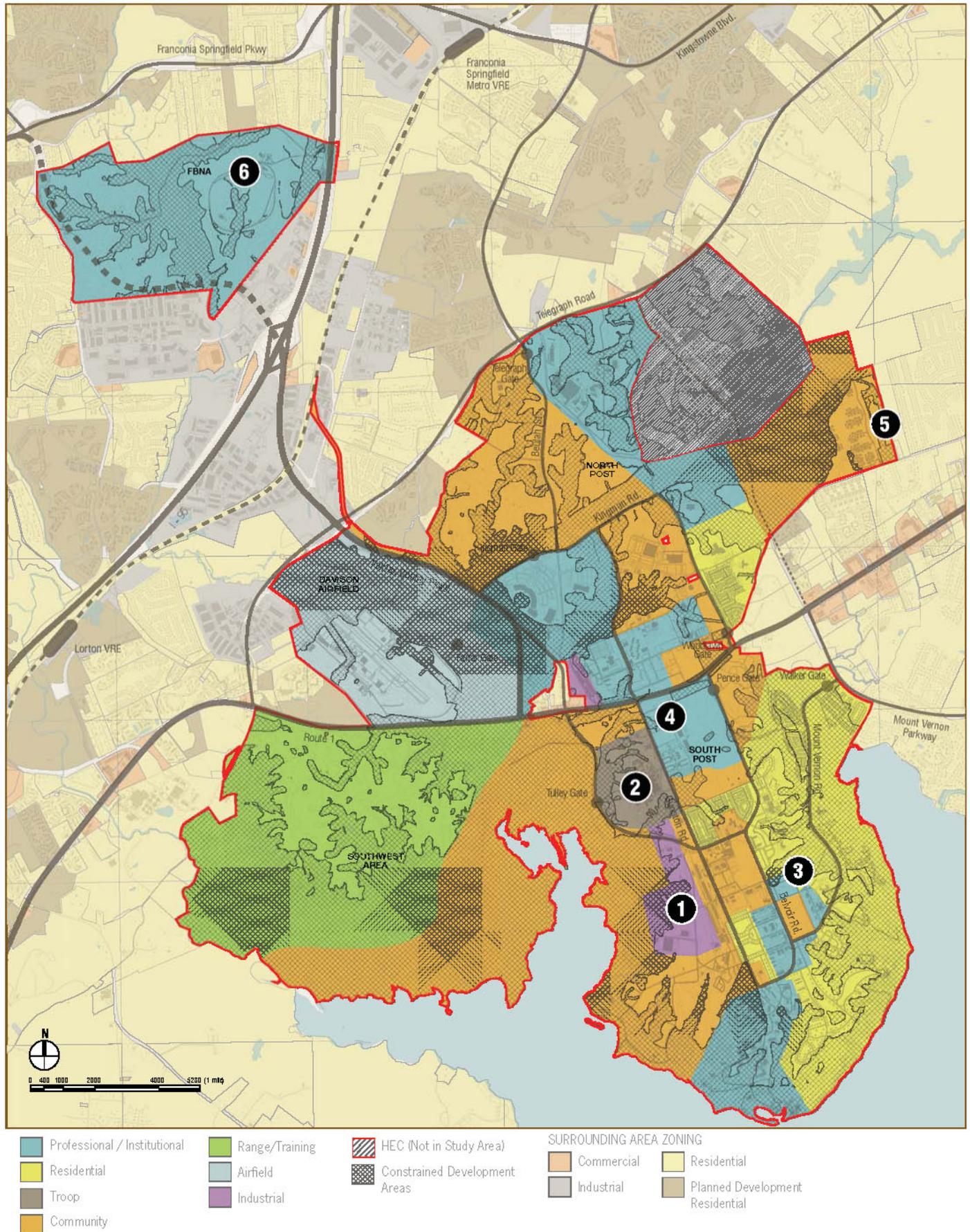
Table 5.1 - Factors affecting Development Potential

| | South Post | Lower North Post | Upper North Post | Southwest Area | Davison Army Airfield | FBNA |
|---|------------|------------------|------------------|----------------|-----------------------|------|
| Buildable sites are under-utilized | ■ | ■ | ■ | ■ | | ■ |
| Facilities are old or improperly located | ■ | ■ | ■ | | ■ | ■ |
| Utility and road networks exist and can be extended | ■ | ■ | ■ | | ■ | |
| Good regional access by road and transit | | | ■ | | ■ | ■ |
| Large contiguous developable areas exist | ■ | ■ | | | | ■ |

Table 5.2 - Land Use Acreage Comparison

| Land Use Category | Existing Land Use Acreage | | | Proposed Land Use Acreage | | | Acreage Change Developable Acres |
|------------------------------|---------------------------|-------------|-------------|---------------------------|-------------|-------------|-------------------------------------|
| | Total | Constrained | Developable | Total | Constrained | Developable | |
| Professional / Institutional | 1233 | 673 | 560 | 2186 | 972 | 1214 | 654 |
| Residential | 1306 | 786 | 520 | 1149 | 701 | 448 | (-72) |
| Troop | 46 | 0 | 46 | 139 | 44 | 95 | 49 |
| Community | 2602 | 1662 | 940 | 2899 | 1891 | 1008 | 68 |
| Range/Training | 2227 | 1297 | 930 | 1286 | 872 | 414 | (-516) |
| Airfield | 707 | 469 | 238 | 689 | 466 | 223 | (-15) |
| Industrial | 379 | 103 | 276 | 152 | 44 | 108 | (-168) |
| TOTAL | 8500 | 4990 | 3510 | 8500 | 4990 | 3510 | 0 |
| TOTAL PERCENTAGES | 100 | 59 | 41 | 100 | 59 | 41 | 0 |
| MAIN POST TOTAL | 7700 | 4705 | 2995 | 7700 | 4705 | 2995 | 0 |
| FBNA TOTAL | 800 | 285 | 515 | 800 | 285 | 515 | 0 |

Figure 5.2 - Proposed Land Use Plan



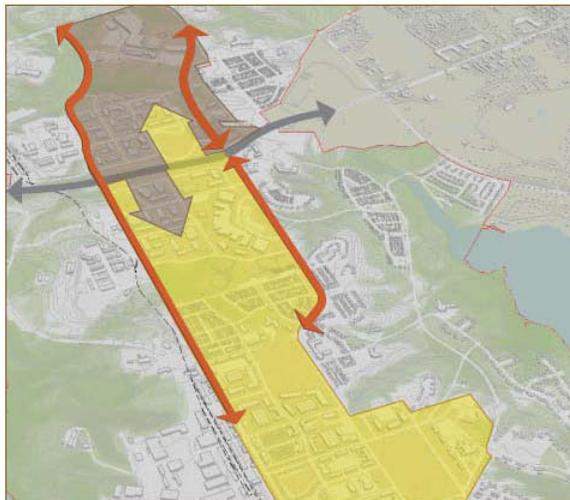
Planning Framework

The planning framework developed in the current master plan reflects a consensus for all aspects of future installation development. It provides an adaptable blueprint that brings control, coordination, and direction to current and potential change. It integrates divergent issues with competing long-range development directions, while complying with the installation's Mission, Vision, Goals and Objectives.

Figure 5.3 shows the overall framework for Fort Belvoir in two phases. The first phase accommodates the growth of approximately 19,000 employees by the year 2015; the second accommodates another 3,000 employees by 2030. (Total projected population for 2030 is 45,000.) The plan recommends the type and location of development, not specific projects. Reserving detailed project information for the Short Range Component (SRC) and Area Development Plans (ADPs) extends the life of the



Proposed development is focused around a central core of activity nodes that offer the urban amenities that encourage a vibrant mixed-use community.

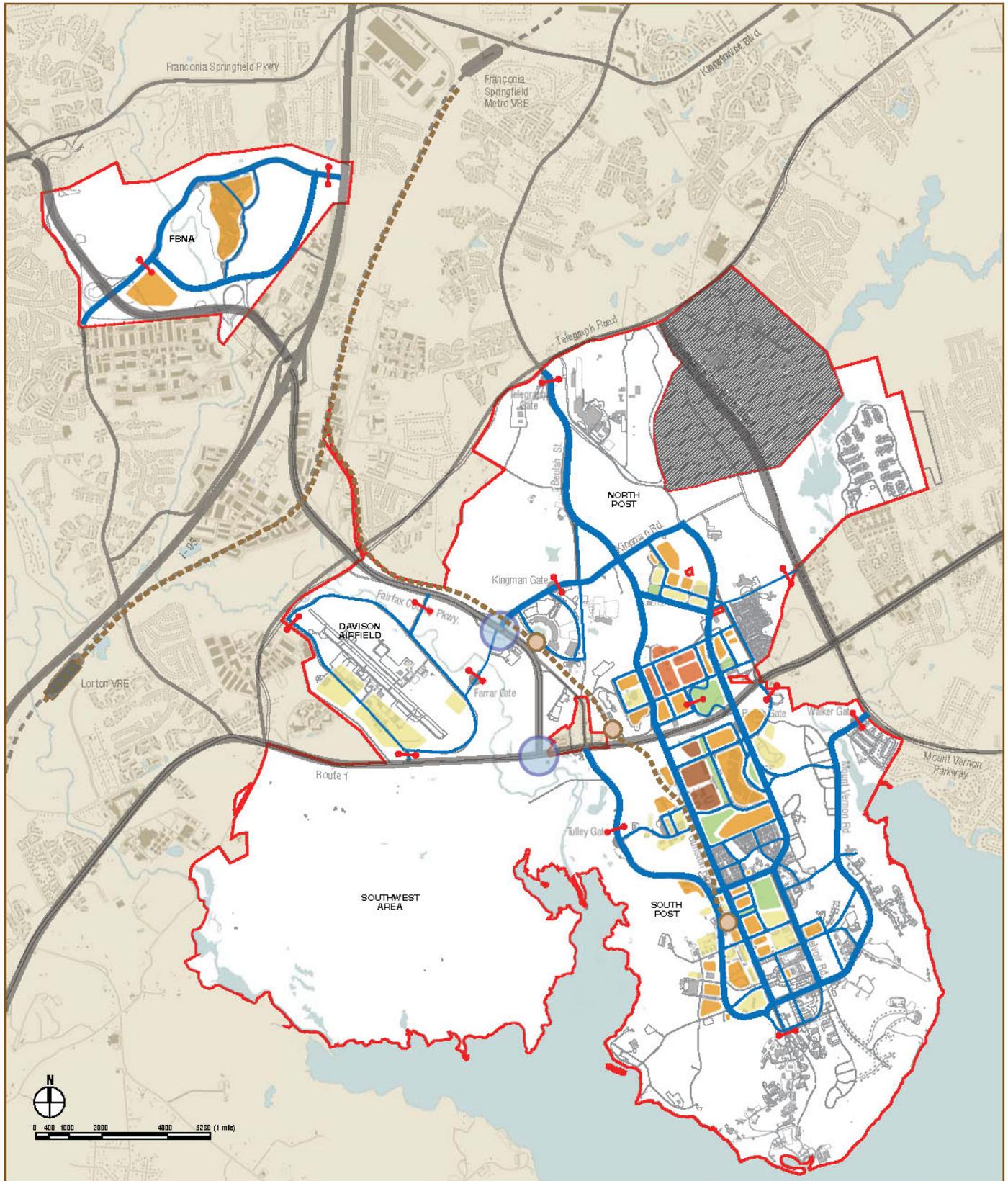


Connectivity between the North and South Post is important to establish a unified urban core. Long severed by U.S. Route 1, strong linear elements such as Gunston Road and Belvoir Road can span this formidable barrier. Connectivity can also be accomplished with well-orchestrated development that visually ties both halves of the Post together.

Framework Plan. This allows the plan to serve as a flexible, overall development guide that does not become outdated as soon as one project changes location. The plan does depict the roads, trails, and open spaces – those elements that serve as connectors for the installation. This network of linkages must work together, and not just function in isolation. The framework also recommends the best type of development for each location. It indicates where high density developments and high level activity nodes should occur. The framework plan:

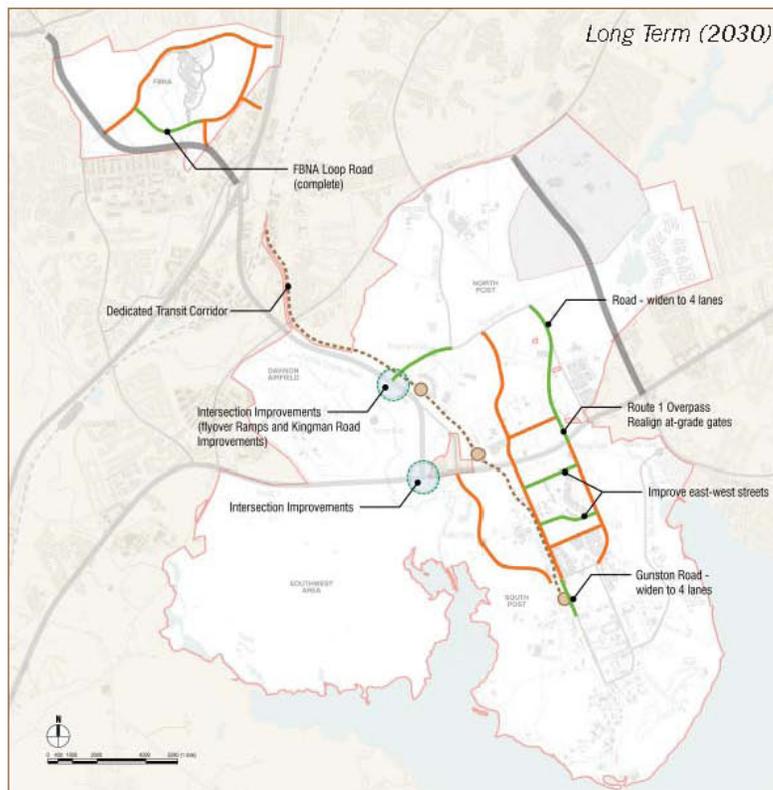
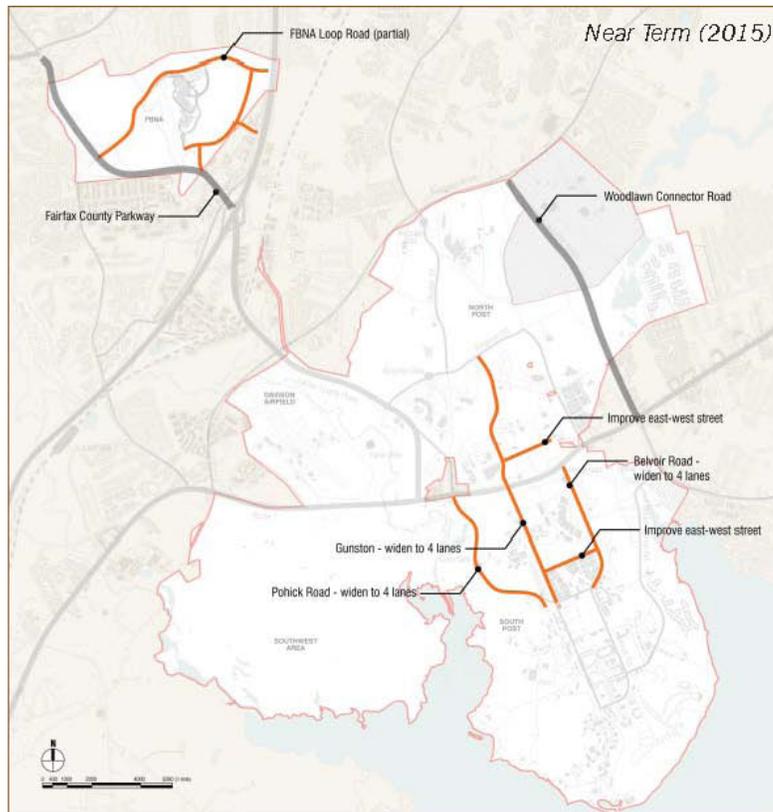
- Provides a dense core of mixed-use development on the plateau that extends north-south across the installation
- Establishes a strong connection between North and South Post
- Reserves parcels for development beyond 2030
- Incorporates relocation of the Woodlawn Village housing units onto South Post
- Provides subdistricts in the Main Post urban core for scale and orientation
- Through redevelopment, increases the efficiency and density of employee campuses located outside the urban core (off the plateau)
- Ensures that the potential transit line is not encroached upon
- Locates other regional uses along the primary roads to take advantage of this public interface
- Capitalizes on the future Fairfax County Parkway for both FBNA and Main Post connections
- Provides an additional bridged connection between North and South Post
- Creates a loop road around the Main Post urban core
- Provides additional east-west connections between Belvoir and Gunston Roads
- Ensures the network of residential neighborhoods along the east and south side of the core stay connected to each other and to Town Center development
- Strategically locates community centers and recreational facilities to serve as hubs for the Main Post community
- Provides an accessible trail system that links open spaces, recreation areas, and main activity centers together as an integrated network
- Utilizes open spaces as buffers to help mitigate impacts to neighboring historic properties
- Provides a variety of open spaces accommodating many types of activities

Figure 5.3 - Framework Development Plan



- | | | | |
|------------------------------|-----------------------------|--|-------------------------------------|
| Regional Roads | Dedicated Transit Corridors | Development Parcels (2015) | Other Potential Development Parcels |
| Installation Primary Roads | Gates | Development Parcels (2030 Lower North Post Option) | |
| Installation Secondary Roads | Intersection Improvements | Development Parcels (2030 South Post Option) | |
| | Transit Stops | | |

Figure 5.4 - Transportation Improvements



Transportation Assessment

Figure 5.4 depicts the primary transportation improvements required in the near term (2015) and in the long term (2030).

