

AGENDA ITEM 11-B
INFORMATION ITEM

TO: CHAIRMAN KAUFFMAN AND THE VRE OPERATIONS BOARD

FROM: DALE ZEHNER

DATE: JANUARY 19, 2006

RE: BRAC UPDATE

Based on previous discussions held at Operations Board meetings, VRE developed the attached white paper on the impact of proposed BRAC actions at Fort Belvoir and the Marine Corps Base (MCB) Quantico. In addition to ridership forecasts, potential impacts of the BRAC action were considered relative to the core network needs (e.g., fleet needs, storage and maintenance capacity, station facilities).

Comments were solicited and received from the jurisdictions and the paper will be discussed at the January 16th VRE Coordinating Committee. As additional information on specific BRAC planning is received, it will be incorporated into the document.

Estimated Effects of BRAC on the Virginia Railway Express



JANUARY 2007

As Reported to the VRE Operations Board

INTRODUCTION

In November, 2005 Congress passed and the President signed a law approving the recommendations of the Base Realignment and Closure (BRAC) Commission. Fort Belvoir and the Marine Corps Base Quantico (MCBQ) in northern Virginia are each identified in the recommendations as receiver sites for realigned activities representing approximately 25,000 jobs. This massive relocation of employees threatens to bring traffic on the already congested I-95/Route 1 travel corridors to a standstill for the better part of the day.

Solutions are needed that offer the employees at each installation commuting choices and mitigate the potential for permanent gridlock. The Virginia Railway Express (VRE) is positioned to be a transportation mode of choice for Fort Belvoir and MCBQ employees and part of the solution to address the BRAC transportation problem.

BACKGROUND

Fort Belvoir BRAC Action

The BRAC action for Fort Belvoir includes relocating Department of Defense (DOD) agencies and activities, primarily from other locations in northern Virginia and the DC region (e.g., Crystal City, Ballston, Rosslyn, Clarendon, Alexandria, Reston, Bethesda, Washington, DC) to Fort Belvoir. The Fort Belvoir BRAC action is summarized in the following table.

Fort Belvoir BRAC Summary

Activity	Population	
Existing Main Post	22,000	
Realigning Activities		
National Geospatial Intelligence Agency (NGA)	8,500	Proposed for Engineer Proving Ground (EPG)
Washington Headquarters Service (WHS) and Office of the Secretary of Defense (OSD) organizations	9,263	Proposed for EPG
Army staff in leased space in National Capital Region (NCR)	2,720	Proposed for Main Post
Program Executive Office for Enterprise Information Systems (PEO EIS)	480	Proposed for Main Post
MDA	150	Proposed for Main Post
DeWitt Community Army Hospital	2,069	Includes existing Dewitt Hospital employees and relocating employees from Walter Reed Medical Center
National Museum of the U.S. Army	231	Proposed for North Post golf course
Total Realigning Activities	23,413	
Total Fort Belvoir	44,000	Post-BRAC population is a net total that reflects organizations leaving Fort Belvoir as a result of other BRAC actions

Source: Belvoir New Visions Planners, Planning Strategies presentation to the BOA, August 2, 2006

Note: Personnel include military and civilian personnel plus on-base contractors. Off-base contractors who may relocate to the Fort Belvoir area are not included.

The Army is preparing an Environmental Impact Statement (EIS) that will assess the impacts of the realignment actions and the update of Fort Belvoir's Master Plan to reflect the additional people and activities. Alternatives being considered in the EIS include:

- Various development center locations at the Main Post, Engineer Proving Ground (EPG) site or combinations of locations
- New construction, renovation, or a combination of the two
- Evaluation of a single land use plan and iterations of alternative land use plans as they are developed
- A no action alternative

The Draft EIS is projected to be available for public review in early 2007. A public hearing will be held at that time to facilitate public comment. While a final decision on the location, type of construction and land use plan will not be made until the NEPA process is completed, the Army has identified the EPG site as the preferred location for nearly 18,000 personnel from the National Geospatial Intelligence Agency (NGA), Washington Headquarters Service (WHS) and Office of the Secretary of Defense (OSD).

