



EA Development Brief

CDMP
FORT BELVOIR

July 7, 2003

Draft

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Note: this document is representative of the current scope for the RCI Development. As the CDMP is further developed, the details of this document may change within the development as described within the Environmental Assessment.

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1.0 PROJECT OVERVIEW

1.1 The RCI Program

In February 1996, President Clinton signed into law the Defense Authorization bill, now Public Law 104-106. As codified on 10 U.S.C. 2871 et seq. are provisions collectively known as the Military Housing Privatization Initiative, which provides the Services with alternative authorities for construction and improvement of military housing (family and unaccompanied personnel). Under these authorities, the Services can leverage appropriated housing construction funds and government-owned assets to attract private capital in an effort to improve the quality of life for our soldiers and their families. This legislation provides a way to maximize use of limited appropriated funds, land, and existing facilities to encourage private sector investment.

Under the Residential Communities Initiative (RCI), the Army will establish long-term business relationships with private sector developers for the purpose of improving military family housing communities. The Army will provide the developer a long-term interest in both land and family-housing assets. These developers will become the master community developers for the Army community. The primary source of financial return for the developers will be the revenue stream generated from the military personnel's basic allowance for housing, which will be paid as rent.

1.2 The Project

The RCI program, as it is being undertaken at Fort Belvoir, will include the provision of new housing units and the rehabilitation of existing housing units with the ongoing maintenance and management of both. In undertaking this process the demolition of select existing units will need to be undertaken.

It is the objective of Fort Belvoir Residential Communities (FBRC) to enhance and restructure the existing housing areas into functional, livable communities. This will include the creation of community facilities and addition of infrastructure to improve the greater community.

As part of the project, FBRC will develop an Out-Year Development Plan (ODP) for ongoing revitalization through construction of additional amenities and systematic renovation of existing structures.

1.3 RCI Program Goal and Objectives

The goal of the RCI program is to eliminate inadequate Army family housing at installations across the United States.

The objectives of the RCI program include:

- Creating quality residential communities
- Leveraging assets / scarce funds
- Obtaining private sector expertise, creativity, innovation and capital

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2.0 PRINCIPLES AND GUIDELINES

2.1 Site Descriptions

Fort Belvoir is located along the Potomac River on 8,656 acres of land. It is approximately 10 miles from the Pentagon. The southern portion of the post is bounded on the east, south and west by the Potomac River. Fort Belvoir is accessible via Route 1, George Washington Memorial Parkway, Mount Vernon Memorial Parkway, Telegraph Road, Beulah Street and Backlick Road. These roads bring traffic from I-95 or the I-495 Beltway into the Fort Belvoir installation.

Fort Belvoir is one over 20 military installations managed and funded within the Northeast Region Office (NERO) of the Installation Management Agency (IMA). Army personnel stationed throughout the Washington, D.C. area live at Fort Belvoir and work in the Pentagon, at Fort Myer, Fort McNair and in various Federal government offices as well as in the organizations located at Fort Belvoir. The Post's present mission is to provide essential administrative and basic operations support to its tenant organizations.

Fort Belvoir is home to several major Army command headquarters and elements of others: 19 different agencies 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 here are a Marine Corps detachment, a U.S. Air Force activity, and an agency from the Department of the Treasury.

Straddling Northern Virginia's U.S. Route 1, Fort Belvoir is divided into two halves, known as the North and South Posts. The Master Planning Concept Map of May 2002 designates RCI areas on both halves. These originally designated RCI lands correspond to the location of the existing Post villages as well as adjacent areas. Existing family housing at Fort Belvoir is grouped into 12 distinctly identifiable housing areas located throughout the cantonment area of the post, and occupies approximately 535 acres.

The Fort Belvoir community is served by two existing Village Centers that provide a variety of commercial/retail, recreation and services facilities. Located on the North Post are the Post Exchange (PX) and Commissary, PX gas station and various other retail and recreation facilities that support the military community. On Fort Belvoir's South Post are the Home and Garden Center, PX gas station, car and truck rentals, credit union and various retail facilities as well as the post library, chapels, Child Development Center (CDC), field house, hospital and other support activities. All of these facilities are essential to making Fort Belvoir a great place to live and work.

The family housing at Fort Belvoir can be divided into two broad categories, non-historic, and historic housing. Both are, for the most part, inadequate when compared with the current market standards or military standards. Overall, the current housing villages are somewhat scattered and appear isolated from one another, despite the connecting roads and trail systems.

The housing villages have generally been built on both the flat and rolling terrain of the area. The older village's trees are adequate and mature, giving the area a friendly and inviting appearance for the most part. In most cases throughout the rest of the military housing community of Fort Belvoir, even though villages are adjacent, they are not interconnected, and blocks are unusually long (due to topography), which discourages walking. Adjacent villages possess little or no individual physical identity that distinguish one from another.

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2.2 Site Constraints and Opportunities

The site has a number of environmental constraints that will be respected during the design, construction, and property management process. These are described in more detail within this document.

Topography

The topography of Fort Belvoir consists of two nearly level plateaus that run south-southeast towards the Potomac River, and slope to lowlands that are primarily associated with Accotink and Dogue Creeks. Slopes, ravines, and stream valleys surround the two plateaus on the east, south, and west sides. The installation ranges in elevation from approximately mean sea level (MSL) along the Potomac River to 230 feet above MSL at the intersection of Beulah and Woodlawn Roads. Uplands and plateaus make up about 40 percent of the Main Post's land area, lowlands make up another 40 percent and slopes make up 20 percent.

Floodplains

Approximately one-third of River Village is currently occupying area that is below the estimated FEMA flood plain level of 10 feet. The redevelopment of this village may occur after the Initial Development Period (IDP). Any redeveloped homes within this area will be constructed above the flood plain as required within current building codes and any redevelopment of River Village within the current flood plain and RPA area will not exceed the existing area of impervious surface.

Floodplain elevations along the Potomac River and Dogue Creek are taken from FEMA and are based on North American Vertical Datum 1929 (NAVD29). The topographic survey information is believed to be in NAVD88. The difference between the two datums is approximately 0.8 feet. If a conversion were applied to the FEMA elevations to match the datum of the topographic survey, the conversion would lower the floodplain by about 0.8 feet. No conversion was used at the CDMP stage due to the conservative approach of the CDMP. At the time of final design, the appropriate conversion will be applied, and the floodplain areas are expected to be reduced accordingly as compared to the floodplain indicated on the CDMP plans.

Existing Waterways and Water Bodies

On July 30, 1998, the Potomac River was designated an American Heritage River under the American Heritage Rivers Initiative. The initiative is designed to help communities restore and protect their river resources in a way that integrates natural resources, economic development, and the preservation of historic and cultural values.

There are seven identified main watersheds on Fort Belvoir. The three largest watersheds originate off-post: the Accotink Creek watershed, the Dogue Creek watershed, and the Pohick Creek watershed. The majority of water from within the installation boundaries flows into these watersheds.

Existing Vegetation

Fort Belvoir is home to three major natural resource areas including the 146-acre Jackson Miles Abbott Wetland Range, the 1,360-acre Accotink Bay Wildlife Refuge, and the 742-acre Forest and Wildlife Corridor. The forest and wildlife corridor connects the Huntley Meadows County Park just north of the installation to the Wetland Refuge. The corridor continues through the installation to the Wildlife Refuge and on to the Mason Neck State Park and the Potomac River National Wildlife Refuge Complex south of the installation.

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Fort Belvoir has a multitude of specimen trees that lend stability and character to the residential communities. The preservation of the existing trees will be considered for any proposed development.

Existing Roads

The installation is well serviced by a clear arterial road network with greater regional connections provided by Route 1, Interstate 95 and the 495 Capital Beltway. The existing housing areas are serviced by a variety of internal networks.

Existing Land Use

The land use within the post consists of operations and maintenance, troop accommodation, administration, recreation and family housing. The structuring of these land uses generally forms a stratified land-use pattern consistent with military-post planning principles.

Existing Buildings

There are currently 2,070 dwellings within the family-housing areas, with associated schools and community buildings.