Near Term (2015): Most of the development on Main Post will occur on South Post. The new hospital will be located on the South Post Golf Course; Army Lease and PEO EIS will backfill into buildings vacated by tenants leaving Main Post; and MDA will be located on the ball fields at the north end of the Parade Grounds. These actions require the following road improvements:

- Widening of Gunston Road, Belvoir Road, Ninth Street, Goethals Road, and Pohick Road to four lanes with appropriate turn lanes
- Construction of a new access control point at the former Lieber Gate site opposite to Belvoir Road to provide access to U.S. Route 1
- Signalization of eight intersections to mitigate impacts due to increased development for the near term

Long Term (2030): Fort Belvoir will be redeveloped over the long term as each of the sub areas on Main Post is redeveloped. These projects will change the roadway network, including roadway realignments and/or widening. Major changes to the on-post roadway network include:

- Extension of Belvoir Road from South Post to North Post – with a grade-separation from U.S. Route 1 and an alignment into Woodlawn Road
- Realignment of the intersection of Theote and Pohick Roads – to promote the major north-south movement for lower South Post traffic to Theote Road, rather than Gunston Road
- Realignment of the lower portion of Theote Road into 23rd Street – to extend into Belvoir Road to promote a “ring-road” on South Post (An alternative alignment would be to extend Theote Road into 21st Street.)
- Extension of Third Street as a 4-lane roadway to connect Belvoir and Gunston Roads
- Extension of Sixth Street as a 2-lane roadway with on-street parking to connect Belvoir and Gunston Roads
- Conversion of the abandoned railway into a transit corridor – either as a BRT or light-rail system to connect to Franconia-Springfield Metrorail Station and VRE stations

In addition, a Transportation Management Plan (TMP) should be implemented, one that strives for a 40% reduction in SOV trips at peak hour. As each sub area is developed per its ADP, traffic impact studies will be required to assess needed roadway improvements and phase in the long-term vision for circulation on Main Post.

Utilities Assessment

In support of the Master Plan, a capacity analysis of current domestic water, wastewater, storm drainage, storm water management, and hot water systems was prepared to determine future demands for 2015 and 2030 Programmed Projects. Capacity studies for the electric and gas systems were not completed in the master plan, because these systems have been privatized. The water and sanitary capacity analyses indicated that significant portions of both systems are presently at or near capacity, and will require major improvements to meet the projected growth for the BRAC and other near-term projects.

Sanitary Sewer (Near Term - 2015) Improvements - Figure 5.5 depicts the near term sanitary system recommended improvements:

- Two large lift stations serving the southern part of Main Post (Pump Stations 00097 and 00687) are overloaded and require significant reconstruction. The study recommends that the new Hospital and associated area development be connected directly to the Fairfax County sewer line that runs along U.S. Route 1, rather than to the existing gravity sewer system (which drains to Pump Station 00097). This would reduce flows to the overloaded trunk sewer and pump station.
- Several parts of the existing sewage collection system appear to be at or over-capacity. These include the sewer lines serving Defense Logistics Agency (DLA) and Davison Army Airfield, as well as the trunk sewer that runs southeast from Belvoir Road and Surveyors Road.
- The limited network of sanitary sewer on FBNA is near the end of its useful life. All existing lines should be removed, and a new network of sanitary sewer and water lines should be constructed to support the new development.

Water (Near Term - 2015) Improvements - Figure 5.6 depicts the near term water distribution system recommended improvements:

- Replace the existing 12-inch main on Belvoir Road between U.S. Route 1 and 12th Street with a new 16-inch main.
- Replace approximately 150 LF of 8-inch water main on U.S. Route 1, west of Belvoir Road, with a new 12-inch main.
- Replace the existing elevated storage tank near Belvoir Road and U.S. Route 1 with a new tank located farther north that would allow the system to maintain the required storage volumes and allow for higher system pressures.
- A second connection from the Fairfax water system to the Fort Belvoir system should be provided by extending a line from Telegraph Road near DCEETA to the existing system near Kingman Road. This would alleviate pressure deficiencies near DLA.

Figure 5.5 - Overall Sanitary System - Near Term (2015)

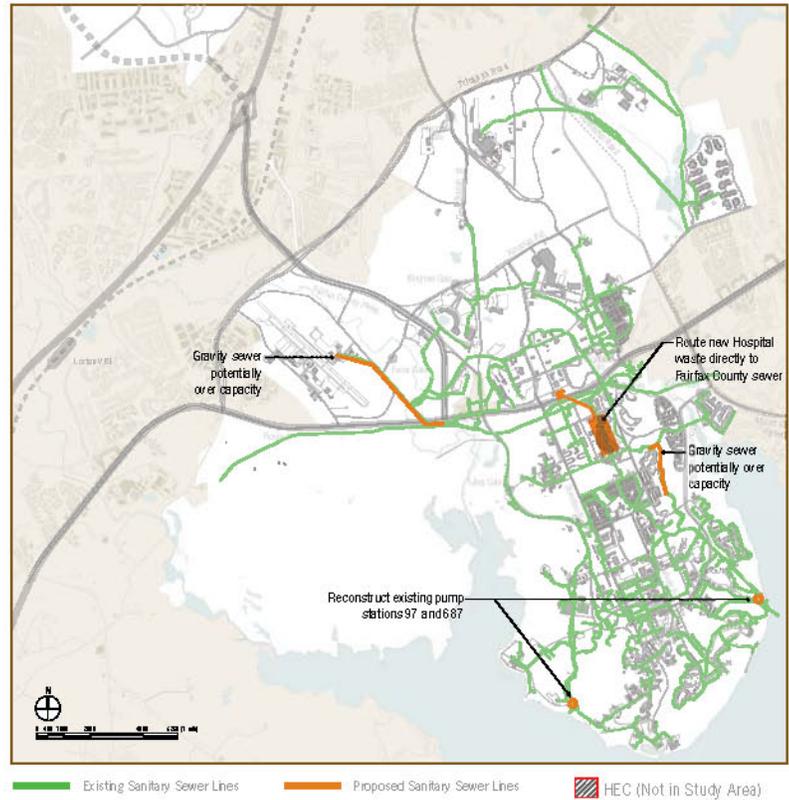
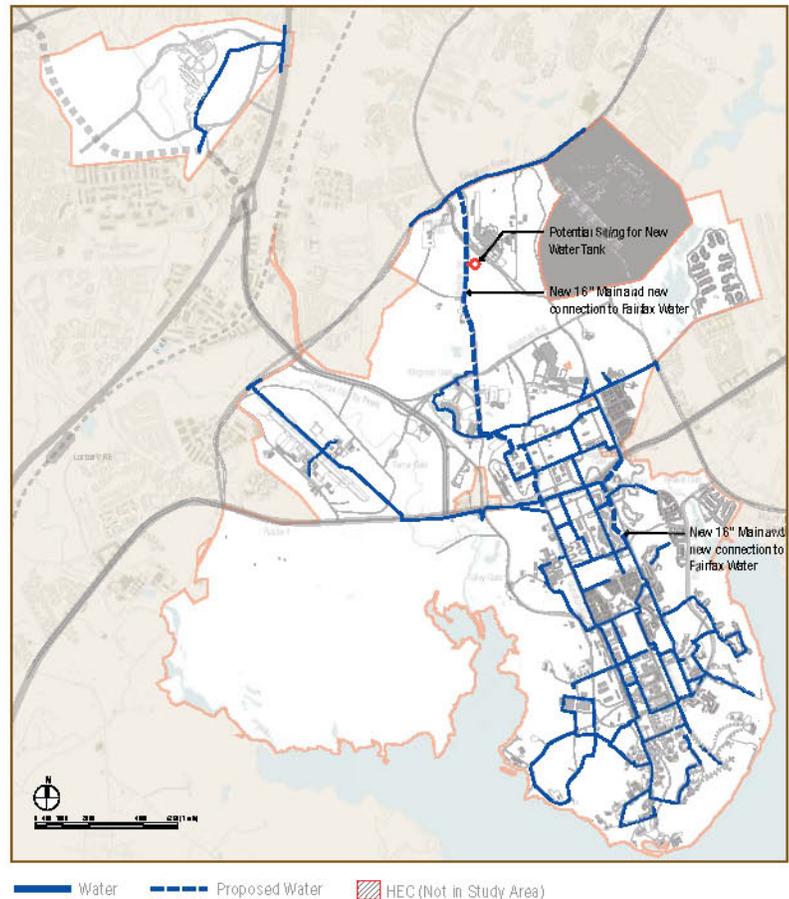


Figure 5.6 - 2015 Overall Water System Map



Installation Design Guide

The purpose of the Installation Design Guide (IDG) is to provide design guidance for standardizing and improving the quality of the total environment of the installation. The IDG includes standards and general guidelines for the design issues of site planning, architectural character, colors and materials, vehicular and pedestrian circulation, and landscape elements, including plant material, seating, signage, lighting, and utilities. The design guidelines incorporate sustainable design, quality of design, anti-terrorism, low maintenance, historic and cultural resources, natural resources, durability, safety, and compatibility.

The Visual Themes and Overlays Plan (Figure 5.7) is organized by the principle of a dense urban core, around which concentric rings of development occur in ever decreasing densities.

The urban core of the Post represents the “downtown” where:

- Level terrain is suitable for an orthogonal grid
- Least number of environmental constraints exists
- Existing infrastructure will be expanded upon
- Mixed-use development provides a compact live-work-play community

The outlying suburban areas represent:

- Varied terrain that is better suited for smaller building sites or individual facilities
- Greater number of environmental constraints that will necessitate dispersed development
- Less access to existing infrastructure
- A segregation of uses that favors single uses or tenant facilities

While the concept of urban and suburban areas helped shape some of the Visual Themes, other governing factors were considered as well. These included:

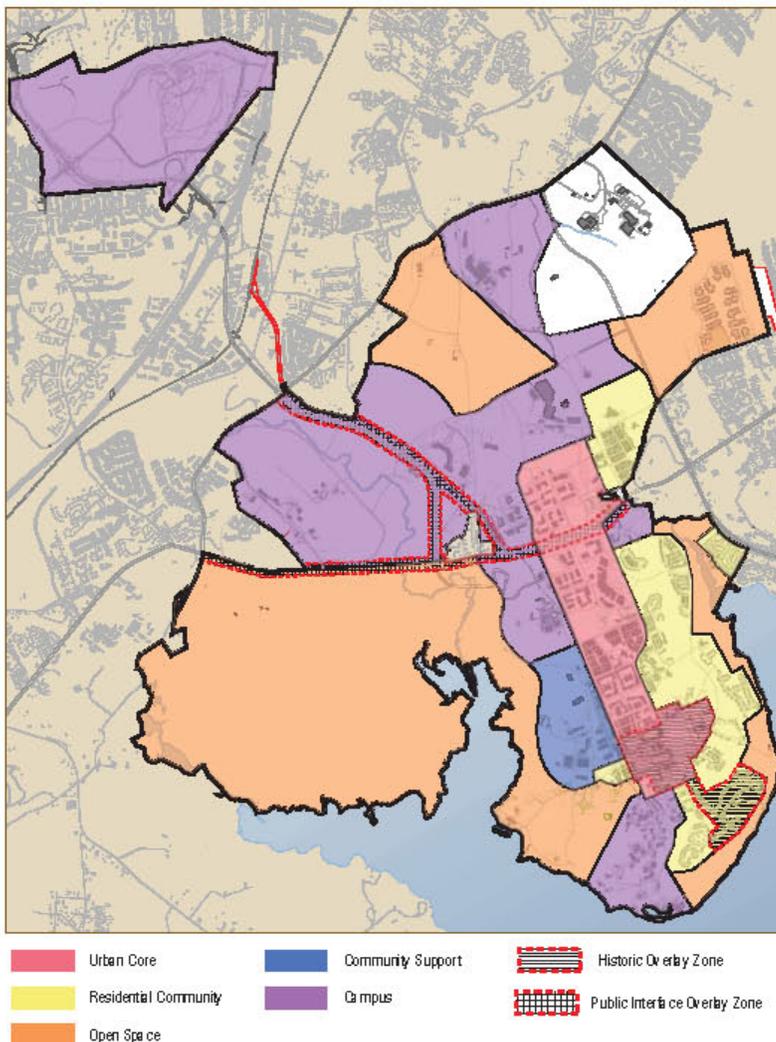
- Function: as projected by the future land use plan
- Massing: the distribution of buildings and their volumes
- Physiographic: natural features that delineate distinct areas
- Political: man-made boundaries and parcel lines
- Operational: man-made physical features that delineate distinct areas

Overlay Zones are not a visual classification found in the Army Installation Design Standards (IDS), but have been added to this document to address special circumstances particular to Fort Belvoir. Overlay Zones offer additional design standards in order to achieve a unified vision for areas that span more than one Theme. If a conflict arises, design standards outlined for each of the Overlay Zones supersede any Theme-based standard.

It should be noted that the Visual Themes Plan should not be confused with a Land Use Plan. Although the latter was instrumental in determining visual areas, and in many ways does correlate in the physical delineation of areas, these are distinct plans. Ultimately, the Visual Themes Plan is a synopsis of aesthetic character rather than functional use.

Figures 5.8 through 5.11 are a few examples of the guidelines presented in the current IDG.

Figure 5.7 - Visual Themes and Overlays Plan



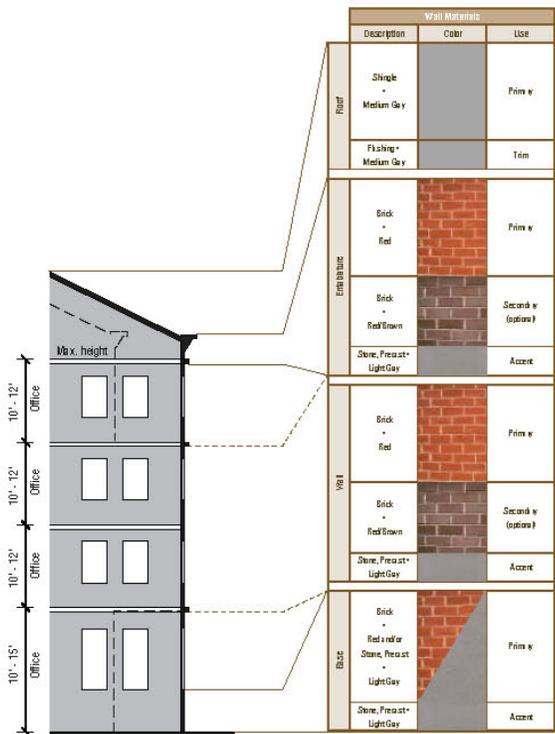


Figure 5.8 - Administration Building Prototype

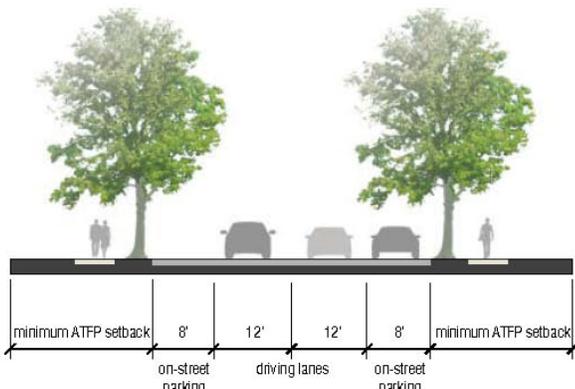
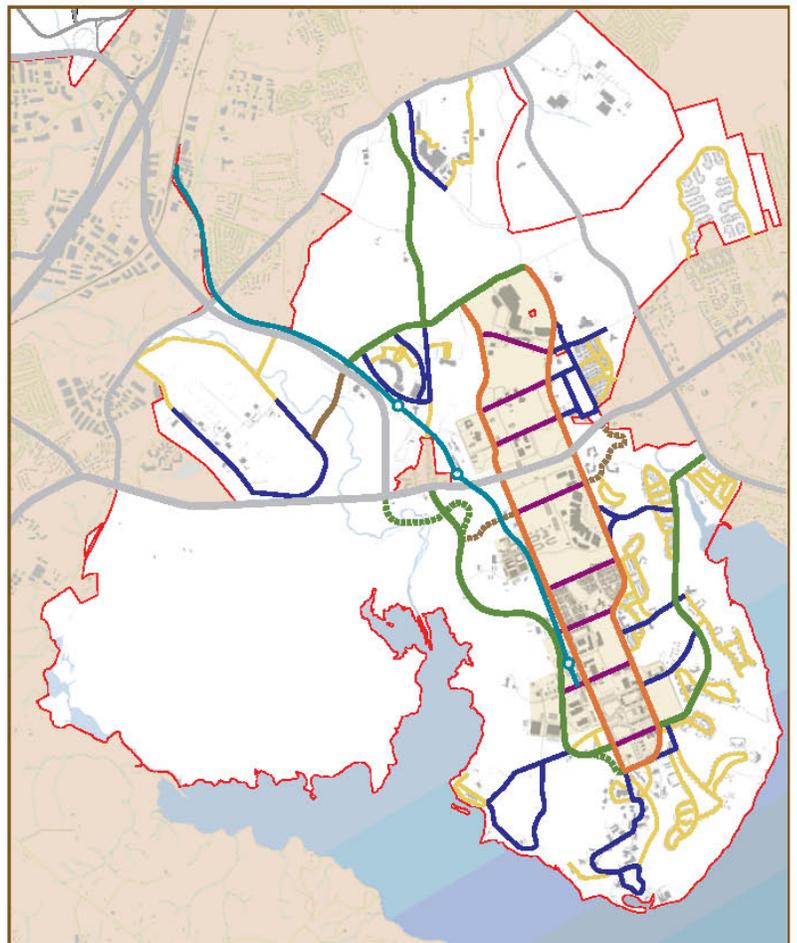