Marine Corps Base Quantico BRAC Action

The BRAC action for MCB Quantico involves the relocation and collocation of DOD and individual service investigative agencies to MCBQ:

- Army Criminal Investigation Command (CID) from Fort Belvoir
- Counterintelligence Field Activity (CIFA) and Defense Security Service (DSS) from leased space in Arlington, Alexandria and additional locations in Maryland, California, Georgia and Ohio
- Naval Criminal Investigation Service (NCIS) from Washington, DC
- Air Force Office of Special Investigations (AFOSI) from Andrews Air Force Base

In addition to BRAC, other Federal and Marine Corps initiatives are expected to continue to identify MCBQ as a possible site for relocation of Marine Corps, DOD or Federal activities. As part of a long-range planning effort, MCBQ has evaluated potential areas within the installation that are the most suitable for locating new development, in addition to the BRAC 2005 actions, without impacting its primary mission of military education and training. Two parcels on the western side ("Westside") of the 60,000 acre MCBQ have been identified for potential future development.

The Federal Bureau of Investigation (FBI) and Drug Enforcement Administration (DEA), major tenants at MCBQ Westside, also anticipate future expansion of staff and students. Expansion of these agencies would occur at the existing FBI complex at Westside.

The following table summarizes the BRAC action and other future expansion at the MCBQ. The Marine Corps has initiated a planning effort that will evaluate two scenarios: "Alternative A", which encompasses the BRAC action plus approximately 1,650 additional Westside personnel (mostly associated with the FBI/DEA activities), and "Alternative B", which includes BRAC, FBI/DEA expansion, and 2,000 additional Marine Corps personnel (1,000 relocated from Mainside) at Westside.

The Marine Corps is preparing an EIS to assess the impacts of the MCBQ BRAC action and additional, future expansion at the base. The proposed action for that EIS is to use the Westside Development Area of MCBQ, located west of I-95, for the BRAC actions and for relocation of existing and future potential base functions.

Marine Corps Base Quantico BRAC Summary

Activity	Population	
Existing Mainside	6,000	Approximate total
Existing Westside		
Marine Corps Permanent Party	1,167	Staff and on-base contractors
Marine Corps Resident Students	1,457	Reside Westside
FBI/DEA	2,276	Staff and on-base contractors
FBI/DEA Resident Students	1,050	Reside Westside
Total Existing Westside	5,950	
Realigning Activities		
Investigative Agencies Staff and On-Base Contractors	2,658	Proposed for Westside
Investigative Agencies Students	315	Reside off-base
Non-BRAC Activities		
Network Operations Center	250	Proposed for Westside
FBI/DEA Staff and Contractor Expansion	1,144	
FBI/DEA Resident Student Expansion	260	
Additional Marine Corps Personnel	2,000	"Alternative B", in addition to BRAC action; 1,000 new to Westside, 1,000 relocated from Mainside
Total Additional Westside	4,627 (6,627)	"Alternative A" ("Alternative B")
Total MCBQ	16,627 (18,627)	Approximate post-BRAC total; "Alternative A" ("Alternative B")

Source: MCBQ, handout to MCBQ EIS Transportation Working Group, January 9, 2007

Note: Off-base contractors who may relocate to the MCBQ area are not included. Approximately 350 off-base contractors are estimated to relocate in conjunction with the BRAC action. Table does not include Reservists being trained and billeted at Camp Upshur/Westside.

As with the Ft. Belvoir EIS, a range of alternatives will be evaluated:

- One of the two development area sites west of I-95 or a combination of the two
- A range of development intensities to accommodate 3,000 (BRAC action only) and 5,000 personnel; 1,000 of the 5,000 personnel scenario would be MCBQ Mainside organizations relocating to Westside
- A no action alternative

All development will be new construction. The facilities to accommodate the BRAC relocations will be consolidated at a single site/complex. The EIS proposed action does not include the personnel associated with the MCBQ Network Operations Center or FBI/DEA expansion. The EIS will, however, take that additional growth into account in its impact analysis.

BRAC-RELATED TRAVEL PATTERNS

Fort Belvoir

The greatest numbers of relocating personnel belong to the NGA, WHS and OSD organizations and will be relocating to the Army EPG site. Most of the NGA/WHS/OSD personnel currently work in northern Virginia locations. Although some of the relocating employees currently work in locations served by VRE (e.g., Crystal City), it is unknown how many of them may already be VRE riders.

