

Greater RVA Transit Vision Plan: Near-Term Strategic Technical Analysis

Technical Memorandum I
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Background & Purpose of Study

The Greater RVA Transit Vision Plan was completed in 2017 and establishes a long-term vision for transit in the Richmond region. Through a collaborative process involving regional stakeholders and the public, the Greater RVA Transit Vision Plan is intended to guide long-term transit investments and expansion as the Richmond region continues to grow, using the year 2040 as a benchmark for achieving the plan's goals. To develop the long-term transit vision, the Greater RVA Transit Vision Plan analyzed a number of relevant factors to characterize the transit demand. These included existing land uses, existing demographics and trends, population and employment characteristics, adopted future land use plans, forecasted population and employment densities, and opportunities to link people with jobs and services throughout the region. The result of this analysis was to identify where demand for increased transit service appeared to be greatest as the foundation for a future 2040 vision of the transit network to effectively serve the Richmond region.

Since the endorsement of the Greater RVA Transit Vision Plan in April 2017, significant transit improvements have occurred in the Richmond region. These improvements include the opening of the Greater Richmond Transit Company (GRTC) *Pulse* Bus Rapid Transit (BRT), GRTC local service expansion to Short Pump in Henrico County, and implementation of the Richmond Transit Network Plan (RTNP). Moreover, new local service is planned through a 2-year demonstration project to serve US Route 1/301 in Chesterfield County starting in March of 2020. These improvements indicate progress toward the goals established in the Greater RVA Transit Vision Plan.

The purpose of this study, the *Greater RVA Transit Vision Plan: Near-Term Strategic Technical Analysis*, is to build upon the success of these recent transit improvements and develop a shorter, near-term strategy to continue advancing the Richmond region toward the long-term vision established in the Greater RVA Transit Vision Plan. This study assumes near-term improvements would occur within the next five to ten years; however, exact timelines for implementation of this study's recommendations will be subject to local and state priorities and availability of funding for improvements. While the Greater RVA Transit Vision Plan identified 34 future transit corridors that included a range of service types (BRT, local, and express), the Near-Term Strategic Technical Analysis focuses on only the 20 high-frequency (20-minute frequency or less) corridors identified in the Greater RVA Transit Vision Plan. Express routes identified in the Greater RVA Transit Vision Plan are not included in this analysis. As part of the Near-Term Strategic Technical Analysis, these high-frequency corridors will be evaluated to identify the corridors that are most viable for near-term implementation and determine the requisite service type and service plan. The Greater RVA Transit Vision Plan network is depicted in **Figure 1**. The Near-Term Strategic Technical Analysis evaluation corridors are shown in **Figure 2**. The evaluation corridors identified as part of the Near-Term Strategic Technical Analysis study are also listed in **Table 1**.

The Near-Term Strategic Technical Analysis methodology consists of three steps: Initial Screening, Detailed Analysis, and Implementation Feasibility. Each step, all of which are further defined in the Methodology section, narrows down the list of viable corridors for high-frequency, near-term service. The result of this study will be the identification of prioritized corridors for local service implementation in the near term that continue to advance the region towards the vision established in the Greater RVA Transit Vision Plan.

This is the first of two technical memoranda to be completed as part of the Near-Term Strategic Technical Analysis and summarizes the methodology and results of the Initial Screening and Detailed Analysis steps. The second technical memorandum will report on the Implementation Feasibility step and include prioritization of corridors for implementation of high-frequency service in the near term.

Figure 1. Greater RVA Transit Vision Plan Network

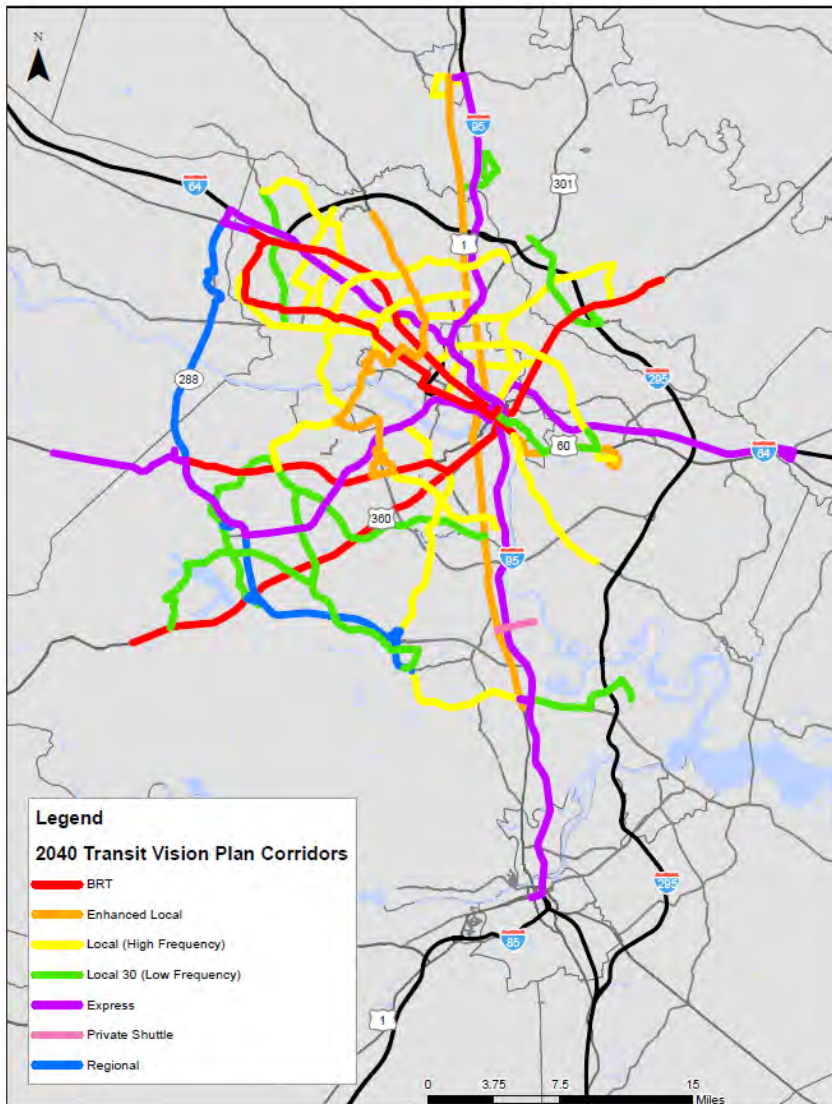


Figure 2. Near-Term Strategic Technical Analysis Evaluation Corridors



Table 1. Near-Term Strategic Technical Analysis Evaluation Corridors

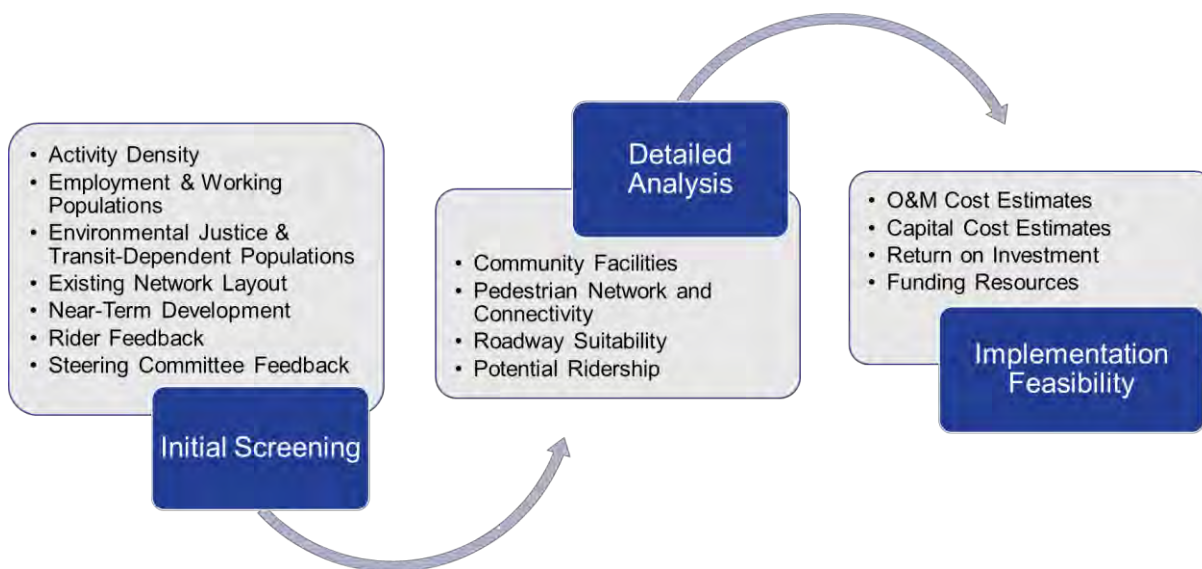
A. Broad Street – Short Pump
B. Hull Street
C. Mechanicsville Turnpike
D. Midlothian Turnpike
E. West End South
F. Airport via Route 60
G. Jeff Davis South to Chester
H. Route 1 to Ashland
I. West End Route 6 – Staples Mill/Route 33
J. Glenside to Midlothian
K. Laburnum Avenue – Willow Lawn to Airport
L. Iron Bridge Road – City to Jeff Davis
M. Route 5 South
N. Lee Davis Road
O. Warwick Road
P. West End and Midlothian
Q. West End Route 3 – Lauderdale
R. West End Route 4 – Pemberton Nuckols
S. West End Route 5 – Innsbrook
T. West End Route 7 – Regency to Azalea

Methodology

The Near-Term Strategic Technical Analysis methodology is composed of three steps: Initial Screening, Detailed Analysis, and Implementation Feasibility. These steps are illustrated in **Figure 3**. The first two steps, Initial Screening and Detailed Analysis, are the subject of this technical memorandum. The final step, Implementation Feasibility, will be summarized in the second technical memorandum. The goal of these three steps is to identify from the 20 high-frequency corridors established in the Greater RVA Transit Vision Plan which corridors are most viable for high-frequency, near-term service. Each step builds upon the previous step, increasing the level of analysis and reducing the number of corridors or corridor segments considered to be viable for near-term local service implementation.

A Steering Committee was established at the outset of the project to provide input and make recommendations throughout the course of the work. The steering committee includes representatives from the Virginia Department of Rail & Public Transportation (DRPT), GRTC, RideFinders, the localities in the transit service area including the City of Richmond, Chesterfield County, Henrico County, Hanover County, and the Town of Ashland along with three representatives from the RRTPO Community Transportation Advisory Committee (CTAC), and RRTPO staff. The project methodology and results of each step have been presented to the Steering Committee for feedback and direction. The results of the Initial Screening and Detailed Analysis steps presented in this Technical Memorandum reflect input from the Steering Committee in preparation for the Implementation Feasibility step.

Figure 3. Near-Term Strategic Technical Analysis Methodology



Initial Screening

Overview

Initial Screening was the first step to determine which corridors were most viable for near-term implementation of high-frequency service. This step looked at all 20 high-frequency corridors identified in the Greater RVA Transit Vision Plan (as shown in **Figure 2** and listed in **Table 1**) and considered three data-driven analysis metrics: activity density; employment and working populations; and environmental justice and transit-dependent populations. These metrics assessed the potential near-term demand and need for transit service along a corridor. Each metric was analyzed for the area within 0.5 miles of a corridor, which represents a generally accepted walking distance for transit users, and typically equates to an approximate 10-minute walk. This is a commonly-used distance in analyses for assessing transit demand, including transit-oriented development planning and assessments of Federal Transit Administration Capital Investment Grants.

In addition to the three data-driven analysis metrics, the existing GRTC transit network, GRTC rider feedback, known development potential, and Steering Committee input were considered during Initial Screening. The proposed corridors were overlaid on top of existing GRTC routes to understand how these corridors may connect and overlap with the existing transit network. GRTC rider feedback provided valuable information on riders' desires for more frequent service or service expansion to specific locations throughout the Richmond region. Site development activity—proposals approved but not built—along corridors were identified as another factor driving additional transit demand. For purposes of this study, potential near-term development considered high-employment generating land uses, such as multi-story office buildings or retail shopping centers as well as multi-family residential developments totaling more than 100 units. Zoning permit approval data detailing number of units for residential projects and square footage for non-residential projects was provided by Henrico County, Chesterfield County, and the City of Richmond. In addition, the Steering Committee input in an August 8, 2019 work session on the Initial Screening validated that analysis results were consistent with their knowledge of the local area and provided consensus on the corridors which showed the greatest viability for high-frequency, near-term service and, therefore, should be advanced to the Detailed Analysis step.

Initial Screening

- Activity Density
- Employment & Working Populations
- Environmental Justice & Transit-Dependent Populations
- Existing Network Layout
- Near-Term Development
- Rider Feedback
- Steering Committee Feedback

Initial Screening Metrics

Activity Density

Activity density, or the density of people and jobs along a corridor, is an indicator of the level of demand for transit service in the area. Activity density was calculated as the population and employment density per acre. Activity density was determined for each Traffic Analysis Zone (TAZ) within 0.5 miles of the corridors using 2017 population and employment estimates from the Richmond Tri-Cities Regional Travel Demand Model socioeconomic data. The DRPT Multimodal System Design Guidelines¹ provide a framework for planning multimodal corridors based on different environments characterized by varying intensities of activity density. The DRPT Multimodal System Design Guidelines assign a supported transit service for six ranges of activity density, as shown in **Table 2**.

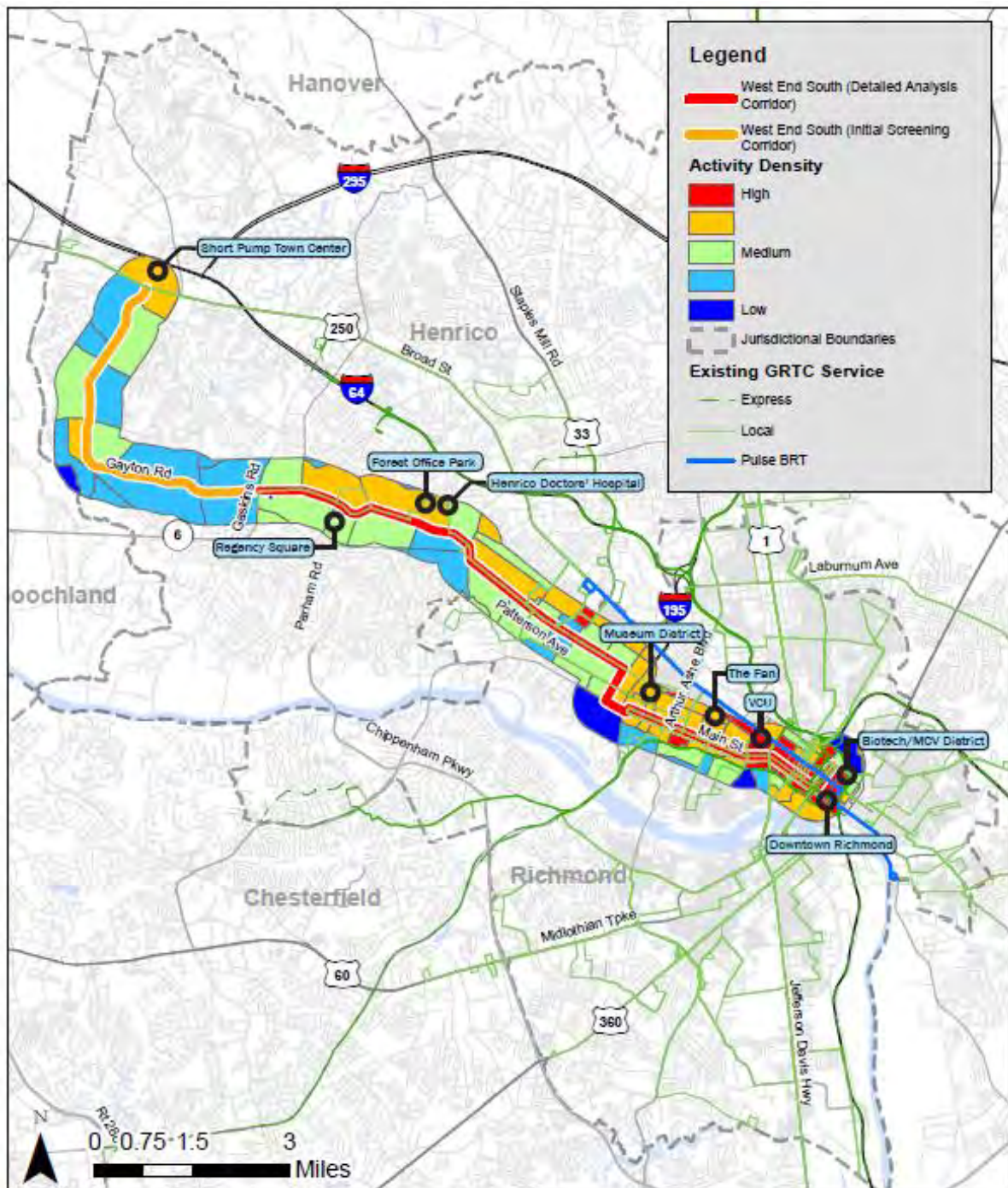
Table 2. Supported Transit Service by Activity Density

Activity Density (Jobs and People per Acre)	Supported Transit Service
1 or less	Demand Response
1 to 10	Demand Response
10 to 25	Fixed Route Bus
25 to 60	Express Bus
60 to 100	BRT/LRT
100 or more	LRT/Rail

Activity density for a sample corridor (West End South) is depicted in **Figure 4**. Areas with a minimum of 10 residents and employees per acre are supportive of fixed route service, which corresponds with TAZs shown in green, orange, or red on the sample map. Areas in blue which have fewer than 10 residents and employees per acre would generally not warrant fixed route service, according to the DRPT Multimodal Design Guidelines. Activity density maps for all Initial Screening corridors are provided in the **Appendix**.

¹ "Multimodal System Design Guidelines," Virginia Department of Rail and Public Transportation. October 2013.

Figure 4. Sample Corridor Activity Density Map



Employment and Working Populations

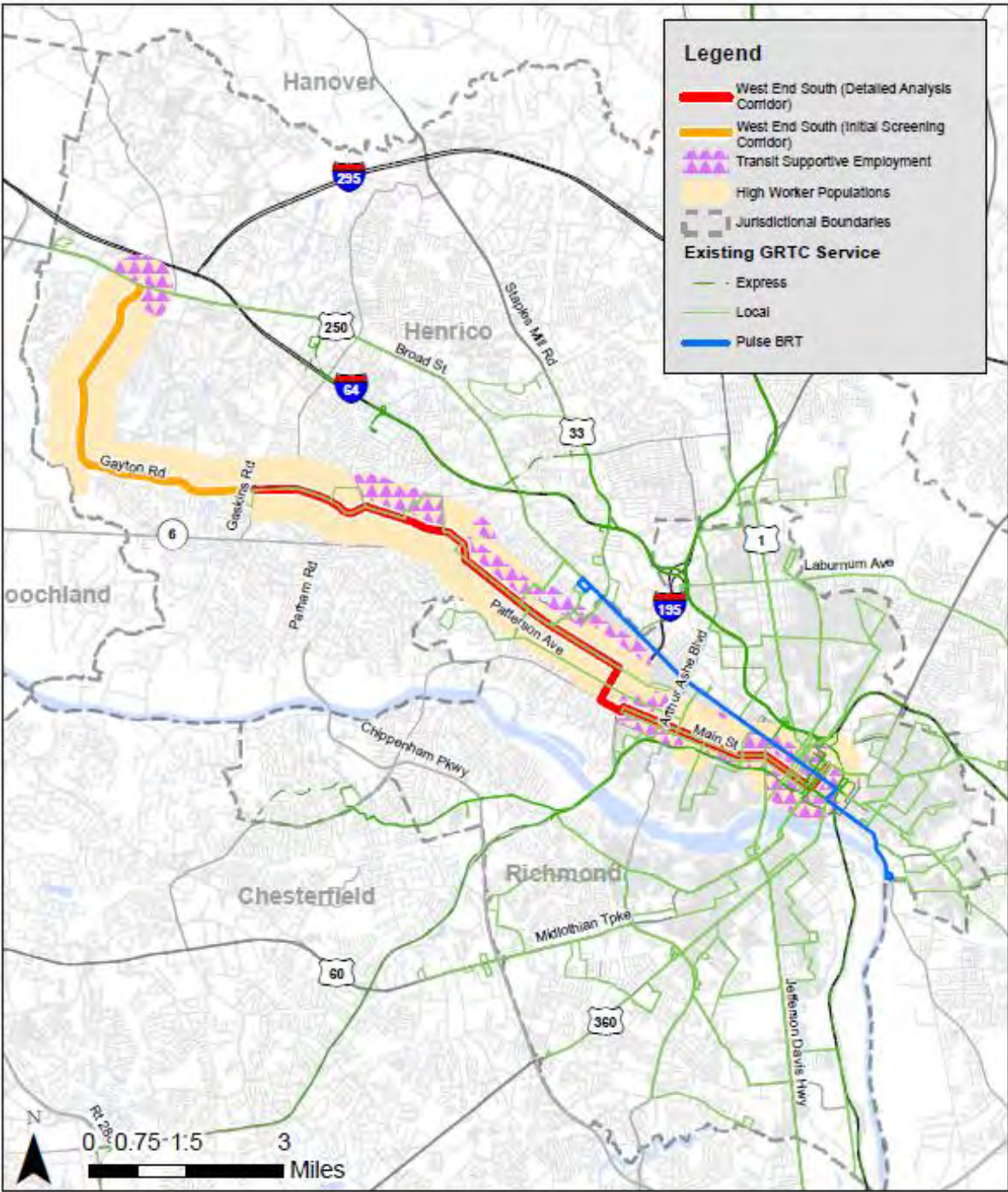
The ability to connect employees to job locations can be another indicator of the demand and need for transit service. To better understand these potential connections, transit-supportive employment and high worker populations were identified for each corridor as part of the Initial Screening step.

Transit-supportive employment areas were defined as locations meeting the DRPT Multimodal Design Guidelines thresholds for fixed route service based on employment density alone. Employment density was determined for each TAZ using 2017 employment estimates from the Richmond Tri-Cities Regional Travel Demand Model. The threshold for transit-supportive employment areas was 10 employees per acre, in line with the minimum activity density requirements for fixed-route bus service.

High worker populations were defined as the top quartile of U.S. Census tracts for workers per acre in the PlanRVA TPO or designated urbanized area. Data from the 2016 American Community Survey (ACS) 5-year estimates was used to identify the top quartile relative to the Richmond area, which included tracts that had 2.34 workers per acre or more.

Transit-supportive employment and high worker population areas are shown for a sample corridor (West End South) in **Figure 5**. Employment and working population maps for all Initial Screening corridors are provided in the **Appendix**.

Figure 5. Sample Corridor Employment and Working Populations Map



Environmental Justice and Transit-Dependent Populations

By incorporating Environmental Justice (EJ) populations into the analysis metrics, the project team places high value on equitable transportation service and meaningful involvement of all people, regardless of race, ethnicity, income, national origin, disability or educational level, with respect to the development, implementation, and enforcement of laws, regulations, and policies.²

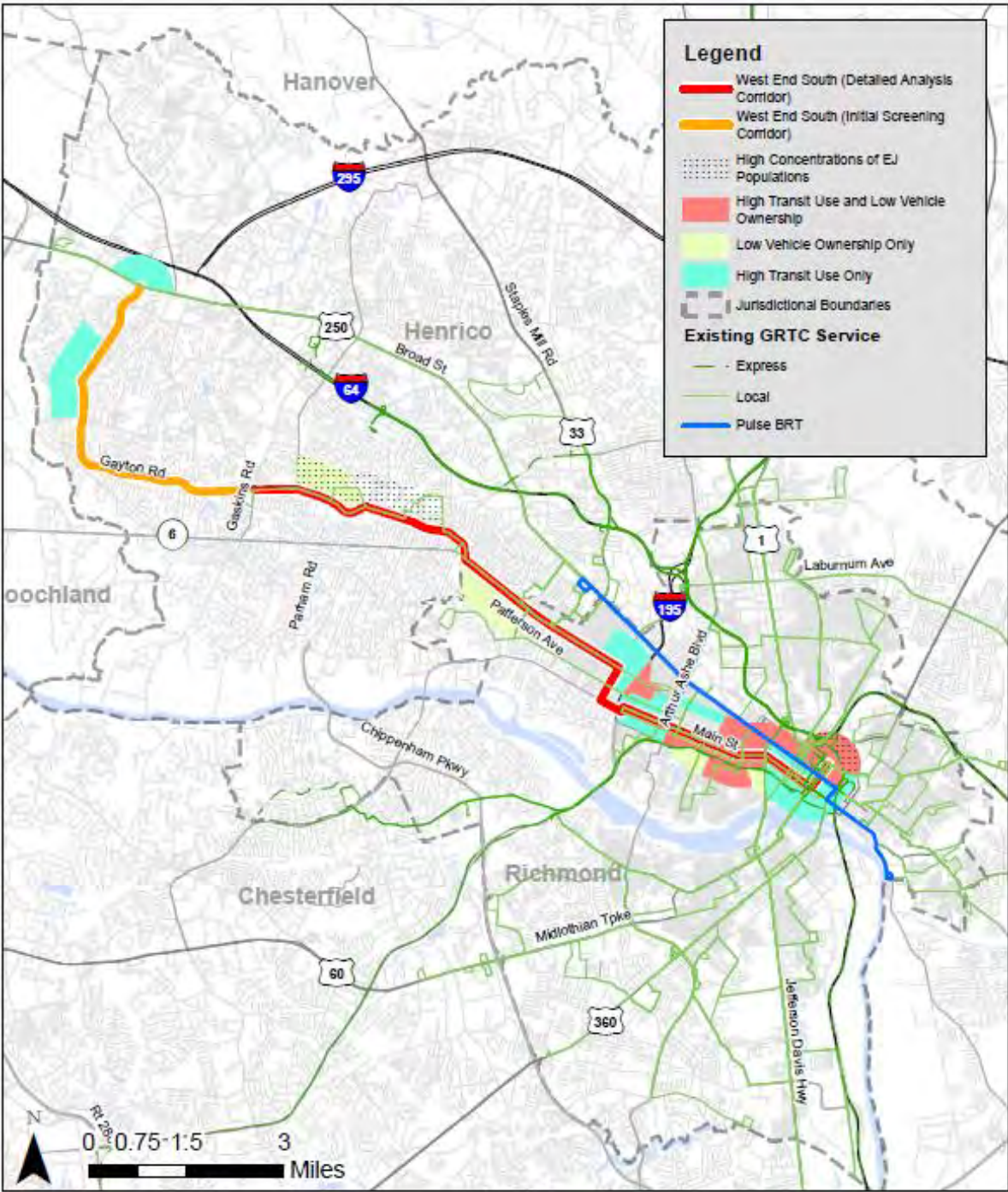
To ensure that the needs of these populations are strongly factored as part of this planning process, an EJ population index was developed. This index considers individuals with disabilities, low-income households, elderly populations, speakers with limited English proficiency, and households with low-vehicle ownership data from the 2016 ACS 5-year estimates. Census tracts with high concentrations of EJ populations, taken as the top 20% of all census tracts in the PlanRVA TPO area by EJ population index, were identified within 0.5 miles of the corridors. The EJ population index methodology used in this study matches the methodology used for PlanRVA's Richmond Regional Park and Ride Investment Strategy study.

In addition to identifying high concentrations of EJ populations, locations of transit-dependent populations, or groups of people who have limited transportation mode options and rely on transit to make most trips, were identified. Factors used to identify transit-dependent populations were low vehicle ownership and high transit use. Low vehicle ownership was defined as the lowest quartile of census tracts by average number of vehicles owned per household, according to 2017 ACS 5-year estimates. To avoid identifying smaller or single person households as having low vehicle ownership, the average number of vehicles per household was normalized by average number of persons per household. The lowest quartile for vehicle ownership was found to be fewer than 0.63 vehicles per person per household. High transit use was defined as the highest quartile of census tracts using transit to get to work as a percentage of all modes, according to the 2017 ACS 5-year estimates. The highest quartile of census tracts for using transit to get to work had a transit mode share of 2.63% or greater.

Environmental Justice and transit-dependent populations metrics for a sample corridor (West End South) are depicted in **Figure 6**. Environmental Justice and transit-dependent populations maps for all Initial Screening corridors are provided in the **Appendix**.

² <https://www.transportation.gov/transportation-policy/environmental-justice/environmental-justice-strategy>

Figure 6. Sample Corridor Environmental Justice and Transit-Dependent Populations Map



Results

Using the Initial Screening data-driven analysis metrics, the Steering Committee reviewed the 20 corridors recommended for high-frequency transit by the Greater RVA Transit Vision Plan to determine which corridors or segments are most likely to be ready for high-frequency service in the near-term. The Steering Committee reached consensus on which corridors should be advanced to the Detailed Analysis step. This resulted in three levels of recommendations for the corridors:

1. Full Corridor from the Greater RVA Transit Vision Plan recommended for Detailed Analysis
2. Partial Corridor from the Greater RVA Transit Vision Plan recommended for Detailed Analysis
3. Greater RVA Transit Vision Plan corridor Not Recommended for Detailed Analysis

The analysis results from the Initial Screening step are summarized in the matrix shown in **Figure 7**. The matrix ranks the corridors relative to one another for each analysis metric and divides the ranked results evenly into high, medium, and low categories. For EJ and transit-dependent populations, the matrix results are based on the number of acres with high EJ index score and high concentrations of transit-dependent populations along each corridor, respectively. In cases where a partial corridor was considered, the matrix illustrates how much the rankings changed when the analysis metrics for only a selected portion of the corridor were considered.

The recommendations from the Initial Screening step are summarized **Figure 8** and **Table 3**. Details on the specific recommendations for each corridor can be found in the **Appendix**. The corridors shown in red in **Figure 8** and listed in the two left most columns in **Table 3** are recommended to advance through Detailed Analysis. Existing activity density was a key factor when determining which corridors or portions of corridors could support high-frequency service in the near term. In some instances, the existing activity density indicated that the full corridor recommended in the Greater RVA Transit Vision Plan was not ready to support high frequency service in the near term, but a portion of the corridor might and should be considered for further analysis.

Of the 20 high-frequency corridors evaluated in the Initial Screening step, three full corridors and nine partial corridors from the Greater RVA Transit Vision Plan were recommended for Detailed Analysis. The eight corridors not recommended for further analysis by the Steering Committee were, in most cases, were not recommended due to insufficient activity density to support high-frequency service in the near term. Although these corridors were not considered ready for high-frequency service in the near term, it is recognized that lower frequency service or service in the longer term may still be warranted given the increased demand and development activity. For the eight corridors not recommended to advance to the Detailed Analysis step, potential next steps for further study and alternative considerations for the near term are discussed in the **Appendix**.

Figure 7. Near-Term Strategic Technical Analysis Initial Screening Evaluation Matrix

		Activity Density (Population and Employment Per Acre)		Transit Supportive Employment (Employees Per Acre)		High Worker Populations (Workers per Acre)		Environmental Justice Populations (Number of Acres in Census Tracts with High EJ Index Scores)		Transit-Dependent Populations (Number of Acres with High Concentrations of TD Populations)	
		Full Corridor	Partial Corridor	Full Corridor	Partial Corridor	Full Corridor	Partial Corridor	Full Corridor	Partial Corridor	Full Corridor	Partial Corridor
A	Broad Street - Short Pump										
B	Hull Street										
C	Mechanicsville Turnpike										
D	Midlothian Turnpike										
E	West End South										
F	Airport via Route 60										
G	Jeff Davis South to Chester										
H	Route 1 to Ashland										
I	West End Route 6 – Staples Mill / Rt 33										
J	Glenside to Midlothian										
K	Laburnum Avenue – Willow Lawn to Airport										
L	Iron Bridge Road - City to Jeff Davis										
M	Route 5 South										
N	Lee Davis Road										
O	Warwick Road										
P	West End and Midlothian										
Q	West End Route 3 – Lauderdale										
R	West End Route 4 – Pemberton Nuckols										
S	West End Route 5 – Innsbrook										
T	West End Route 7 – Regency to Azalea										
Low		Low = 2.0 - 8.0 Medium = 8.1 - 11.0 High = 11.1 - 18.0		Low = 0 - 3.5 Medium = 3.51 - 6 High = 6.01 or more		Low = 0 - 2.06 Medium = 2.061 - 2.5 High = 2.51 or more		Low = 0 - 2,100 Medium = 2,101 - 3,000 High = 3,001 or more		Low = 0 - 750 Medium = 751 - 1,500 High = 1,500 or more	
Medium											
High											

Figure 8. Near-Term Strategic Technical Analysis Initial Screening Corridor Recommendations

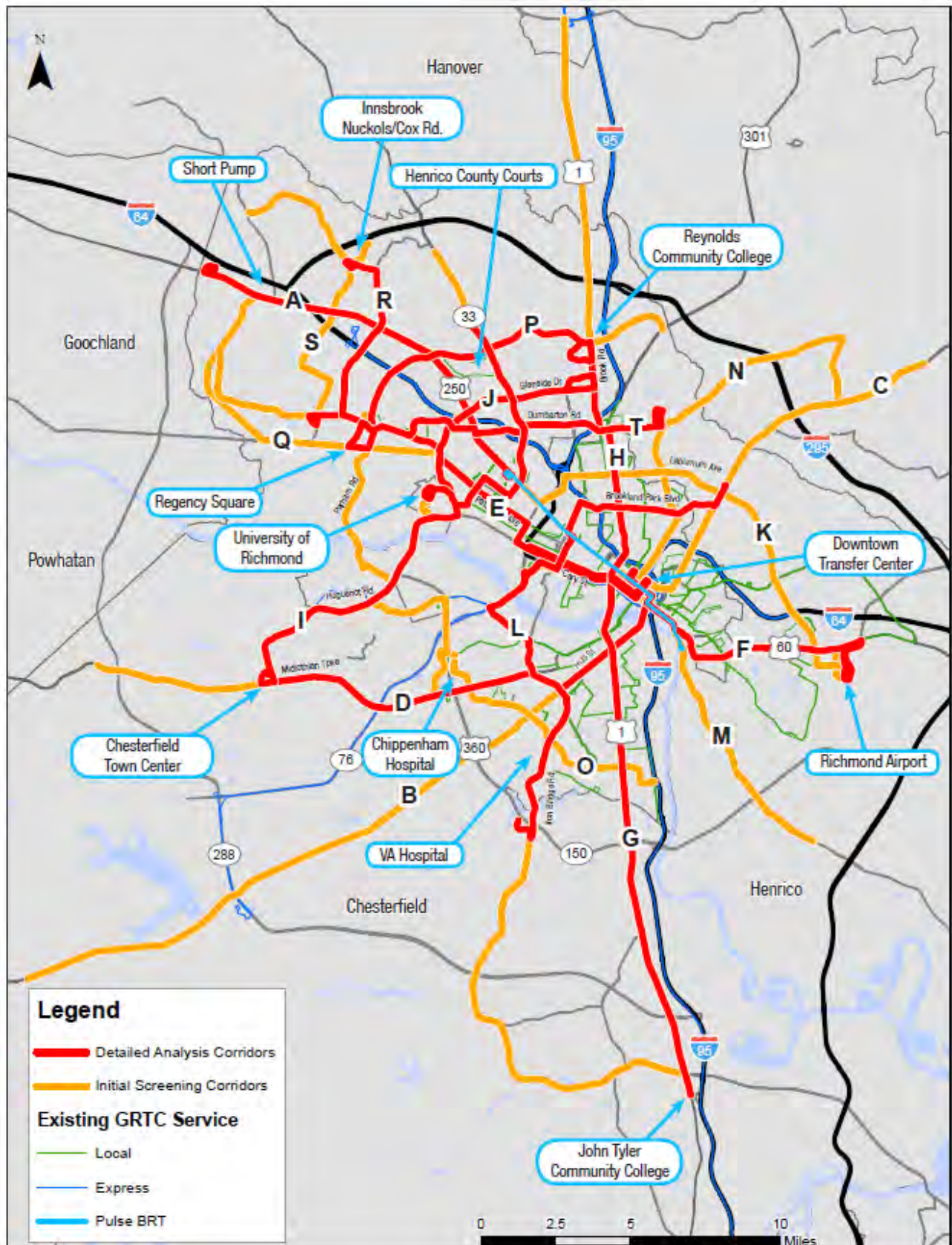


Table 3. Near-Term Strategic Technical Analysis Initial Screening Results

Full Corridor Recommended for Detailed Analysis	Partial Corridor Recommended for Detailed Analysis	Corridor Not Recommended for Detailed Analysis
A. Broad Street – Short Pump	D. Midlothian Turnpike (Downtown Richmond to Chesterfield Towne Center)	B. Hull Street
F. Airport via Route 60	E. West End South (Downtown Richmond to Gayton Crossing Shopping Center)	C. Mechanicsville Turnpike
G. Jeff Davis South to Chester	H. Route 1 to Ashland (Downtown Richmond to Reynolds Community College)	K. Laburnum Avenue – Willow Lawn to Airport
	I. West End Route 6 – Staples Mill/ Route 33 (Chesterfield Towne Center to Staples Mill Marketplace)	M. Route 5 South
	J. Glenside to Midlothian (University of Richmond to Belmont Park)	N. Lee Davis Road
	L. Iron Bridge Road – City to Jeff Davis (Henrico Plaza Shopping to Ukrop Park/SwimRVA Complex)	O. Warwick Road
	P. West End and Midlothian (Regency Square Shopping Center to Reynolds Community College)	Q. West End Route 3 – Lauderdale
	R. West End Route 4 – Pemberton Nuckols (Regency Square to Innsbrook Office Park)	S. West End Route 5 - Innsbrook
	T. West End Route 7 – Regency to Azalea (Regency Square Shopping Center to Henrico County Center for the Arts)	

Detailed Analysis

Overview

Detailed Analysis was the second step in determining which corridors were most viable for near-term implementation of high-frequency service. This step looked at the 12 corridors (three full corridors and nine partial corridors) identified in the Initial Screening step and evaluated each corridor using additional data-driven metrics and Steering Committee feedback. The analysis metrics considered in this step included the presence of community facilities, pedestrian network and connectivity, roadway suitability, and ridership potential. These analysis metrics primarily assessed each corridor's ability to attract enough riders to support high-frequency service in the near term and identified the additional physical infrastructure that would be needed to support the service.

The Steering Committee participated in a December 10, 2019 work session to review the results of the Detailed Analysis, provide input on near-term viability of the corridors for high-frequency service, and reach consensus on which corridors should be advanced to the Implementation Feasibility step.

Detailed Analysis

- Community Facilities
- Pedestrian Network and Connectivity
- Roadway Suitability
- Potential Ridership

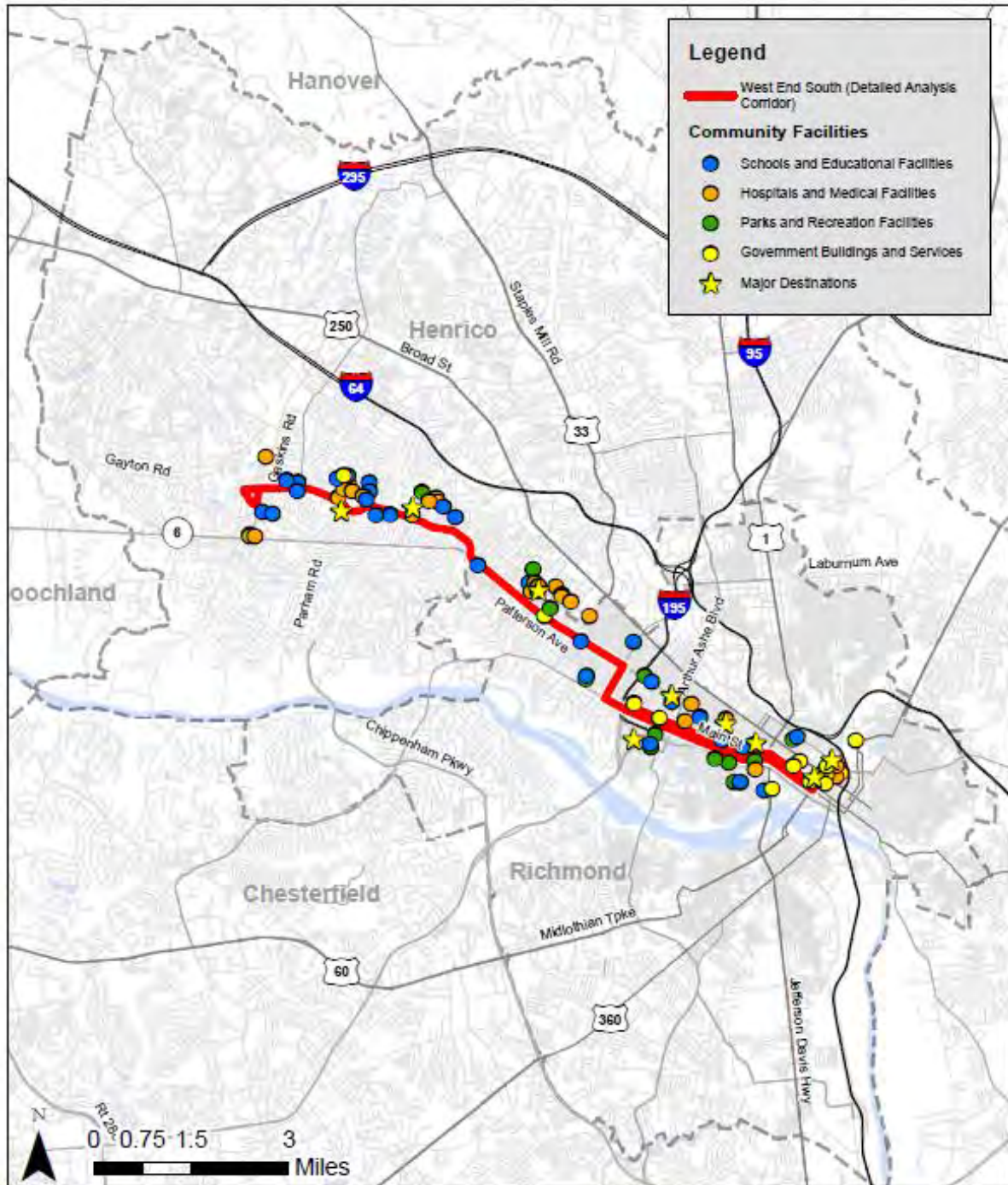
Detailed Analysis Metrics

Community Facilities

The presence of community facilities is an indicator of the need to provide people with access to these services and the resulting demand for transit access. Community facilities within 0.5 miles of each corridor were identified. These facilities include destinations such as schools and educational facilities, hospitals and medical facilities, parks and recreation facilities, government buildings and services (including post offices; courts; city, county, and state offices; and libraries), and grocery stores. These destinations are essential to everyday life, and high-frequency service to these destinations can increase the quality of life of residents in the Richmond region. Community facilities GIS data was gathered from public websites of Henrico County, Chesterfield County, and the City of Richmond. Major destinations were identified and included large shopping centers, universities, industrial or commercial districts, large parks, and county and city government centers.