Figure 5.9 - Grid Road Prototype

Figure 5.10 - Site Furnishing Recommended for Historic Overlay Zone

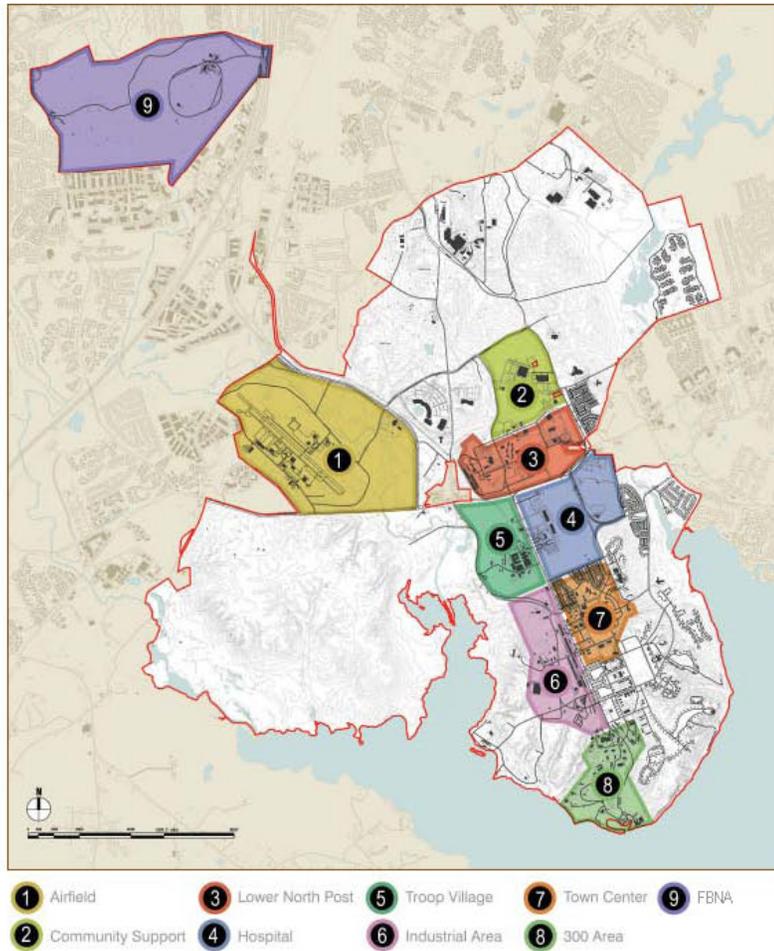


Figure 5.11 - Road Hierarchy Regulation Plan



- Highway
- Scenic Parkway
- Primary Road
- Loop Boulevard
- Secondary Road
- Avenue
- Grid Roads
- Tertiary Road
- Transit Corridor
- Transit Station

Figure 5.12 - Area Development Plan (ADP) Locations



Area Development Plans

By definition, Area Development Plans (ADPs) address the site planning of a specific area of an installation – unified by function, identity, location, or architectural style. Figure 5.12 depicts the boundaries of the ADPs that were developed in conjunction with the current master plan. These ADPs build on the overall development framework presented in the 2008 Master Plan (Figure 5.3). The ADPs illustrate both short-term and long-term physical changes, with the latter depicted in phases.

It is the goal of all ADPs to ensure that Fort Belvoir is organized into dense, compact, and clearly defined neighborhoods – each with its own specific character and feel. For example, the Town Center should be developed as a mix of complementary uses with opportunities for a variety of transportation modes – such as walking, biking, driving, or riding public transit. This creation of a walkable Post further promotes the feeling of community and a sense of wellness for all those who live, work, and play on Fort Belvoir.

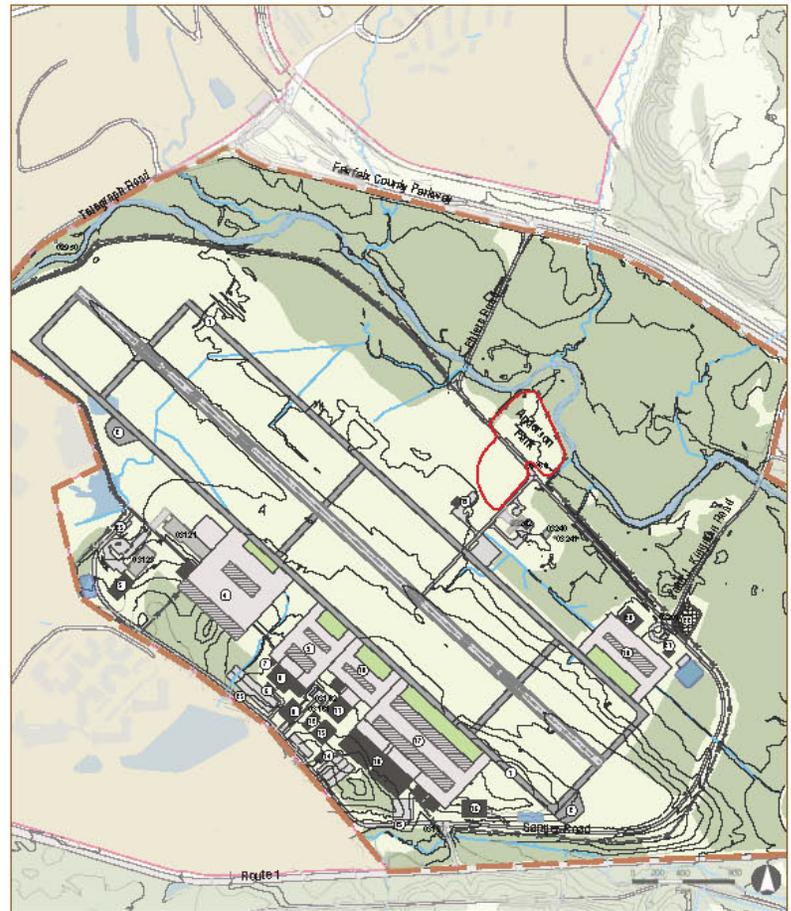
The following pages present a summary of the most recent ADPs for Fort Belvoir.

Airfield Area ADP

The general concept of dividing the Davison Army Airfield (DAA) into two types of land use zones was supported by key stakeholders during discussions. Based on the principle that core airfield activities must have proximity to the runway, Mission Essential zones are directly adjacent to the runway, while the Mission Support zones abut it. Along the southwest side, a transitional area between the installation boundary and airfield operations would be beneficial, but is not possible due to land constraint. The proposed development plan for the Airfield has the following features:

- The runway, primary surface, and taxiways are brought into compliance, and replacement facilities are sited on both sides of the runway. Base operations and transient aircraft parking are located on the northeast side of the airfield near the entrance to DAA. This provides easy access for passenger drop-off and pick-up. The existing Fire Station will remain in its current location and will have immediate access to the airfield.
- The majority of the aircraft operations and maintenance is located on the southwest portion of the airfield. Aircraft parking and maintenance aprons are adjacent to the parallel taxiway. This provides easy access to the runway. These aprons can accommodate the tenant rotary wing and fixed wing requirements. There is transient parking for two C-130 aircraft adjacent to the DC ANG armory. Replacement aviation unit maintenance hangars and aviation operations space are adjacent to the parking aprons.
- Administrative space was consolidated for the OSAA/OSACOM and 12th Aviation adjacent to their maintenance hangar on the southwest side of the airfield. Unit storage was sited near or adjacent to operational functions.
- The perimeter road on the southwest side will be relocated to provide access to the operational facilities along this portion of the airfield. This will require grading of the hillside along the roadway to adjust to inlet roadway design standards for vertical curves.

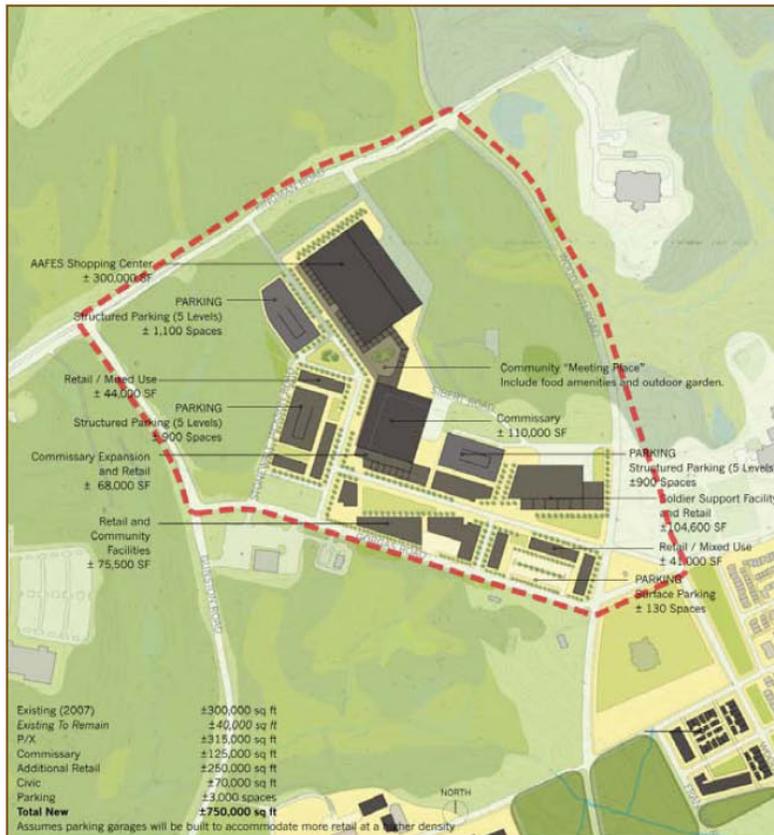
Figure 5.13 - Proposed Development Plan for the Airfield Area as Presented in ADP



| | | | |
|-------------------------------------|-----------------------------------|----------------------------------|---|
| Existing Facilities | S 701 A C TRK FUEL LOG | S207 A 020522 CHT R C | S242 FIRE STATION DRG R R K R VED |
| S 220 WTR SUPPLY TQ BLDG | S 702 A C TRK W/ HGR | S240 FR 16/HT/RES220 | S200 A 020522 CHT A C |
| S 703 A C TRK W/ HGR | S 705 A R HGR PUDRY | S 703 A 020522 CHT A C | S241 2T 0209.50 GP HGR |
| Proposed Facilities | | | |
| ① New Taxiways | ① HV 620 Hangar/Avn Unit Ops | ① OSAA Hangar/Avn Unit Ops | ① Flight Control Tower - A R Location |
| ② New Parking Pkcs | ② UAV Use Entrance Adj. Storage | ② OSAA Avn In GP | ② OAA F Org. Storage |
| ③ DC ANG Org. Storage | ③ HV 620 Org. Storage | ③ 12th Avn A. Unit in GP/Chc. HQ | ③ 12th Avn C. Hangar/Avn Unit Ops |
| ④ DC ANG Parking Adj. Washing Apron | ④ OSAA Org. Storage | ④ Co HQ/Chc. Classroom | ④ TEU R DCR, U color Pond, 01150 En plier |
| ⑤ HV 620 Parking Adj. Washing Apron | ⑤ OSAA Parking Adj. Washing Apron | ⑤ Flight Control Tower | ⑤ OAA F Parking Adj. Washing Apron |
| | | | ⑥ New Run |

The graphic presented above may vary slightly from the images presented in the final ADP reports. The graphic above has been revised to depict specific project details that developed after the ADP reports were published.

Figure 5.14 - Proposed Development Plan for the Community Support as Presented in ADP



- | | | |
|-------------------------|--------------------------------|---------------------------|
| Existing Buildings | Area Development Plan Boundary | Engineered Open Space |
| Proposed Buildings | Proposed Block Framework | Previously Developed Land |
| Future Expansion | Streams | Recreational Fields |
| Proposed Parking Garage | Forest | Grasslands |

- P/X 315,000 SQ FT
- COMMISSARY 125,000 SQ FT
- OTHER RETAIL 250,000 SQ FT
- CIVIC 70,000 SQ FT
- TOTAL NEW 750,000 SQ FT

The graphic presented above may vary slightly from the images presented in the final ADP reports. The graphic above has been revised to depict specific project details that developed after the ADP reports were published.

Community Support ADP

Like many installations, the Community Support Area of Fort Belvoir is a place where families, soldiers, civilians, and retirees gather to enjoy the amenities of the area, such as the P/X and Commissary. This area and the Town Center are at the heart of non-training activities at the Post, and vital to the morale and welfare of all who live and work at Fort Belvoir.

The vision for the community support area is to:

- Develop a new regional center for destination shopping and amenities
- Provide an incremental redevelopment of the area
- Favor compact development to enable future higher density uses
- Emphasize a sense of place and pedestrian character of the regional shopping center



Concept image from Community Support ADP

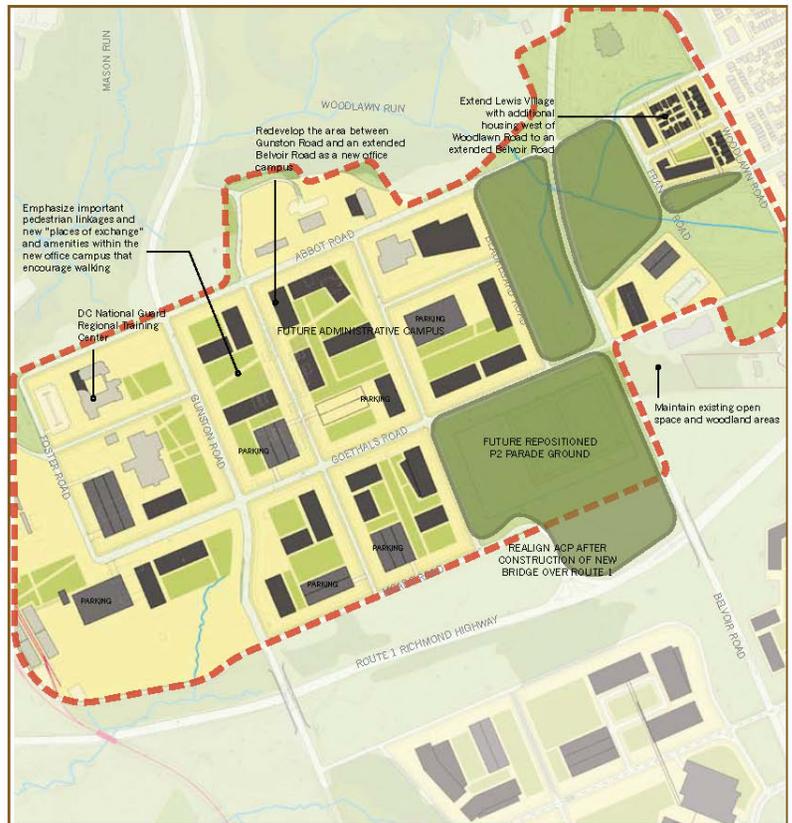
Lower North Post ADP

Vision for the future redevelopment of the Lower North Post is to transform it from an area of recreational facilities, barracks, soldier support facilities, and open area to an office/administrative environment. This redevelopment will happen in phases, as the need for new office development arises and as barracks are rebuilt in another location on the installation. The intent is to provide administrative areas that meet security requirements for potential future tenants. Administrative facilities will include office space and parking structures, as well as some housing and retail to support workers. Some demolition/relocation of buildings will occur in the near term, as well as later as full redevelopment of the area is achieved. The redevelopment will include construction of a variety of uses, including retail, housing, offices, and structured parking.



