



## Executive Director's Recommendation

Commission Meeting: July 9, 2015

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<b>PROJECT</b> <b>Draft 2015 Marine Corps Base Quantico Master Plan Review</b> Marine Corps Base Quantico 3250 Catlin Avenue Quantico, Virginia	<b>NCPC FILE NUMBER</b> MP67
<b>SUBMITTED BY</b> United States Marine Corps	<b>NCPC MAP FILE NUMBER</b> 2402.00(05.00)44127
<b>REVIEW AUTHORITY</b> Advisory per 40 U.S.C. § 8722(a) and (b)(1)	<b>APPLICANT'S REQUEST</b> Approval of comments on draft master plan
	<b>PROPOSED ACTION</b> Approve comments as requested
	<b>ACTION ITEM TYPE</b> Staff Presentation

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### PROJECT SUMMARY

The United States Marine Corps has submitted a draft master plan update for Marine Corps Base Quantico (MCBQ) in Quantico, Virginia. MCBQ is situated 35 miles south of Washington, DC and 20 miles north of Fredericksburg, Virginia. The installation is bifurcated by I-95, with approximately 50,000 acres of land to the west of I-95 (known as West Side) and 8,000 acres of land to the east (known as Main Side). West Side is used primarily as a training "range" by the Marine Corps and other federal training academies such as the Federal Bureau of Investigation (FBI) and the Drug Enforcement Agency (DEA). East Side is used by a number of community, support, and administrative uses for various tenants including: Marine Corps Air Facility, Officer Candidate School, and Marine Corps University. Overall, there are 33 tenants on the installation, which is divided into 11 land uses. The installation borders the west-side of the Potomac River and straddles three different counties (Prince William, Stafford, and Fauquier).

The purpose of the 2015 Master Plan is to: govern future development on the installation; accommodate an increasing daytime population (from 31,000 to 43,000 people assuming 2% annual growth); protect the Base mission; and protect the appearance and quality of life on MCBQ today. The 2015 Plan will update the existing 2001 MCBQ Master Plan with numerous construction, demolition, repair/renovation, and utility projects during the next 20 years (until 2035), divided into Short-Range (present to 2018) and Long-Range (2019-2035) timeframes. The proposed Master Plan is supported by a draft Transportation Management Plan (TMP) and Bicycle and Pedestrian Mobility Plan, which illustrate how the installation will minimize Single Occupancy Vehicle (SOV) traffic; conserve energy; and improve bicycle and pedestrian-related infrastructure.

## KEY INFORMATION

The Master Plan is developed in accordance with planning guidance and recommendations that have been issued by MCB Quantico and Department of Defense United Facilities Criteria (UFC 2-100-01) for Installation Master Planning.

The Comprehensive Plan's parking ratio for this installation is 1 space for every 1.5-2.0 employees. Overall, MCBQ's existing ratio is 1:1.36 (including Main Side and West Side). The master plan includes long-term targets that meet the Comprehensive Plan's parking ratio by 2035.

The Master Plan vision is: "To protect training and education areas through proper growth management of compatible land uses, preserve and conserve natural resources and historic character, and implement sustainable facility and infrastructure development patterns that create mixed-use communities with multimodal streets and trail connections between neighborhoods."

The Master Plan goals are to:

- Protect MCB Quantico's mission as a training /education and live-fire base
- Retain the history and character of MCB Quantico
- Address all known and existing deficiencies
- Consider locations on the base for all units currently located off of the base
- Improve quality of life for enlisted personnel and their families
- Channel the project needs of each organization through a centralized validation process
- Avoid growth from organizations looking for available space that have no ties to the base
- Ensure that "silent tenant growth" does not detract from training activities

## RECOMMENDATION

The Commission:

**Provides** the following comments on the draft 2015 Marine Corps Base Quantico Master Plan submission:

**Supports** the district-based planning approach of the Master Plan and overall structure of the document, which is designed to comply with policies from the United Facilities Criteria (UFC 2-100-01) for Installation Master Planning.

**Notes** that NCPC has review authority for all plans and projects within the Prince William County portion of Marine Corps Base Quantico (MCBQ) pursuant to the 1952 National Capital Planning Act, and that several projects were not reviewed by the Commission prior to construction, including: 1) the Marine Corps Intelligence Agency (MCIA) parking garage, 2) National Museum of the Marine Corps expansion, and 3) Heritage Center Parkway; and **Reminds** MCBQ to submit future projects.

### Master Plan

**Recommends** that MCBQ add a more detailed climate adaptation section to the Master Plan that identifies aspects of climate change that are likely to impact the installation's mission; how MCBQ will address those future potential impacts; and specific projects and programs that would help ensure continued installation operation.

**Recommends** that MCBQ revise the Master Plan to identify areas that would be most suitable for various stormwater management areas (rain gardens, bio-retention, underground retention, pervious pavement) and "green energy" (geothermal, solar, wind) production areas in support of the Master Plan's sustainability goals.

**Recommends** that MCBQ consolidate parking as much as possible to reduce impervious surface area, to improve the urban design of the installation, and to foster transit, walking, and bicycle travel in support of the Master Plan's sustainability goals.

**Recommends** that MCBQ simplify internal vehicular circulation as much as possible by eliminating redundant intersections and roadways with no adjacent development to maximize future development density and to minimize future infrastructure costs.

**Recommends** that MCBQ eliminate all unnecessary impervious surfaces within close proximity of the Potomac riverfront to bolster stormwater management efforts; to improve water quality in the Potomac River and Chesapeake Bay; and to minimize future infrastructure costs.

**Recommends** that MCBQ conduct further, more detailed planning to reinforce Barnett Avenue as the installation's Main Street through a consistent streetscape, in-fill development, and cohesive character as appropriate, within the context of the Historic District.

**Recommends** that MCBQ locate future Russell Road development directly adjacent to or on existing development sites to increase walking, biking, and transit accessibility and to minimize future infrastructure costs.

**Recommends** that MCBQ reconfigure the future Museum district to provide a higher-quality, direct, pedestrian connection between the future hotel and museum building without crossing the surface parking lot.

### Employee Parking

**Notes** that the MCBQ Master Plan and Transportation Management Plan are designed to adhere to the NCPC parking ratio goals with and without High Occupancy Vehicle (HOV) / Hot Occupancy Toll (HOT) facilities, but **recommends** that MCBQ strive to attain a 1:2.0 goal for Main Side to support the 2012 UFC Installation Master Planning policies; the installation's ambitious plan to improve on-site bicycle and pedestrian facilities; planned off-site transportation improvements; and the installation's employees who reside within the surrounding area.

Transportation Management Plan

**Recommends** that MCBQ revise the Transportation Management Plan to include short-term and long-term travel mode share goals in support of the installation’s 1:1.5 long-range parking goal for West Side and NCPC’s recommended 1:2.0 parking goal for Main Side.

Future Coordination

**Requests** that MCBQ provide written responses to all referral comments from the Virginia Department of Transportation, Prince William County, Northern Virginia Regional Commission, and National Park Service as part of the final Master Plan submission.

**Requests** that MCBQ work with NPS and NCPC staff to determine how the Potomac Heritage National Scenic Trail (PHT) can complement installation operations, with future connections to a regional pedestrian, bicycle and water trail network, as well as provide interpretive opportunities.

**Requests** that MCBQ commit to work with Stafford, Prince William, and Spotsylvania Counties to establish additional transit, bicycle, carpool/vanpool, and pedestrian programs between the local surrounding communities and the installation.

**PROJECT REVIEW TIMELINE**

<b>Previous actions</b>	<b>None.</b> The current Master Plan was last approved in 2002.
<b>Remaining actions</b> (anticipated)	<b>October 2015</b> - Approval of Final Marine Corps Base Quantico Master Plan

Prepared by Michael Weil  
July 2, 2015

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## I. PROJECT DESCRIPTION

### Site

As shown in Figure 1, MCB Quantico is located approximately 35 miles south of Washington, D.C. and 20 miles north of Fredericksburg, Virginia. About 40 percent of MCB Quantico's landholdings are in Prince William County, 55 percent in Stafford County, and 5 percent in Fauquier County. Nearby communities include Triangle, Dumfries, Woodbridge, Dale City, Manassas, Garrisonville, Aquia Harbor, Stafford and Quantico. Except for the Potomac River shoreline, the Town of Quantico is completely landlocked by the MCB Quantico property.

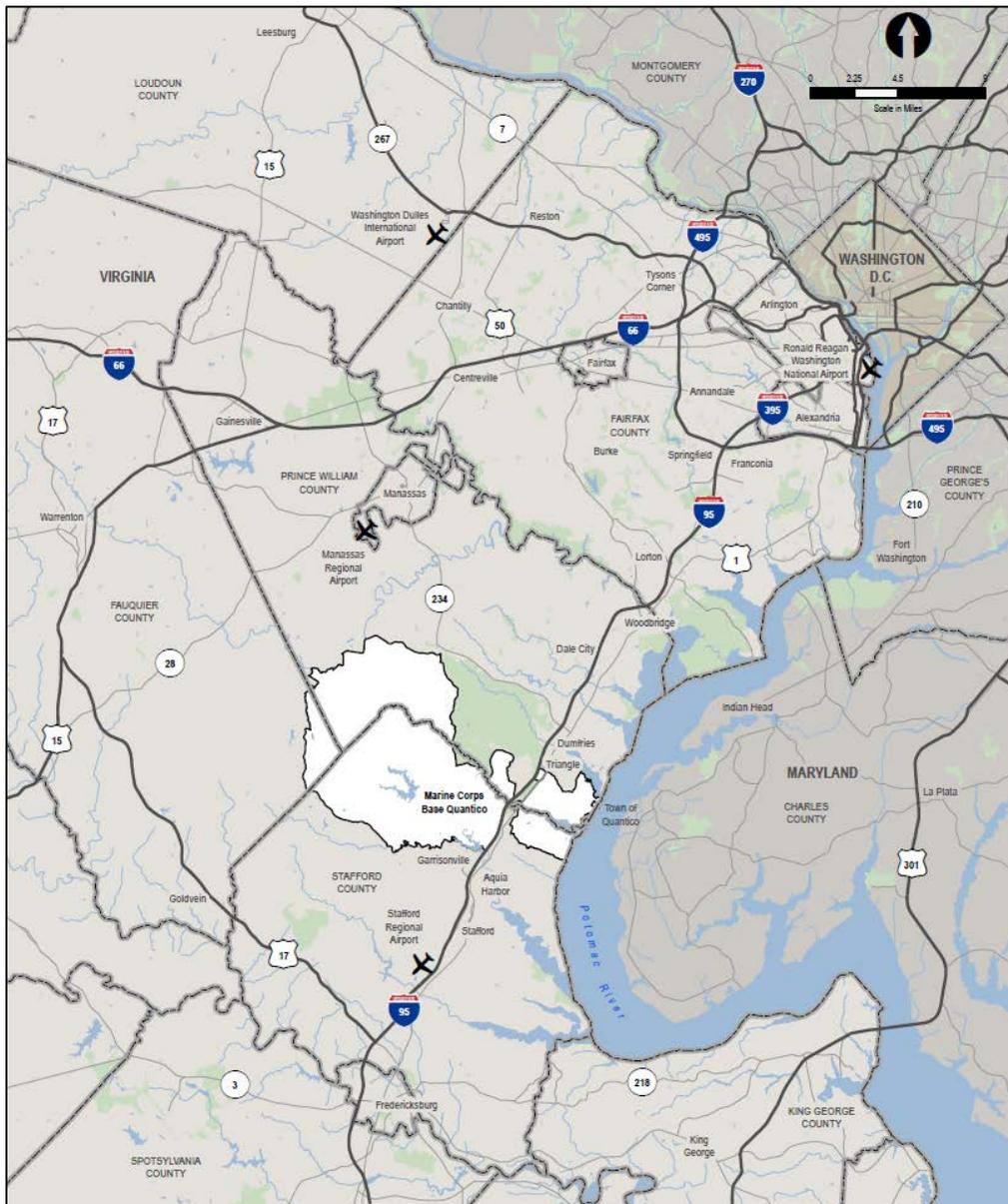


Figure 1: Regional Vicinity Map

MCB Quantico consists of two separate sites, bisected by Interstate-95 (I-95). The Main Side, located east of I-95, supports administrative, residential, education, community and base-wide support activities. The primary tenants include Officer Candidates School (OCS) training, Marine Corps University (MCU) and Marine Corps Systems Command (MCSC).

The West Side, located west of I-95, consists primarily of the Quantico Range Complex. The Basic School (TBS), Military Department Investigative Agency, Weapons Training Battalion (WTBn), Federal Bureau of Investigation (FBI), and Drug Enforcement Agency (DEA) are also located on the West Side. The Quantico Range Complex includes 38 training areas and affiliated live-fire ranges, over approximately 49,381 acres of land and 141 square nautical miles of special use airspace. The Quantico Range Complex is defined as a top-tier range, with a mission that is unique among top tier ranges in the Marine Corps. It provides training support to the Marine Corps Training and Education Command (TECOM) formal schools, the primary users of the ranges. TECOM training focuses on individual level ground combat (infantry) skills that introduce and demonstrate all elements of Marine air ground integrated operations. In addition, the ranges support a diverse set of tenant commands including the Marine Security Guard and the Marine Corps Systems Command. Requirements range from individual weapons and tactics training to demolitions and weapons system demonstrations and evaluations.

## **Background**

### *History*

MCB Quantico's military history began in 1917 when 5,300 acres adjacent to the Town of Quantico were leased by the federal government from The Quantico Company to provide an area to train Marines for World War I. In July of 1918, Congress authorized the purchase of the land. In 1921, the Marine Corps Schools were formally established and provided both vocational and technical training to Marines at various stages of their careers. During the same period, the Schools developed a particular expertise in amphibious warfare techniques that soon became the basis for many of the amphibious operations and techniques executed during World War II (WWII).

With the outbreak of WWII, Quantico's mission changed to the training of Marine personnel in addition to amphibious warfare training. Prior to the War, there were only 2,000 active duty Marines at MCB Quantico. By the War's end, that number had increased to 37,000. To accommodate the tremendous increase in required manpower, additional land and facilities were needed at Quantico. In 1943, approximately 51,000 acres of land were acquired west of U.S. Route 1 to provide live-fire training opportunities.

Over the past ten years, MCB Quantico has experienced a surge in non-training, administrative tenants. The 2005 Base Realignment and Closure (BRAC) Act and increased defense spending for the Marine's Grow-the-Force (GTF) campaign has brought significantly more construction to MCB Quantico than in previous decades, resulting in the expansion and recapitalization of several tenant facilities. These changes have placed increased pressure on the base's aging infrastructure, and in some instances, have led to direct land use conflicts where the new land uses were inappropriately sited.

### *Previous Commission Action*

At its December 2002 meeting, the Commission approved the current Marine Corps Base Quantico Master Plan, with the exclusion of the Master Plan employee parking ratio. In addition, the Commission requested the following:

- “The Department of the Navy return to the Commission in eighteen months with a report evaluating the effectiveness of the instituted TMP and goals for further reducing the amount of parking at MCB Quantico, Mainside (including the MCU, Airfield, and OCS areas), to meet the Commission’s Comprehensive Plan parking ratio, and reduce the surface parking that is dynamically prominent at Mainside. The requested TMP revision and updated parking ratio modification must occur prior to further submission of any MCB Quantico project.”
- “That the Department of the Navy ensures the MCB Quantico participates in the established federal transit subsidy program for commuting to the workplace for employees, which is required in the National Capital Region under Presidential Executive Order, to the greatest extent possible in the requested re-evaluation of the TMP.”

The 2002 Master Plan set an employee parking ratio goal of 1:1.10, which was inconsistent with the 1989 NCPC Comprehensive Plan goal of 1:1.5, in effect at that time.

### **Master Plan Development and Organization**

The Master Plan is the second part of a two-phase planning process, developed through extensive collaboration among MCB Quantico staff, MCB Quantico leadership, Naval Facilities Engineering Command (NAVFAC) Washington staff and planning consultants. During Phase I, the Integrated Land Use Plan (ILUP) was developed through a series of stakeholder meetings, coupled with an analysis of existing conditions. The ILUP established the overall vision of MCB Quantico as follows:

*“To protect training and education areas through proper growth management of compatible land uses, preserve and conserve natural resources and historic character, and implement sustainable facility and infrastructure development patterns that create mixed-use communities with multi-modal streets and trail connections between neighborhoods.”*

The ILUP defines future land use, establishes growth boundaries, identifies areas for future development, and projects population growth through the year 2035. Building upon the conclusions reached in the ILUP, the Master Plan provides a more detailed analysis of on-base development, and site-specific guidance governing the amount and type of permitted future development. The Master Plan incorporates data and planning direction from several predecessor planning studies including:

- Officer Candidates School (OCS) Area Development Plan, 2009
- Camp Upshur Master Plan, 2012
- Marine Corps Systems Command (MCSC) Workspace Allocation and Facilities Acquisition Plan, 2012
- Marine Corps University (MCU) Master Plan Update, 2009
- The Basic School (TBS) Development Plan, 2004

- Weapons Training Battalion (WTBn) Area Development Plan, 2009
- Administrative Study, 2013

The following graphic depicts the planning process used to develop the current draft Master Plan document:

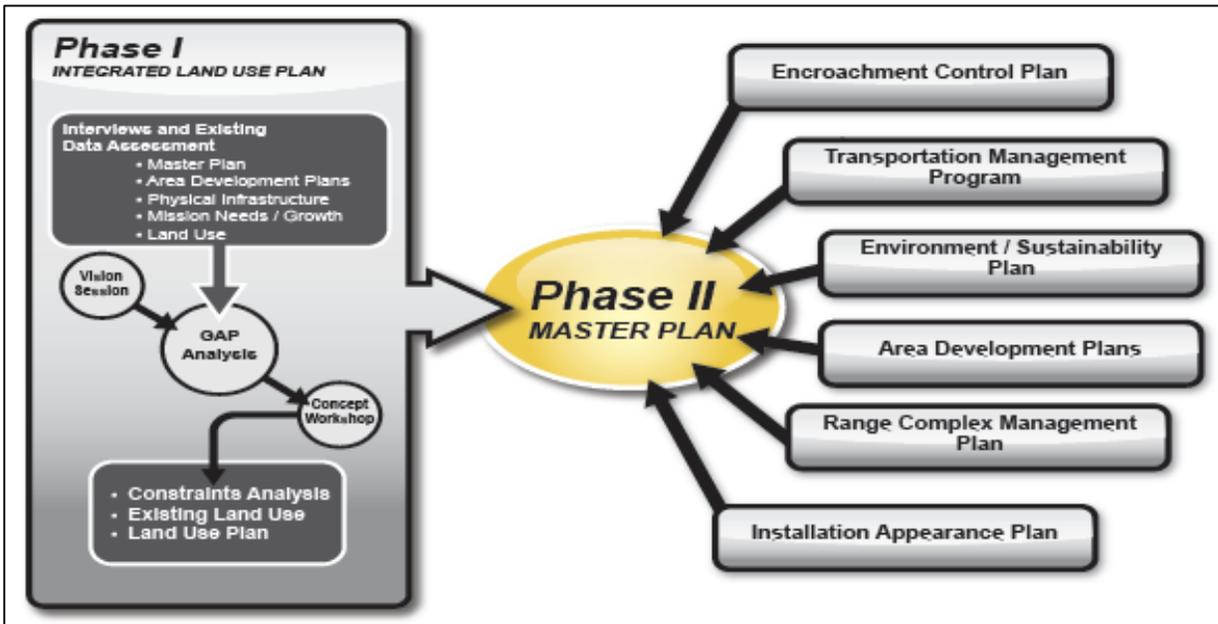


Figure 2: MCB Quantico Master Planning Process

Founded on the Master Plan vision and official MCB Quantico mission, the following goals are used to help guide the master planning process:

- Protect MCB Quantico's mission as a training /education and live-fire base
- Retain the history and character of MCB Quantico
- Address all known and existing deficiencies
- Consider locations on the base for all units currently located off-base
- Improve quality of life for enlisted personnel and their families
- Channel the project needs of each organization through a centralized validation process
- Avoid growth from organizations looking for available space that have no ties to the base
- Ensure that "silent tenant growth" does not detract from training activities

The Master Plan is developed in accordance with planning guidance and recommendations from the Department of Defense and MCB Quantico, in particular, with the DoD United Facilities Criteria (UFC 2-100-01) for Installation Master Planning. The draft Master Plan submission consists of a: 1) Master Plan, 2) Transportation Management Plan (TMP), and 3) Bicycle and Pedestrian Mobility Plan. The Master Plan is divided into two primary components – a Short-Term Future Development

Plan (2018 time horizon) and a Long-Term Future Development Plan (2035 time horizon) - each with the “sub-plans” as follows:

- Land Use Plan - illustrates land use
- Regulating Plan - specifies details of future growth relative to building orientation, height and massing
- Illustrative Plan - graphic rendering of MCB Quantico
- Circulation Plan - outlines transportation, transit, and pedestrian corridors and improvements
- Open Space Plan - outlines parks, open space and outdoor recreational areas.

For planning purposes, the base population at MCB Quantico is forecasted to increase by a maximum of 2,500 personnel by 2018, resulting in a total daytime population of approximately 31,000, and by a maximum of 14,000 personnel for a daytime population of approximately 43,000 by 2035. Short-term development is designed to mitigate the present deficit of administrative space (350,000 square feet); improve mobility for all modes of transportation; and to start to create a more pleasant on-base environment. The Long-Term Development Plan includes development from the Short-Term Development Plan, with additional infrastructure and development to replace aging facilities; to create a more sustainable installation; and to accommodate the larger forecasted 2035 population.

The Master Plan identifies numerous “small area” planning districts within the West Side and East Side sections of the installation as shown in Figures 3 and 4. Each of the planning district sections (within the Master Plan) includes a “Regulating Plan” and an “Illustrative Plan” to reflect proposed short-term and long-term land uses, build-to lines, set-back lines, parking, etc. on a site-by-site basis within each district, which is consistent with the new UFC policy. A legend for the Regulating Plans is included in Appendix A of this report to show all of the various elements within each of the Plans.

Generally, most of the planning districts on Main Side are included within the National Capital Region (NCR), which is under the review jurisdiction of NCPC pursuant to the 1952 National Capital Planning Act. Installation property located on the south-side of Chopawamsic Creek (in Stafford County), within Main Side, is not under NCPC’s review authority. The Boswells Corner, Officer Candidate School (OCS), and southern half of the Marine Corps Air Facility (MCAF) planning districts are not within the NCR (Figure 3). Most of West Side is located outside of the NCR, which includes all of the planning districts except Camp Upshur (Figure 4). This report will show planned roadway improvements and future land uses for the entire installation; however, only the planning districts within the NCR/Prince William County portion of the installation will be reviewed.