Existing Main Utility Lines

The Development Plan anticipates the utilization of the existing street and utility infrastructure whenever possible. Existing utilities lines not being reused will be abandoned or removed. The new housing will be located to minimize the impact on existing services capacity. Where the land plan requires, new utility mains will be built in conjunction with the infill roads and tied into the existing mains at the street intersections. New service laterals will be built from the new homes and tied into the existing mains.

FBRC will study the various utility systems affecting the housing areas in conjunction with the local utility providers who own, maintain, and operate the utility mains. FBRC will work closely with the garrison and the Defense Energy Support Center (DESC) during the utility privatization process to determine responsibilities pertaining to construction, ownership and maintenance of the various utility systems.

Identified Archeological Sites

Twenty-two (22) potential archeological sites have been identified in or adjacent to the RCI footprint. Several of the RCI sites have already been tested and evaluated. At this time, it has been determined that of the sites within or adjacent to Project areas, at least 5 are ineligible.

Noise-Affected Zones

The housing areas of Fort Belvoir are generally clear of major noise impact from installation facilities. However, the key potential noise impact for the housing will be the existing arterial road network. All home replacement, new housing, and renovation activities will need to respect distances and sound-mitigation techniques. The master plan includes buffer zones with trees and other vegetation to reduce the impact of road noise. Sound walls and other structural barriers are not anticipated as part of this construction.

2.3 Neighborhood and Planning Principles

A broad planning process has been developed with the objective of creating viable and workable neighborhoods and villages. These social and spatial planning concepts and the components that build them are listed below. The work to be undertaken within the RCI program will serve to reinforce these planning principles:

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The Streetscape

The component directly adjacent to the dwelling. This is arguably the most highly valued and best understood part of the urban environment. Most people typically know six or more households on their street, and will be greatly interested in its appearance and functionality, especially regarding safety and traffic.

The Block

The component recognized as an area to walk around. Homes and buildings are contained on blocks in which neighbors regularly interact with one another. Blocks should contain recreation and playgrounds for safe and convenient use by families living on the block.

The Neighborhood

The grouping of 200-500 families within approximately a quarter-mile radius to allow a five-minute walk from the center to the edge. The scale of the neighborhood is small enough for neighbors to know one another. Neighborhoods may contain computer centers, meeting rooms, recreation facilities or playgrounds for convenient use by residents of the neighborhood. Larger neighborhoods may also contain a property management office.

The Village

The grouping of 600-1500 families within approximately a three-quarter mile radius to allow a fifteen-minute walk from the center to the edge. Villages, made up of multiple neighborhoods, typically offer a wide variety of quality of life amenities including a village center organized around a village green, schools, a church or meeting hall, shopping, recreation, daycare centers, playgrounds, meeting spaces, property management offices, or outdoor activity spaces, all easily accessible by the resident families.

The Village Center

The village center is the focus of the village. Typically located in the geographical center of the grouping of neighborhoods, this location may shift if so determined by environmental opportunities. The village center may contain facilities such as a community clubhouse, shoppette, and a village park. The village center will often relate to the open-space network and natural drainage systems.

The composition of these elements will respond to the following guiding principles:

- The creation of an enhanced connectivity between housing areas, schools and community / recreational facilities.
- Provision of a usable, functional and integrated open-space network between and throughout all villages.
- Provide a “social infrastructure” through the development of community and recreational facilities.
- Establish street systems that reduce pedestrian / automobile conflicts.
- Design “walkable” communities and reduce car dependency.

Traditional streetscapes and open space networks will connect blocks to create neighborhoods and neighborhoods will combine to create the villages. These special residential neighborhoods and villages will be served by a mix of support and life-fulfilling uses. Places such as shops, town halls/community buildings, athletic/wellness centers, and play fields will be part of every village to support the full range of life’s activity.

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Our goal is to provide military families living at Fort Belvoir with an enduring, once-in-a-lifetime experience and memory of their time spent in the Nation's Capital. Our plans for developing, operating and maintaining this high quality family community include village and home designs using proven, traditional design principles and techniques to encourage residents to interact with their neighbors and take advantage of everything their homes and villages offer. At Fort Belvoir, our designs create a "sense of place" where smaller, human-scaled villages offer their own unique character and architectural style. This cohesive community design approach reinforces each family member's connection to his or her community, and transforms the house into his or her home. Each revitalized village will have new single family detached, duplexes and town homes with distinctive architectural style.

Whenever practical, the homes at Fort Belvoir will be designed and carefully placed to take advantage of the beautiful views surrounding the Potomac River, Dogue Creek and the rolling hills of northern Virginia. In all villages, quiet streets will be designed to decrease vehicular traffic by parking in the rear of the homes to increase pedestrian safety, and encourage vigorous runs and leisurely family strolls. Both private fenced-in backyards and public play areas near homes provide parents and children the security of knowing that each is within sight and a shout away. Village Centers with park-like green spaces that invite residents to take leisurely strolls or have impromptu gatherings with friends and neighbors will be provided.

The new designs will also introduce concepts of street design and public open space networks. These will be scaled to create more connected residential groupings that reinforce a better sense of community. Design concepts will also incorporate the following:

- The homes, amenities and open spaces will be designed on a human scale so that each village and block has a comfortable feel that encourages people to use the public realm.
- Where appropriate, long blocks of houses on existing streets have been shortened, with sidewalks on both sides of the street to create a more pedestrian-friendly setting.
- Covered parking for residents will be in 2-car garages conveniently located to the sides or rear of each home, so that street views are attractive and the neighborhoods are pedestrian-friendly.

Well-lit streets, lined with shade trees and sidewalks will be designed to be shared by pedestrians and cars. Slower traffic on residentially scaled streets will create a safer, pedestrian-friendly environment. Interconnected streets on shortened blocks will offer a variety of routes so that pedestrians and cars can move more easily to conveniently located destinations within the village.

The housing types and styles reflect the regional culture and tradition of Virginia. Each village will have its own identity relative to landscaped village entry features, architectural style, house types and amenities. This approach avoids "cookie-cutter" homes by creating streets that contain homes with unique facades, colors and roof lines mixed with a variety of housing types and sizes to give each family a sense of pride and identity in where they live. Village features will include:

- Unique entrance features into each village with signage and landscaping to reinforce the individual identity of the community.

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- With villages sized to be no more than a 5-minute walk from center to edge, and tot lot and play areas that are no more than a 2-1/2 minute walk from any home, we have encouraged convenience and pedestrian activity.
- Common ancillary amenities so that each village contains certain basic comforts (i.e. playgrounds, tot lots, recreation facilities). Unique amenities will also be constructed to reinforce each village's distinct identity. The architectural style of the amenity buildings will be coordinated with the overall design so there is continuity of the architectural character as a whole.
- The plan for open spaces has been designed to encourage safe use of parks, village squares, bike/jogging paths, and playgrounds that are integrated with the natural terrain of each village. Well-lit, landscaped, public areas, such as parks and playgrounds, will be designed to create clearly defined spaces.
- Unique amenities and ancillary facilities are placed to encourage residents of other villages to use them, thus promoting interconnections both physically and psychologically within the Fort Belvoir community. This commitment to connectivity will be further reinforced within each village by establishing clear links between villages through the network of streets, and walking paths.

2.4 Environment Planning Principles

Environmental stewardship is a critical component of our strategy for the development of new homes at Fort Belvoir, and for the ongoing long-term operation and maintenance of the homes at all of the family neighborhoods. Our approach, as proactive partners with the Army, is characterized by one overarching concept: to practically integrate human habitat and a healthy natural environment, so that the long-term use and viability of the homes and the overall residential communities will be enhanced and preserved. The key elements of our proactive approach to environmental stewardship include:

- **An assessment of existing conditions.** Prior to new construction, demolition or substantial rehabilitation, environmental and existing condition assessments will be completed as required by applicable Federal and State laws, rules and regulations to analyze existing wetlands, endangered species, existing grades and potential environmental hazards. Further, FBRC will coordinate all new construction, demolition and rehabilitation efforts with Fort Belvoir Department of Public Works and Logistics (DPW&L).
- **Conservation.** Clark Pinnacle is committed to the introduction and maintenance of Best Management Practices (BMP) in the use and conservation of energy and water. We envision a system that will promote minimum utility costs to the residents, while at the same time rewarding them for conserving energy.