The Army has provided preliminary data on the residence locations and anticipated travel patterns of existing and relocating personnel, as indicated in the following table. Relocating NGA/WHS/OSD

employee residences are generally spread to the north and east of the Main Post while existing personnel are more concentrated to the south and west in south-eastern Fairfax and eastern Prince William Counties. The EIS transportation analysis will be based on the following assumptions:

- In 2011, the BRAC relocation year, 50% of relocating employees will retain their current residence locations and 50% will have relocated consistent with commuting patterns of existing Fort Belvoir personnel
- By 2030 all Fort Belvoir personnel commuting patterns will be consistent with existing patterns

Fort Belvoir Commuting Patterns

	North (north-eastern Fairfax, Arlington, DC, MD)	East (Alexandria, DC, MD)	South (south-eastern Fairfax, eastern Prince William, Stafford)	West (western Fairfax and Prince William)
Existing Personnel	20%	10%	60%	10%
	4,400	2,200	13,200	2,200
Existing + Relocating Personnel	9,140	4,570	27,420	4,570
EPG-bound Personnel	3,550	1,780	10,660	1,780

Source: Fort Belvoir Planning Team, BOA Transportation Working Group meeting, October 11, 2006

Detailed information regarding the mode of travel of existing Fort Belvoir personnel and relocating personnel is not available at this time. It is anticipated the EIS for the BRAC action will include an analysis of existing and projected mode share and other travel characteristics. Army planners have informally shared the following information:

- The Army planning goal is to achieve 5-10% basewide transit usage post-BRAC relocation
- Less than 2% of existing Fort Belvoir staff currently use transit
- 3 to 5% of Defense Logistics Agency staff (located at Fort Belvoir North Post and served by Fairfax Connector and Metrobus routes stopping at Franconia-Springfield Metrorail/VRE station and Lorton VRE station) use transit
- A 1:1.5 to 1:2¹ ratio of parking spaces to on-site employees (6 spaces for every 10 employees) is being used for planning purposes for new EPG facilities

Marine Corps Base Quantico

Investigative agencies relocating to MCBQ are primarily dispersed throughout the DC region in northern Virginia, the District and Maryland. Marine Corps planners estimate about half of the investigative agencies personnel relocating to MCBQ already live within 35 miles of the base, including approximately 15% who currently live in Prince William or Stafford Counties. Marine Corps planners are basing the EIS transportation analysis on the same assumptions as the Fort Belvoir EIS; by 2011 half of the relocating personnel will have migrated to Prince William and Stafford Counties and other points to the south of the base and adopt commuting patterns similar to existing MCBQ personnel and by 2030 all MCBQ personnel commuting patterns will be consistent with existing conditions.

¹ Consistent with National Capital Planning Commission Comprehensive Plan for the National Capital, Transportation Element

MCB Quantico Commuting Patterns

	North (Prince William, Fairfax, Arlington, DC, MD)	South (Stafford and other points south)
Existing Personnel	33%	67%
	3,960	8,040
Existing + Relocating Personnel		
Alternative A	5,610	10,750
Alternative B	5,940	11,420
Westside-bound Personnel	3,550	10,660
Alternative A	2,790	5,020
Alternative B	3,450	6,360

Source: MCBQ Planning Team, EIS Transportation Working Group meeting, January 9, 2007

Note: Commuters from points west are assumed to arrive at the base from either the north or south. Totals exclude students residing on-base and off-base contractors.

MCBQ planners have informally shared the following additional information regarding existing personnel mode splits. As with the Army BRAC action, it is anticipated the EIS will include an analysis of existing and projected mode share and other travel characteristics.

- Approximately 95% of commuters observed arriving at the base are single occupancy vehicles or low occupancy vehicles (< 3 persons)
- 4% of existing MCBQ staff commute in high occupancy vehicles (> 3 persons) based on observed conditions
- Approximately 1% of existing MCBQ staff use transit
- A 1:1 ratio of parking spaces to employees is being used for planning purposes for new investigative agency facilities
- MCBQ planners assume investigative agency personnel relocating to MCBQ Westside will not utilize public transit and/or carpool

BRAC-RELATED RIDERSHIP

The Lorton VRE station, the closest to the Fort Belvoir Main Post, is a small destination station for VRE. About 2% of VRE riders or 150 persons typically get off at the station in the morning based on the results of the annual VRE Customer Survey². The Quantico station, located in the Town of Quantico adjacent to MCBQ, is also a small destination station for VRE. An estimated 1% of VRE riders or about 75 persons get off at Quantico in the morning. While both stations are served by local bus transit – Fairfax Connector Route 171 at Fort Belvoir and PRTC OmniLink Route 1 at MCBQ – the existing service is not designed to exclusively serve the bases. The Fairfax Connector route makes one stop at the Defense Logistics Agency (DLA) site at the Fort Belvoir Main Post. The PRTC OmniLink Route 1 bus stops at Quantico town; MCBQ policy, however, prohibits the bus from picking up or discharging passengers at any location other than the train station.