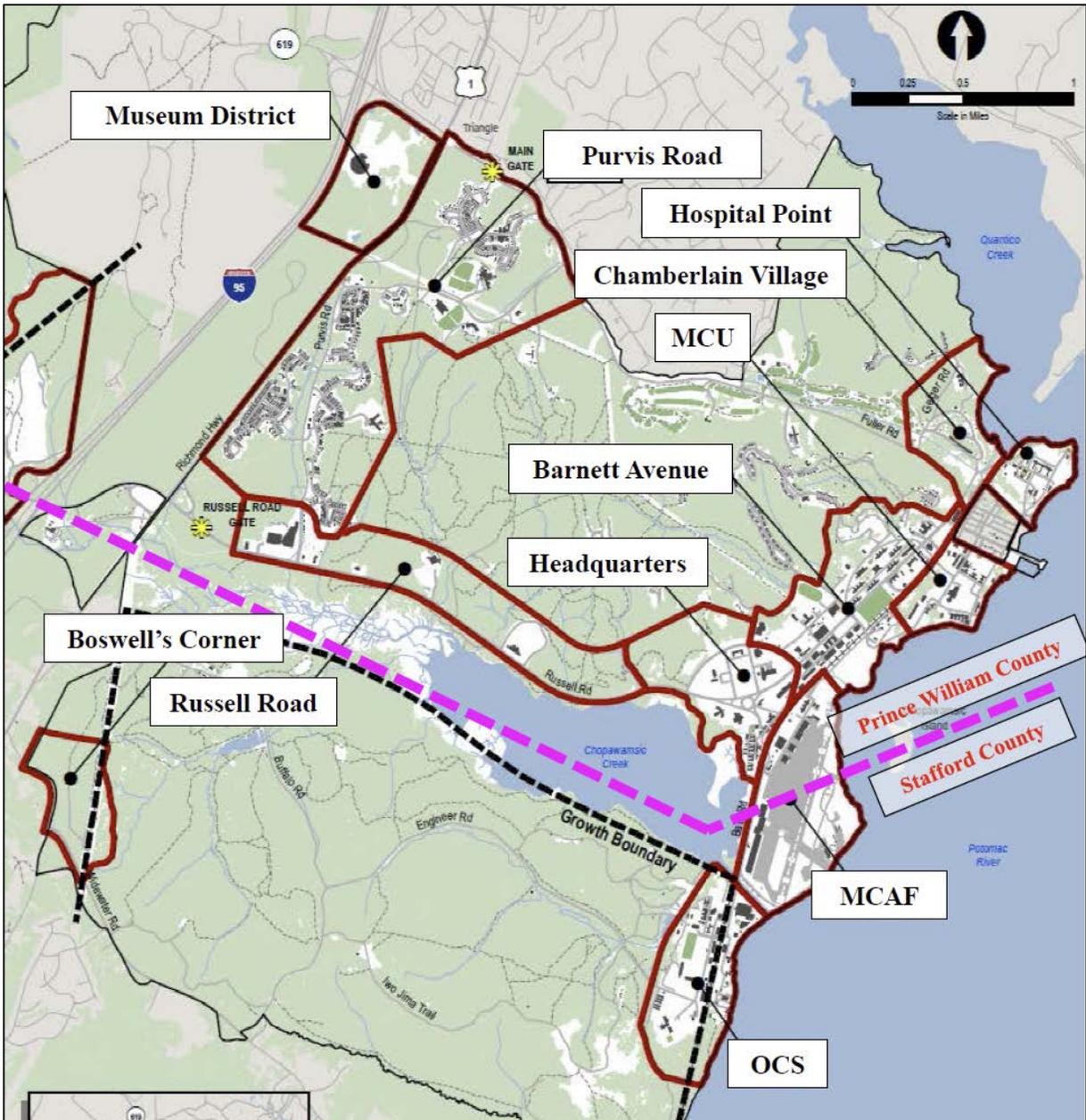


Figure 3: Future Framework Plan – Main Side

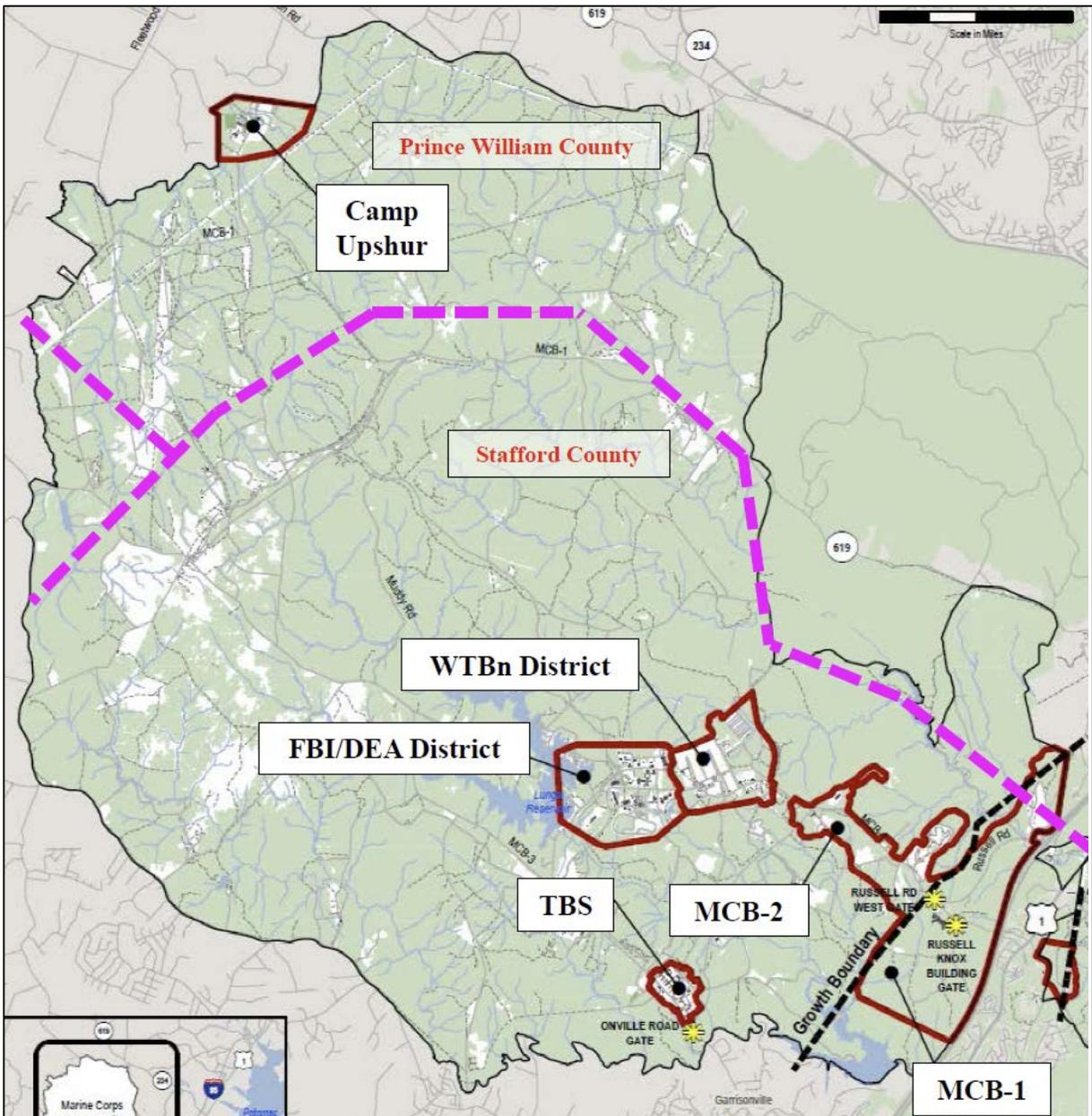


Figure 4: Future Framework Plan – West Side

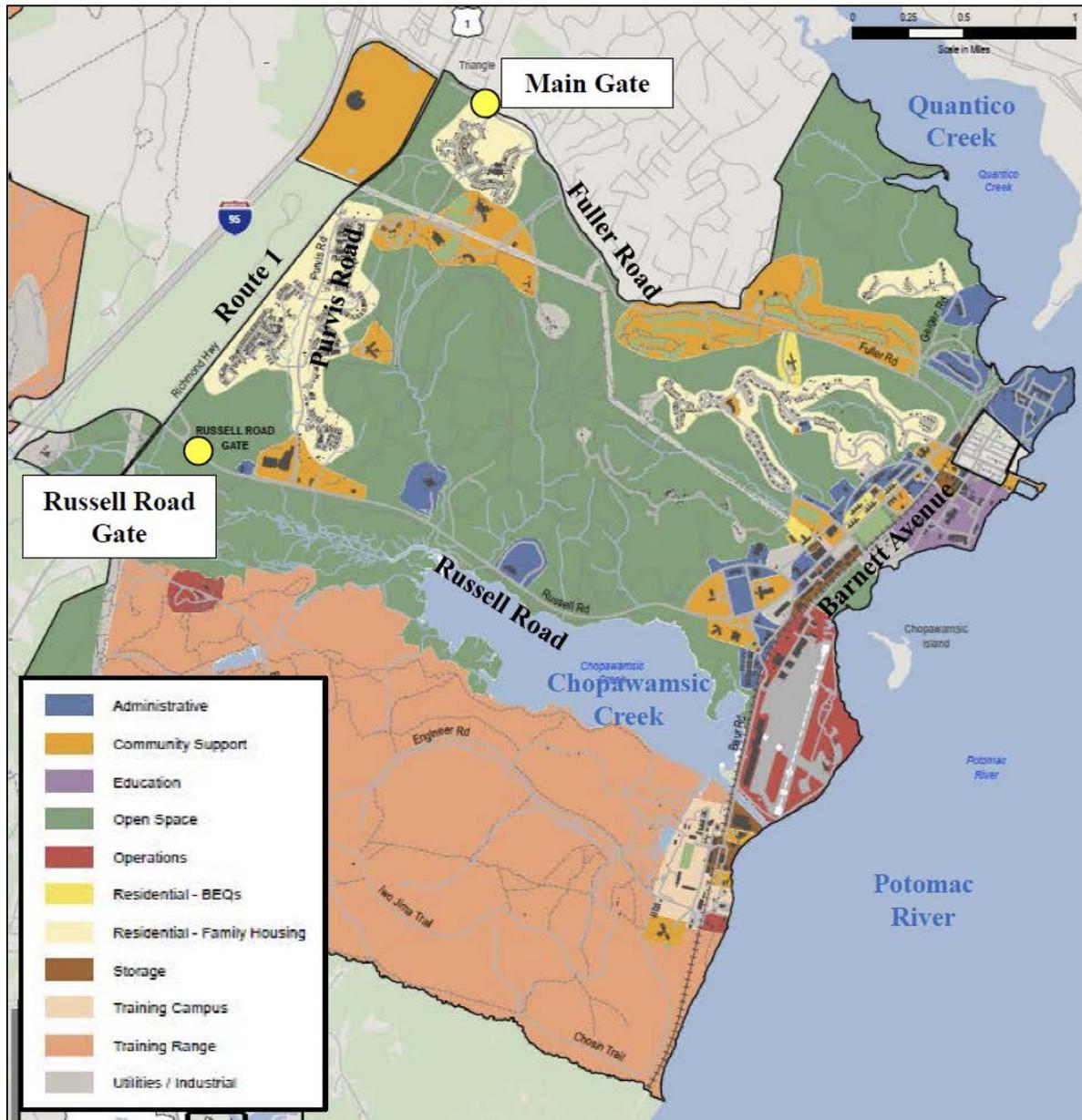


Figure 5: Existing Land Uses – Main Side

### **Existing Conditions**

Figures 5 & 6 show the existing land uses for Main Side and West Side. As shown, Main Side hosts a majority of the installation's development along an internal "ring" roadway network consisting of Russell Road, Barnett Avenue, Fuller Road, and Purvis Road. Purvis Road accesses most of the installation's residential neighborhoods, as well as MCB Quantico's elementary, middle, and high schools. Most of the Main Side's commercial and administrative development is situated along Russell Road and Barnett Avenue; however, Main Side also contains clusters of other land uses such as: Education, Storage, Operations, Community Support, and Open Space.

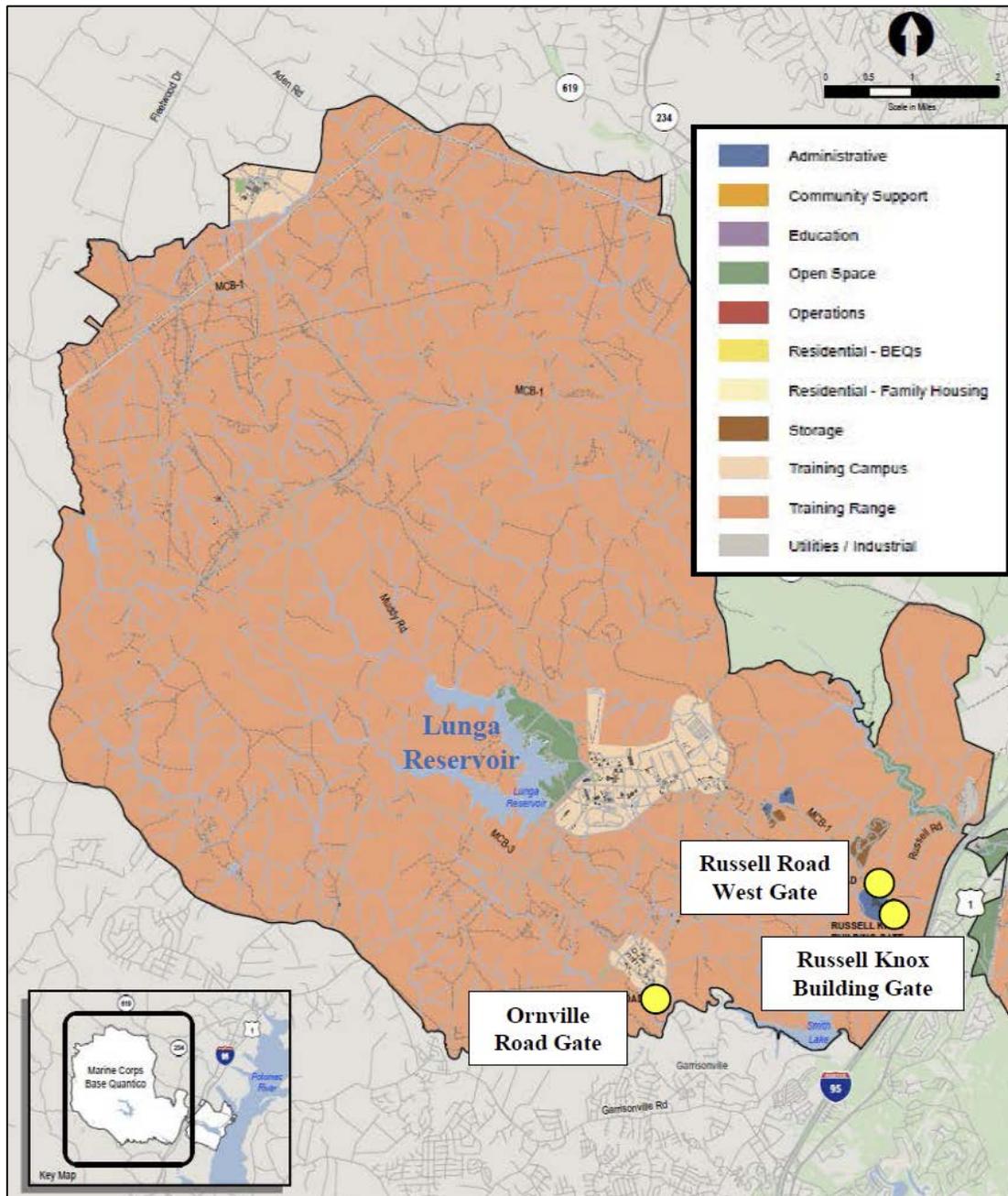


Figure 6: Existing Land Use – West Side

Main Side property located within and outside of the Purvis Road, Russell Road, Barnett Avenue, Fuller Road roadway “ring” is primarily undeveloped forestland (Figure 5). West Side is predominantly used for training “range” land, with a number of disbursed development enclaves used by the Federal Bureau of Investigations (FBI), Drug Enforcement Agency (DEA), and the Marine Corps Weapons Training Battalion (WTBn). A large portion of West Side is used for live-fire exercises amongst people, heavy equipment, and aircraft. The following table shows a breakdown for each of the various existing land uses.

Main Side		West Side	
Land Use Category	Existing Acres	Land Use Category	Existing Acres
Administrative	241	Administrative	115
Community Support	616	Community Support	1
Education	68	Education	0
Open Space	2,905	Open Space	455
Operations	250	Operations	0
Residential - Barracks	29	Residential - Barracks	0
Residential - Family Housing	519	Residential - Family Housing	0
Storage	46	Storage	101
Training Campus	75	Training Campus	1,606
Training Range	2,586	Training Range	47,541
Utilities/Industrial	159	Utilities/Industrial	215

Table 1: Existing Land Use Area Breakdown

Figures 7 and 8 show the existing roadway network for the Main Side and West Sides, respectively. As shown in the graphics, the Master Plan separates interior roads into four different categories based on their vehicle-carrying capacity, design, and purpose. Primary roads (thin and thick red lines) are designed with two- and four-lane cross sections, intended to carry the largest traffic volumes between the I-95/Route 1 corridor and Barnett Avenue, which is considered to be the Main Side’s “downtown” area (Figure 7). There are two access control points to Main Side along Russell Road and Fuller Road (Main Gate). A primary road connects the Officer Candidate School (OCS) district to the Russell Road-Barnett Avenue-Fuller Road primary roadway network on Main Side. Secondary roads (shown in blue) provide vehicular access to various sites within the Barnett Avenue, Headquarters, Marine Corps University, Hospital Point, Purvis Road, and Chamberlain Village planning districts. Main Side’s tertiary roadways access the residential neighborhoods along Purvis Road and to the north of the Barnett Avenue district.

West Side has three gates (Ornville Road Gate, Russell Road West Gate, Russell Knox Building Gate), with a four-lane section along Russell Road that transitions into a two-lane section once inside the Russell Road West Gate (Figure 8). The main development clusters within the southern portion of West Side are served by a two-lane “primary” roadway loop, with several “secondary” roadway segments and numerous “tertiary” roads throughout the West Side’s undeveloped forestland. Campus Upshur is situated in the far northern area of West Side, served by a network of tertiary roadways.



Figure 7: Existing Roadway Network – Main Side

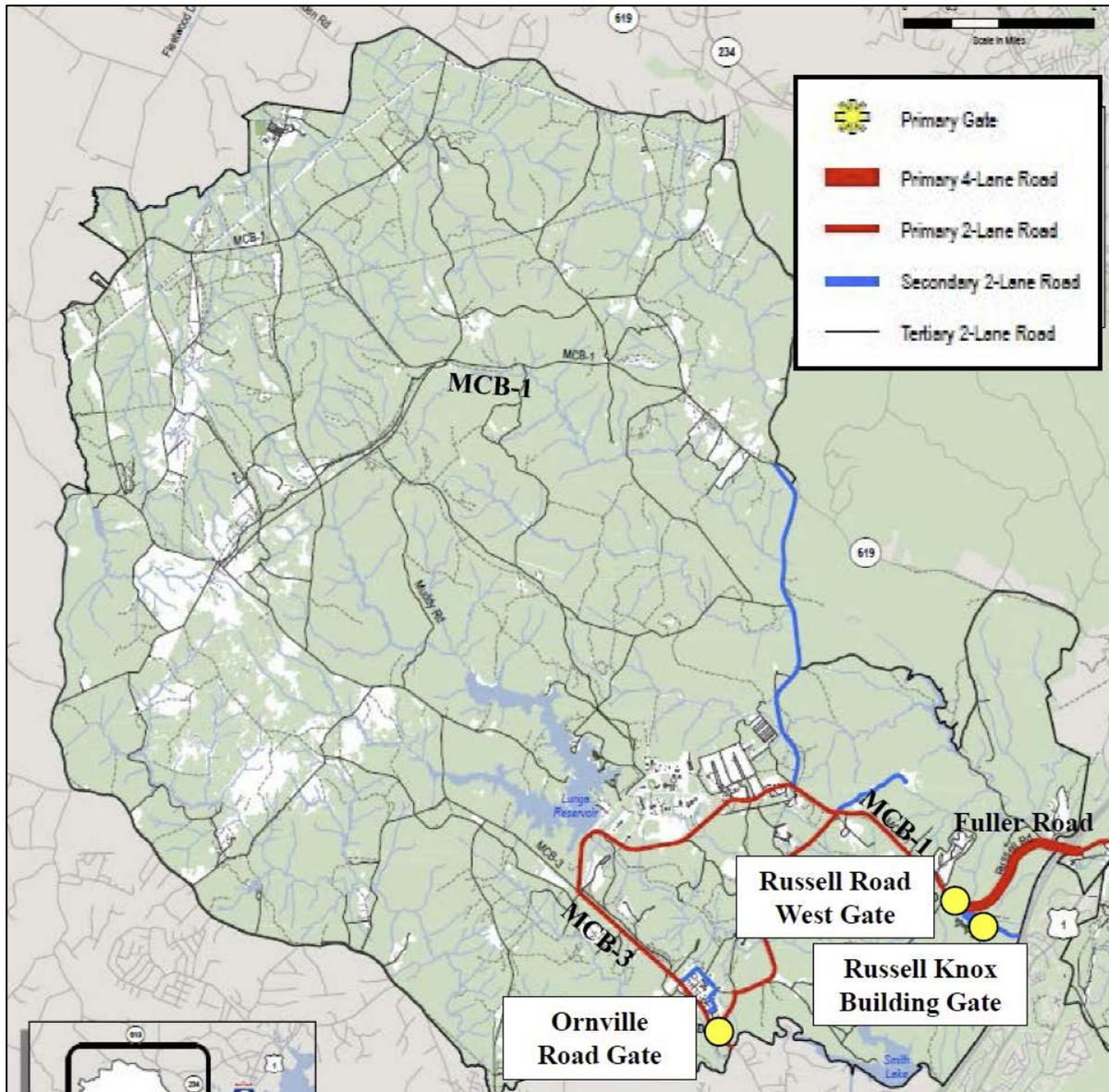


Figure 8: Existing Roadway Network – West Side

The following figures show current employee parking ratios for Main Side and West Side, and for each of the Master Plan's identified planning districts. MCB Quantico's existing overall Main Side parking ratio (1:1.47) is just outside of the Comprehensive Plan's applicable 1:1.5-2.0 goal for the installation based on its "suburban area beyond 2,000 feet of Metrorail" location.

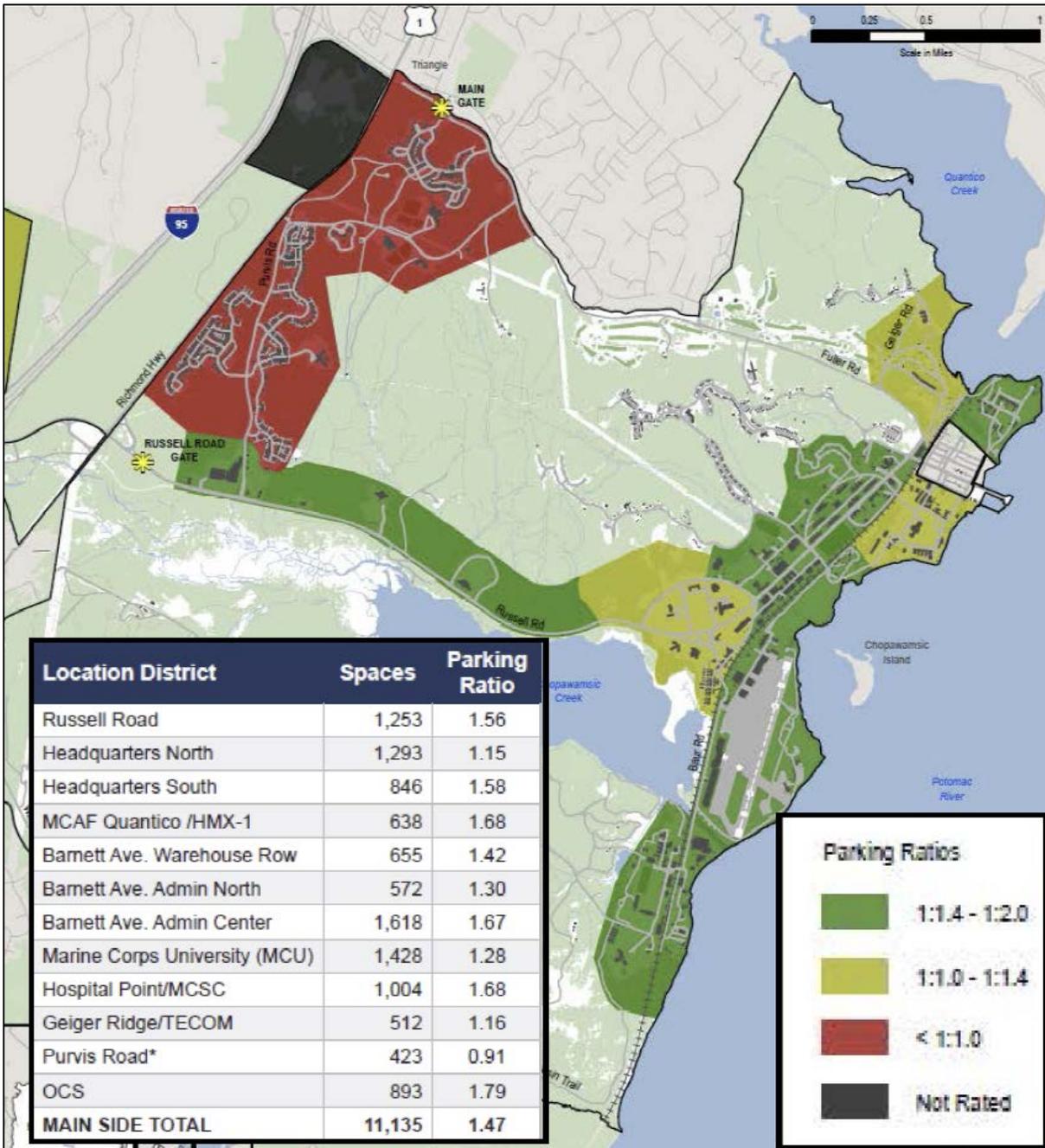


Figure 9: Existing Planning District Parking Ratios – Main Side

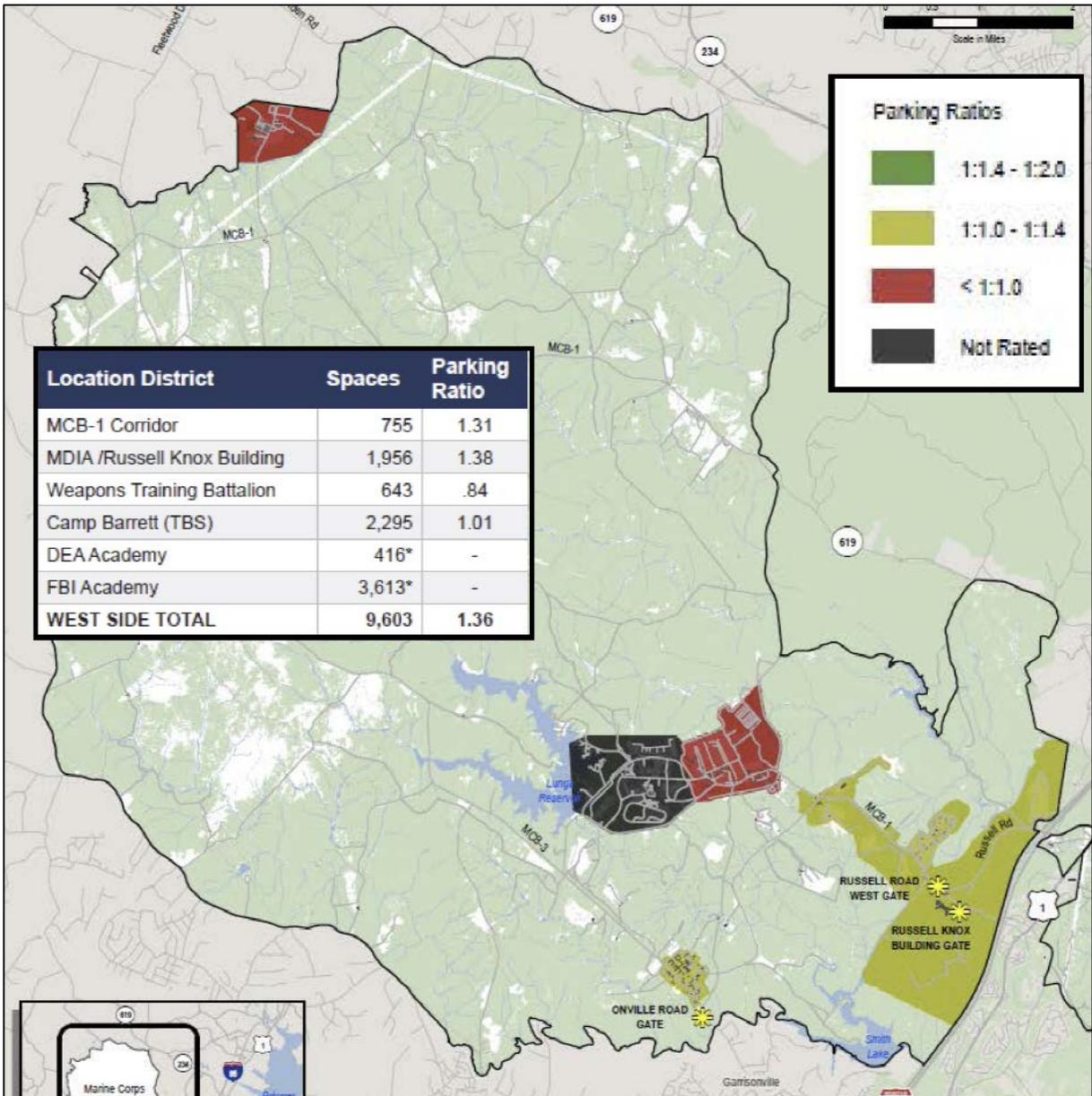


Figure 10: Existing Planning District Parking Ratios – West Side

Compared to the 2002 MCBQ Master Plan however, which set an employee ratio goal of 1:1.10, the installation has made a lot of progress in moving closer to the NCPC goal during the past 13 years. Four out of nine of the planning districts within the Prince William County/NCR portion of the installation (under NCPC's jurisdiction) are shown to either be close to or in compliance with the 1:1.5-2.0 parking ratio goal. West Side has an existing parking ratio of 1:1.36.

MCB Quantico is served by a number of external transit systems including: Virginia Railway Express (VRE), Amtrak, and Potomac and Rappahannock Transportation Commission (PRTC) bus service. Internally, MCQB operates a two-route shuttle system, and there are several private taxis that are

allowed to operate on-call, business-related, travel service between on-installation locations. MCBQ also operates a fairly large fleet of government-owned vehicles, which can be reserved for off-site business. The following graphic shows the MCBQ shuttle system (red and green routes) and the PRTC route (aqua), which operates between the Woodbridge and Quantico VRE stations. There is no transit service to West Side at this time.

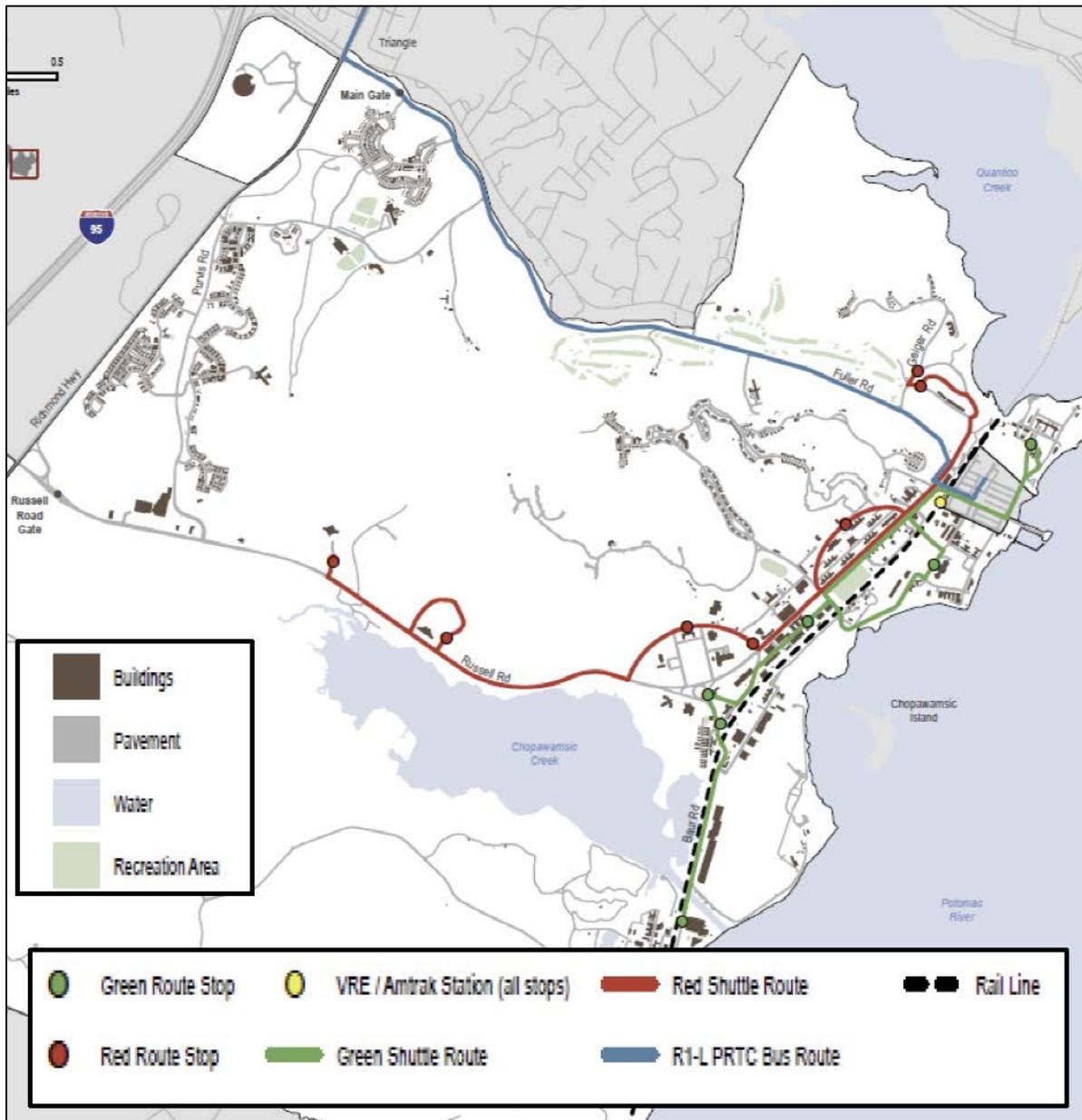


Figure 11: Existing Mass Transit System – Main Side

The MCB Quantico TMP shows a large part of the installation's employees commuting by driving alone at 83%, with 14% commuting by carpool/vanpool. Very few employees currently utilize transit, VRE, walk, or bike to work.