Concept image from Lower North Post ADP

Figure 5.15 - Proposed Development Plan for the Lower North Post as Presented in ADP



| | |
|--------------------------|----------------------------|
| OFFICES ±1,400,000 SQ FT | RESIDENTIAL ±80 UNITS |
| RETAIL ±90,000 SQ FT | TOTAL NEW ±1,700,000 SQ FT |
| CIVIC ±70,000 SQ FT | |

The graphic presented above may vary slightly from the images presented in the final ADP reports. The graphic above has been revised to depict specific project details that developed after the ADP reports were published.

Figure 5.16 - Proposed Development Plan for the Hospital Area as Presented in ADP



| | |
|------------------------------|-------------------------------|
| ■ HOSPITAL ± 1,000,000 SQ FT | ■ HOTEL ± 140,000 SQ FT |
| ■ OFFICES ± 1,400,000 SQ FT | ■ RESIDENTIAL ± 60 UNITS |
| ■ EDUCATION ± 320,000 SQ FT | ■ TOTAL NEW ± 3,000,000 SQ FT |

The graphic presented above may vary slightly from the images presented in the final ADP reports. The graphic above has been revised to depict specific project details that developed after the ADP reports were published.



Concept image from hospital design document

Hospital Area ADP

There are currently four inpatient facilities in the National Capital Region (NCR) - Bethesda National Naval Medical Center, Walter Reed Army Medical Center, Malcolm Grow Medical Center, and DeWitt Army Community Hospital. These four hospitals will merge into two – the Walter Reed National Military Medical Center (WRNMMC) and the Fort Belvoir Community Hospital, in an attempt to streamline medical care and make the system more efficient.

In addition to the goal of designing a world class hospital to serve both the Belvoir community and the armed forces as a whole, the hospital needs to be a dense, diverse, interconnected, and open campus that is an integral part of the Post. The plan proposes to:

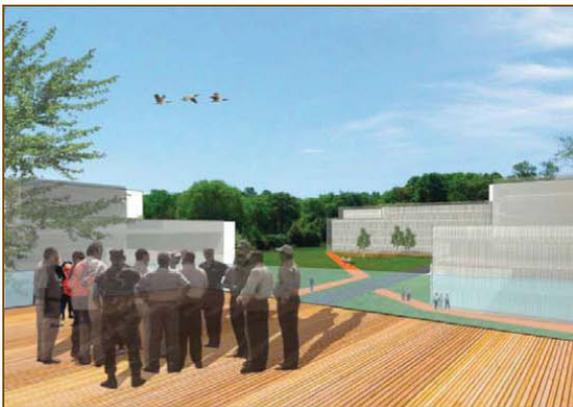
- Redevelop the site west of Belvoir Road as a new health campus
- Create a north-south “patient care link” that clearly integrates offices, outpatient services, inpatient services, and parking
- Identify future phases for expansion of ambulatory services without disrupting the campus or circulation patterns
- Redevelop the area east of Gunston Road as a new office campus
- Develop the area south of the hospital as the Warrior in Transition Campus

Gray’s Hill site could possibly be available for appropriate adjacent hospital uses.

Troop Village ADP

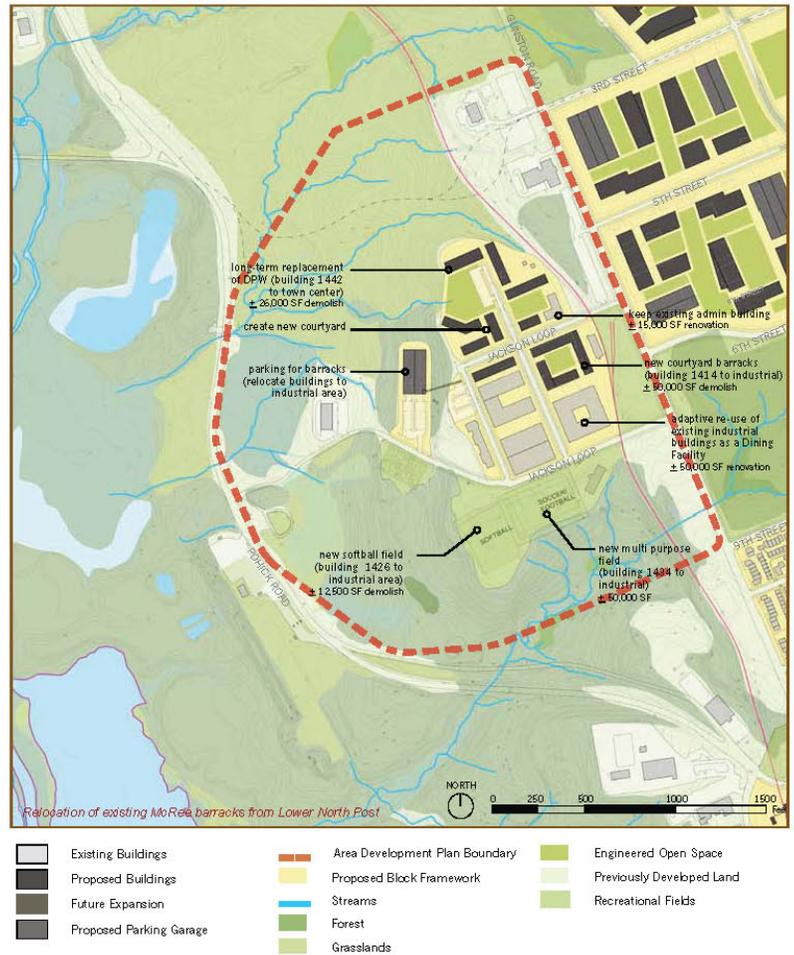
The development of a new Troop Housing area on Fort Belvoir will accomplish several goals that benefit both the troops and the installation as a whole. Relocating the troops from the Lower North Post area will place them in proximity to the Town Center and main activities on Post. This move also creates an entirely new housing village with larger, more modern accommodations. The plan proposes to:

- Establish a new troop housing area that emphasizes a sense of community
- Rebuild the area north of Jackson Loop Road with new barracks that open to the natural landscape to the west
- Explore opportunities to adaptively reuse some of the older warehouse and industrial buildings (for functions such as indoor training, recreation, or other amenities that would otherwise require new construction)
- Develop necessary athletic/outdoor recreation areas along the southern edge in coordination with the Recreation Plan (Figure 5.26).



Concept image from Troop Village ADP

Figure 5.17 - Proposed Development Plan for the Troop Village as Presented in ADP



The graphic presented above may vary slightly from the images presented in the final ADP reports. The graphic above has been revised to depict specific project details that developed after the ADP reports were published.

Figure 5.18 - Proposed Development Plan for the Industrial Area as presented in ADP



| | | | | |
|--|---------------------------------|----------------------------|-------------------------------|--|
| Existing Facilities | 766 Storage/Air | 782 Storage | 1101 Elk Unit/Street | 1124 Ret/POD Building |
| 185 Air in OP | 767 Storage GRV/HT Area/Parking | 1029 Recycle/Refuse/Grds | 1102 Animal Shelter | |
| Proposed Facilities | ① Fast Drive Credit Union (ATM) | ② U DMV/Shop | ③ Rebuilt 100/1000 Warehouses | ④ Industrial Industrial Support Center & RCI |
| ① W Area Gunston Road | ② BOCEBA | ③ Retail Delivery Facility | ④ Offices | ⑤ Expanded Gerber Village Housing |
| ② W Area Park Rd | ③ HCS/BU | ④ Restaurant & Café/Shop | ⑤ Bus Storage | ⑥ Expansion/Expansion Intersection in green area |
| ③ Public/Industrial/Trade Warehouse Improvements | ④ DMV Offices & Other Tenants | ⑤ Vehicle Maintenance Shop | ⑥ Industrial Support Center | ⑦ Expansion of Vet Clinic |
| ④ O/S in the new H/O | ⑤ Auto Maintenance Services | ⑥ Storage Yard | ⑦ New Service Drive | |
| ⑤ AAFES Storage & Bus Station | | | | |

The graphic presented above may vary slightly from the images presented in the final ADP reports. The graphic above has been revised to depict specific project details that developed after the ADP reports were published.

Industrial Area ADP

The vision of the industrial area is to create:

- A transitional zone of community support and office uses along the west side of Gunston Road to serve as a buffer between the industrial area and the non-industrial activities located to the east of Gunston Road
- A transition from light to heavy industrial uses, by locating the heavy industrial uses along the western edge of the site
- Open and landscaped areas and buffers around the industrial areas
- Direct access to industrial facilities from Pohick Road

Figure 5.19 - Proposed Functional Areas for the Industrial Area



| | | | |
|----------------|---------------------|---------------------------------|--|
| --- Study Area | Transitional Zone | Light Industrial | Heavy Industrial |
| Open Space | - Community Support | - Warehouses | - Large Warehouses |
| Residential | - Office Uses | - Designed for Multiple Tenants | - Single Users Requiring Large Space |
| | - Other | - Office Storage | - Outdoor Storage |
| | | - Office | - Assembly |
| | | | - Motor Pools |
| | | | - Shipping & Receiving |
| | | | - Specialized Uses (i.e. Vet Clinic/Kennels) |

Town Center ADP

The vision of the Town Center is to create:

- An outstanding place to live, work, and play
- A culture that exists in harmony with surrounding communities and the natural environment
- A continuing legacy of a “Beautiful to See” installation
- A mixed-use center with offices, amenities, retail, and housing
- Housing along the 12th Street and 16th Street corridors
- A new office center with retail and amenities at key intersections
- Parking in the middle of the blocks and away from major pedestrian areas

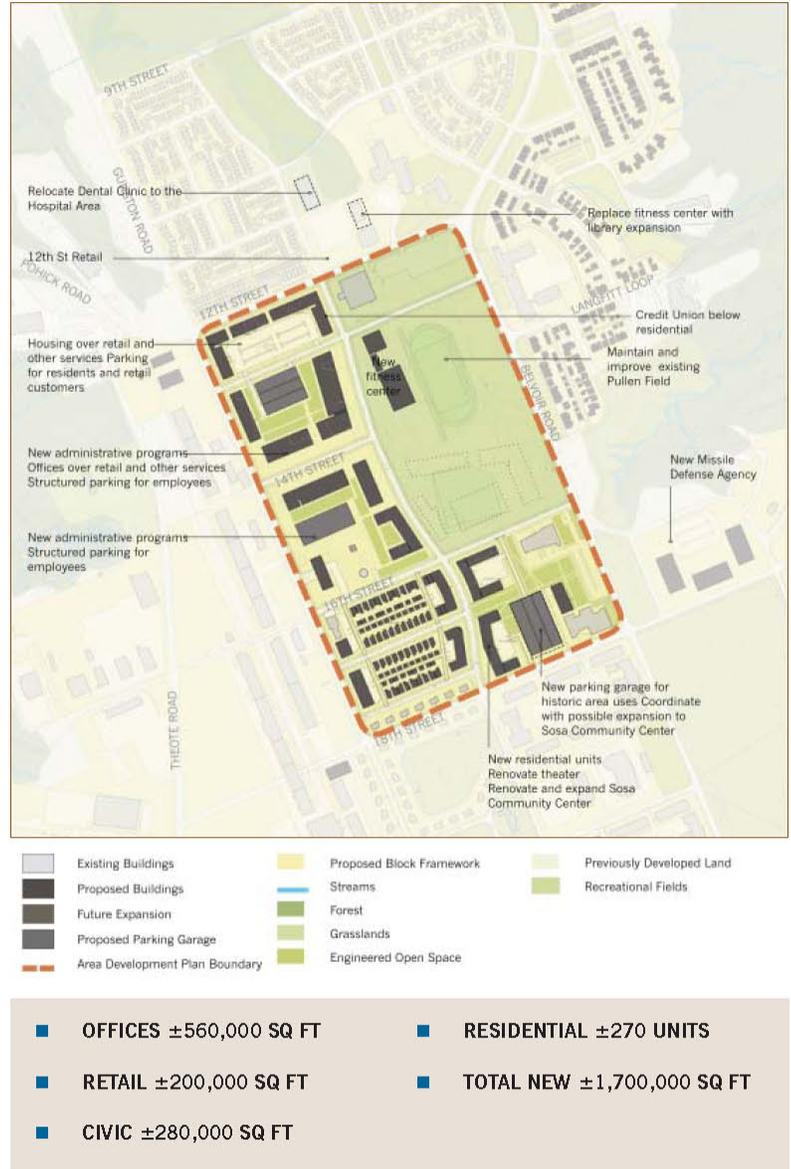


Concept image from Town Center ADP



Concept image for Missile Defense Agency (MDA) development located just east of the Town Center Development Plan

Figure 5.20 - Proposed Development Plan for the Town Center as presented in ADP



The graphic presented above may vary slightly from the images presented in the final ADP reports. The graphic above has been revised to depict specific project details that developed after the ADP reports were published.

Figure 5.21 - Proposed Development Plan for the FBNA as presented in ADP

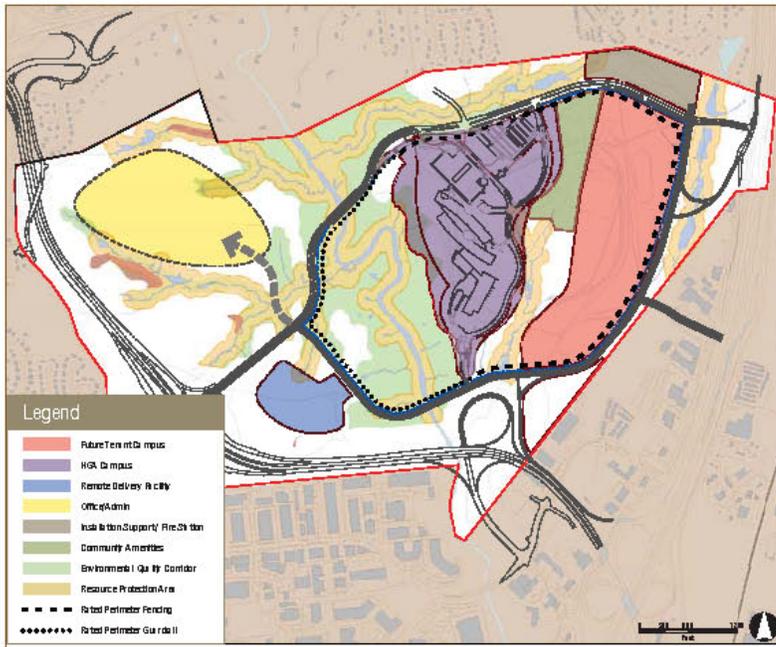


Figure 5.22 - Actual Development Plan for NGA on FBNA



Concept image from NGA design document

The graphic presented above may vary slightly from the images presented in the final ADP reports. The graphic above has been revised to depict specific project details that developed after the ADP reports were published.

FBNA ADP

Planning principles for the FBNA area development include:

- Buildings should reinforce the common campus edges. This includes the central open space. Buildings should also be in conversation with one another. Along the common campus areas, an attention to the compatibility of uses and building typology is critical.
- Locate parking at the perimeter of each campus area along the major access routes. This will reinforce standoff requirements and provide optimal development area for programs.
- Connect buildings and places with pedestrian paths and a series of "campus gardens".
- Maintain and preserve views and sight lines to important open spaces from each campus area.
- Develop a hierarchy of streets and points of access that coordinate with the larger transportation strategy.
- Reinforce a comprehensive strategy for security and AT/FP requirements that is integrated with building siting, access, and the overall development concept.
- Initiate collective approaches for storm water management, ancillary uses, and remote truck inspection areas that share resources to optimize site development and program integration.
- Promote sustainable strategies that minimize development impact, and embrace forward thinking and best practices in site planning, open space design, and architecture.
- Develop a feasible and constructible strategy that is sensitive to schedule and costs.

300 Area ADP

The 300 Area is a cleared area, surrounded by forest and Resource Protection Areas (RPAs). Although space here is severely constrained, there are a few open, flat areas that could be used for new buildings and/or parking structures. Its main road (Kingman) must be realigned to provide a more direct main road. Another safety improvement option to the road network would be the closing of Beach Road to automobile traffic, as this roadway is heavily traveled by pedestrians.