² 2006 VRE Customer Survey

Ridership Challenges

Given the projected residence locations of many employees at each base, it is reasonable to consider the VRE one of several transit options available to serve commuters to each base once the BRAC relocations are complete. In order for the VRE to be a truly viable commuting option, however, a number of issues must be addressed at each installation:

- The lack of connecting transit to link the stations to the dispersed, on-base employment locations
- The predominance of free, on-base parking
- The existing low levels of transit usage among base employees and lack of formal travel demand management (TDM) programs that encourage employees to utilize alternative commuting options (e.g., transit, carpools, vanpools, etc.)

The VRE market share of commuter trips increases with the distance from the city center and is affected by the frequency, reliability and comfort of the service compared to single occupancy vehicles (SOV) as well as competing modes such as Metrorail, line haul/commuter bus, and car and van pools. Beyond the Metrorail service area, the I-95/I-395 as well as I-66 HOV lanes are competitive with VRE for many commuters (since they are free) and have the greatest effect on VRE ridership potential.

The high occupancy toll (HOT) lane project proposed for I-95/I-395 is likely to affect VRE ridership potential, however. The project is proposed by a private consortium under the Virginia Public Private Transportation Act (PPTA). Environmental and financial studies are underway for the two-phase project: the Northern Phase adds HOT lanes to the existing I-95/I-395 high occupancy vehicle (HOV) lanes from Dumfries to their terminus on the Virginia side of the 14th Street Bridge while the Southern Phase constructs new HOV/HOT lanes on I-95 from Dumfries to Massaponax south of Fredericksburg. The plan being advanced proposes new or improved access points throughout the corridor, including points near the EPG (Newington Rd./Fairfax County Parkway) and MCBQ (Russell Rd.). New commuter parking lots are also proposed near each location as well as a number of other locations between Quantico and Massaponax. It is anticipated that the northern phase will open in 2010 and the southern phase by 2015.

Although transit service will not be provided by the operator of the HOT lanes, the enhanced access and additional commuter parking lots offer the opportunity for expanded commuter access between the HOV/HOT lanes and destinations along the corridor. A HOV/HOT Lane Transit Advisory Committee has been established by the Virginia Department of Rail and Public Transportation (VDRPT) to assist them in formulating a transit and TDM plan for the I-95/I-395 HOT Lanes project. The potential for expanded transit service in the corridor, enhanced access to BRAC work locations, and free price for HOV-3 vehicles makes the HOV/HOT lanes, if implemented as currently planned, very competitive with VRE service.

Trip Estimates

As noted previously, MCBQ planners are assuming that investigative agency personnel relocating to MCBQ Westside as a result of BRAC will not utilize public transit and/or carpool. Given the distance to other Westside work locations from the Quantico VRE station and lack of connecting transit, it is assumed none of the MCBQ personnel working at Westside would commute to work via the VRE. The pool of potential VRE commuters would be limited to personnel working at Mainside. Since there is no increase in MCBQ personnel projected for Mainside as a result of BRAC or other actions, no new VRE riders have been assumed for MCBQ. Ridership estimates are limited to new trips associated with the BRAC action for Fort Belvoir.

Estimates of potential new VRE trips to Fort Belvoir were developed based on existing VRE ridership data, current transit usage at Fort Belvoir/DLA and regional demographic trends. The estimates also consider the challenges to attracting new riders discussed in the previous section. VRE data indicates approximately 100-150 people currently get off at the Lorton station in the mornings, most destined for the Fort Belvoir area. Army planners have noted transit usage at the DLA complex at Fort Belvoir is in the 3-5% range. The complex is served by Fairfax Connector bus that provides a direct connection from both the VRE Lorton station and Metrorail stations (Franconia-Springfield and Huntington). The regional transit usage rate by public transit (i.e., VRE, PRTC, FRED and other local transit providers plus taxicabs) for workers in Prince William and Stafford Counties and the City of Fredericksburg is approximately 3%³ according to Census 2000 records. While data was not available to break out the shares by each public transit provider, it is assumed that VRE riders make up a large portion of the total. Drawing upon this data, three ridership scenarios were developed as outlined in the following table. The “high” scenario assumes the VRE captures 5% of work trips to Fort Belvoir. The “medium” scenario assumes 2.5% and the “low” scenario assumes the VRE captures 1%.