Community facilities for a sample corridor (West End South) are shown in **Figure 9**. Maps showing community facilities along all Detailed Analysis corridors are provided in the **Appendix**.

Figure 9. Sample Corridor Community Facilities Map



Pedestrian Network and Connectivity

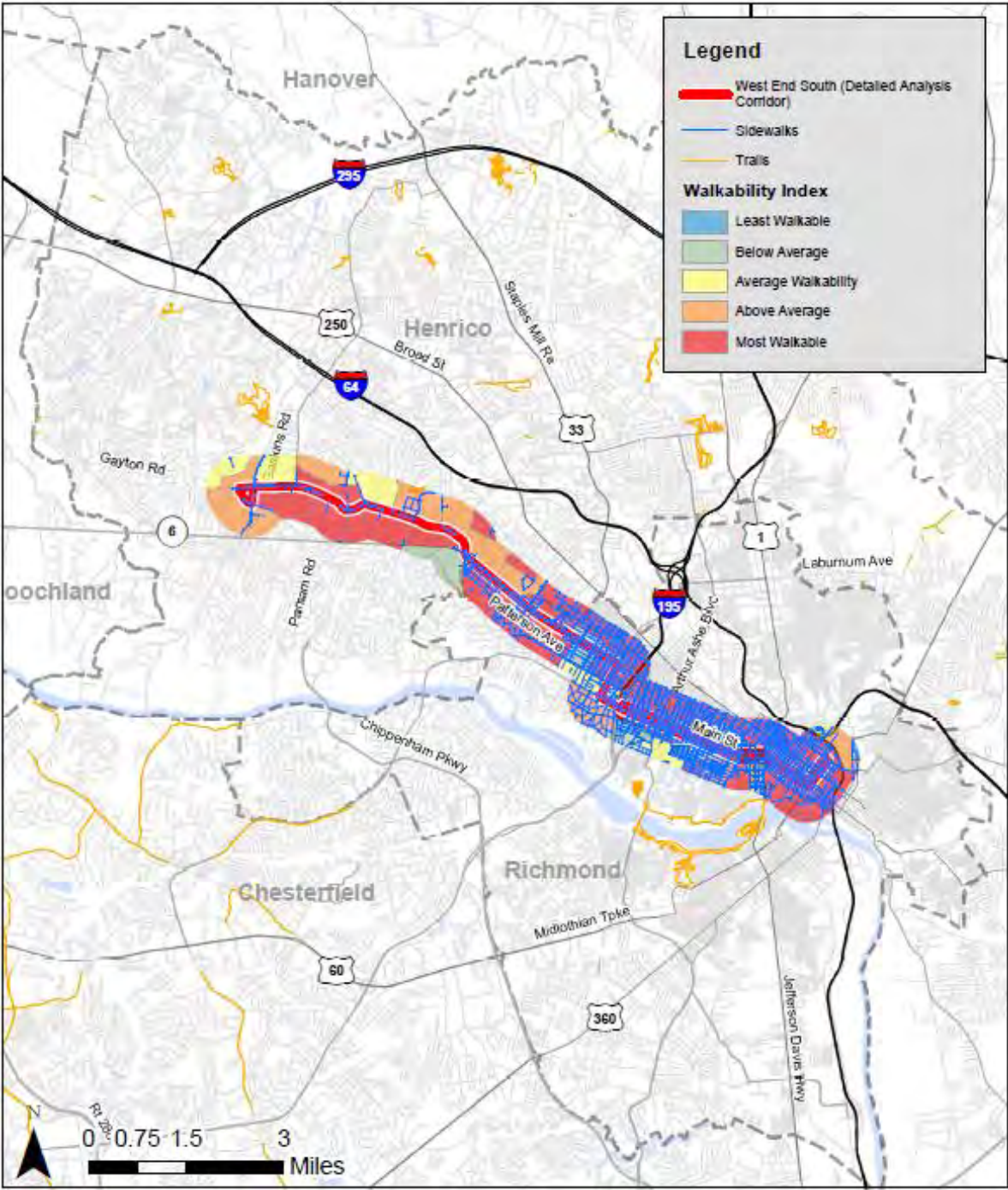
The presence of pedestrian infrastructure is an indicator of transit accessibility and connectivity to surrounding destinations and community facilities. To assess the existing pedestrian network, the linear feet of roadway (excluding limited-access highways) within 50 feet of a pedestrian facility (sidewalks and trails) was measured for the area within 0.5 miles of each corridor. Locations of existing pedestrian facilities were provided in GIS layers by Henrico County, Chesterfield County, and the City of Richmond.

In addition to identifying the existing infrastructure, people's desire to walk, or "walkability", in the vicinity of the corridor was considered important to determine. A National Walkability Index of the Environmental Protection Agency (EPA) scores the walkability of census block groups based on the mix of employment types, amount of occupied housing, intersection density, and predicted commute mode split. It is important to note that this index does not take into account terrain or the availability of pedestrian facilities. Instead, a high National Walkability Index score indicates an area that might be desirable to walk in if there were safe sidewalks and trails.

To add a realistic factor existing pedestrian infrastructure was overlaid on the walkability index data to highlight areas where there may be a strong desire to walk but lack sidewalk/trail facilities. This information helps to identify gaps in the pedestrian network and locations where sidewalk may need to be added as part of implementing transit service.

The pedestrian network and National Walkability Index surrounding a sample corridor (West End South) is shown in **Figure 10**. Pedestrian network and connectivity maps for all Detailed Analysis corridors are provided in the **Appendix**.

Figure 10. Sample Corridor Pedestrian Network and Connectivity Map



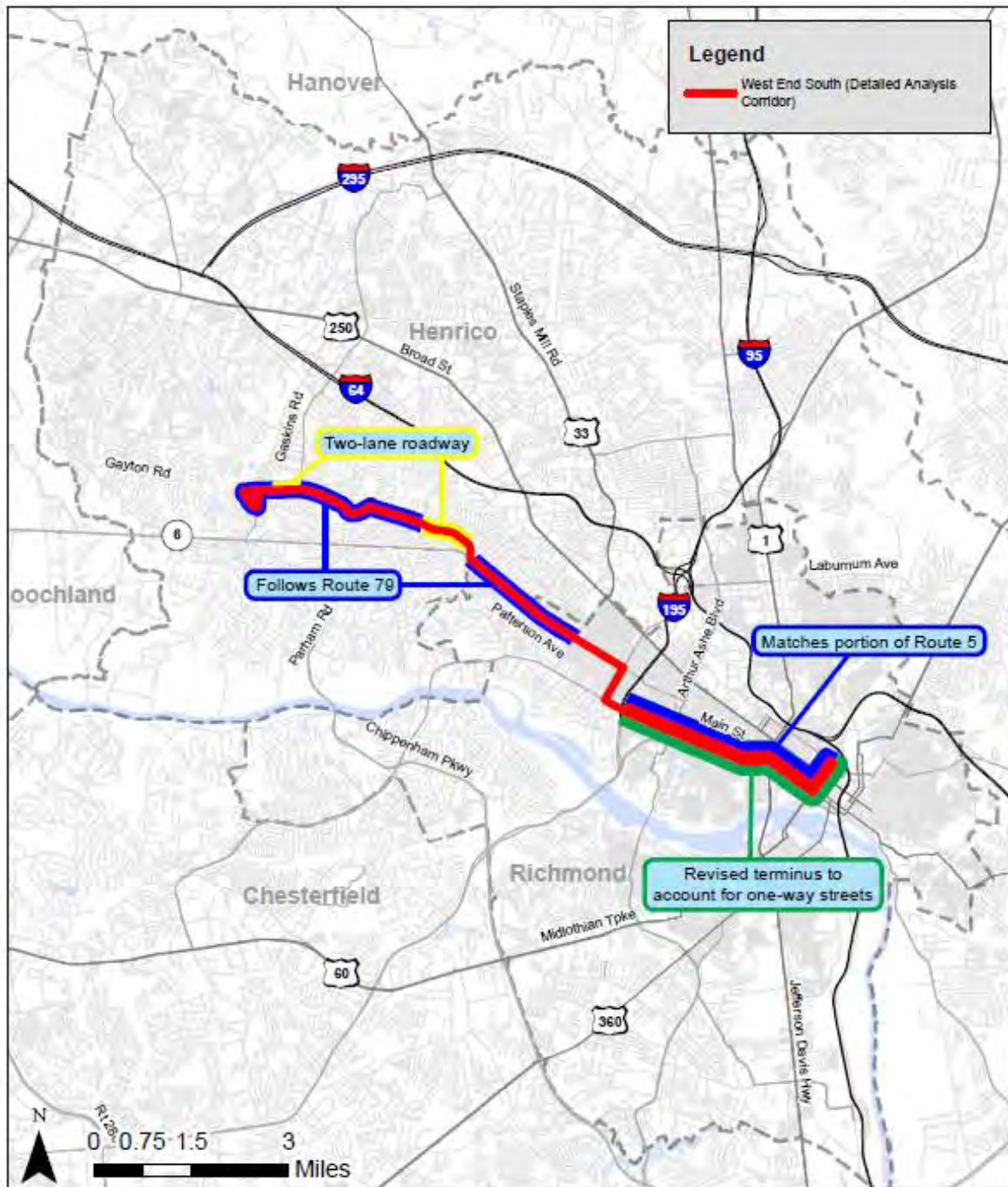
Roadway Suitability

The characteristics of the existing roadway corridors making up the network often dictate the suitability of a corridor to accommodate transit service. Roadway characteristics including one-way streets, two-lane roadways, intersections that present challenges for bus maneuvers, and inefficient or illogical termini locations were identified along each of the 12 corridors. Implementation of transit service on corridors with physical limitations requires an extra level of analysis since implementation can result in additional capital costs for roadway improvements. Transit service along one-way streets require buses to run along different streets when traveling inbound and outbound, which can cause rider confusion. In addition, buses running on two-lane roadways can cause traffic congestion and delays when buses stop to let passengers on and off. Difficult turning maneuvers may require intersection improvements prior to operating transit service. Inefficient or illogical termini locations may result in longer travel times and be detrimental to on-time performance while not supporting strong ridership.

In addition to identifying roadway characteristics of each corridor, segments where the Detailed Analysis corridors overlapped with existing GRTC routes were identified. Since transit service is already provided along these segments, minimal roadway improvements are likely to be needed to implement additional transit service at these locations.

The roadway suitability characteristics for a sample corridor (West End South) are shown in **Figure 11**. Roadway suitability maps for all Detailed Analysis corridors are provided in the **Appendix**.

Figure 11. Sample Corridor Roadway Suitability Map



Ridership Potential

Ridership potential is an indicator of the demand for transit service along a corridor. This metric was estimated for each of the 12 corridors using existing GRTC ridership (as of January 2019) and associated activity density. To develop ridership potential, the TAZs within 0.5 miles of existing GRTC routes were identified and divided into low, medium, and high activity density categories. The TAZs were evenly divided into the three activity density categories and for each category, an average daily ridership per TAZ was calculated. As this study is focused on implementation of high-frequency service, only existing GRTC routes with frequencies less than 60 minutes (i.e. 15-minute or 30-minute service) were used in the calculation. Furthermore, TAZs with exceptionally high ridership and TAZs containing more than two GRTC local routes were removed from the calculation since these locations were considered outliers and not representative of the ridership potential expected along the corridors. The resulting ridership per TAZ along existing GRTC routes is summarized in **Table 4** for each of the three activity density categories.

Table 4. Average Daily Ridership by Activity Density Category

Activity Density Category	Number of TAZs	Average Daily Ridership per TAZ
Low	56	42.6
Medium	57	50.3
High	55	66.2

Next the TAZs within 0.5 miles of the corridors were classified into the same low, medium, and high activity density categories. The average daily ridership per TAZ based on the existing GRTC routes and associated activity density category were applied to the TAZs along the 12 corridors. The ridership potential for each TAZ along a corridor was added together to calculate a total corridor average daily ridership potential. An average daily ridership potential range was calculated for each corridor as +/- 25% of the average daily ridership potential. A summary of the ridership potential ranges for each Detailed Analysis corridor is provided in **Table 5**. The ridership potential ranges presented are inclusive of existing ridership; therefore, net new ridership on a corridor with existing GRTC service would be less than what is shown in the ridership potential ranges.

To allow for equitable comparison of corridors of varying lengths, ridership productivity metrics were calculated for each of the corridors. These metrics included boardings per mile, boardings per trip, and boardings per hour. While longer distance corridors may have higher total ridership potential, these corridors also require more service miles, trips, and service hours operating to run the same frequency as a shorter distance route. As a result, the ridership productivity metrics provide a means to compare the effectiveness of transit service in each corridor regardless of the corridor length. The ridership productivity metrics for each of the corridors are provided in **Table 5** as well as the **Appendix**.

It is important to note that ridership *potential* developed for this study is intended to provide a high-level comparison among corridors and should not be confused with ridership *forecasts*. Ridership

forecasts would take into consideration other elements such as person trip patterns within each corridor, service levels, regional transit network connectivity, auto versus transit speeds and associated travel times, transit fares, and parking costs.

Table 5. Ridership Potential by Corridor

Corridor	Daily Ridership Potential Range	Boardings per Mile Range	Boardings per Trip	Boardings per Hour
A. Broad Street – Short Pump	1,000 – 1,700	87 – 148	13	19
D. Midlothian Turnpike	2,300 – 3,900	161 – 266	30	30
E. West End South	2,400 – 4,100	151 – 258	32	28
F. Airport via Route 60	1,500 – 2,500	143 – 238	20	26
G. Jeff Davis South to Chester	2,000 – 3,400	120 – 204	26	22
H. Route 1 to Ashland	1,900 – 3,100	176 – 287	25	32
I. West End Route 6 – Staples Mill/ Route 33	1,300 – 2,200	73 – 119	17	16
J. Glenside to Midlothian	600 – 1,100	69 – 126	8	15
L. Iron Bridge Road – City to Jeff Davis	1,700 – 2,800	94 – 155	22	20
P. West End and Midlothian	700 – 1,200	63 – 108	9	14
R. West End Route 4 – Pemberton Nuckols	500 – 900	61 – 110	7	13
T. West End Route 7 – Regency to Azalea	900 – 1,400	77 – 120	12	17

Results

Using the Detailed Analysis data-driven analysis metrics, the Steering Committee reviewed the 12 high-frequency corridors from the Initial Screening and assessed their viability for high-frequency service in the near-term. At a work session on December 10, 2019, the Steering Committee reached consensus on which corridors should be advanced from the Detailed Analysis step to the Implementation Feasibility step.

The analysis results from the Detailed Analysis step are summarized in the matrix shown in **Figure 12**. Similar to the matrix from the Initial Screening step, each Detailed Analysis corridor was ranked relative to one another for each analysis metric and divided evenly into high, medium, and low categories to allow for a comparison of corridors. Community facility matrix results were based on the number of facilities within 0.5 miles of each corridor. Pedestrian network coverage was ranked based on the percentage of roadway within 0.5 miles of each corridor with pedestrian facilities. For walkability, an average National Walkability Index score was calculated for each corridor. Due to the qualitative nature of the roadway suitability metric, this analysis metric was not included in the matrix but was considered in the overall evaluation. The corridors recommended to advance to the Implementation Feasibility step are shown in **Figure 13** and **Table 6**. Ridership potential and related productivity metrics were the key factors when determining which Detailed Analysis corridors could support high-frequency service in the near term.

Of the 12 high-frequency corridors evaluated in the Detailed Analysis step, five corridors were recommended for Implementation Feasibility assessment. The seven corridors that were not recommended for further analysis by the Steering Committee were, in most cases, not recommended due to insufficient ridership potential to support high-frequency service in the near term. Although these corridors were not determined to be ready for high-frequency service in the near term, lower frequency service may still be warranted, and in some cases is already operating or planned for operation along these corridors. In addition, the Jeff Davis South to Chester (G) corridor was not recommended to advance to the Implementation Feasibility step because implementation of new 30-minute service is planned for March 2020. The Steering Committee recommended observation of the new service before evaluating this corridor for higher frequency service. For the seven corridors that were not recommended to advance to the Implementation Feasibility step, potential next steps for further study and alternative considerations for the near term are discussed in the **Appendix**.

Figure 12. Near-Term Strategic Technical Analysis Detailed Analysis Evaluation Matrix

		Ridership Potential (Average Daily Riders)	Boardings Per Mile	Boardings Per Trip	Boardings Per Hour	Community Facilities (Number within 0.5 miles)	Pedestrian Network Coverage (Percentage of Roadway Network with Pedestrian Facilities)	Walkability (Average National Walkability Index Score)
A	Broad Street - Short Pump							
D	Midlothian Turnpike							
E	West End South							
F	Airport via Route 60							
G	Jeff Davis South to Chester							
H	Route 1 to Ashland							
I	West End Route 6 – Staples Mill / Rt 33							
J	Glenside to Midlothian							
L	Iron Bridge Road - City to Jeff Davis							
P	West End and Midlothian							
R	West End Route 4 – Pemberton Nuckols							
T	West End Route 7 – Regency to Azalea							
Low		Low = Less than 1,200	Low = Less than 100	Low = Less than 15	Low = Less than 15	Low = Less than 45	Low = Less than 40%	Low = 7.8 - 8.3
Medium		Medium = 1,200 - 2,400	Medium = 100 - 200	Medium = 15 - 25	Medium = 15 - 25	Medium = 45 - 65	Medium = 40 - 60%	Medium = 8.3 - 8.8
High		High = More than 2,400	High = More than 200	High = More than 25	High = More than 25	High = 65+	High = Greater than 60%	High = 8.8 - 9.6

Figure 13. Near-Term Strategic Technical Analysis Detailed Analysis Corridor Recommendations

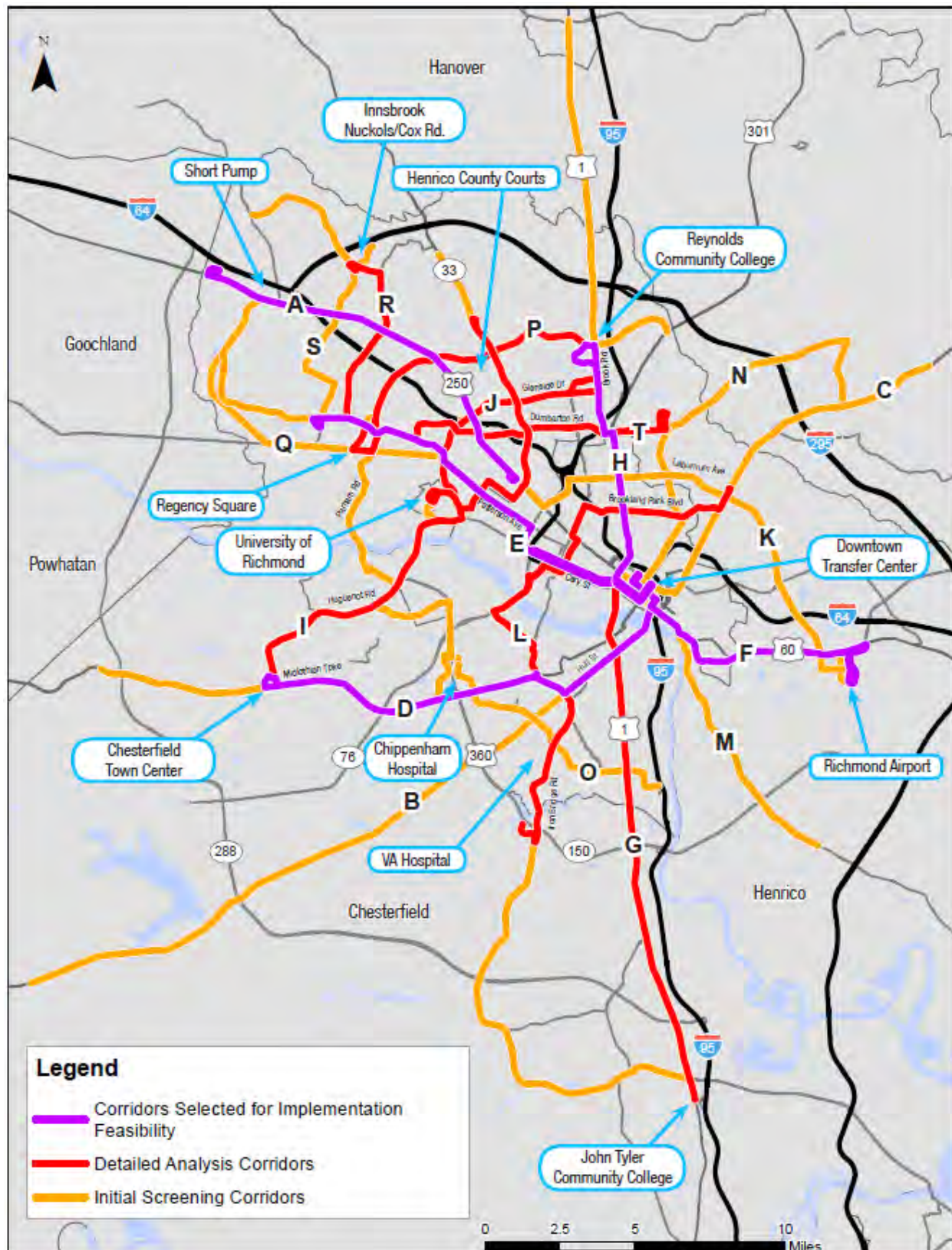


Table 6. Near-Term Strategic Technical Analysis Detailed Analysis Results

Corridor Selected for Implementation Feasibility	Corridor Not Selected for Implementation Feasibility
A. Broad Street – Short Pump	G. Jeff Davis South to Chester
D. Midlothian Turnpike (Downtown Richmond to Chesterfield Towne Center)	I. West End Route 6 – Staples Mill/ Route 33 (Chesterfield Towne Center to Staples Mill Marketplace)
E. West End South (Downtown Richmond to Gayton Crossing Shopping Center)	J. Glenside to Midlothian (University of Richmond to Belmont Park)
F. Airport via Route 60	L. Iron Bridge Road – City to Jeff Davis (Henrico Plaza Shopping to Ukrop Park/SwimRVA Complex)
H. Route 1 to Ashland (Downtown Richmond to Reynolds Community College)	P. West End and Midlothian (Regency Square Shopping Center to Reynolds Community College)
	R. West End Route 4 – Pemberton Nuckols (Regency Square to Innsbrook Office Park)
	T. West End Route 7 – Regency to Azalea (Regency Square Shopping Center to Henrico County Center for the Arts)

Next Steps

The purpose of this study, the Greater RVA Transit Vision Plan: Near-Term Strategic Technical Analysis, is to build upon the success of recent regional transit improvements and develop a near-term strategy to continue advancing the Richmond region toward the long-term vision established in the Greater RVA Transit Vision Plan. This is the first of two technical memoranda to be completed as part of the Near-Term Strategic Technical Analysis and summarizes the methodology and results of the Initial Screening and Detailed Analysis steps. These steps narrowed down the 20 high-frequency corridors identified in the Greater RVA Transit Vision Plan to five corridors most viable for near-term implementation of high-frequency service.

The next step of the Near-Term Strategic Technical Analysis is Implementation Feasibility. This step will further evaluate the five corridors, considering factors including capital costs, operations and maintenance costs, and return on investment. Potential funding sources will be reviewed and eligible sources for funding the implementation of recommended service will be identified. Using the results of the Implementation Feasibility step, as well as feedback from the Steering Committee, the corridors will be prioritized and implementation recommendations developed that will continue to advance the region toward the goals and vision set forth in the Greater RVA Transit Vision Plan.

Appendix

- A. Broad Street – Short Pump
- B. Hull Street
- C. Mechanicsville Turnpike
- D. Midlothian Turnpike
- E. West End South
- F. Airport via Route 60
- G. Jeff Davis South to Chester
- H. Route 1 to Ashland
- I. West End Route 6 – Staples Mill/Route 33
- J. Glenside to Midlothian
- K. Laburnum Avenue – Willow Lawn to Airport
- L. Iron Bridge Road – City to Jeff Davis
- M. Route 5 South
- N. Lee Davis Road
- O. Warwick Road
- P. West End and Midlothian
- Q. West End Route 3 – Lauderdale
- R. West End Route 4 – Pemberton Nuckols
- S. West End Route 5 – Innsbrook
- T. West End Route 7 – Regency to Azalea

A. Broad Street – Short Pump

Initial Screening

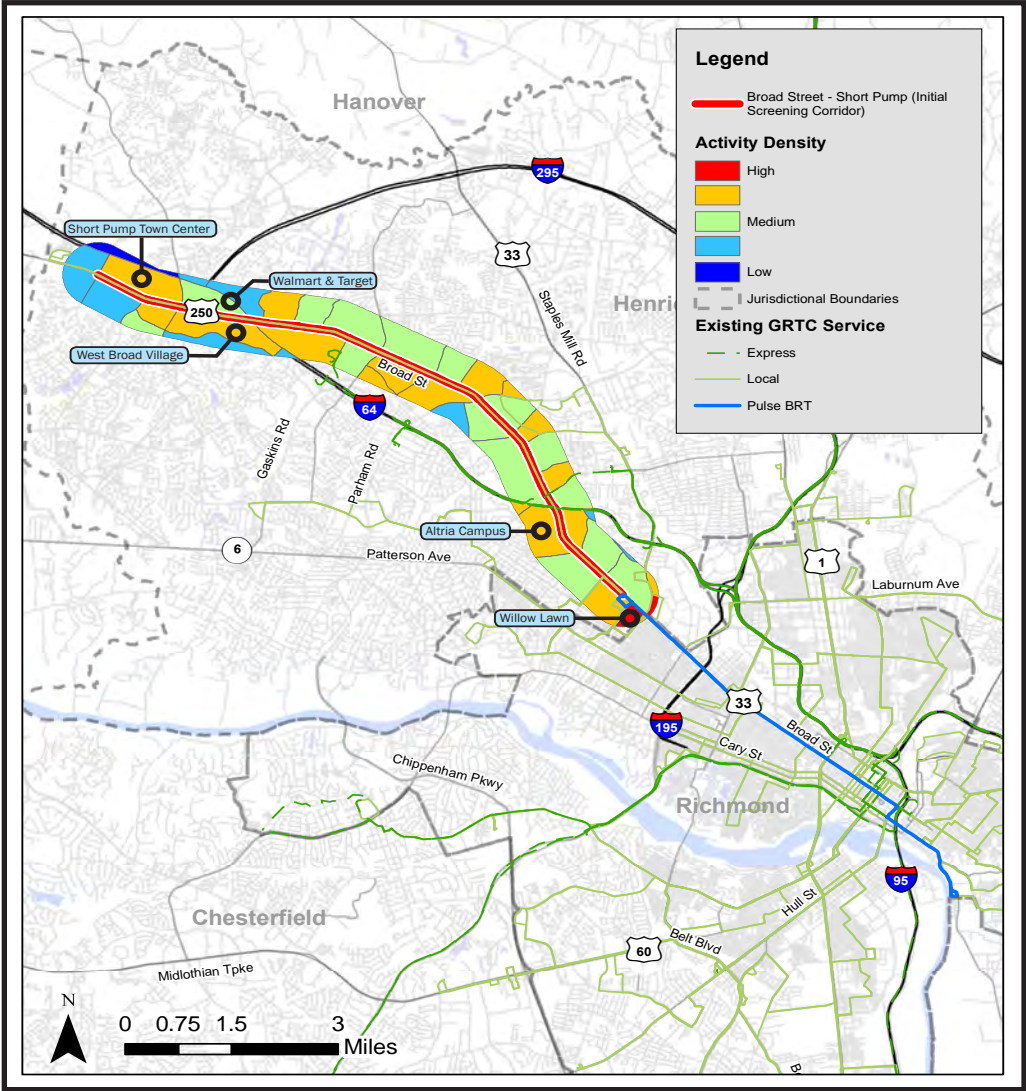
The Broad Street – Short Pump corridor operates on Broad Street between Short Pump and Willow Lawn in Henrico County. In the Initial Screening, this corridor demonstrated high activity density, transit-supportive employment, and worker populations, when compared to other analysis corridors. In general, jobs and people were evenly distributed along the corridor. There were not a substantial number of areas with high proportions of EJ populations along the corridor. However, the significant number of jobs and commercial and service land uses along the corridor increase access to employment for EJ populations in other areas of the region. In addition, significant near-term development was identified along this corridor, indicating the potential for continued growth and demand for service. The full Broad Street – Short Pump corridor proposed in the Greater RVA Transit Vision Plan was recommended for further study in the Detailed Analysis.

Detailed Analysis

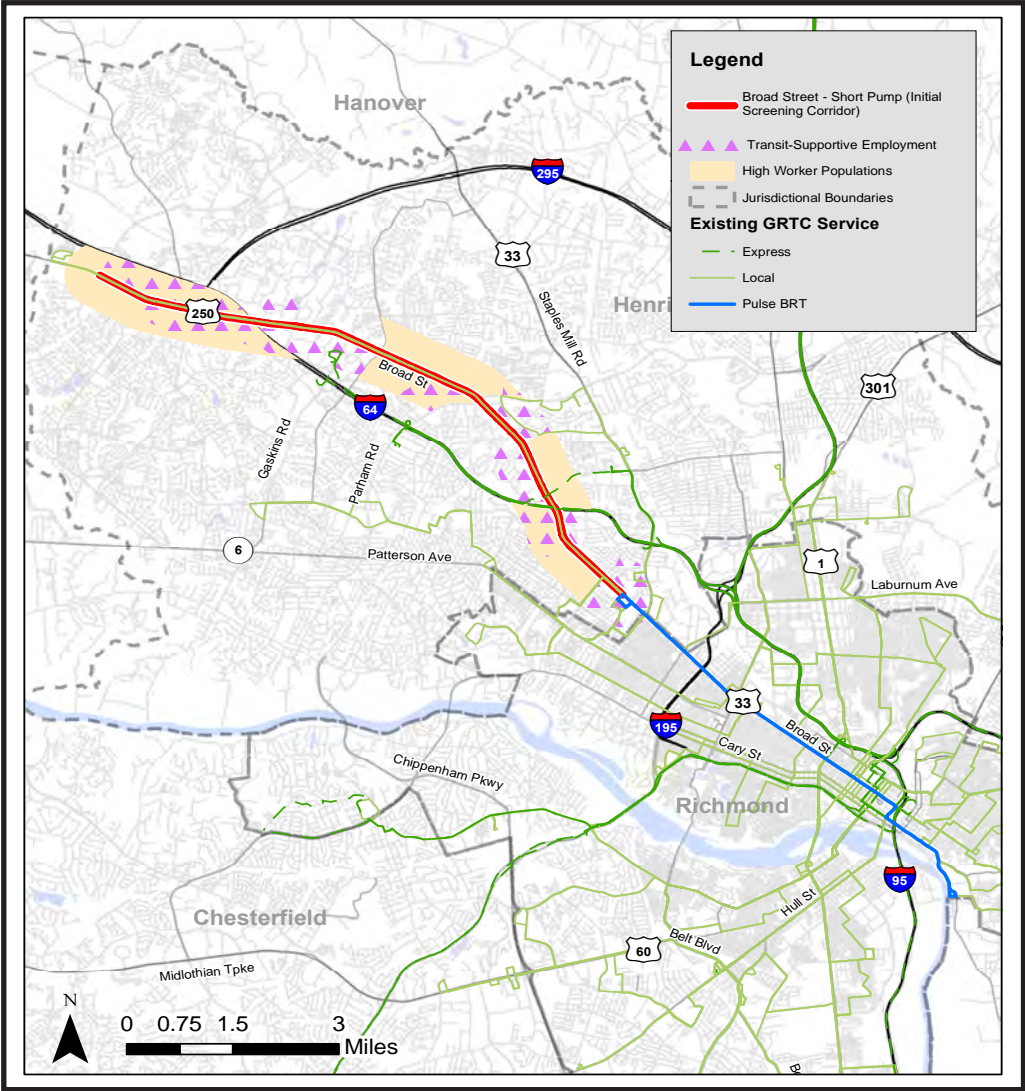
The Detailed Analysis identified a significant number of community facilities within walking distance of the corridor and high walkability when compared to the other corridors. Existing GRTC service (Route 19) runs along this corridor, demonstrating high roadway suitability for transit service. However, the Detailed Analysis also revealed a lack of pedestrian infrastructure at the western end of the corridor. The ridership potential and associated productivity metrics are anticipated to be moderate. Implementation of frequent service in this corridor would need to be responsive to concerns of low ridership during off-peak periods based on the current Route 19 service, as well as address missing links in the pedestrian infrastructure network. Henrico County currently has sidewalk projects programmed for areas throughout the corridor, which should address some of these pedestrian network concerns. As a result, the Broad Street – Short Pump corridor was recommended for further study and advancement to the Implementation Feasibility assessment.

Broad Street - Short Pump Corridor

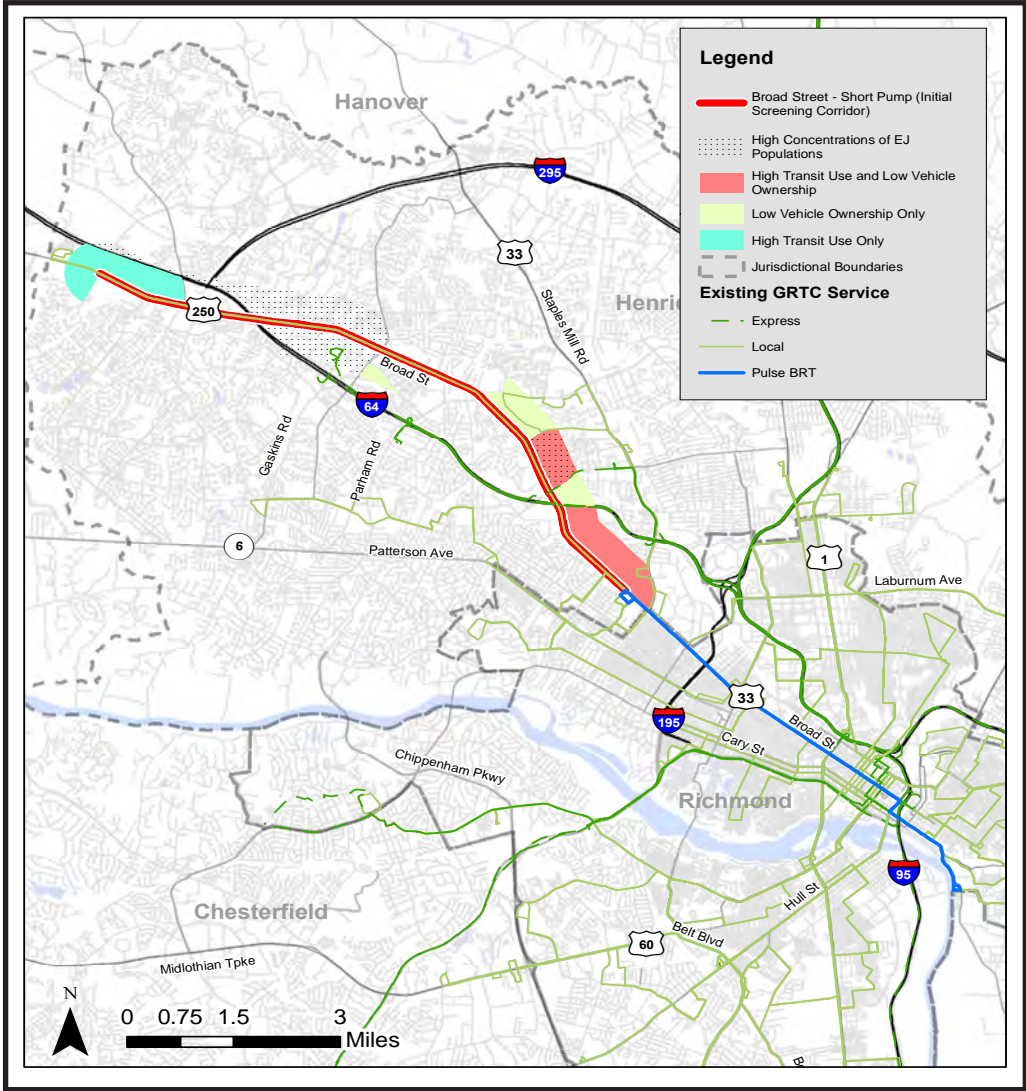
Activity Density



Employment and Workers



Environmental Justice and Transit Dependent



Corridor Description

- Extension of the existing Pulse service from Willow Lawn to Short Pump via Broad Street;
- Serves Henrico County

Major Destinations

- Willow Lawn Shopping Center
- Altria Campus
- West Broad Village
- Target
- Walmart - Short Pump
- Short Pump Town Center

Existing Connecting GRTC Service

- Pulse BRT (Peak: 10 min., Off-Peak: 15 min., Night: 30 min.)
- Route 18 (Weekdays Only: 60 min.)
- Route 19 (All Day: 30 min.)
- Route 50 (All Day: 30 min.)
- Route 75 (Peak Only: 30 min.)
- Route 76 (Peak: 30 min., Off-Peak: 60 min.)
- Route 77 (Peak: 30 min., Off-Peak: 60 min.)
- Route 79 (Peak: 30 min., Off-Peak: 60 min.)
- Route 91 (All Day: 60 min.)

Existing Overlapping GRTC Service

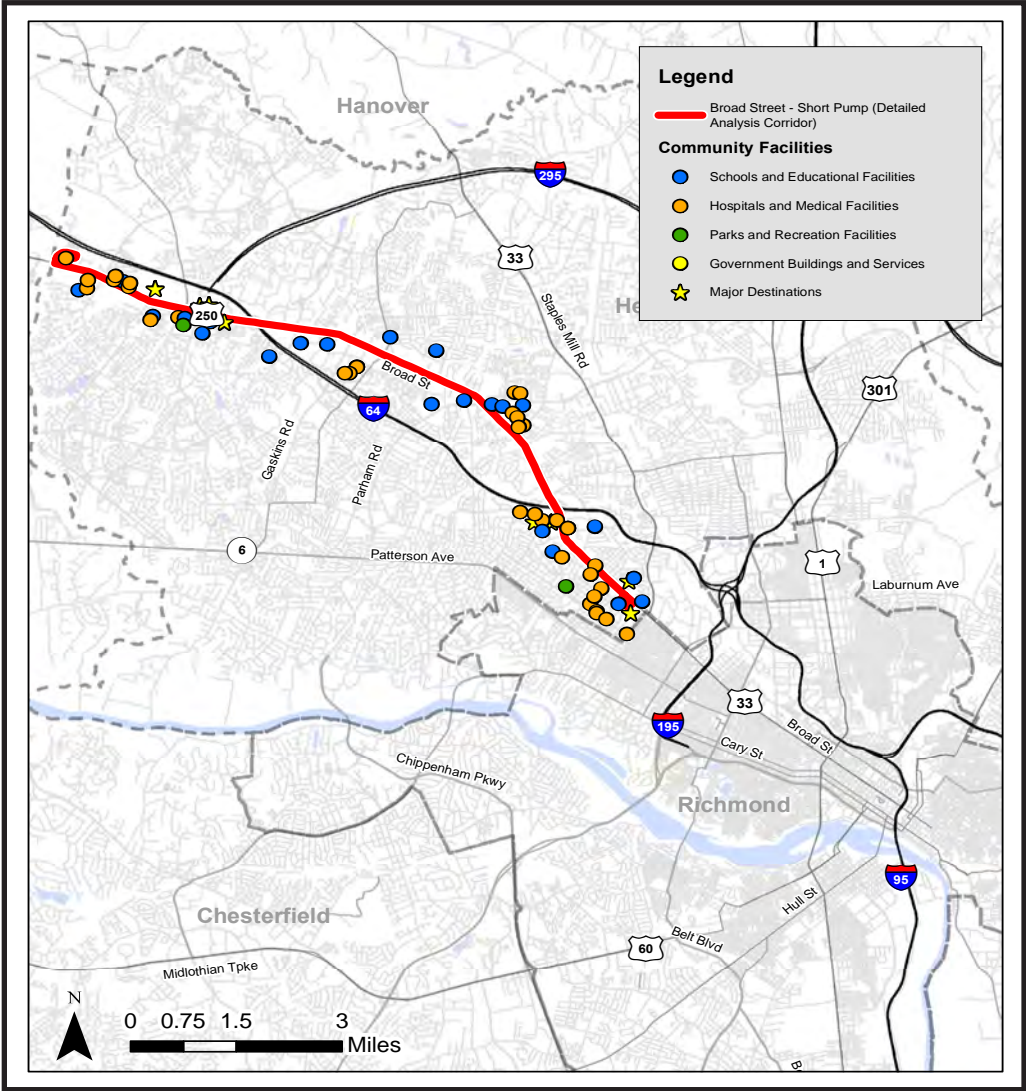
- Route 19 (All Day: 30 min.)