Figure 5.23 - Proposed Open Areas and Clustered Developments as presented in ADP

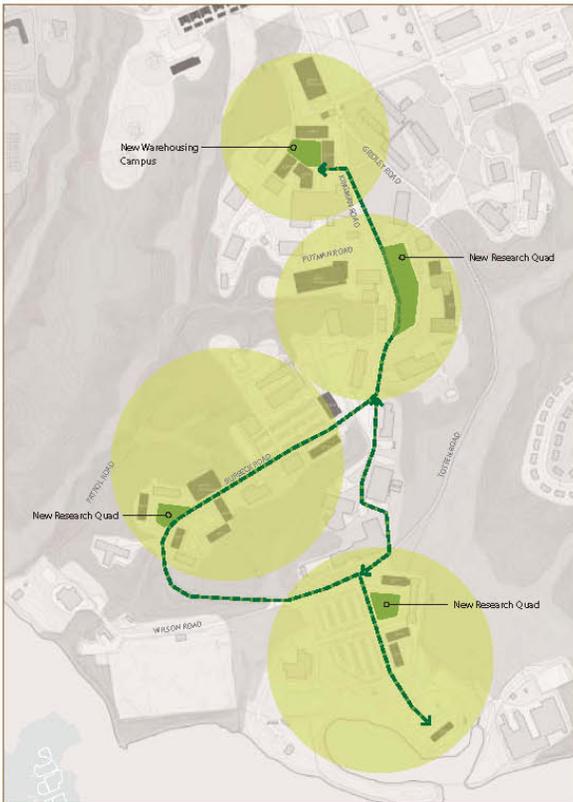
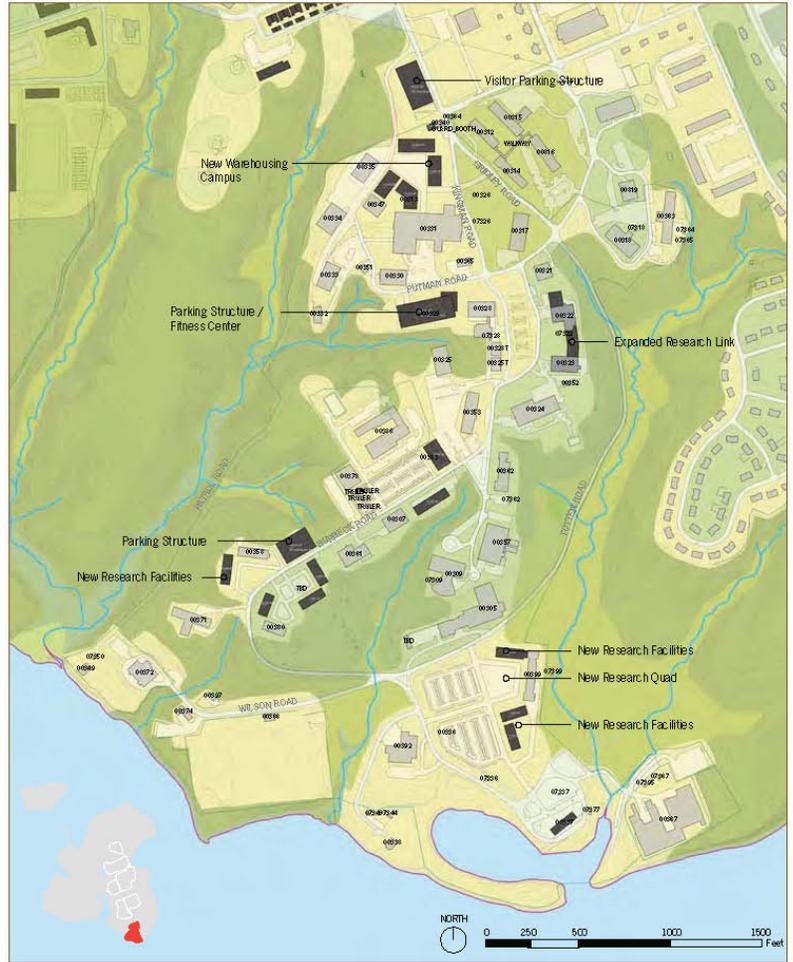


Figure 5.24 - Proposed Development Plan for 300 Area as presented in ADP



The graphic presented above may vary slightly from the images presented in the final ADP reports. The graphic above has been revised to depict specific project details that developed after the ADP reports were published.



Concept image from WT Development Plan

Warrior in Transition ADP

The Warrior in Transition (WT) Campus at Fort Belvoir will provide support facilities consisting of a Soldier and Family Assistance Center (SFAC), WT Barracks, and WT Operational Areas (WT OPS). The WT Barracks is planned to accommodate 276 persons in 138 Strickland Suites. Figure 5.25 depicts the proposed development for the WT Campus.

The mission of the Warrior in Transition (WT) Unit Campuses project is to provide an environment where injured soldiers can focus on recovery, thereby facilitating a soldier's smooth transition back to military duty or civilian life.

The WT program became a requirement at Fort Belvoir after the Master Plan was completed. However, incorporating this unforeseen requirement was easily managed due to the solid planning framework of the Master Plan. One of the primary driving factors for the WT siting was proximity to the Hospital.

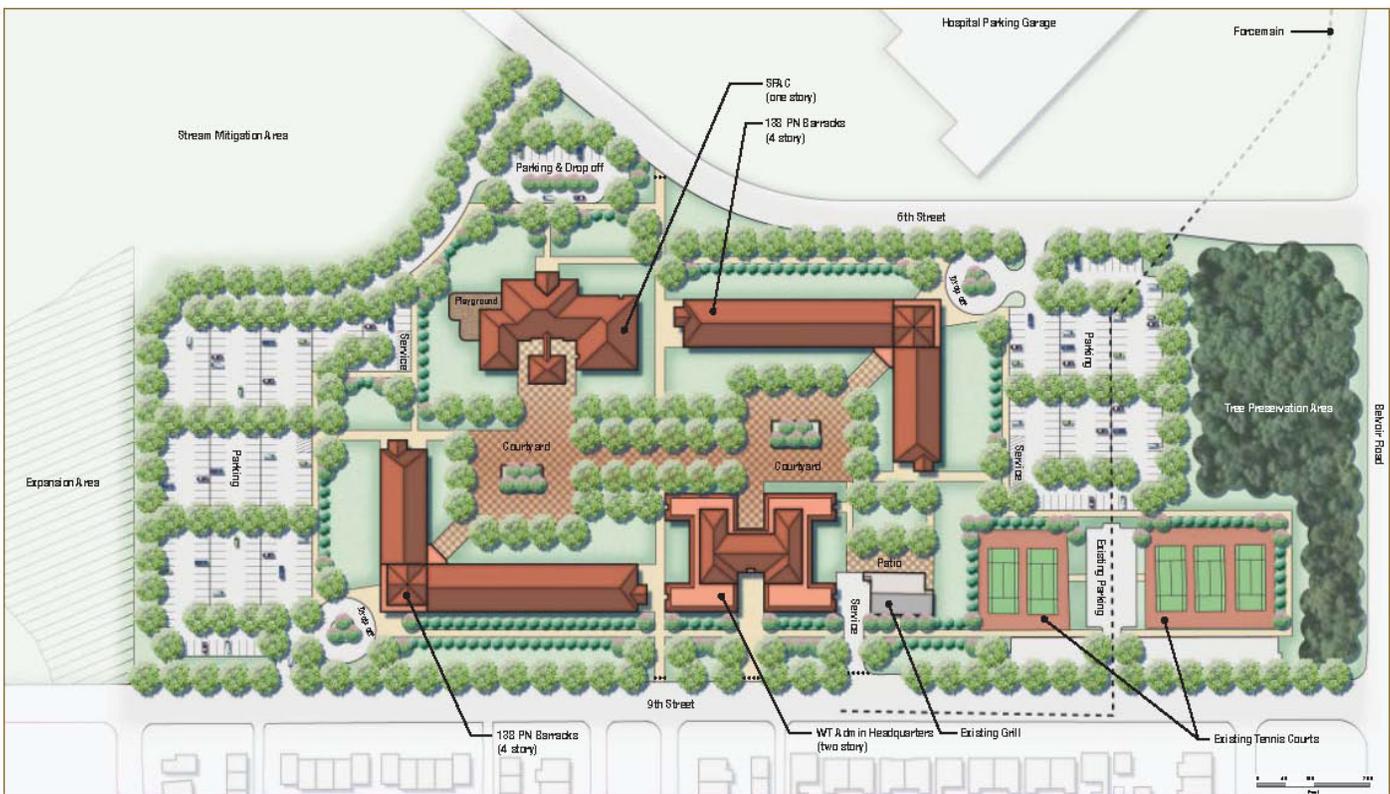


Figure 5.25 - Proposed Development Plan for the WT Campus

Recreation ADP

Open Space / Recreation Framework Plan Goals include:

- Create a responsible and sustainable plan
- Locate features that foster surrounding community benefits near access points and regional transportation
- Create a network of open spaces and recreations areas, including neighborhood parks, informal open areas, and larger recreation complexes
- Design the trail network to also connect non-recreation destinations, so it can serve as an alternative mode of transportation

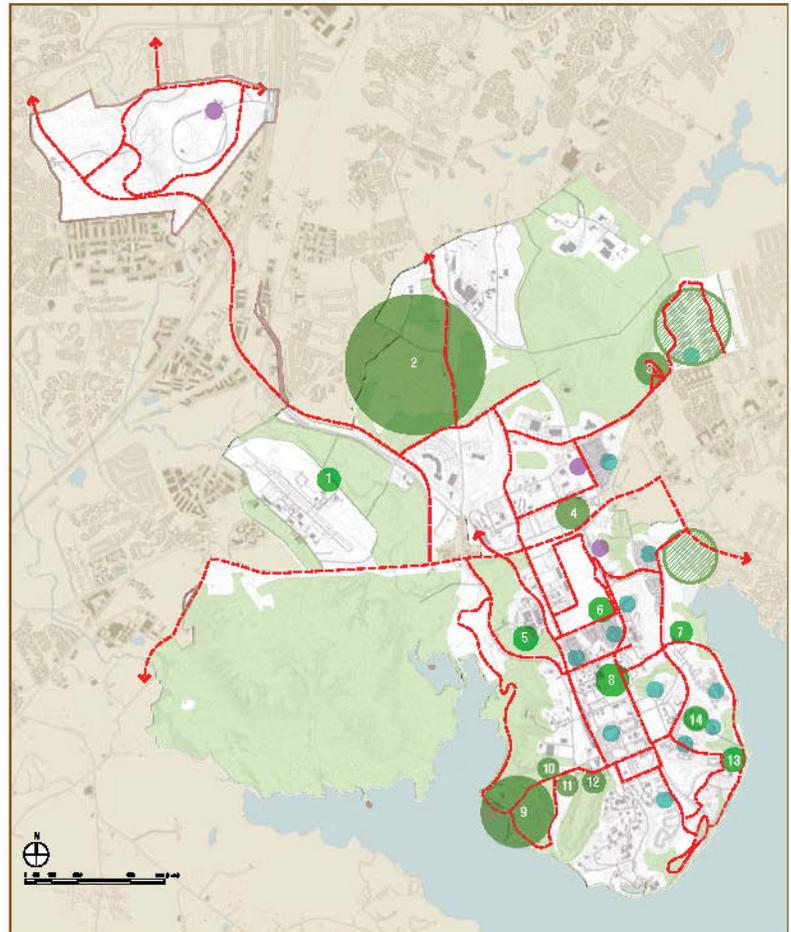


Concept design as presented in IDG for Little League Fields (Area 12 on Figure 5.26)



Concept design as presented in IDG for Troop Recreation Area (Area 5 on Figure 5.26)

Figure 5.26 - Proposed Recreation Development Plan



Concept design as presented in IDG for Multi-Use Recreation Area (Areas 10 and 11 on Figure 5.26)



Residential Communities Initiative

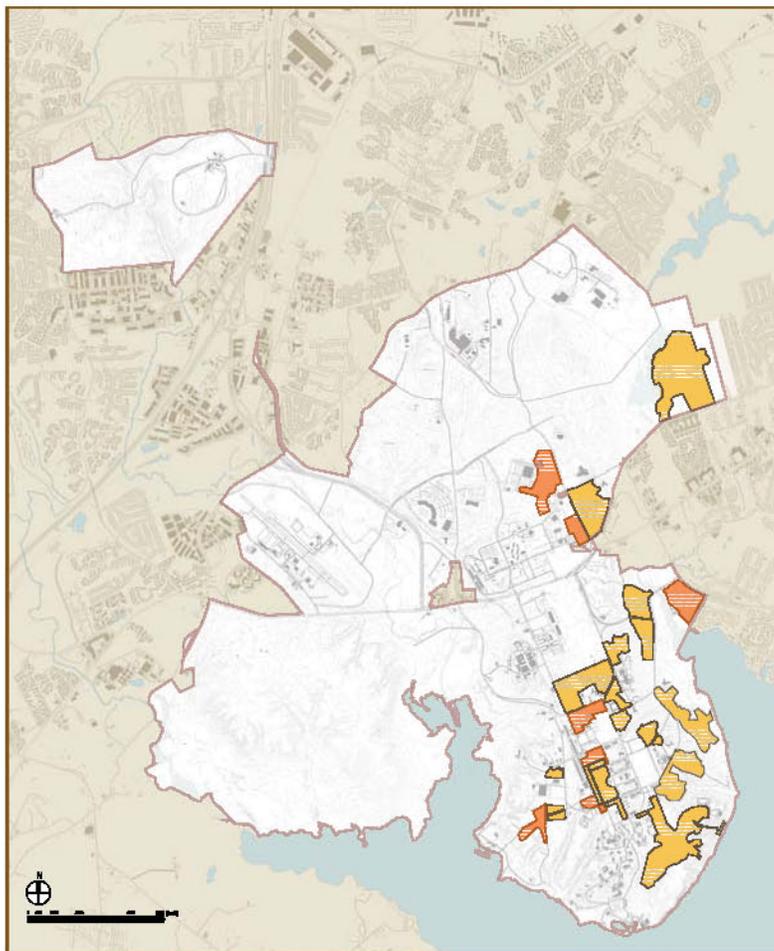
Since the inception of the Residential Communities Initiative by the U.S. Army, the residential neighborhoods at Fort Belvoir have undergone a dramatic change. Reconstructed Villages now follow the standards of Traditional Neighborhood Design (TND). TND, which is experiencing a resurgence in regional/national planning trends, is a development pattern that reflects the characteristics of the smaller, older communities of the late 19th and early 20th centuries. It achieves this by shifting the development focus from the automobile to the pedestrian. These traditional communities are typically characterized by mixed land uses, grid street patterns, pedestrian circulation, intensively-used open spaces, architectural character, and a sense of community.

With the exception of Belvoir, Gerber, Woodlawn, and River Villages, all on-post villages are undergoing redevelopment as TND communities.

Historic Belvoir Village and Gerber Village are the only neighborhoods being preserved in their entirety. Both are exemplified by distinctive architecture and site planning. Belvoir Village features grand Georgian style homes on curvilinear streets. Gerber Village is comprised of more modest homes in the Neoclonial style, which are arranged in a formal symmetrical grid pattern. Both villages are being maintained due to their durable construction and timeless style, which is still fresh and enduring to this day. The mature landscaping within these villages creates an idyllic setting of tree-shaded properties and well established plantings that make these neighborhoods distinctive.

Because Woodlawn Village is isolated from the rest of the Post, these units will not be redeveloped in place, but will be distributed into and around other Post housing areas. Figure 5.27 shows the potential locations for the relocation of the Woodlawn Village housing units.

Figure 5.27 - Potential Locations for Distribution of Woodlawn Village Housing Units



- RCI Leased Areas
- Proposed New Housing Areas

BRAC 133 (WHS) at Mark Center

Due to the traffic concerns raised by local and state agencies regarding the WHS original siting at FBNA, alternative sites were considered through a competitive process. The Mark Center site was chosen in September 2008. The Army has purchased this land and added to Fort Belvoir's inventory.

Mark Center is a mixed-use development of residential, retail, and office components. It is located at the corner of North Beauregard Street and Seminary Road in Alexandria, approximately four miles southwest of the Pentagon.

Two parcels of land within this development were purchased in December 2008 and annexed to Fort Belvoir. The site will accommodate a complex, which will consist of two office towers, parking structures, a transportation center, and a remote inspection facility. The Mark Center will house 21 DoD agencies and a total workforce of 6,400 employees. The approved development plan has a capacity of 10,000 to 12,000 employees. Fort Belvoir has no plans for additional capacity beyond these numbers at Mark Center.