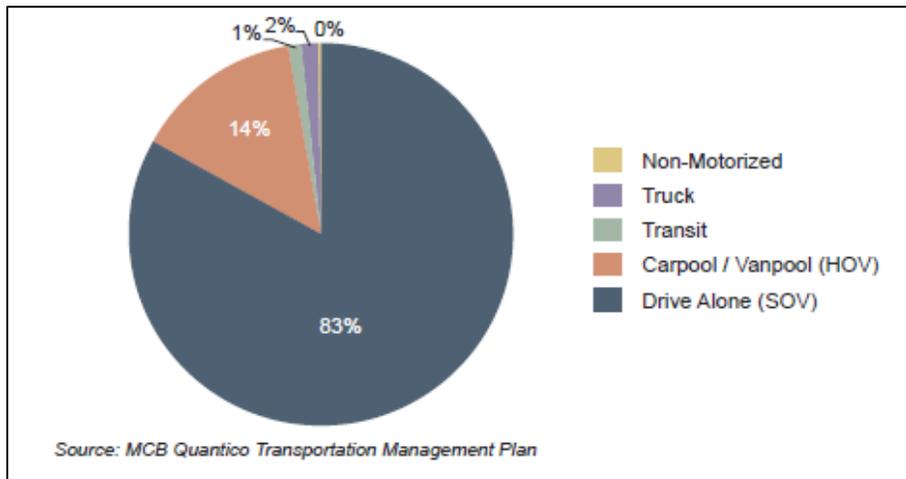


Figure 12: Existing Employee Commuter Travel Mode Splits

A majority of installation employees travel to work from destinations to the south (65%), which are not as well served by transit as locations closer in to Washington, D.C.

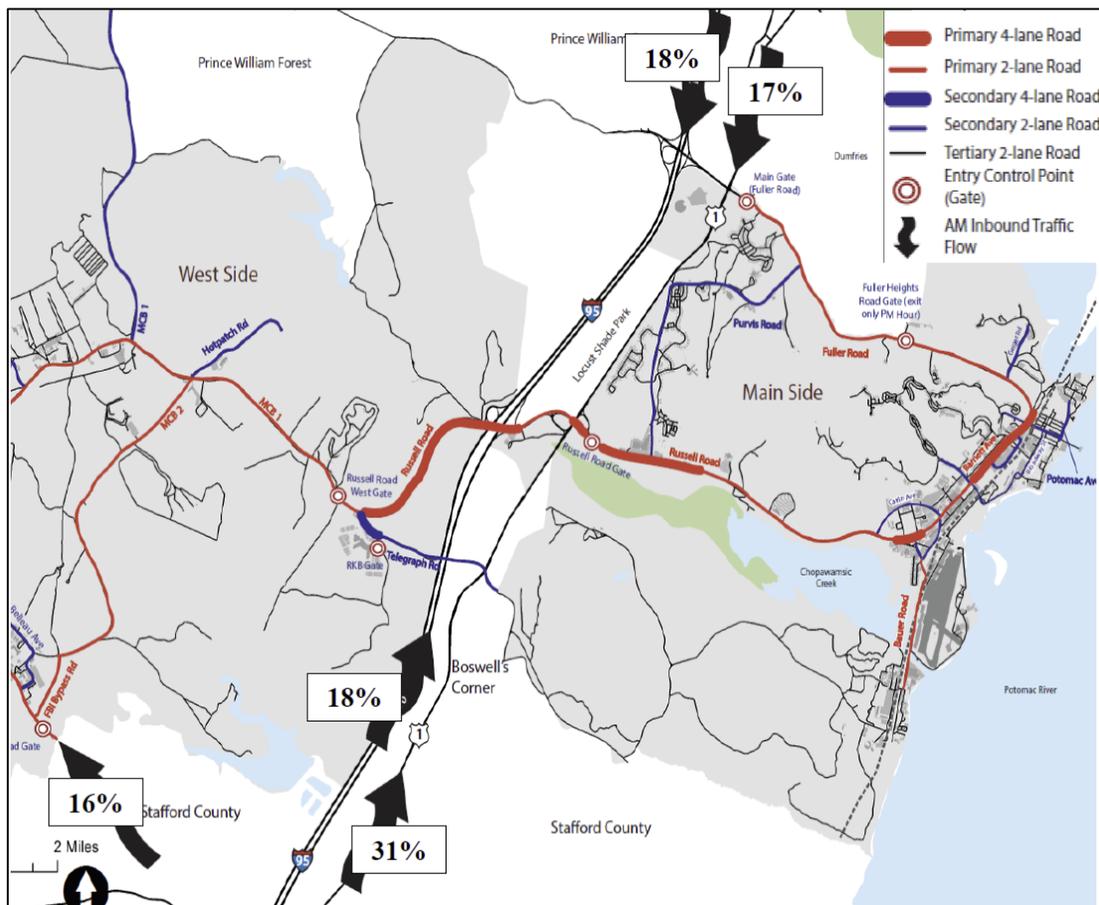


Figure 13: Existing Employee Commuter Morning Direction of Approaches

The following graphic shows a fairly extensive internal network of off-road bicycle trails (green) and one bicycle lane along Fuller Road (blue) on Main Side. The rest of the roadways are under signed (purple) or unsigned (black) “share the road” usage conditions.

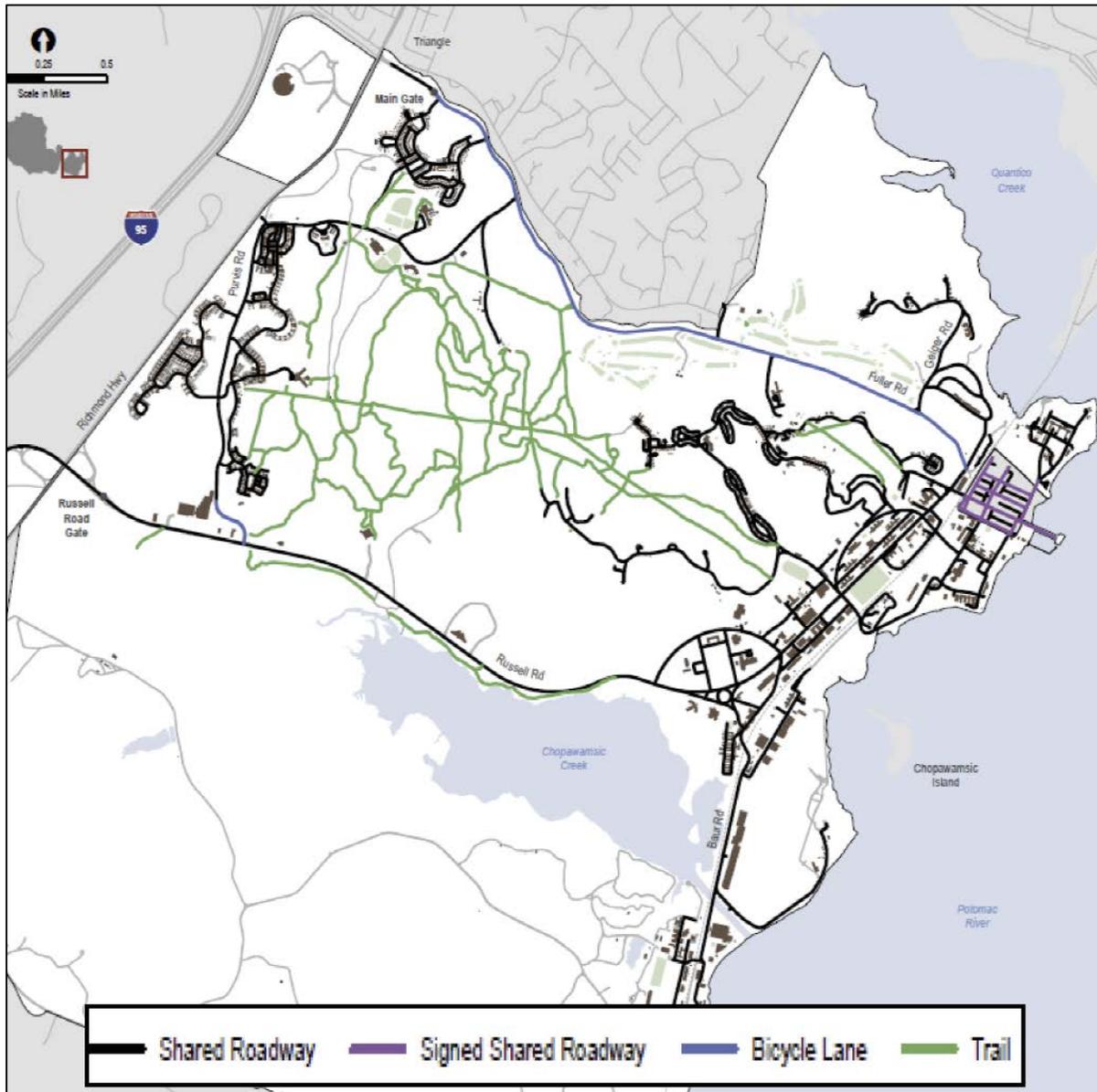


Figure 14: Existing Bicycle Network – Main Side

There are currently no defined bicycle facilities shown on West Side, other than the primary and secondary roadways, which operate under an unsigned “share the road” policy.

Similar to the existing bicycle network, Main Side has an extensive network of trails throughout its interior forested area (green) and sidewalks (black) within its residential (along Purvis Road) and

commercial areas along Barnett Avenue. Some of West Side's roadways are used as training and physical fitness test routes.

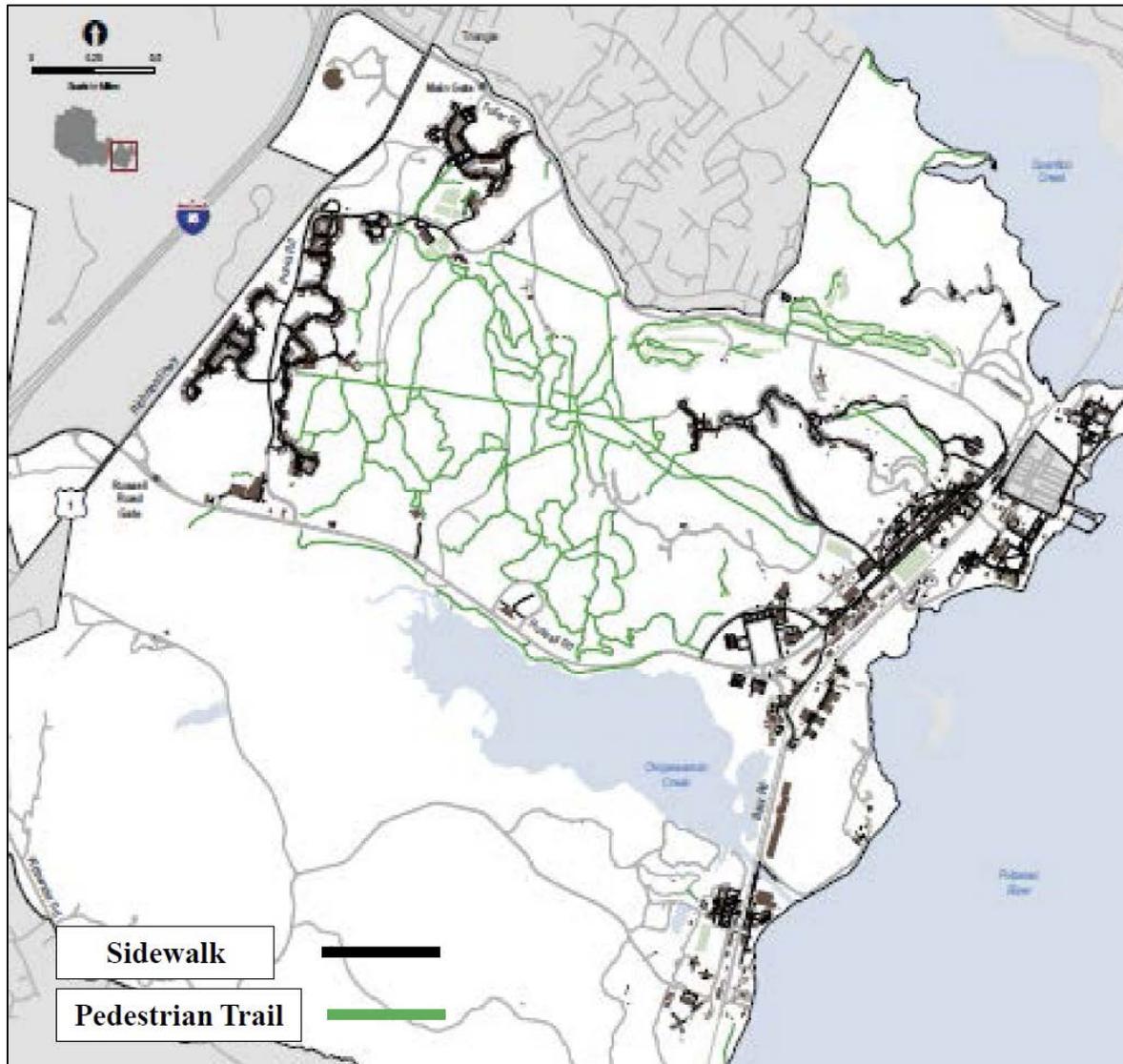


Figure 15: Existing Pedestrian Network – Main Side

The next two figures show the installation's existing cultural resources, which include multiple Civil War encampment sites, many small cemeteries (especially on West Side), and a historic district (light yellow). The historic district was included on the National Register of Historic Places (NRHP) in 2001 with 239 contributing buildings, sites, and objects and 188 non-contributing buildings, structures, and sites.

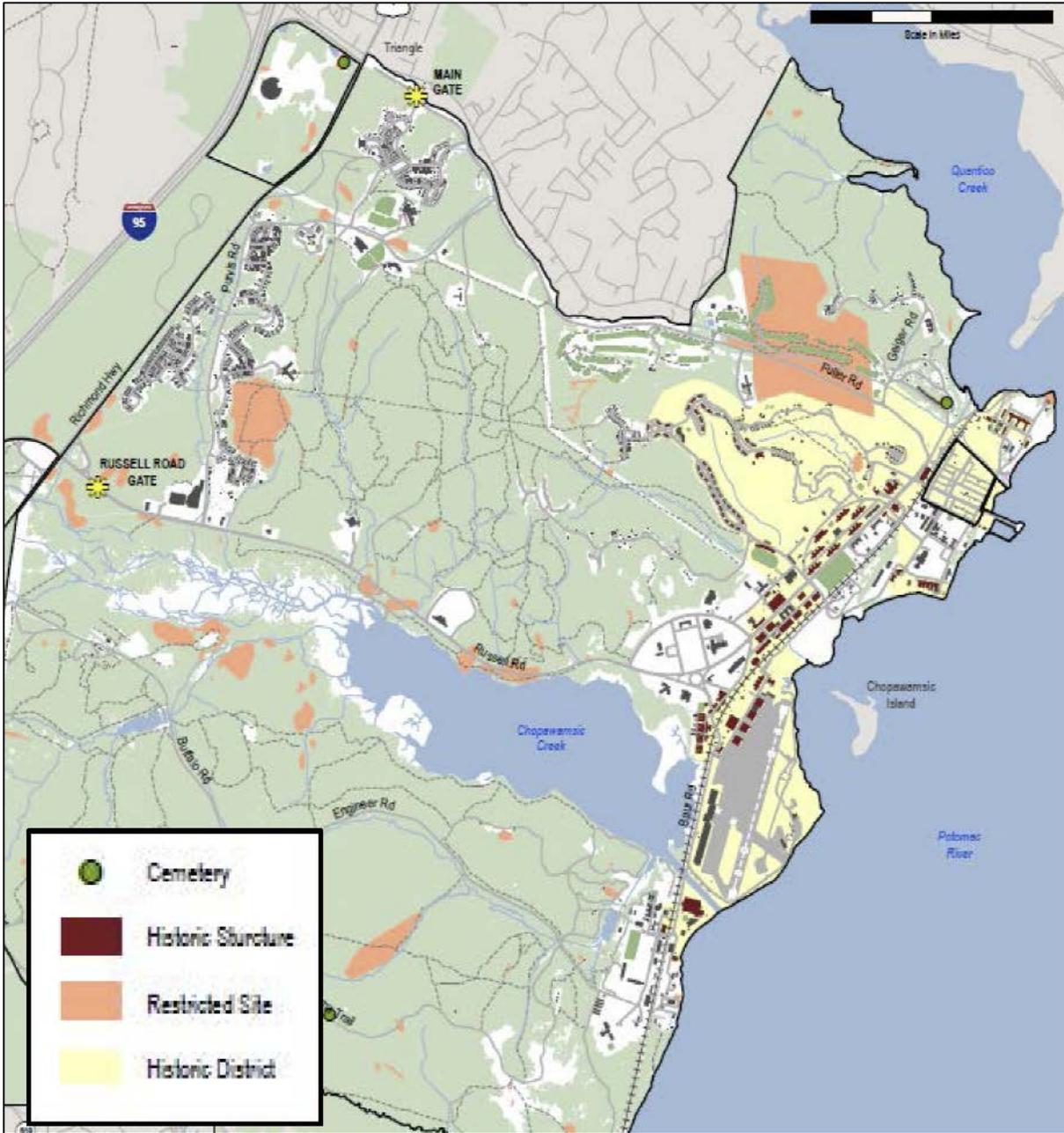


Figure 16: Existing Cultural Resources – Main Side

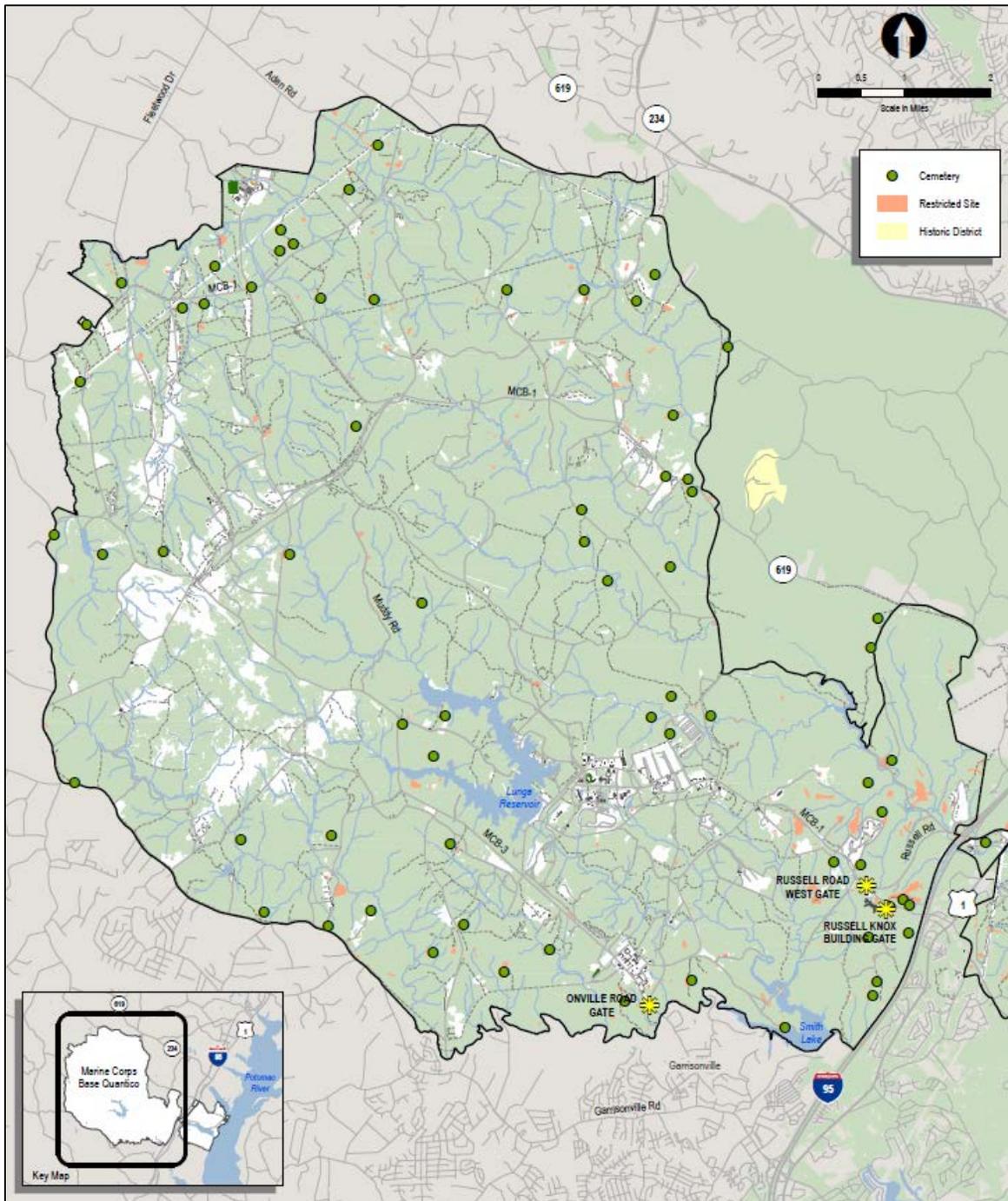


Figure 17: Existing Cultural Resources – West Side

The Master Plan identifies numerous existing natural, operational, wildlife, and cultural constraints that are avoided in future development plans as much as possible. Figures 18 and 19 are combined constraints maps for Main Side and West Side respectively.

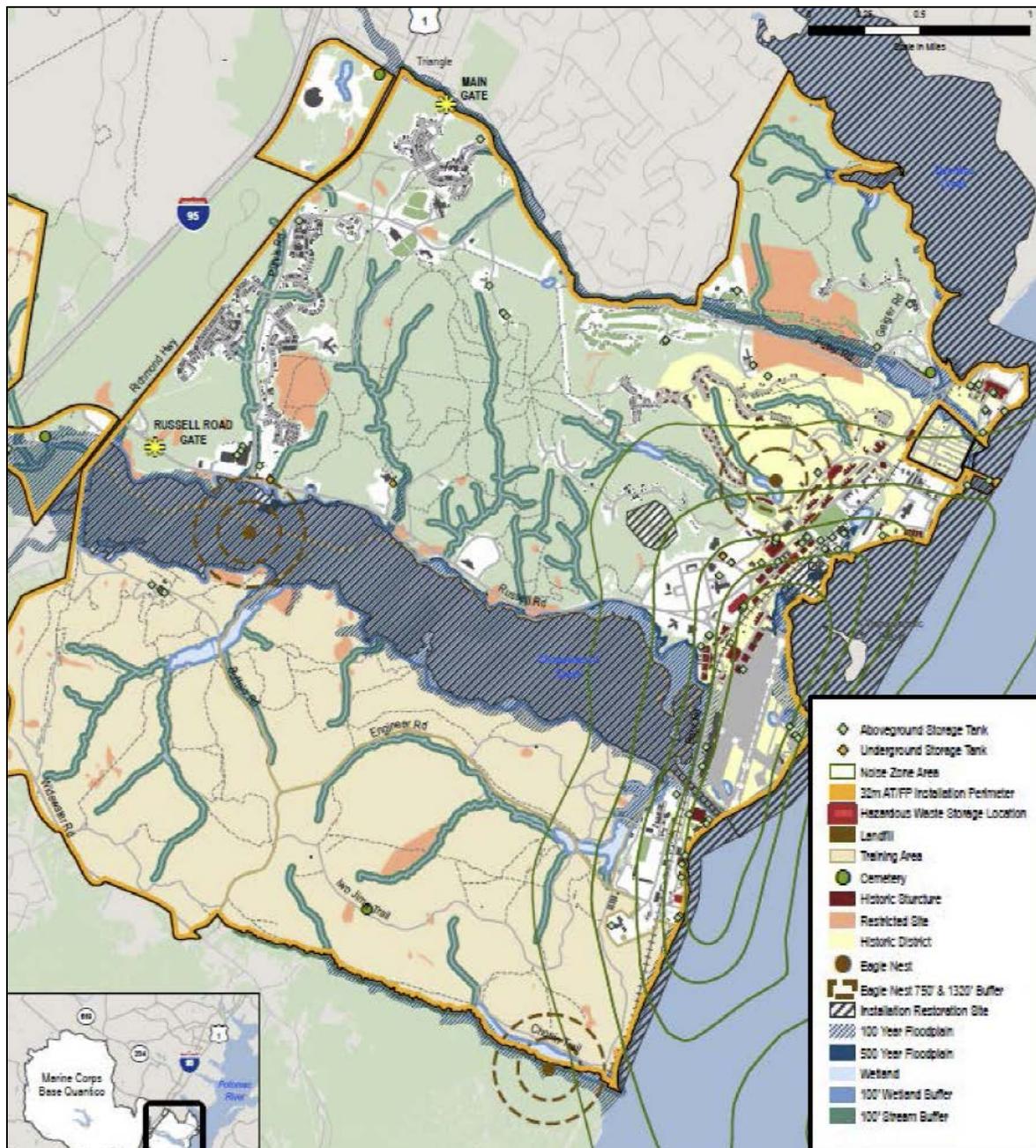


Figure 18: Existing Combined Constraints – Main Side

The southern half of Main Side (shown in beige), south of Chopawamsic Creek, is designated as “training area”, which restricts future development outside of the Prince William/NCR area of MCBQ to the Officer Candidate School district. Most of northern Main Side is identified as open space, wetlands, stream buffer areas, restricted areas, or within the historic district, which limits future

development to clusters within the Russell Road, Barnett Avenue, Headquarters, Hospital Point, and Chamberlain Village districts.



Figure 19: Existing Combined Constraints – West Side

Most of the West Side land is restricted to future development by training ranges, stream buffer areas, endangered animals, and wetlands, which will focus future development into existing development enclaves operated by various federal tenants.

### Proposed Draft Master Plan

Based on 2012 UFC master planning policies, the MCBQ Master Plan incorporates the premise that development should occur within the Main Side nodes - within appropriate land use areas - before expanding to any new “green field” areas on the West Side. Densification on the Main Side is easier and less expensive in the long term, primarily because most of the infrastructure currently exists to support increased development and density. Existing infrastructure expansion is also less expensive than adding new infrastructure to support future growth where no infrastructure currently exists.

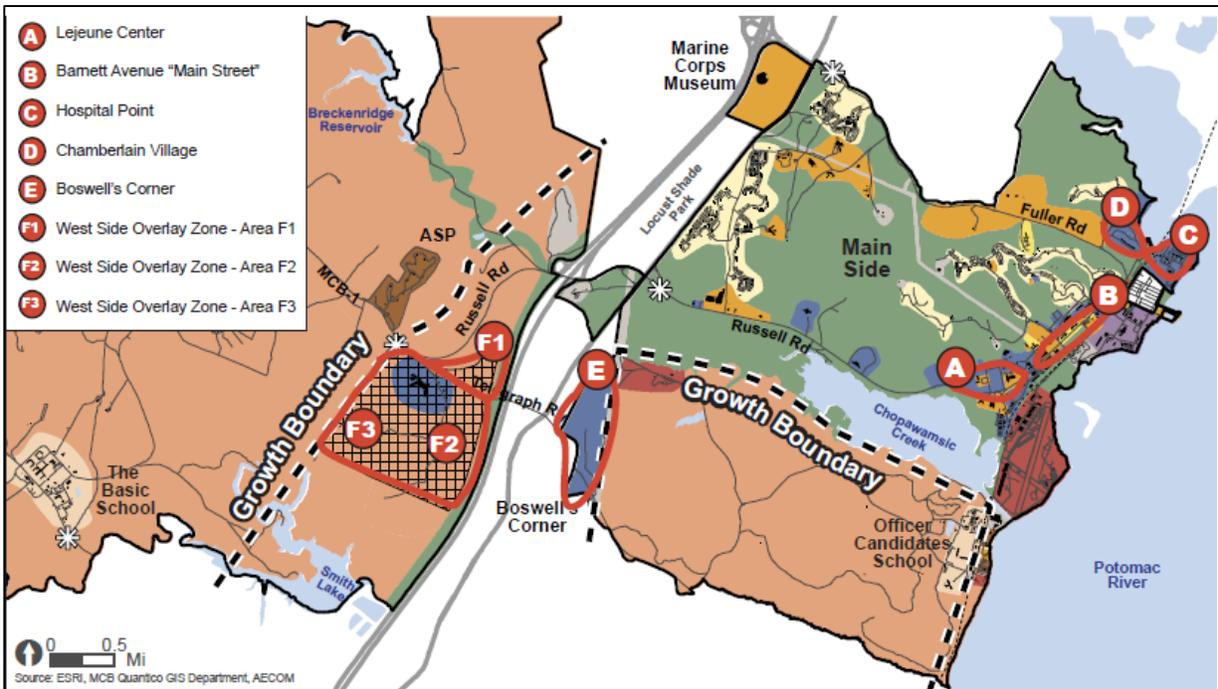


Figure 20: Proposed Land Use and Planning Nodes Plan

The Future Land Use Plan identifies specific areas for continued development, redevelopment and new development. These “nodes,” which are labeled in the previous graphic as A-E, consist of existing centers or campuses, and include new “hubs” or redevelopment areas for land use expansion. The development nodes guide the Master Plan’s more specific planning district plans, which were refined as part of the master planning process, with specific projects and development actions. These projects will be described and addressed in later sections.