GRTC Rider Feedback

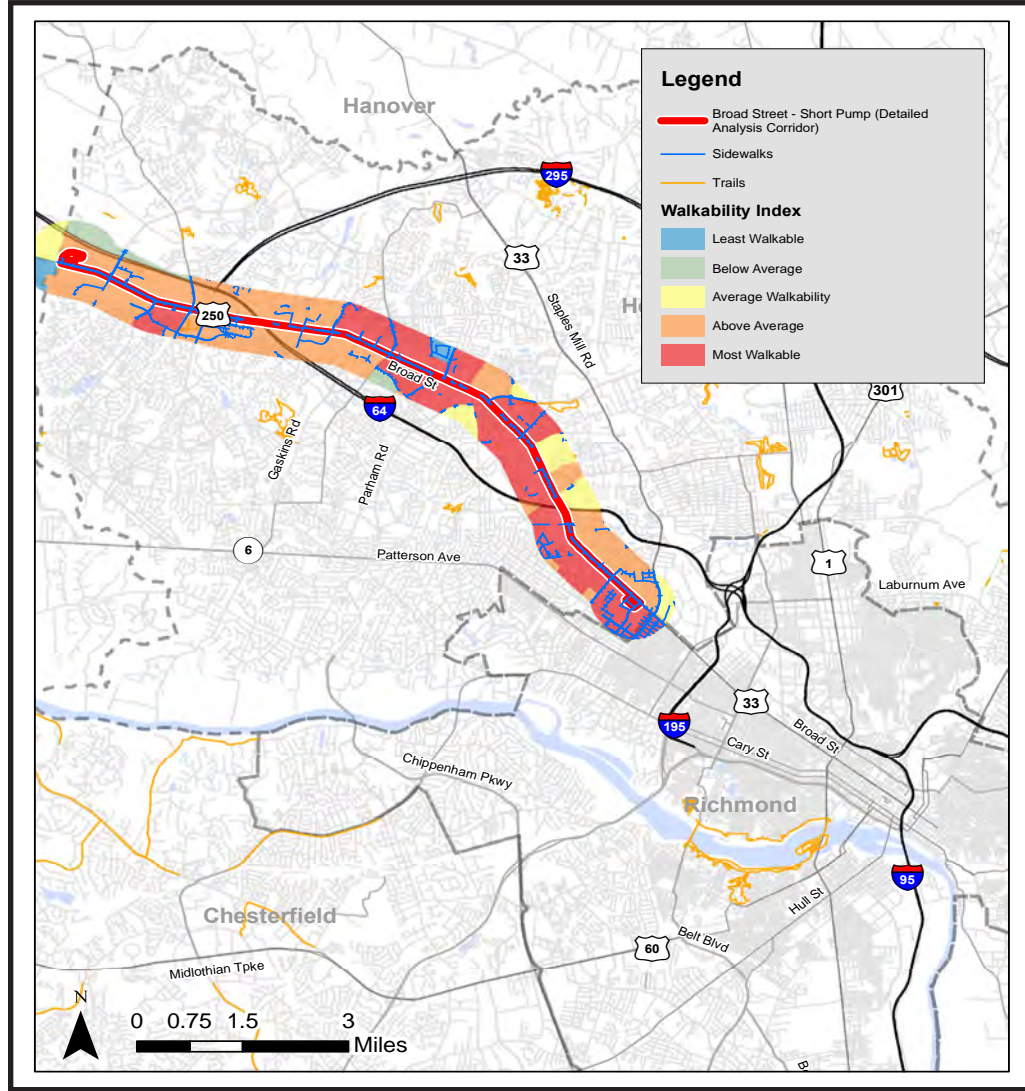
- Interest in improved weekend frequency and hours of service

Broad Street - Short Pump Corridor

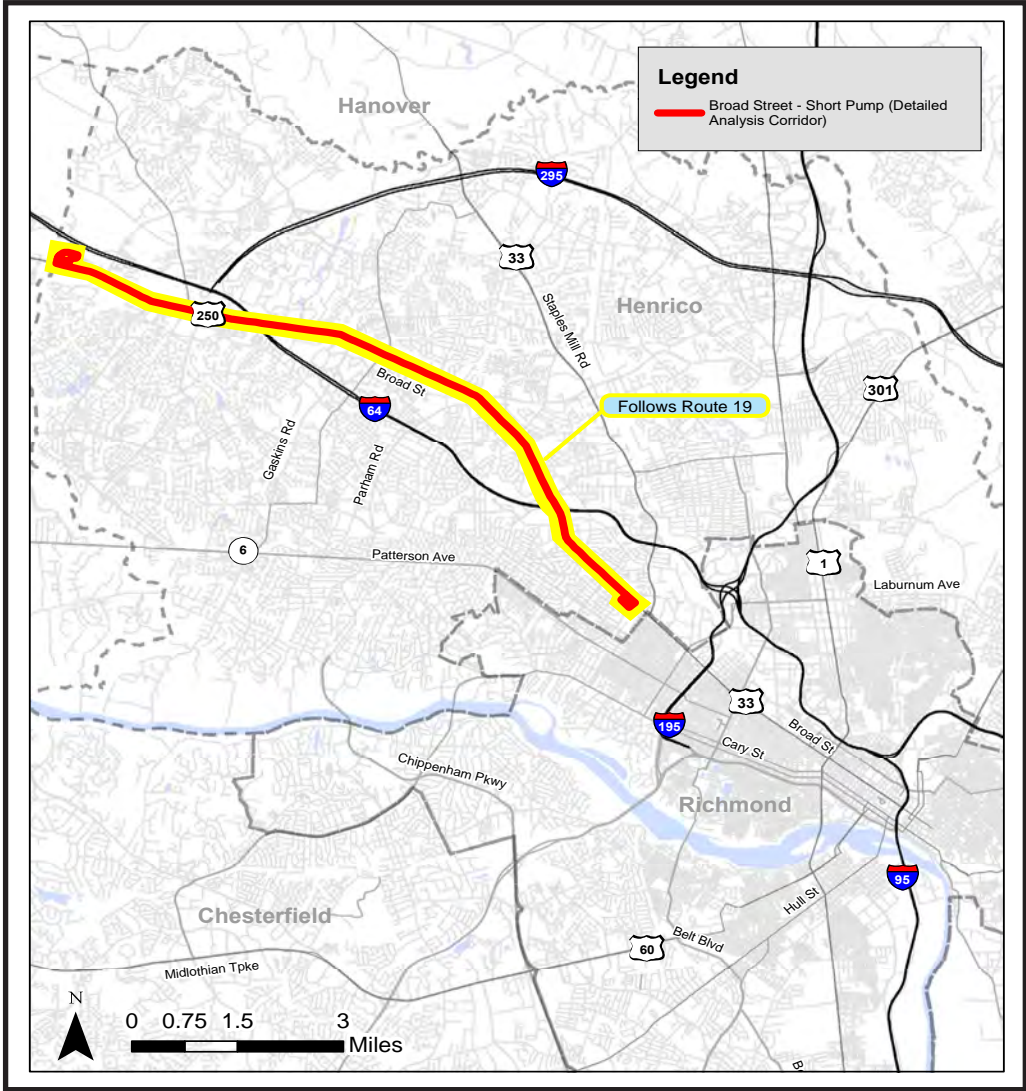
Community Facilities



Pedestrian Network and Connectivity



Roadway Suitability



Community Facilities

- 22 schools and educational facilities
- 35 hospitals and medical facilities
- 2 parks and recreation facilities
- 0 government services and office buildings
- 16 grocery stores

Pedestrian Network Coverage

- Linear feet of roadway - 935,143 ft.
- Roadway with access to sidewalks - 375,307 ft.
- Pedestrian facility coverage - 40%

Projected Ridership Potential

- Total riders: 1,000 - 1,700
- Boardings per mile: 87 - 148
- Boardings per trip: 13
- Boardings per hour: 19

Potential Future Development

- West Chase Townhomes: Nearly 200-townhome complex off Parham Road in Henrico
- Innslake Place: 350-unit apartment complex at Innslake Drive and Dominion Boulevard
- West Broad Landing: 200 condos planned on the former Lawrence Dodge dealership property
- Townes of Wistar Woods: 136 condos and 24 townhomes planned on Wistar Road
- Saunders Station: 240 townhomes planned on Broad Street
- Altria Headquarters Expansion: 170,000 sq. ft. addition to existing 250,000 sq. ft. building on Broad Street next south of I-64
- Harp's Landing at Libbie's Mill: 140,000 sq. ft. of office and retail space on Libbie Mill Boulevard
- Kinsale Capital Property: 300 apartments and 147,000 sq. ft. headquarters at the intersection of Maywill and Thalbro Streets

B. Hull Street

Initial Screening

The Hull Street corridor runs along Route 360, connecting Chesterfield County and Manchester with Downtown Richmond. The Hull Street corridor was the third longest corridor proposed in the Greater RVA Transit Vision Plan at just over 20.5 miles in length. In the Initial Screening, this corridor demonstrated high connections to EJ populations and transit-dependent populations and moderate activity density, transit-supportive employment, and working populations, when compared to the other analysis corridors. The locations of jobs and working populations were found to be clustered in small segments of the corridor. Most of the corridor's activity density was located north of Chippenham Parkway. The majority of the corridor's working populations, EJ populations, and transit-dependent populations were also found in this portion of the corridor. Since portions of the corridor were already served by park and ride lots and express GRTC service and this corridor overlaps with the coverage provided by the proposed Midlothian Turnpike (D) corridor, the Hull Street corridor was not recommended for further evaluation.

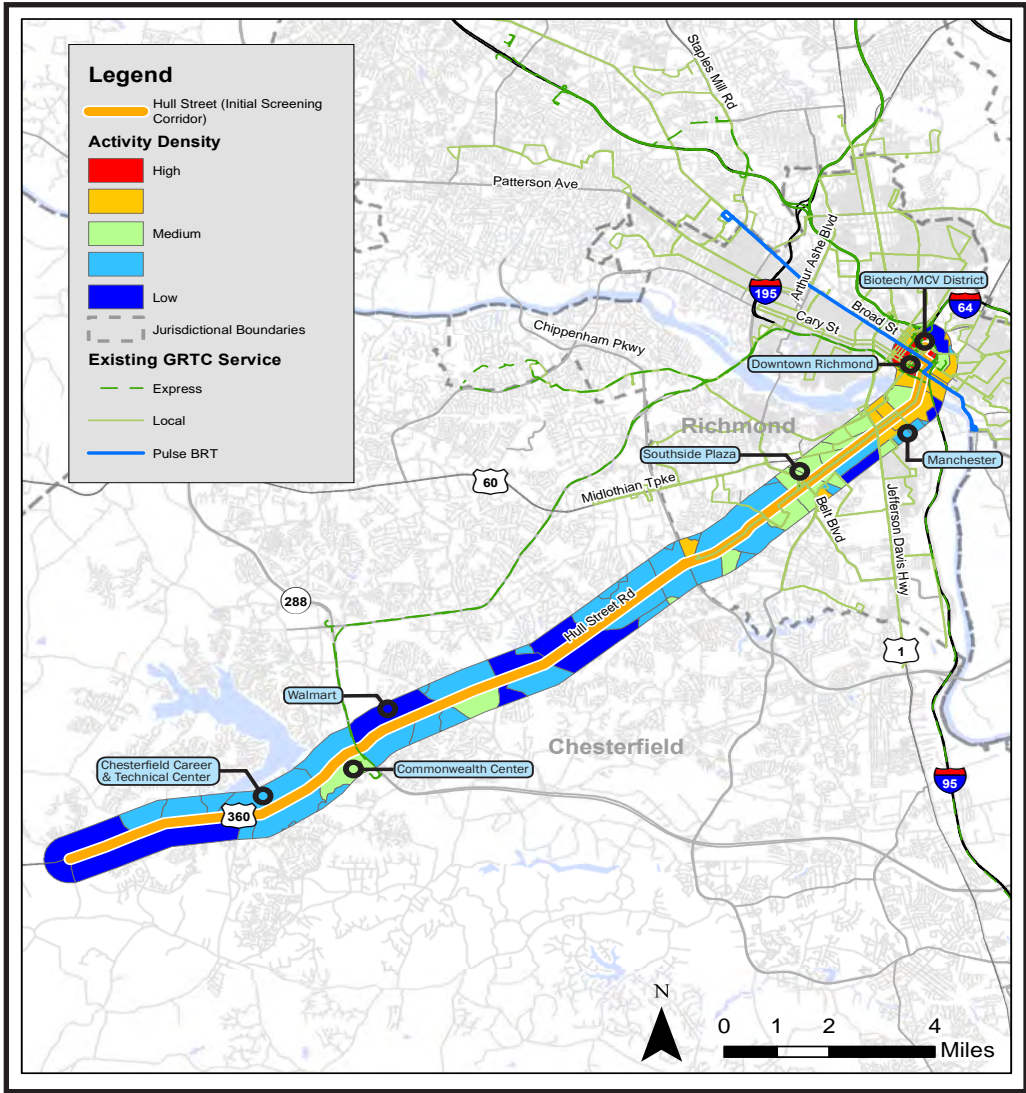
Detailed Analysis

The Hull Street corridor was not recommended for Detailed Analysis.

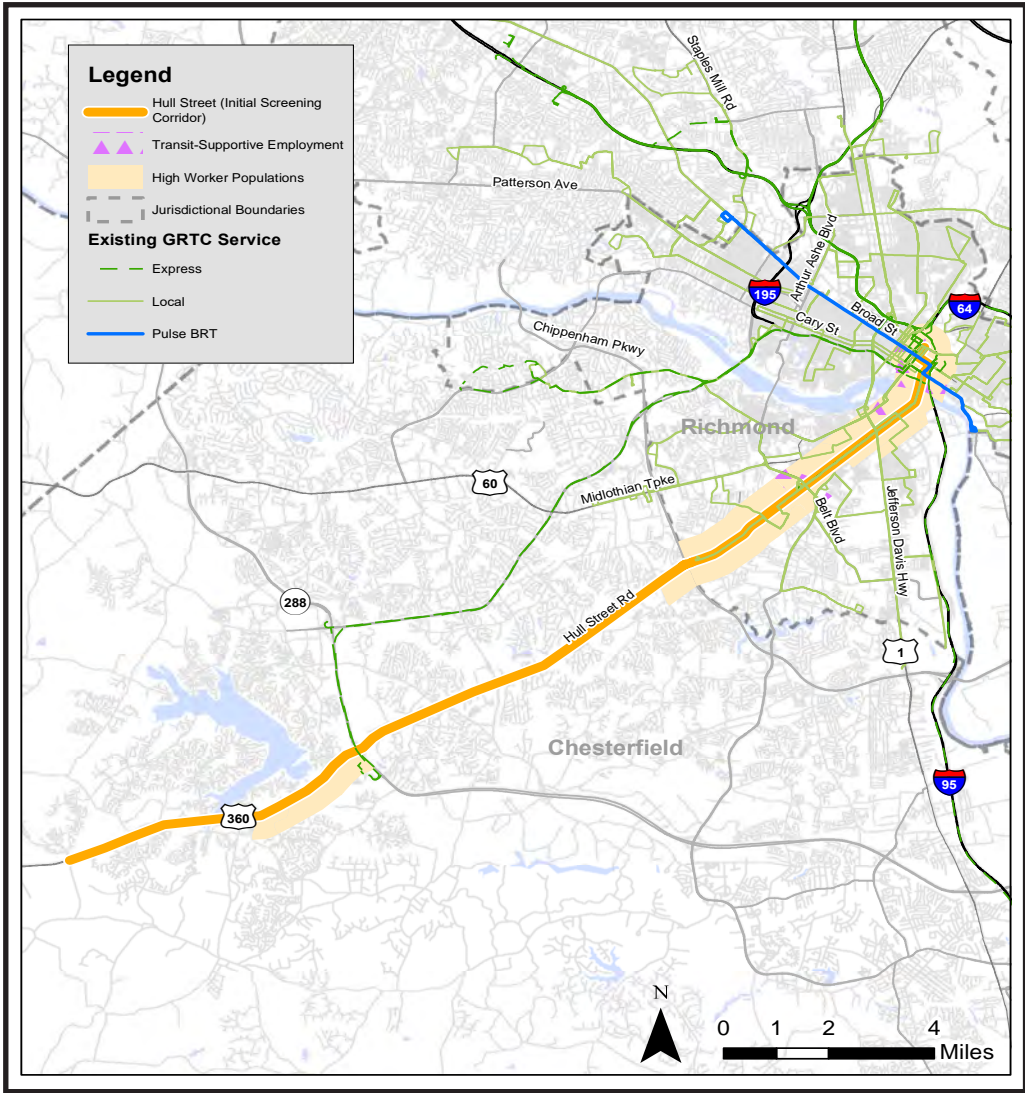
Potential Next Steps

While the Hull Street corridor was not recommended for near-term high-frequency service, the corridor should be studied for potential transit services that could support existing and future land uses and provide improved connections to working and EJ populations. Improved express transit service to Commonwealth Center and coverage-level transit service along Hull Street Road south of Chippenham Parkway could strengthen network connections in the near-term. Continued growth of population and employment along Hull Street could make the corridor a viable candidate for high-frequency service in the future.

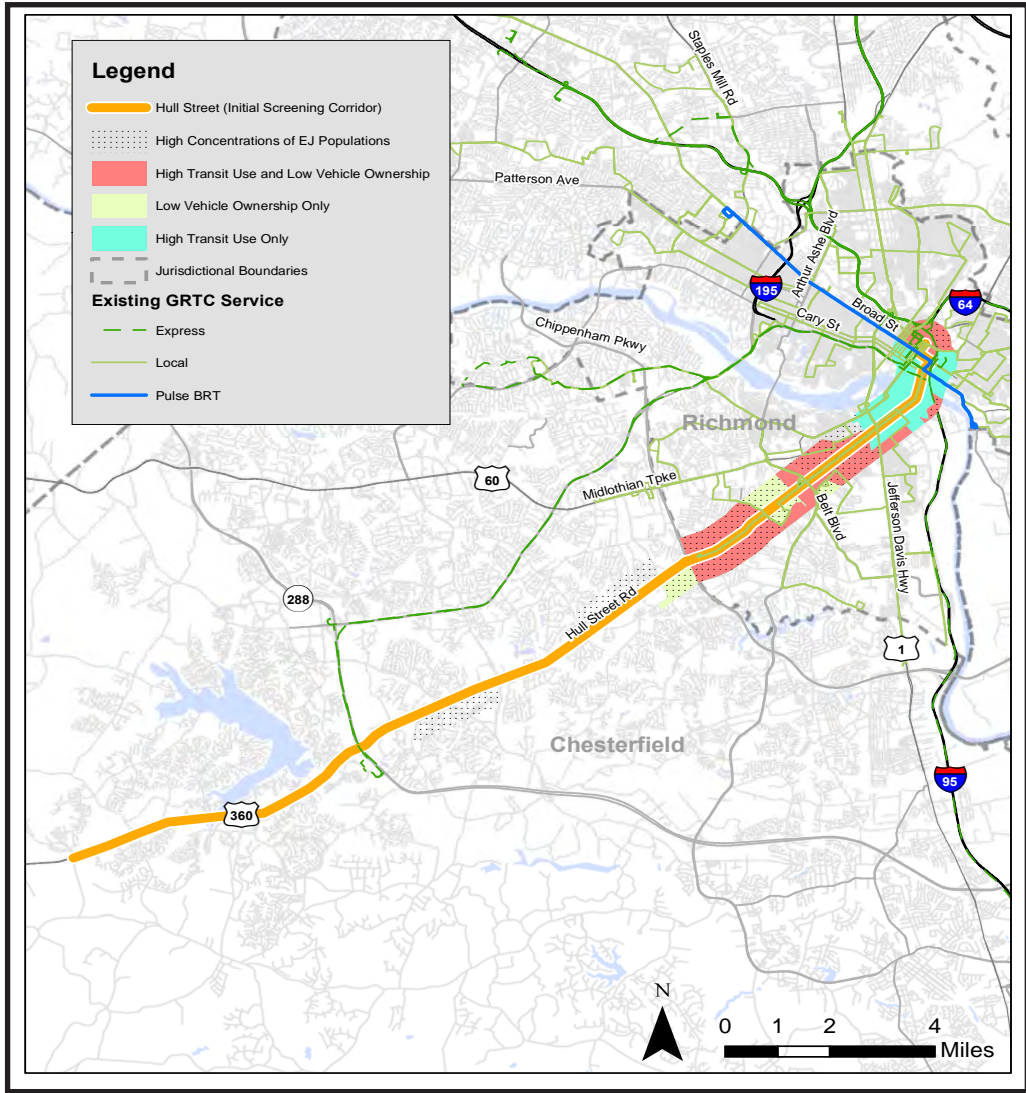
Activity Density



Employment and Workers



Environmental Justice and Transit Dependent



Corridor Description

- Connects the Downtown Transfer Plaza to Manchester and the Hull Street corridor
- Serves the City of Richmond and Chesterfield County

Major Destinations

- Biotech/MCV District
- Downtown Richmond
- Manchester
- Southside Plaza
- Walmart - Chesterfield Crossing
- Commonwealth Center
- Chesterfield Career & Technical Center

Existing Connecting GRTC Service

- Pulse BRT (Peak: 10 min., Off-Peak: 15 min., Night: 30 min.)
- Route 2C: (Peak/Off-Peak: 30 min., Night: 60 min.)
- Route 20: (All Day: 30 min.)
- Route 87 (Daytime Only: 60 min.)

Existing Overlapping GRTC Service

- Routes 1A/B/C (Combined: 15 min., Individual: 60 min.)

Potential Future Development

- 5411 Commonwealth Center Parkway: 240-unit apartment complex near Commonwealth Center
- Kinsley Steel Plant: 200,000 sq. ft. steel fabrication plant planned in Manchester
- City View Market Place: 161 apartment units with ground floor retail on Hull Street in Manchester
- South Falls: 481-unit apartment complex with ground floor retail on Hull Street in Manchester

C. Mechanicsville Turnpike

Initial Screening

The Mechanicsville Turnpike corridor connects Downtown Richmond and Mechanicsville via Mechanicsville Turnpike. In the Initial Screening the corridor showed high activity density and transit-supportive employment when compared to other analysis corridors but provided limited connections to working populations, EJ populations, and existing GRTC service. The corridor's high activity density and transit-supportive employment was primarily concentrated within the Richmond city limits and south of I-64, a portion of the corridor that is already well served by local GRTC service. Outside of the Richmond city limits the corridor had poor existing transit connectivity, low activity density, and fewer connections to transit-dependent and EJ populations. GRTC service was previously provided to Mechanicsville but ultimately, was eliminated due to low ridership. As a result, the Mechanicsville Turnpike corridor was not recommended for further evaluation.

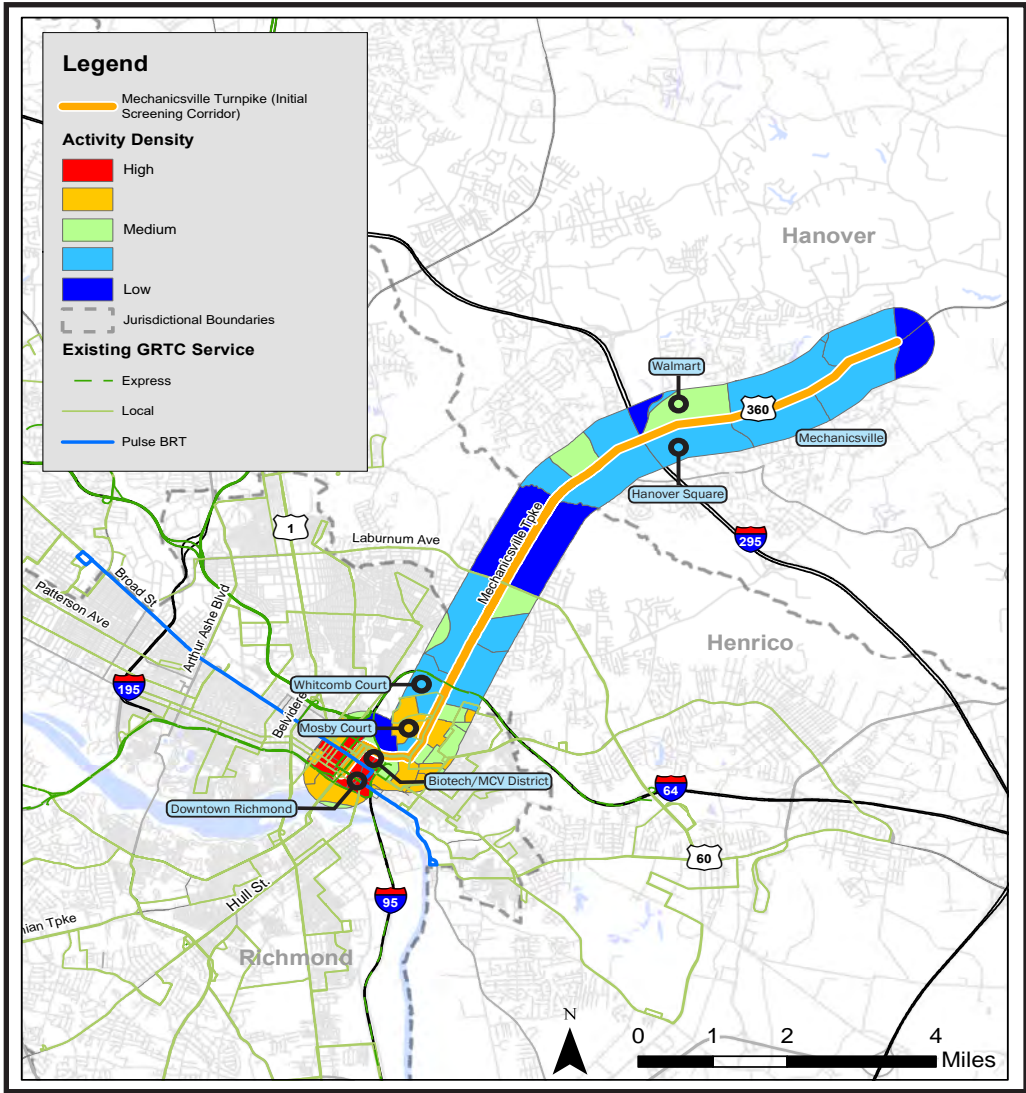
Detailed Analysis

The Mechanicsville Turnpike corridor was not recommended for Detailed Analysis.

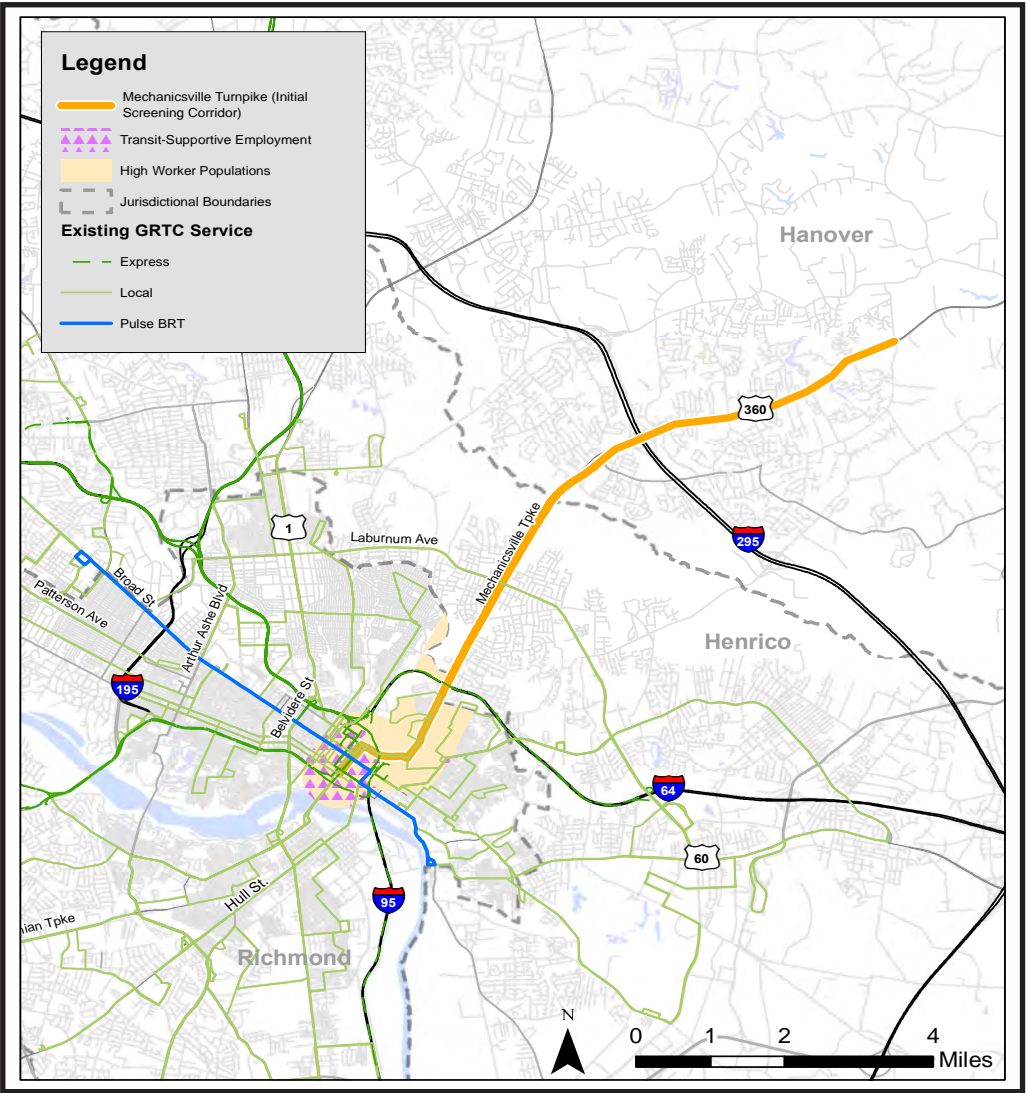
Potential Next Steps

While the Mechanicsville Turnpike corridor was not recommended for near-term high-frequency service, the corridor should be studied for potential transit services that could support existing and future land uses and provide improved connections to EJ populations. Options to consider in future study could include extensions of the existing GRTC Route 3 or 5 by relocating the northern termini to Laburnum Avenue or Azalea Avenue or lower-frequency service to Mechanicsville. In addition, express transit service to Mechanicsville and coverage-level transit services along Mechanicsville Turnpike north of I-64 could strengthen network connections in the near-term. Growth of population and employment north of I-64 could make the corridor a viable candidate for high-frequency service in the future.

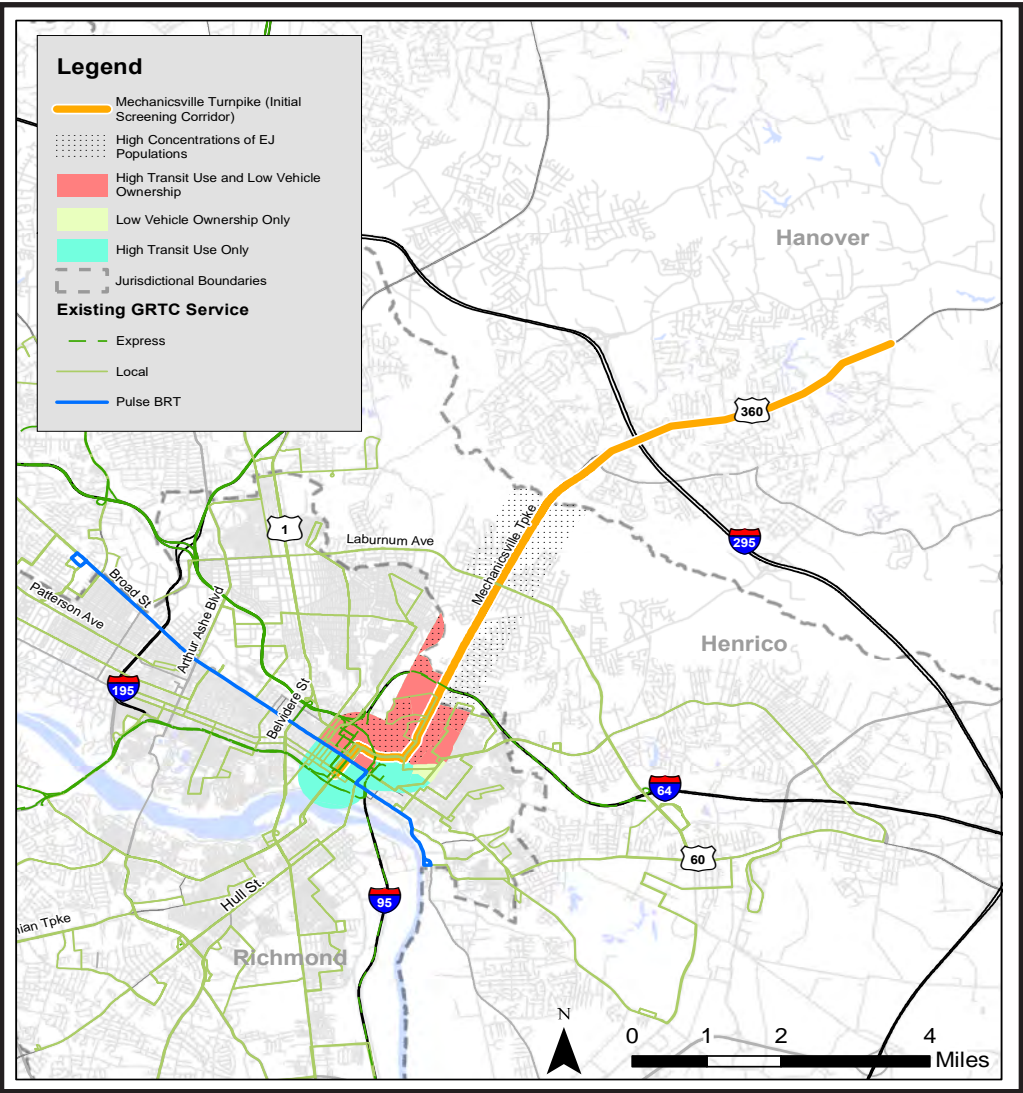
Activity Density



Employment and Workers



Environmental Justice and Transit Dependent



Corridor Description	Major Destinations	Existing Connecting GRTC Service	Existing Overlapping GRTC Service	Potential Future Development
<ul style="list-style-type: none">Connects Downtown Richmond and Mechanicsville via the Mechanicsville TurnpikeServes City of Richmond, Henrico County, and Hanover County	<ul style="list-style-type: none">Downtown RichmondBiotech/MCV DistrictMosby and Whitcomb CourtHousingHanover SquareWalmartMechanicsville	<ul style="list-style-type: none">Route 91 (All Day: 60 min.)	<ul style="list-style-type: none">Route 5 (Peak/Off-Peak: 15 min., Night: 30 min.)Route 12 (All Day: 30 min.)	<ul style="list-style-type: none">Boxwood Park: Mixed-use community planned at Pole Green Road and Bell Creek Road with 508 units.Cambridge Square Apartments: 207-unit apartment complex near Brandy Hill Plaza shopping center.

D. Midlothian Turnpike

Initial Screening

The Midlothian Turnpike corridor extends from Downtown Richmond to Westchester Commons in Chesterfield County via Hull Street and Route 60. In the Initial Screening, this corridor demonstrated high activity density and transit-supportive employment, provided connections to transit-dependent populations, and projected significant near-term development, when compared to other analysis corridors. Connections to working populations, EJ populations, and the existing GRTC network were moderate along the corridor. The areas with high activity density and connections to working populations, EJ populations, and transit-supportive employment were concentrated east of Chesterfield Towne Center. As a result, only the portion of the Midlothian Turnpike corridor east of Chesterfield Towne Center was recommended for further evaluation in the Detailed Analysis.

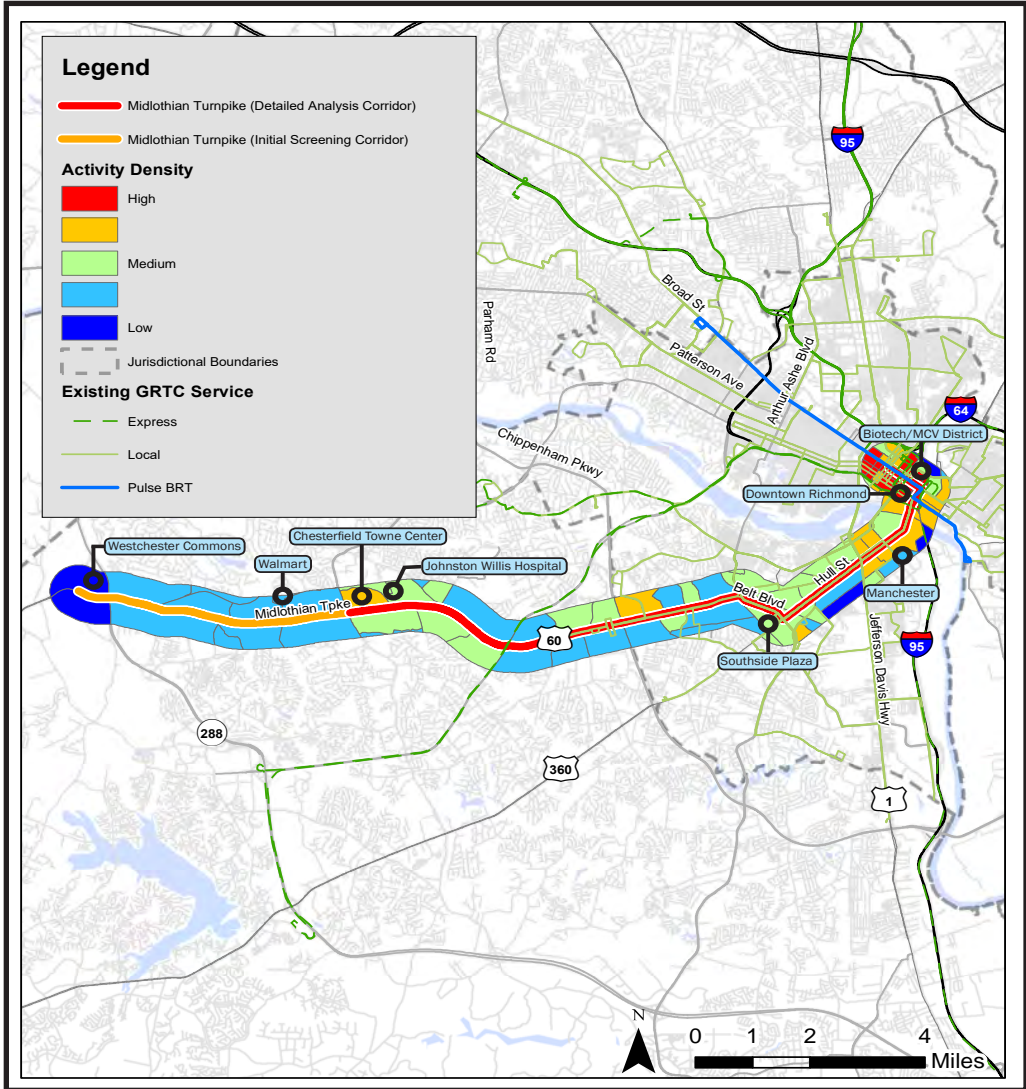
Detailed Analysis

The partial Midlothian Turnpike corridor evaluated in the Detailed Analysis extended from Downtown Richmond to Huguenot Road. The corridor, which was modified from the corridor proposed in the Greater RVA Transit Vision Plan, travels along one-way streets in Downtown Richmond, follows the GRTC Route 1A along Hull Street and Midlothian Turnpike, and was rerouted to allow for a western terminus and turnaround location at Huguenot Road. In the Detailed Analysis, this corridor demonstrated high ridership potential and associated productivity metrics, when compared to the other corridors. While the connections to community facilities, walkability, and presence of pedestrian infrastructure ranked as moderate or low in comparison to other corridors, Chesterfield County has plans to invest in the pedestrian infrastructure along the corridor in the near term. Due to the strong transit demand projected for this corridor, Chesterfield County has identified the Midlothian Turnpike corridor as a top transit priority, following the implementation of service on US Route 1. As a result, the partial Midlothian Turnpike corridor was recommended for further study and advancement to the Implementation Feasibility assessment.