The General Conformity Analysis indicates that annual emissions from both stationary and construction activities will not exceed the *de minimis* level required by the Clean Air Act at any point during construction. These conforming levels will be maintained by controlling phasing of the construction during the IDP. If required, Clark will provide a refined estimate of NOx emitting equipment usage on an annual basis.

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- **Energy efficient materials and systems.** With regard to achieving energy conservation through the use of energy efficient materials and systems, Clark Pinnacle will continue our normal strategy of using energy-efficient building materials and systems available. New construction will use standard energy-efficient techniques for the walls, roofs, and windows, and renovations will use energy-efficient components to replace the old systems where appropriate. Heating and ventilation systems will be installed that have been designed to meet ENERGY STAR[®] standards.
- **Connectivity.** One key to the success of an ecologically friendly neighborhood/village is an understanding of the natural environment and the connectivity required to keep these systems intact. Neighborhood block structures will be studied to promote these connections. These plans explore existing and proposed natural systems that effect the planning of the new and revitalized neighborhoods and connect villages and neighborhoods through a network of roads, sidewalks, paths, parks and open spaces.
- **Pedestrian friendly design.** The block structure also strengthens the neighborhood goals. With houses that front the street, private driveway systems that direct parking in specific areas, and public open spaces, the neighborhood becomes a pedestrian friendly community. Open space is located within a two and a half-minute walk of every residence in every neighborhood.
- **New infill neighborhoods.** The new infill neighborhoods have been carefully planned to be integrated and placed into the natural surroundings to utilize and connect with existing infrastructure and to preserve existing grand trees.
- **Multi-modal transportation network reduces need for car travel.** Sidewalks and bicycle paths provide opportunity for travel throughout the site without a car.
- **Reduced impervious surface area throughout.** A series of open spaces and natural absorption areas are designed as multipurpose recreation areas and parks that connect pervious surfaces throughout the plan.
- **Street trees and yard trees.** Our plan promotes the use of trees throughout, and utilizes large shade trees along paved streets to reduce the heat-island effect.
- **Encourage use of native plants, shrubs and trees, and avoid mono-cultures: the use of single tree species on site.** Most important to the survival of the natural environment is positive native vegetation management to minimize any additional disturbance and distribution of invasive plants. Creating healthy soil by mulching and encouraging below grade animal habitat will encourage deeper tap root type trees to flourish minimizing erosion.
- **Minimized development on slopes of greater than 15%.** This action will reduce erosion problems and its corresponding affect on water quality.
- **Site plan demonstrates a reasonable balance of cut and fill.** This environmentally sensitive and cost-effective approach to redevelopment and infill of neighborhoods minimizes the transport of material onto and off of the site.

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- **Recycle as much demolished building material as practical.** This minimizes the landfill of building materials.
- **Use Best Management Practices (BMP) to control and disperse storm water on site; create Bio-retention swales, planted with grasses, shrubs and other wet-soil adaptive species.** The bio-retention swales double as protected wildlife habitats integrated into the surrounding neighborhood. They are planted with herbs, grasses, shrubs and moist to wet adaptive trees. Bio-retention swales also serve as a natural storm water management system. Larger bio-retention swales may promote connectivity and protection of larger and more vulnerable plant species.

2.5 New, Replacement and Revitalized Dwellings

The existing housing will be handled in one of two ways:

1. Demolition: Most units will be removed completely. These units will be selected based on location, condition, and livability. Selected units will be removed to provide village restructuring opportunities and amenities.
2. Rehabilitation: All retained units will be rehabilitated and maintained to comparative private sector practice over the life of the program.

The interiors of the historic homes will be modified and updated to gain the best functional use of the available interior space with review and approval by appropriate agencies.

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3.0 COMMUNITY PLANNING

3.1 The Development Plan

The Development Plan establishes a long-term framework for development on the installation. It outlines current and future development areas, primary road transportation networks, and open-space networks. The key elements of the development plan have been derived from the existing environmental conditions of the installation, together with the village and neighborhood planning principles outlined previously, serving to provide a reliable basis for ongoing detailed land-use planning and urban design. The key development plan elements are the land-use pattern, open-space network, circulation networks, and center locations.

Land Use Pattern

Traditional streetscapes and open space networks will connect blocks to create neighborhoods and neighborhoods will combine to create the villages. A mix of support and community facilities will serve these residential neighborhoods and villages. Shops, town halls/community buildings, athletic/wellness centers, and play fields will be accessible from every village.

Open-Space Network

The open-space network is a continuous system aligned with the natural drainage corridors and, where practical, integrating other areas of environmental significance, such as high points and existing vegetation. This facilitates a path-and-cycle-way network that is situated in a natural setting suitable for providing a strong, safe pedestrian network. The open-space network further serves a dual purpose as a storm water regulation and water quality improvement management system.

Circulation Networks

In some cases at Fort Belvoir, even though neighborhoods are adjacent, they are not interconnected, and blocks are unusually long (sometimes due to topography) — which discourages walking. Pedestrians and cyclists will be accommodated through a series of pathways, both on and adjacent to road locations and via pathways constructed in conjunction with the open-space network.

Centers

The new village plans provide a variety of amenities and assets to enhance the military families' quality of life. Most villages will be oriented around Neighborhood Centers for small gatherings such as neighborly get-togethers and family birthday parties, with a kitchen, meeting/activity rooms, computer centers, and rest rooms. The Centers will also contain property management offices that are readily accessible to local families. These centers will be located in New South Post, Woodlawn, Lewis Heights, Fairfax, and George Washington Villages.

Across from the Belvoir Chapel on 12th Street a large new Community/Recreation Center with exercise rooms, an Olympic-size indoor pool, full sized basketball court, racquetball courts, and other family oriented facilities is proposed.

3.2 The Village Structures

In planning and designing the revitalization of Fort Belvoir's family housing areas, the goal is to provide the military family neighborhoods with community assets that offer a high quality of life. The following village plans allow for the development of more homes than are being demolished and renovated. This gives the plan the flexibility to react and adapt to sensitive conditions that are discovered as development progresses. For example, if we find that wetlands in one neighborhood are more expansive than currently believed, this plan gives us the flexibility to

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shift homes away from the wetlands and into another village in order to be able to avoid as much wetlands as practical. However we do not plan in this project on having more homes occupied than exists in the current inventory of 2,070 nor do we plan on building more homes in any one village than is shown in the “up to” numbers provided in the following sections.

North Post

The North Post is home to the Jackson M. Abbott Wetland Refuge, a large environmental preserve that forms part of a wildlife corridor linked to Fairfax County’s Huntley Meadows Park. The North Post also contains extensive community facilities including the Commissary, PX and Fort Belvoir Elementary School.

The North Post contains two large family housing neighborhoods, Lewis Heights and Woodlawn Village. Lewis Heights was built in the late 1950’s and is a community of brick apartments. Woodlawn Village was built in the early 1980’s and is a condo style attached development.

Home to JENL, JNCO and SNCO in distinct, but adjacent areas, the new layout for Lewis Heights takes its inspiration from the existing road layout, and features a radial plan centered on a Neighborhood Center within formal green, lined with single family attached and detached houses. Two roads radiate out from this central space: one to the northeast contains both a small formal tree lined park, as well as large recreation field and play space beyond; while another green to the southeast opens to a view of the Woodlawn Plantation. We have been careful to assure a verdant open space that serves as a visual and physical connection between this important historic resource and the new homes of Lewis Heights. Lewis Heights will include 290 new attached and detached homes for JENL, JNCO and SNCO and their families.