Estimated New VRE Trips to Fort Belvoir

	Fred'bg Line	Manassas Line	Total	Fred'bg Line	Manassas Line	Total	Fred'bg Line	Manassas Line	Total
	Low (1% share of work trips)			Medium (2.5 % share of work trips)			High (5 % share of work trips)		
EPG Trips	107	18	125	266	44	311	533	89	622
Main Post Trips	67	28	95	320	70	390	738	140	878
Total Fort Belvoir Trips	174	46	220	586	114	701	1,271	229	1,500

Note: One-way trips.

The table reflects new VRE trips to Fort Belvoir destinations. The Main Post trips on the Fredericksburg Line have been reduced to reflect existing VRE riders destined to the Main Post. The estimates also assume leased space in Alexandria and Arlington vacated by Army and DOD personnel will be backfilled with new tenants and the VRE riders among those new tenants will offset those relocating to Fort Belvoir. The estimates also assume connecting transit is available and runs at least as frequently as current service to Fort Belvoir.

POSSIBLE BRAC EFFECTS ON VRE

Ridership

The VRE Strategic Plan recommends the VRE work towards a 2025 “Targeted Growth” ridership goal of 25,000 to 30,000 trips per day (21,300-23,500 trips per day in 2013). Current, short-term ridership estimates, shown in the following table, are tracking at the Strategic Plan 2025 “Constrained Growth” level of 18,300-20,100 trips per day in 2013. Projected out to 2025, current ridership projections fall between the Constrained Growth and Targeted Growth levels. Estimated additional BRAC-related VRE trips are also shown in the table.

³ Census 2000 Profile of General Demographic Characteristics (DP-1) for Arlington, Fairfax, Prince William and Stafford Counties and the cities of Alexandria, Fairfax, Manassas, Manassas Park and Fredericksburg.

Estimated Daily VRE Ridership (2007-2012)

	2006	2007	2008	2009	2010	2011	2012
2006 Ridership Projections	14,700	15,200	15,770	16,440	17,450	18,130	18,830
2006 Projections + BRAC Effect "High" Scenario (5% work trip share)	14,700	15,200	15,770	16,440	17,450	21,130	21,890
Net Increase	0	0	0	0	0	3,000	3,060
2006 Projections + BRAC Effect "Medium" Scenario (2.5% work trip share)	14,700	15,200	15,770	16,440	17,450	19,532	20,260
Net Increase	0	0	0	0	0	1,402	1,430
2006 Projections + BRAC Effect "Low" Scenario (1% work trip share)	14,700	15,200	15,770	16,440	17,450	18,570	19,279
Net Increase	0	0	0	0	0	440	449

BRAC-related ridership estimates represent a 2-16% increase in daily riders over current projections, depending upon the scenario. While new riders are possible, the "high" scenario is an optimistic, best case scenario. The effects on overall VRE ridership levels are more likely to be at the "low" to "medium" end of the range above due to competing transit modes, generous amounts of SOV parking provided at each base and other factors. If projected out to 2025, post-BRAC ridership levels remain between the Constrained Growth and Targeted Growth levels for the "low" and "medium" scenarios. Only if the significant increase in riders represented by the "high" scenario is realized does ridership rise to the Targeted Growth level.

VRE Core Network Needs

The principal short-term needs for VRE to keep pace with growth in ridership are in the areas of rolling stock (passenger cars and locomotives), station facilities (parking and platforms) and train storage and maintenance capacity. These basic needs must be met in order for VRE to continue to deliver a high-quality commuter rail service and before serious consideration can be given to increasing the quantity of VRE train service, including lengthening of consists.

The VRE was designed and sized for 10,000 riders per day. Ridership has grown beyond that capacity and the VRE currently accommodates approximately 14,700 riders a day and over 3.6 million trips per year⁴. The VRE Strategic Plan recommends a series of short-term investments that address both maintenance of existing assets and expansion of core capacity to accommodate the Targeted Growth levels. While progress is being made towards the necessary investments, financial constraints have deferred some of those investments.

- **Passenger Cars** – In 2006 the VRE completed its purchase of 61 new rail cars. The purchase satisfies coach needs through 2015. The acquisition of an additional 39 coaches is recommended by 2016 to continue to maintain seat availability at Constrained Growth levels; 59 coaches are needed to meet Targeted Growth levels.
- **Locomotives** – The VRE locomotive fleet is 35+ years old. While a program of top-deck rebuilds is underway, such measures will only extend the locomotive life span for another four

⁴ As of the end of FY2006

to five years. Additionally, the GP39 and GP40 locomotives do not have sufficient capacity⁵ to reliably accommodate longer consists. VRE must replace existing and acquire additional locomotives beginning in 2008 to maintain its current operations and allow growth.