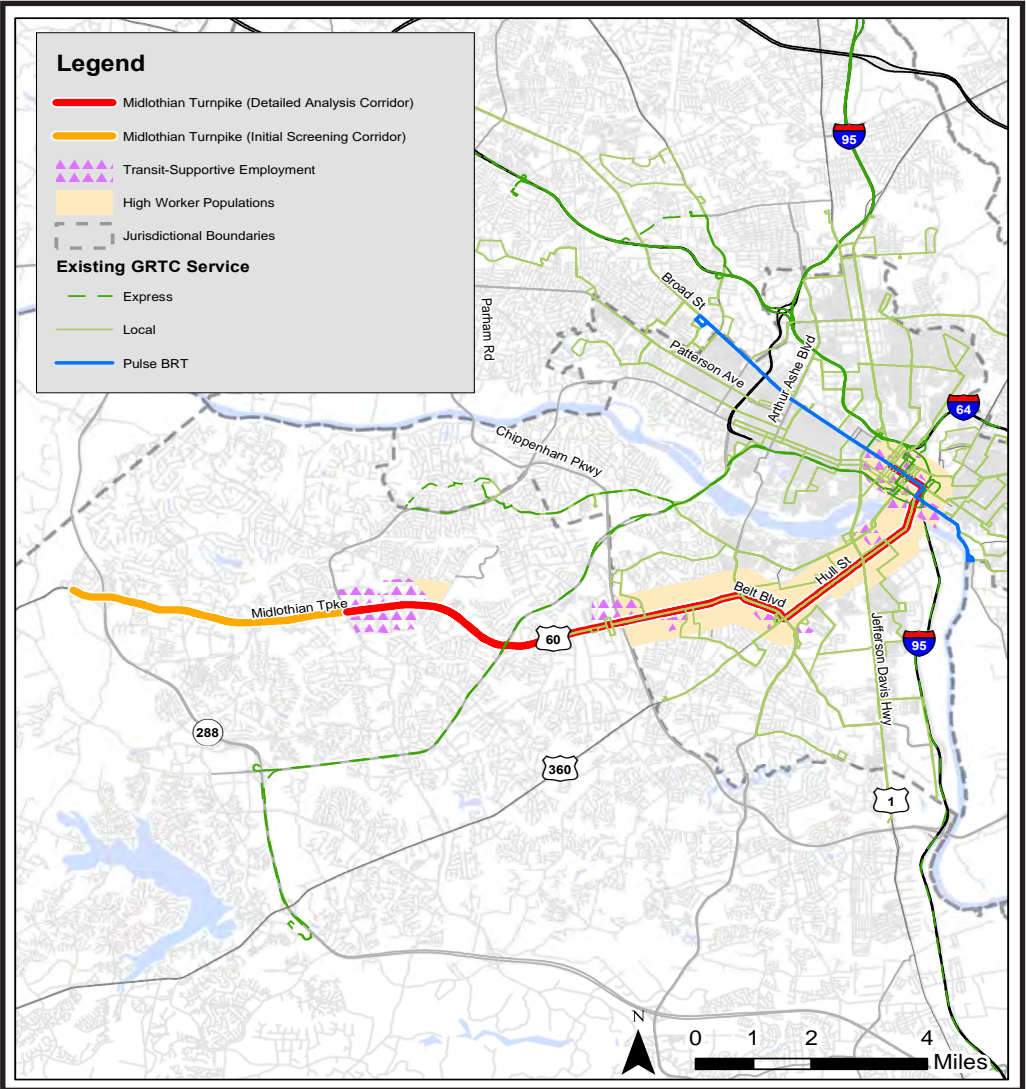
Potential Next Steps

Areas of the Midlothian Turnpike corridor west of Chesterfield Towne Center should be studied separately for potential coverage-level service or express service to strengthen network connections in the near-term. Growth of population and employment west of Chesterfield Towne Center could make the corridor a viable candidate for high-frequency service in the future. Future transit extensions can be accommodated when demand from increased density, population increases and changes in land use warrant the service. Chesterfield County should continue to acknowledge potential for transit service along Midlothian Turnpike in future local planning efforts consistent with the Midlothian Community Special Area Plan (adopted on December 11, 2019).

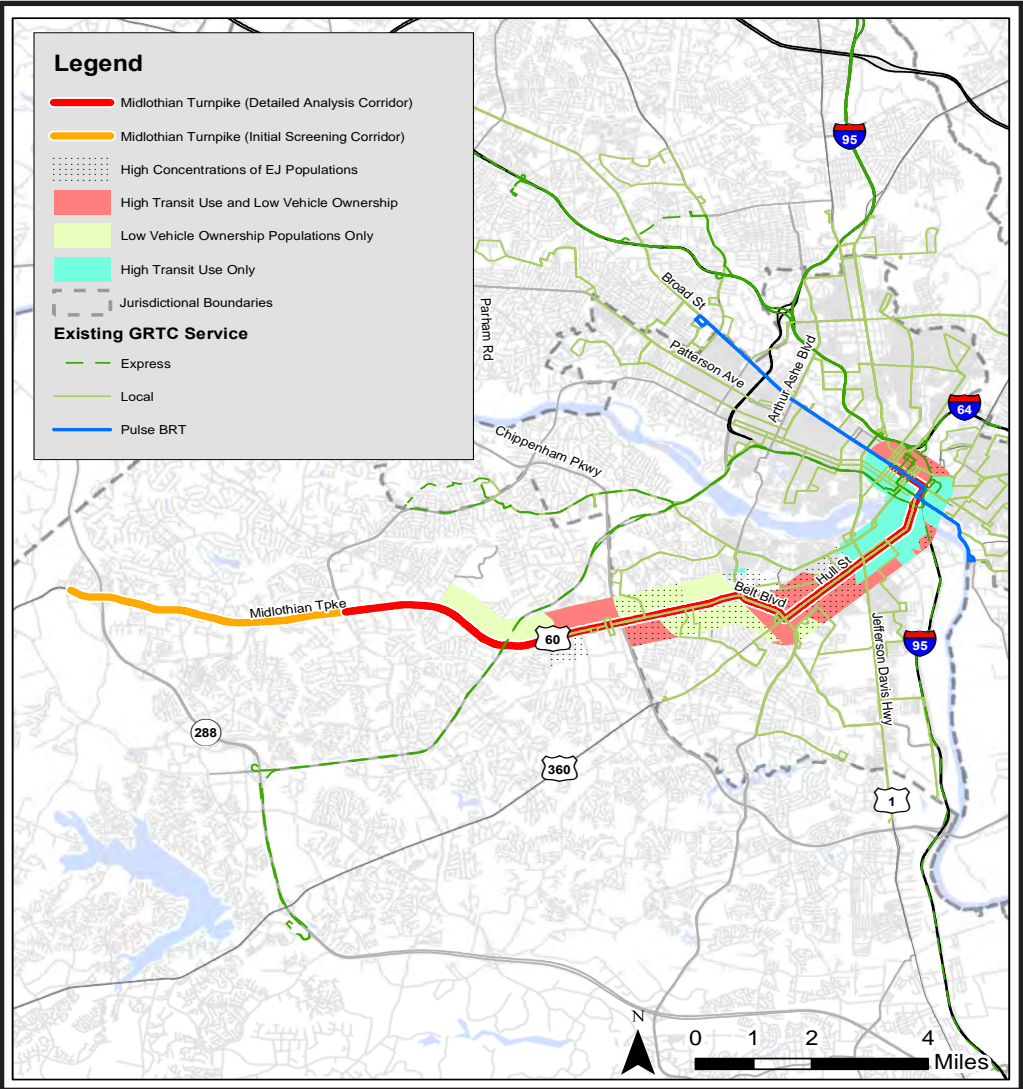
Activity Density



Employment and Workers



Environmental Justice and Transit Dependent



Corridor Description

- Connects Downtown Richmond to neighborhoods in the Manchester area and the commercial development in the Midlothian Turnpike corridor
- Serves the City of Richmond and Chesterfield County

Major Destinations

- Biotech/MCV District
- Downtown Richmond
- Manchester
- Southside Plaza
- Johnstons-Willis Hospital
- Chesterfield Towne Center
- Walmart - Midlothian Turnpike
- Westchester Commons

Connecting GRTC Service

- Routes 3A/B/C (Combined: 15 min., Individual: 30 min., Night: 30 min.)
- Route 86 (Daytime Only: 60 min.)
- Route 87 (Daytime Only: 60 min.)
- Route 88 (Peak Only: 30 min.)
- Route 102X (Seasonal)

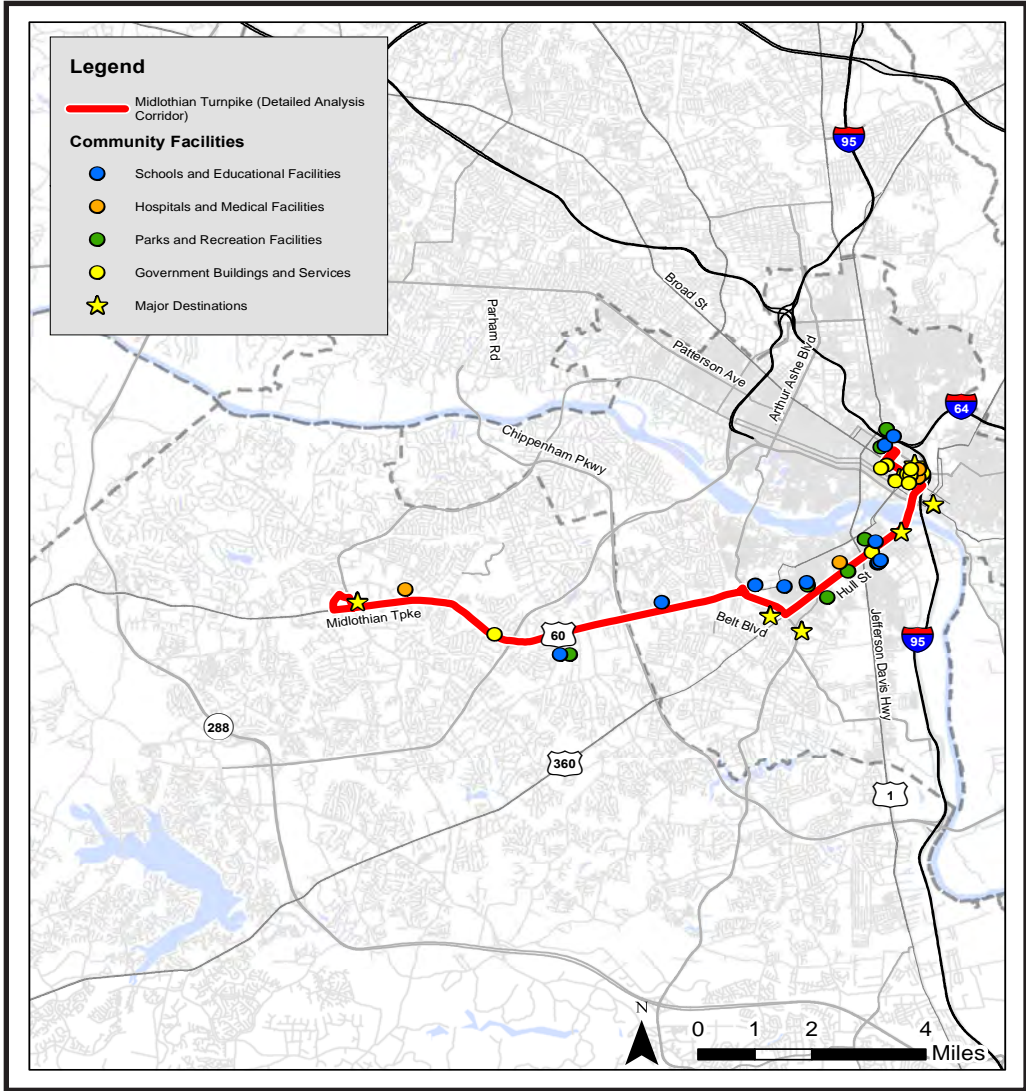
Overlapping GRTC Service

- Routes 1A/B/C (Combined: 15 min., Individual: 60 min.)
- Route 2B (All Day: 60 min.)
- Route 2C (Peak: 30 min., Off-Peak: 60 min.)
- Route 20 (All Day: 30 min.)

GRTC Rider Feedback

- High interest in extension of service to Chesterfield Towne Center to connect employment in the corridor with existing system. Interest in extension to Westchester eventually, to provide connections to additional medical facilities and employment opportunities. Interest in higher frequencies for Route 2B, which may require frequency changes to other Route 2 services to align schedule

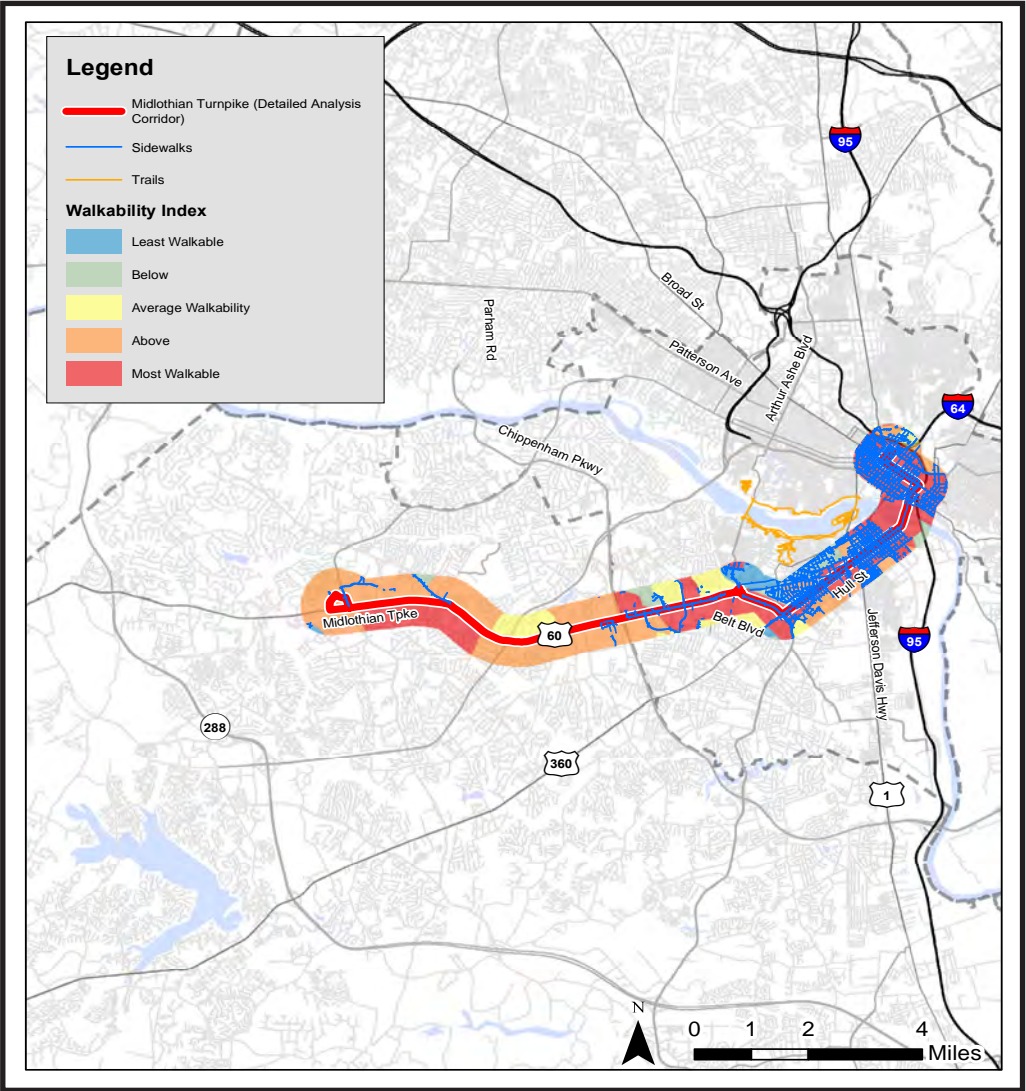
Community Facilities



Community Facilities

- 11 schools and educational facilities
- 3 hospitals and medical facilities
- 10 parks and recreation facilities
- 11 government services and office buildings
- 9 grocery stores

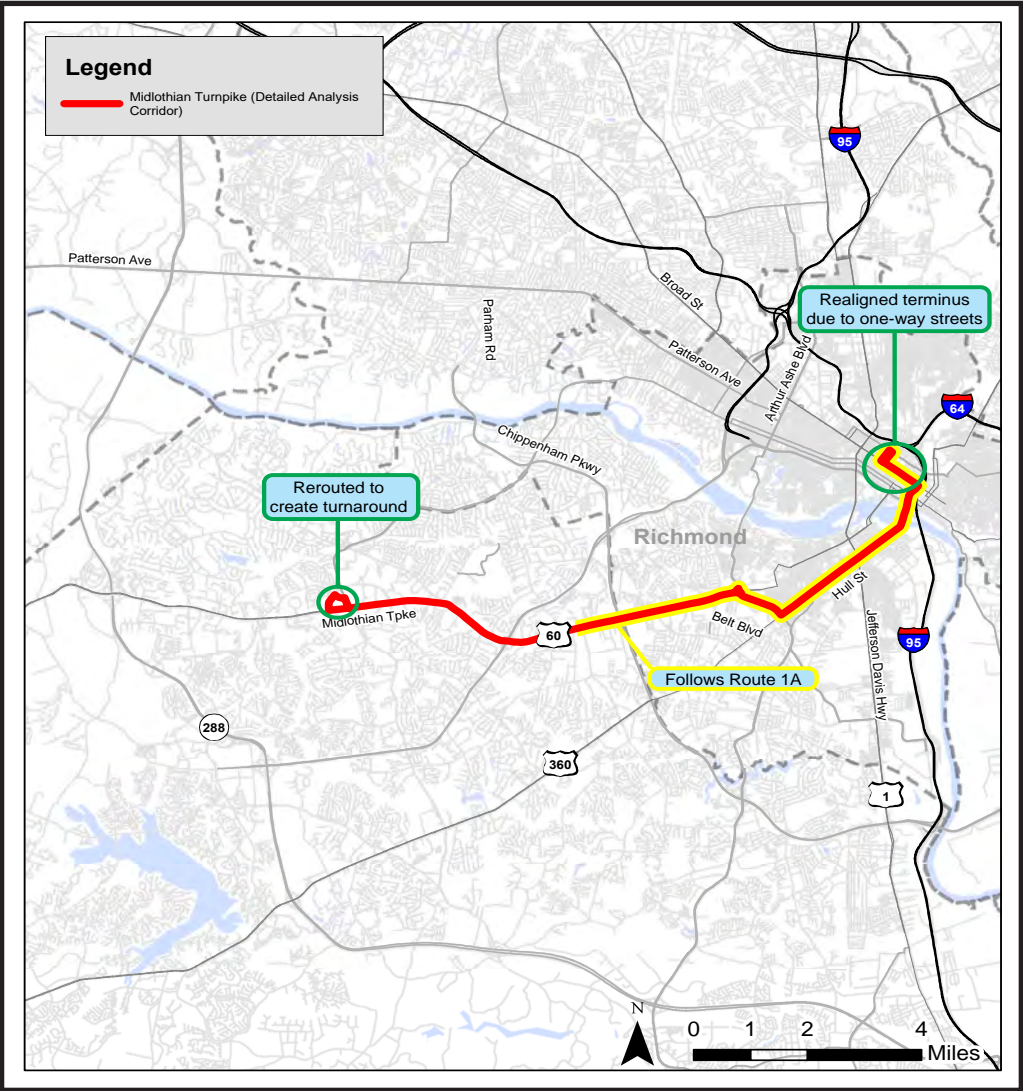
Pedestrian Network and Connectivity



Pedestrian Network Coverage

- Linear feet of roadway - 1,426,439 ft.
- Roadway with access to sidewalks - 830,874 ft.
- Pedestrian facility coverage - 58%

Roadway Suitability



Potential Future Development

- Kinsley Steel Plant: 200,000 sq. ft. steel fabrication plant planned in Manchester
- City View Market Place: 161 apartment units with ground floor retail on Hull Street in Manchester
- South Falls: 481-unit apartment complex with ground floor retail on Hull Street in Manchester
- Richmond Redevelopment and Housing Authority: 76 new units on vacant lots in Blackwell
- Jackson Place - 154-unit, 4-story multi-family building on Jackson and First Streets
- RiverHaus: 7-story apartment building with 130-140 units on Cowardin Avenue and W 19th Street
- Locks Tower: 237-unit residential building on E. Byrd and 11th Streets
- Penny at Jackson Ward: 6-story mixed-use building with 166 residential units and ground floor commercial on W. Marshall Street
- VCU Hospital Additions: Two 16-story towers with a combined 1,103,000 sq. ft. of space

E. West End South

Initial Screening

The West End South corridor connects Downtown Richmond with Short Pump via Main Street, Patterson Avenue, and Gayton Road. In the Initial Screening, this corridor demonstrated high activity density, transit-supportive employment, concentrations of working populations, and near-term development, when compared to other analysis corridors. The West End South corridor had the highest activity density of all the corridors considered in the Initial Screening. However, the areas with high activity density were concentrated at Short Pump and east of the Gaskins-Quioccasin Road Shopping Center, while the portion of the corridor between Short Pump and the Gaskins-Quioccasin Road Shopping Center had less activity density, as well as less transit-supportive employment, transit-dependent populations, and EJ populations than the rest of the corridor. While Short Pump had the activity density to support high-frequency transit service, this section of the corridor could also be served by the Broad Street - Short Pump (A) corridor, which allows passengers to go from Downtown Richmond to Short Pump. Given that most of the activity density, transit-supportive employment, working population, and areas with high concentrations of transit-dependent and EJ populations were located on the portion of the corridor east of the Gaskins-Quioccasin Road Shopping Center, only this portion of the corridor was recommended for further evaluation in the Detailed Analysis.

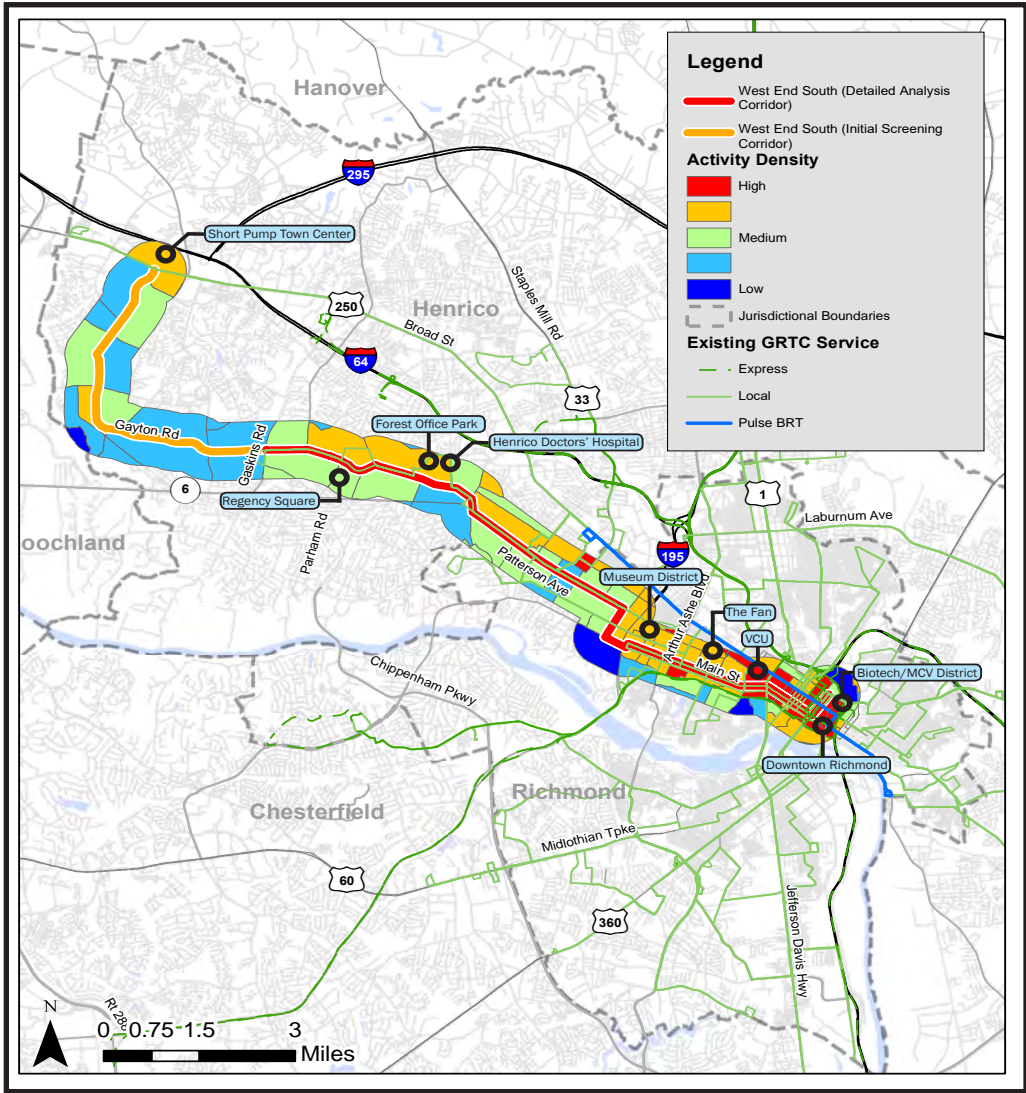
Detailed Analysis

The partial West End South corridor evaluated in the Detailed Analysis extends from Downtown Richmond to Gaskins Road follows the existing GRTC Route 5 east of I-195. In the Detailed Analysis, this corridor ranked high for all data-driven analysis metrics, when compared to the other corridors. Although transit service currently exists along many segments of the corridor, there is currently no single-seat ride from the West End to Downtown Richmond, as had been provided historically. Higher frequency service in this corridor could provide ample connections to many community facilities and well-connected, walkable areas. As a result, the partial West End South corridor was recommended for further study and advancement to the Implementation Feasibility assessment.

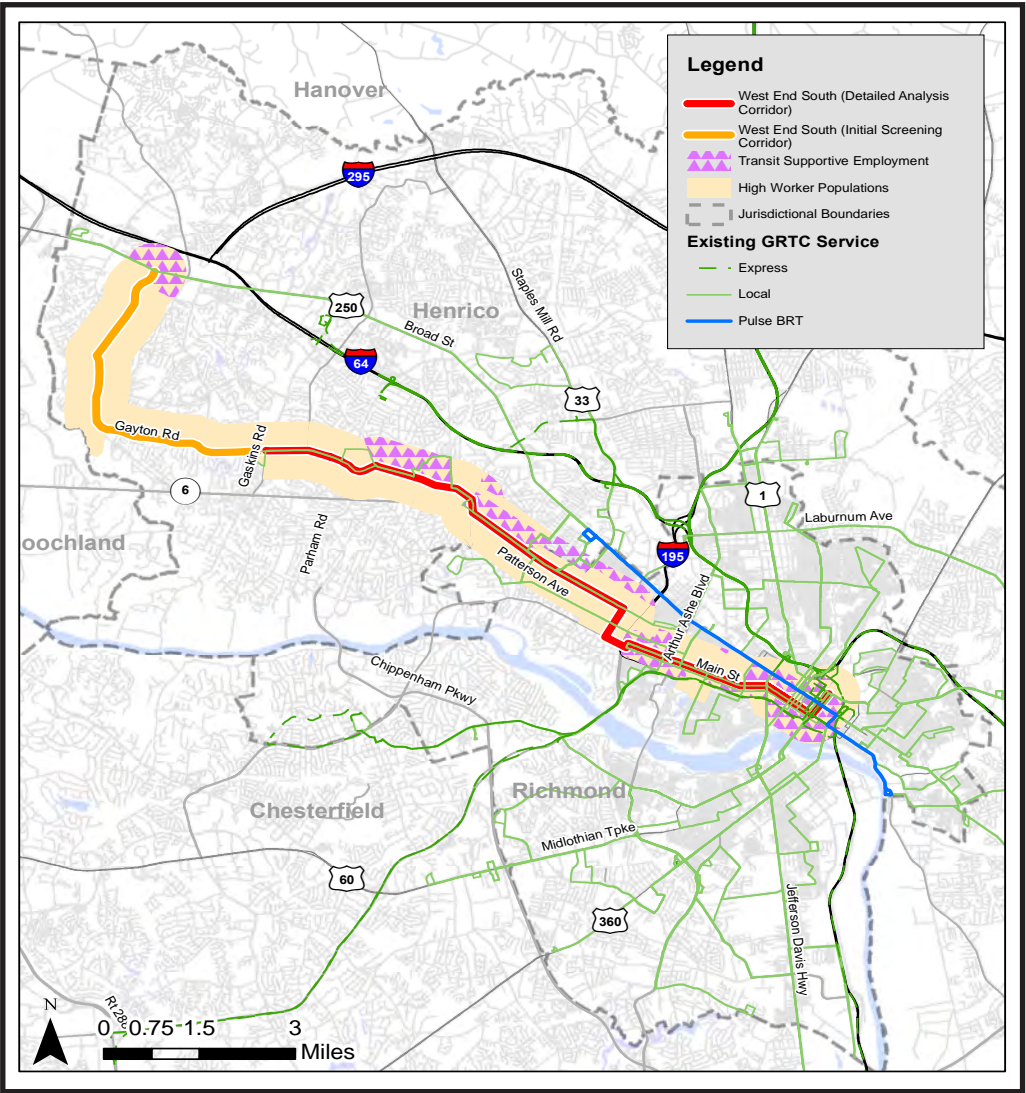
Potential Next Steps

Areas of the West End South corridor between Short Pump and Gaskins Road should be studied separately for potential coverage-level service to strengthen network connections in the near-term. Growth of population and employment west of Gaskins Road would make the corridor a viable candidate for high-frequency service in the future. Currently, this section of the corridor predominantly consists of quieter residential areas with populations of low-income and/or elderly residents and one consideration may be a micro-transit type of service that could provide connections to more frequently served corridors.

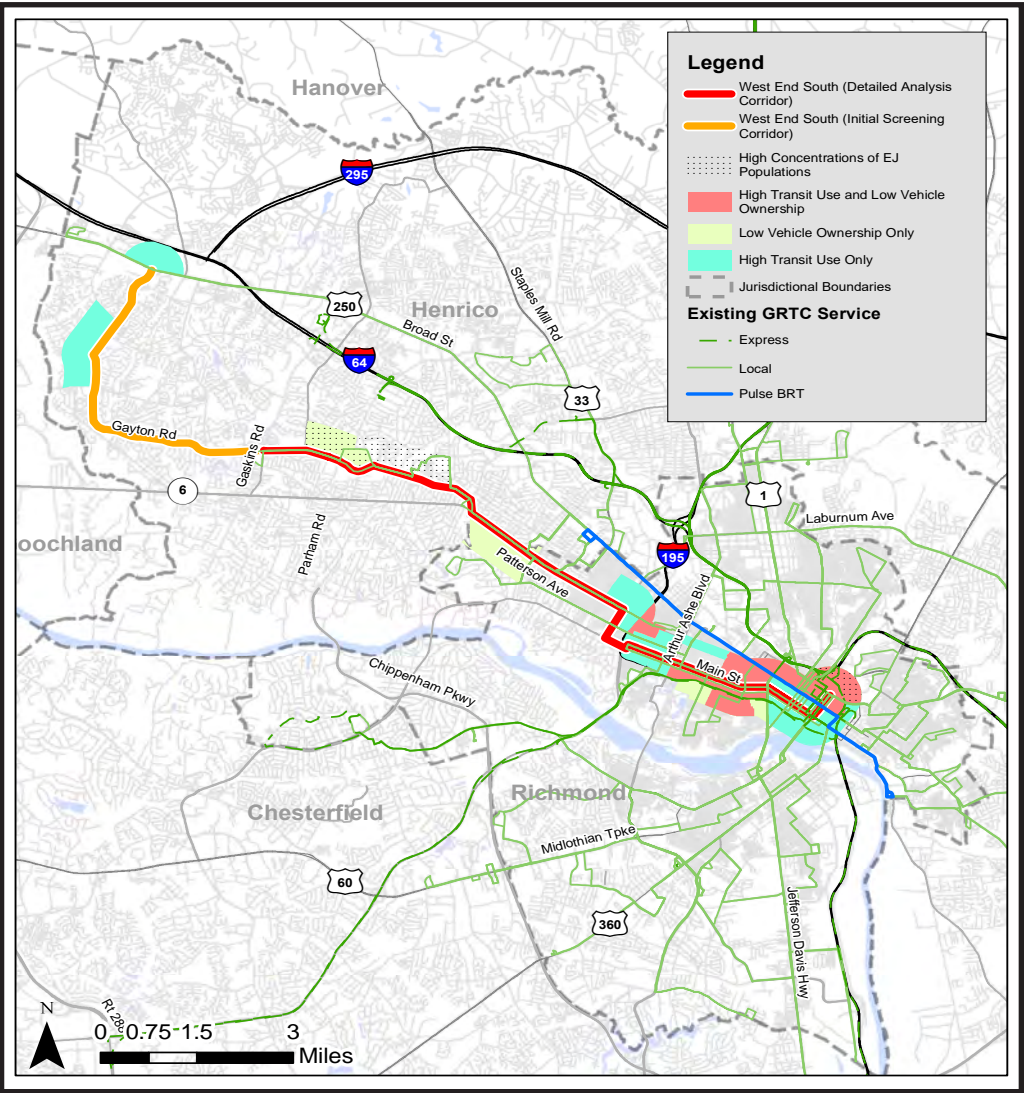
Activity Density



Employment and Workers



Environmental Justice and Transit Dependent



Corridor Description

- Connects the Downtown Transfer Plaza to Carytown, West End, Tuckahoe, and Short Pump
- Serves the City of Richmond and Henrico County

Major Destinations

- Biotech/MCV District
- Downtown Richmond
- Virginia Commonwealth University
- Fan District
- Museum District
- Henrico Doctors' Hospital
- Forest Office Park
- Regency Square
- Short Pump Town Center

Connecting GRTC Service

- Route 20: (All Day: 30 min.)
- Route 75 (Peak Only: 30 min.)
- Route 77 (Peak: 30 min., Off-Peak: 60 min.)
- Pulse BRT (Peak: 10 min., Off-Peak: 15 min., Night: 30 min.)

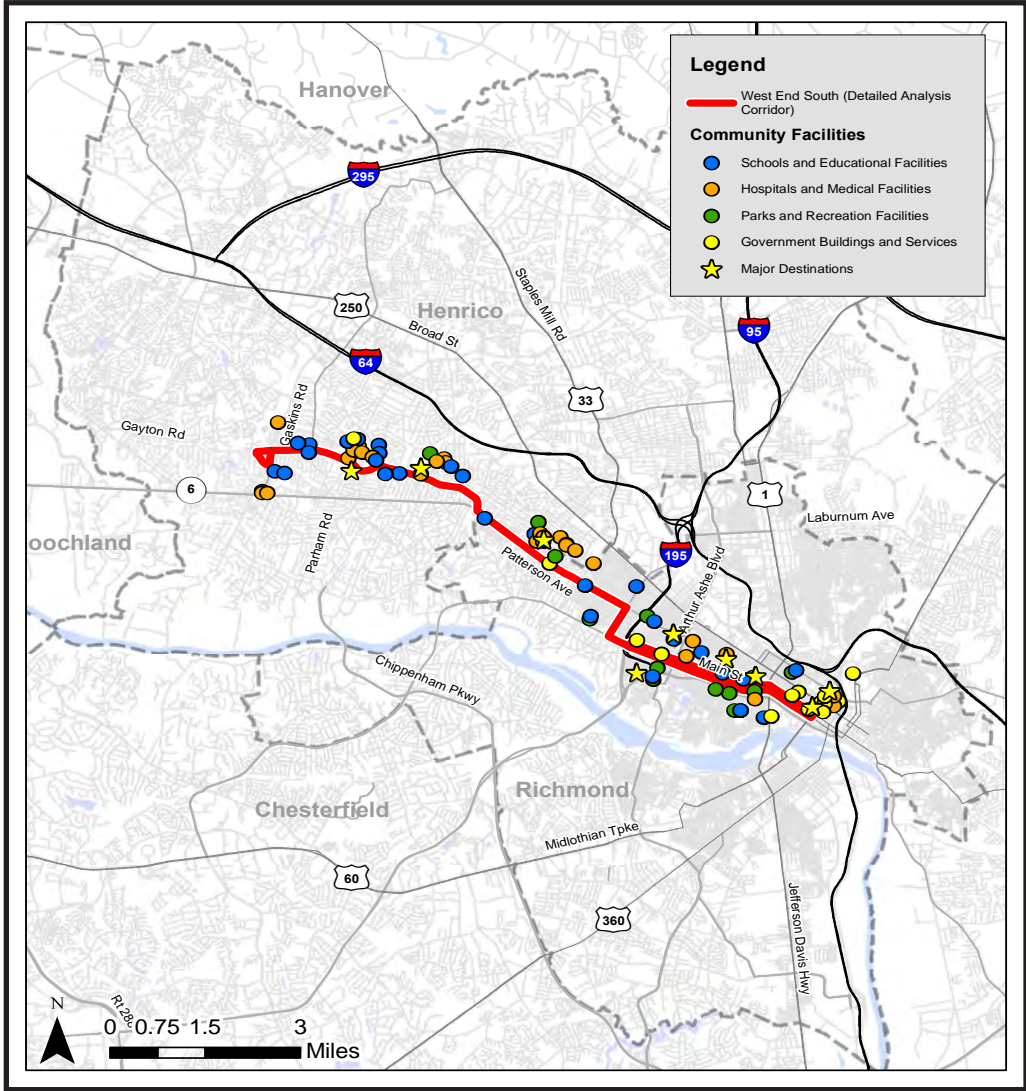
Overlapping GRTC Service

- Route 5 (Peak/Off-Peak: 15 min., Night: 30 min)
- Route 76 (Peak: 30 min., Off-Peak: 60 min.)
- Route 78 (All Day: 60 min.)
- Route 79 (Peak: 30 min., Off-Peak: 60 min.)