The largest family housing area at Fort Belvoir, Woodlawn Village, will be the setting of 450 new homes for JENL, JNCO and SNCO. As in other neighborhoods JENL and JNCO neighborhoods will be distinct, but adjacent to SNCO. Located at the eastern edge of the Jackson Abbott Wetland Refuge, the existing perimeter road will be entirely preserved and will be addressed in the proposed neighborhood plan as an edge that allows all of the residents an access to the fabulous natural views across this preserve. Many of the new homes will also face onto the wetland preserve from across the loop road. One can imagine evening strolls along a the walking path along this parkway edge as an opportunity to enjoy views of wading herons and other native birds while greeting neighbors sitting on stoops or porches across the street.

At Woodlawn Village’s center is a large park, serving as a community gathering and recreation space complete with a Neighborhood Center, recreation amenities, pathways, a picnic shelter and large grassy areas for pick-up games, and running and playing opportunities. This space will also provide natural planted areas – bio-swales- for storm water recharge. The residential blocks are designed to link the central park and the perimeter road edge with a series of small parkways. These open roadways will create a continuous visual relationship between these two types of green spaces in an ‘emerald necklace’ arrangement, allowing virtually every resident a constant connection with the natural environment. Woodlawn Village will be made up of single-family houses, with a series of town homes and duplexes along the village center and some of the parkways, to provide architectural accent and spatial enclosure.

The following table illustrates the current and proposed family-housing inventory at each neighborhood in North Post. Of special note, the proposed number of homes is under review and is subject to change.

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<u>Neighborhood</u>	<u>Current</u>	<u>Proposed</u>
Woodlawn	444	Up to 410
Lewis Heights Village	428	Up to 300
Total	872	Up to 710

South Post

From the picturesque and historic Belvoir Village to the newly constructed South Post Village, the villages on the South Post are as spatially diverse as the landscape in which they occur. Historic designations, steep terrain, drainage swales, wetlands, water views and tree saves are among the many factors, both natural and man-made, that combine to provide distinctive and challenging sites. Unfortunately, these factors have also resulted in villages that, in the past, have been designed and developed in partial isolation from one another and the community facilities of the Post.

Responding to this planning legacy and the challenges offered by the site, the new South Post villages are linked together with an existing roadway network, and a common organizational strategy centered on the Village Green and the South Post Town Center. At the same time, each of the South Post Villages are oriented towards their magnificent views, whether they be of the naturally occurring forested swales, Dogue Creek or the marvelous green spaces of historic Fort Belvoir.

For example, the new George Washington attempts to make better use of its waterfront locations, sharing views of the existing marina and Dogue Creek. Meanwhile, historic areas, such as Gerber Village, Belvoir Village and Jadwin Loop are planned to center around bucolic central greens, contributing to their character by reinforcing their neighborhood structure.

Dogue Creek provides an important visual amenity as the potential for creating an area that engages the waterfront becomes apparent. River Village and George Washington Villages currently turn their backs to this underutilized amenity. The master plan vision develops a way that the waterfront area can unify these villages rather than divide them. From every approach, these waterside villages join through visual, pedestrian, and vehicular connections.

From the high end of the George Washington Village Green, the layering of vistas is obvious. Glimpses of the marina emerge in the distance, while the park system provides an informal terminus on the green. Additional greens, some lined by homes for Junior Enlisted and Junior Non-Commissioned Officer (JENL/JNCO), others lined by Senior Enlisted (SNCO) allow more residents to share in views of Dogue Creek.

Colyer Village and Rossell Loop are smaller villages of 85 and 80 homes, respectively, attached to the South Post Core area as charms on a bracelet. The new entrance to Colyer will be created around a neighborhood green with homes fronting along its length. Colyer and Rossell are design to follow, where reasonable, the existing road layouts in order to preserve tree canopy and minimize grading. Each village provides several intimate community greens allowing for tot lots and informal recreation space. Colyer Village is composed of homes for SNCOs exclusively, while Rossell Loop provides residences for Company and Field Grade Officers.

Marked by small green at the intersection of Forney Road and 21st Street, at the southern edge of the parade ground, stands the entrance to Fairfax and Belvoir Villages. Fairfax is designed to

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provide residences for 130 officers and their families, as well as a distinct area for Sergeants Major families. Fairfax Village is designed to utilize the existing roadway network where possible, including a southern connection to Belvoir Village, enhancing the roadway network to create an inviting village green. At the head of this green, opposite the Belvoir Village connection will be a Neighborhood Center serving both villages.

The provision for a mix of single family detached, duplex and town homes requires the construction of a New South Post Village on previously undeveloped land. This New South Post Village is made up of three, characteristically distinct, yet well-linked areas completing the northern geographic "edge" around the South Post Town Center. The first of these three areas is bordered by Gunston and Belvoir Roads, the golf course, and 12th street, which is envisioned to become the South Post's "Main Street." Imbedded in this neighborhood are a number of existing Post-wide amenities including the Post Chapel, day-care center, fitness facility and the Post Library. In keeping with its "in-town" location, this neighborhood will be made up primarily of town homes and duplexes.

The families residing here will find the essential services and administrative areas of the Post an easy walk from their front door. The town center strategy outlined here includes the creation of a Main Street along what is now 12th Street and aligning it with significant architectural facades that frame the space of the street and animate it with shop windows and activities. The Clark Pinnacle Welcome Center will be located here as well as a unique housing type -- the live-work unit. These exciting townhouses will provide Company Grade Officer's (CGO) and Senior Non-Commissioned Officer's (SNCO) families the opportunity for the kind of urban lifestyle that young professionals in the private sector are increasingly demanding. Their homes will be located above a ground floor space that will be available for retail and/or service opportunities (e.g., coffee shops, video rental stores, tax preparation services and the like). These spaces will be available for lease as the South Post Core expands. The Belvoir Master Plan in coordination with this CDMP imagines a complimentary type of development on the other side of 12th Street completing the Main Street theme.

Adjacent to this new village to the southeast, across a realigned Belvoir Road, another area of New South Post Village completes the core ensemble. Large and elegant townhouses for Company Grade and Field Grade Officers will align the eastern edge of Belvoir Road, providing a dignified face fronting onto the South Post's main recreation green. The Village is designed to integrate the continuing education opportunities provided at the adjacent Barden Education Center and the recreational amenity of the existing Teen Center as it completes the South Post Core.

The combined areas in New South Post Village will house 403 homes, with homes for JENL, JNCOs, SNCOs, Company Grade and Field Grade Officers.

The following table illustrates the current and proposed family-housing inventory at each neighborhood in the South Post. Of special note, the proposed number of homes is under review and is subject to change.

<u>Neighborhood</u>	<u>Current</u>	<u>Proposed</u>
Fairfax Village	148	Up to 120
Belvoir Village	61	Up to 66
Rossell Loop	60	Up to 75
Gerber Village	76	Up to 81

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Jadwin Loop	45	Up to 60
Park Village	14	Up to 27
Colyer Village	92	Up to 80
George Washington Village	244	Up to 210
New South Post Village	0	Up to 410
Total	928	Up to 1,129

Potentially Developed After IDP

River Village	188	Up to 145
Dogue Creek	270	Up to 145

4.0 PUBLIC DOMAIN AND LANDSCAPE

Over the 50-year project life of Fort Belvoir Residential Communities, the approach to the natural environment globally will change significantly. With the current goal of being responsible stewards of our environment, new development will need to be undertaken with a long-term management strategy influenced by best practice procedures.

Planning principles established for improvements to new and existing housing are based on an understanding and respect for the natural systems. The proposed new development will sit lightly on the land taking advantage of the unique natural surroundings while mitigating any potential negative effects to the environment and character of Fort Belvoir.

The Regional Context

Fort Belvoir is situated on the historic William Fairfax's Belvoir Plantation; hence, the landscape architecture treatments as well as the architecture attempt to emphasize its rich historic legacy. The landscape plan adopted for Fort Belvoir during the 1920's exemplified Army efforts to improve the quality of life for its personnel and the aesthetic beauty of its installation. George B. Ford, planning adviser to the War Department during that period, encouraged installations to turn away from more formal, traditional planning practices, particularly the use of straight lines and monotonous patterns. He advocated creating useful, 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 officers' housing sections at Fort Belvoir today as well as in the proposed Master Plan.