- **Parking Capacity** – As of the end of FY2006, six⁶ of the VRE's 13 rail station parking lots reach or exceed their practical capacity (85% or better utilization) before the end of the morning peak period. The planned Manassas and Burke Centre parking structures will add approximately 1,200 spaces to the Manassas Line, although demand for parking at Broad Run may still exceed capacity, especially by riders coming from points farther west of the VRE service area. Serving additional Fort Belvoir riders adds emphasis to the need for parking expansion and/or alternative station access options for terminal stations, particularly on the Fredericksburg Line. Approximately 500-1,000 additional parking spaces are needed at the Fredericksburg and Leeland Rd. stations alone by 2015 to meet projected demand; up to 3,400 additional spaces are needed by 2025 along the entire Fredericksburg Line.
- **Platform Capacity** – lengthening of station platforms is necessary at most station locations, particularly on the Fredericksburg Line, to accommodate longer trains.
- **Mid-Day Storage** – Midday storage has become critical since the Amtrak Ivy City Coach Yard used by VRE is filled to capacity. Mid-day storage for up to 83 locomotives or coach units (up to 14 6-to-8 car consists) can be accommodated in DC once the planned L'Enfant storage track is completed in 2007. Mid-day storage capacity will be exceeded when the fleet grows beyond that size.
- **Overnight Storage** –overnight storage is constrained by the number of available slots for passenger cars and locomotives at the VRE's end of the line storage yards. Capacity currently exists to store 63 units (8 consists) at the Crossroads Yard and 54 units (8 consists) at the Broad Run Yard.

In the long term, through 2025, continuing investment in VRE core network needs, as outlined in the Strategic Plan, is required to sustain existing operations and support projected ridership levels. Financial constraints have, in part, suppressed ridership growth and have hampered progress towards building a network capable of supporting the VRE Board-endorsed goal of 25,000 to 30,000 daily trips. The BRAC-related ridership growth pushes projected ridership closer to the Targeted Growth level and further emphasizes the need to overcome financial challenges affecting continued investment in the VRE system.

Planned Network Expansion

The BRAC actions are not anticipated to alter the requirements outlined in the VRE Strategic Plan for an expanded network. The potential for Fort Belvoir and MCBQ personnel to follow regional trends and migrate to residences at the outer ends or beyond the VRE service area gives additional weight to the argument for an expanded VRE network.

VRE AS ONE SOLUTION TO THE BRAC TRAFFIC PROBLEM

There are a number of factors affecting the selection of transit, in this case VRE, as a mode of choice for Fort Belvoir and MCBQ commuters, including:

- Does VRE take me where I want to go when I want to go there? and
- What does the trip cost?

⁵ Engine horsepower and head end power (HEP) for running the train's lighting, heating and air conditioning systems.

⁶ Fredericksburg and Leeland Rd. on the Fredericksburg Line and Broad Run, Manassas Park, Burke Centre and Rolling Road on the Manassas Line.

If an affirmative decision to ride VRE is made, additional questions must be answered:

- Can I find a seat?
- Can I find a parking space at the station?

Does VRE take me where I want to go when I want to go there?

The VRE service area coincides with the residence locations of a large segment of Fort Belvoir and MCBQ employees. The VRE schedule generally coincides with the commuting times of those employees. Those factors bode well for the VRE to capture a portion of Fort Belvoir or MCBQ commuters.

Marine Corps planning decisions to date have effectively ruled out the possibility of VRE as a commuting option for MCBQ commuters, however. Competition from other modes serving Fort Belvoir – bus transit or carpooling via the proposed I-95/I-395 HOV/HOT corridor – is likely to dampen VRE attractiveness as well. It is believed, nevertheless, that VRE can still be attractive to a segment of commuters, especially at the “Low” ridership scenario level, if connecting transit service is provided between VRE stations and work locations. Specifically, connecting transit must feature:

- Service timed to meet every train
- Drop-off points at work locations or within comfortable walking distance (i.e., 1,500-2,000 feet or less)

The provision of connecting transit is beyond VRE’s control. However, VRE will work closely with local transit providers and/or DOD to coordinate connections to and from the VRE stations.

What does the trip cost?

Cost considerations include:

- Actual fare cost, and
- The time cost to take transit relative to the time it takes to drive the same distance or take another mode

While the majority of VRE riders receive some type of transit subsidy, the cost of connecting transit from the VRE station to the final destination and the cost of parking (at the origin park-and-ride location and relative to the cost of parking at the work location if a commuter drives to work) are also considerations. Parking at VRE stations is currently free, in order to encourage ridership. Transfers to and from VRE stations to Fairfax Connector, OmniLink and Metrobus routes are currently free as well.