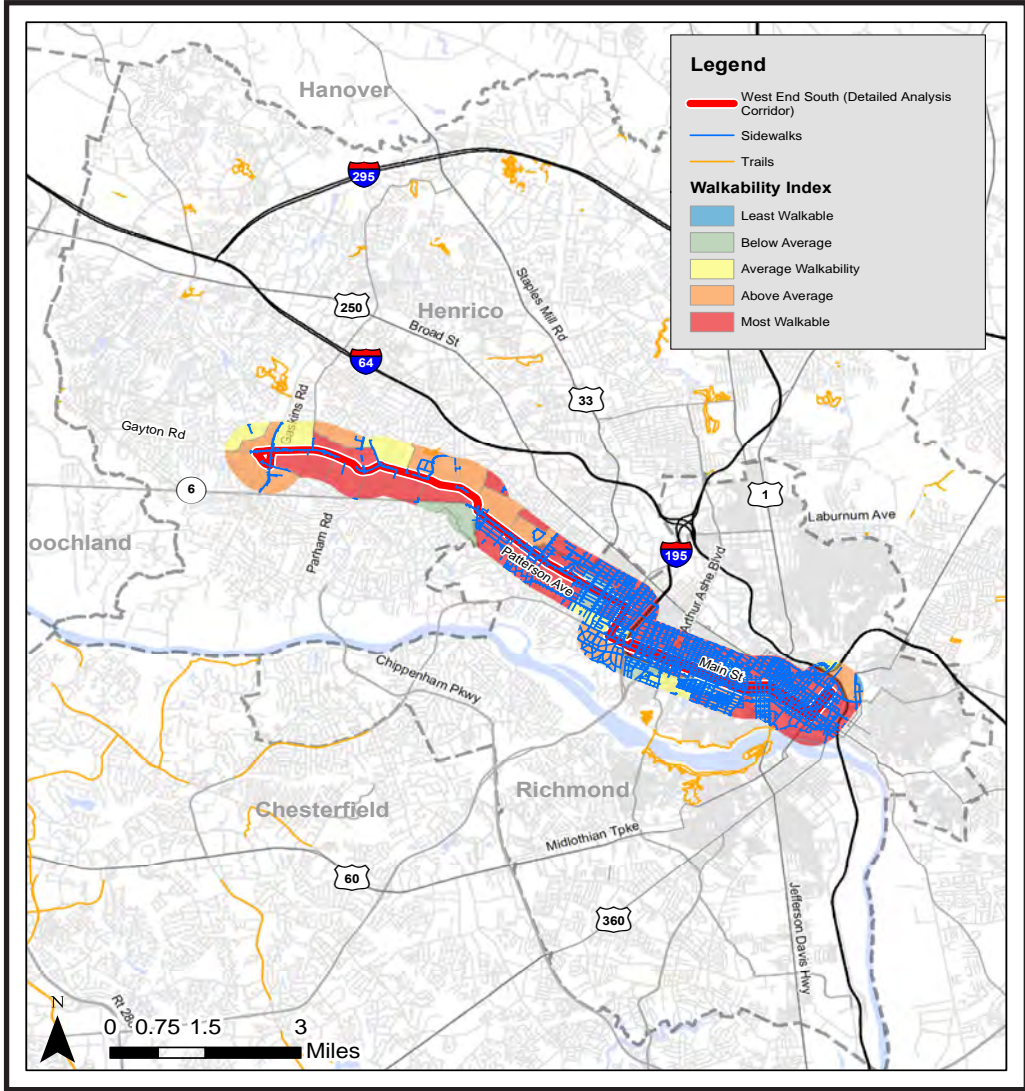
GRTC Feedback

- Interest in providing a single-seat ride from University of Richmond area to Downtown Richmond, similar to the old Route 16 on Grove Street

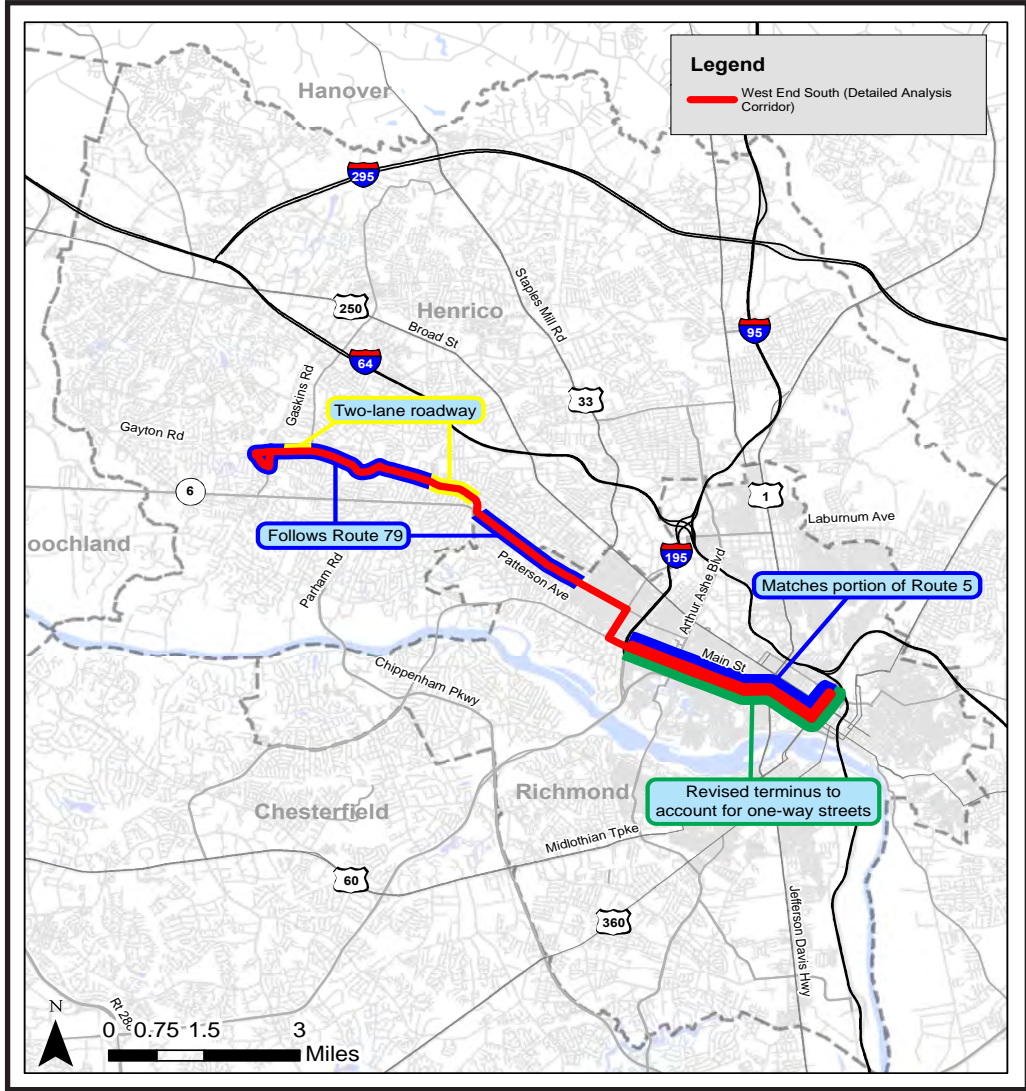
Community Facilities



Pedestrian Network and Connectivity



Roadway Suitability



Community Facilities

- 30 schools and educational facilities
- 26 hospitals and medical facilities
- 14 parks and recreation facilities
- 17 government services and office buildings
- 8 grocery stores

Pedestrian Network Coverage

- Linear feet of roadway - 1,800,402 ft.
- Roadway with access to sidewalks - 1,252,500 ft.
- Pedestrian facility coverage - 70%

Projected Ridership Potential

- Total riders: 2,400 - 4,100
- Boardings per mile: 151 - 258
- Boardings per trip: 32
- Boardings per hour: 28

Potential Future Development

- Second Dominion Tower: 911,000 sq. ft. office tower on Cary Street adjacent to the existing Dominion Energy offices
- 805W: 100-unit apartment building with ground floor retail on Cary Street in the Fan
- Regency Square: Redevelopment of abandoned big-box retail into 1,250 apartments
- Jackson Place - 154-unit, 4-story multi-family building on Jackson and First Streets
- The Circ: 106-unit apartment building on Grace Street
- Locks Tower: 237-unit residential building on E. Byrd and 11th Streets
- Penny at Jackson Ward: 6-story mixed-use building with 166 residential units and ground floor commercial on W. Marshall Street

F. Airport via Route 60

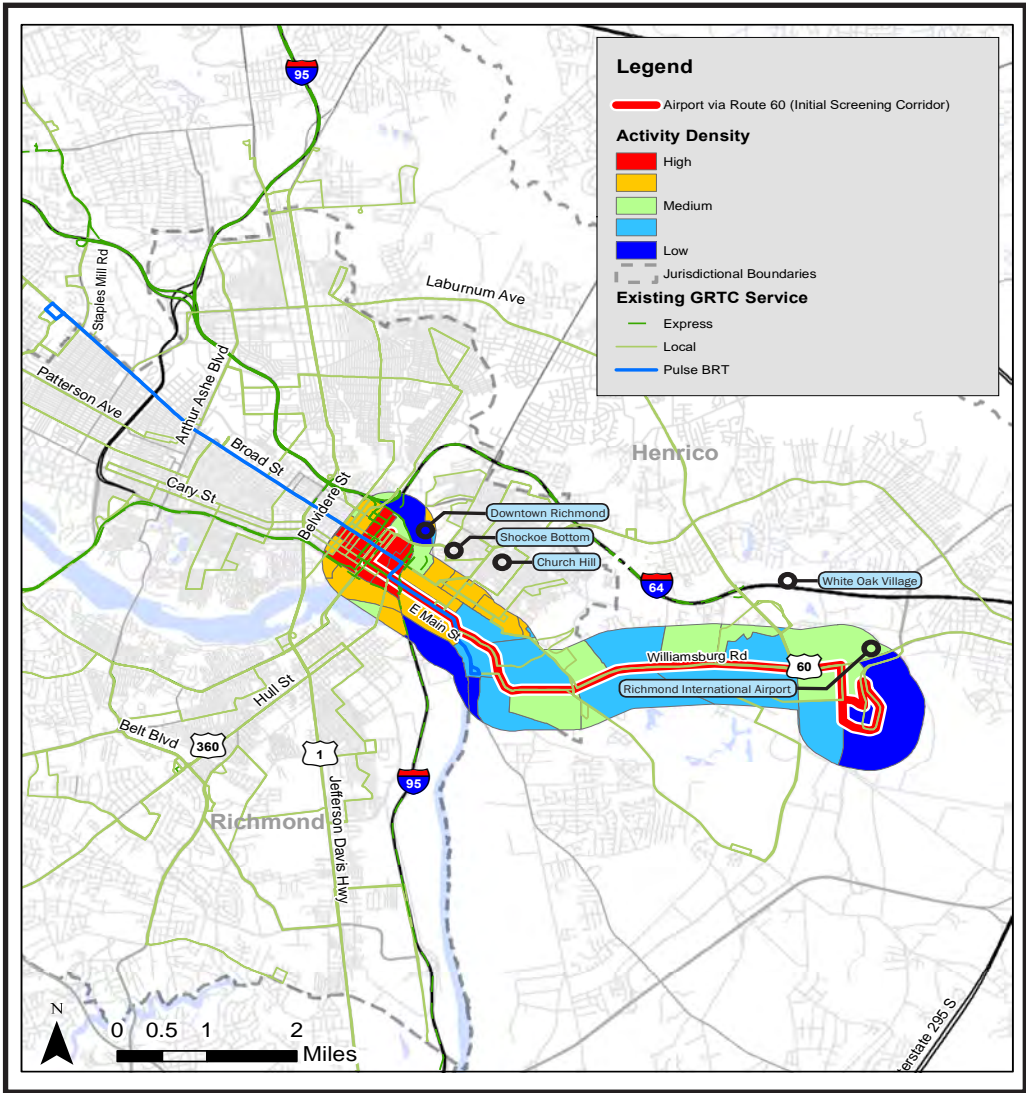
Initial Screening

The Airport via Route 60 corridor connects Downtown Richmond with the Richmond International Airport via Main Street and Williamsburg Road (Route 60). In the Initial Screening, this corridor demonstrated high activity density and transit-supportive employment and served moderate amounts of working populations, transit-dependent populations, and EJ populations, when compared to other analysis corridors. The highest concentrations of activity density and transit-supportive employment were located in Richmond's Downtown and Shockoe Bottom neighborhoods. Williamsburg Road, which connects these two high-activity density areas to the airport, was largely residential and had a higher proportion of the corridor's working populations than the other segments of the corridor. Transit-dependent populations along the corridor were mainly clustered within the Richmond city limits, but EJ populations were spread throughout the corridor. The full Airport via Route 60 corridor proposed in the Greater RVA Transit Vision Plan was recommended for further study in the Detailed Analysis.

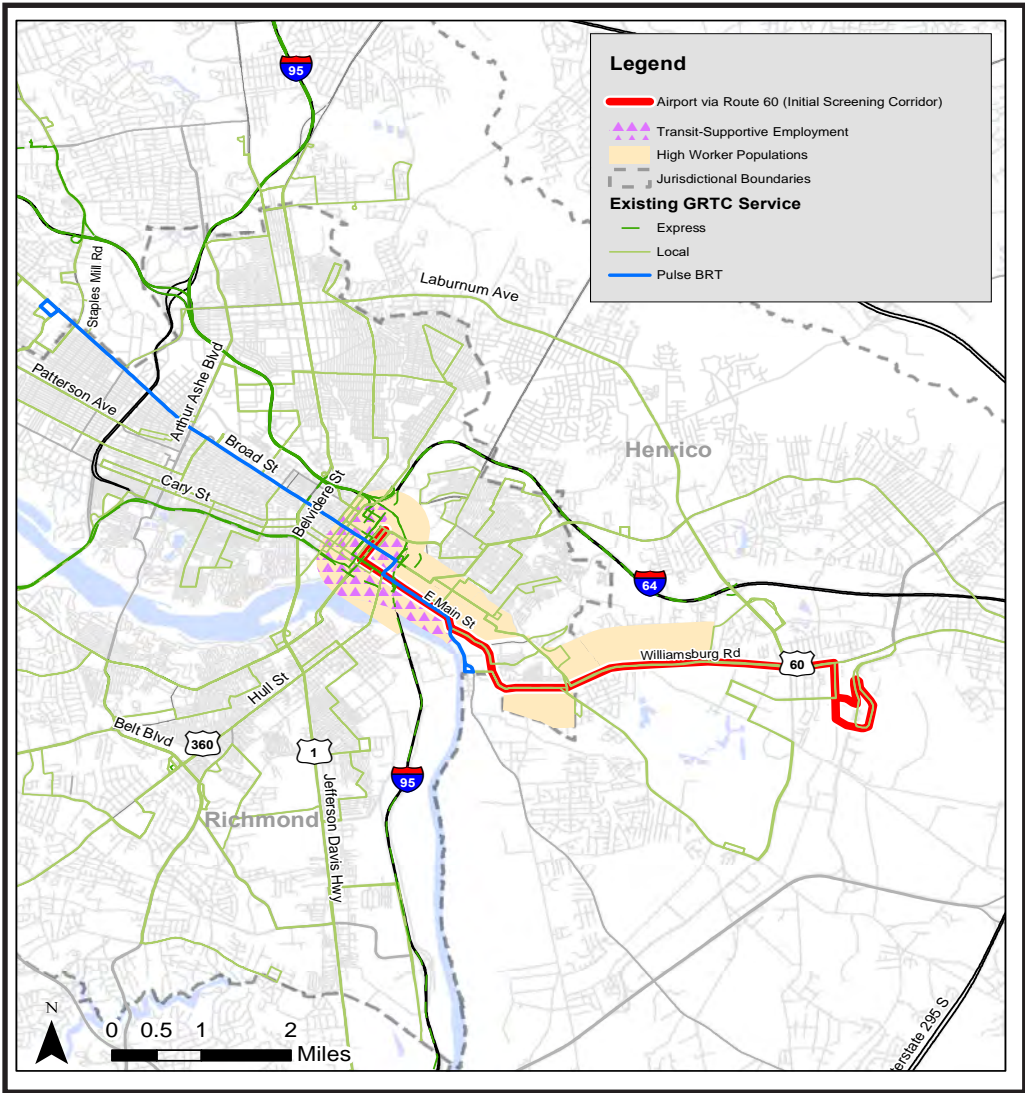
Detailed Analysis

The Airport via Route 60 corridor is currently served by multiple GRTC routes, but no existing routes provide a direct connection between Downtown Richmond and the airport. The Detailed Analysis revealed that outside the City of Richmond limits, there were limited community facilities or pedestrian infrastructure along the corridor. However, this short corridor had the potential to generate a high boardings per hour and provide transit options for employment opportunities in Downtown Richmond and at the airport. In addition, pedestrian infrastructure needs along this corridor are currently being studied by the Virginia Department of Transportation (VDOT) through the Strategically Targeted Affordable Roadway Solutions (STARS) program. As a result, the Airport via Route 60 corridor was recommended for further study and advancement to Implementation Feasibility assessment.

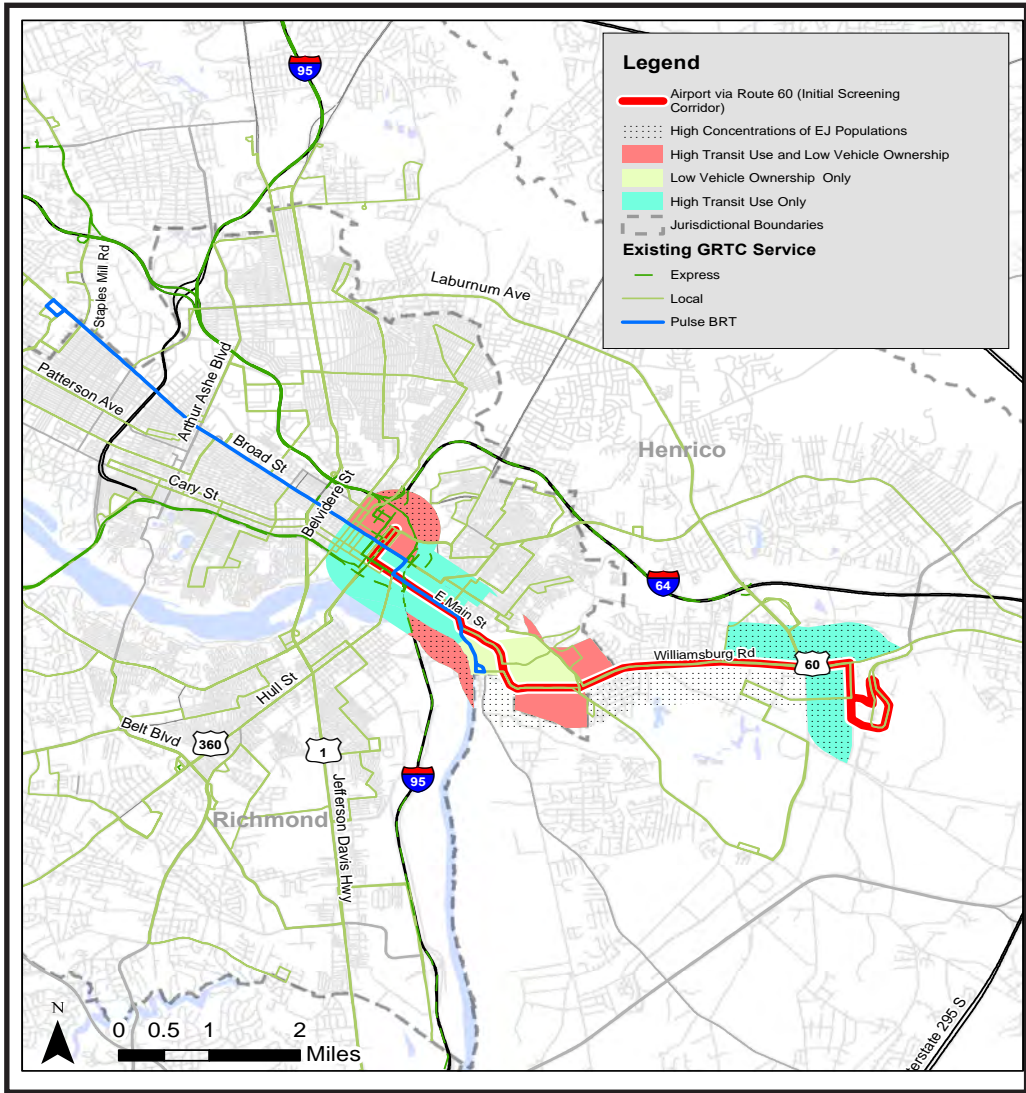
Activity Density



Employment and Workers



Environmental Justice and Transit Dependent



Corridor Description

- Connects the Downtown Transfer Plaza to Richmond International Airport via Williamsburg Road
- Serves City of Richmond and Henrico County

Major Destinations

- Downtown Richmond
- Shockoe Bottom
- Church Hill
- White Oak Village
- Richmond International Airport

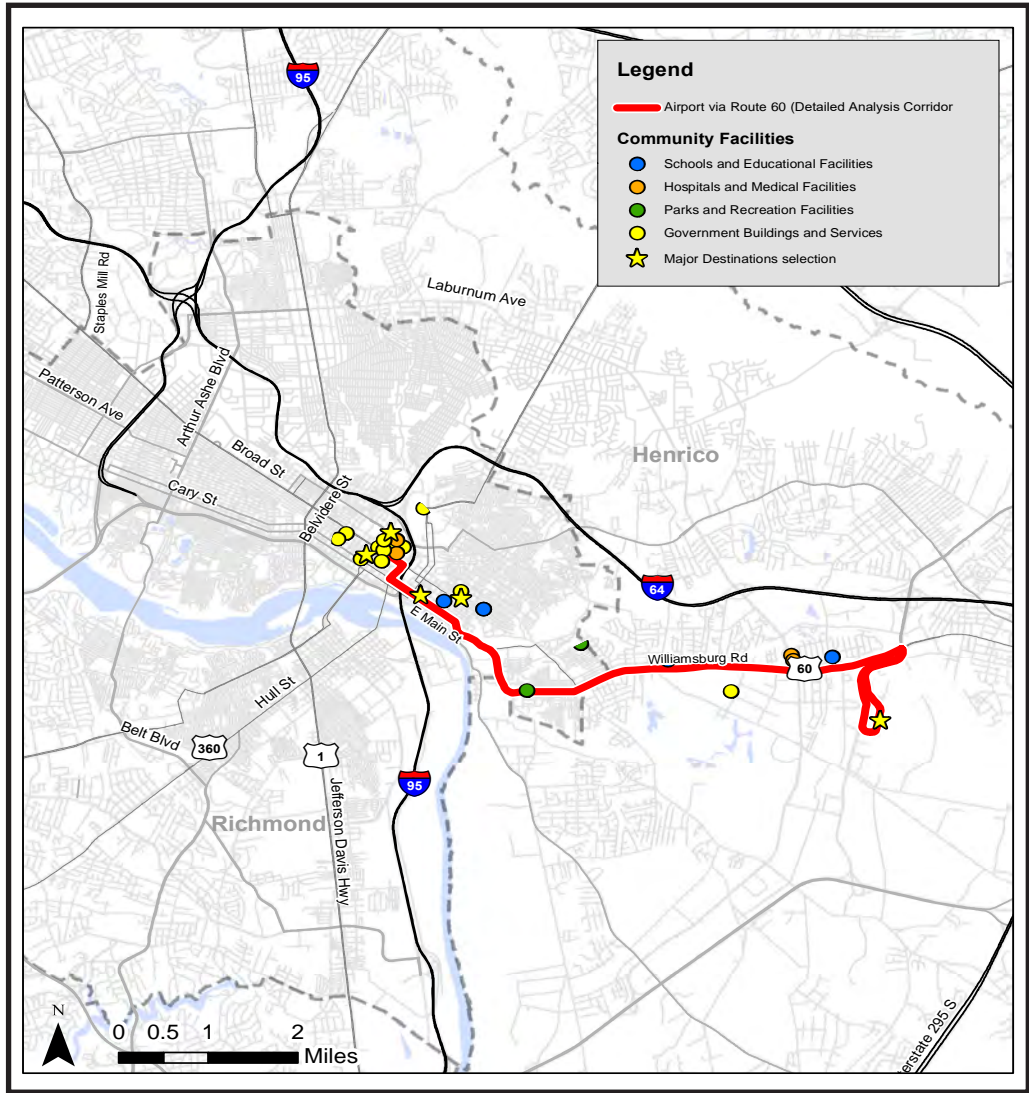
Existing Connecting GRTC Service

- Route 4A (All Day: 30 min.)
- Route 12 (All Day: 30 min.)
- Route 13 (All Day: 30 min.)
- Route 14 (All Day: 30 min.)
- Route 91 (All Day: 60 min.)

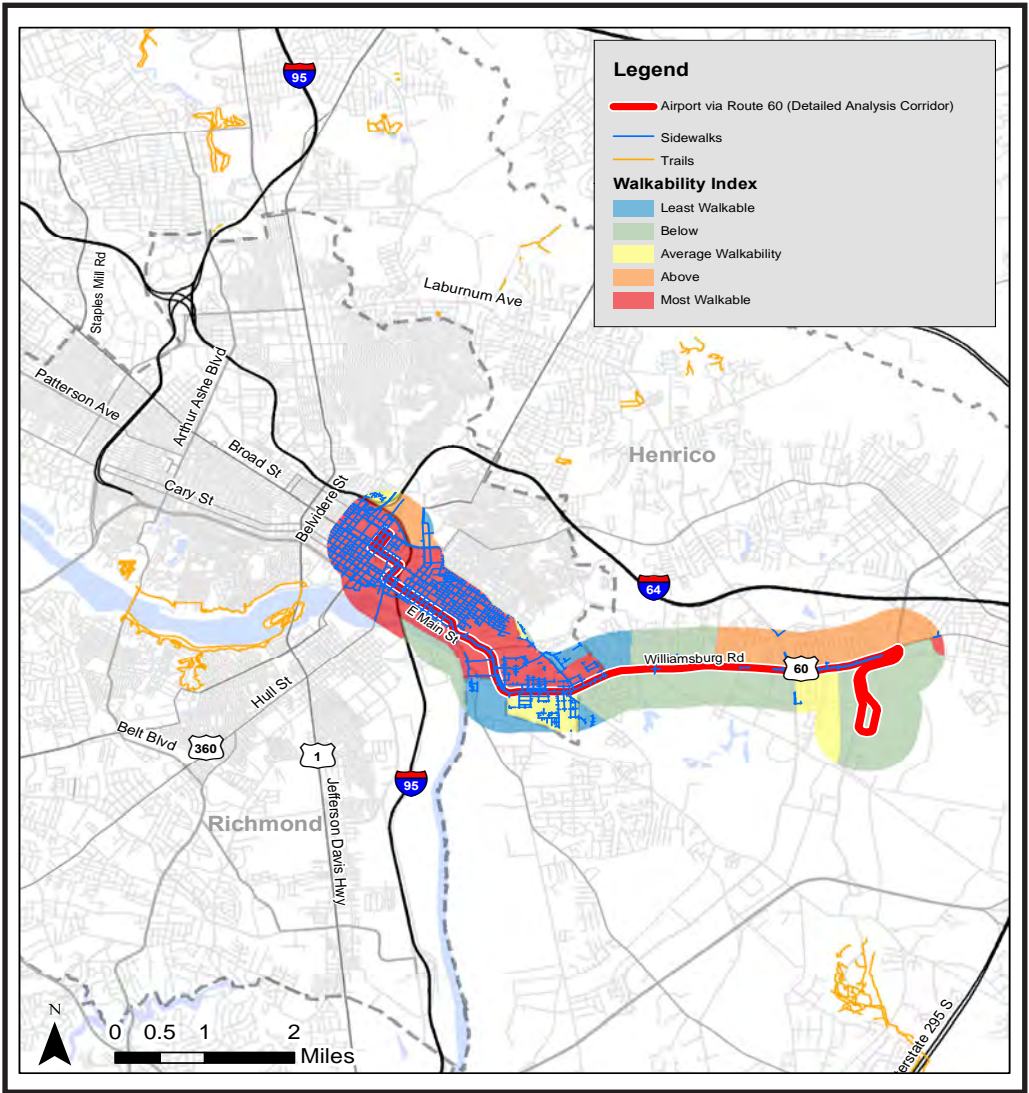
Existing Overlapping GRTC Service

- Pulse BRT (Peak: 10 min., Off-Peak: 15 min., Night: 30 min.)
- Route 4B (All Day: 30 min.)
- Routes 7A/B (Combined: 30 min., Individual: 60 min.)
- Route 56 (Peak Only: 60 min.)

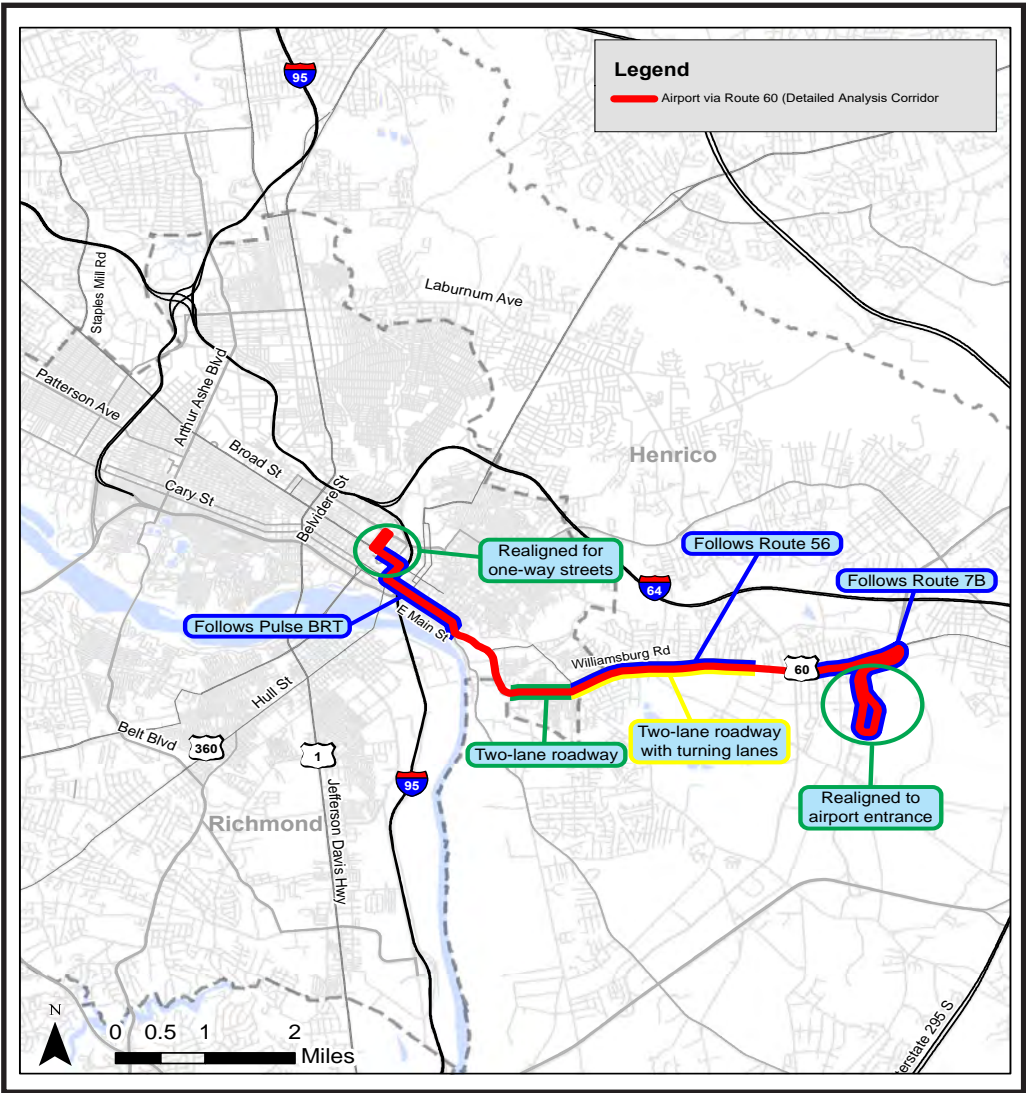
Community Facilities



Pedestrian Network and Connectivity



Roadway Suitability



Community Facilities

- 4 schools and educational facilities
- 4 hospitals and medical facilities
- 3 parks and recreation facilities
- 12 government services and office buildings
- 3 grocery stores

Pedestrian Network Coverage

- Linear feet of roadway - 813,259 ft.
- Roadway with access to sidewalk - 447,120 ft.
- Pedestrian facility coverage - 55%

Projected Ridership Potential

- Total riders: 1,500 - 2,500
- Boardings per mile: 143 - 238
- Boardings per trip: 20
- Boardings per hour: 26

Potential Future Development

- Main 2525: 216-unit apartment building in Shockoe Bottom with ground floor retail
- Fulton Yard Site: Mixed-use development consisting of 535 apartments and 106,00 sq. ft. of retail and office space adjacent to the CSX rail facility
- Jackson Place - 154-unit, 4-story multi-family building on Jackson and First Streets
- Locks Tower: 237-unit residential building on E. Byrd and 11th Streets
- Penny at Jackson Ward: 6-story mixed-use building with 166 residential units and ground floor commercial on W. Marshall Street
- VCU Hospital Additions: Two 16-story towers with a combined 1,103,000 sq. ft. of space

G. Jeff Davis South to Chester

Initial Screening

The Jeff Davis South to Chester corridor runs along US Route 1 between John Tyler Community College in Chesterfield County and Downtown Richmond. In the Initial Screening, this corridor demonstrated high activity density, transit-supportive employment, connections to transit-dependent populations, and near-term development, when compared to other analysis corridors. The corridor had moderate amounts of EJ populations and working populations, but these groups were clustered within the jurisdictional limits of the City of Richmond near the dense activity centers of Manchester and Downtown. Implementation of initial service along the entire corridor is planned to begin operation in March 2020 using funding from a DRPT Demonstration Grant. As a result, the full Jeff Davis South to Chester corridor proposed in the Greater RVA Transit Vision Plan was recommended for further study in the Detailed Analysis.

Detailed Analysis

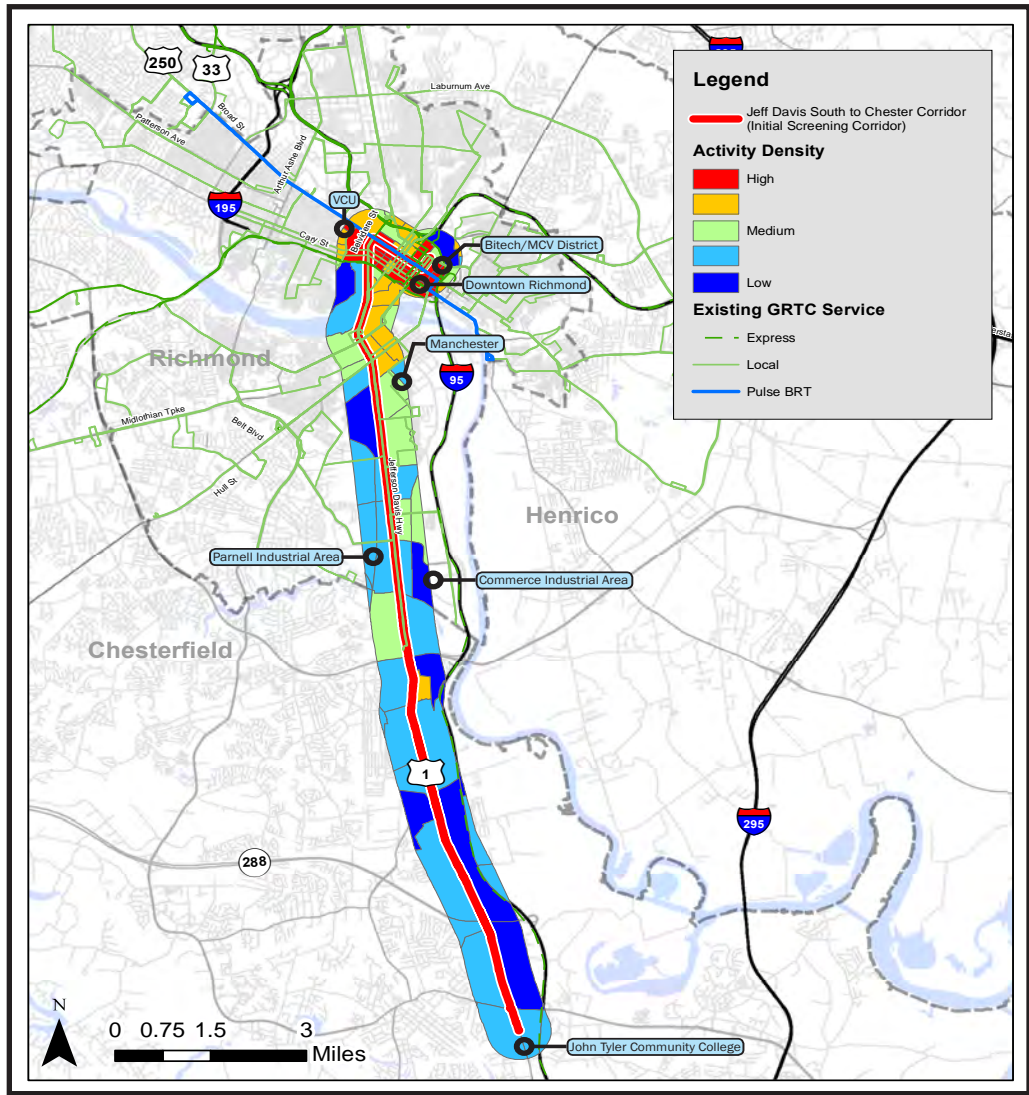
In the Detailed Analysis, the Jeff Davis South to Chester corridor showed high ridership potential and boardings per trip, when compared to other analysis corridors. However, due to the length of the corridor other route productivity metrics, including boardings per mile and boardings per hour were more moderate. The corridor also had moderate connections to community facilities and pedestrian networks. However, several sidewalk projects are programmed by Chesterfield County throughout the corridor, in support of the new transit service.

Operation of new 30-minute service on this corridor is planned for March 2020. The Steering Committee agreed that the operation and success of the new service should be observed prior to evaluating this corridor for any higher-frequency service. As a result, the Jeff Davis South to Chester corridor was not recommended for advancement to the Implementation Feasibility assessment.

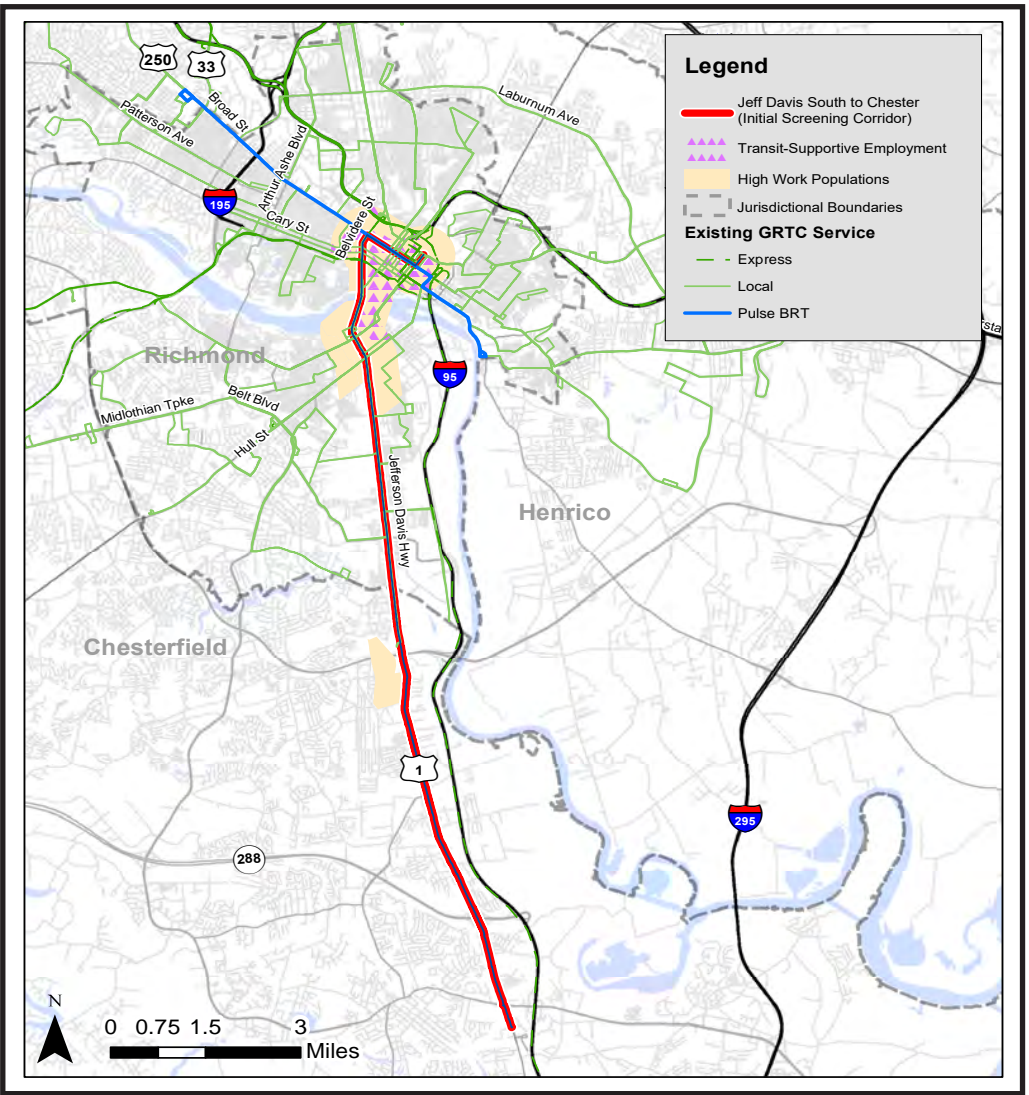
Potential Next Steps

The new service on this corridor is funded through a demonstration project grant for a two-year period. Data collected from the new route, once in operation, should be used to indicate a need to study higher frequency service in the corridor. Data should be collected for 12 to 18 months of service prior to any further evaluation.