It is the goal of this project to integrate the patterns of the natural landscape with the development. It is precisely this natural landscape character that not only inspires a truly sustainable environment, but also makes the most sense from an aesthetic standpoint.

Design Goals

- Provide a diverse landscape across the Post that takes advantage of the unique features and natural environments in the Post.
- Establish a long-term strategy to integrate quality water management practices into the design development.
- Integrate the outdoors at every level: community, village, home.

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- Initiate a landscape management policy that will accommodate a naturally changing landscape.
- Establish an open-space network as a tool for community education.
- Enhance the sense of pride, safety, community, continuity and ownership associated with the Fort Belvoir Residential Communities.
- Use the historical patterns of vegetation as an inspiration for land management and design.
- Plan for landscape improvements that will ultimately improve residents' attitudes about their time at Fort Belvoir.
- Create community gathering spaces with strong sense of place where families and residents of Fort Belvoir can come together.

Design Concept

Each neighborhood will have its own identity, which will be reflected in a unique palette of plant materials that will be used extensively and solely in that community. For instance, Woodlawn Village, overlooking the beautiful marshland grasses, might feature native ornamental grasses, sedges, and day lilies.

The plant material palette for each individual neighborhood would be tailored to the neighborhood based on the neighborhood's solar orientation, topography, natural setting, and architectural scale. Perennial flowers and bulbs would be carefully chosen for each neighborhood and matched to the shrubs and trees selected for that neighborhood. Residents would be given a palette of recommended plant material and garden ideas that would carry out the theme and landscape character.

The formal public open space in each neighborhood will reflect a manicured and urbane character. Using historic colonial elements found in Virginia, the streetscape will feature wide tree-planting strips between the curb line and sidewalk. These tree yards will contain large broad shade trees to provide a continuous leafy canopy over the streets. The sidewalks will be placed on both sides of all the streets in the neighborhood. The street tree palette for that neighborhood will further define its uniqueness and identity. Street lighting will be selected to reflect the colonial architecture. We will explore different lamppost or lamps for each neighborhood. The precinct between the sidewalk and residential facades will be carefully designed for each neighborhood.

Military housing is notoriously lacking in a "layered" approach to landscaping; however, we are proposing to provide just such an approach. In addition to the large street trees we will plant lower understory ornamentals. These ornamentals provide a changing palette of color to the neighborhoods. A layer of hedges and shrubs will soften the transition from yard to buildings providing an evergreen definition of individual yards. Finally, we will use a groundcover and low shrubs layer to accentuate entrances and add interest to the streetscape.

The following outlines the community's landscape features and the design approach to each element.

Village Connections

Village entrances' will be selected to reflect the colonial architecture and will punctuate roadways and provide identity as well as markers for each neighborhood. The roadway image will be further amplified by the willow and street tree planting regime and common understory

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landscape vocabulary of broad waves of cascading plantings. The entire effect of the village connections will be of a continuous beautiful thread tying one neighborhood to the next.

Sidewalks

Sidewalks will be provided on both sides of the neighborhood village streets. The sidewalks will be 4' in width.

Community Open Space and Ancillary Facilities

Each neighborhood has at least one community green, designed in the manner of Early American town greens. These community spaces occupy a central and prominent location in each village, with many of the neighborhood streets and major drives leading into the green. These greens will also be unique in design for each neighborhood. They could contain perhaps, a gazebo or a bandstand for sheltered seating and performances. They will have play equipment and benches. While the landscape treatments will be more formal and gardenesque than community parks, they will be designed to accommodate a wide range of passive and active community functions. For example, several will be large enough for informal playing fields, while others will include naturalized planting areas or gardens to facilitate ground water quality improvements. In selected villages, the focal point of the greens will be a recreation and civic building designed to compliment the surrounding neighborhood homes.

Community ancillary facilities and parks will be distributed throughout the community and provide residents with more structured play and recreation. However, even these parks will not be simple large expanses of grass, they will be landscaped with trees and shrubs breaking down these large expanses into several outdoor "rooms" containing multi-use fields with shade tree fringes.

Trees

Reforestation of Fort Belvoir will be accomplished through our street tree program and our village greens and community parks. Where possible we will preserve the existing tree stands and utilize this structure in the designs of the village housing program and community open space. While the majority of the Post has a mature forest stand, our planting program will begin to establish the next generation of forest canopy.

New Housing Gardens

The architectural design of each housing unit was conceived with the idea of providing physical and visual connections to the exterior environment. With this in mind the landscape treatment reinforces the architectural design. The landscape of the individual units will provide for a strong and easily maintainable landscape framework that allows for individualization by residents.

Yard Fencing

Each new unit will receive fencing to enclose the rear yard. The fencing will be semi-opaque wood fence at 3 to 6' tall.

Vegetation Clearing Plan

The goal of the master plan is to preserve the existing forest stands where possible. This includes limited disturbance to the forest floor and the herbaceous layer of ground cover.

Tree protection measures will be used throughout the development. Areas of existing forest identified to be saved will be identified before construction and clearly identified on site by a combination of signage and fencing. In addition we will review all construction elements of

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impact to the tree and forest environment to reach a balance between protection of trees and meeting construction goals.

Street Furniture

Street furniture will be selected similar to that of the street trees and street lights in that each village will possibly have a unique program of street furniture while reinforcing the overall theme developed for these residential areas. The benches will be made of wood, metal or a combination of those materials.

Street Lighting

Street lighting will be part of the fabric of each village and will be designed according to the neighborhood pattern of housing setbacks, street widths, and street tree spacing. The fixtures may be individualized in the different villages to further create a special identity. The lights may include different finials and poles and colors may vary.

Neighborhood External Lighting Plan

The exterior lighting design for Fort Belvoir will balance between providing consistent, even lighting levels for security in high pedestrian use areas while designing the appropriate foot candles usage in areas of less use to limit the amount of light pollution into the environment. Special areas will receive higher levels of illumination with different types of fixtures.

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5.0 SITE ENGINEERING

5.1 Technical Standards

Electrical Utilities Design Criteria

Design criteria for electrical distribution system design will be based on those used by Dominion Virginia Power, the local dominant utility provider.

Storm Drainage Standards

The storm drainage system at Fort Belvoir is currently federally owned. The storm water management system consists of mostly of standard closed storm drain systems and open channels that receive sheet flow and point source flow from within the post's 58-sub-watersheds. The open channels ultimately discharge to the post's watercourses through approximately 118,000 linear feet of paved draining ditch and 315,000 linear feet of storm drain. Within the RCI areas the current system does not include any provision for peak flow attenuation of water quality measures. As a part of the redevelopment within the RCI areas, this project will provide proven Best Management Practices (BMP) to attempt to decrease pollution loading and stabilize flow rates.

Water System Standards

Fort Belvoir receives potable water from three entry locations: Fairfax County Water Authority meter vault/pump stations on Pole Road, Telegraph Road and Beulah Road. Fort Belvoir is considered a consecutive water works system by the Commonwealth of Virginia because it buys its drinking water from Fairfax County for on-post distribution and also sells water to customers of the installation who do not have a direct water service connection to the County. The installation's status as a consecutive waterworks requires the installation to produce its own water quality reports.

The master community plan anticipates the utilization of existing water distribution systems. New mains will be constructed per Fairfax County Water Authority (FCWA) the utility providers' standards only in locations where new streets are added to service infill homes and connected to existing mains where the streets meet existing streets. New service laterals will be added at each house and run to its point of connection at the existing main. The new service laterals are anticipated to benefit the overall community by reducing water loss from existing connections, which have degraded.

The water supply system for the privatization of Fort Belvoir Residential Communities shall conform to applicable Federal and State codes for "Public Water Drinking" systems. These specifications have been adopted to ensure regional options are considered, consummate with public health design criteria, in compliance with existing State statutes and in accordance with good public health engineering practices. Variance may be required in respect to the measure of demand for service, and shall be determined based on actual measured flows.

Sanitary Sewer Standards

Fort Belvoir owns and maintains the on-post sanitary sewer systems, which is comprised of approximately 380,000 linear feet of service laterals, collection pipes and mains with 1,697 manholes, 34 lift stations, and two main pumping stations. The installation also owns and operates two ferrous sulfate sewage treatment facilities.