The area to the west of I-95 and south of Chopawamsic Creek are defined by growth boundaries, which will discourage future development that is not directly related or compatible with “training” and “range” activities. The area between the growth boundary and I-95 is designated as a Special Exception Overlay Zone, with approximately 625 acres, for use as the last major potential development area at MCB Quantico. Any other development that is not compatible with training and ranges to occur in these areas will require special advance approvals by MCBQ leadership.

The following graphics show the future Long-Range (2035) land uses for Main Side and West Side, with key changes highlighted. There are only minor changes between the existing and Short-Range (2018) land use graphics, so these are omitted from the report.

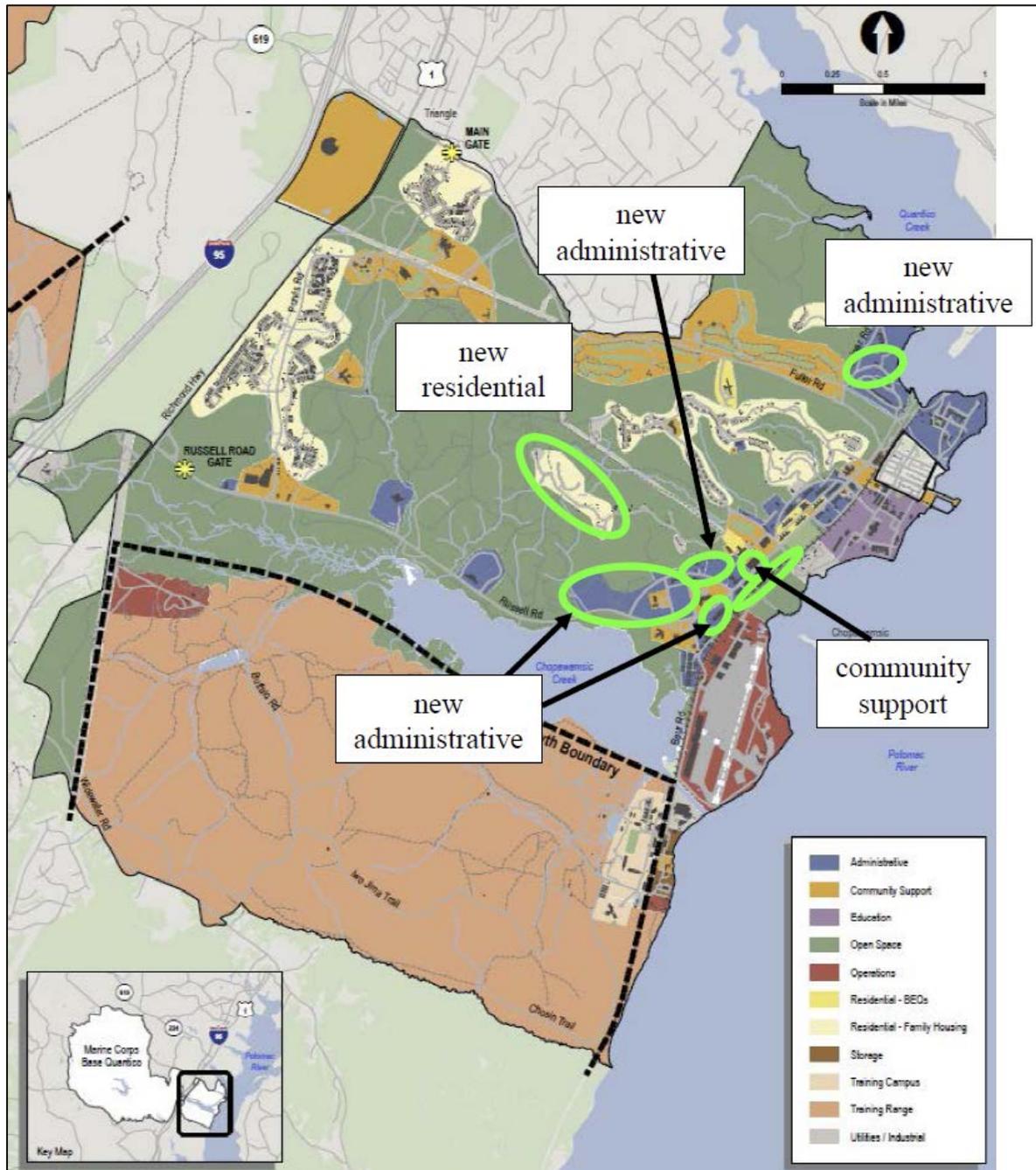


Figure 21: Long-Range (2035) Land Uses – Main Side

As shown in the figures, most of the changes occur on Main Side, with the establishment of a growth boundary; increase in Administrative space within the Headquarters, Chamberlain Village, and

Barnett Avenue districts; additional Residential – Family Housing; and the removal and relocation of Utility and Storage space from Main Side to West Side. In addition, the Boswell’s Corner district (outside of NCPC’s review jurisdiction) is expanded with Operations space. Very little is expected to change on West Side, other than the addition of several Storage use-related clusters and the establishment of a growth boundary parallel to I-95 to steer all future development close to the I-95/Route 1 corridor.

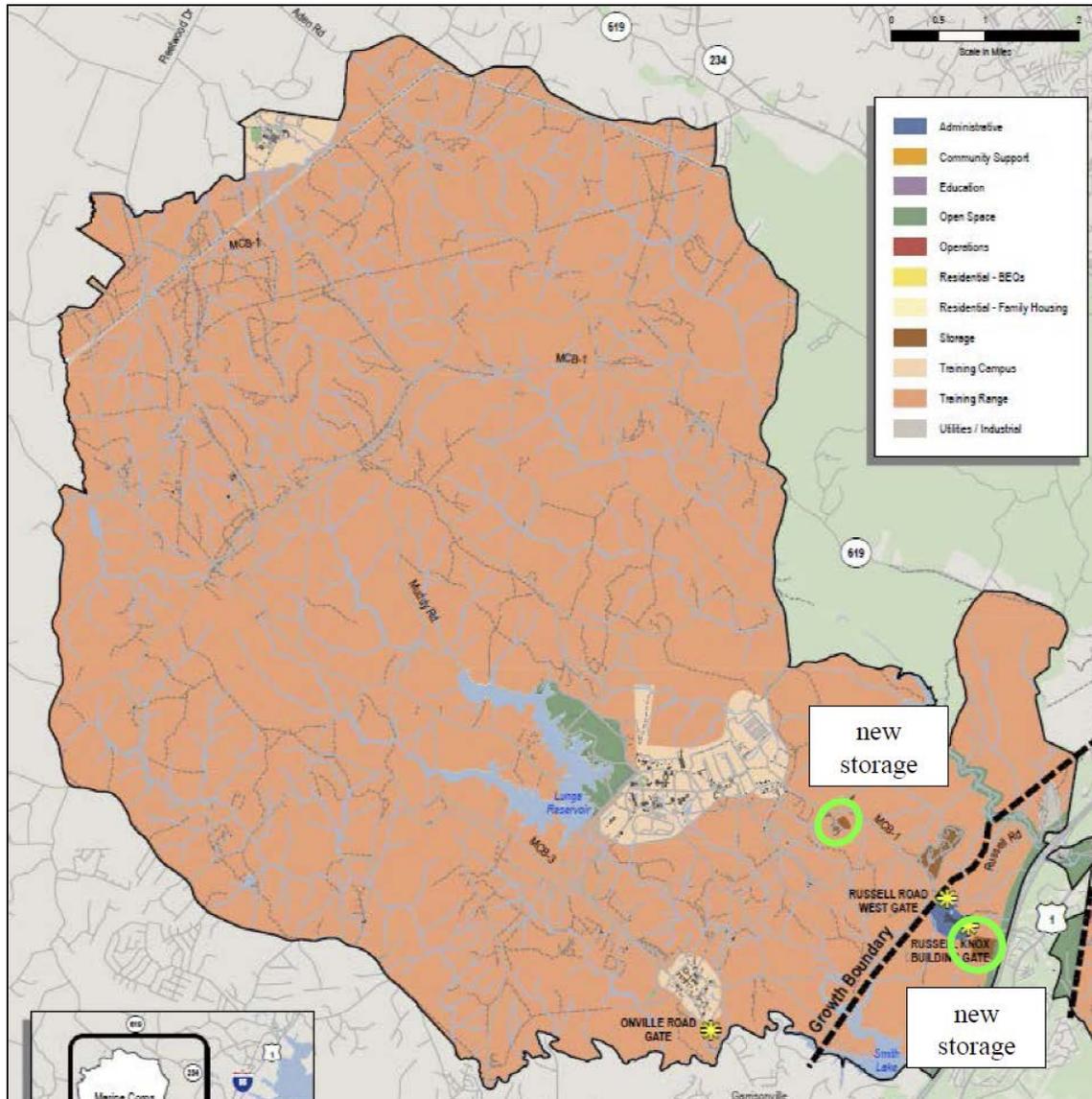


Figure 22: Long-Range (2035) Land Uses – West Side

The following summary table shows 20-year increases in Administrative and Residential – Family Housing uses, and decreases in Community Support, Open Space, Storage, and Utilities/Industrial uses on Main Side. West Side will convert 32 acres of Training Range land into Storage use during the next 20 years as this function is consolidated and gradually relocated from Main Side. Land used

for Utility/Industrial, Storage, and Open Space today, will be converted into land used for Administrative facilities in the long-term.

<b>Main Side</b>				
<b>Land Use Category</b>	<b>Existing Acres</b>	<b>Short Range Acres</b>	<b>Long Range Acres</b>	<b>Long Range Change</b>
Administrative	241	268	329	+61
Community Support	616	598	583	-15
Education	68	74	74	0
Open Space	2,905	2,878	2,831	-47
Operations	250	283	283	0
Residential - Barracks	29	29	29	0
Residential - Family Housing	519	519	561	+42
Storage	46	40	19	-21
Training Campus	75	80	84	4
Training Range	2,586	2,553	2,553	0
Utilities/Industrial	159	173	149	-24

<b>West Side</b>				
<b>Land Use Category</b>	<b>Existing Acres</b>	<b>Short Range Acres</b>	<b>Long Range Acres</b>	<b>Long Range Change</b>
Administrative	115	87	87	0
Community Support	1	6	6	0
Education	0	0	0	0
Open Space	455	649	649	0
Operations	0	0	0	0
Residential - Barracks	0	0	0	0
Residential - Family Housing	0	0	0	0
Storage	101	101	133	+32
Training Campus	1,606	1,606	1,606	0
Training Range	47,541	47,371	47,339	-32
Utilities/Industrial	215	215	215	0

Table 2: Existing and Future Land Use Area Comparison

The following graphics show various planned Short-Range (by 2018) vehicular roadway improvements, both on Main Side and West Side, including:

1. Adding inspection lanes to Fuller Road/Main Gate access control point facility;
2. Redesigning Russell Road/Route 1 interchange and widening Russell Road;
3. Widening Fuller Road from Main Gate to Barnett Avenue;
4. Widening Russell Road between Marine Credit Union and Dunlap Circle;
5. Constructing a traffic circle at the Martin Street/Broadway Street intersection/entrance to MCU;
6. Constructing a roundabout at the main West Side entry intersection;

7. Installing an eastbound left-turn lane and a northbound left-turn on Barnett Avenue and Potomac Avenue
8. Constructing a new gate at the entrance to the Marine Corps Air Facility.

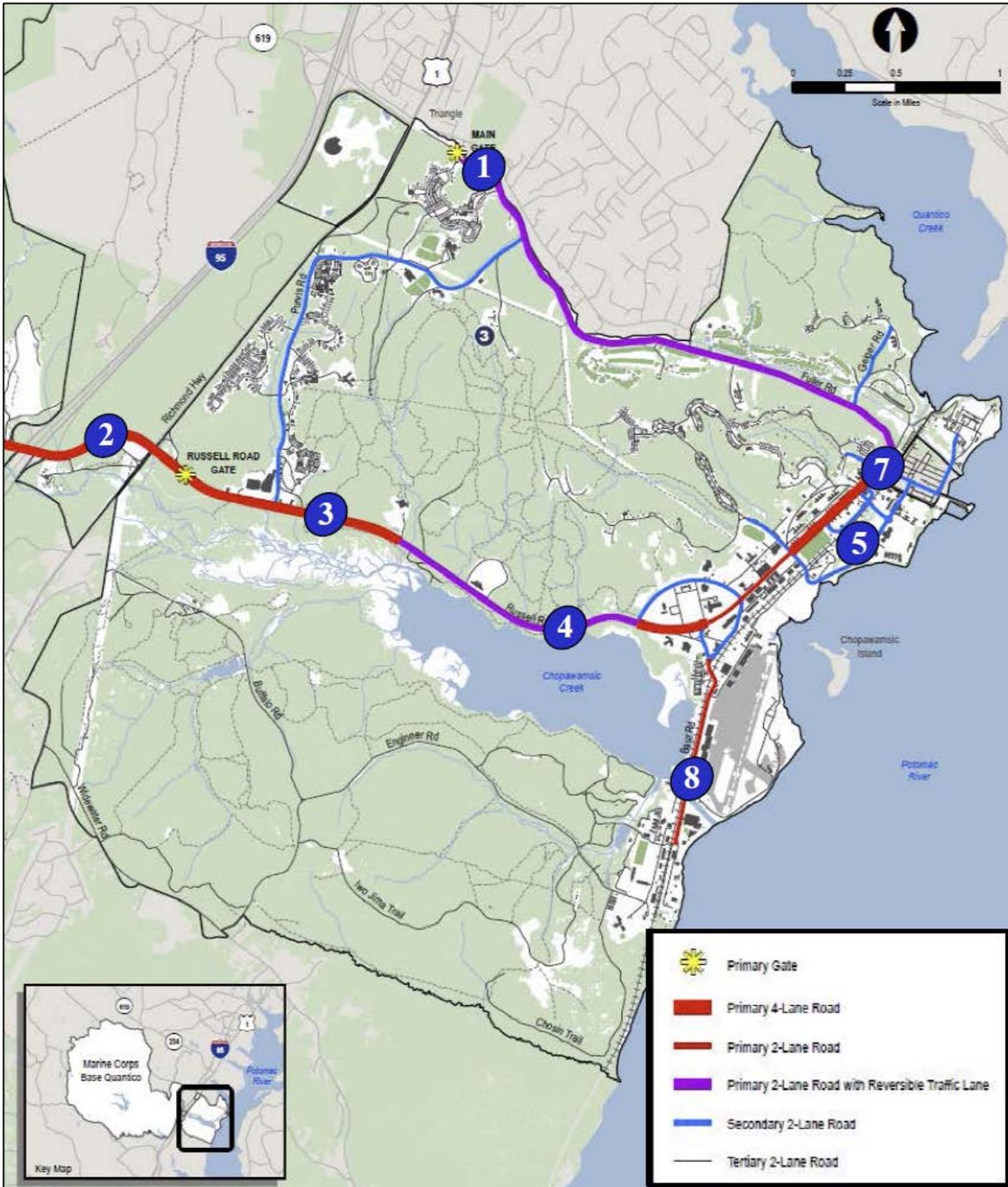


Figure 23: Planned Short-Range Roadway Improvements – Main Side

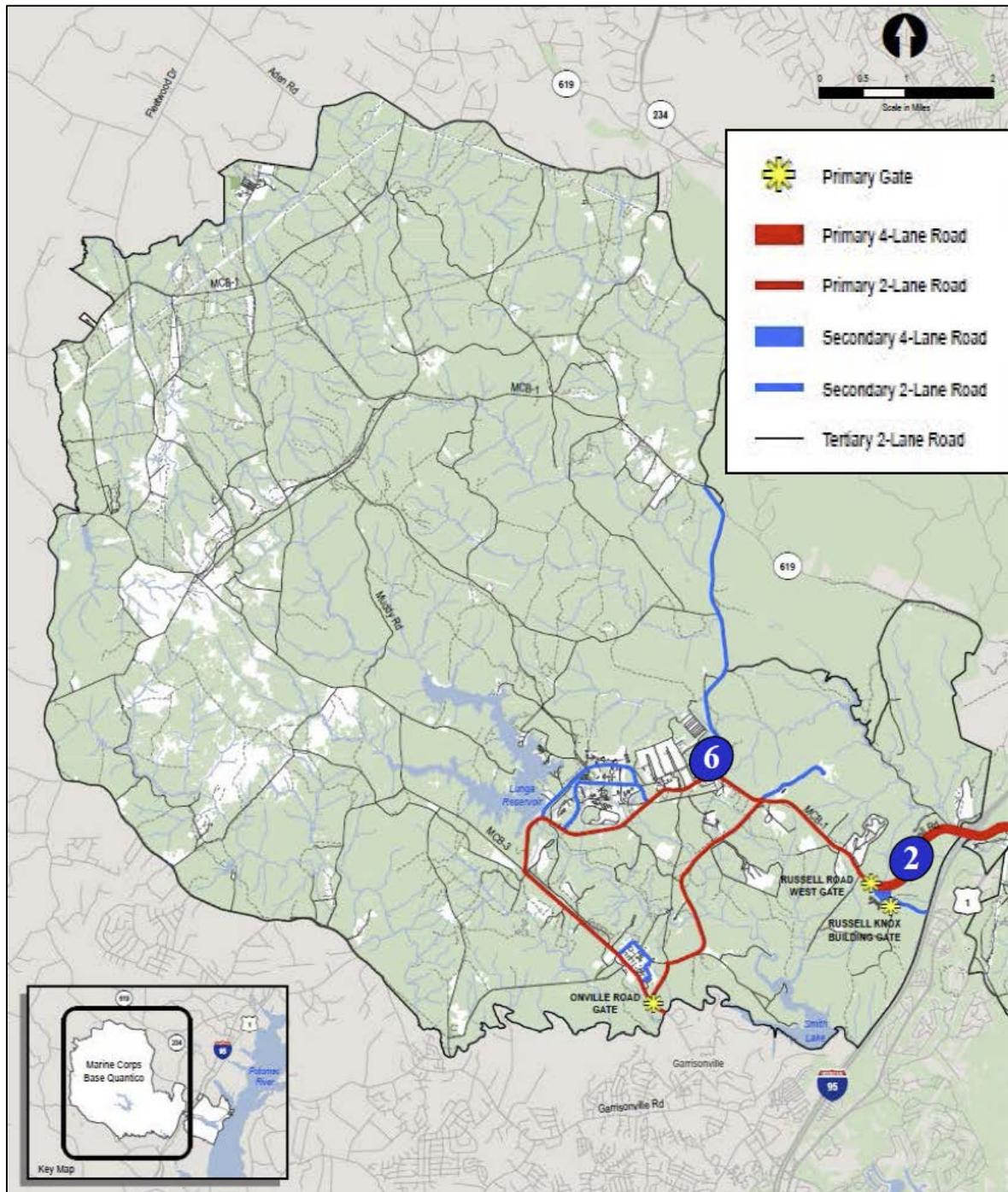


Figure 24: Planned Short-Range Roadway Improvements – West Side

Short-term projects # 1-4 are designed to mitigate current morning and evening “rush” period vehicular traffic queues along Russell and Fuller Roads by increasing carrying capacity along these roadways, between I-95/Route 1 and Barnett Avenue (Main Side “downtown”) and West Side destinations. The traffic circle and roundabout projects (# 5 and 6) are intended to serve as “place-

making" elements on Main Side; project # 7 is intended to improve driver safety; and project # 8 (new gate) is intended to increase security for the MCAF district.

The following graphics show various planned long-range (by 2035) vehicular roadway improvements, both on Main Side and West Side, including:

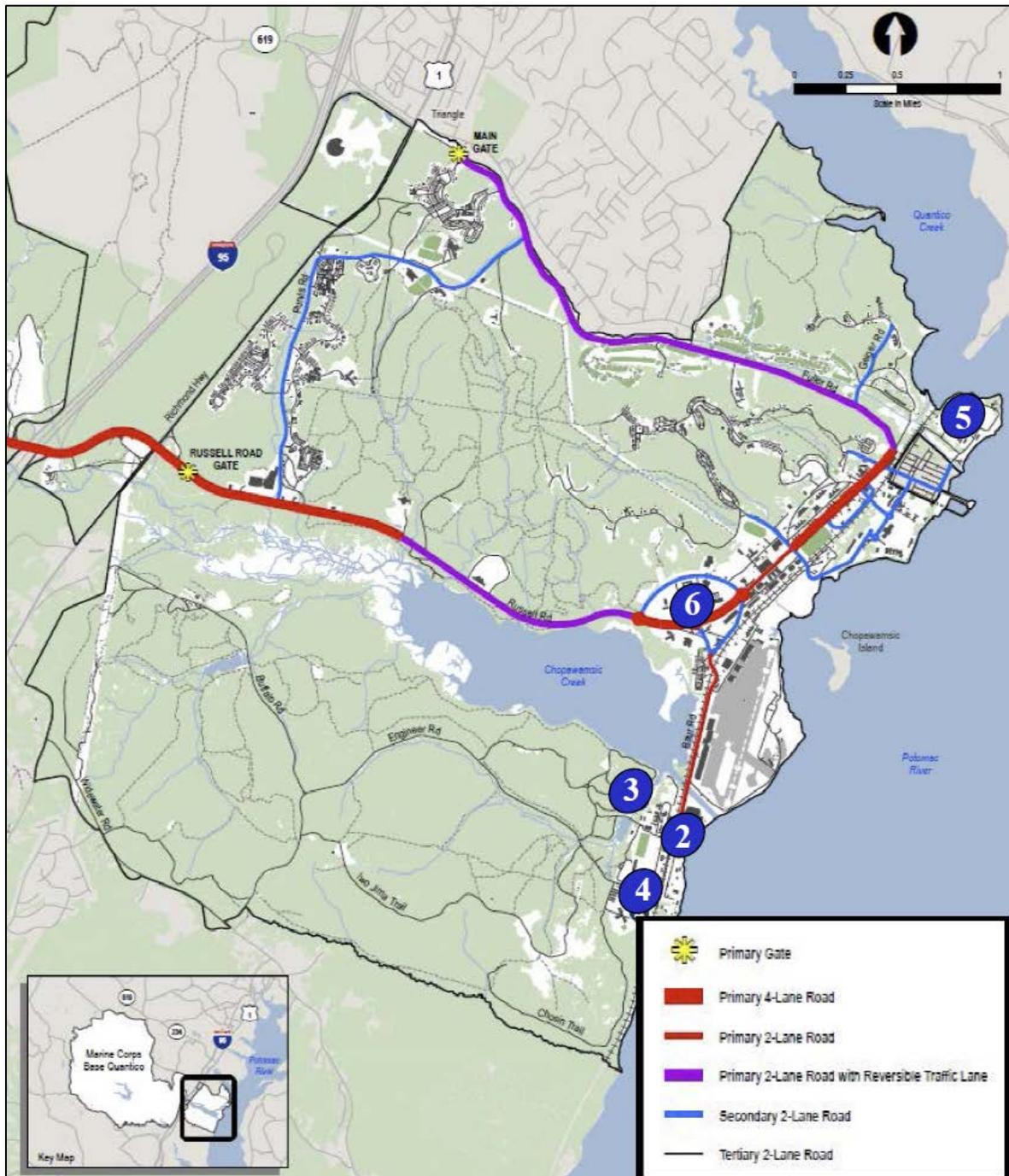


Figure 25: Planned Long-Range Roadway Improvements – Main Side

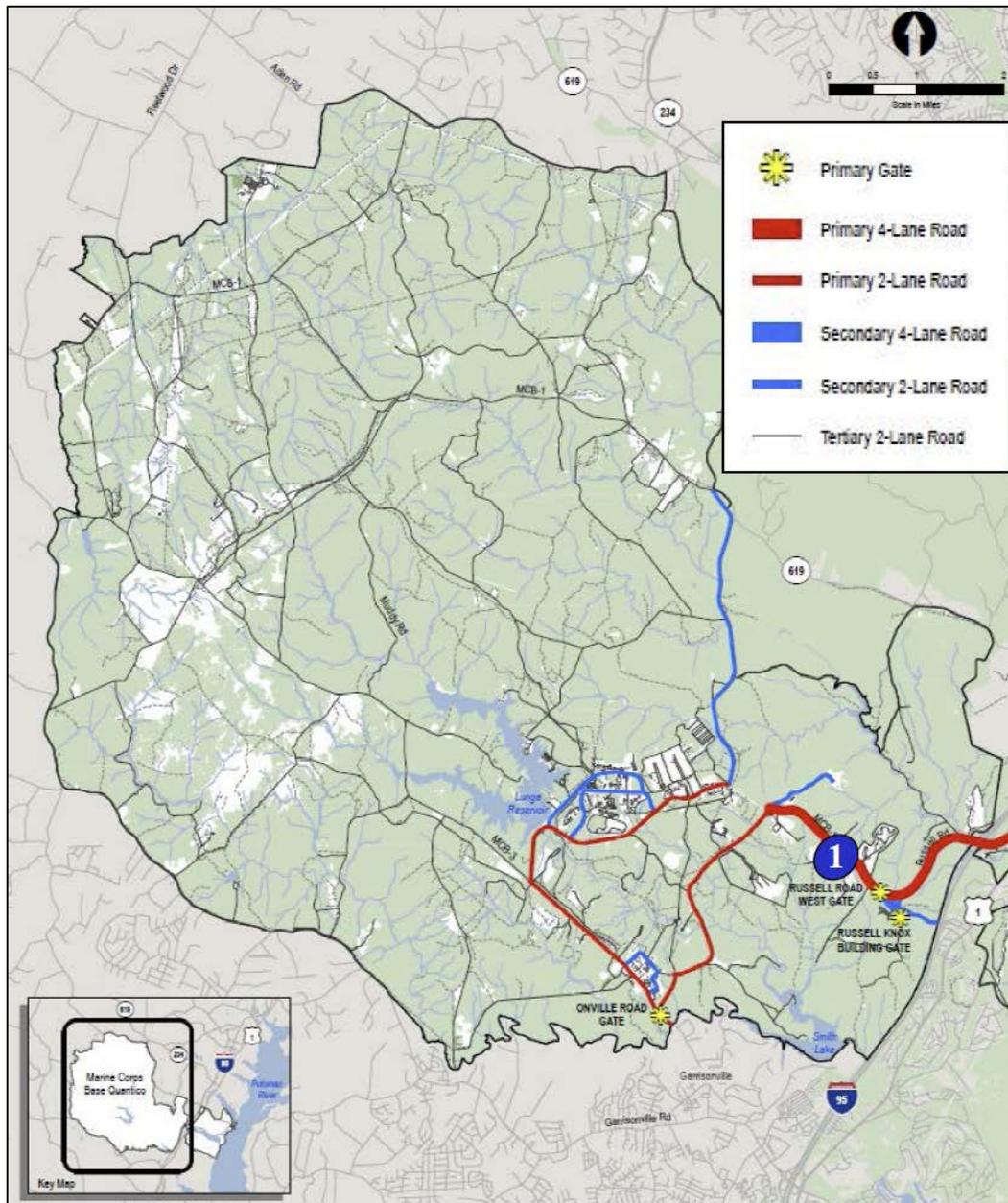


Figure 26: Planned Long-Range Roadway Improvements – West Side

1. Widening main West Side entry-road to four lanes;
2. Realigning the Officer Candidate School entryway to create a standard four-way intersection;
3. Realigning Timmerman Avenue (within OCS Campus) to connect to Elrod Road;
4. Constructing a new road (within OCS Camps) to connect Elrod Road with Chosin Trail;
5. Realigning Lester Street, Halyburton Street, and William Street (Hospital Point district);

6. Repositioning Dunlop Circle; widening Barnett Avenue; realigning Thombs Street; and adding traffic circles at the Barnett Avenue/Caitlin Avenue and Barnett Avenue/Thombs Street intersections.

The long-range improvements are intended to increase vehicular entry capacity into West Side (project # 1); simply the roadway network and improve accessibility within the OCS district (projects # 2-4); improve accessibility throughout the Hospital Point district (project # 5); and simply the roadway network within the Headquarters district, with two “place-making” traffic circles (project # 6).