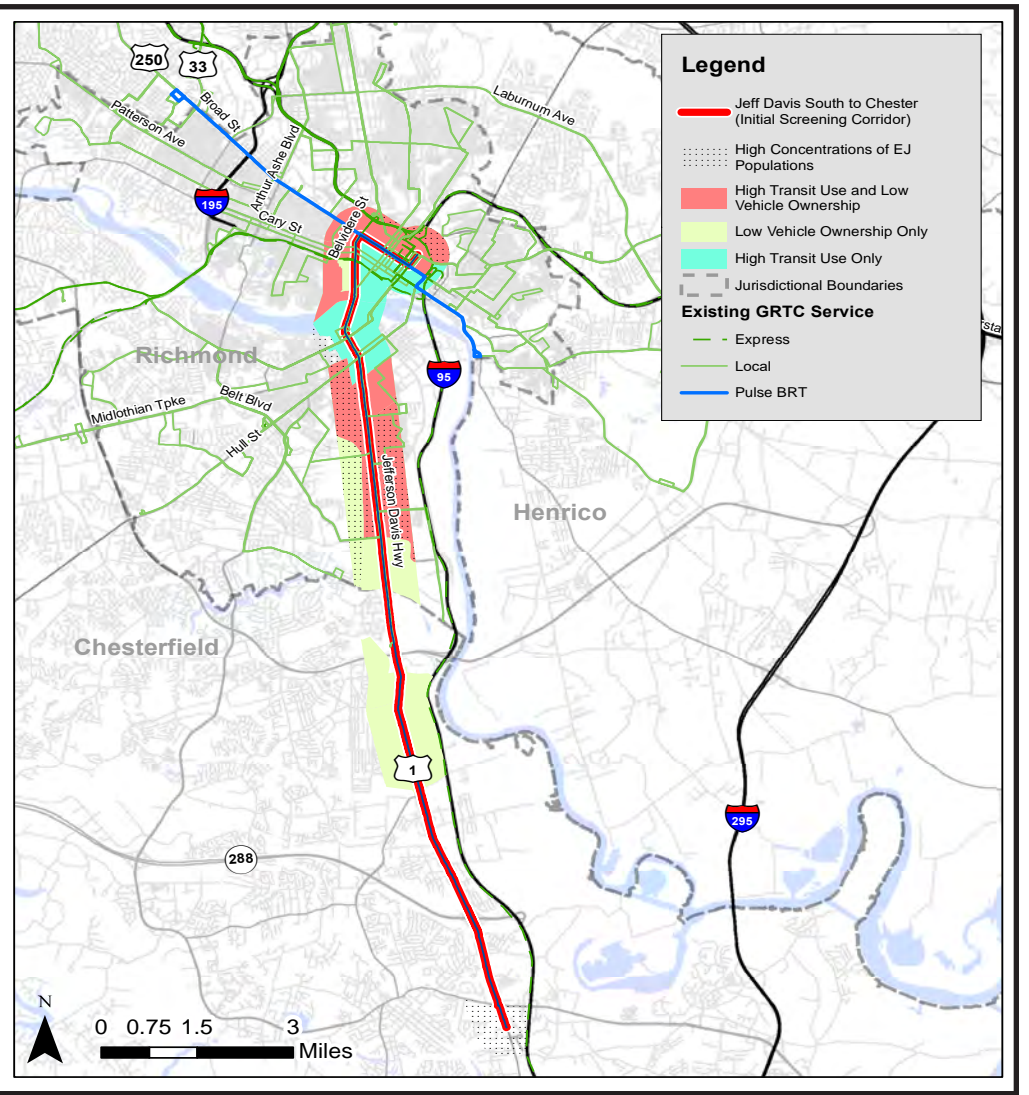
Activity Density



Employment and Workers



Environmental Justice and Transit Dependent



Corridor Description

- Connects the Downtown Transfer Plaza to John Tyler Community College in Chester via Jefferson Davis Highway
- Serves City of Richmond and Chesterfield County
- Beginning as a pilot service in 2020

Major Destinations

- Biotech/MCV District
- Downtown Richmond
- Virginia Commonwealth University
- Manchester
- Parnell and Commerce Road Industrial Areas
- John Tyler Community College

Connecting GRTC Service

- Routes 1A/B/C (Combined: 15 min., Individual: 60 min.)
- Routes 2A/B/C (Combined: 15 min., Individual: 60 min.)
- Route 14 (All Day: 30 min.)
- Route 88 (Peak Only: 30 min.)
- Route 102X (Seasonal)

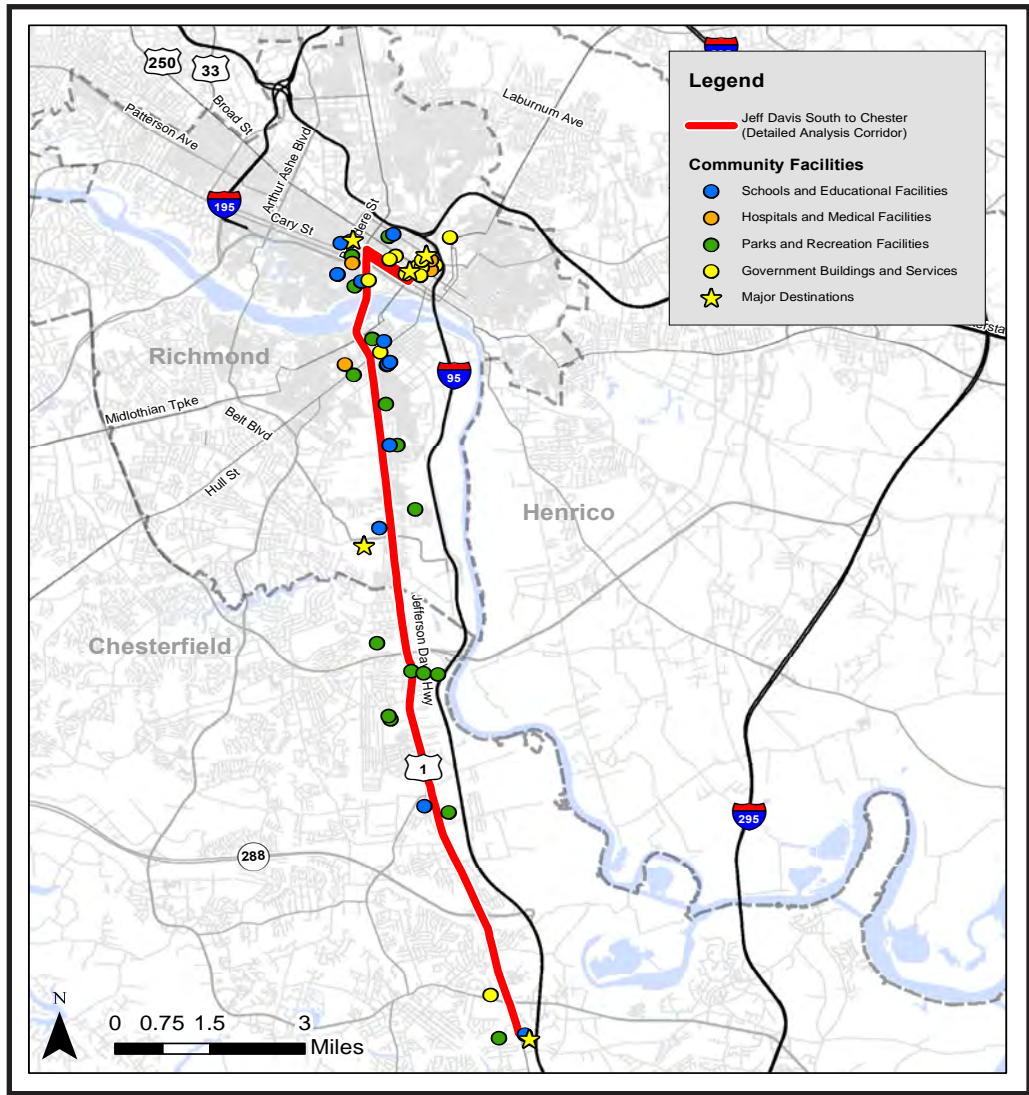
Overlapping GRTC Service

- Routes 3A/B/C (Combined: 15 min., Individual: 30 min., Night: 30 min.)
- Route 5 (Peak/Off-Peak: 15 min., Night: 30 min.)
- Route 87 (Daytime Only: 60 min.)

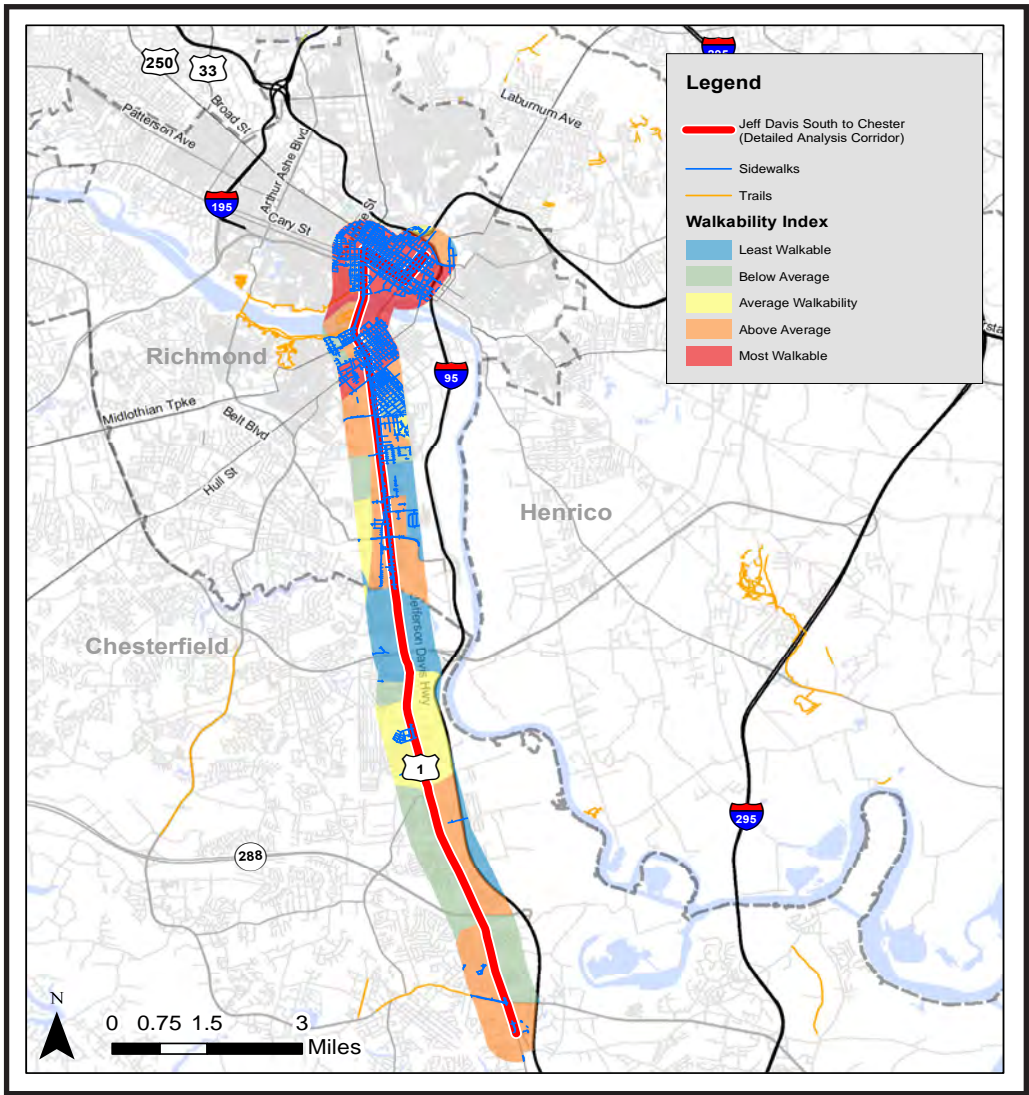
GRTC Rider Feedback

- Interest in connecting service to Petersburg to provide more connections to local service, rather than express bus service
- Interest in increased frequencies to promote corridor development

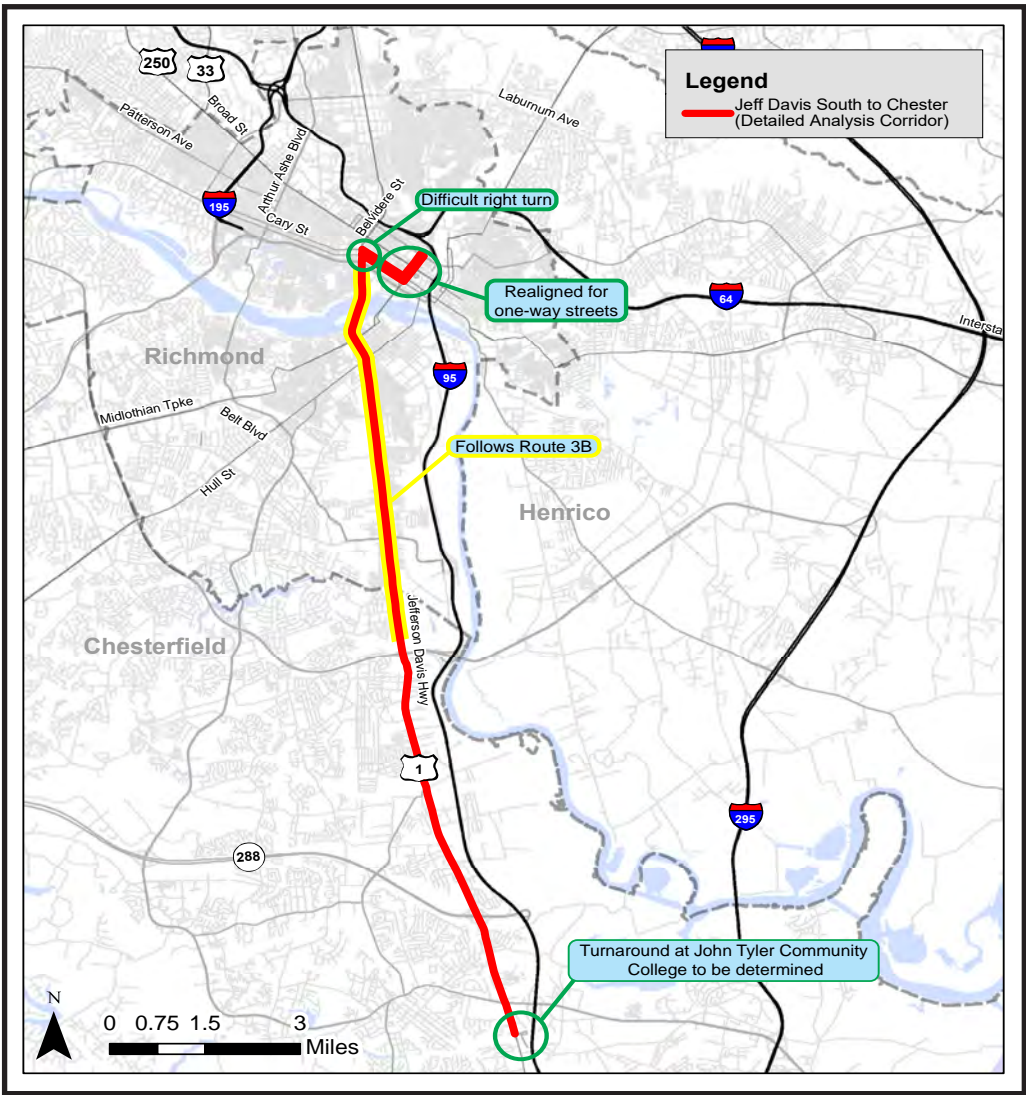
Community Facilities



Pedestrian Network and Connectivity



Roadway Suitability



Community Facilities

- 12 schools and educational facilities
- 1 hospital and medical facility
- 21 parks and recreation facilities
- 14 government services and office buildings
- 6 grocery stores

Pedestrian Network Coverage

- Linear feet of roadway - 1,416,423 ft.
- Roadway with access to sidewalks - 778,799 ft.
- Pedestrian facility coverage - 55%

Projected Ridership Potential

- Total riders: 2,000 - 3,400
- Boardings per mile: 120 - 204
- Boardings per trip: 26
- Boardings per hour: 22

Potential Future Development

- Moore's Lake Apartments: 385-unit apartment complex on Jefferson Davis Highway north of VA Route 10
- Shoppes at Moore's Lake: 500,000 sq. ft. shopping center and office park on Jefferson Davis Highway north of VA Route 10
- Art Deco Model Tobacco Property: 47,000 sq. ft. mixed use development with 275 apartments on Jefferson Davis Highway south of Manchester
- Jackson Place - 154-unit, 4-story multi-family building on Jackson and First Streets
- Model Tobacco Apartments: 275-unit mixed-use building with a 47,000 sq. ft. entertainment venue on Jefferson Davis Highway
- Penny at Jackson Ward: 6-story mixed-use building with 166 residential units and ground floor commercial on W. Marshall Street
- VCU Hospital Additions: Two 16-story towers with a combined 1,103,000 sq. ft. of space

H. Route 1 to Ashland

Initial Screening

The Route 1 to Ashland corridor connects Downtown Richmond with Ashland via Route 1. In the Initial Screening, this corridor demonstrated high activity density, transit-supportive employment, worker populations, transit-dependent populations, and near-term development, when compared to other analysis corridors. While the corridor had an overall high activity density, the activity density was primarily concentrated south of Parham Road. Areas with high concentrations with EJ populations were interspersed throughout the corridor, and the high activity density along the corridor within the Richmond city limits would provide ample access to employment opportunities. As a result, only the portion of the corridor between Downtown Richmond and Parham Road was recommended for further evaluation in the Detailed Analysis.

Detailed Analysis

The partial Route 1 to Ashland corridor evaluated in the Detailed Analysis extended from Downtown Richmond to Parham Road. The corridor, which was modified from the corridor proposed in the Greater RVA Transit Vision Plan, required a turnaround location near Parham Road and was realigned along one-way streets through Downtown Richmond. In the Detailed Analysis, this corridor demonstrated high ridership potential and associated productivity metrics, when compared to other corridors. In addition, pedestrian connectivity, particularly south of Azalea Avenue, and walkability, especially on the northern end of the corridor, ranked high when compared to the other corridors. Due to the strong transit demand projected for this corridor, Henrico County has identified this corridor as a transit priority for its residents. As a result, the partial Route 1 to Ashland corridor was recommended for further study and advancement to the Implementation Feasibility assessment.

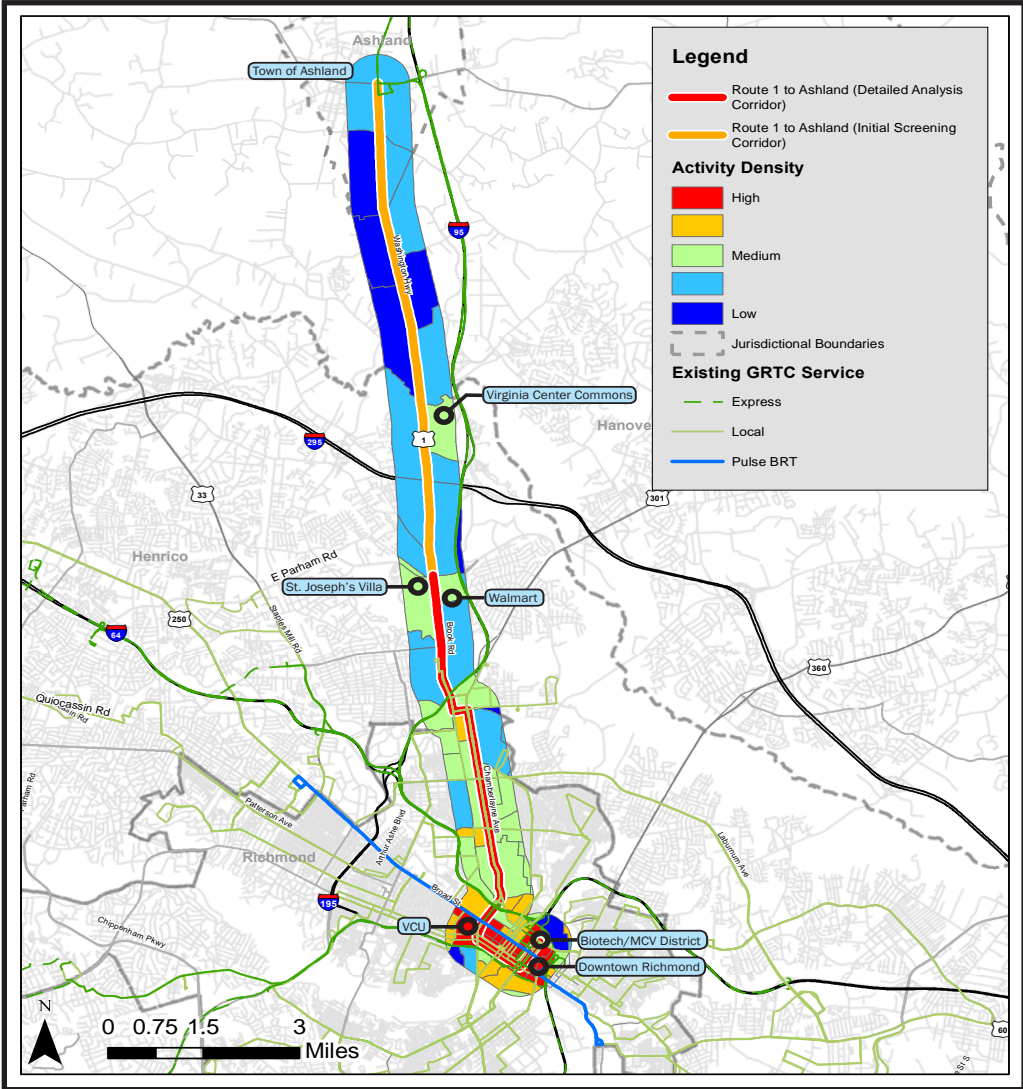
Potential Next Steps

In the near-term, areas of the Route 1 to Ashland corridor north of Parham Road should be studied for potential coverage-level service or express service to strengthen network connections. In particular, express service to Ashland and nearby park-and-ride locations, in addition to the existing Kings Dominion seasonal route, should be considered to address demand for transit service to Downtown Richmond. In addition, development at and around Virginia Center Commons should continue to be monitored. Development in this area may warrant expansion of high-frequency service north of Parham Road.

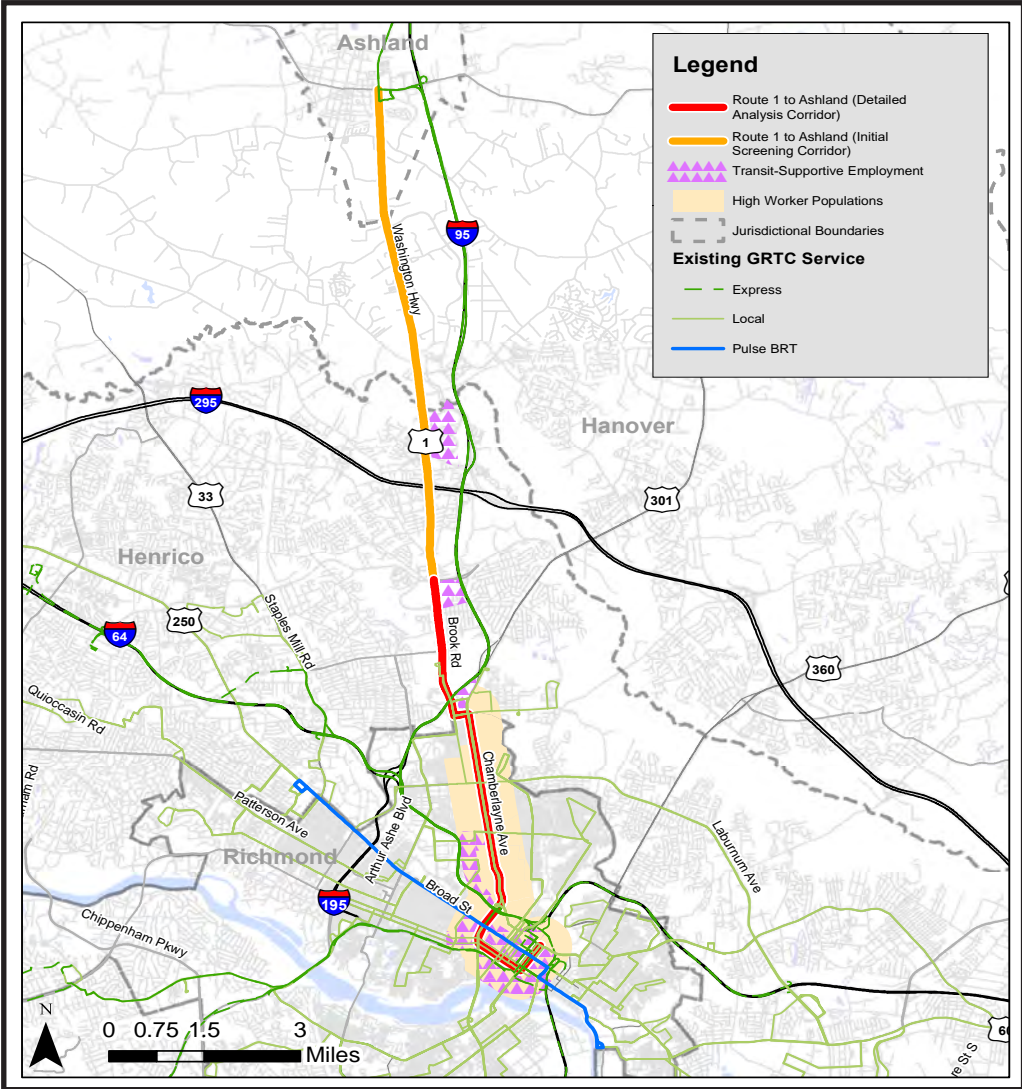
Route 1 to Ashland Corridor



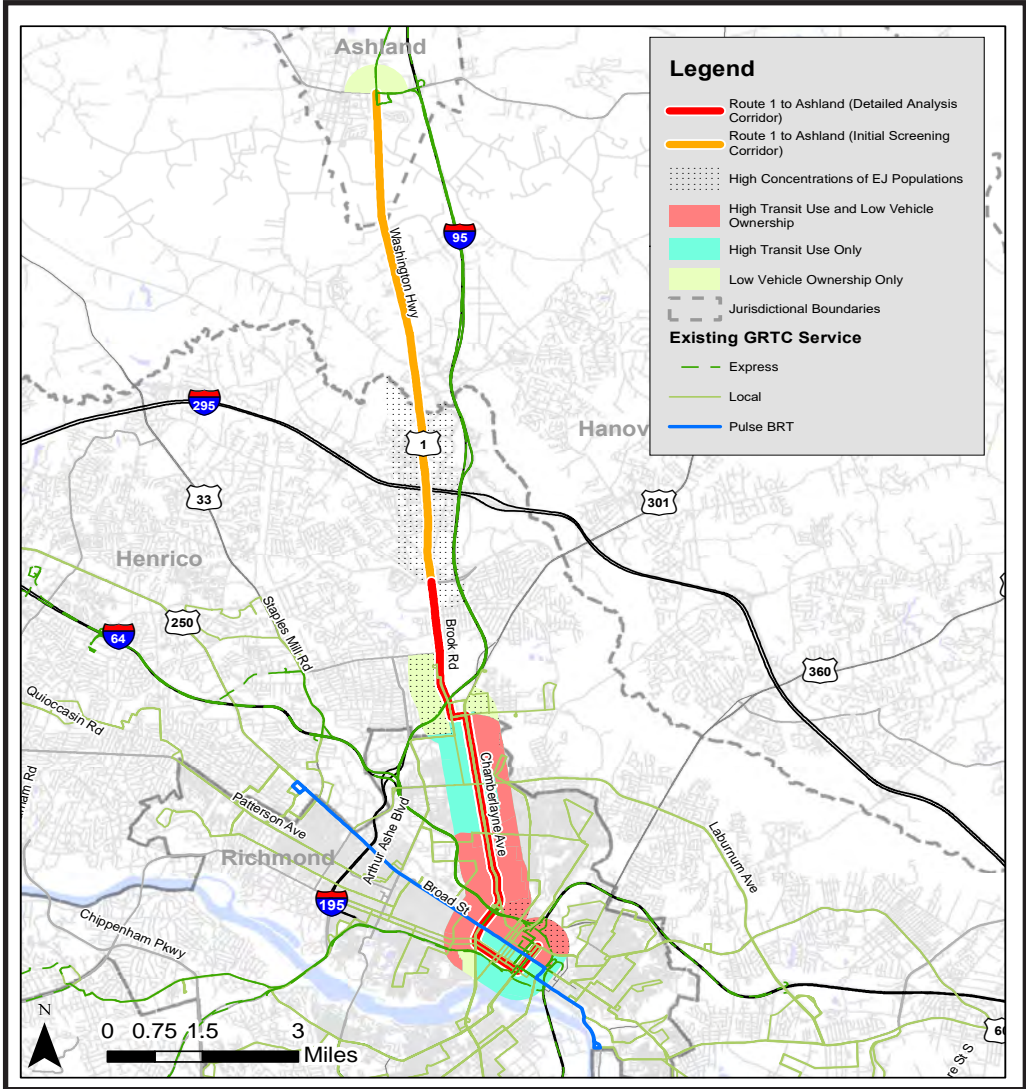
Activity Density



Employment and Workers



Environmental Justice and Transit Dependent

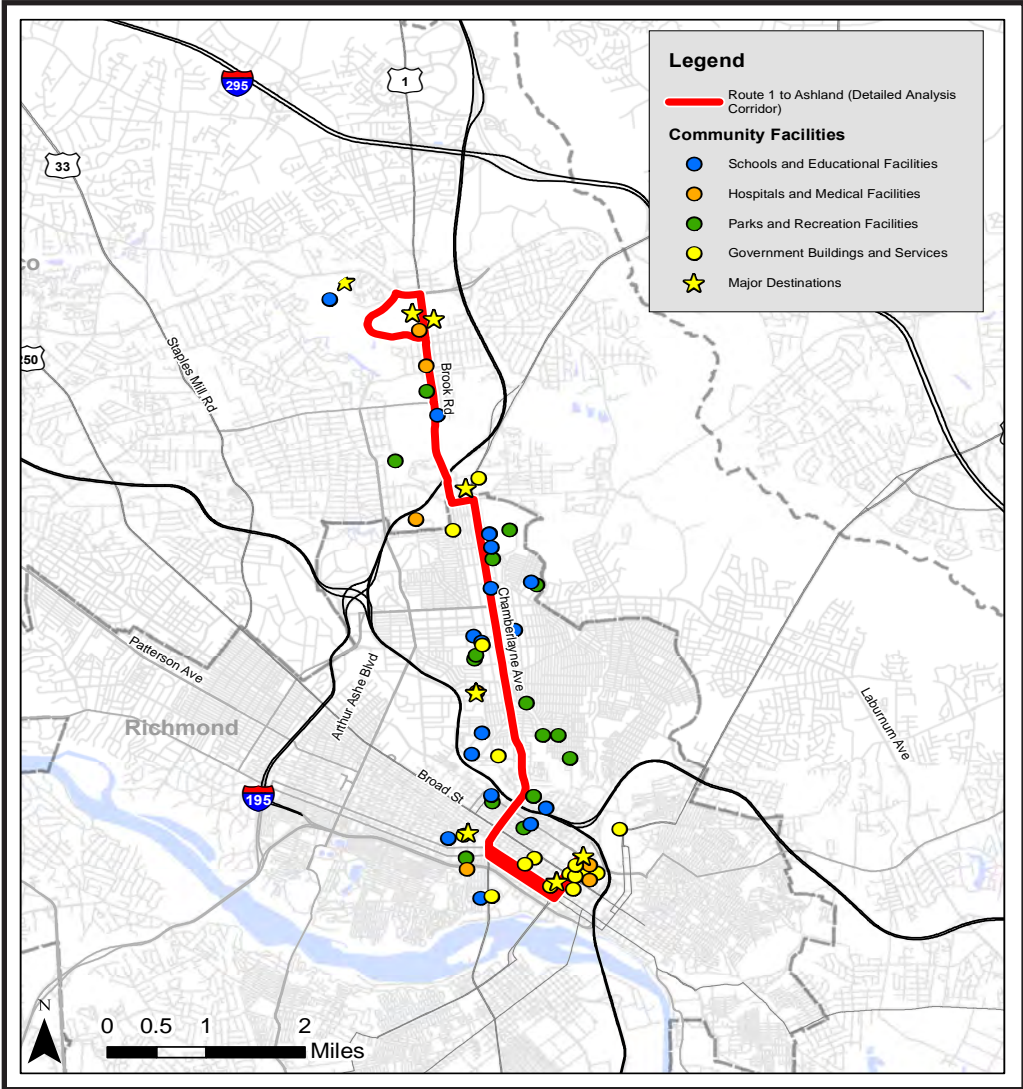


Corridor Description	Major Destinations	Connecting GRTC Service	Overlapping GRTC Service	GRTC Rider Feedback
<ul style="list-style-type: none">Connects the Downtown Transfer Plaza to the Town of Ashland via US Route 1Serves the City of Richmond, Henrico County, Hanover County, and the Town of Ashland	<ul style="list-style-type: none">Biotech/MCV DistrictDowntown RichmondVirginia Commonwealth UniversitySt Joseph's VillaWalmart - Parham RoadVirginia Center CommonsTown of Ashland	<ul style="list-style-type: none">Pulse BRT (Peak: 10 min., Off-Peak: 15 min., Night: 30 min.)Routes 3A/B/C (Combined: 15 min., Individual: 30 min., Night: 30 min.)Route 5 (Peak/Off-Peak: 15 min., Night: 30 min.)Route 14 (All Day: 30 min.)Route 20: (All Day: 30 min.)Route 91 (All Day: 60 min.)Route 102X (Seasonal)	<ul style="list-style-type: none">Routes 1A/B/C (Combined: 15 min., Individual: 60 min.)Route 93 (Peak Only: 40 min.)	<ul style="list-style-type: none">Overall interest in connections to Virginia Center Commons. Connection from Azalea Mall to Walmart at Parham Road is most crucial, but connection to Virginia Center Commons would address safety issues for pedestrians. Commuters from Ashland to Downtown Richmond are currently relying on seasonal express service to King's Dominion.

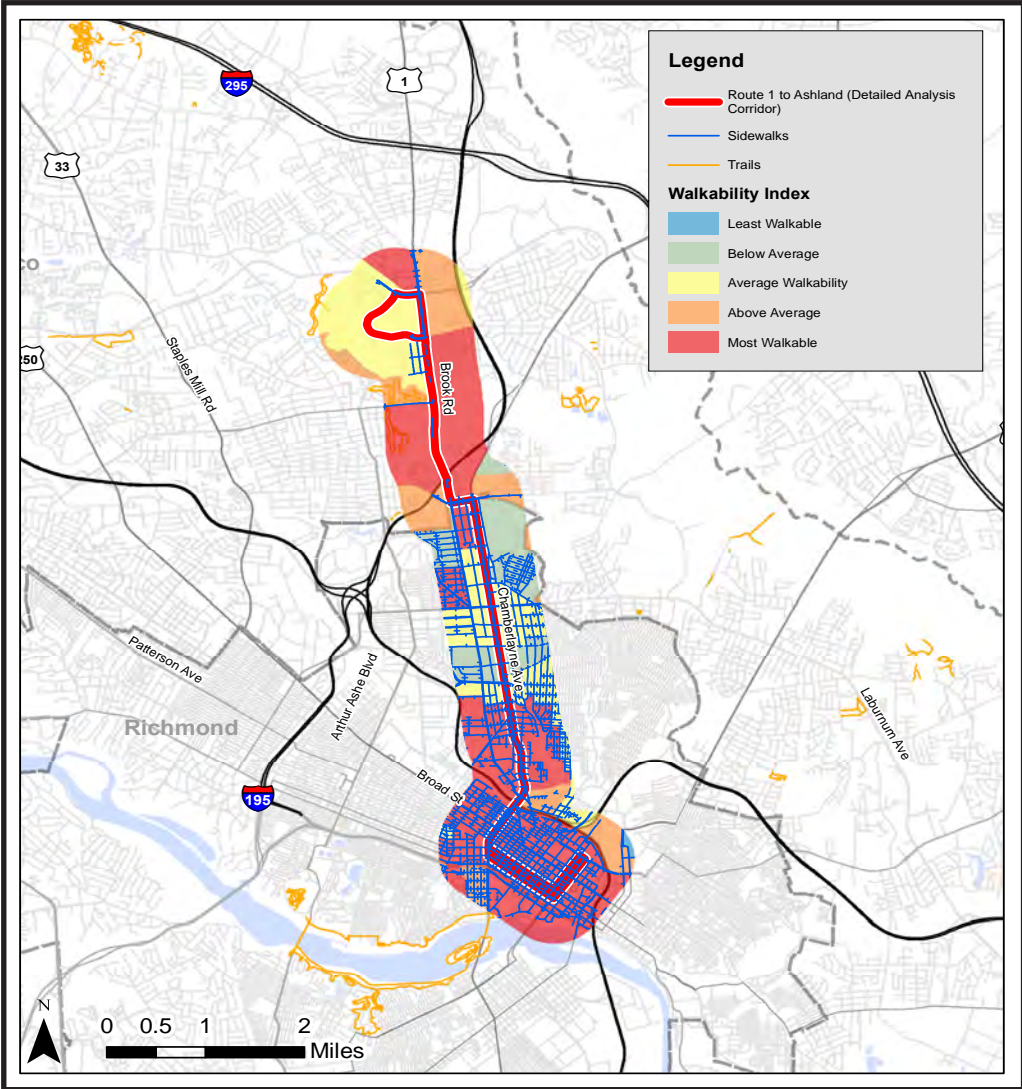
Route 1 to Ashland Corridor



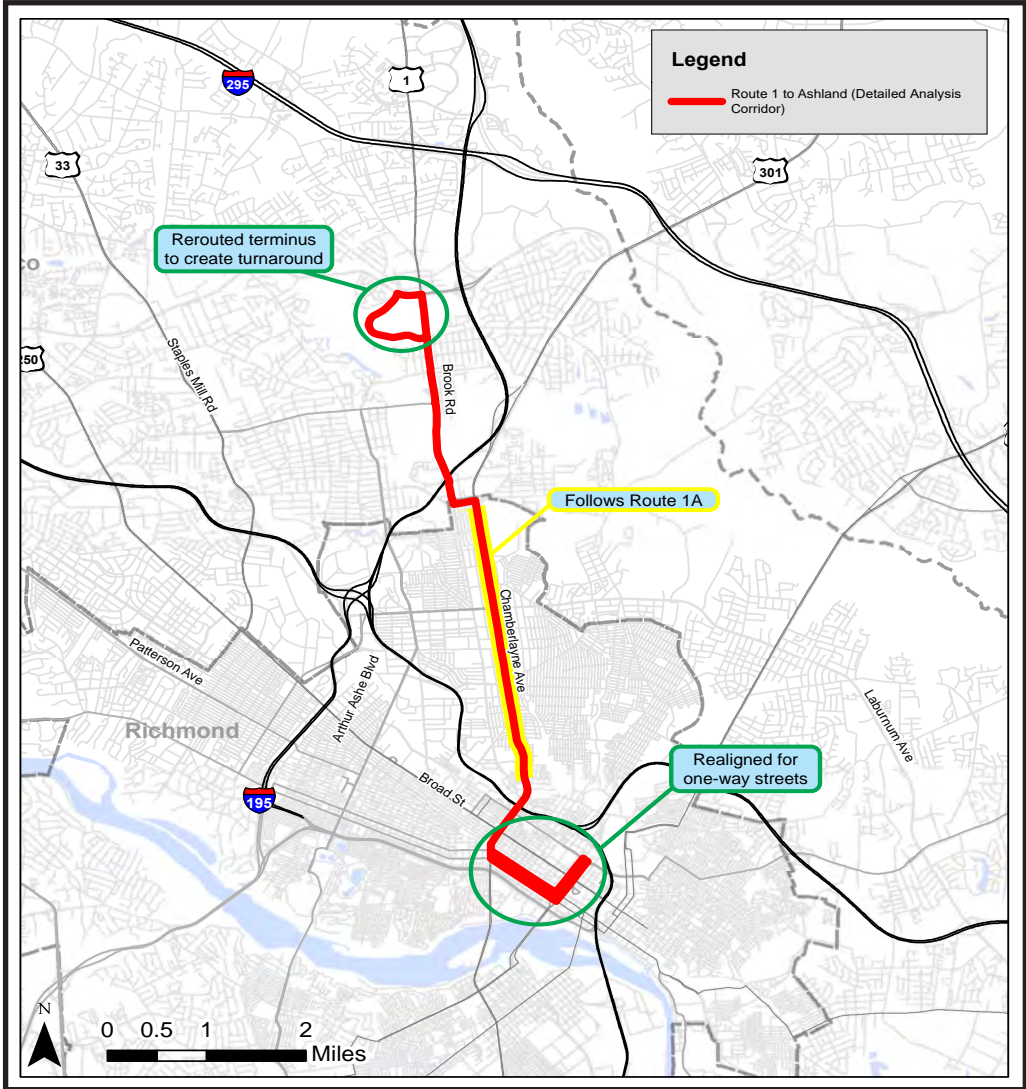
Community Facilities



Pedestrian Network and Connectivity



Roadway Suitability



Community Facilities

- 17 schools and educational facilities
- 5 hospitals and medical facilities
- 16 parks and recreation facilities
- 18 government services and office buildings
- 5 grocery stores

Pedestrian Network Coverage

- Linear feet of roadway - 834,839 ft.
- Roadway with access to sidewalks - 1,070,118 ft.
- Pedestrian facility coverage - 78%

Projected Ridership Potential

- Total riders: 1,900 - 3,100
- Boardings per mile: 176 - 287
- Boardings per trip: 25
- Boardings per hour: 32

Potential Future Development

- River Mill: 1,000 home development planned near Virginia Center Commons with a mix of townhomes, apartments, and single-family homes
- Chickahominy Falls: Age-restricted development with 430 units north of Virginia Center Commons
- School Street Apartments: 200-unit apartment complex near Virginia Union University
- 2009 Brook Road Apartments: 224-unit apartment complex near Virginia Union University
- Canopy at Ginter Park: 301-unit apartment complex near Union Presbyterian Seminary
- Jackson Place - 154-unit, 4-story multi-family building on Jackson and First Streets
- Locks Tower: 237-unit residential building on E. Byrd and 11th Streets
- Penny at Jackson Ward: 6-story mixed-use building with 166 residential units and ground floor commercial on W Marshall Street
- VCU Hospital Additions: Two 16-story towers with a combined 1,103,000 sq. ft. of space

I. West End Route 6 – Staples Mill/Route 33

Initial Screening

The West End Route 6 – Staples Mill/Route 33 corridor connects Midlothian, Bon Air, Willow Lawn, and Staples Mill, running from Chippenham Hospital on Jahnke Road to Hungary Road in Glen Allen. This is the only analysis corridor that extends through the City of Richmond, Henrico County, and Chesterfield County. In addition, this corridor connects key locations in the region, including the University of Richmond, Willow Lawn, and the Staples Mill Amtrak Station. In the Initial Screening, the full corridor demonstrated moderate activity density, transit-supportive employment, worker populations, EJ populations, transit-dependent populations, and near-term development, when compared to other analysis corridors.