The master community plan anticipates the utilization of existing sanitary sewer mains. New mains will be constructed per FCWA only in locations where new streets are added to service

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infill homes and connected to existing mains where the streets meet existing streets. New service laterals will be added at each house and run to its point of connection at the existing main. The new service laterals are anticipated to benefit the overall community by replacing degraded existing connections.

The sanitary sewer system for the privatization of Fort Belvoir Residential Communities shall conform to the applicable codes for "Design Criteria for Sewerage Systems". These design specifications are the guidelines to be used for the comprehensive consideration of domestic sewage collection, treatment, and disposal systems, establishing the minimum design criteria pursuant to existing state statutes pertaining to effluent quality meeting State water quality standards. These criteria are intended to promote the design of facilities in accordance with good public health and water quality engineering practices. Variance may be required, with respect to the measure of demand for service and shall be determined based on actual measure flows.

Gas Standards

Gas distribution mains are currently owned, maintained and operated by Washington Gas. The master community plan anticipates the utilization of gas mains. New mains will be constructed or relocated by the utility provider and shall conform to the code and design criteria established by them.

5.2 Demarcation

Neighborhood Extensions and Infill Dwellings

Within the areas of neighborhood extensions and infill dwellings, the utilities shall be designed and constructed to connect into the existing service. Demarcation of all utilities will be as outlined in the U. S. Army Memorandum, Headquarters Department of the Army (HQDA), Assistant Chief of Staff for Installation Management (ACSIM), (DAIM-FD) Memorandum, May 31, 2001, Privatizing Utility Systems.

Replacement Dwellings

Where existing dwellings are being replaced with new dwellings, the area will be treated as new development relevant to utility distribution. Accordingly, the construction of utility infrastructure will be as outlined during negotiations between Clark Pinnacle, RCI, the Army, DPW & L and DESC as utility privatization and negotiations with existing utility providers takes place. Demarcation of all utilities will be as outlined in the U. S. Army Memorandum HQDA, ACSIM (DAIM-FD) Memorandum, May 31, 2001, Privatizing Utility Systems.

5.3 Integrated Utilities

The single ownership of land, the reduced levels of easement requirements, and the form of the new residential blocks allow for efficient utilities designs. This efficiency is gained by

- Utilities being run in common trenches, where practical.
- Ensuring that "off the shelf" products are incorporated into the design (i.e. standard transformers).
- Minimizing piped storm water by capturing and directing storm water flows on grade.
- Close coordination of the design and installation of the utilities.
- Careful consideration of the location of the residential blocks within the surrounding topography.

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5.4 Water Management

Water management is a critical design element within the proposed village developments. Residential blocks and streets are oriented to existing slopes. Street runoff will be collected and then dispersed through a series of vegetated spreader swales. The vegetation assists in pollutant clean up. The spreader swales will be perpendicular to the slope. The shallow swale allows for some absorption but primarily serves to spread and slow the flow, reducing the formation of eroded rivulets into the stream from paved areas.

The use of BMP to control and disperse storm water on site shall be analyzed for its potential utilization within the master community to create bio-retention swales, planted with grasses, shrubs and other wet-soil adaptive species. Bio-retention swales double as protected wildlife habitats that are integrated into the surrounding neighborhoods. They are planted with herbs, grasses, shrubs and moist to wet adaptive trees. The bio-retention swale also serves as a natural storm water management system. Larger bio-retention swales should promote connectivity and protection of larger and more vulnerable plant species.

5.5 Storm Water Drainage

Storm drainage systems for new houses within existing village areas will typically be integrated into the storm water management (SWM)/BMP systems to provide safe and adequate conveyance of storm water. Where practical, in the neighborhood extensions drainage will be accommodated within surface water systems designed to ensure that storm water will be conveyed away from the house into drainage swales that, in turn, will carry the flow to the SWM/BMP systems, and then from the SWM/BMP systems to a safe and stable outfall point.

5.6 Water Distribution

The design principles for the water distribution system will be to provide a reliable service to each residential unit.

When an existing residential area is increased in size, the water distribution system for that area will be studied and, if needed, a new distribution main will be installed beginning at the RCI property line to the location of the new houses. If, as a result of the new development, existing utilities are required to be upgraded beyond the line of that particular residential village, then Fort Belvoir and FBRC will work together to determine what upgrades are necessary and each will pay its "fair share" of the cost of such upgrades. Water pressures need to be evaluated to assess the ability for the existing system to provide adequate water supply and pressures.

5.7 Sanitary Sewer

The design principles for the sewer distribution system will be to provide a reliable service to each residential unit. When an existing residential area is increased in size, the sanitary sewer distribution system for that area will be studied, and if needed, a new main will be installed beginning at the RCI property line to the location of the new houses.

System capabilities at the individual villages need to be evaluated to assess the ability for the existing system to provide adequate service. If, as a result of the new development, existing utilities are required to be upgraded beyond the line of that particular residential village, then Fort Belvoir and FBRC will work together to determine what upgrades are necessary and each will pay its "fair share" of the cost of such upgrades.

5.8 Gas Distribution

The design principles for the gas distribution system will be to provide safe and reliable gas service to each residential unit. When existing residential areas are increased in size or are

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dramatically rearranged, the gas distribution system for that area will be studied, and if needed, a new gas distribution main will be installed to the location of the new homes by the utility provider. If, as a result of the new development, existing utilities are required to be removed and redistributed or upgraded beyond the line of that particular residential village, it is proposed that this upgrade work be undertaken by Washington Gas, the utility provider, as is typically done in similar private development projects.

5.9 Electrical Distribution

The design principles for the electric distribution system will be to provide reliable electric service to each residential unit. Electrical distribution system will consist of a combination of overhead and underground primary service feeders dependant on the area involved and its corresponding type of construction (i.e. new or renovation). New construction may be served with underground primary and secondary service. The ability to replace overhead electrical utilities with underground services is being explored for inclusion within the RCI program but may not be adapted.

5.10 Telephone, Data and CATV

Cable Television and Telephone

The cable television and telephone system will be incorporated into the design of the new developments. Industry standards will be used for the design and construction of these facilities.

Communication Distribution System

The communication distribution system will be installed underground for all new areas of construction. In areas of renovation, the system will be a continuation of the existing overhead or underground system in place.

5.11 Hazardous Materials

Clark Pinnacle will coordinate with Fort Belvoir's DPW&L department on an Environmental Management Plan (EMP) for the project. This plan will be completed by closing and will discuss plans for managing the following hazardous materials:

- Lead-based Paint
- Lead in Soils
- Asbestos-Containing Building Materials (ACBM)
- Radon
- Underground Storage Tanks
- Polychlorinated biphenyls (PCB)
- Pesticide Management
- Mold
- Ordnance

Further, the EMP will contain a Hazardous Materials Spill Contingency Plan, complete with spill discovery and notification procedures, mobilization of response resources, emergency response actions, and post-incident follow up procedures.

The Operations and Maintenance Plans that currently exist at Fort Belvoir for Lead Based Paint, Radon, Mold and Asbestos will be utilized until such time as a new O & M Plan is completed. All toxic materials including batteries, paint, pesticides and other chemicals or hazardous waste

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will be removed and disposed of in accordance with Resource Conservation and Recovery Act standards as well as all local State and County regulations.

A Certified Pesticide Applicator Contractor, in accordance with all State, Federal, and County regulations, will perform housing Pest Control. A comprehensive pest management plan will be provided by the contractor to the appropriate Fort Belvoir departments for review as required.

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6.0 NEW DWELLINGS

6.1 Residential Plan Making

With the exception of the historic and historically significant homes, and the 270 homes being revitalized currently at Dogue Creek Village, all of the existing houses at Fort Belvoir have exceeded their useful life of being comfortable, functional houses. New structures will offer residents homes that are comparable to those found in the local area market. During the IDP, all of these obsolete houses will be torn down and replaced with new homes featuring modern features, and high quality materials with amenities that exceed military and market standards. These new homes will be built as detached single-family homes, duplexes and town home residences for 3-bedroom, 3-bedroom with den and 4-bedroom with den size families. The dens are sized and designed to be able to be used as an extra bedroom if needed.