The following table shows the planned Short-Range (2018) parking ratios for each of the planning districts, Main Side and West Side, and overall MCBQ installation. By increasing its population in the near-term by 2,500 people, the installation has projected improvements in virtually all of its planning district ratios, from a 1:1.47 for Main Side today, to a 1:1.52 ratio by 2018. The West Side ratio will improve from 1:1.16 to a 1:1.30 by 2018. Overall, the installation will be close to NCPC’s Comprehensive Plan goal with a 1:1.44 in the near-term. In the Long-Range (2035), the Master Plan commits to maintaining an overall 1:1.5 minimum parking ratio for the base, with the goal adjusted up to a 1:2.0 should future direct access to I-95 Express lanes be provided.

Employment Districts	2013			2018			NCPC Rec. Parking Ratio
	Population	Parking Spaces	Employee Parking Ratio	Population	Parking Spaces	Employee Parking Ratio	
Main Side							
1) Russell Road	1,957	1,253	1.56	2,057	1,253	1.64	1:2
2) Headquarters North	1,489	1,293	1.15	1,565	1,293	1.21	1:2
3) Headquarters South	1,337	846	1.58	1,405	846	1.66	1:2
4) MCAF Quantico/HMX-1	1,072	638	1.68	1,127	638	1.77	1:2
5) Barnett Ave. Warehouse Row	929	655	1.42	976	655	1.49	1:2
6) Barnett Ave. Admin North	741	572	1.30	779	572	1.36	1:2
7) Barnett Ave. Admin Center	2,700	1,618	1.67	2,838	1,618	1.75	1:2
8) Marine Corps University (MCU)*	1,830	1,428	1.28	2,246	2,138	1.41	1:2
9) Hospital Point/MCSC	1,690	1,004	1.68	1,776	1,004	1.77	1:2
10) Geiger Ridge/TECOM**	593	512	1.16	896	512	1.75	1:2
11) Purvis Road	383	423	0.91	403	423	0.95	1:2
12) OCS**	1,599	893	1.79	1,943	893	2.18	1:1.5
<b>MAIN SIDE TOTAL</b>	<b>16,320</b>	<b>11,135</b>	<b>1.47</b>	<b>18,011</b>	<b>11,845</b>	<b>1.52</b>	
West Side							
13) MCB 1 Corridor**	3,697	2,711	1.36	4,336	2,711	1.60	1:1.5
14) WTBn	541	643	0.84	569	643	0.88	1:1.5
15) Camp Barrett (TBS)	2,322	2,295	1.01	2,440	2,295	1.06	1:1.5
<b>WEST SIDE TOTAL</b>	<b>6,560</b>	<b>5,649</b>	<b>1.16</b>	<b>7,345</b>	<b>5,649</b>	<b>1.30</b>	
Main Side + West Side							
<b>MCBQ TOTAL</b>	<b>22,880</b>	<b>16,784</b>	<b>1.36</b>	<b>25,356</b>	<b>17,494</b>	<b>1.44</b>	

Table 3: Proposed Short-Range (2018) Parking Ratios

The MCBQ Transportation Management Plan (TMP) presents a series of potential measures that could be implemented, if mission requirements allow, funding is available, and consensus can be built, which will help reduce Single Occupant Vehicle (SOV) travel amongst base employees. The

TMP states that a multi-faceted approach is required at MCB Quantico, due to the location of employee's residences, primary travel modes, and availability of multi-modal options. The following graphic shows a disbursed pattern of employee residences (broken down by zip code), with approximately 50% residing within the nearby counties of Prince William, Stafford, and Spotsylvania.

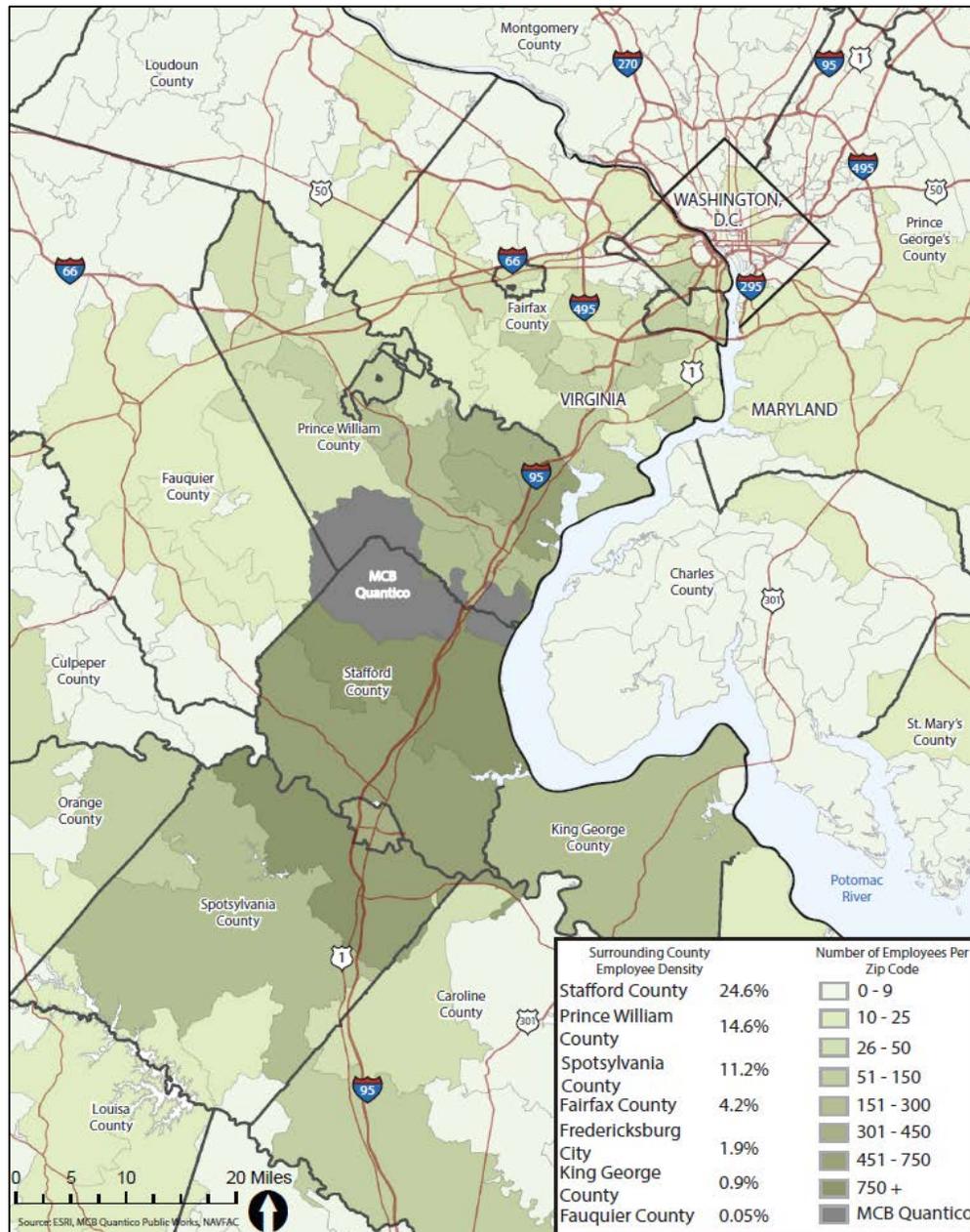


Figure 27: MCBQ Employee Zip Code Commuting Map

According to the TMP, incentivizing ridesharing will have the best change of creating a travel mode shift from SOV to carpools/vanpools due to the lack of multi-modal options available to

most employees commuting to the installation. The TMP presents a table (shown in the Appendix) that summarizes various strategies that were selected from the Naval District Washington RTV “Tool Box” based on survey responses, gate counts, vehicle classification counts, installation growth, previous studies, and other published literature. The strategies are divided into categories (Information, Telework/Employee Incentives, Land Use, Parking, Mobility Options, Alternative Fuel, and Regional Partnerships) and listed with specific implementation actions and projected implementation years.

Future bicycle circulation improvements are detailed in the MCB Quantico Bicycle and Pedestrian Mobility Plan, which categories future projects by type and within three different construction timeframes (Short Range – by 2018, Mid-Range – 2018-2025, and Long Range – 2026-2035). Several of the “command priority” improvements (planned for implementation by 2018) will create an internal Main Side bicycle loop through the installation of bicycle lanes, pavement markings, and “share the road” signs along Purvis Road, Fuller Road, Barnett Avenue, and Russell Road.

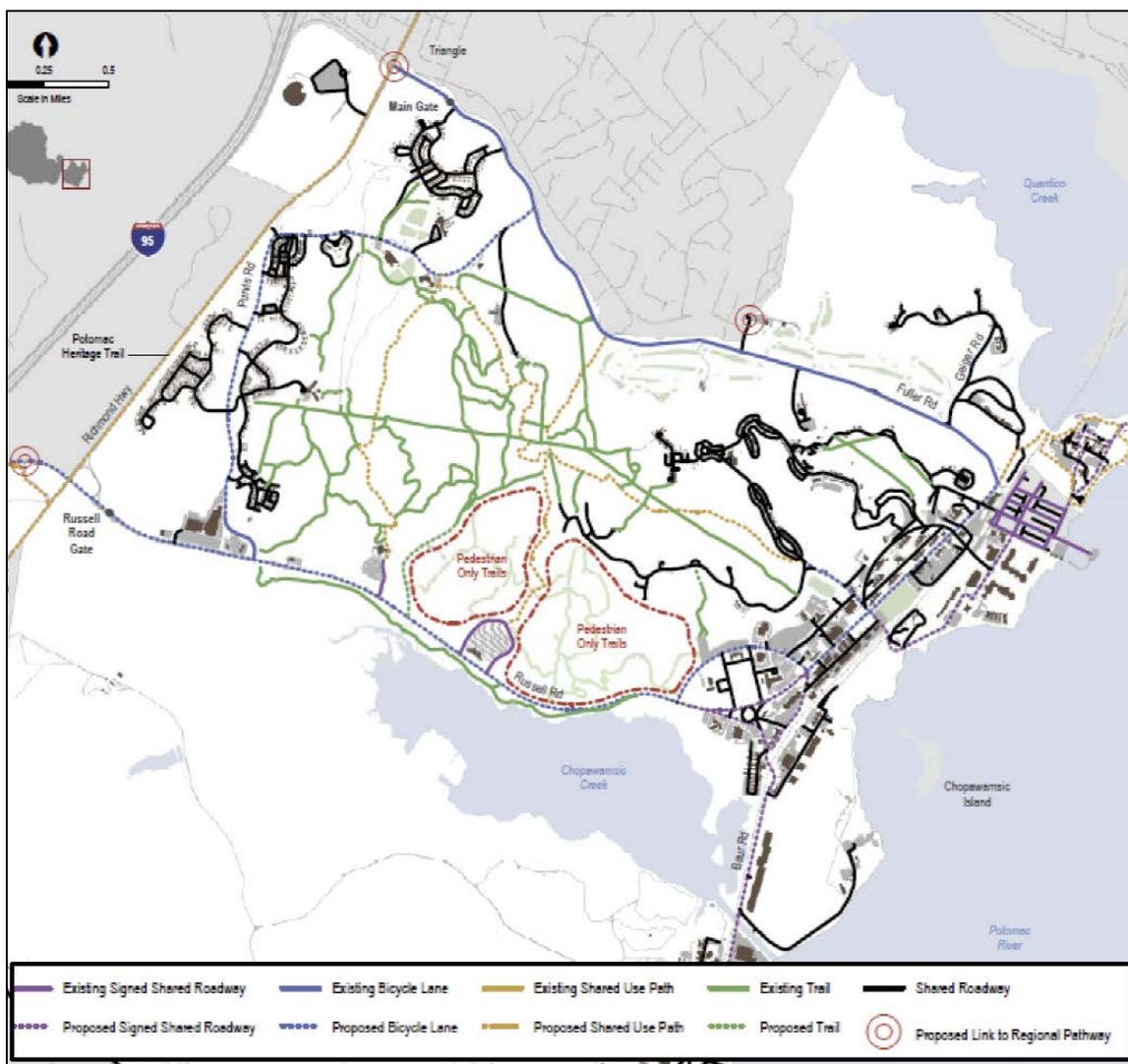


Figure 28: Planned Bicycle Facility Improvements – Main Side

As shown in the previous graphic, there are also plans to establish access points (concentric red circles) to the external regional bicycle system at four different Main Side locations to encourage more bicycle and pedestrian commuting. The following graphic shows existing and planned external bicycle trails and paths within the vicinity of MCB Quantico.

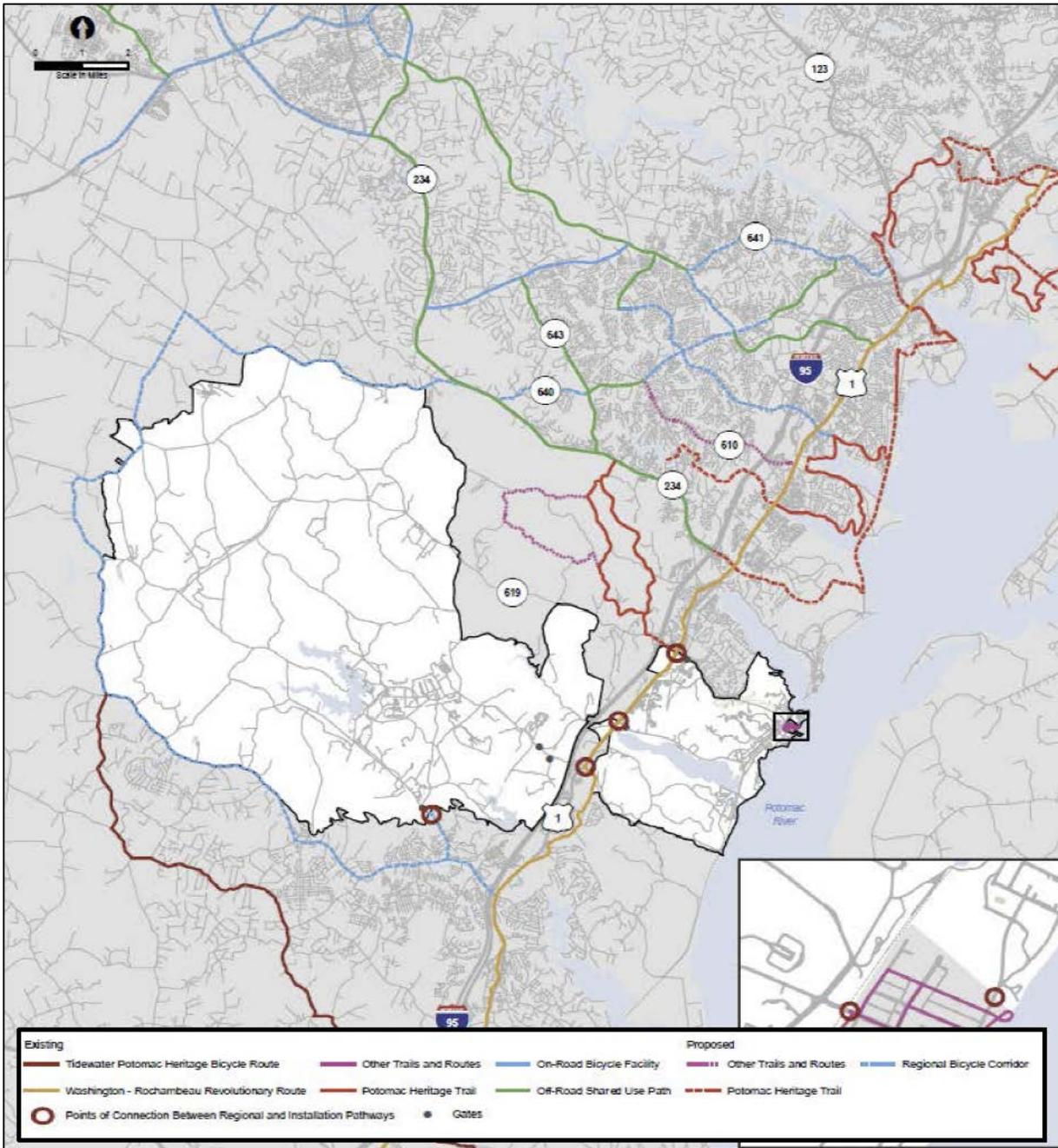


Figure 29: Nearby External Bicycle and Trail Network

The following graphic shows a number of planned access points, bicycle lanes, and “share the road” improvements (signs and pavement markings) on West Side. One improvement will establish a “share the road” facility from the more developed southern portion of West Side to Camp Upshur (not shown), which is located within the Prince William County portion of the installation.

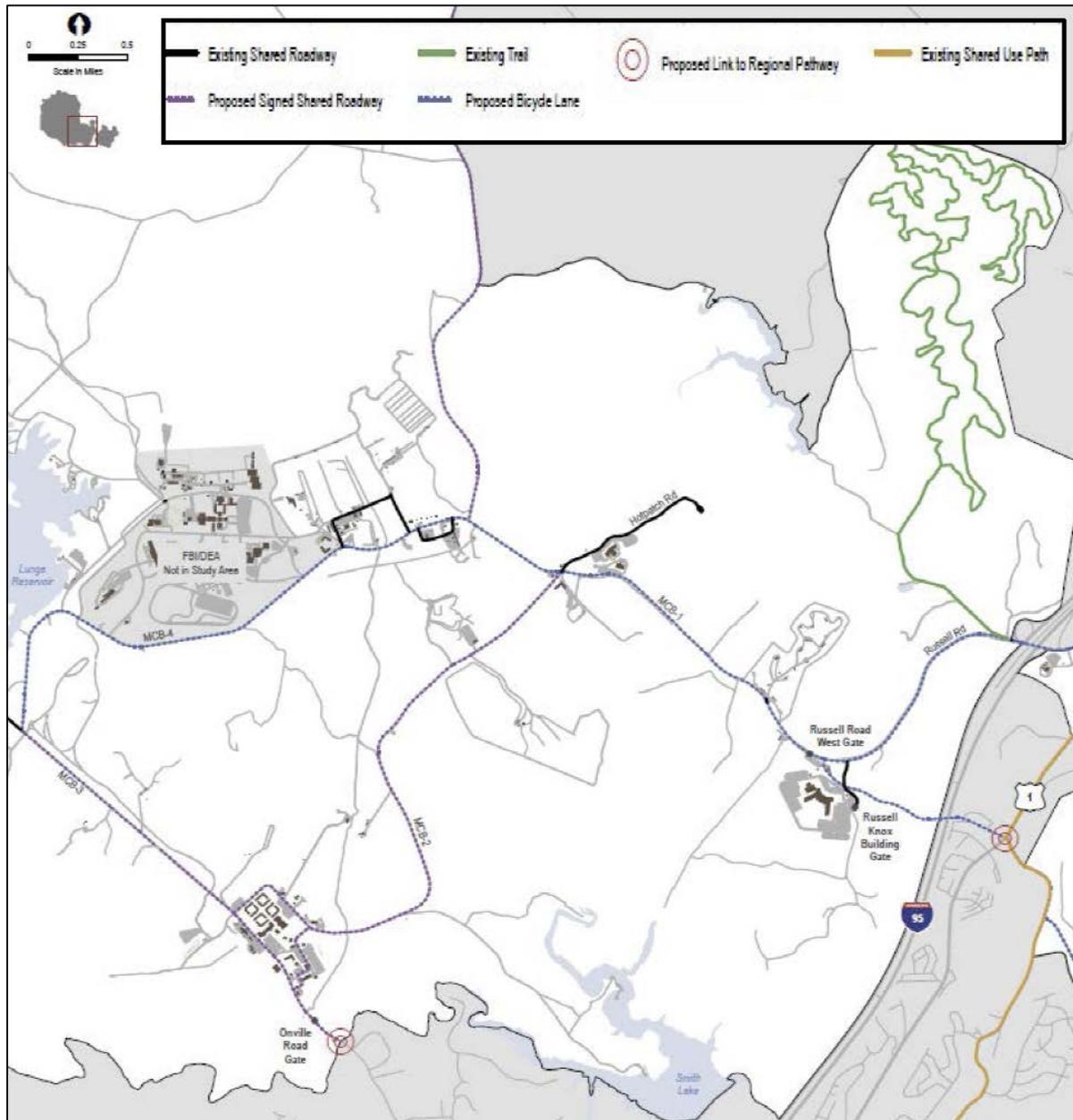


Figure 30: Planned Bicycle Lane and Shared Road Improvements – West Side

Lastly, MCB Quantico plans to add numerous bicycle racks and bike-share stations throughout the installation, with a particular focus on the more densely-developed areas on Main Side such as the Headquarters, Barnett Avenue, and Marine Corps University districts.

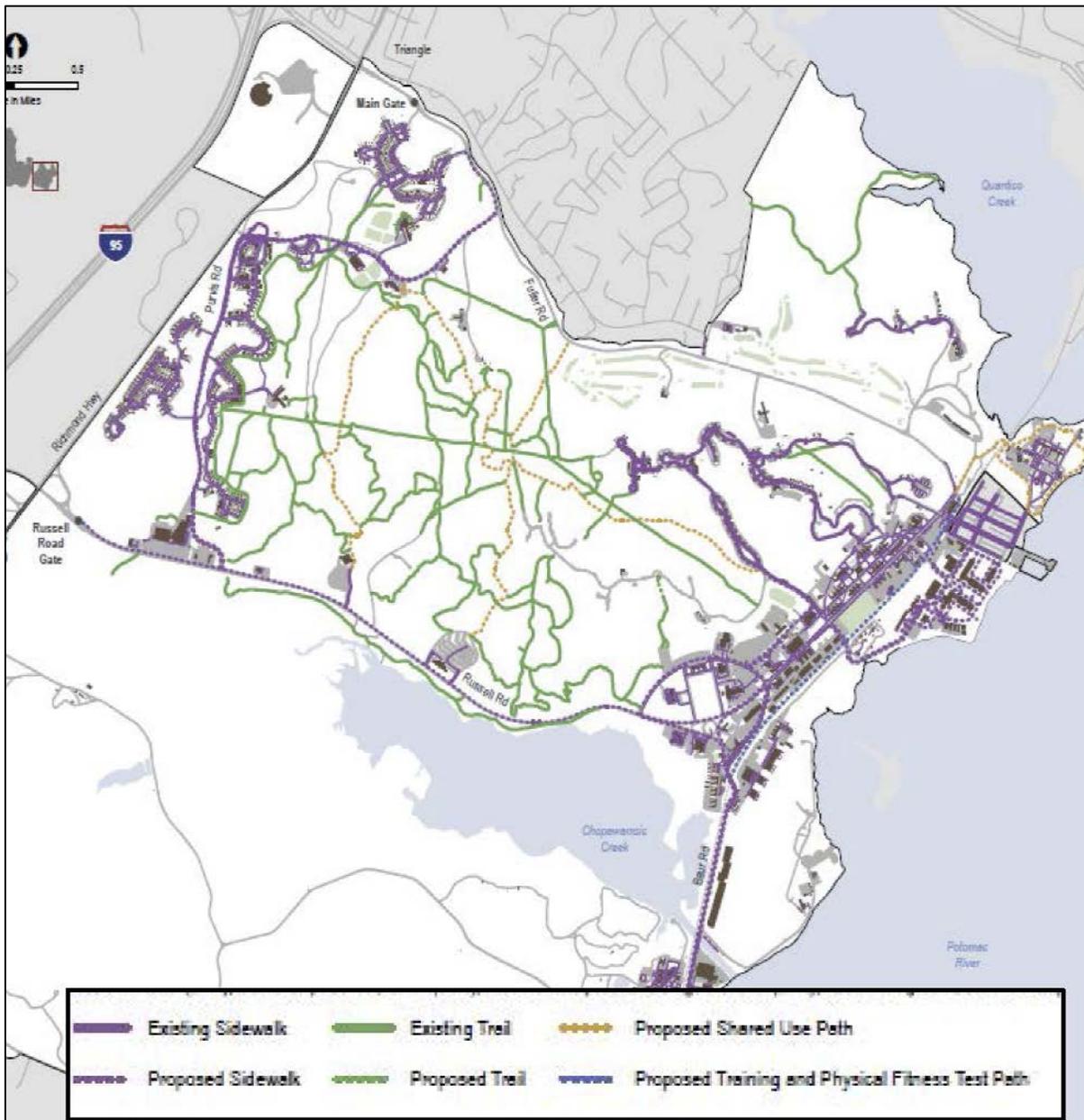


Figure 31: Planned Pedestrian Facility Improvements – Main Side

Similar to MCBQ's effort to greatly expand its internal bicycle facility network, the Bicycle and Pedestrian Mobility Plan shows many new and improved trails, sidewalks, crosswalks, rest stations, and access point improvements. The previous figure shows some of these various planned projects. The following figure shows a number of planned sidewalks (purple) and Training and Physical Fitness Paths (blue) within the West Side's more developed southern section. The future expanded pedestrian circulation network will be supplemented through multiple crosswalk, access point, "rest station", and streetscape projects as well, with a particular focus on the more densely development Main Side areas such as the Headquarters, Barnett Avenue, and Marine Corps University districts.

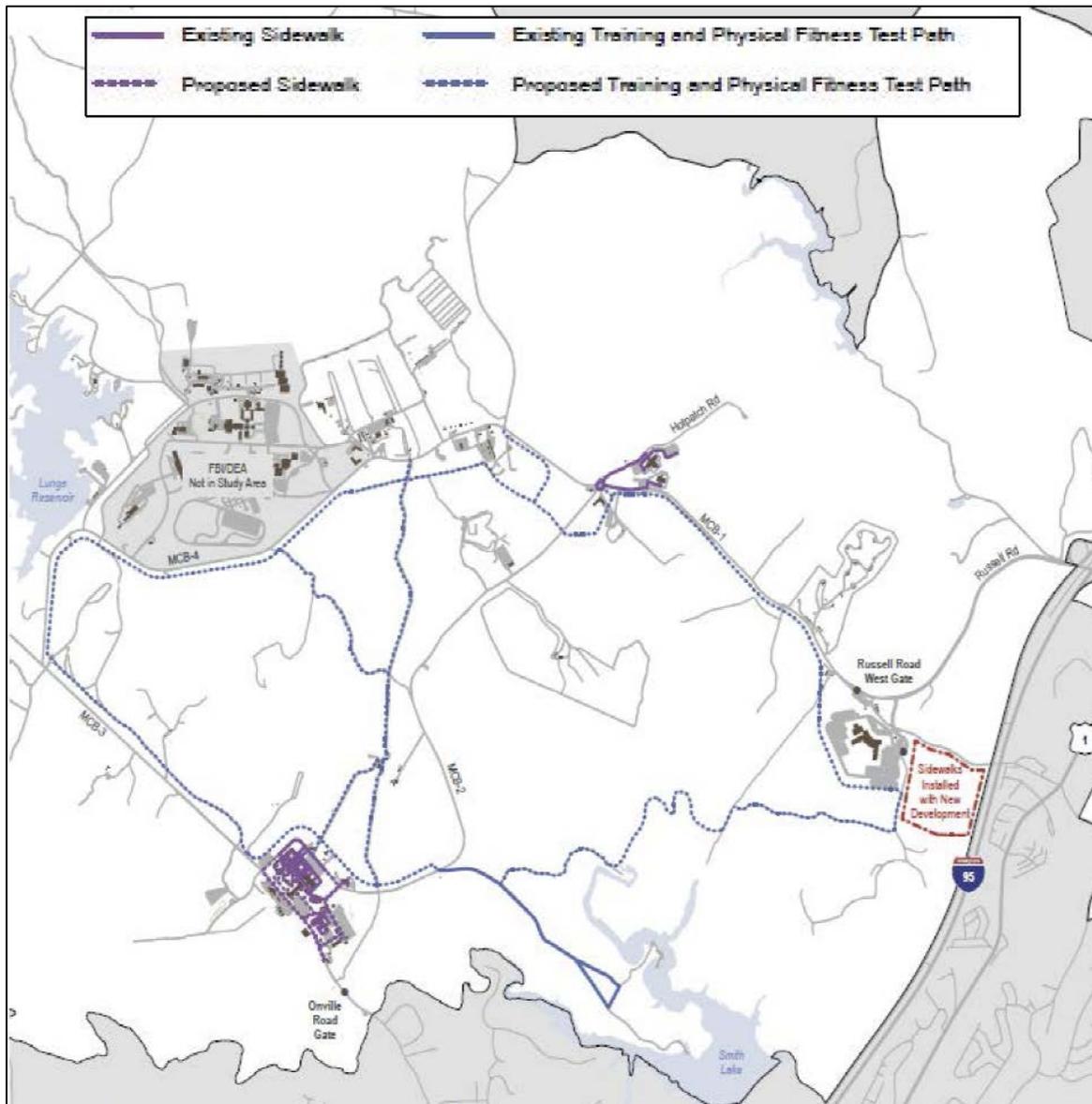


Figure 32: Planned Sidewalk and Physical Fitness Path Improvements – West Side

The following graphic shows three short-term “open space” projects including: 1) Creation of an activities quad adjacent to the new Marine Corps University Student Activities Center, 2) Relocated recreational facilities for the new combined Middle/High School, and 3) Enhanced natural forested area suitable for trails and recreation. The West Side Open Space Plan shows several passive recreation areas adjacent to the Lunga Reservoir, Chopawamsic Creek, and within a natural buffer along the I-95 corridor (graphic not shown).