Access to the BRAC 133 parcels will be via two site entrances off Mark Center Drive, which loops through the center's southeast portion from North Beauregard to Seminary Road. The site is adjacent to the I-395 corridor, which includes both general purpose and HOV (high occupancy vehicle) lanes to accommodate car poolers and transit services. Site design starts in late 2008, and will be coordinated with the City of Alexandria and the Commonwealth of Virginia.

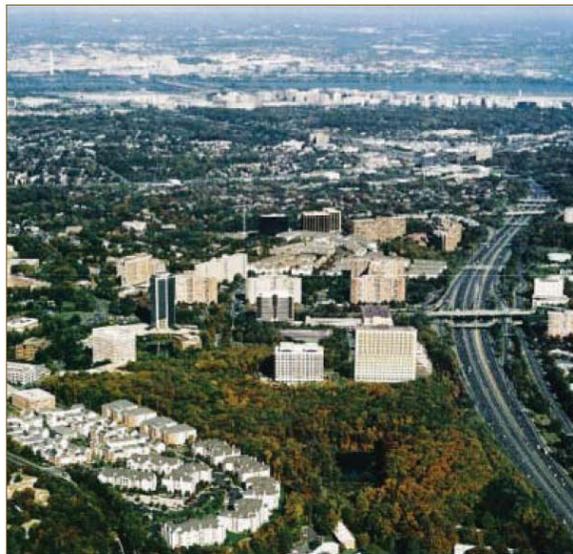


Figure 5.28 - Conceptual Site Plan for BRAC 133 at Mark Center



Integrated Natural Resources Management Plan

The Integrated Natural Resources Management Plan (INRMP) provides guidance for the implementation of the U.S. Army Fort Belvoir's natural resources program. The plan establishes procedures to ensure the sustainability of the land to accomplish Fort Belvoir's military mission. It outlines conservation efforts for the Post's natural resources (for example, its aquatic resources, flora, and fauna) and establishes procedures to ensure compliance with related environmental laws and regulations.

The Fort Belvoir natural resources program conserves and protects biodiversity using an ecosystem management approach. Baseline surveys of each resource area (for example, water resources, wetlands, etc.) were conducted to characterize the resources on Post and to assess their significance. So that management strategies could be developed and implemented, program goals were established. These include:

- Goal 1. Ensure compliance of installation actions with federal, state, regional, and local statutes, regulations, and policies applicable to natural resources.
- Goal 2. Manage Fort Belvoir lands to provide balanced, multiple-use opportunities (for example, military training and testing, environmental education, scientific research and study, and low intensity recreation) without degradation of natural resources in accordance with DoDI 4715.3, Environmental Conservation.
- Goal 3. Provide natural resource customer service to military training and testing activities, base operations, tenants, military personnel and their families, the research and education community, and the general public that meet their expectations and demands for quality in accordance with the Fort Belvoir Strategic Plan (U.S. Army, 2000).
- Goal 4. Ensure natural resources stewardship by protecting against loss or degradation of: native habitat conditions, native biological diversity, and structure within native communities.

Fort Belvoir fully embraces biodiversity conservation, and has developed and implemented an ecosystem-based natural resources management program. The installation does not emphasize single-species management. Neither does it aim to increase the number of species or number of communities on the Post. Consistent with the principles of ecosystem management, Fort Belvoir aims to preserve the native diversity of communities and the native diversity of species within communities. Fort Belvoir recognizes that it will conserve the greatest biodiversity if it focuses management efforts at the community level.

The following summarizes Fort Belvoir's management considerations regarding biodiversity conservation:

- The ecosystems on Fort Belvoir have boundaries that extend far beyond the Installation. Therefore, the Post must take a regional view and involve outside partners/participants in its management program.
- Fort Belvoir's on-post natural habitat areas already exist as fragments within the larger ecosystem area. Other nearby fragments of natural habitat include Huntley Meadows Park to the north, as well as Mason Neck State Park and the Potomac River National Wildlife Refuge Complex to the south. Together, this complex of fragments represents the largest continuous and most diverse habitat area in eastern Fairfax County. Fort Belvoir recognizes that the ecological function of this larger habitat complex depends upon conservation of its component piece.
- Preservation of the size and continuity of on-post natural habitat is the single most important management tool for maintaining native diversity, within both Fort Belvoir and the broader eastern Fairfax County area.
- Fort Belvoir has completed baseline natural resource surveys. While the resources have been fairly well inventoried, the natural processes to which they are subject (for example, nutrient cycling and hydrologic cycle) have not been characterized. Aiming to "restore" a community is difficult, because of insufficient knowledge about the community. Consequently, Fort Belvoir must assume that its current level of biodiversity, based on existing surveys, is the appropriate level, and all management efforts will be focused on maintaining its current level of biodiversity. Nonetheless, Fort Belvoir must be prepared to change its management strategies to accommodate new information as it becomes available.
- Change/variation is inevitable and natural. The installation's natural resources management program needs to allow for naturally occurring change and the processes that cause change. However, Fort Belvoir recognizes that there may be situations where it may be ecologically beneficial to alter/ intervene with naturally occurring changes (for example, succession). These situations will be considered on a case-by-case basis.
- In the urban landscape of Northern Virginia, people comprise a large part of the landscape, both on and off Post. Therefore, human activities must be integrated into the landscape in a way that does not degrade the existing environment.
- Management funds and resources are limited, so Fort Belvoir must manage natural resources in the most cost-effective method and with a regional approach.

Integrated Cultural Resources Management Plan

Fort Belvoir is responsible for the stewardship of the cultural and historic resources located within its boundaries. Its cultural resources responsibilities are defined by a wide range of laws, principally the National Historic Preservation Act (NHPA) of 1966, as amended, which requires Federal agencies to identify, inventory, evaluate, and protect properties listed in or eligible for listing in the National Register of Historic Places, and by DoD and DA regulations, including Army Regulation (AR) 200-4.

An Integrated Cultural Resources Management Plan (ICRMP) facilitates installation compliance with cultural resource management laws and policies by:

- Integrating cultural resources management into the existing framework of Fort Belvoir's operations and mission in a manner consistent with current Federal, DoD, and DA laws and regulations
- Developing a resource program to enhance project coordination, planning, and compliance activities
- Providing the basis for one or more Programmatic Agreement(s) (PA) among the Department of the Army (Fort Belvoir), the Virginia Department of Historic Resources (VDHR), the Advisory Council on Historic Preservation (ACHP), and other interested groups
- Providing installation-specific procedures and recommendations for cultural resources management

Fort Belvoir's cultural resources include buildings, structures, and identified and potential archeological sites that relate both to the Post's pre-installation history and its development as a military installation. Management responsibility for these resources is currently assigned to the Cultural Resource Manager (CRM). The cultural resources management program at Fort Belvoir:

- Identifies and evaluates cultural resources and maintains an up-to-date inventory of historic properties
- Complies with NHPA, NEPA, all Federal laws, and Army regulations related to managing cultural resources
- Ensures that current and planned installation programs, plans, and projects (for example, master plans, environmental impact analyses, real property and maintenance, facilities construction site approvals, and other land use activities) are integrated with cultural resources protection initiatives
- Preserves and protects cultural resources within Fort Belvoir's mission

- Ensures that sound and cost-effective preservation techniques are used to manage historic buildings, districts, sites, objects, structures, and other cultural resources
- Ensures that appropriate consultation procedures are followed at the earliest planning stage of any undertaking that might affect historic properties (During the consultation process, the nature of the undertaking, the Area of Potential Effect (APE), the historic properties within the APE, and the direct/indirect effects of the undertaking on cultural resources are identified.)

To maintain and strengthen its program of Cultural Resource Management, the ICRMP has the following general goals:

- Plan adequately for the identification and evaluation of cultural resources, in compliance with Federal legislation and Army regulations AR 200-4 and DA PAM 200-4.
- Integrate the results of ICRMP (for example, goals, objectives, priorities, and cultural resources data) into the Real Property Master Plan (RPMP).
- Integrate the GIS archeological and historical database, including the historic district and individual National Register properties layers, with master planning maps; ensure that the GIS program is available to all branch chiefs within DIS; and review and update GIS database on a regular schedule.
- Integrate provisions for cultural resources in planning documents undertaken or administered by other activities as they are revised (for example, Housing and Engineering).
- Preserve and maintain historic buildings and structures in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties and DA PAM 200-4. Preservation and rehabilitation are recommended as the most appropriate treatment options for historic resources at Fort Belvoir.

In addition, the ICRMP includes specific recommendations for the following segments of the Plan:

- Internal Administration
- Continued Identification and Evaluation of Historic Properties
- Training for Personnel Involved in Cultural Resources Management
- Rehabilitation and Maintenance of Fort Belvoir's Historic Properties
- Negotiation of a Programmatic Agreement (PA)
- Periodic Review of the ICRMP

Short Range Component

The Short Range Component (SRC) defines real property projects scheduled in the near future. These actions are prioritized by Program Year, in accordance from the Real Property Planning Board (RPPB) and the Garrison Commander.

The most notable recent mission impacting the installation is the 2005 Base Realignment and Closure (BRAC) Act. However, Fort Belvoir also has over 70 other future development projects

addressing current needs that must be coordinated with the BRAC projects. The project list included in Table 6-1 is current as of May 2009. Individual projects are subject to frequent revisions and changes in scope; therefore, this project list should only be considered for general planning guidance. To confirm a project status for the most up-to-date changes, contact the Facility Planning Division, Directorate of Public Works. The maps following the table include the projects broken out by year.

Table 6.1 - Fort Belvoir Project List (Short and Long Term)

| PROJECT NAME | PROJECT NUMBER | FUNDING SOURCE | CWE (\$K) | PROGRAM YEAR (FY) | FUNDED |
|--|----------------|-----------------|-----------|-------------------|--------|
| FY 2007 | | | | | |
| DCNG Resources Training Center | n/a | DCNG | 13,600 | 2007 | X |
| NGA Admin | 65416 | BCA/joint | 1,442,219 | 2007-10 | X |
| NGA, Increment 1 | NGA 002 | | unknown | 2007 | X |
| AMC Relocatables | 66228 | BCA - Essential | 20,500 | 2007 | X |
| Replace Piers 645 & 696 | IJO | OMA | 834 | 2007 | X |
| Mulligan Road (DAR Connector) | | MCA | 31,000 | 2006-2009 | X |
| Mulligan Road, Increment 1 | 62297 | MCA | 500 | 2006 | X |
| Mulligan Road, Increment 2 | 56062 | MCA | 13,000 | 2007 | X |
| FY 2008 | | | | | |
| Mulligan Road, Increment 3 | 66667 | MCA | 13,000 | 2008 | X |
| NGA, Increment 2 | 65416 | | 428,900 | 2008 | X |
| Hospital | 64238 | BCA | 806,900 | 2008-2010 | X |
| Hospital, Increment 1 | 65675 | BCA | 403,400 | 2008 | X |
| USANCA Support Facility | IJO | BCA | 5,200 | 2008 | X |
| Missile Defense Agency Facility | 67320 | BCA | 33,094 | 2008 | X |
| Little-League Ball Fields Replacement | IJO | Funded by MDA | 1,270 | 2008 | X |
| Museum Support Center | 58697 | MCA | 24,380 | 2008 | X |
| Infrastructure | | BCA | 172,000 | 2008-2010 | X |
| Infrastructure, Increment 1 | 64097 | BCA | 20,000 | 2008 | X |
| Marina Piers and Slips Replacement | 57846 | NAF | 581 | 2008 | X |
| Child Development Center (CDC) | 70067 | NAF | 4,750 | 2008 | X |
| Joint-Use Intelligence Analysis Facility | 64115/61204 | BRAC | 61,000 | 2008 | X |
| Fairfax County Parkway | n/a | | | 2008-2010 | X |
| FY 2009 | | | | | |
| NGA, Increment 3 | 68472 | | 545,000 | 2009 | X |
| Hospital, Increment 2 | 65676 | BCA | 262,750 | 2009 | X |
| Infrastructure, Increment 2 | 67487 | BCA | 91,000 | 2009 | X |
| OCAR | n/a | OCAR | 81,000 | 2009 | |

Table 6.1 - Fort Belvoir Project List (Short and Long Term)

| PROJECT NAME | PROJECT NUMBER | FUNDING SOURCE | CWE (\$K) | PROGRAM YEAR (FY) | FUNDED |
|--|----------------|-----------------|-----------|-------------------|--------|
| WHS Admin | 64234 | BCA/Joint | 1,300,000 | 2009-11 | X |
| Emergency Services Center | 64076 | BCA | 7,200 | 2009 | X |
| Child Development Center | 64148 | MCA | 14,200 | 2009 | |
| Replace South Post Fire Station | 61453 | MCA | 4,900 | 2009 | X |
| Replace and Expand PX | 71074 | AAFES | 45,000 | 2009-2011 | |
| Warrior in Transition (WT) Complex | 65745 | MCA | 70,000 | 2009 | |
| DLA Receiving and Screening Facility | 62134 | RDT&E | 4,200 | 2009 | |
| DLA Entrance Gate Security Enhancements | DESI08S4 | RDT&E | 4,698 | 2009 | X |
| Company Operations Building | 72475 | | 1,400 | 2009 | |
| MWR Family Travel Camp | 54898 | NAF | 4,600 | 2009 | |
| Repair/Relocate Building 5034 | 71175 | OMA | 7,000 | 2009 | |
| FY 2010 | | | | | |
| NGA, Increment 4 | 68474 | | 112,900 | 2010 | X |
| Hospital, Increment 3 | 65677 | BCA | 140,750 | 2010 | X |
| Infrastructure, Increment 3 (including FBNA South Loop Road) | 68038 | BCA | 61,000 | 2010 | X |
| Dental Clinic (near Hospital) | 64241/ 71251 | BCA | 17,700 | 2010 | X |
| NARMC HQ Building | 65871 | BCA | 23,000 | 2010 | X |
| Flight Control Tower | 62779 | MCA | 8,300 | 2010 | X |
| Modernize Building 211, 215, 219, 220 | 65450 | BCA - Validated | 25,000 | 2010 | |
| FBNA I-95 & Fairfax County Parkway Ramps | n/a | MCA-DAR | | 2010 | |
| Access Control Point | 63571 | MCA | 10,200 | 2010 | |
| Joint Personnel Recovery Agency (JPRA) | 56184 | MCN | 17,500 | 2010 | X |
| Shoppette with Gas, Burger King, Car Wash | 63035 | AAFES | 4,000 | 2010 | |
| Museum of the US Army | 60084 | Public/Private | 168,000 | 2010 | |
| Infrastructure, Army Museum | 71149 | MCA | 20,000 | 2010 | |
| Biometric Fusion Center (Clarksburg, VA) | 69941 | | 30,000 | 2010 | |
| FY 2011 | | | | | |
| NGA, Increment 5 | 68475 | | 28,000 | 2011 | |
| SCIF, Information Dominance Center | | MCA | | 2011-2013 | X |
| SCIF, Information Dominance Ctr, Increment 1 | 57508 | MCA | 53,000 | 2011 | X |
| FY 2012 | | | | | |
| SCIF, Information Dominance Ctr, Increment 2 | 58849 | MCA | 66,000 | 2012 | X |
| FY 2013 | | | | | |
| SCIF, Information Dominance Ctr, Increment 3 | 62243 | MCA | 67,000 | 2013 | X |
| Army Lodging | 66805 | NAF | | 2013 | |
| Medical Guest House | 64293 | NAF | | 2013 | |
| Replace Commissary | 64327 | DeCA | 25,000 | 2013 | |
| Physical Fitness Center | 64231 | MCA | 30,000 | 2013 | X |
| FY 2014 | | | | | |
| Training Support Center | 69249 | RDT&E | | 2014 | |
| AAFES Car Wash | | AAFES | | 2014 | |
| | | | | | |