These new homes are larger than current standards for military and private sector housing, reflecting our desire to provide truly exceptional homes. Taking our direction from the existing architectural style of the historic units at Fort Belvoir and the northern Virginia area, we propose three styles – Colonial, Georgian, and Colonial Revival for the new housing. These styles will create new villages that “Build on the Legacy” and history of Fort Belvoir and the northern Virginia area.

We have developed unique designs for these homes that take advantage of the beautiful rolling terrain of northern Virginia and the scenic views along the Potomac River. Contemporary floor plans with 9-foot high first floor ceilings and ample windows encourage family activities both inside and in the private outside space. The houses will be carefully placed on the site, with unique materials and façades to maximize the individuality of each home. Where possible, we will take advantage of graded sites in the various existing villages to reduce expensive re-grading, and every effort will be made to retain as many existing trees as possible within these villages.

In all of the new houses two-car garages with garage door openers will be provided and placed behind the front of the house to allow for maximum views to the street from inside the homes, and to create streetscapes that encourage pedestrian usage. In most cases, cars will enter the garages from rear driveways off an alley to improve pedestrian safety by eliminating street congestion while still allowing direct access to the kitchen areas from the garage in the individual houses.

Most of the new houses, with the exception of the smaller 3-bedroom units, will have a den and a full bathroom on the ground floor. These “extra rooms” expand both the space and flexibility of the homes, and will allow the family members the opportunity to use this space to serve the unique needs of their family as an office, den, study, computer room, sewing room, or a bedroom if needed. In addition, all homes have separate family rooms or great rooms on the first floor to further expand the living space.

Taking into consideration the frequency with which the military families move-in and move-out of the housing at Fort Belvoir, we have designed wider than normal stairwells in the new housing units to facilitate the movement of furniture throughout the house and to minimize damage and maintenance expenses that often occur during the moving process. All homes will also have 9-foot ceilings on the first floor, which will make the units feel even more spacious. High quality and energy efficient appliances, materials, and systems will be used to ensure durability and

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reliability. All homes will also have separate laundry rooms or laundry closets and generous interior and exterior storage to accommodate the special needs of military families.

To enhance the connection of the families to the outdoors, each house is designed with patios at the rear, accessible from the family rooms via French doors. Also, fenced back and side yards will provide more privacy for safe play for small children, family activities, or quiet entertainment. Homes will be beautifully landscaped to soften the edges and to give each home its own identity. Where topographic grades are an issue, unfinished basements will be provided in lieu of retaining walls to assure that houses and garages are aligned and that access between them is retained. This added feature offers substantial “bonus” storage and living space for the families who will live in them.

Each village at Fort Belvoir will have its own consistent style of architecture to reinforce the unique character of the community. Whether Colonial, Georgian or Colonial Revival, each home within the village will have distinct features, with different architectural details and treatments, materials, colors, and rooflines, to reinforce the unique identity that each family has with the place they call “home”. Streetscapes will be enhanced by mixing 3-bedroom, 3-bedroom with den, and 4-bedroom with den single-story accessible homes along with the two-story homes in each village.

Five percent (5%) of the homes have been designed to comply with handicap accessibility requirements under the Uniform Federal Accessibility Standards (UFAS). These homes will be interspersed throughout each village, with careful attention to their placement in the flatter areas of the site. This percent figure was determined through collaboration with the Fort Belvoir RCI staff using the Post historic handicapped occupancy and Exceptional Family Member Program (EFMP) data.

We will use low-maintenance, energy efficient materials and systems to ensure long-term durability and high-quality maintainability throughout the villages. All the new homes have been designed to meet all applicable local building codes and ENERGYSTAR® requirements.

The houses will be carefully placed on the site, with unique materials and façades to maximize the individuality of each home. Where possible, we will take advantage of graded sites in the various existing villages to reduce expensive re-grading, and every effort will be made to retain as many existing trees as possible within these villages.

Homes will be wired for high-speed Internet access, allowing friends and families to stay in touch via cutting-edge communication technology. Within the homes, fire and safety standards will be maintained to include hardwired smoke detection alarms, and Carbon Monoxide (CO) alarms.

The new homes for enlisted personnel as well as for officers reflect increasingly refined features and architectural amenities inside and out that are appropriate to rank.

The new houses will be characterized by:

- SPiRiT Gold Rating
- Foyers with tiled floors and closets
- ENERGYSTAR® certified
- 9-foot high ceilings on first floor
- A den in most homes

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- Kitchens adjacent to family rooms
- Wider than normal stairwells to accommodate the frequent moves required of military families
- Quality appliances, materials, systems and finishes
- STC 26 and 30 low “e” vinyl windows
- Water conserving plumbing fixtures
- Covered entries on many homes
- Dining rooms adjacent to kitchens
- Natural flow throughout living spaces
- Kitchens with separate laundry rooms
- Powder rooms on the first floor
- Ceiling fans
- Bedrooms that meet or exceed the local market standard for size
- Closets that meet or exceed current military standards
- At least two full bathrooms on the second floor and ½ bath on the ground floor.
- Trash cans and recycling bins will be provided by the trash contractor and should be stored in the garage.
- Landscaped yards using sustainable design
- Use of modern technologies and materials that meet state codes and standards
- Smart wiring for internet access and cable TV
- Attached and detached garages with automatic garage door opener
- Basements where topography requires them. (The basements are not counted as part of the unit square footage, offering “bonus” space in those homes.)

The new homes for SNCO and officers reflect increasingly refined features and architectural amenities inside and out that are appropriate to rank. Homes for senior enlisted and officers with families will include the following upgrades above the standard, high quality features, materials and systems for JENL homes:

- Additional storage
- Upgraded interior/exterior trim packages
- More elegant and stylized facades
- Upgraded landscaping
- Soaking tub and separate shower in 4-bedroom sergeant majors and senior officer’s quarters (O & N units)
- Upgraded appliances in senior officer’s quarters (O unit)
- Built-in bookshelves in the den of senior officer’s quarters (O unit)

6.2 Space Planning Guidelines

The basic building modules will be developed based on a repetitive dimensional system to accommodate the required spaces and usages. The use of a standard grid allows equality across different unit plans and provides the opportunity for standardized components across the range of new housing, including closets, storage, kitchens, bathrooms, and cabinetry.

6.3 Architectural Language

Our homes will have an enduring quality and an architectural character that is derived from Virginia, and that are specifically sited, when practical, to take advantage of the great landscape and the wonderful views of Dogue Creek, the Potomac River and the Jackson M. Abbott Wetland Refuge.

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We have taken very special care to make our village plans and our home designs of this region — unique and authentic in style — so as to create a home that is truly desirable. Of the traditional styles that we have adopted from the Virginia region are the Colonial, Georgian, and Colonial Revival Styles.

The architectural styles and designs of the homes and villages match the quality and standards set by Clark and Pinnacle in their most successful residential communities, and complements the styles of the northern Virginia area. Housing types, facades, colors and details are mixed to create unique, diverse streetscapes. This diversity avoids the monolithic appearance common to many modern residential (both private and military) neighborhoods.

6.4 Parking and Storage

In most cases, two-car garages with garage door openers will be provided and placed behind the house to allow for maximum views to the street from inside the homes, and to create streetscapes that encourage pedestrian usage. Cars will enter the garages from rear driveways off an alley (in most cases) to improve pedestrian safety by eliminating street congestion while still allowing direct access to the kitchen areas from the garage in the individual houses.

With the mobile nature of the military families, adequate storage is required. All homes will have separate laundry rooms and generous interior and exterior storage to accommodate the special needs of military families.

6.5 Sustainable Design

The composition of the building envelope will be considered to optimize energy conservation and performance. This will include assessment of the primary building envelope elements and secondary insulation components. Low-maintenance, energy-efficient materials and systems will be used to ensure long-term durability and high-quality maintainability.