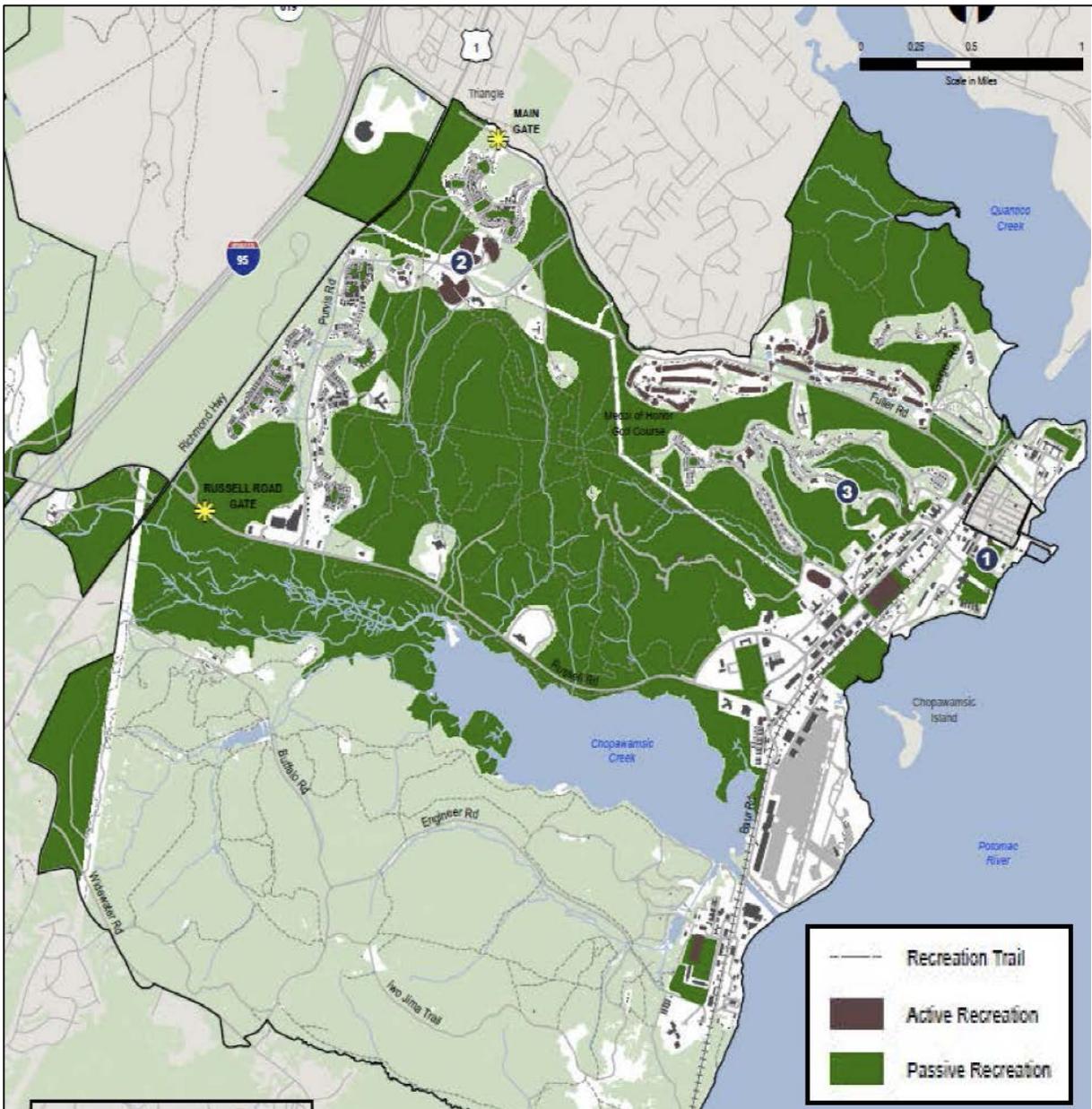


Figure 33: Short-Range Open Space Plan – Main Side

The following graphics shows the MCBQ Long-Range Open Space Plan with two projects: 1) Obsolete warehouse building demolitions will result in open space along Barnett Avenue and 2) Obsolete warehouse building demolitions will result in open space between Elrod Road and CSX right-of-way. The West Side Long-Range Open Space Plan shows no change from the Short-Term Plan.

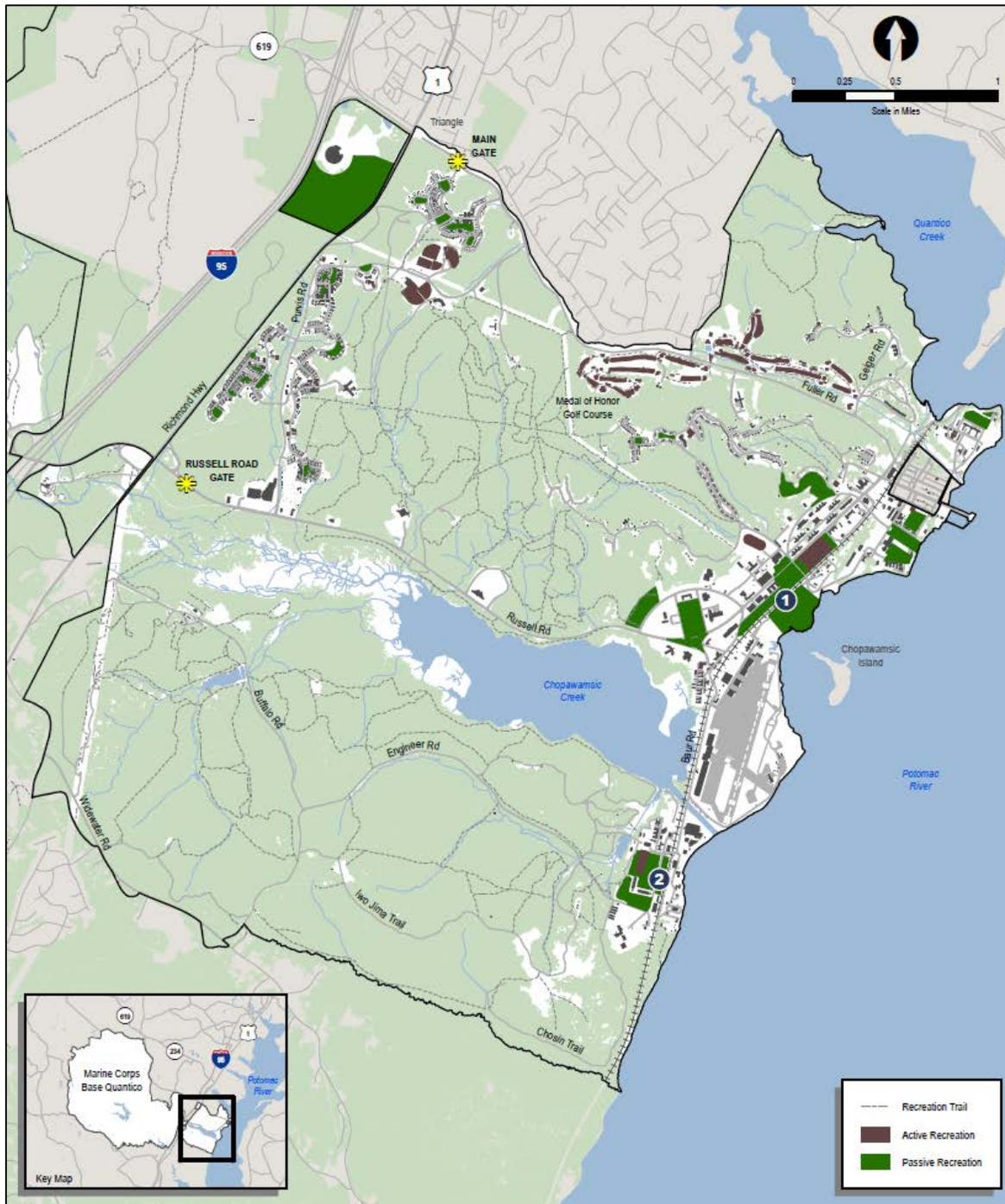


Figure 34: Long-Range Open Space Plan – Main Side

The draft MCBQ Master Plan document is divided into two primary components – a Short-Range Development Plan (2018) and a Long-Range Development Plan (2035). Each Plan consists of an overall West Side and Main Side Land Use Plan, Circulation Plan, Framework Plan, and Open Space Plan, with smaller planning district-level Regulating and Illustrative Plans. The district-level Area Development Plans each reflect site-specific development parameters and land uses, and highlight the

new projects that are planned for construction by 2018 (Short-Range) and between 2018 and 2035 (Long-Range). The following sections will summarize the changes within the proposed Short-Range and Long-Range district plans that are located within the Prince William County (National Capital Region) portion of MCBQ based on NCPC’s review authority.

*Marine Corps University District*

The strategic plan for MCU’s future growth is designed to achieve MCU’s vision of a premier pedestrian-oriented educational campus. In the short-range, a significant amount of demolition will create space for new construction (shown in red dotted circles) that includes a 43,000 square foot warehouse, 74,000 SF of educational space and 36,000 SF of administration space, as well as a parking garage. Long range actions complete the plan with the relocation of the remaining facilities/tenants not associated with MCU, and construction of new academic space (300,000 SF) and a new parking garage.

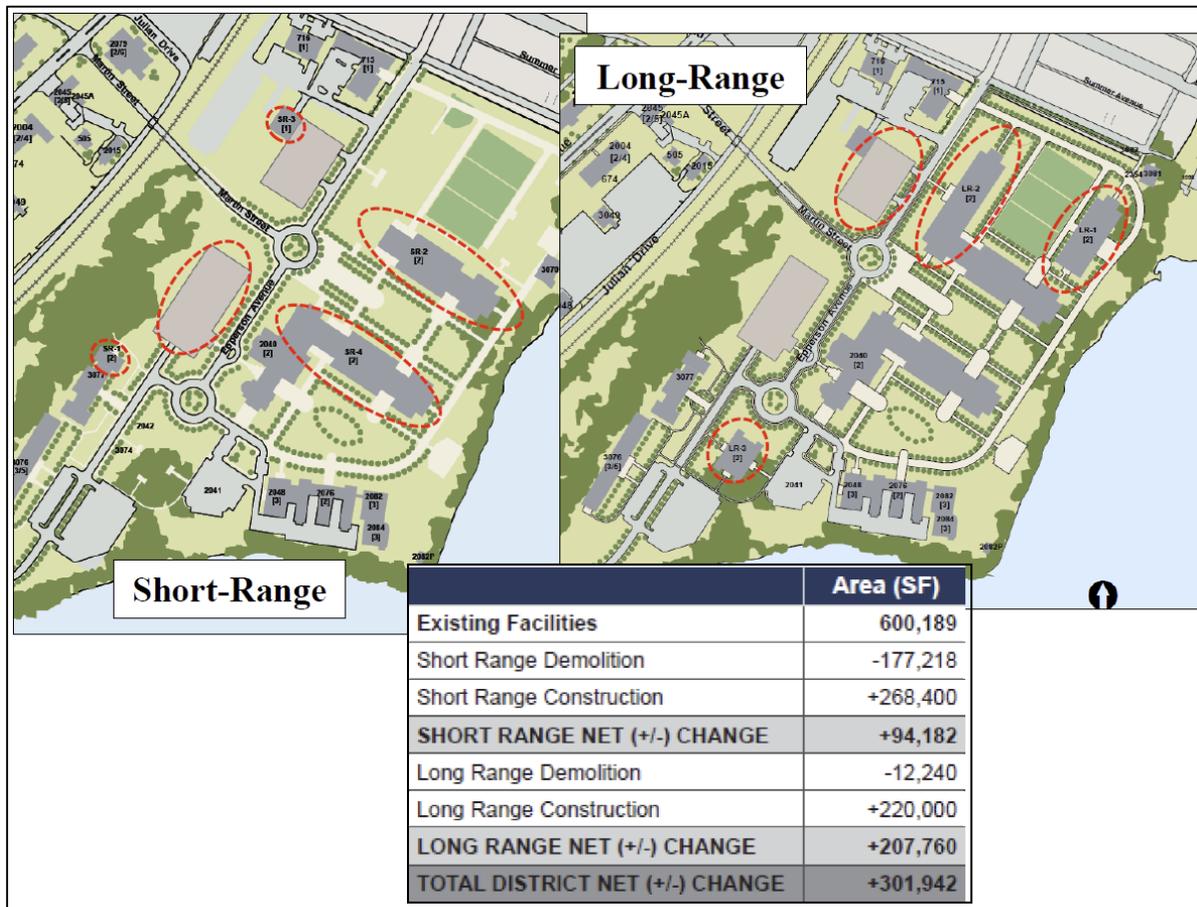


Figure 35: Short- and Long-Range Development – Marine Corps University District

*Marine Corps Air Field District*

Due to the height restrictions and clearance setbacks associated with the airfield, the MCAF district has very little remaining developable area. A large amount of demolition is planned in the short-range, with the removal of approximately 126,000 SF of hangar space and 80,000 SF of barrack space. One

new project is shown in the short-term – a 47,000 SF barracks and dining hall building (dotted red circles). There are no long-term plans for this district.

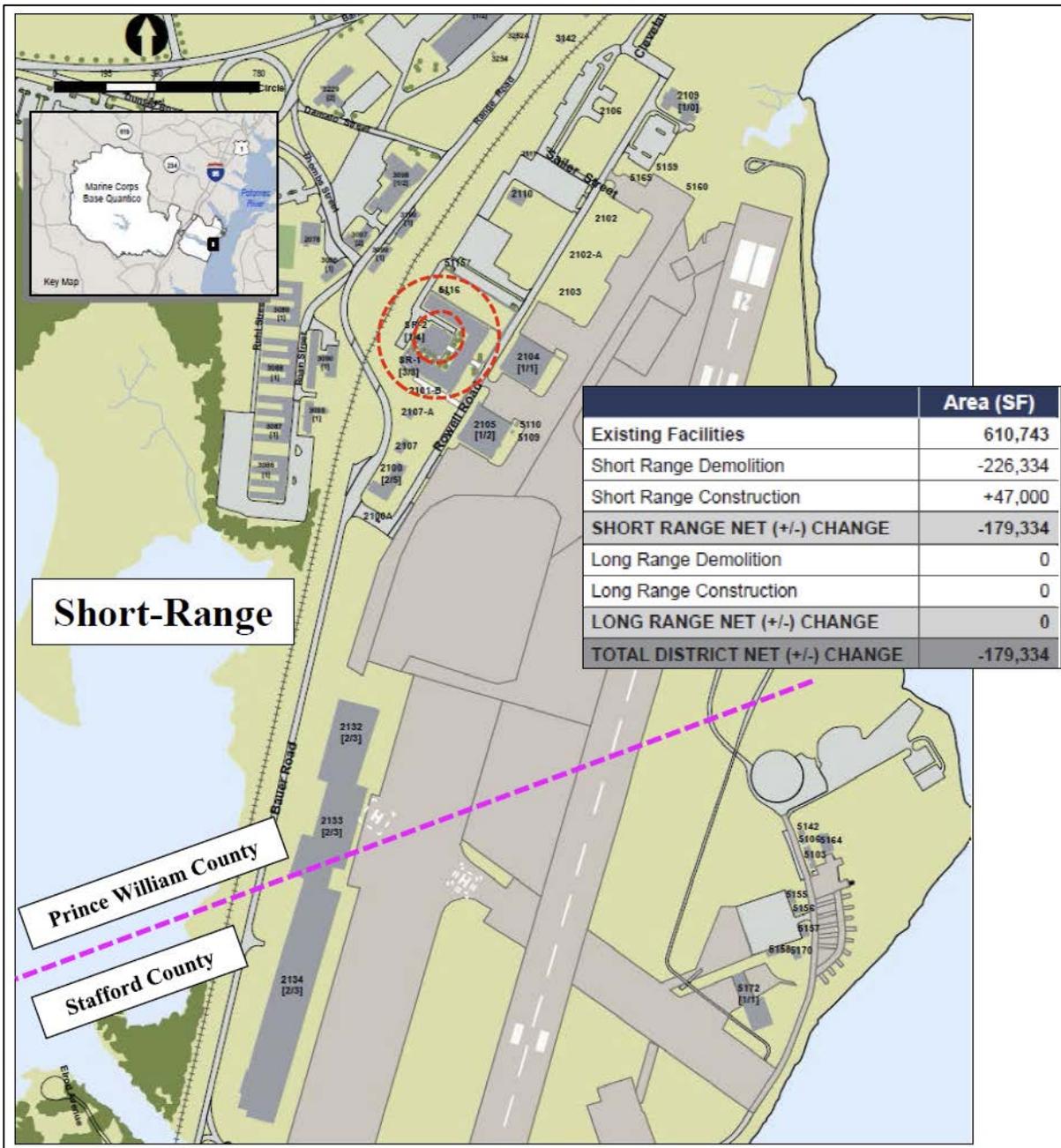


Figure 36: Short-Range Development – Marine Corps Air Field District

### Headquarters District

The Headquarters District serves as the core administrative area of the Main Side. This district is identified as a planning node, which is able to support future development with increased administrative use, infill and density.

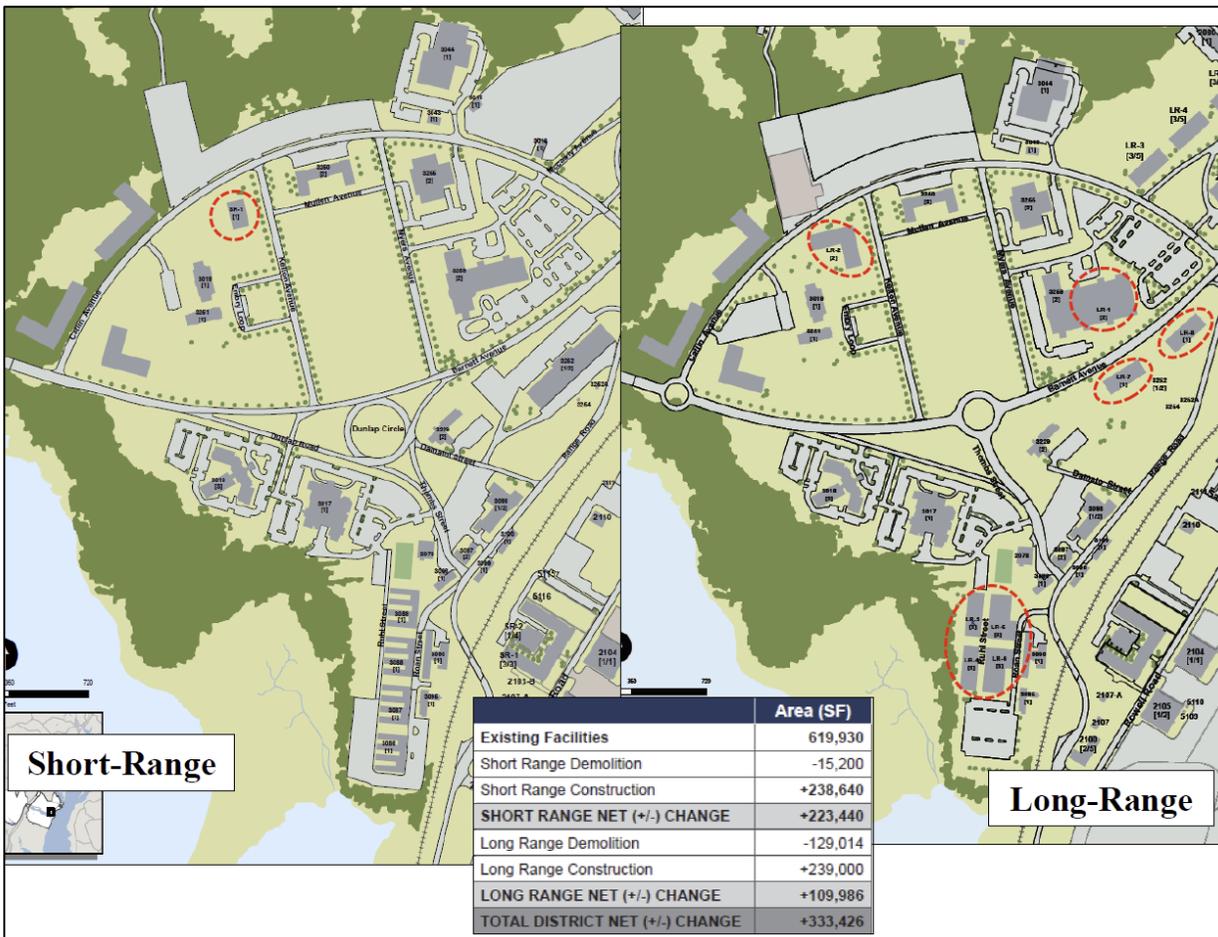


Figure 37: Short- and Long-Range Development – Headquarters District

Short-range plans involve minimal demolition of warehouse and administration space, off-set with 238,000 SF of new administrative space, primarily to the west of Lejeune Hall. In the long-range, south of Barnett Avenue, large-scale re-development of the Chop Annex and removal of the public works facility will create new sites for additional administrative development. Transportation infrastructure improvements (including two new traffic circles) and consolidated parking areas will accommodate planned increased development density. Future projects will result in a net increase of about 350,000 SF (dotted red circles), primarily administrative square footage, to address the installation’s current and projected deficit of administrative space.

*Barnett Avenue District*

At the core of the historic district, Barnett Avenue serves as the installation’s “Main Street” and future planning node in an effort to densify the area and create a more walkable street.

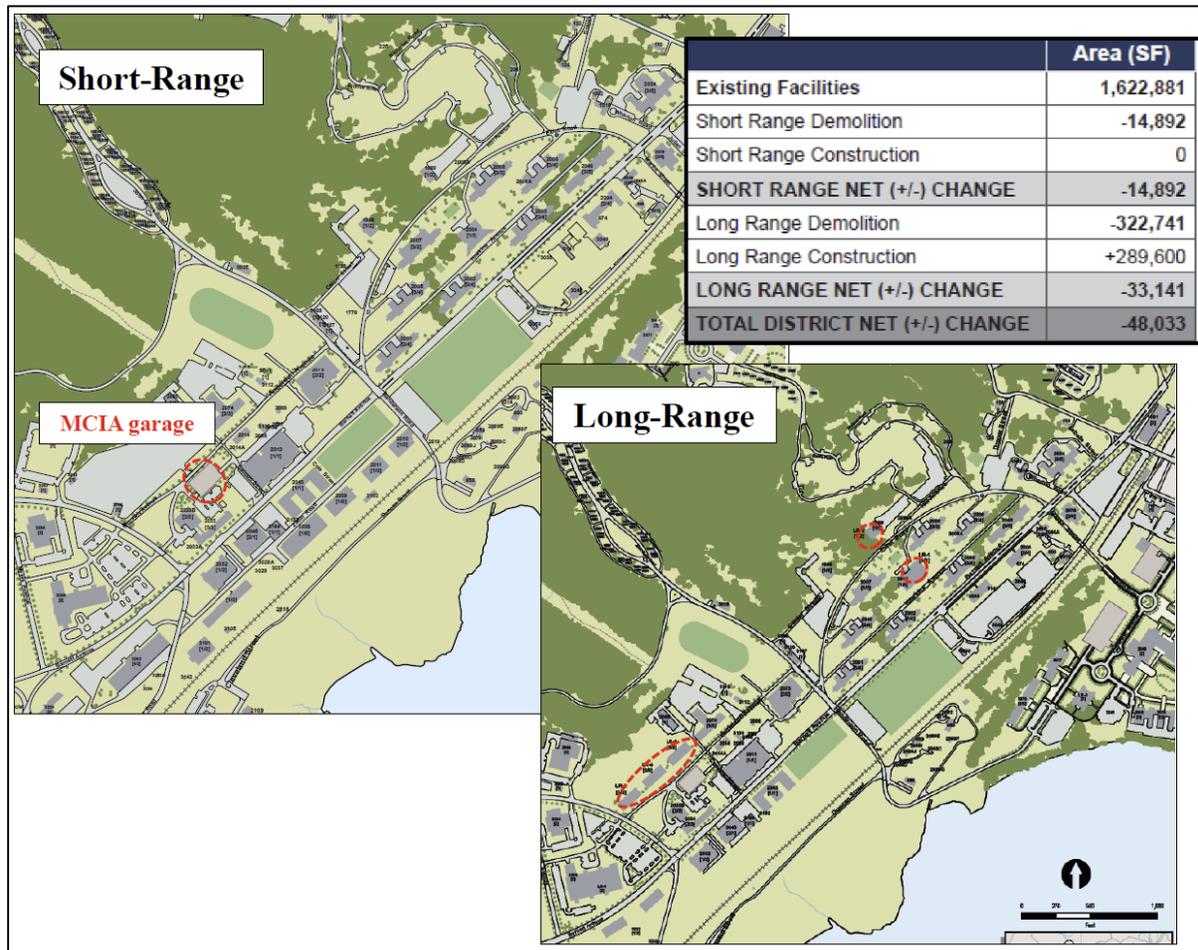


Figure 38: Short- and Long-Range Development – Barnett Avenue District

In the short-range, 15,000 SF of demolition will remove older and/or temporary administrative and warehouse space. Short-range plans include construction of a new parking garage for the Marine Corps Intelligence Agency (MCIA)<sup>1</sup> and a nature preserve area. In the long-range, significant changes are planned for the district, with the relocation of incompatible uses such as the motor pool and community buildings to other districts, which will allow for administrative infill development. Also, facilities that exceed height restrictions (imposed around the nearby MCAF runway) will be relocated to other districts as well, creating additional open space within the district. Overall, 163,000 SF of storage space will be relocated to the West Side and infill/redevelopment will increase density in remaining administrative blocks. Overall, long-range construction of 225,000 net new administrative space (dotted red circles) will help address the current and projected deficit at MCB Quantico.

<sup>1</sup> Although the Master Plan describes the MCIA garage as a short-range project, the garage appears to have been already constructed, and NCPC records do not reflect submission of the project for Commission review as required under the 1952 National Capital Planning Act.

*Hospital Point District*

With the exception of a two small warehouses and an ordnance test facility, all of the facilities in this district have an administrative function. This district is designated as a planning node and identified for significant re-development. Short-range plans involve demolition of aging facilities, and long-range projects will completely re-configure the district’s development pattern with 180,000 SF of new administration space, 72,000 SF of new warehouse space, 5,000 SF of new lab space, and a new parking garage.

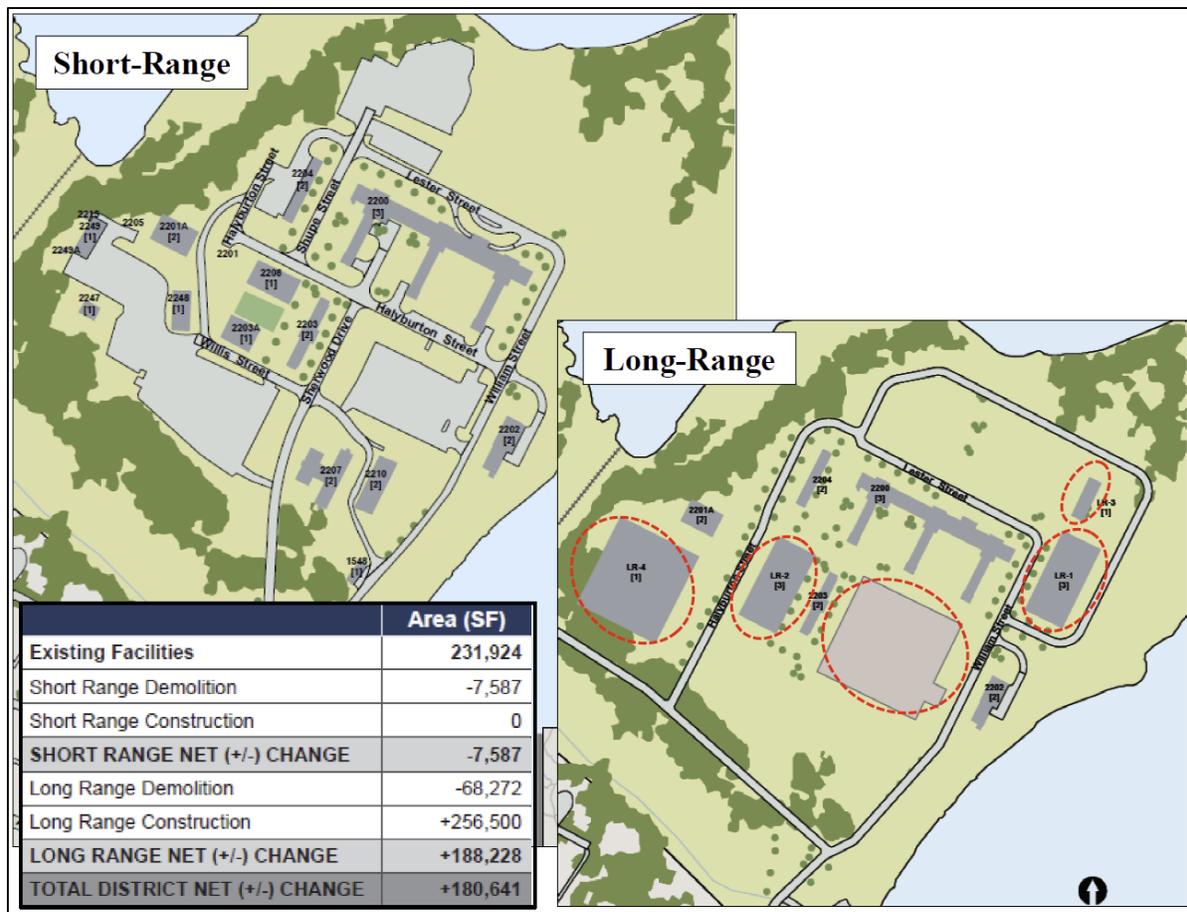


Figure 39: Short- and Long-Range Development – Hospital Point District

*Chamberlain Village District*

This district is a planning node that contains an academic building associated with MCU and two administrative facilities located in relocatable trailers. In the short-range, temporary facilities will be removed and replaced by three permanent buildings, resulting in a 90,000 SF administrative space increase and a 54,000 SF instructional space increase. In the long-range, the conversion of Building 2077 and construction of two new administrative buildings will add 150,000 SF of new development.