The southern segment of the corridor that runs through Bon Air overlaps with portions of the Glenside to Midlothian (J) and West End and Midlothian (P) corridors, both of which terminate at Chesterfield Towne Center. The Steering Committee determined that there was no need for the overlap between these three corridors, but a southern connection to Chesterfield Towne Center was more desirable than Chippenham Hospital. As a result, the West End Route 6 corridor was reconfigured to travel on Huguenot Road to Chesterfield Towne Center instead of turning onto Forest Hill Avenue/Chippenham Parkway to Chippenham Hospital. This provided a desired north-south connection; however, the corridor modification resulted in lower activity density and concentrations of worker populations and fewer direct connections to EJ and transit-dependent populations. Although the modified route did not serve these populations found near Chippenham Hospital, service to this area could be provided by the Midlothian Turnpike (D) corridor. This modified corridor was recommended for further evaluation in the Detailed Analysis.

Detailed Analysis

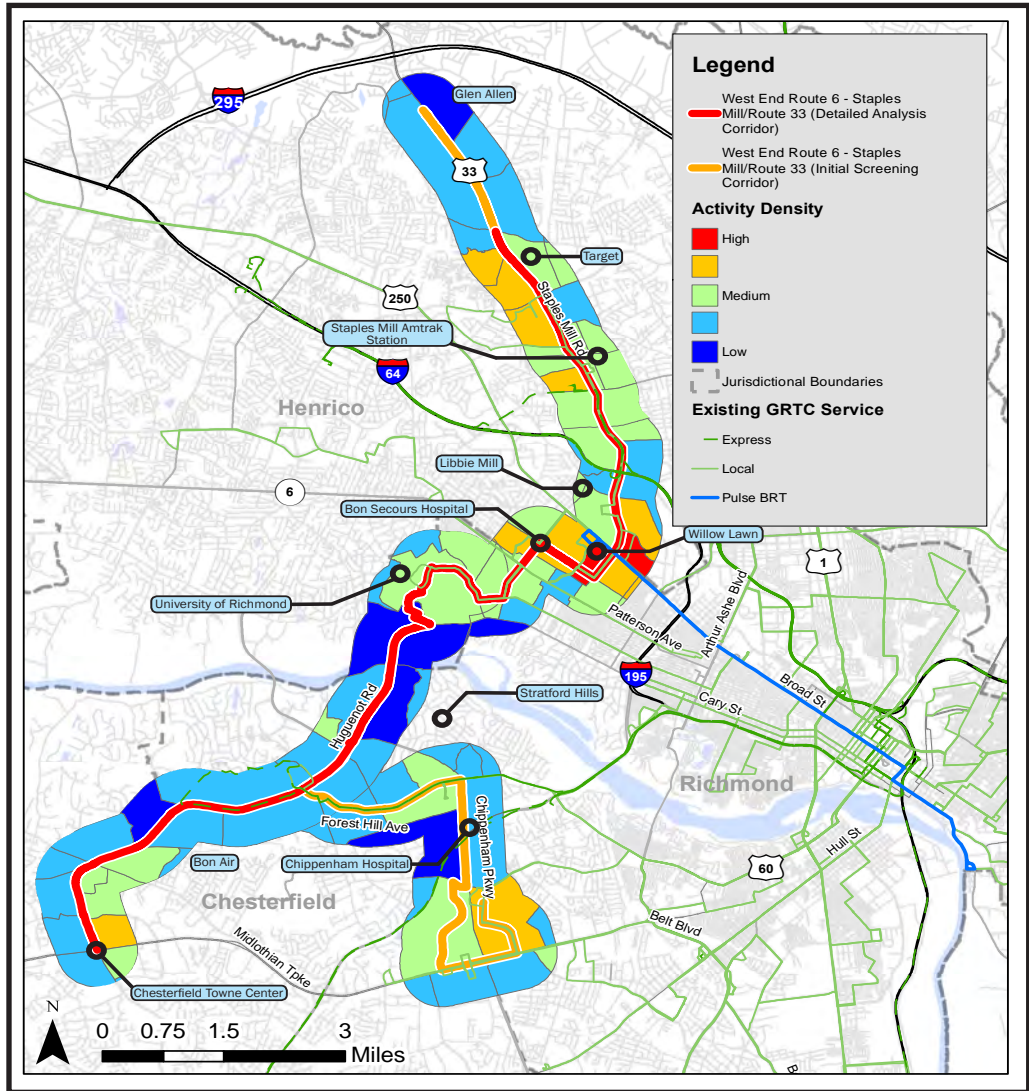
The partial West End Route 6 – Staples Mill/Route 33 corridor evaluated in the Detailed Analysis extended from Staples Mill Marketplace to Chesterfield Towne Center. The corridor, which was modified from the corridor proposed in the Greater RVA Transit Vision Plan, included portions of Huguenot Road that were previously part of the Glenside to Midlothian (J) and West End and Midlothian (P) corridors, provided a safer travel pattern through University of Richmond, and allowed for turnarounds at Midlothian Turnpike and Hungary Road. Despite the opportunity to connect University of Richmond students and employees to community facilities, the Detailed Analysis indicated only moderate potential ridership in this corridor, when compared to the other corridors. The lower ranking analysis metrics on this corridor were likely due to the limited density, minimal pedestrian facilities, and limited walkable destinations in many portions of the corridor. In addition, existing service provided in the northern portion of the corridor, on GRTC Route 18, has not experienced ridership growth that was anticipated. As a result, the partial West End Route 6 – Staples Mill/Route 33 corridor was not recommended for advancement to the Implementation Feasibility assessment.

Potential Next Steps

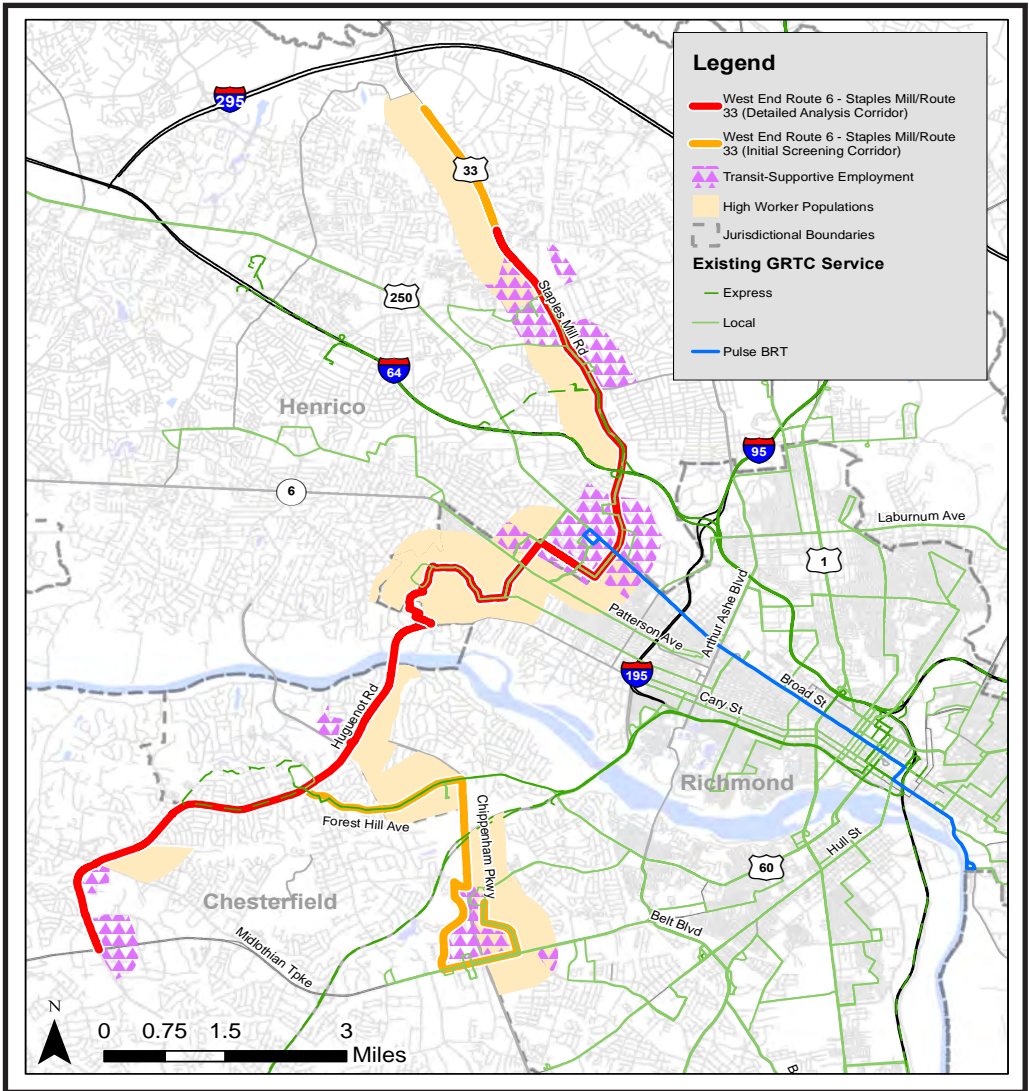
In the near-term, areas of the West End Route 6 – Staples Mill/Route 33 corridor should be studied for potential coverage-level service to strengthen network connections. Areas with the greatest potential need for transit were generally found north of the James River. Improvements to consider in this area could include modifications of existing service to improve ridership, including the GRTC Route 18 serving the Staples Mill area and the Route 75 serving University of Richmond. Development along the route, especially in the Staples Mill area, should continue to be monitored. As development occurs high-frequency service may be warranted.

West End Route 6 - Staples Mill Route 33 Corridor

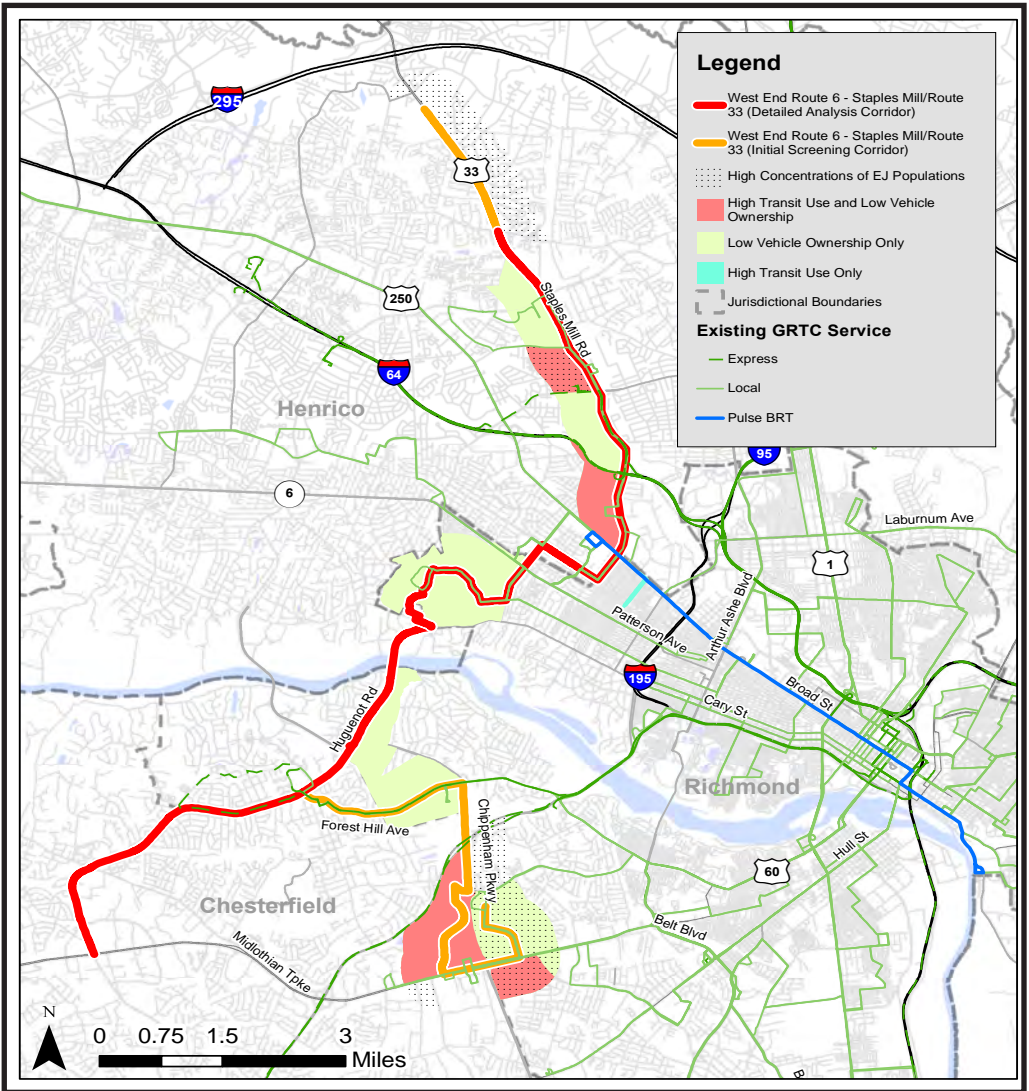
Activity Density



Employment and Workers



Environmental Justice and Transit Dependent



Corridor Description

- Connects Midlothian, Bon Air, Willow Lawn and the Staples Mill Corridor
- Serves Chesterfield County, the City of Richmond, and Henrico County

Major Destinations

- Chippendale Hospital
- Stratford Hills
- Bon Air
- University of Richmond
- Bon Secours Hospital
- Willow Lawn Shopping Center
- Libbie Mill
- Staples Mill Amtrak Station
- Target - Hungary Spring Road
- Glen Allen

Existing Connecting GRTC Service

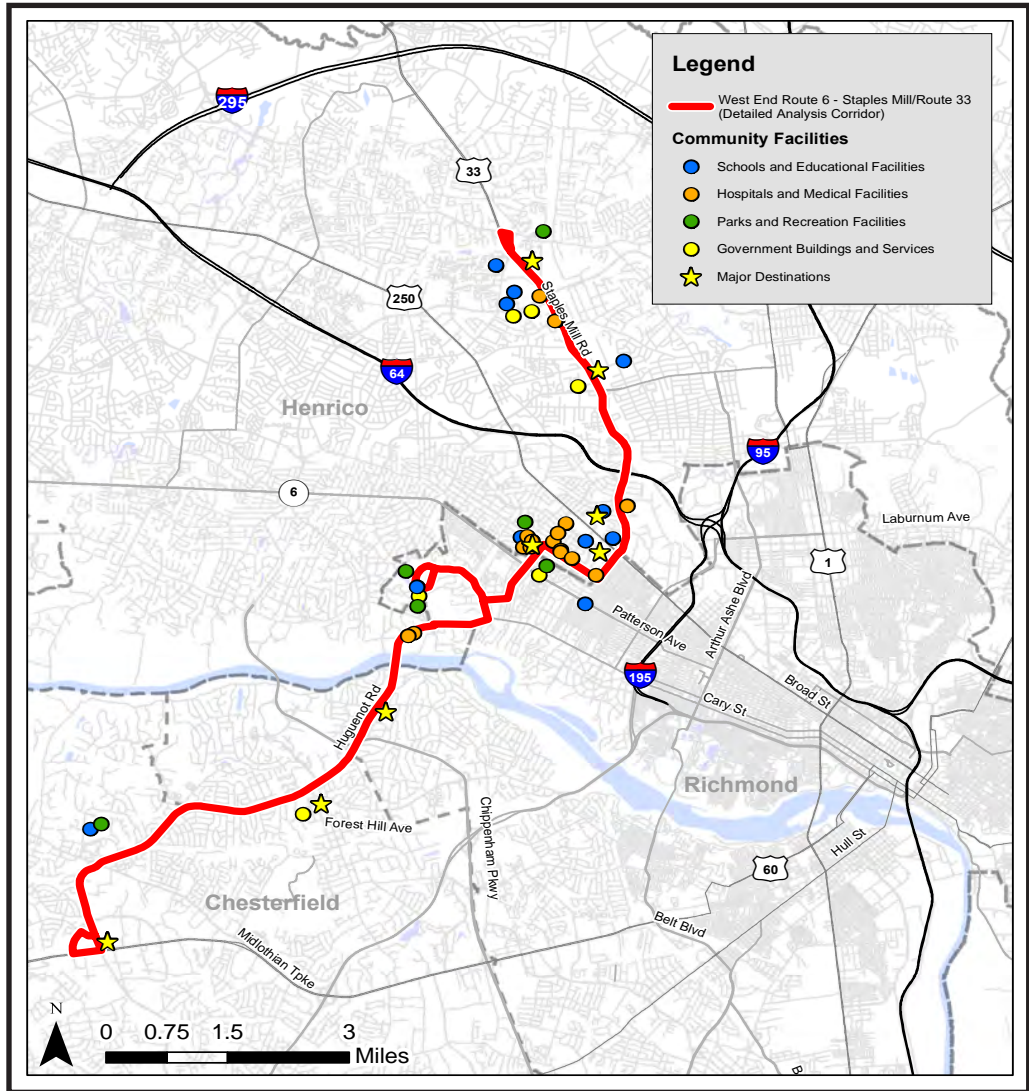
- Route 1A (Peak: 30 min., Off-Peak: 60 min.)
- Route 2A (All Day: 60 min.)
- Route 19 (All Day: 30 min.)
- Route 23X (PM Peak Only: 15 min.)
- Route 27X (Peak Only: 15 min.)
- Route 1A (Peak: 30 min., Off-Peak: 60 min.)
- Route 2A (All Day: 60 min.)
- Route 19 (All Day: 30 min.)
- Route 23X (PM Peak Only: 15 min.)
- Route 27X (Peak Only: 15 min.)

Existing Overlapping GRTC Service

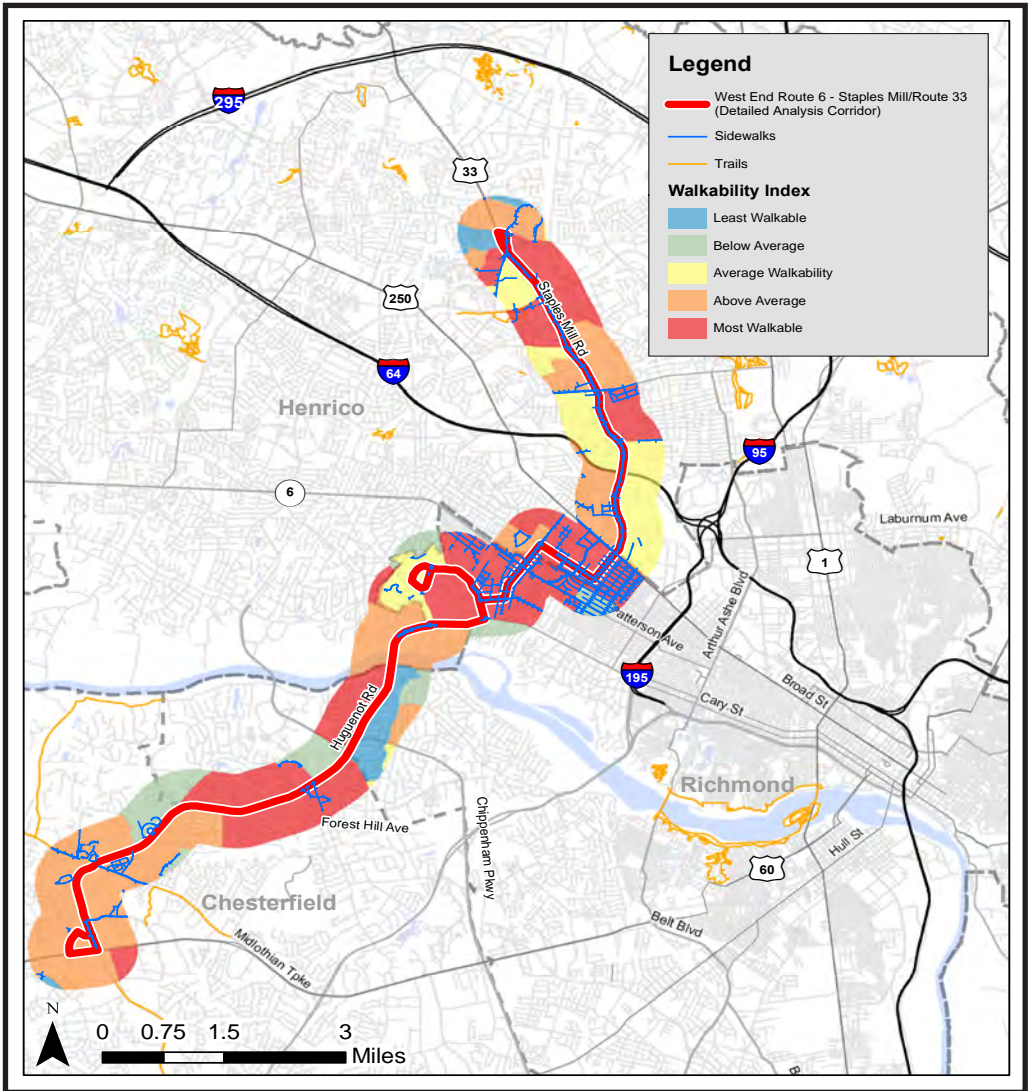
- Route 2B (All Day: 60 min.)
- Route 18 (Weekdays Only: 60 min.)
- Route 64X (Peak Only: 30 min.)
- Route 75 (Peak Only: 30 min.)
- Route 77 (Peak: 30 min., Off-Peak: 60 min.)

West End Route 6 - Staples Mill Route 33 Corridor

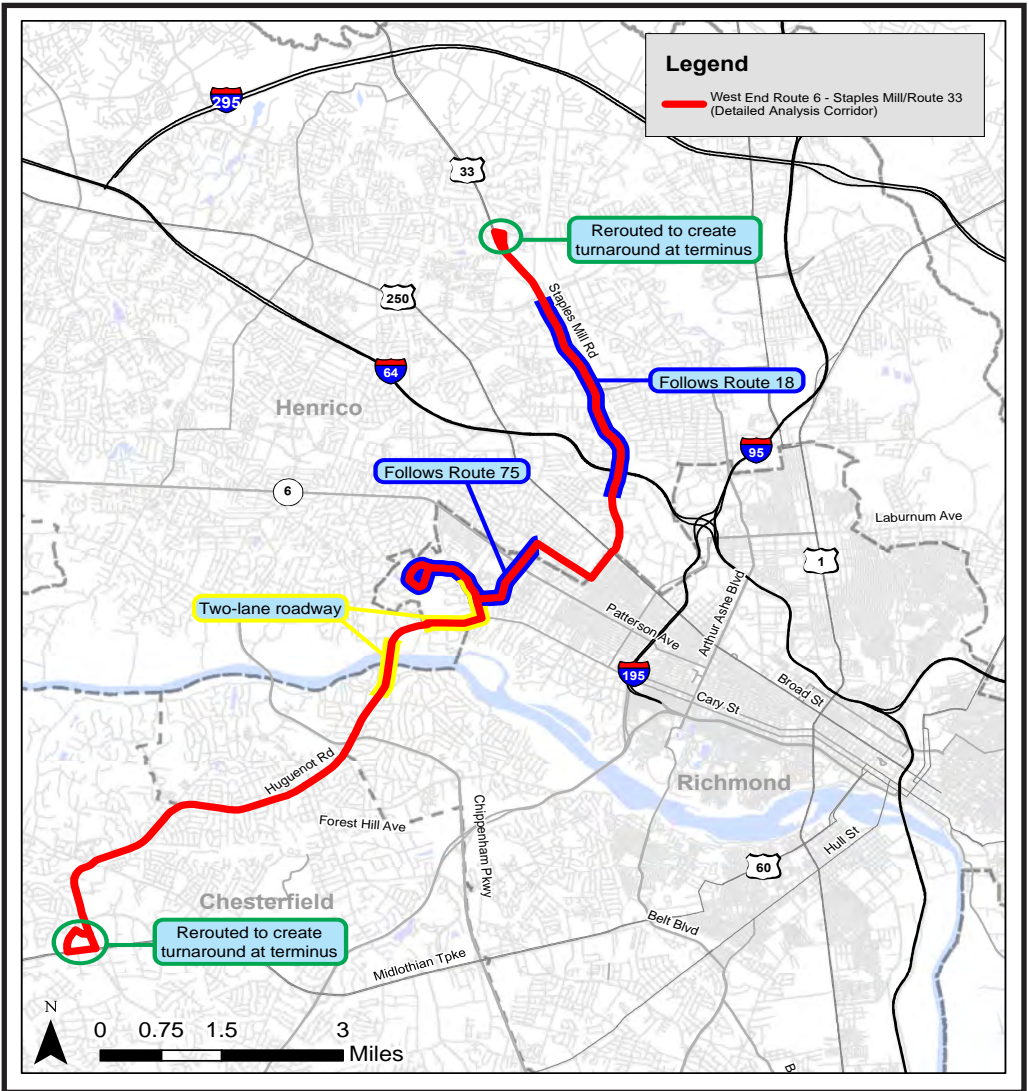
Community Facilities



Pedestrian Network and Connectivity



Roadway Suitability



Community Facilities

- 11 schools and educational facilities
- 29 hospitals and medical facilities
- 6 parks and recreation facilities
- 6 government services and office buildings
- 17 grocery stores

Pedestrian Network Coverage

- Linear feet of roadway - 1,465,052 ft.
- Roadway with access to sidewalks - 458,846 ft.
- Pedestrian facility coverage - 31%

Projected Ridership Potential

- Total riders: 1,300 - 2,100
- Boardings per mile: 73 - 119
- Boardings per trip: 17
- Boardings per hour: 16

Potential Future Development

- Carriage Hill Apartments: 267-unit senior living apartment complex along Glenside Drive west of Staples Mill Road
- The Neighborhood of Libbie Mill Midtown: Mixed-use community currently under construction, planned for 2,093 residences at build-out
- Harp's Landing Office Buildin: 140,000 sq. ft. of office and retail space on Libbie Mill Boulevard
- Wilton Commerce Park: 5.1-acre commercial, office, and industrial complex near Hermitage Industrial Center
- Kinsale Capital Property: 300 apartments and 147,000 sq. ft. headquarters at the intersection of Maywill and Thalbro Streets

J. Glenside to Midlothian

Initial Screening

The Glenside to Midlothian corridor connects Lakeside in Henrico County with Chesterfield Towne Center in Chesterfield County via Glenside Drive and Huguenot Road. In the Initial Screening, the overall corridor ranked lower for all data-driven analysis metrics, when compared to the other corridors. However, the segment of the corridor north of the James River showed significantly higher activity density, transit-supportive employment, and worker populations. Transit-dependent and EJ populations still ranked lower compared to other analysis corridors, but these groups were present in the northern segment of the corridor. This segment could provide a valuable connection to with high activity density corridors that intersect with the corridor, including Broad Street-Short Pump (A), West End South (E), and West End Route 6 – Staples Mi//Route 33 (I), providing more potential connection opportunities for these groups. When only the northern segment was considered, this corridor demonstrated high worker populations and moderate activity density and transit-supportive employment, compared to the other analysis corridors.

The southern portion of this corridor, which runs on Huguenot Road through Bon Air and to Chesterfield Towne Center, overlaps with the West End and Midlothian (P) and the reconfigured West End Route 6 (I) corridors. As a result of this overlap and the higher concentrations of activity density, transit-supportive employment, and worker populations north of the James River, only the portion of the corridor between the University of Richmond and Lakeside was recommended for further evaluation in the Detailed Analysis.

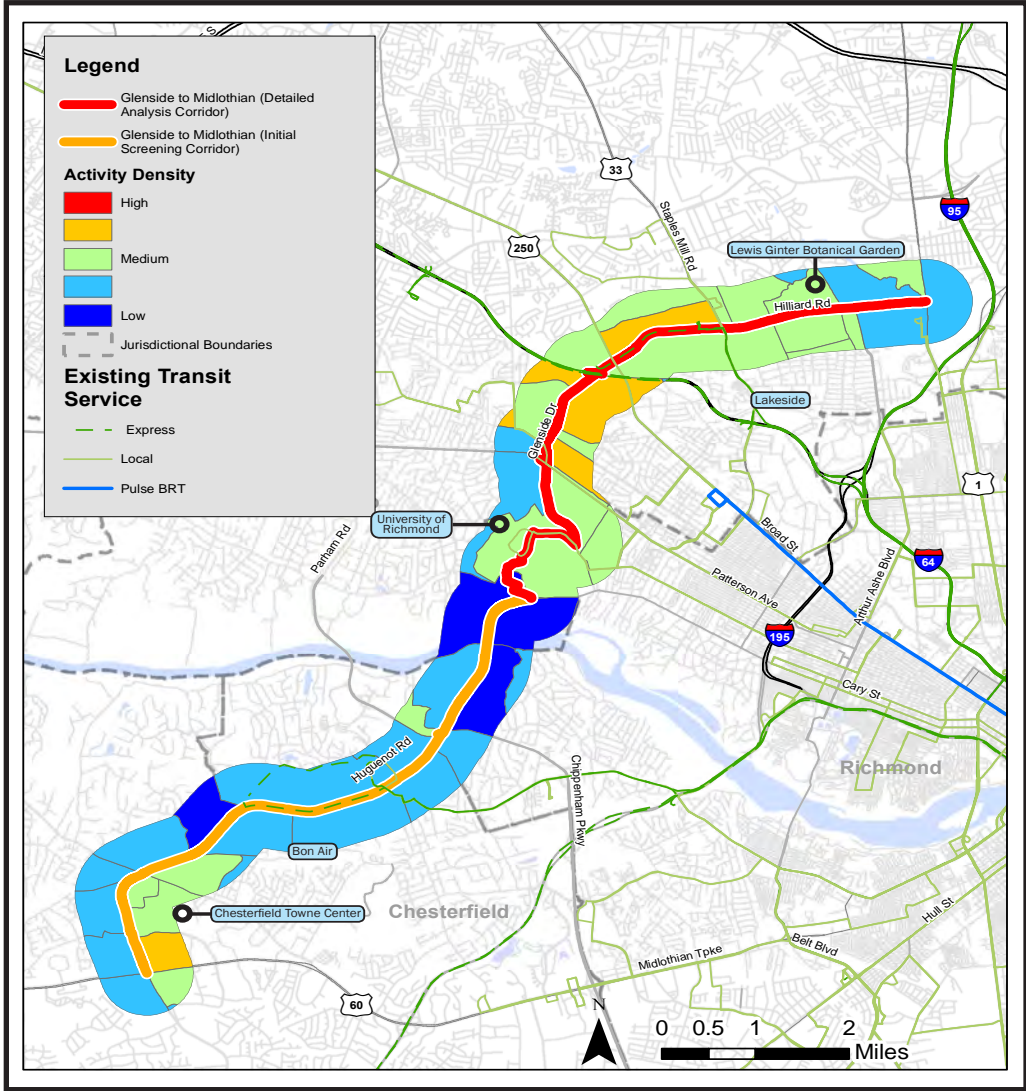
Detailed Analysis

The partial Glenside to Midlothian corridor evaluated in the Detailed Analysis extended from the University of Richmond to Lakeside. Despite modifying the corridor to focus service on higher density areas, the Detailed Analysis showed the corridor has low ridership potential and related productivity metrics, access to community facilities, and available pedestrian facilities, when compared to the other corridors. As a result, the partial Glenside to Midlothian corridor was not recommended for advancement to the Implementation Feasibility assessment.

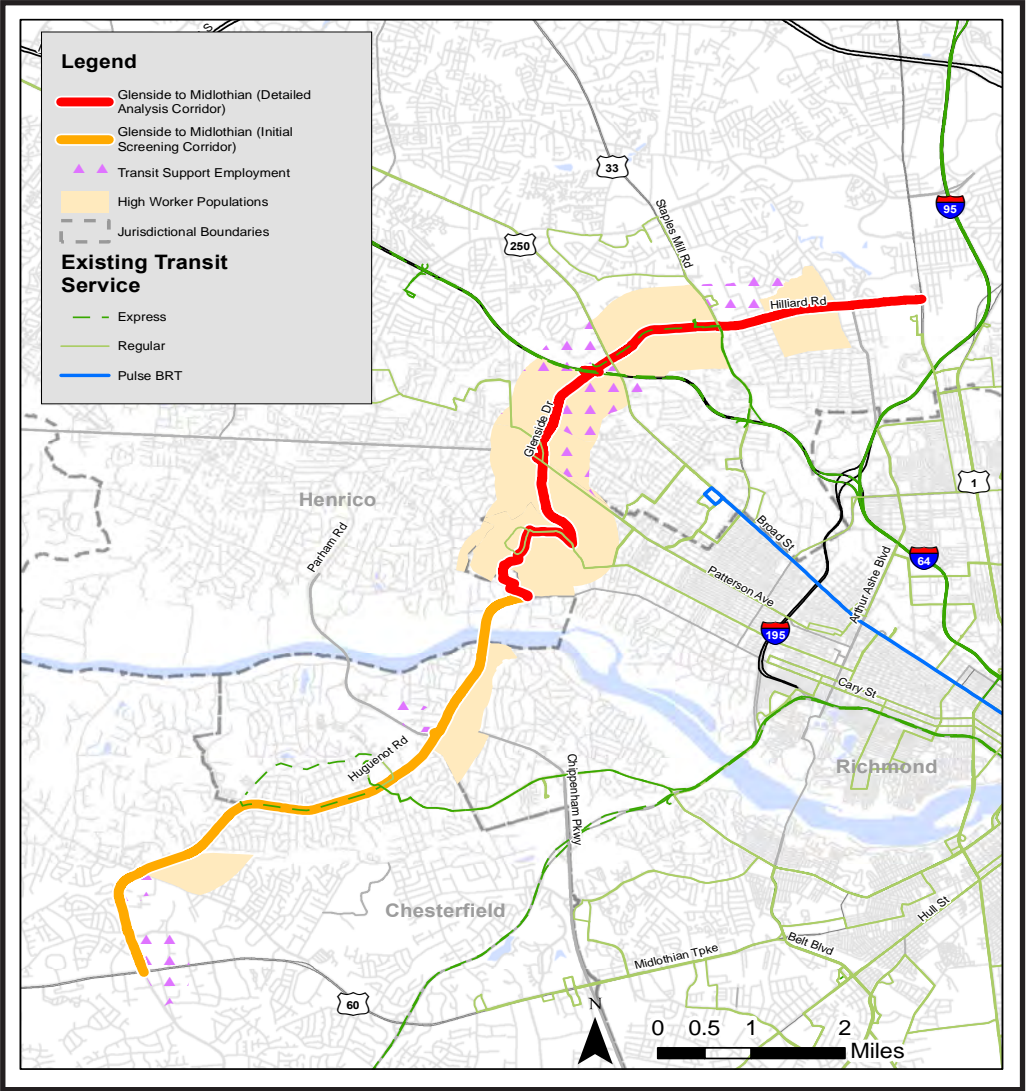
Potential Next Steps

In the near-term, the Glenside to Midlothian corridor should be studied for potential coverage-level service to strengthen network connections. The corridor may have value to residents as an orbital route that provides connections to other corridors with higher frequency service. Some areas with a potential need for lower-frequency transit service along the corridor include the medical facilities near Forest Avenue and the apartment complexes along Hilliard Road and Glenside Drive.

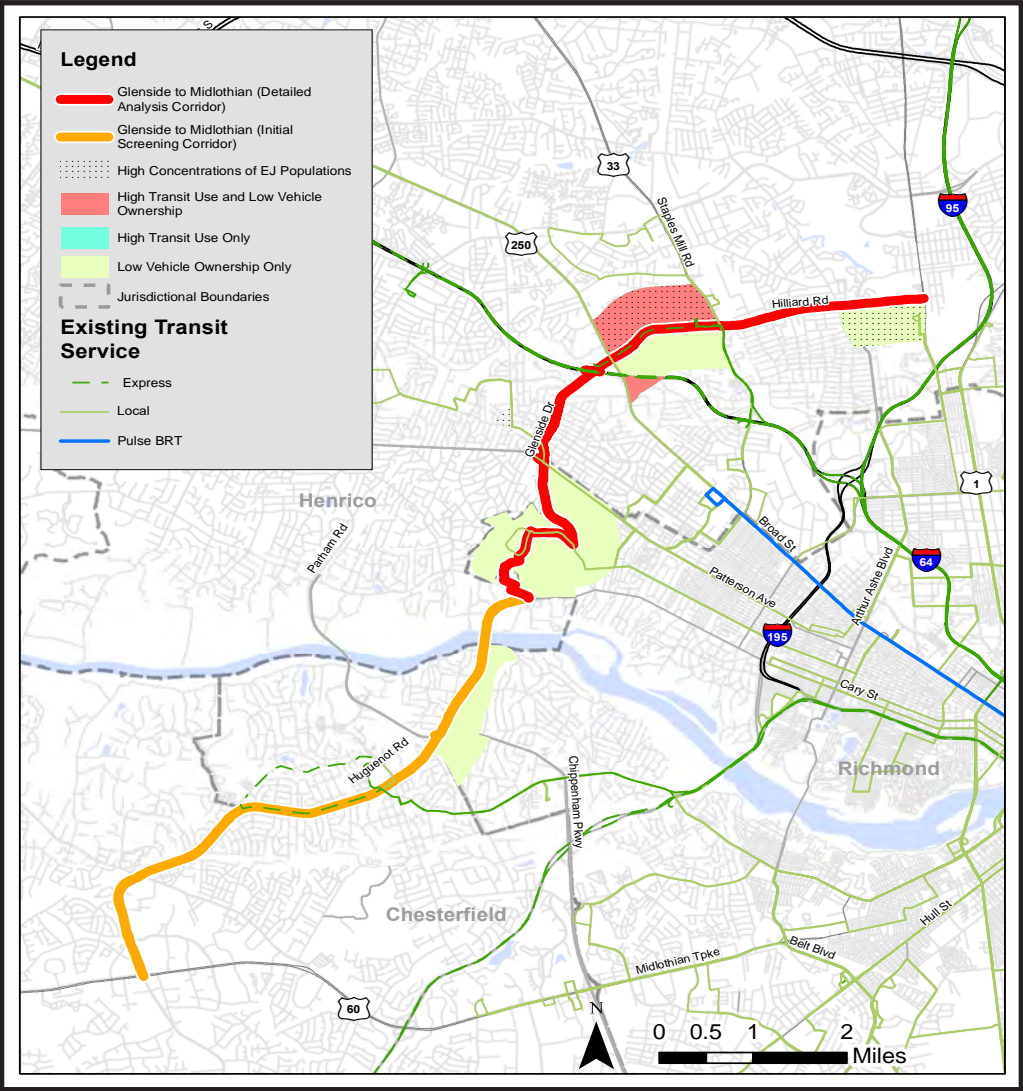
Activity Density



Employment and Workers



Environmental Justice and Transit Dependent



Corridor Description

- Connects Lakeside to Chesterfield Towne Center via Glenside Drive and Huguenot Road;
- Serves Henrico County, City of Richmond, and Chesterfield County

Major Destinations

- Lakeside
- Lewis Ginter Botanical Garden
- West Broad Street
- University of Richmond
- Bon Air
- Chesterfield Towne Center

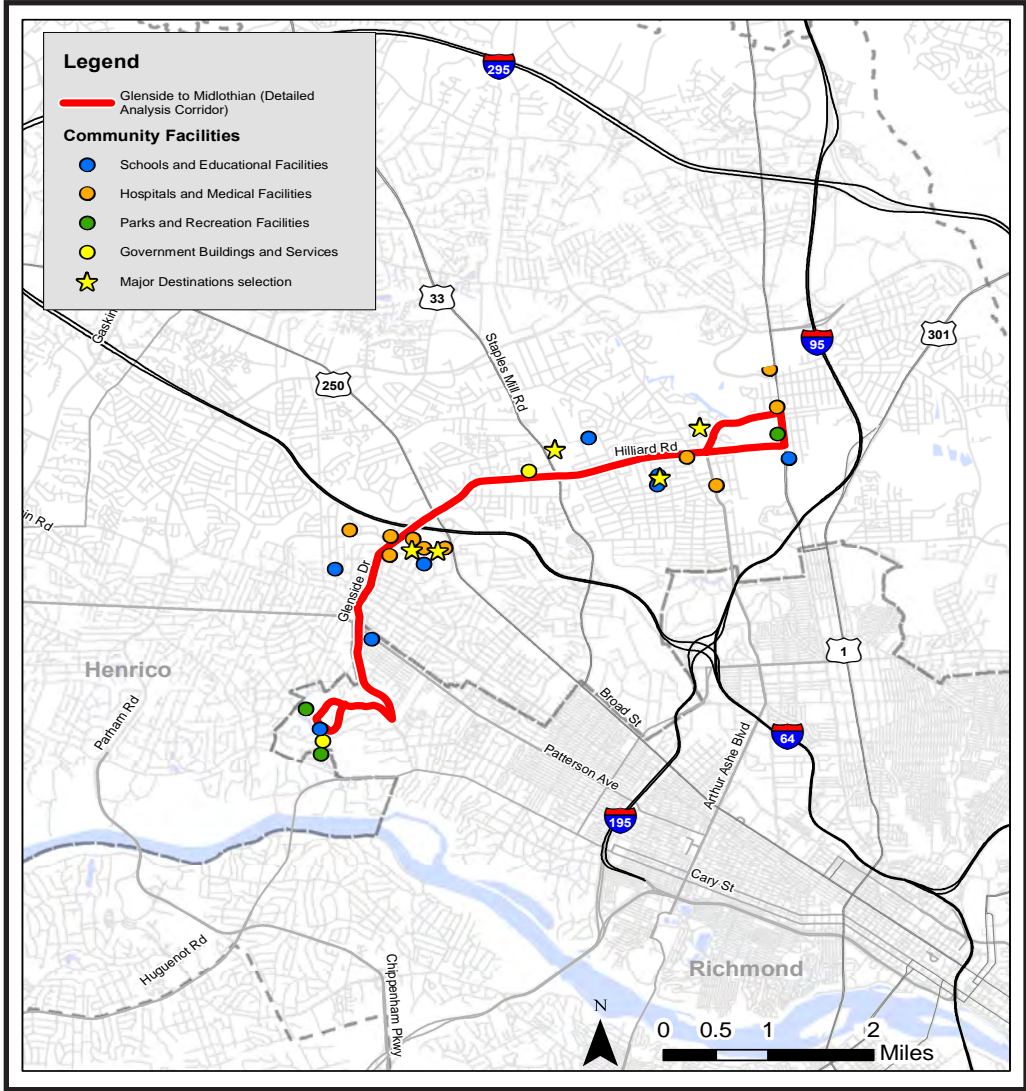
Existing Connecting GRTC Service

- Route 19 (All Day: 30 min.)
- Route 23X (PM Peak Only: 15 min.)
- Route 27X (Peak Only: 15 min.)
- Route 64X (Peak Only: 30 min.)
- Route 75 (Peak Only: 30 min.)
- Route 77 (Peak: 30 min., Off-Peak: 60 min.)
- Route 79 (Peak: 30 min., Off-Peak: 60 min.)