Consideration of maintenance of the building components and systems will be a priority in light of the ongoing property management role of the RCI program. Construction methodologies and materials will be assessed on life cycle costs including longevity, routine maintenance, replacement processes, and energy conservation. The new units will be compliant with Energy Star standards with the appropriate inclusions, such as energy saving lighting and equipment, and envelope materials.

6.6 Codes

All of the homes have been designed to meet all applicable local building codes.

Homes will be designed to the following codes as amended by the Virginia Uniform Statewide Building Code / 1997:

- Council of American Building Officials (CABO) One and Two Family Dwelling Code / 1995
- National Fire Protection Agency (NFPA) 70 – 96 National Electrical Code
- ICC International Mechanical Code - 1996
- ICC International Plumbing Code – 1995 with 1996 supplement
- Uniform Federal Accessibility Standard (for accessible units)

7.0 EXISTING HOUSING

7.1 Housing Revitalization Strategy

One of the elements that gives Fort Belvoir its sense of place and character is the buildings that make up the Fort Belvoir Historic District. The district was nominated to the National Register of Historic Places, and certified by the Virginia Department of Historic Resources in 1996. In addition to the core administrative buildings from the original Fort development, there are a number of housing neighborhoods (Villages), which are designated as contributing to the district, and worthy of preservation.

These include two areas of housing in the original master plan of Fort Belvoir, Gerber Village (1930-31) and Belvoir Village (1935-45), both designed in a colonial revival style, with Gerber Village being the smaller single family and duplex units and Belvoir Village as the larger senior officer housing. Pre-dating Fort Belvoir is a group of one-story frame houses which were built in 1920-21 as a part of Camp Humphreys. These houses, built as temporary units, originally formed a continuous row stretching from the entrance to Rossell Village on 21st Street, around Jadwin Loop, and continuing across the fort to finish as a neighborhood known as Park Village. In 1939, the frame houses along one side of the central green in Jadwin Loop Village were replaced with a group of five-plex style row houses consistent with the colonial revival character of the Fort. Some of the early frame houses currently remain along 21st Street, along a portion of Jadwin Loop and at Park Village. Others have been removed over the years for various developments at the post. All of these houses, along with the 1939 Jadwin Loop row houses, have recently been added to the list of contributing buildings in the district through the Section 110 process of the National Historic Preservation Act (NHPA). Rossell Village, which is located between Belvoir Village and Jadwin Loop, has also been recently identified as contributing to the historic district. This Village consists of 30 two-story brick duplex buildings built in the late 1940's.

The general approach toward utilizing the historic housing resources at Fort Belvoir is to retain the units in Gerber, Belvoir, Park and Jadwin Loop Villages that contribute to the original colonial revival character of the 1930's development of the post. This was the primary development period of the historic district, and any development within these neighborhoods will be undertaken so as to retain the colonial revival character of the Villages. These units will require interior rehabilitation, repair and upgrading, primarily with respect to mechanical, electrical and plumbing systems, the energy envelope, kitchens, bathrooms and closets. Primary public spaces will remain. The smaller Gerber Village houses will be enlarged. New, detached, two-car garages will be added to all units in Gerber, Belvoir and Jadwin Loop Villages which are presently without them, providing both covered parking and storage. Other exterior rehabilitation work will include maintenance on painted surfaces, roofs, masonry and windows, with possible replacement of some windows. Landscaping will be maintained and upgraded on an ongoing basis, consistent with the historic landscape of the Villages. In Gerber and Belvoir Villages, new infill housing units will be constructed on available home sites, maintaining the original spacing, siting and character of each Village. The infill houses will be designed specifically to be compatible with the historic houses in the Village, utilizing similar style, massing and materials, but readily identifiable as different from the historic units. In Jadwin Loop Village, the 1920's frame houses will be removed, and new row houses of a similar scale and style to those built in 1939 will be constructed, thereby completing the reconstruction of Jadwin Loop started in the 1930's. The placement of the road will be changed slightly, to allow the new buildings to be placed farther from the edge of the cliff.

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Between Jadwin Loop Village and Rossell Village, the intact row of six 1920 craftsman style frame houses will be retained and rehabilitated. In Park Village two "L" shaped frame houses from the same period will be retained and rehabilitated. All of the frame houses that are retained will have rehabilitation work done to the exterior that is in keeping with the historic character of the units. All existing original details will be retained or replaced in kind if in deteriorated condition, and an effort will be made to restore important details that have been lost over the years. The houses will be enlarged and similar rehabilitation work to that described above will be undertaken. In Park Village, new housing in a compatible craftsman or bungalow style will be constructed, evocative of the 1920's era, pre-Fort Belvoir, Camp Humphreys. The street will be extended into a loop, similar to other Villages in Fort Belvoir.

The placement of additions, infill housing and garages will be coordinated with the Village site plan and reviewed with the Virginia State Historic Preservation Officer, through the Section 106 process of the NHPA to ensure that the character of each Village is not materially adversely affected by the change. In each case, new housing will be designed to be compatible with the scale and siting of the existing historic houses. These new units will also be sympathetic to the materials and style of their historic neighbors, but will not be imitative of them so that a distinction between the new and historic units may be made.

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8.0 ANCILLARY SUPPORT FACILITIES

8.1 Recreation and Neighborhood Centers

The Recreation Center and Neighborhood Centers will provide significant community-building amenities. Within each of our high-tech Neighborhood Centers, we will provide a computer lab and business center equipped with state of the art computer systems, printers, and plotters with connections to the World Wide Web. All existing learning activities will be reviewed and monitored as part of an ongoing community activities and endeavor to provide opportunities to fill the gaps that are identified by community forums. All efforts will be to supplement and support, not overlap, the programs of Morale, Welfare and Recreation (MWR) and Child Development Services (CDS).

The state-of-the-art Recreation Center at Fort Belvoir will be modeled after the cutting edge centers being built today on many college campuses. It will include features such as:

- Indoor pool
- Fitness center/weight room
- Aerobics room
- Basketball court
- Racquetball court
- Men's & Women's locker rooms
- Meeting/Activity Rooms

There will be five new Neighborhood Centers at Fort Belvoir. Each Neighborhood Center will include features such as:

- Great room with attached kitchen for meetings/programs
- Breakout / meeting rooms for smaller groups
- Computer learning center
- Property Management Office
- Fitness room

In addition to these facilities that will have a strong visual identity and presence in each village, the social connections will be provided as well as programs that will teach and foster health and wellness to each resident.

8.2 Welcome Center

The state-of-the-art Welcome Center at Fort Belvoir will be modeled after the cutting edge centers being built today in many new home communities. It will include features such as:

- Residential Welcome Staff offices on the 1st floor to greet every new Fort Belvoir family.
- Meeting Rooms
- Multi-Purpose facility with attached kitchen
- Offices for Development, Construction and Property Management

8.3 Property Management and Construction Space

Property Management

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Clark Pinnacle will operate its property management and operations plan in 60,000 square feet of space. We anticipate using 40,000 square feet of indoor space and 20,000 square feet of outdoor space. The specific areas and buildings are shown on the Environmental Assessment (EA) Map dated March 26, 2003.

Construction

The site adjacent to the RCI building (#766) is approximately 3.5 acres (450' x 325'). This area will be used for Clark Realty Builder's (CRB) trailer compound, which will include project management, field supervision, and subcontractor trailers. This area may also house CRB's panel operation/lumber yard.

The site labeled "TB1" is approximately 4 acres (250' x 775'). This is the first site located on the right side of Warren Road. This site will be used for the crushing operation and possibly a concrete batch plant.

The site labeled "TB2" is approximately 4 acres (250' x 775'). This is the first site located on the left side of Warren Road. This site will be used for large equipment storage.

Conclusion

The Residential Communities Initiative offers an incredible opportunity to improve the quality of life of service members and their families. By working together in partnership, the Army, and Fort Belvoir Residential Communities are focused on an integrated plan which provides for a sustainable development throughout the agreed upon term. This integrated approach works best towards enhancing the living environment, resulting in a direct benefit to all who live on the post.