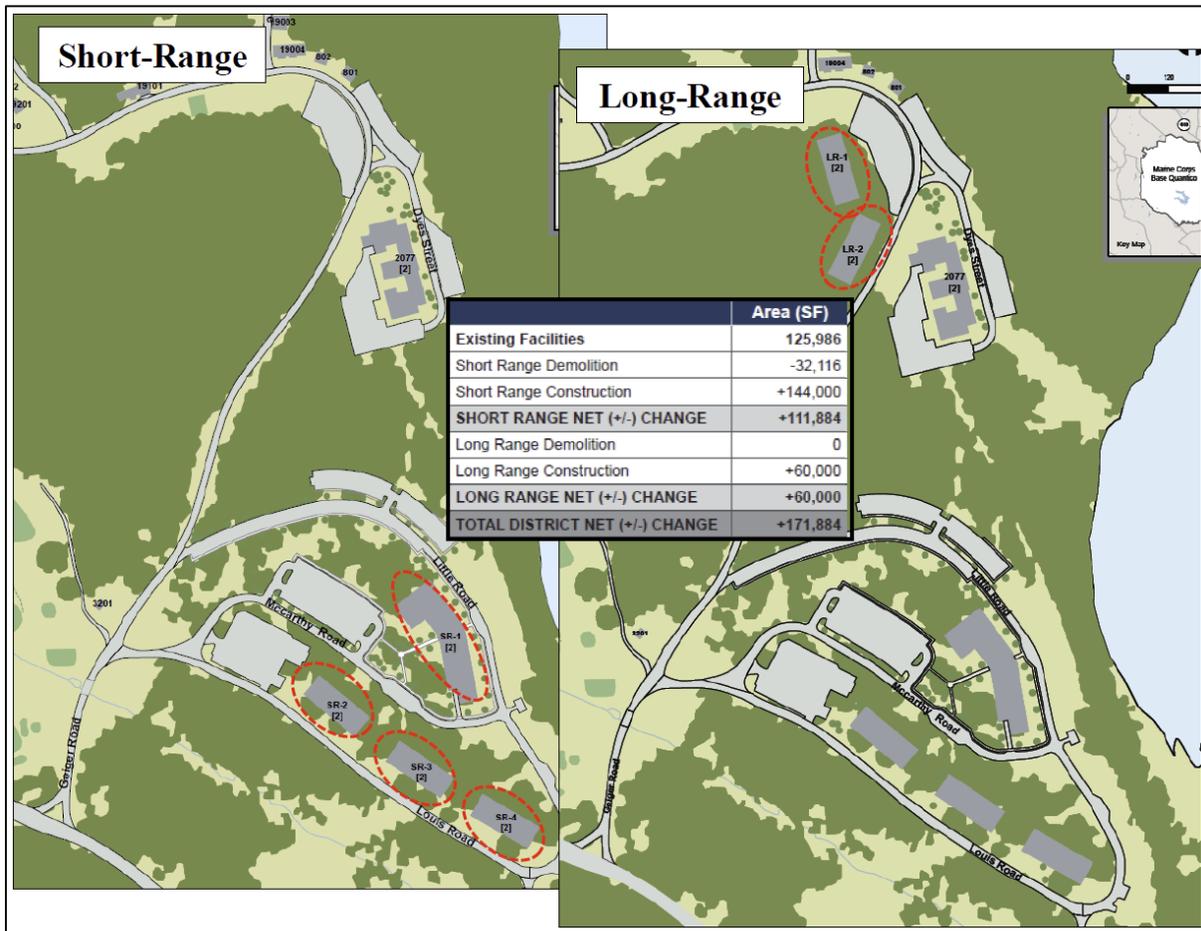


Figure 40: Short- and Long-Range Development – Chamberlain Village District

*Russell Road District*

In addition to two large administrative buildings along Russell Road, the district is oriented around community functions for both external and on-site users as a commercial cluster. The district is slated for expansion with several new community services and improved pedestrian and bicycle connections to the housing areas along Purvis Road. Short-range projects include construction of a Child Development Center (CDC) and a new fire station. The only long-range project will relocate the Exchange Auto Repair Station to the district from the Barnett Avenue district.

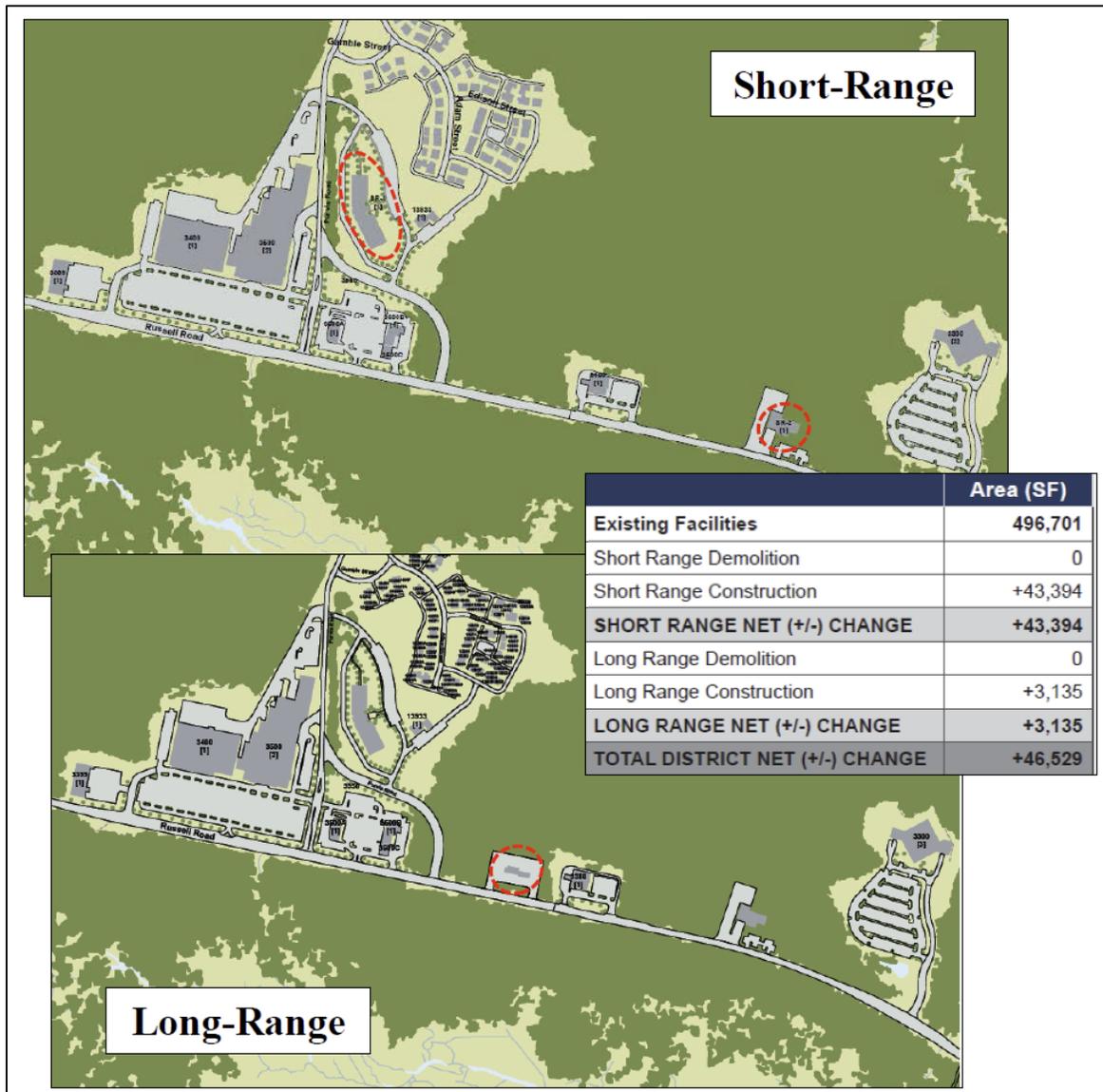


Figure 41: Short- and Long-Range Development – Russell Road District

*Purvis Road District*

This district is comprised of family housing and schools. Short-range actions will demolish various community facilities and construct a new Consolidated Elementary School for the installation (combining three existing elementary school into one facility). A new Entry Control Facility (ECF) will be constructed near the intersection of Purvis Road and Fuller Road to improve installation AT/FP and security (recently reviewed and approved by NCPC). In the long-range, the existing middle and high schools will be demolished and replaced by a Consolidated Middle/High School Facility.

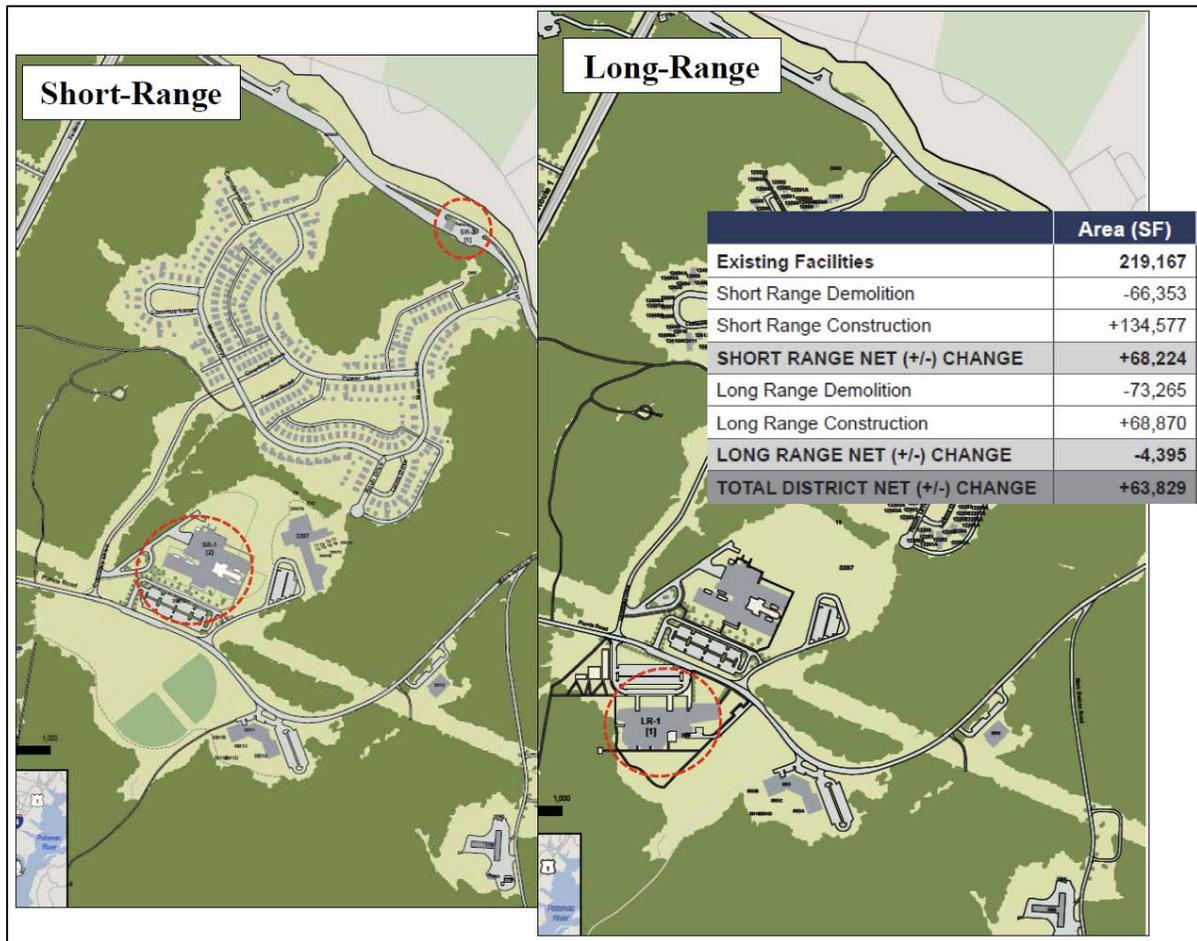


Figure 42: Short- and Long-Range Development – Purvis Road District

### Museum District

The only facility currently within this district is the National Museum of the Marine Corps. The only short-range project is construction of the new Heritage Parkway<sup>2</sup>, which will offer visitors an alternate entry to the museum and park from Route 1.<sup>3</sup> In the long-range, 225,000 SF of new construction related to the museum includes a hotel, an administrative facility, and a consolidated warehouse and artifact restoration facility that will accommodate all of the associated curator/warehouse facilities, which are currently situated within the MCU and OCS Districts.

<sup>2</sup> The new Heritage Parkway appears to currently be under construction, and NCPC records do not reflect submission of the project for Commission review as required under the 1952 National Capital Planning Act.

<sup>3</sup> The museum appears to be currently undergoing expansion, which was anticipated in the museum's original NEPA document and mentioned as a future project in the original NCPC project approval from November, 2003. However, NCPC records do not reflect submission of the museum expansion for Commission review as required under the 1952 National Capital Planning Act.

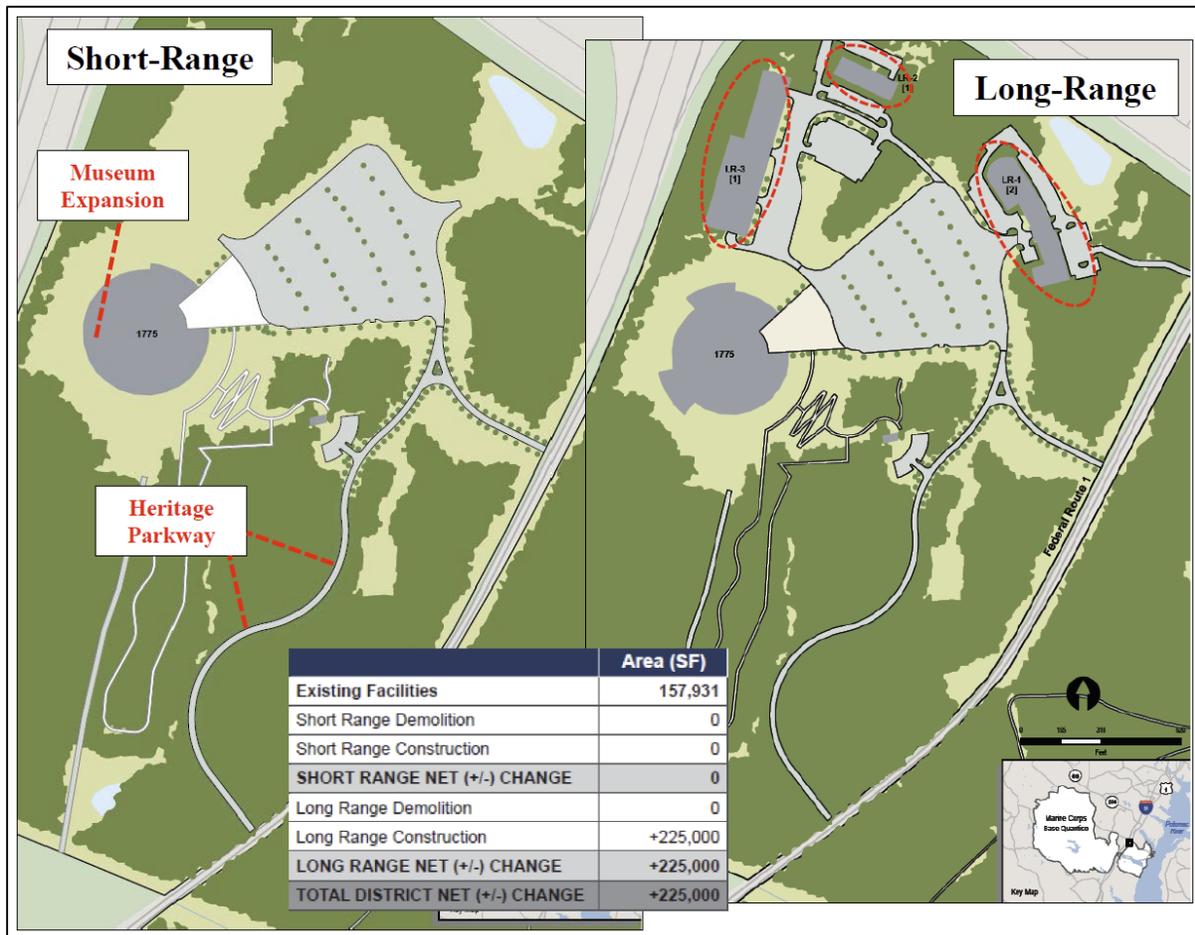


Figure 43: Short- and Long-Range Development – Museum District

### Camp Upshur District

The district is primarily used on a transitional basis for training by outside tenants. The short-range plan involves demolition of Training Support facilities, with the only new construction of a wastewater treatment plant. In the long-range, the camp is scheduled to undergo a major reconstruction, with 150,000 SF of new barrack space. This is the only district located on the West Side that is within Prince William County (NCR) and under NCPC's review authority.

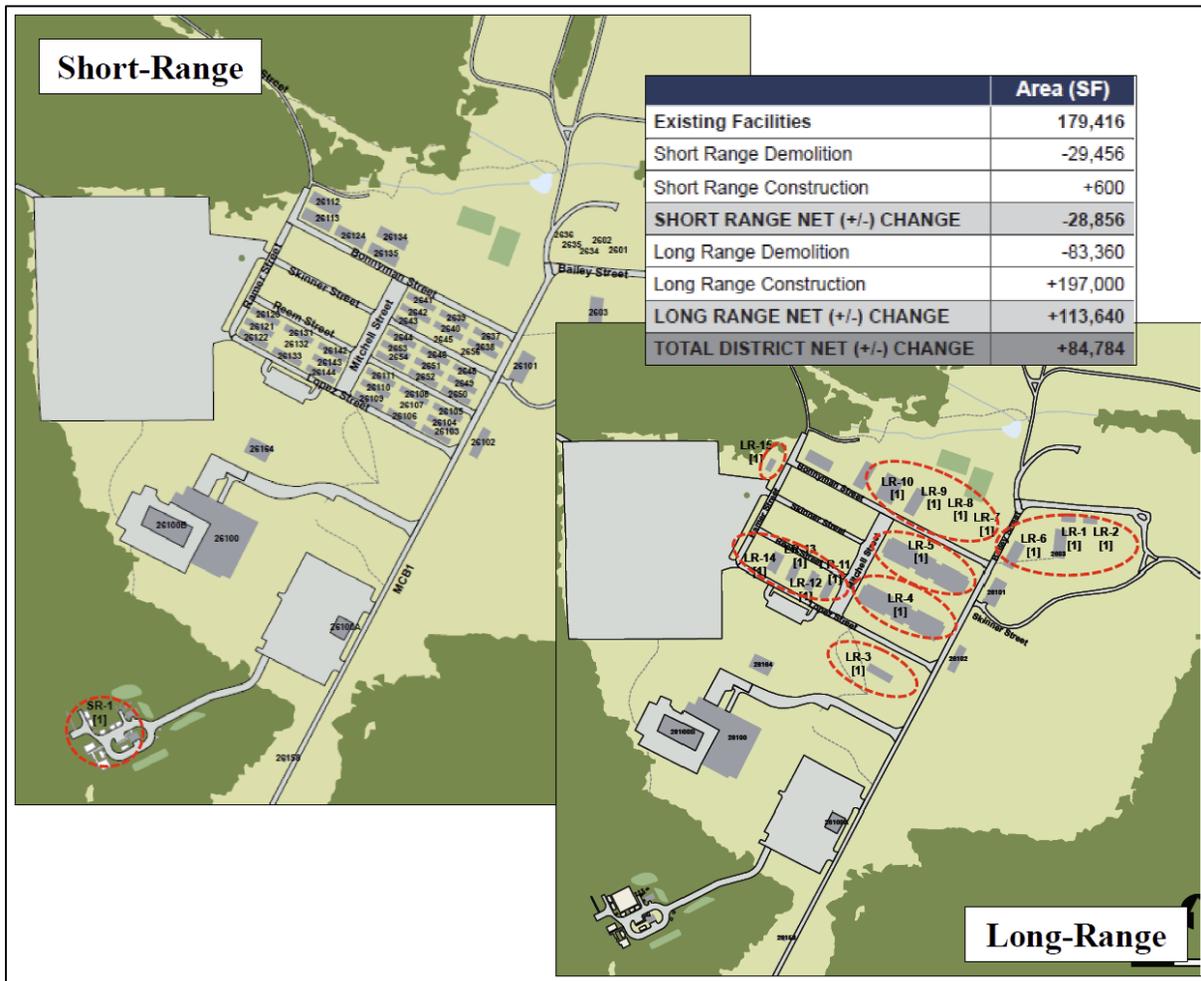


Figure 44: Short- and Long-Range Development – Camp Upshur District

## II. PROJECT ANALYSIS/CONFORMANCE

### Analysis

The current draft Master Plan submission was developed through a multi-year process that uses data from a number of studies and sub-area plans, and input from various leadership and tenant stakeholders, intended to comply with the new 2012 United Facilities Criteria (UFC 2-100-01) for Installation Master Planning. The Master Plan document starts to transform the installation’s transportation system into a more balanced network that promotes transit, walking, biking, and car-sharing; encourages more efficient land uses through compact and infill development; and promotes healthy community planning through a more robust pedestrian/bicycle circulation system. Many of the UFC’s “Smart Growth”-oriented policies are manifested in the 2015 Master Plan’s proposed projects and future development patterns. In addition, the Master Plan has a District Area Focus and includes many of the components that are required by the UFC such as:

Illustrative Plans, Regulating Plans, Framework Plans, and various form-based standards. Therefore, staff recommends that the Commission **support the district-based planning approach of the Master Plan and overall structure of the document, which is designed to comply with policies from the United Facilities Criteria (UFC 2-100-01) for Installation Master Planning.** Department of Defense installations are not officially required to have master plans in compliance with the new 2012 code until October 1, 2018.

As previously described, the MCB Quantico installation spans approximately 85,000 acres across three different counties including Prince William, Stafford, and Fauquier. As stated in the 1952 National Capital Planning Act (NCPA), the Commission has a review jurisdiction over all federal development within the National Capital Region (NCR), which includes Arlington, Fairfax, Loudoun, and Prince William Counties in Virginia. The Master Plan identifies one project that has already been constructed (MCIA parking garage) and two projects that appear to be under construction (Marine Corps Museum Heritage Parkway and National Museum of the Marine Corps expansion). Though NCPC records do not reflect any sort of Commission review, prior to construction, as required under the NCPA. All three projects are located within the Prince William County section of the installation.

Therefore, staff recommends that the Commission **note that NCPC has review authority for all plans and projects within the Prince William County portion of Marine Corps Base Quantico (MCBQ) pursuant to the 1952 National Capital Planning Act, and that several projects were not reviewed by the Commission prior to construction, including: 1) the Marine Corps Intelligence Agency (MCIA) parking garage, 2) National Museum of the Marine Corps expansion, and 3) Heritage Center Parkway; and remind MCBQ to submit future projects.**

### Master Plan

The Master Plan includes a small section describing the federal requirement for federal agencies to plan for climate change under the Executive Order 13514 on Federal Leadership in Environmental, Energy, and Economic Performance. However, staff believes that the Master Plan should provide more information related to how climate change will impact MCBQ more specifically, and how future installation development will be designed and laid out in a manner that will help mitigate these impacts and ensure continued operation. Therefore, staff recommends that the Commission **recommend that MCBQ add a more detailed climate adaptation section to the Master Plan that identifies aspects of climate change that are likely to impact the installation's mission; how MCBQ will address those future potential impacts; and specific projects and programs that would help ensure continued installation operation.**

A master plan is a necessary form of preliminary planning to help guide future development patterns and help accommodate future growth on a more systematic scale. While detailed stormwater management must be designed at the site level, federal installations should review the suitability of various potential stormwater strategies on a larger scale, which could result in additional synergistic benefits. Areas that may be appropriate for future "green energy" production (i.e. geothermal, solar, wind) should also be identified through a larger, installation-wide review to allow for multiple site alternatives and implementation flexibility. The current draft Master Plan adequately describes regulating stormwater management and sustainable energy requirements for MCBQ, but does not show potential future sites for various stormwater management applications

and sustainable energy production. Therefore, staff recommends that the Commission **recommend that MCBQ revise the Master Plan to identify areas that would be most suitable for various stormwater management areas (rain gardens, bio-retention, underground retention, pervious pavement) and “green energy” (geothermal, solar, wind) production areas in support of the Master Plan’s sustainability goals.**

The Master Plan identifies two planning districts that will dramatically redevelop with a more efficient land use pattern in the future (long-range), with consolidated parking – the Marine Corps University (MCU) district and the Hospital Point district. The future Area Development Plans for these districts reflect several “Smart Growth”-oriented policies from the new 2012 UFC that relate to parking consolidation and denser development. However, MCBQ may be able to further consolidate surface parking in other districts as shown in the following graphic. These long-range plans appear to show an overabundance of surface lots, with an approximate one-to-one, lot-to-building ratio. The dotted red circles identify potential strategic elimination locations that would reduce impervious area and improve the urban design quality of these districts.

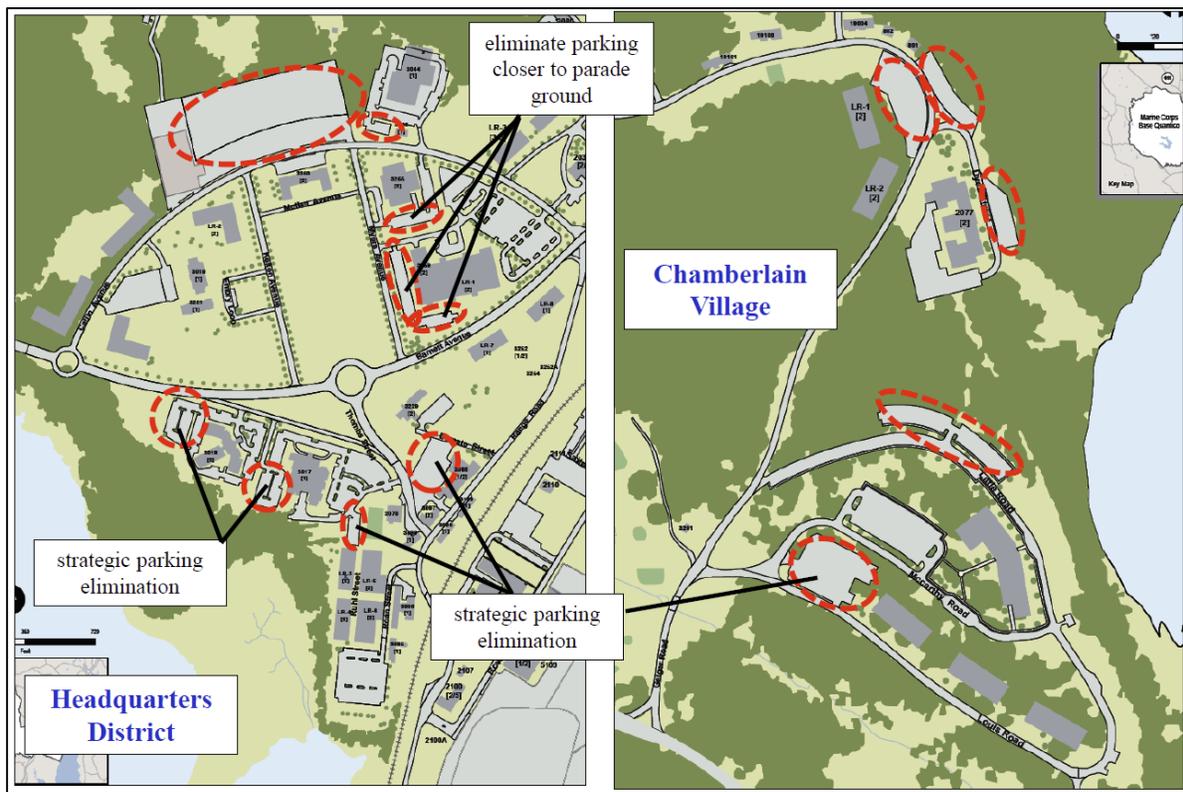


Figure 45: Potential Surface Parking Elimination Opportunities

Staff recommends that the Commission **recommend that MCBQ consolidate parking as much as possible to reduce impervious surface area; to improve the urban design of the installation; and to foster transit, walking, and bicycle travel in support of the Master Plan’s sustainability goals.**

There are a number of locations on MCBQ that appear to have redundant intersections and roadways as shown in the following graphic. The Master Plan identifies some improvements that will help simplify the installation's internal roadway network; however, staff believes that there may be additional opportunities to eliminate additional roadways as shown (pink lines). For example, the "ramp" road to the north of the Crossroads Inn and The Clubs at Quantico will likely divert traffic away from the proposed traffic circles and allow faster-moving traffic between Russell Road and Thombs Street, which is counter to a more walkable, bike-able environment. Removal of this "ramp" road would force traffic through the future traffic circles and to remain along Barnett Avenue. In addition, there appear to be unnecessary roadway connections to Myers Avenue, directly adjacent to the parade ground, which detracts that the district's design quality and pedestrian environment.