Table 6.1 - Fort Belvoir Project List (Short and Long Term)

| PROJECT NAME | PROJECT NUMBER | FUNDING SOURCE | CWE (\$K) | PROGRAM YEAR (FY) | FUNDED |
|---|----------------|-----------------|-----------|-------------------|--------|
| MAIN POST FAMILY HOUSING PROJECTS: | | | | | |
| Fairfax Village | n/a | Clark-Pinnacle | | 2007 | X |
| Jadwin Village | n/a | Clark-Pinnacle | | 2007 | X |
| Belvoir Village | n/a | Clark-Pinnacle | | 2004-2010 | X |
| Woodlawn Village Replacement | n/a | Clark-Pinnacle | | 2009 (?) | |
| Dogue Creek Village | n/a | Clark-Pinnacle | | 2011+ | |
| LONG RANGE PROJECTS: | | | | | |
| Belvoir Credit Union | n/a | Private | | 2015 | |
| Religious Ed Center | 65746 | MCA - Validated | 5,500 | 2015 | |
| Veterinary Treatment Facility | 62539 | MCA | 2,400 | 2015 | |
| Barracks | 62892 | MCA - Validated | 50,000 | 2015 | |
| Battalion HQ for 249th Battalion (PP) | 59554 | MCA | 25,000 | 2015 | |
| Physical Fitness Center | 57837 | MCA | 22,000 | 2015 | |
| TEMP, COF, Motor Pool, 911th Eng. Complex | 70935 | MCA | 7,700 | 2015 | |
| Trainee Barracks | 70936 | MCA | 55,000 | 2015 | |
| Soldier Support Center | 57495 | MCA - Validated | 17,000 | 2015 | |
| Child Development Center (CDC) | 55661 | MCA | 7,500 | 2015 | |
| AV MF, Aircraft Maintenance Hangar | 57537 | MCA | 8,300 | 2015 | |
| AV MF, Aircraft Maintenance Hangar | 57532 | MCA | 8,100 | 2015 | |
| Network Enterprise Complex | 62752 | MCA | 44,000 | 2015 | |
| AV MF, Aircraft Maintenance Hangar | 57533 | MCA | 8,300 | 2015 | |
| Emergency 911 Center | 61452 | MCA - Validated | 3,250 | 2015 | |
| Dogue Creek Maintenance Dredging | 63300 | APF | 6,000 | 2012 | |
| Child Development Center | 55662 | MCA | 9,300 | 2015 | |
| Admin Building, PEO Soldier | 63815 | MCA | 17,000 | 2015 | |
| Structured Parking Facility | 54347 | MCA - Validated | 7,000 | 2015 | |
| AV MF, Aircraft Maintenance Hangar | 57534 | MCA | 8,300 | 2015 | |
| Dining Facility | 61451 | MCA | 9,900 | 2015 | |
| Replace 1400/1900 Warehouses | 57498 | MCA - Validated | 9,200 | 2015 | |
| Revitalize Maintenance Facilities | 61457 | MCA | 8,500 | 2015 | |
| Medical Guest House | 64293 | NAF | | | |
| Rapid Equipping Force Admin Facility | 62891 | MCA | 2,300 | | |
| Addition to MP Station | 63206 | MCA | 1,150 | | |
| Expand Main Post Library | 65218 | MCA | 7,500 | | |
| Potomac Heritage National Scenic Trail, Phase 1 | 55523 | Private | 4,350 | | |
| Potomac Heritage National Scenic Trail, Phase 2 | 52694 | Private | 1,450 | | |
| PEO EIS Admin Facility | 65592 | BCA | 103,000 | | |
| Secure Admin Facility for PEO EIS | 67321 | BCA | 69,000 | | |
| Replace Maintenance Hangar | 43554 | MCA | | | |
| Officers Club Upgrade | 65317 | NAF | 2,500 | | |
| Expand Bowling Center | 65141 | NAF | 2,650 | | |
| Golf Course Replacement | n/a | NAF | | | |