A decision has not yet been made there regarding connecting transit between VRE stations and Fort Belvoir work locations, let alone whether there will be a cost and how much for such service. Army planners have indicated that paid parking at the new BRAC work locations is not being considered at this time. Coupled with the relatively generous amount of parking being planned for those locations, there does not appear to be a great incentive from a price/TDM perspective for relocating employees to use modes other than SOV. The time cost of traveling the adjacent roadways may push employees to seek out commute alternatives, however.

About 30% of VRE riders transfer to another transit mode (i.e., Metrorail or bus) as part of their trip to their final destination. It is assumed Fort Belvoir-bound VRE commuters would be willing to do the same, assuming that connecting transit service is available to meet every train, convenient and priced right. The time cost of taking a bus to complete the trip from the VRE station can also affect the willingness to ride, however. The distance from VRE stations to various Fort Belvoir and MCBQ work locations is indicated in the following table.

Distance from VRE Stations to Work Locations (miles)

	Fredericksburg Line			Manassas Line
	Franconia-Springfield	Lorton	Quantico	Backlick Rd.
Fort Belvoir EPG	2.9	3.8	N/A	3.4
Fort Belvoir Main Post (DLA)	7.5	5.0	N/A	N/A
Fort Belvoir Main Post (Belvoir Rd. – 16 th St.)	N/A	6.4	N/A	N/A
MCBQ Westside/MCB1 Site	N/A	N/A	7.3	N/A
MCBQ Westside/Russell Rd. Site	N/A	N/A	6.4	N/A
MCBQ Mainside (Lejeune Hall)	N/A	N/A	1.3	N/A

According to Army planners, current transit usage by Defense Logistics Agency (DLA) headquarters staff, located at the McNamara Building at the Fort Belvoir Main Post, is approximately 3-5%. The DLA complex connects to VRE and Metrorail stations via Fairfax Connector service at approximately 30 minute headways in the peak periods. Ridership projections are based on a level of VRE usage at the low end of that range and assume shuttle service is of similar frequency, terminates at the work site, and is promoted as part of a base-wide TDM program. While there is greater confidence in achieving the projected ridership at the Fort Belvoir EPG, there is less certainty whether it will hold true for the Fort Belvoir Main Post given the more dispersed work locations and the availability of free parking.

The expansion of commuter parking within the I-95 corridor as part of the HOV/HOT lanes project is expected to work against expanded VRE ridership from a cost perspective, since parking is free at the commuter lots. VRE preference will depend upon the cost of other transit service to Fort Belvoir that may be available from the commuter lots (i.e., bus or vanpool) or the availability of carpool partners to satisfy the 3 person requirement for free use of the HOV/HOT lanes.

Can I find a seat? Can I find a parking space at the station?

These specific factors relate directly to the VRE's core network capacity. While seat and parking capacity are foremost in riders concerns, investment in VRE infrastructure – rolling stock, parking, platform capacity, mid-day and overnight storage, and rail infrastructure – at greater levels than currently available is necessary for VRE to be a viable solution.

New VRE Station

A VRE station has been suggested between the existing Lorton and Franconia-Springfield stations, to serve riders destined for the Fort Belvoir EPG. Serving the EPG using VRE will require a shuttle bus connection to the EPG whether or not a new station is built. There is no advantage to constructing a new station when the existing stations are within reasonable shuttle travel distance (2.9 miles from Franconia-Springfield to EPG, 3.8 miles from Lorton and 3.4 miles from Backlick Rd.).

The VRE does not believe an additional station between Lorton and Franconia-Springfield is a practical or feasible option due to the following additional concerns:

- Low projected ridership: planning estimates of ridership are very optimistic for what is essentially a station dedicated to a single user and are predicated on an aggressive effort by the DOD to promote transit ridership.
- Funding: priorities for maintaining and expanding VRE facilities and equipment are outlined in its capital improvement plan (CIP). The CIP is currently under-funded and a new station would be in addition to already identified capital needs. Assuming that DOD provided capital funding for a new station, a consistent source of annual operating funds would also be necessary to maintain it.
- Railroad operations: the short rail distance between an EPG station and adjacent stations (approx. 1.6 miles to Franconia-Springfield and 3.1 miles to Lorton) is undesirable for commuter rail operations. The VRE Fredericksburg Line average station spacing is 4.9 miles.
- Railroad capacity: VRE is currently limited on the number of trains it can operate under the CSXT/VRE operating agreement. CSXT must also approve additional stations in the VRE system.