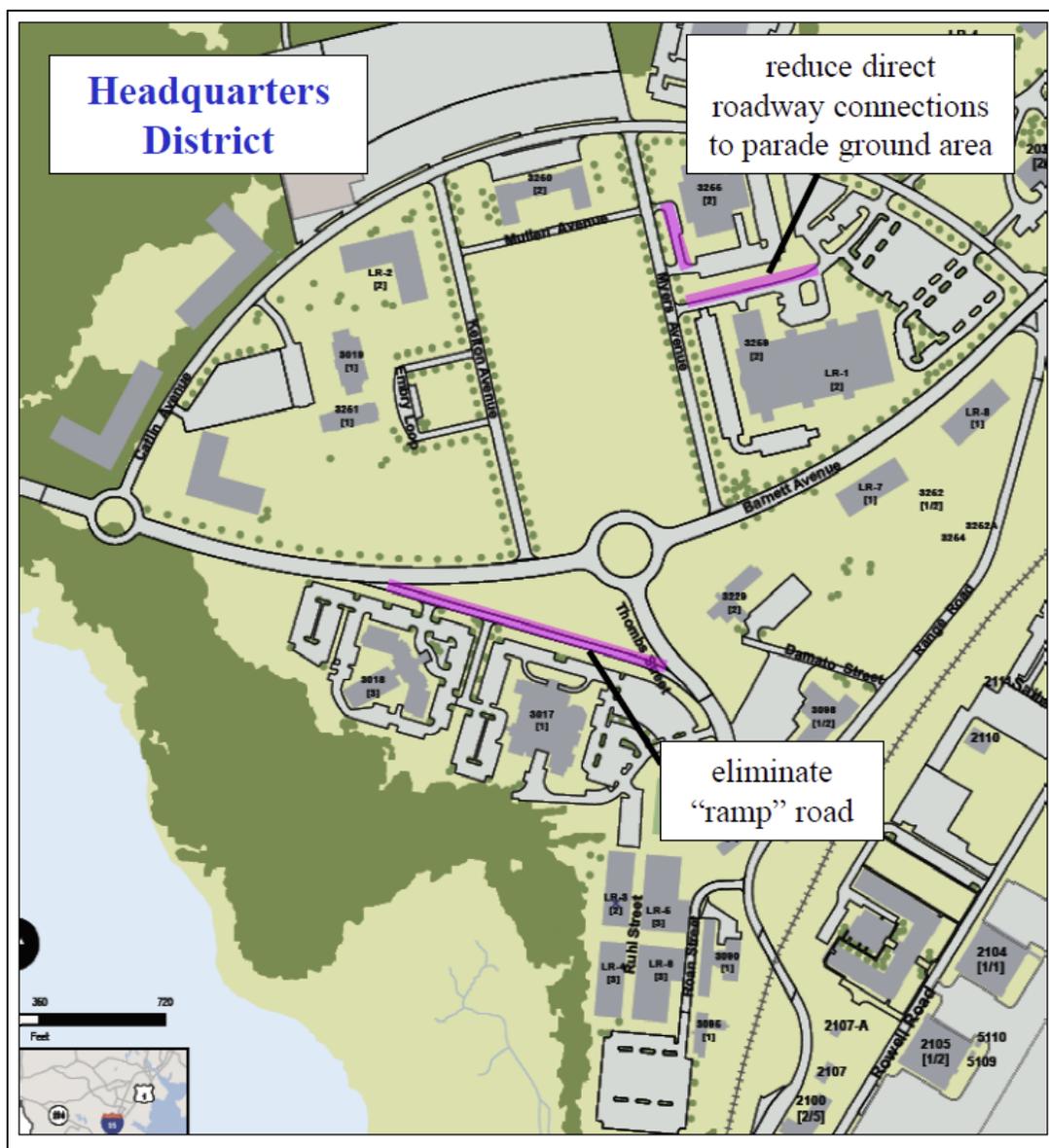


Figure 46: Potential Roadway Elimination Opportunities

The Master Plan shows two future Area Development Plans that appear to have redundant and unnecessary roadways as shown in the following graphic. Staff believes that these could be potentially eliminated or reconfigured to simplify the road system; reduce impervious surface; and create a safer, more pedestrian-oriented environment. Specifically, the new roadway (long-range Hospital Point district plan) closer to the waterfront (between Lester Street and the waterfront) is shown with no adjacent future development and the Master Plan does not justify the roadway's intended purpose. Also, the long-range Chamberlain Village district plan shows a roadway connection (McCarthy Road) that bifurcates a roadway ring made up of Little Road and Louis Road, which could be potentially eliminated. The Master Plan does not adequately explain why three roads are necessary when a single loop road could provide the same level of accessibility to the buildings.

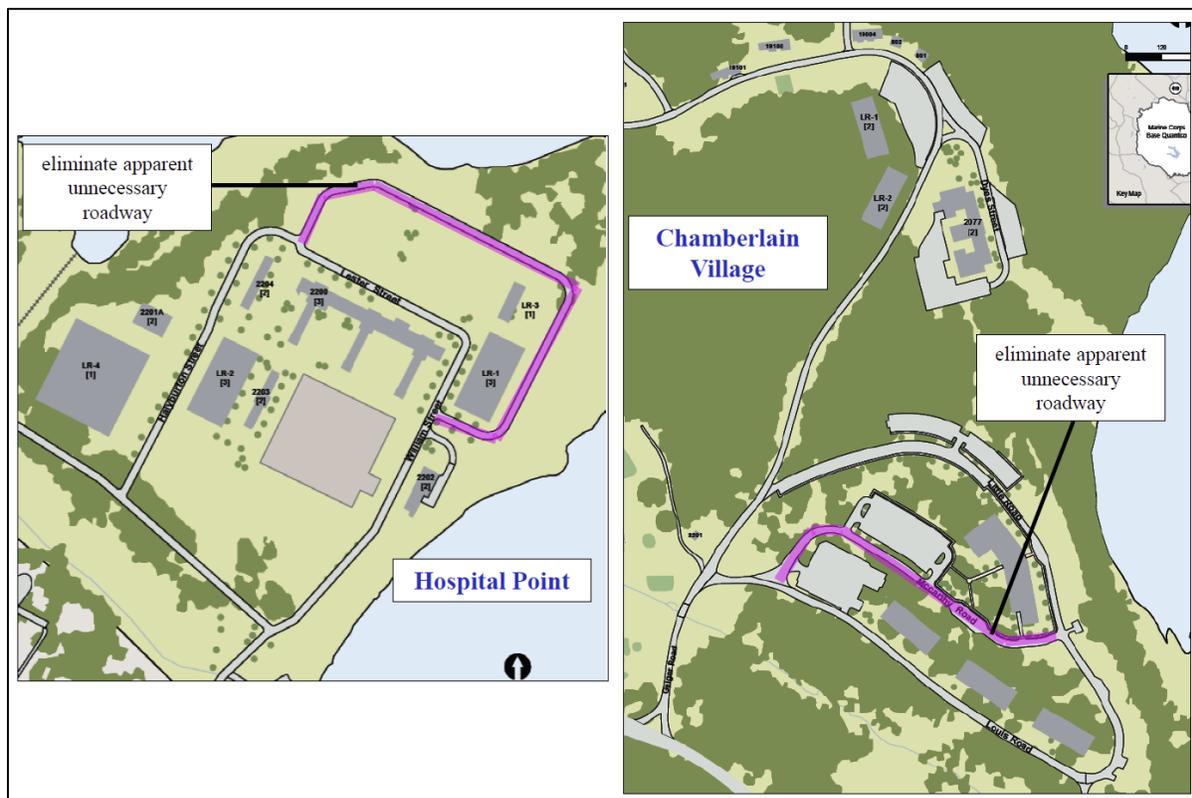


Figure 47 Potential Roadway Elimination Opportunities

Staff recommends that the Commission **recommend that MCBQ simplify internal vehicular circulation as much as possible by eliminating redundant intersections and roadways with no adjacent development to maximize future development density and to minimize future infrastructure costs.**

In an effort to improve the installation's off-site appearance and to reduce impervious surface area near the water, NCPC staff believes that there are several opportunity areas where parking, circulation, and storage/utility areas could be eliminated along the Potomac riverfront as shown in

the following graphic. For example, the existing parking shown immediately adjacent to Buildings 2048, 2076, 2082, and 2084 (Marine Corps University district) and Lot 2041 appear to be unnecessary with the planned new garages nearby. The Marine Corps Air Field district plan shows a lot of impervious area (gray) in its northern and eastern areas, near the waterfront, and staff remains unclear about the purpose of so much pavement with the planned large reduction (-180,000 SF) in district development.

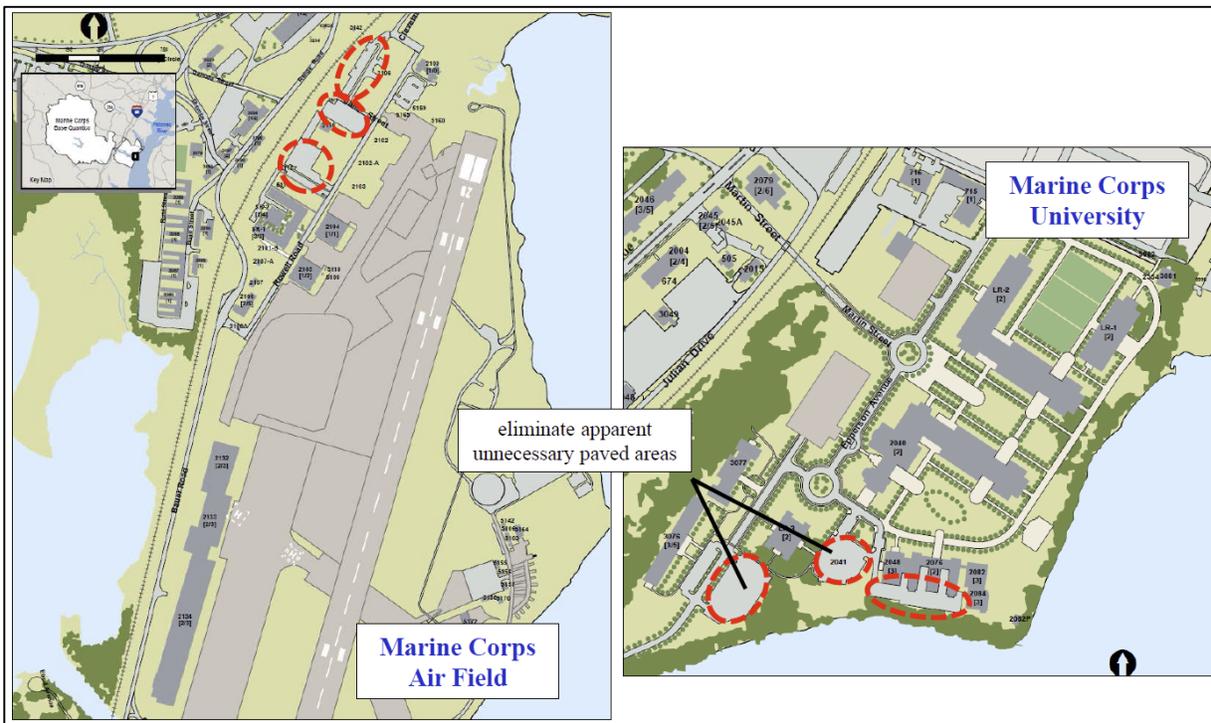


Figure 48: Potential Paved Area Elimination Opportunities

Staff recommends that the Commission **recommend that MCBQ eliminate all unnecessary impervious surfaces within close proximity of the Potomac riverfront to bolster stormwater management efforts; to improve water quality in the Potomac River and Chesapeake Bay; and to minimize future infrastructure costs.**

The Master Plan describes the Barnett Avenue district as the installation's downtown and "main street" area, with an existing mix of uses and a relatively high level of development density for MCB Quantico. The Master Plan shows future plans to remove the existing Storage and Utility uses to other parts of MCBQ to free-up land for future infill Administrative and Community Support development. Also, the Bicycle and Pedestrian Mobility Plan shows the district with sidewalks along both sides of each street in the future, as well as a marked bicycle lane along Barnett Avenue, along the district's "Main Street", as part of a future internal bike loop within Main Side. However, many of the district's land and structures (contributing) are situated within an extensive historic district, which limits the scope and flexibility of future development here. With the Master Plan's intent of densifying the district; creating a more bicycle/pedestrian-friendly

area; and strengthening the district’s “sense of place”, staff recommends that the Commission **recommend that MCBQ conduct further, more detailed planning to reinforce Barnett Avenue as the installation’s Main Street through a consistent streetscape, in-fill development, and cohesive character as appropriate, within the context of the Historic District.**

The Master Plan shows two new developments along Russell Road that will be located on separate, discrete lots from existing development, formed out of the installation’s Open Space area. This proposed future land use pattern is reminiscent of a Euclidian-pattern of development, which favors driving, rather than walking, biking, and transit use. Staff believes that unless there is an operational reason for physically separating the development parcels from each other, then MCBQ should consider adding future development directly adjacent to, or on previously-developed sites. Therefore, staff recommends that the Commission **recommend that MCBQ locate future Russell Road development directly adjacent to or on existing development sites to increase walking, biking, and transit accessibility and to minimize future infrastructure costs.**

The long-range Museum district plan shows a hotel that is located on the far-side of the Museum’s main visitor lot, which will require hotel patrons to either walk directly across an expansive surface lot or else walk a more circuitous route around the edge of the lot. Rather, the development should be configured so that the hotel is situated in a closer location to the Museum building and does not require patrons to cross the lot via the most direct route. Therefore, staff recommends that the Commission **recommend that MCBQ reconfigure the future Museum district to provide a higher-quality, direct, pedestrian connection between the future hotel and museum building without crossing the surface parking lot.**

Employee Parking

MCB Quantico has significantly improved its parking ratio since the last NCPC review of its Master Plan in 2002, which proposed an overall parking ratio goal of 1:1.0, well under the 1:1.5 applicable goal at the time. The following table shows the existing and future proposed ratios for West Side, Main Side, and overall installation.

	Existing	2018	2035	NCPC Goal
Main Side	1:1.47	1:1.52		
West Side	1:1.16	1:1.30		
Overall MCBQ	1:1.36	1:1.44	1:1.5-2.0	1:1.5-2.0

Under the current 2004 Comprehensive Plan policy, MCBQ should comply with the 1:1.5-2.0 long-term goal, depending upon whether the installation is located adjacent to an HOV/HOT lane facility (1:2.0) or not (1:1.5). MCBQ’s two sides are very different in terms of their development patterns and functions. West Side is used primarily for training purposes and has clusters of development disbursed throughout its expanse. Main Side serves as an area for a large mix of uses, with relatively dense development nodes. Though the Master Plan proposes to attain the minimum NCPC parking ratio standard in the long-term future (1:1.5-2.0), staff believes that MCBQ’s Main Side should strive to attain a 1:2.0 goal, either with or without direct access to a HOV/HOT facility. The following sections will detail staff’s rationale for adopting a more stringent long-term goal.

The MCB Quantico Master Plan is designed to comply with the 2012 UFC Installation Master Planning policies to reflect modern “Smart Growth” policies that are used in many parts of the Country. These “Smart Growth” policies encourage more efficient land use patterns (greater mix of uses, denser development), which can rely on smaller-scale transportation infrastructure (sidewalks, pedestrian/bike paths, etc.) for circulation, rather than on more expensive roadways. Reducing employee parking on Main Side will help support the more efficient Smart Growth land use pattern, and help the installation attain many of its sustainability goals and objectives. Greater reliance on non-SOV modes has a number of benefits including: fostering physical activity and improved health; reducing the demand for more expensive roadway/parking lot construction and maintenance; reducing our Nation’s dependence upon fossil-fuels; reducing the amount of particulate matter and Ozone-forming gas emissions; and saving precious finite land resources.

The MCBQ Bicycle and Pedestrian Mobility Plan is designed to significantly expand and improve the installation’s pedestrian and bicycle circulation network, both as a base with extensive training needs and plans to grow over the next 20 years. The increased extent of the future bicycle/pedestrian network will go far in encouraging more pedestrian and bicycle travel between on-base locations, and between on- and off-base locations. Parking demand will likely be reduced in the future (and fewer spaces needed) as MCBQ transitions into more of a “park once” environment. A recent employee commuter survey revealed that a number of people drive to work alone due to a lack of mid-day mobility options (i.e. shuttle) to get around base, once at work. MCBQ’s future expanded bicycle/pedestrian circulation network will provide these workers with a greater variety of “mid-day” mobility options and thereby, reduce their need to drive to work alone.

The Metropolitan Washington Council of Government’s (Wash COG) Constrained Long-Range Plan (CLRP) cites a number of planned transportation improvements that will favor future non-SOV travel to the installation including: expanding future Virginia Railway Express (VRE) service; widening and constructing additional I-95 Express (HOT) lanes; and a new bike trail along Virginia State Route 234. In addition, there are other on-going studies and potential projects that could improve regional accessibility to the base including: future Potomac River commuter ferry service and future Bus Rapid Transit (BRT) service along Route 1. Though there are no current plans to provide direct access to MCB Quantico from the I-95 HOT lanes, the facility can still benefit southbound traffic from further away locations in Maryland and northern Virginia, even if vehicles have to use general lanes for several miles to ultimately access MCBQ. Based on these plans, staff believes that regional accessibility to the installation will gradually improve.

The Master Plan submission shows approximately 50% of MCBQ’s workers residing within the three closest counties (Prince William, Stafford, Spotsylvania), which offers the potential to shift SOV drivers to walking, biking, and transit.<sup>4</sup> There may be opportunities for MCBQ to work with the adjacent counties to modify existing bus transit service to better accommodate the installation’s

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<sup>4</sup> Carpooling and vanpooling tend to be more likely with commuters who are commuting from further away, when “side” trips to pick-up other participants or driving to the carpool/vanpool driver’s residence are perceived to be a very minor part of the overall commute trip.

commuter travel needs, or establish service where none currently exists. In addition, the Master Plan shows future planned pedestrian and bicycle access points along the north and south sides of the installation, which could facilitate more direct, convenient walking/bicycle travel between off- and on-base locations. NCPC staff believes that the TMP shows enough possibility for future non-SOV travel demand that MCBQ should engage with staff from each of the counties to explore implementation feasibility for the various possibilities.

The NCPC Comprehensive Plan's parking ratios are long-term (20+ year) goals rather than required standards, to be applied on a case-by-case basis. Based on the MCBQ's Master Plan submission's goals, objectives, and design pursuant to 2012 UFC policies, staff believes that the installation should strive to meet a 1:2.0 parking ratio for Main Side. A more stringent parking goal would better support the Master Plan's intended future condition. Therefore, staff recommends that the Commission **note that the MCBQ Master Plan and Transportation Management Plan are designed to adhere to the NCPC parking ratio goals with and without High Occupancy Vehicle (HOV) / Hot Occupancy Toll (HOT) facilities, but recommends that MCBQ strive to attain a 1:2.0 goal for Main Side to support the 2012 UFC Installation Master Planning policies; the installation's ambitious plan to improve on-site bicycle and pedestrian facilities; planned off-site transportation improvements; and the installation's employees who reside within the surrounding area.**

#### Transportation Management Plan

The submitted TMP provides a list of proposed Travel Demand Management (TDM) strategies and their anticipated year of implementation. In an effort to improve the Main Side's parking ratio to a 1:2.0 as previously discussed, it will be helpful to set long-term mode share goals to reflect 50% Single Occupant Vehicle (SOV) and 50% non-SOV commuter travel, with further breakdown of non-SOV travel into transit, walking, biking, teleworking/AWS, and carpool/vanpool. Each of the TDM actions/programs can then be organized within each of the various non-SOV travel categories (walking, biking, etc.) to demonstrate how each mode share goal will be attained. In other words, the various mode share goals would serve as intermediary performance metrics in attaining the ultimate goal of a 1:2.0 parking ratio on Main Side. Therefore, staff recommends that the Commission **recommend that MCBQ revise the Transportation Management Plan to include short-term and long-term travel mode share goals in support of the installation's 1:1.5 long-range parking goal for West Side and NCPC's recommended 1:2.0 parking goal for Main Side.**

#### Future Coordination

On March 25, 2015 NCPC referred the draft MCB Quantico Master Plan for review and comment to the following public agencies in Virginia: Prince William County Department of Transportation; Northern Virginia Regional Commission; Northern Virginia Transportation Commission; Prince William County Office of Planning; Virginia Department of Environmental Quality; and Virginia Department of Transportation. In addition, due to the potential planned alignment of the Potomac Heritage National Scenic Trail (NPS) across MCBQ property, NCPC also forwarded the draft submission to Mr. Donald Briggs, who serves as the Superintendent of the Potomac Heritage National Scenic Trail. NCPC received comments from the Virginia Department of Transportation, Prince William County Planning Office, and National Park Service. These comments are attached

in the Appendix. As part of a “good neighbor” policy, staff recommends that the Commission **request that MCBQ provide written responses to all referral comments from the Virginia Department of Transportation, Prince William County, Northern Virginia Regional Commission, and National Park Service as part of the final Master Plan submission.**

The National Park Service provide a comment related to planning for the future Potomac Heritage National Scenic Trail (PHT) alignment through the MCBQ installation. As background, the PHT spans the states of Virginia, Maryland, Pennsylvania, and the District of Columbia. The facility traces the outstanding natural, historical, and cultural features along the Potomac River and a portion of the Rappahannock River. There are numerous side routes that provide access to various points of interest. Currently, much of the trail network is segmented with connectivity achieved by travelling along roads. Segments currently exist near the National Museum of the Marine Corps and along Prince William Forest Park’s scenic drive.

The PHT could serve as a potential future pedestrian connection to the installation and allow an opportunity to educate the Public about MCBQ’s important role in this nation’s history, as well as allow access to the natural areas in the vicinity of the Potomac River. The continuation of the trail alignment through MCBQ will also add another segment to this ever-growing interstate facility. Based on a referral comment submitted by the National Park Service’s PHT Office, staff recommends that the Commission **request that MCBQ work with NPS and NCPC staff to determine how the Potomac Heritage National Scenic Trail (PHT) can complement installation operations, with future connections to a regional pedestrian, bicycle and water trail network, as well as provide interpretive opportunities.**

In light of the MCBQ’s large employee distribution in nearby counties (Prince William, Stafford, Spotsylvania) and the installation’s desire to increase “alternative” travel behavior (walking, biking, carpool/vanpool, and transit) amongst its employees, there appears to be an opportunity to jointly develop the necessary programs and facilities with local planning offices. Any successful future TMP will likely have to rely on targeting local commuters who reside in nearby communities. Therefore, staff recommends that the Commission **request that MCBQ commit to work with Stafford, Prince William, and Spotsylvania Counties to establish additional transit, bicycle, carpool/vanpool, and pedestrian programs between the local surrounding communities and the installation.**

### **Comprehensive Plan for the National Capital**

The proposed draft Master Plan is generally consistent with policies found in the federal elements of the *Comprehensive Plan for the National Capital*, including:

#### *Federal Workplace Element:*

- Consider the modernization, repair, and rehabilitation of existing federally owned facilities for federal workplaces before developing new facilities.
- Establish the level of employment that can be accommodated on installations where more than one principal building, structure, or activity is located or proposed through the master planning process as established by the Commission. Agencies should continually monitor the employment levels at installations and revise installation master plans as

necessary to reflect changed conditions and provide an up-to-date plan for the development of the installation.

- Minimize development of open space by selecting disturbed land or brownfields for new federal workplaces or by reusing existing buildings or sites.

*Transportation:*

- Prepare Transportation Management Plans (TMPs) to encourage employee commuting by modes other than the single-occupant vehicle.
- Encourage ridesharing, biking, walking, and other non-single occupant vehicle modes of transportation for federal commuters.
- Provide bicycle travel lanes, paths, or trails between campus entrance points and all buildings on the campus. Where bike lanes, paths, or trails exist outside of the campus, bicycle travel ways on campus should connect to those outside the campus.

*Parks and Open Space Element:*

- Maintain and conserve tree cover and other vegetation in the landscaped buffer areas on federal installations in a natural condition. Perimeter roads and cleared areas on these sites should be kept to a minimum, carefully landscape, and managed in a manner that addresses security, aesthetics, and a natural character.
- Increase and conserve the tree canopy and landscape cover in urban areas of the region.
- Retain natural wooded buffer areas in the vicinity of federal installations throughout the region.

*Federal Environment Element:*

- Preserve existing vegetation, especially large stands of trees.
- Incorporate new trees and vegetation to moderate temperatures, minimize energy consumption, and mitigate storm-water runoff.

*Preservation and Historic Features Element:*

- Use historic properties for their original purpose or, if no longer feasible, for an adaptive use that is appropriate for the context and consistent with the significance and character of the property.

**Relevant Federal Facility Master Plan**

The proposed draft 2015 MCBQ Master Plan will supersede the existing 2001 Master Plan, which was approved by the NCPC in December, 2002, upon Commission approval of the final version, which is scheduled for Commission review in October, 2015.

**National Environmental Policy Act (NEPA)**

MCB Quantico is in the process of completing an Environmental Assessment (EA) for the Master Plan, and will submit the final study (along with the FONSI) as part of the final Master Plan submission.

### **National Historic Preservation Act (NHPA)**

MCB Quantico has a Programmatic Agreement with the U.S. Marine Corps, Virginia State Historic Preservation Office, Virginia Council on Indians, and Stafford County, Virginia regarding consultation under Section 106 NHPA for undertakings affecting historic properties at MCB Quantico. The purpose of the agreement is:

- To ensure that the historic and architectural qualities of the historic properties at MCB Quantico are appropriately recognized and considered in the course of MCB Quantico's management and use of historic properties, and
- To set forth a streamlined process for compliance with Section 106 of the NHPA, for MCB Quantico when agreed upon criteria are met and procedures contained in this agreement are followed.

The Base Exterior Architecture Plan, 2000 follows the processes established for resolving adverse effects to balance mission with historic preservation. The MCBQ Integrated Cultural Resources Management Plan (ICRMP) guidelines provide mitigation measures to be considered during the implementation of future projects under the proposed Master Plan.

Inventory of historic buildings and structures is an ongoing process, and a potential for undiscovered archaeological sites remains. When new discoveries are identified in the future, archaeological sites should be properly recorded and evaluated if necessary. Future investigations should be conducted in accordance with Section 110 of the NHPA to comply with the requirement to inventory and evaluate all federal property, or in advance of ground-disturbing activities in areas determined to retain potential for archaeological resources.

## **III. CONSULTATION**

### **Coordination with local agencies**

On March 25, 2015 NCPC referred the draft MCB Quantico Master Plan for review and comment to the following public agencies in Virginia: Prince William County Department of Transportation; Northern Virginia Regional Commission; Northern Virginia Transportation Commission; Prince William County Office of Planning; Virginia Department of Environmental Quality; and Virginia Department of Transportation. In addition, due to the potential planned alignment of the Potomac Heritage National Scenic Trail (NPS) across MCBQ property, NCPC also forwarded the draft submission to Mr. Donald Briggs, who serves as the Superintendent of the Potomac Heritage National Scenic Trail.

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