Figure 6.1 - Projects for FY 2007

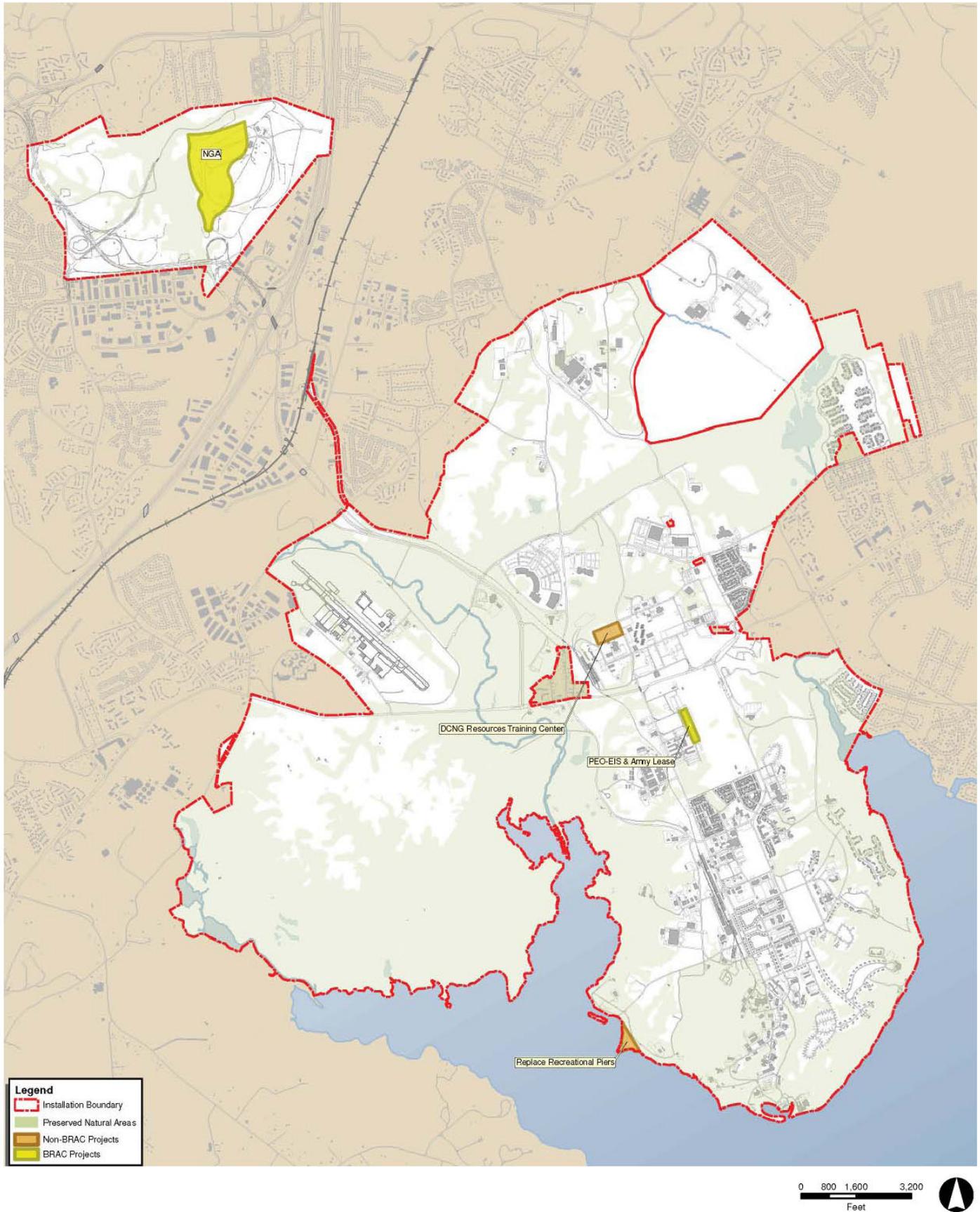


Figure 6.2 - Projects for FY 2008

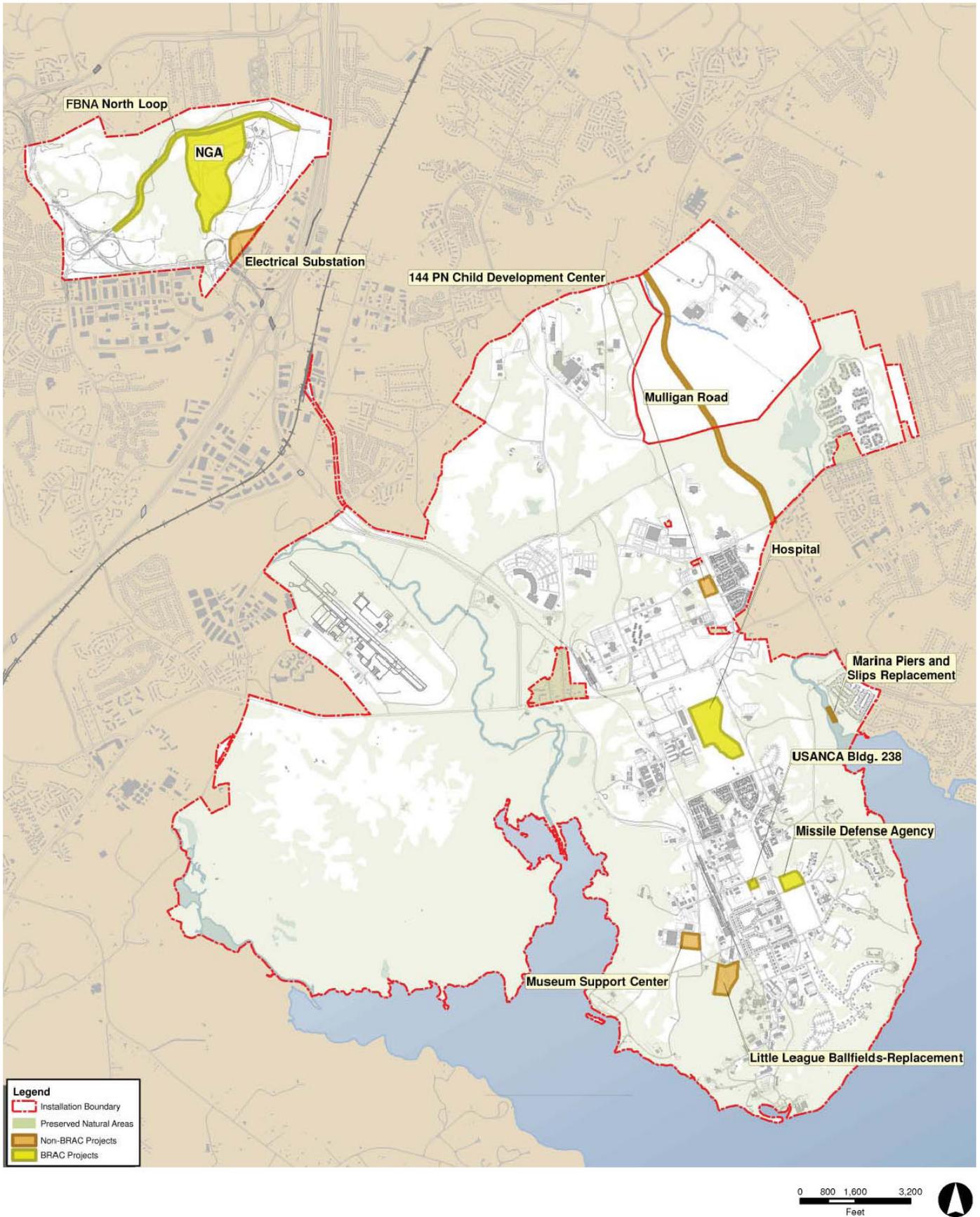


Figure 6.3 - Projects for FY 2009

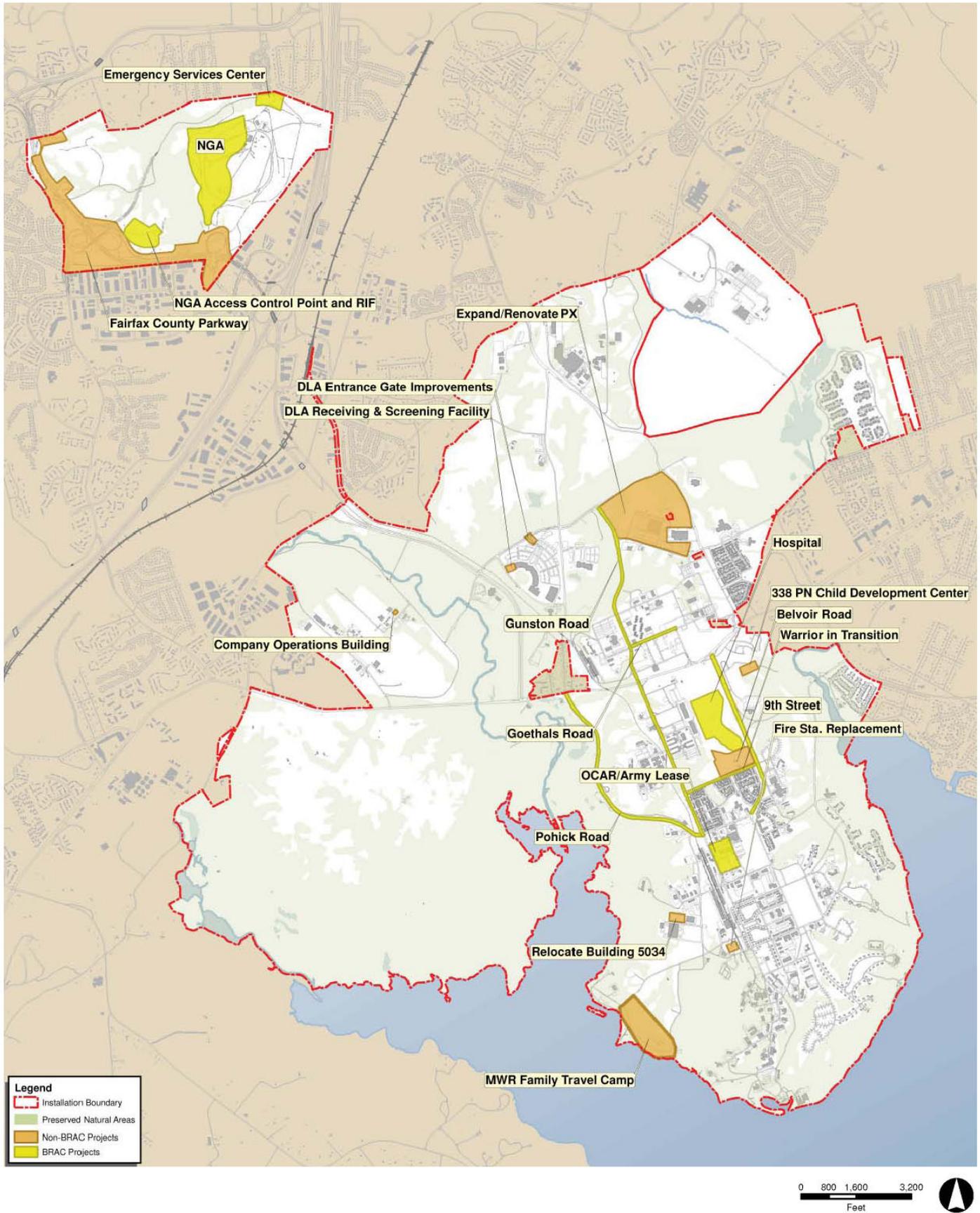


Figure 6.4 - Projects for FY 2010

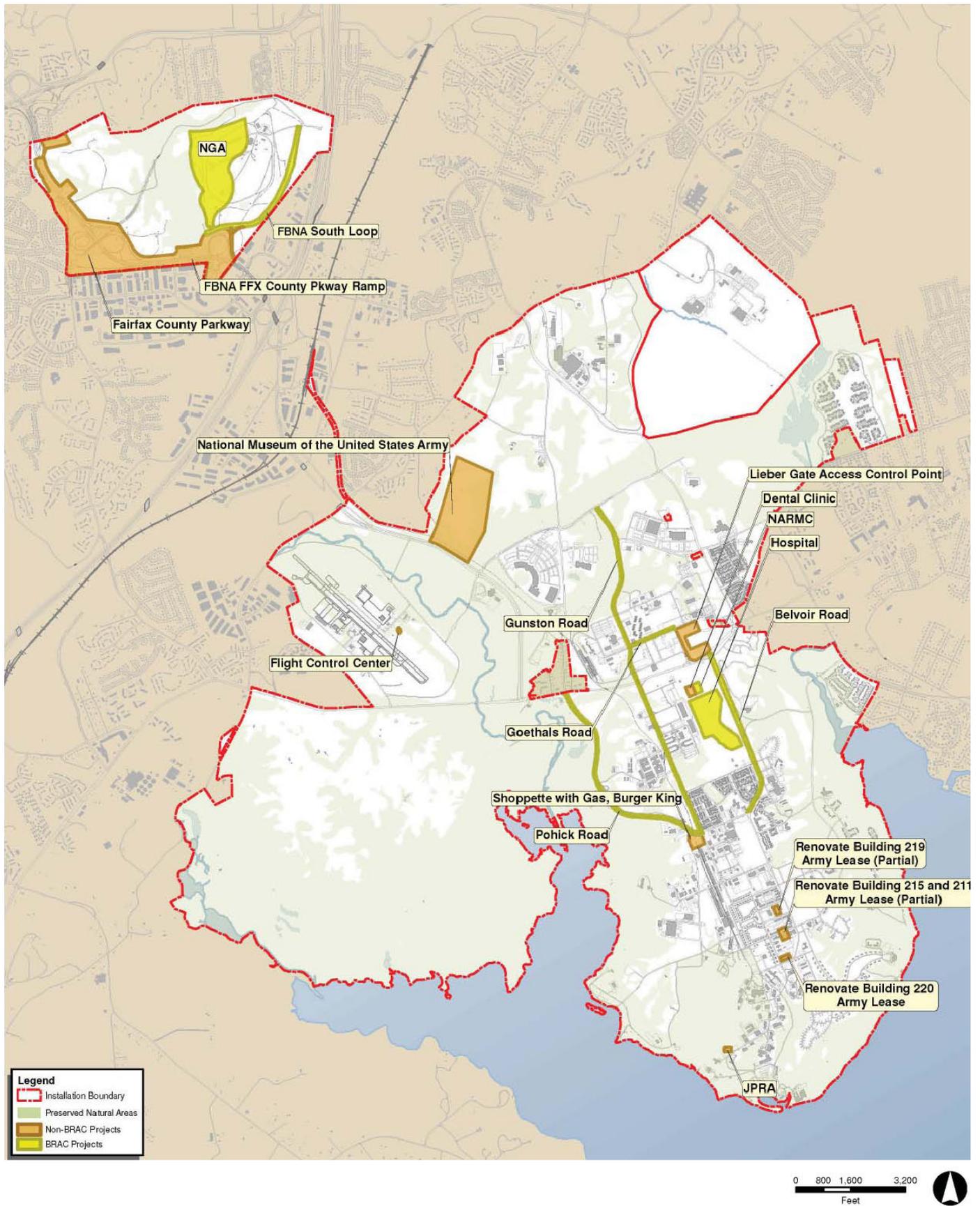


Figure 6.5 - Projects for FY 2011

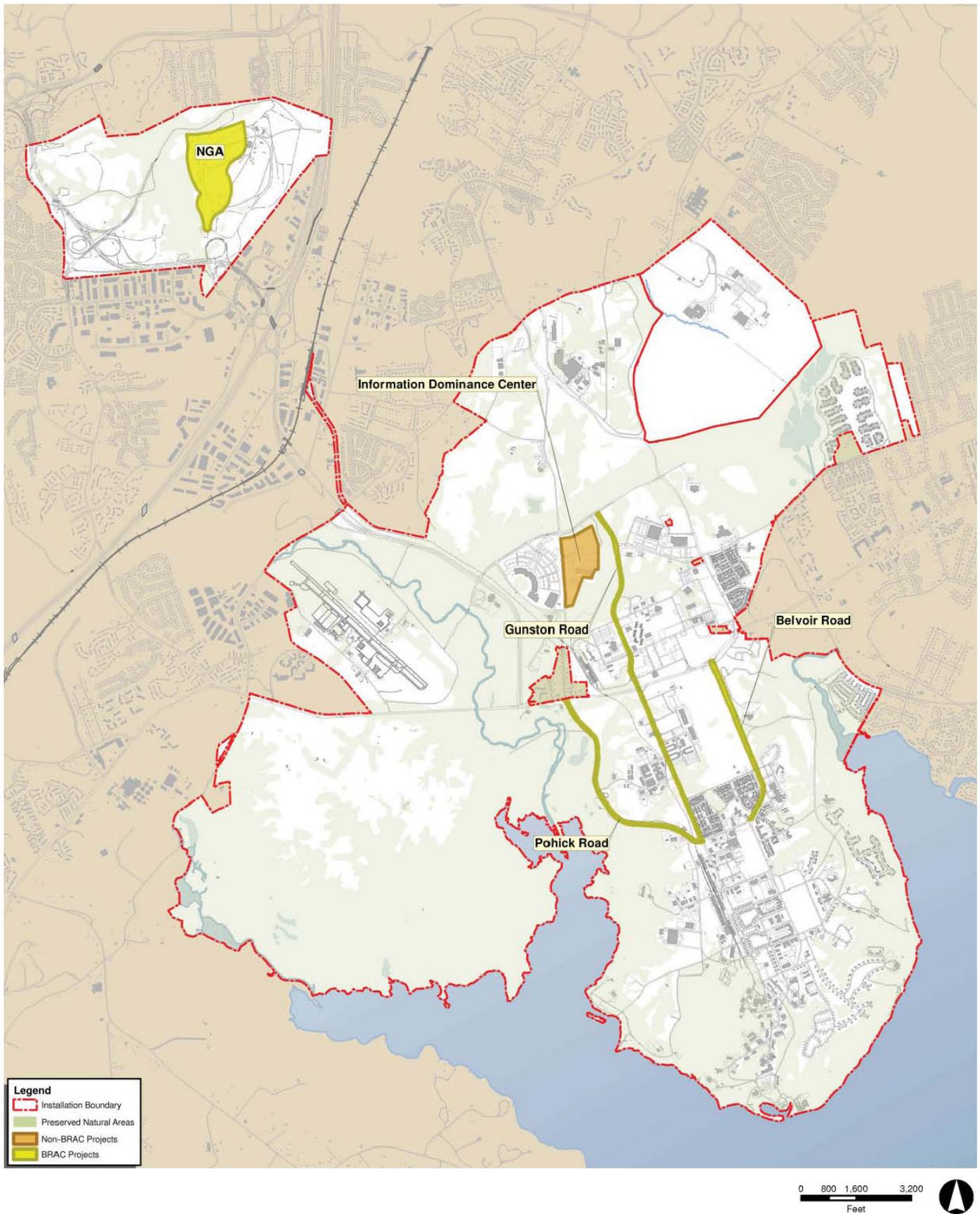


Figure 6.6 - Projects for FY 2012

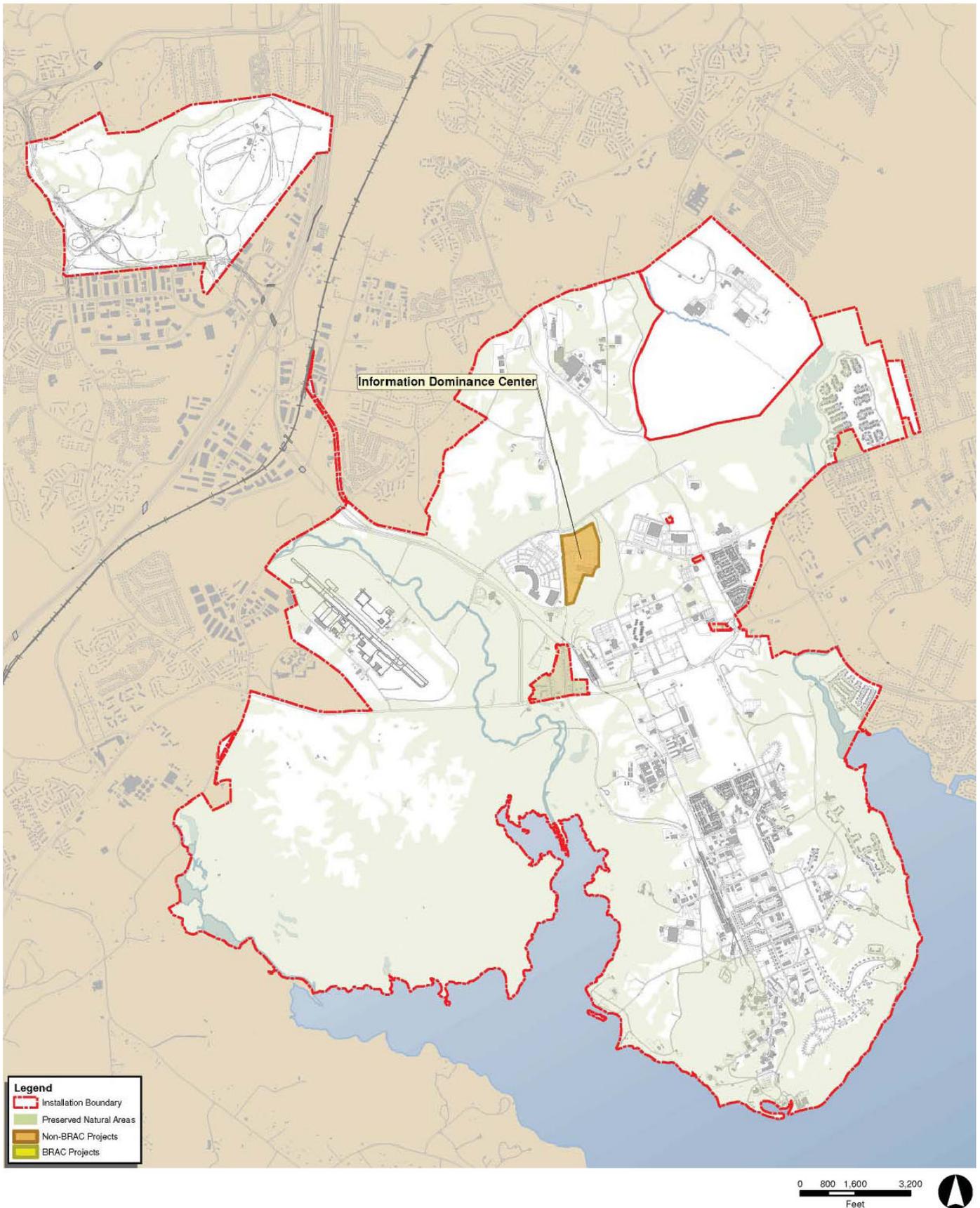


Figure 6.7 - Projects for FY 2013

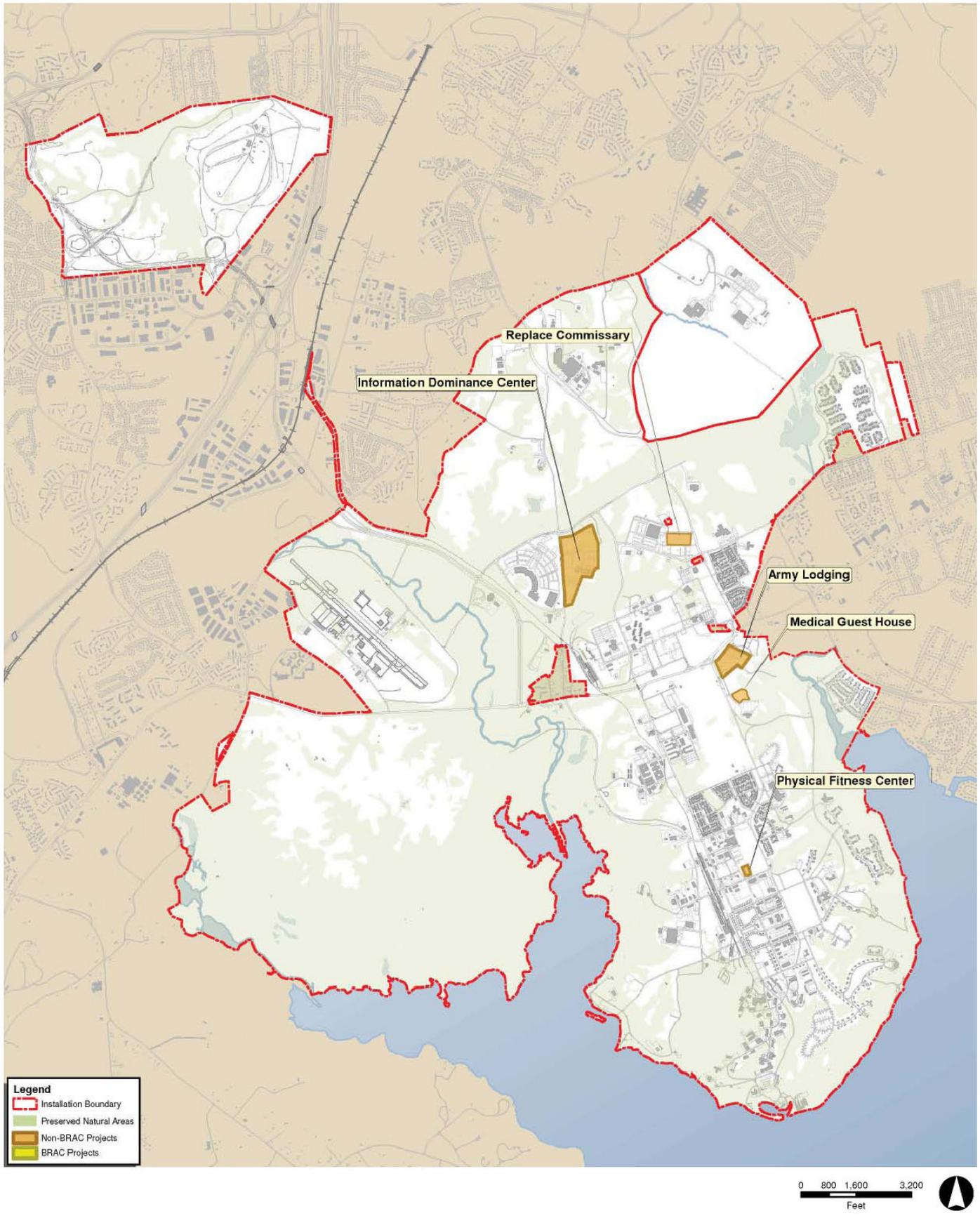


Figure 6.8 - Projects for FY 2014

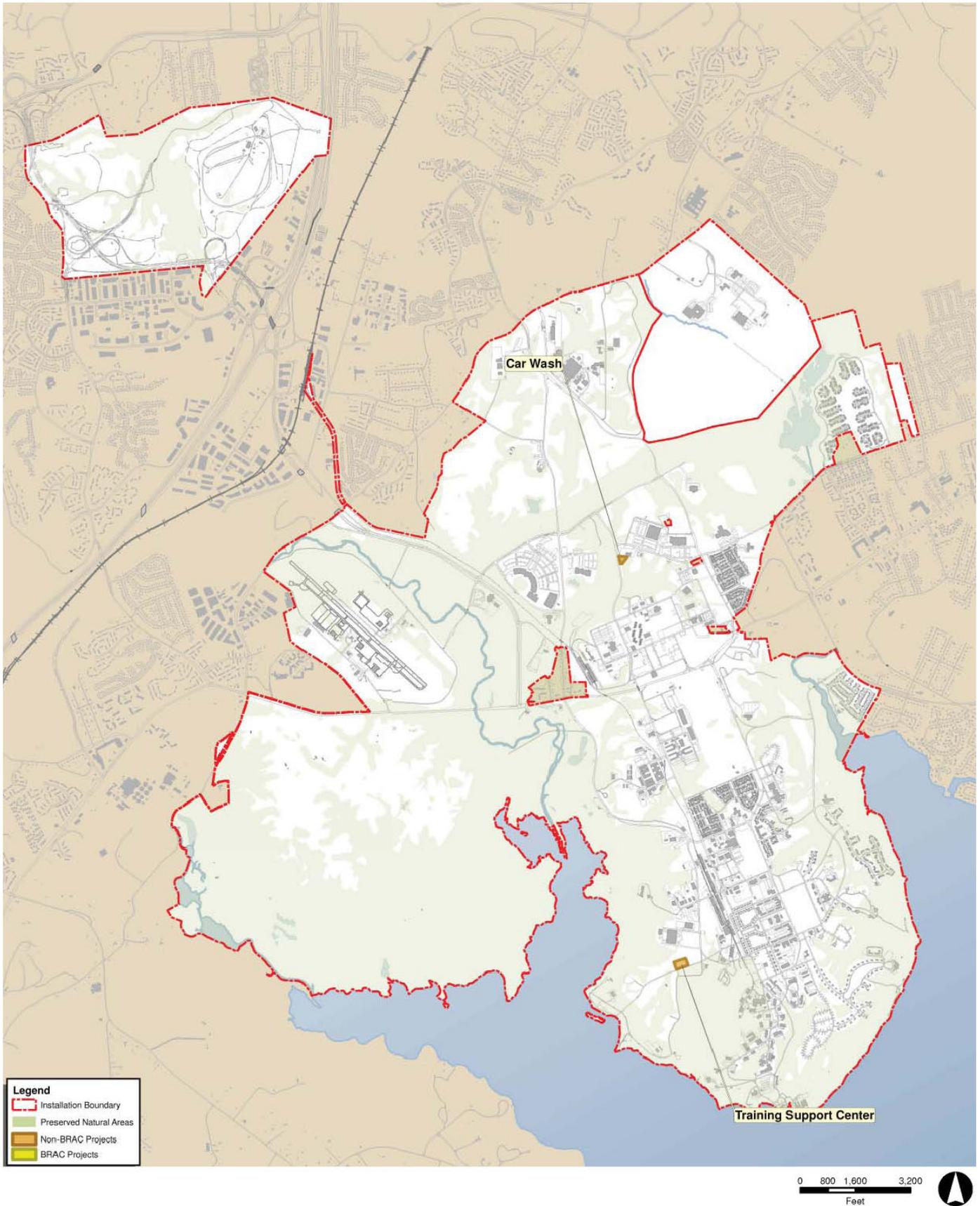


Figure 6.9 - Projects for FY 2007-2014