Furthermore, an additional stop on the Fredericksburg Line will require adjustment of VRE schedules to accommodate boarding/alighting at the new station and increase the time it takes to get to the CBD stations. Longer travel times to the CBD destinations to accommodate a minor destination station may serve to alienate CBD-bound riders who form the majority of VRE riders.

Finally, a new station is a costly proposition, as indicated in the table below, and would only add to the long list of unfunded transportation improvements identified to support the BRAC actions.

Estimated VRE Station Costs (2006\$)

Description	Estimated Cost
EPG station	\$ 6,500,000
Vehicular bridge/roadway (VRE station to EPG)	\$ 12,000,000
Pedestrian bridge/roadway (VRE station to EPG)	\$ 4,000,000

Note: Does not include land acquisition costs, station operations and maintenance costs or cost of shuttle bus service.

Conclusion

The VRE is a viable option to serve a segment, although small, of BRAC-related commuters bound for Fort Belvoir, particularly the EPG. It should be noted that serving even that small segment is based upon several key assumptions, including the provision of connecting transit between the VRE stations and the EPG and the availability of parking at the VRE origin stations.

From a broader perspective, the BRAC actions serve to emphasize the financial challenges facing the VRE relative to accommodating any growth in ridership, be it BRAC related or otherwise. The path to position VRE as one solution to the region’s traffic problem, including management of BRAC-related traffic, is to keep the focus on the strategic growth of the system. The following table summarizes the VRE investments necessary to support that focus.

Estimated Costs to Support BRAC/Targeted Growth Scenario (2006\$)

Description ¹	2012	2025
Locomotives ²	\$ 41,000,000	\$ 8,600,000
Coaches ³	N/A	\$ 133,000,000
Mid-day storage ⁴	\$ 10,000,000	\$ 50,000,000
Overnight storage/yard maintenance facilities	\$ 10,000,000	\$ 50,000,000
Parking expansion ⁵	\$ 35,000,000	\$ 17,000,000
Fredericksburg Line platforms		
Fredericksburg Line platform extensions, same side ⁶	\$ 10,500,000	
Fredericksburg Line platform expansions, off side ⁷		\$ 20,200,000
Manassas Line platforms		
Manassas Line platform extensions, same side ⁶	\$ 3,000,000	
Manassas Line platform expansions, off side ⁷		\$ 30,000,000
Total	\$ 109,500,000	\$ 308,800,000

Notes:

- 1 *Descriptions and costs are system wide requirements to serve targeted growth ridership levels, excluding planned CSXT/DRPT/3rd track improvements and Gainesville-Haymarket expansion project. Shuttle bus operation/maintenance between VRE station(s) and Fort Belvoir/MCBQ also excluded.*
- 2 *24 additional locomotives (beginning c. 2008-2023) are needed to meet 2025 targeted growth requirements (excludes incremental, additional Gainesville-Haymarket requirements).*
- 3 *Assumes planned acquisition of 61 cabs/coaches; 62 additional coaches (60 c. 2014-2016 and 20 c. 2023) are needed to meet 2025 requirements (excludes incremental, additional Gainesville-Haymarket requirements).*
- 4 *Mid-day storage in addition to planned L'Enfant storage tracks.*
- 5 *1,500 additional parking spaces on the Fredericksburg Line by c. 2012; 950 additional parking spaces by c. 2025. Estimated cost does not include land acquisition. Number of spaces is in addition to planned parking at Burke Centre and Manassas.*
- 6 *Lengthen existing platforms to 600 feet at Leeland Rd., Brooke, Rippon, Lorton, Franconia-Springfield, Crystal City, L'Enfant, Rolling Rd. and Backlick Rd.*
- 7 *Rippon, Brooke, Leeland, Lorton, Broad Run, Manassas Park, Burke Centre, Rolling Rd. and Backlick Rd. stations. 2012 Fredericksburg Line cost also includes automatic signal control system between Milepost CFP 110 in Arlington, VA and Milepost CFP 112.3 in Washington, DC*

The ridership estimates and projected VRE system improvements and costs are based upon currently available information on the BRAC relocations. More information should become available in February-March 2007, when the Army and Marine Corps are scheduled to release draft EIS reports. The data in this paper will be updated, as needed, following the publication of the environmental documents.