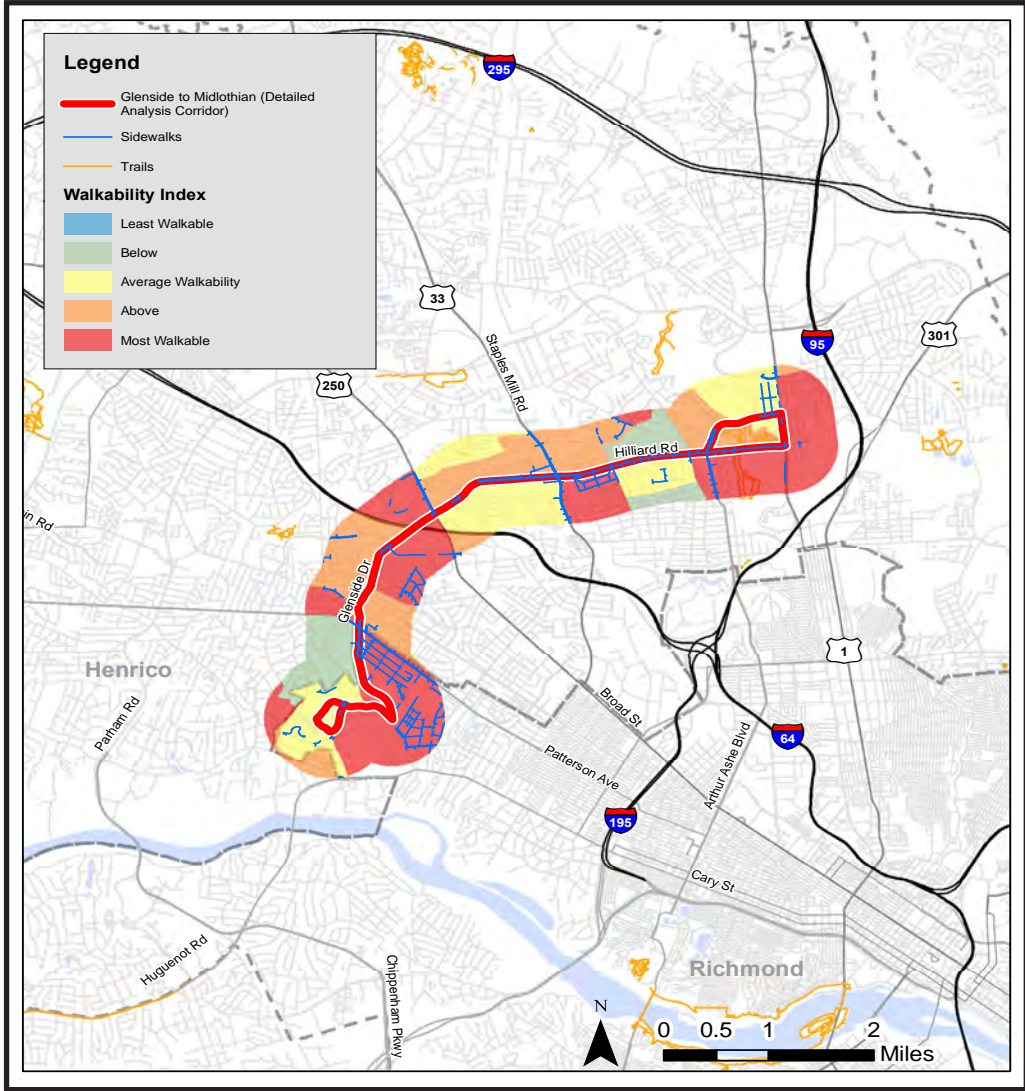
Existing Overlapping GRTC Service

- None

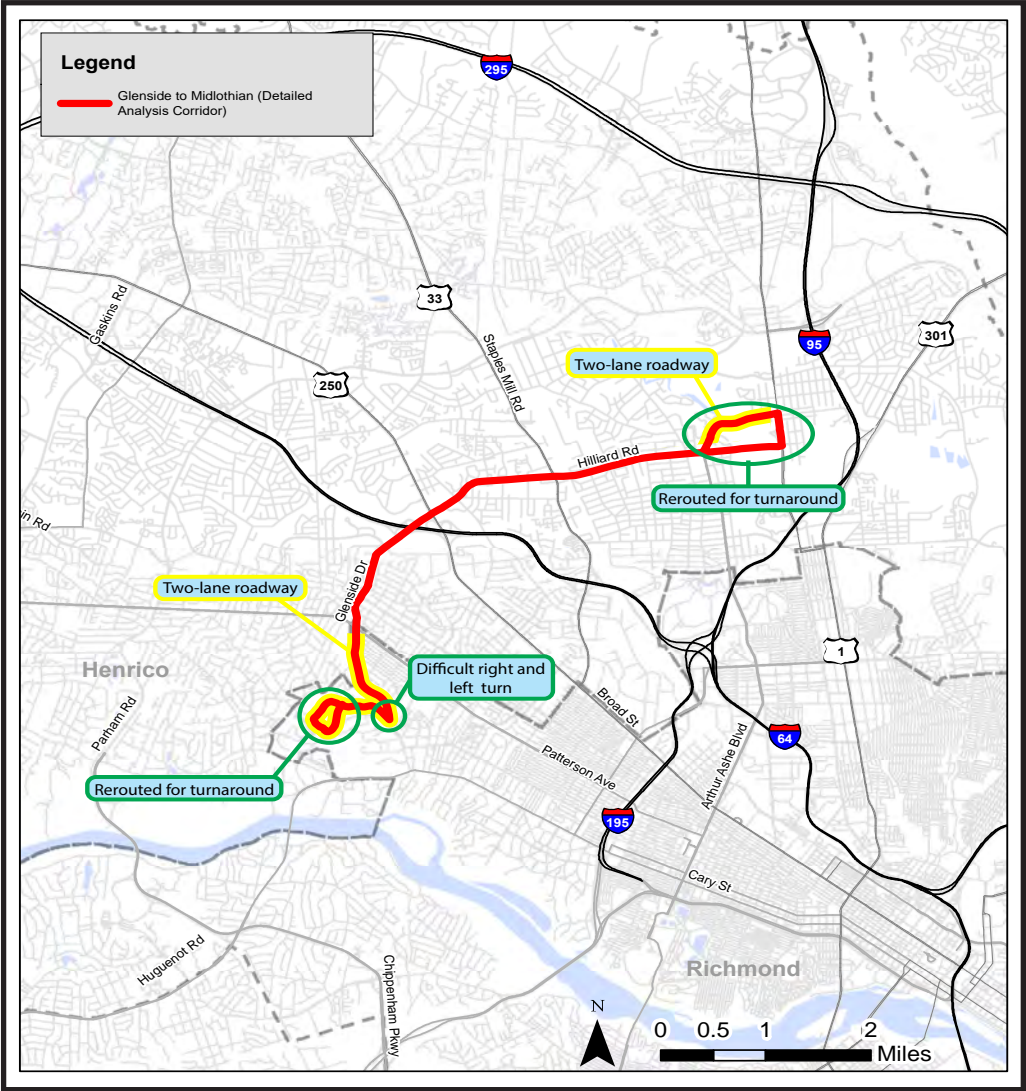
Community Facilities



Pedestrian Network and Connectivity



Roadway Suitability



Community Facilities

- 8 schools and educational facilities
- 10 hospitals and medical facilities
- 3 parks and recreation facilities
- 2 government buildings and offices
- 3 grocery stores

Pedestrian Network Coverage

- Linear feet of roadway - 698,039 ft.
- Roadway with access to sidewalk - 190,413 ft.
- Pedestrian facility coverage - 27%

Projected Ridership Potential

- Total riders: 600 - 1,100
- Boardings per mile: 69 - 126
- Boardings per trip: 8
- Boardings per hour: 15

Potential Future Development

- Carriage Hill Apartments: 267-unit senior living apartment complex along Glenside Drive west of Staples Mill Road
- Publix at Huguenot Village: New grocery store on Huguenot Road
- Altria Headquarters Expansion: 170,000 sq. ft. addition to existing 250,000 sq. ft. building on Broad Street next south of I-64
- West Broad Landing: 200 condos at the intersection of Broad and Willard Streets
- Lakeside Landing: 84 condos and 42 townhomes off of Route 1 on Hilliard Road
- Brook Villas Apartments: 84 apartments on Brook Road south of Parham Road

K. Laburnum Avenue – Willow Lawn to Airport

Initial Screening

The Laburnum Avenue – Willow Lawn to Airport corridor connects Willow Lawn with the Richmond airport via Laburnum Avenue. This east-west corridor connects with several north-south Greater RVA Transit Vision Plan corridors, including Broad Street – Short Pump (A), West End Route 6 – Staples Mill/Route 33 (I), Route 1 to Ashland (H), and Iron Bridge Road – City to Jeff Davis (L). In the Initial Screening, the corridor showed high connections to EJ populations and moderate concentrations of transit-supportive employment and transit-dependent populations, when compared to other analysis corridors. However, due to the low activity density and working populations, as well as the lack of near-term development, the Laburnum Avenue – Willow Lawn to Airport corridor was not recommended for further evaluation.

Detailed Analysis

The Laburnum Avenue – Willow Lawn to Airport corridor was not recommended for Detailed Analysis.

Potential Next Steps

While the Laburnum Avenue – Willow Lawn to Airport corridor was not recommended for near-term high-frequency service, the corridor is served by the existing GRTC Route 91. Further study could include evaluating the need to increase the existing 60-minute frequency of GRTC Route 91. Growth of population and employment along the corridor could make the corridor a viable candidate for high-frequency service in the future.

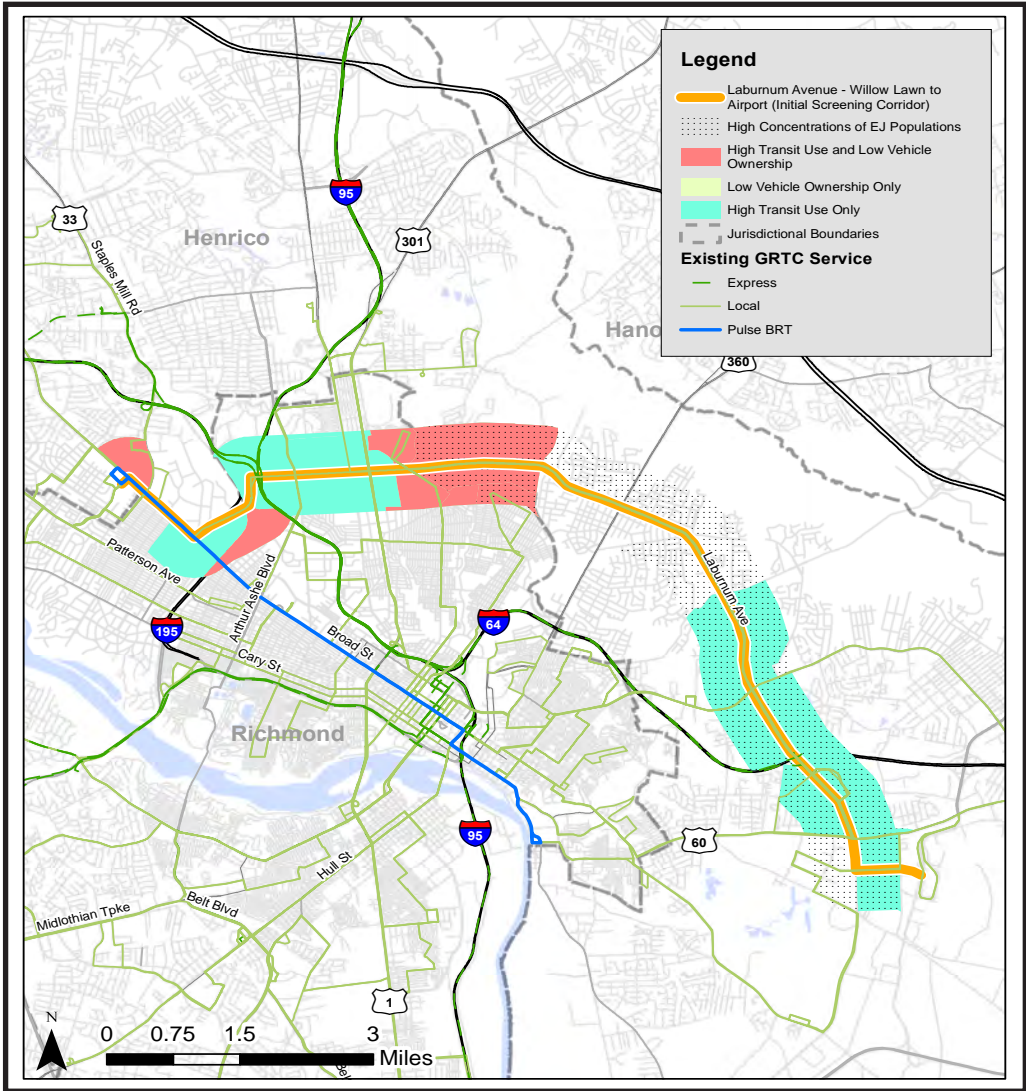
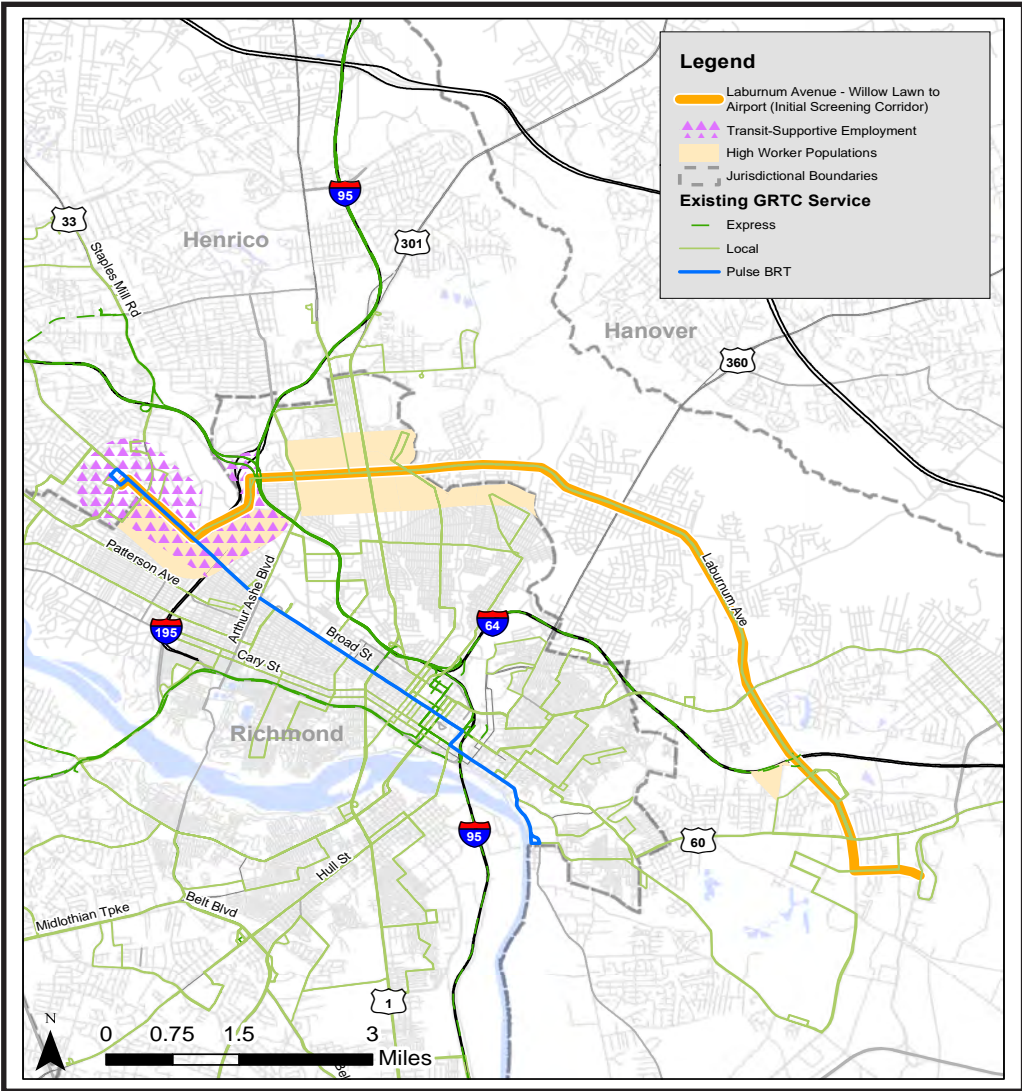
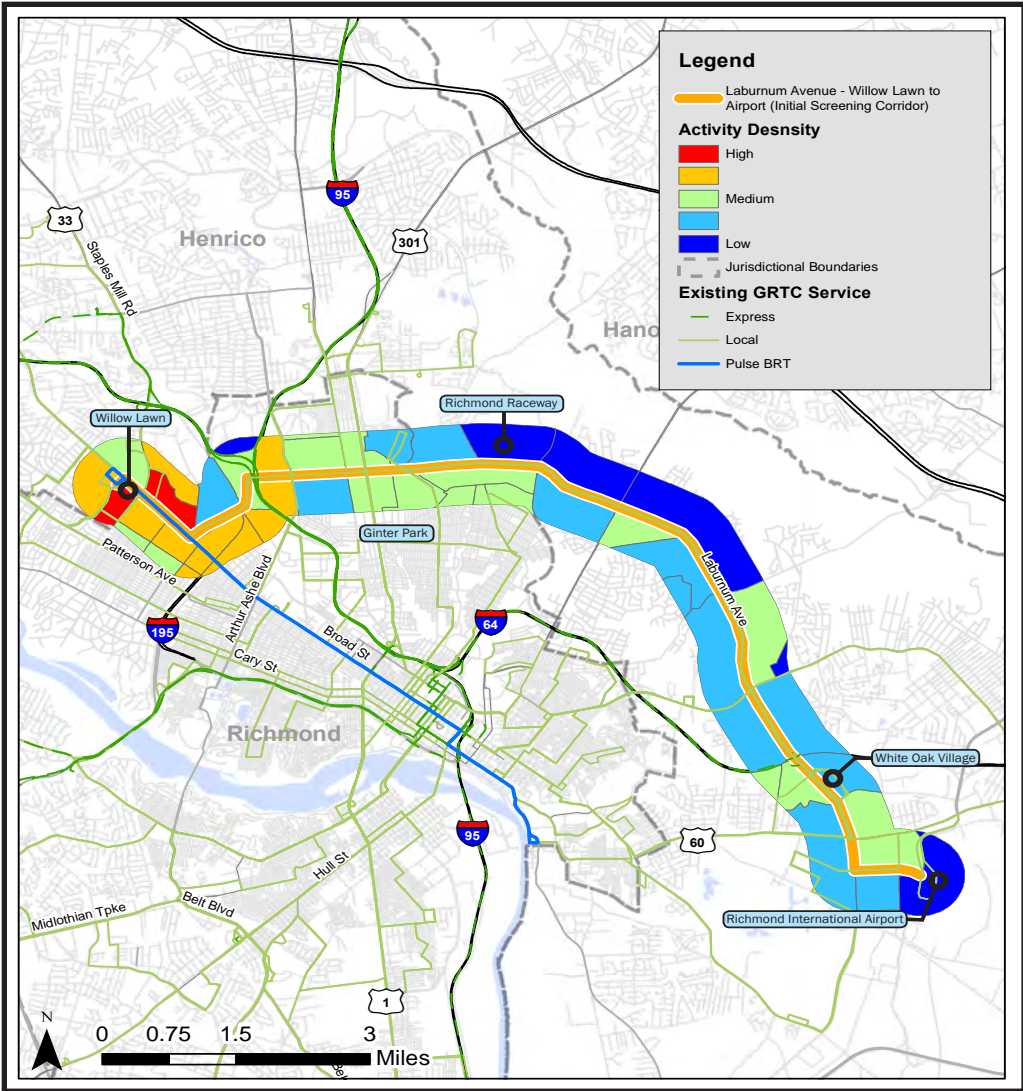
Laburnum Avenue - Willow Lawn to Airport Corridor



Activity Density

Employment and Workers

Environmental Justice and Transit Dependent



Corridor Description	Major Destinations	Existing Connecting GRTC Service	Existing Overlapping GRTC Service	Potential Future Development
<ul style="list-style-type: none">Connects Willow Lawn to the Richmond International Airport via Laburnum Avenue;Serves City of Richmond and Henrico County	<ul style="list-style-type: none">Willow Lawn Shopping CenterGinter ParkRichmond RacewayWhite Oak VillageRichmond International Airport	<ul style="list-style-type: none">Routes 1A/B/C (Combined: 15 min., Individual: 60 min.)Routes 2A/B/C (Combined: 15 min., Individual: 60 min.)Route 14 (All Day: 30 min.)Route 18 (Weekdays Only: 60 min.)Route 19 (All Day: 30 min.)Route 75 (Peak Only: 30 min.)Route 76 (Peak: 30 min., Off-Peak: 60 min.)Route 77 (Peak: 30 min., Off-Peak: 60 min.)Route 79 (Peak: 30 min., Off-Peak: 60 min.)	<ul style="list-style-type: none">Route 91 (All Day: 60 min.)Pulse BRT (Peak: 10 min., Off-Peak: 15 min., Night: 30 min.)Routes 7A/B (Combined: 30 min., Individual: 60 min.)Route 50 (All Day: 30 min.)Route 56 (Peak Only: 60 min.)	<ul style="list-style-type: none">Kinsale Capital Office: 150,000 sq. ft. headquarters near Maywill Street

L. Iron Bridge Road – City to Jeff Davis

Initial Screening

The Iron Bridge Road – City to Jeff Davis corridor operates between the Highland Park neighborhood in Richmond and John Tyler Community College in Chesterfield County. This corridor was the longest corridor evaluated in the Near-Term Strategic Technical Analysis at 28.4 miles. In the Initial Screening, this corridor demonstrated high connectivity to EJ populations, transit-dependent populations, and near-term development, when compared to other analysis corridors. However, activity density and transit-supportive employment were found to be limited along the corridor. While the overall activity density along the corridor was low, higher concentrations of activity density were found along the segment of the corridor north of Chippenham Parkway. This segment also contained higher concentrations of worker, EJ, and transit-dependent populations than the southern portion of the corridor. As a result, only the portion of the corridor between Highland Park and the Ukrops Park/SwimRVA Complex was recommended for further evaluation in the Detailed Analysis.

Detailed Analysis

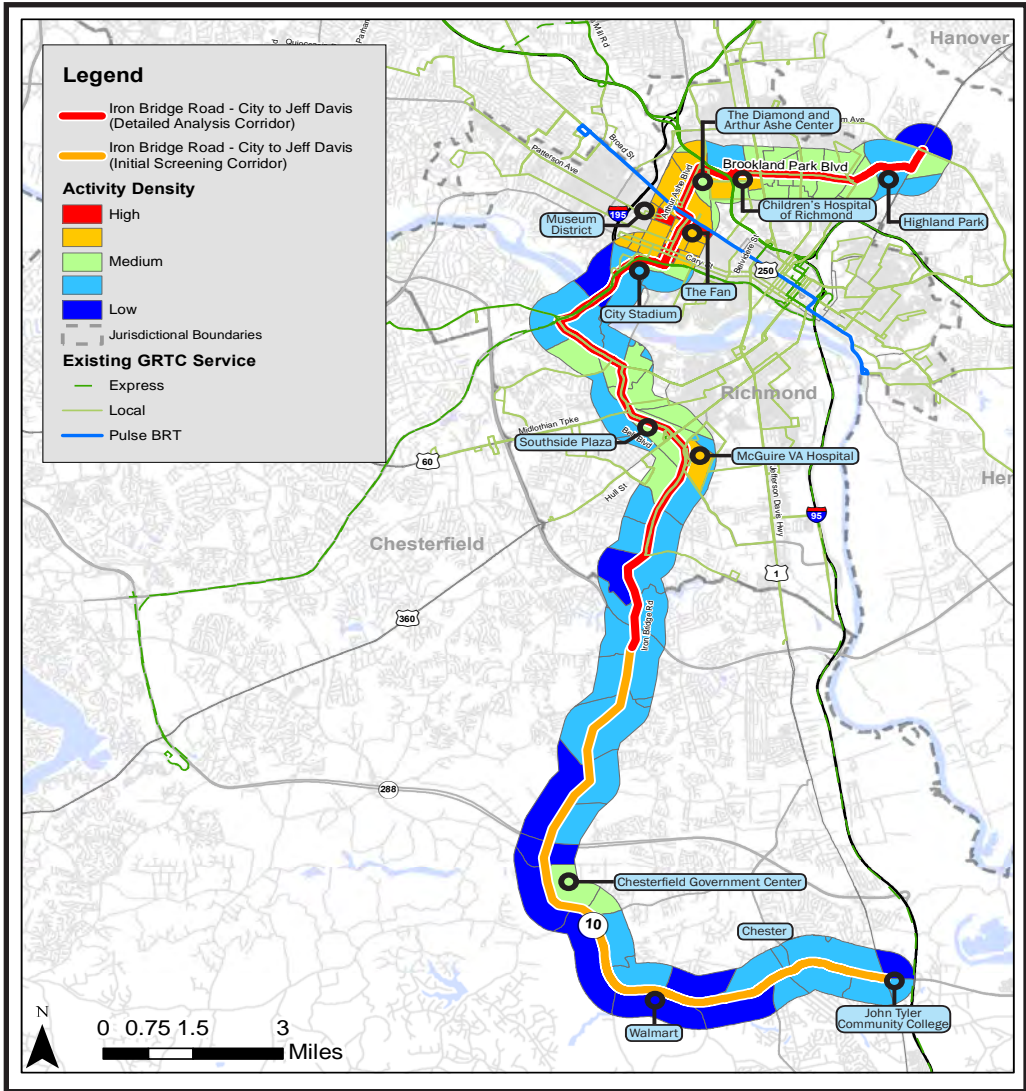
The partial Iron Bridge Road – City to Jeff Davis corridor evaluated in the Detailed Analysis extended from Highland Park and the Ukrop Park/SwimRVA Complex. In the Detailed Analysis, the corridor demonstrated moderate ridership potential and related productivity metrics, access to community facilities, and available pedestrian facilities, when compared to the other corridors. However, much of this route is served by the existing GRTC Route 20, which has 30-minute frequencies and stable ridership. Extending GRTC Route 20 south into Chesterfield County would serve the apartment complexes along Route 10 and the Ukrop Park/SwimRVA facility; however, this area does not currently have the ridership potential to support high-frequency service and an adequate turnaround location for a transit vehicle could not be identified at the proposed southern terminus near Chippenham Parkway. Similarly, a northern extension of GRTC Route 20 to Mechanicsville Turnpike would also require the identification of a feasible turnaround location near Laburnum Avenue. As a result, the Iron Bridge Road – City to Jeff Davis corridor was not recommended for advancement to the Implementation Feasibility assessment.

Potential Next Steps

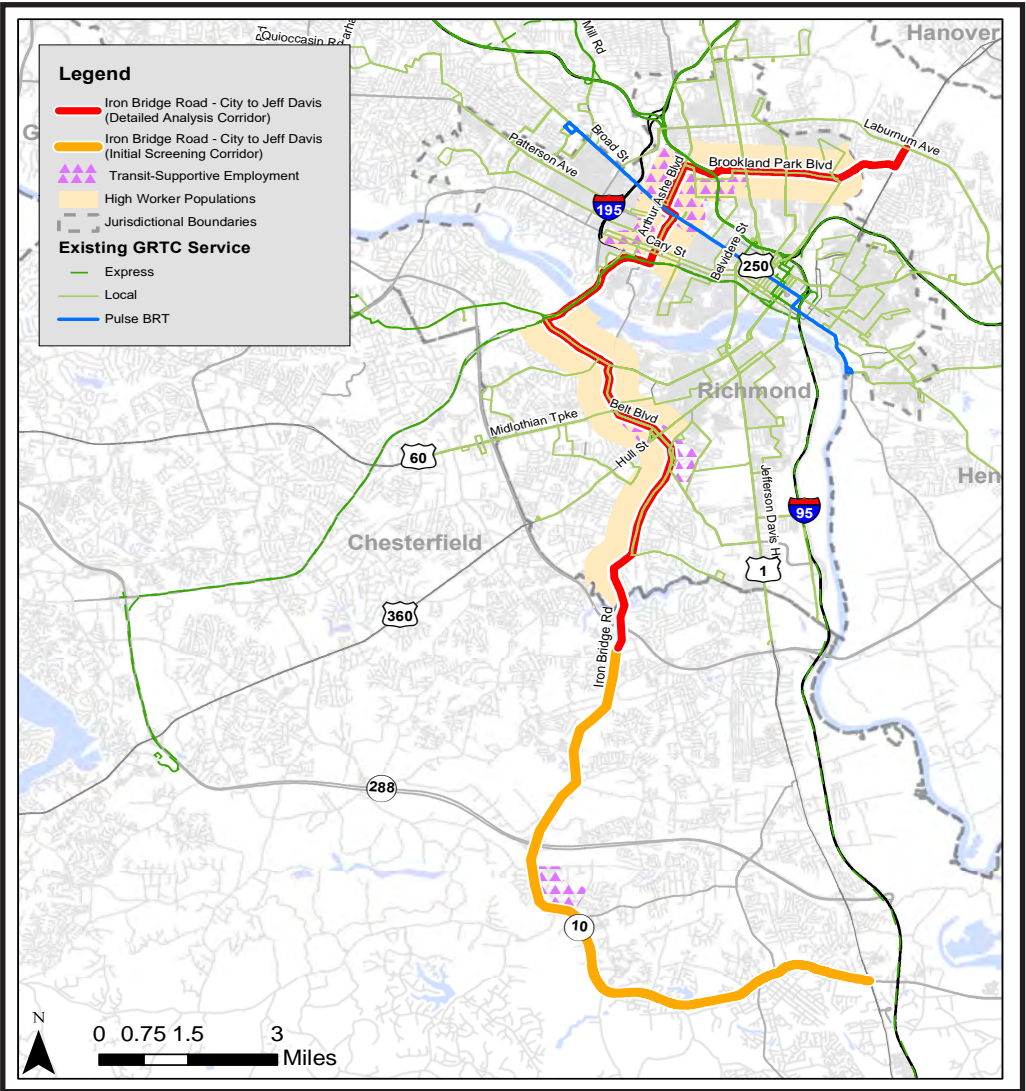
In the near-term, areas of the Iron Bridge Road – City to Jeff Davis corridor, such as between the VA Hospital and the intersection of Chippenham Parkway and Route 10 should be studied for potential coverage-level service. An extension of the existing GRTC Route 20 should be considered to provide service to EJ and low-vehicle ownership populations in Chesterfield County. Growth of population and employment along the corridor could make the corridor a viable candidate for high-frequency service in the future.

Iron Bridge Road - City to Jeff Davis Corridor

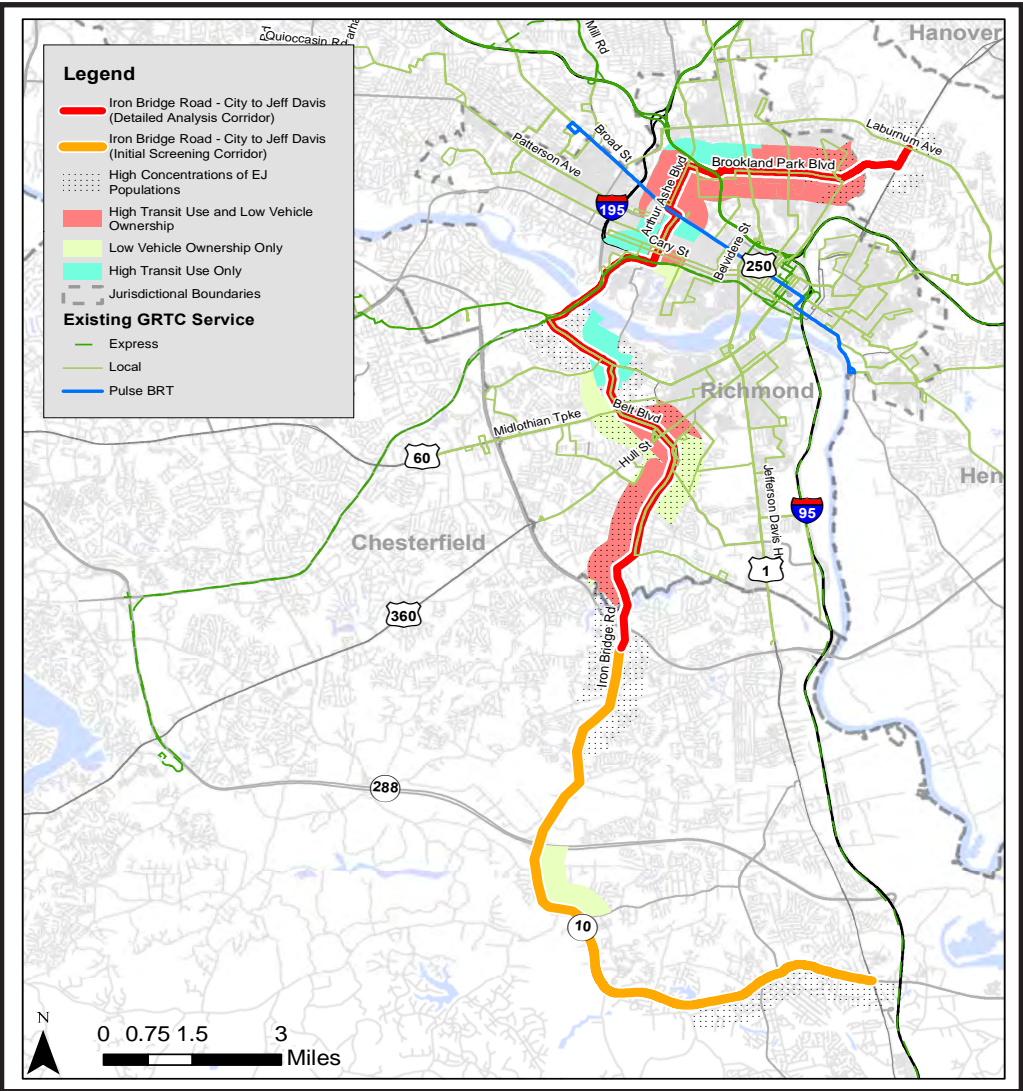
Activity Density



Employment and Workers



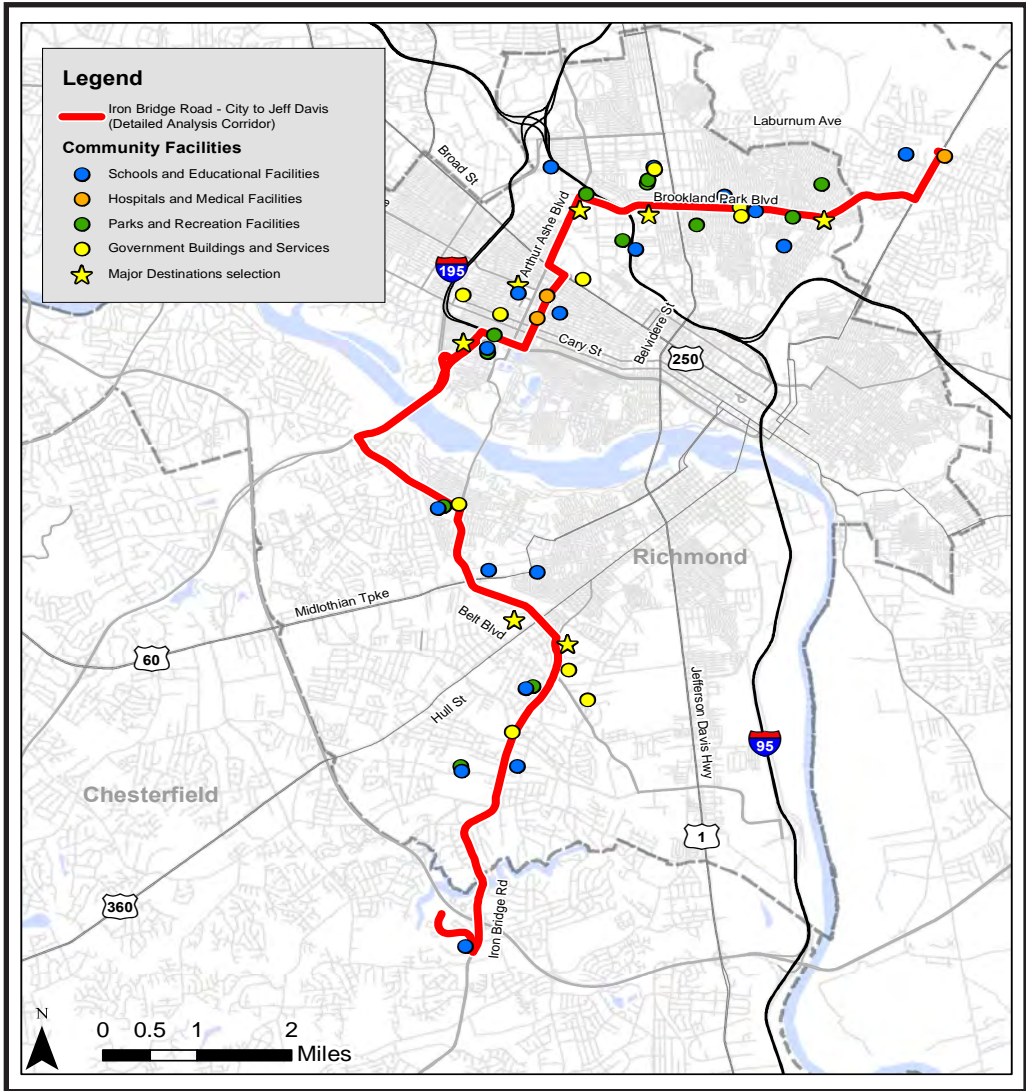
Environmental Justice and Transit Dependent



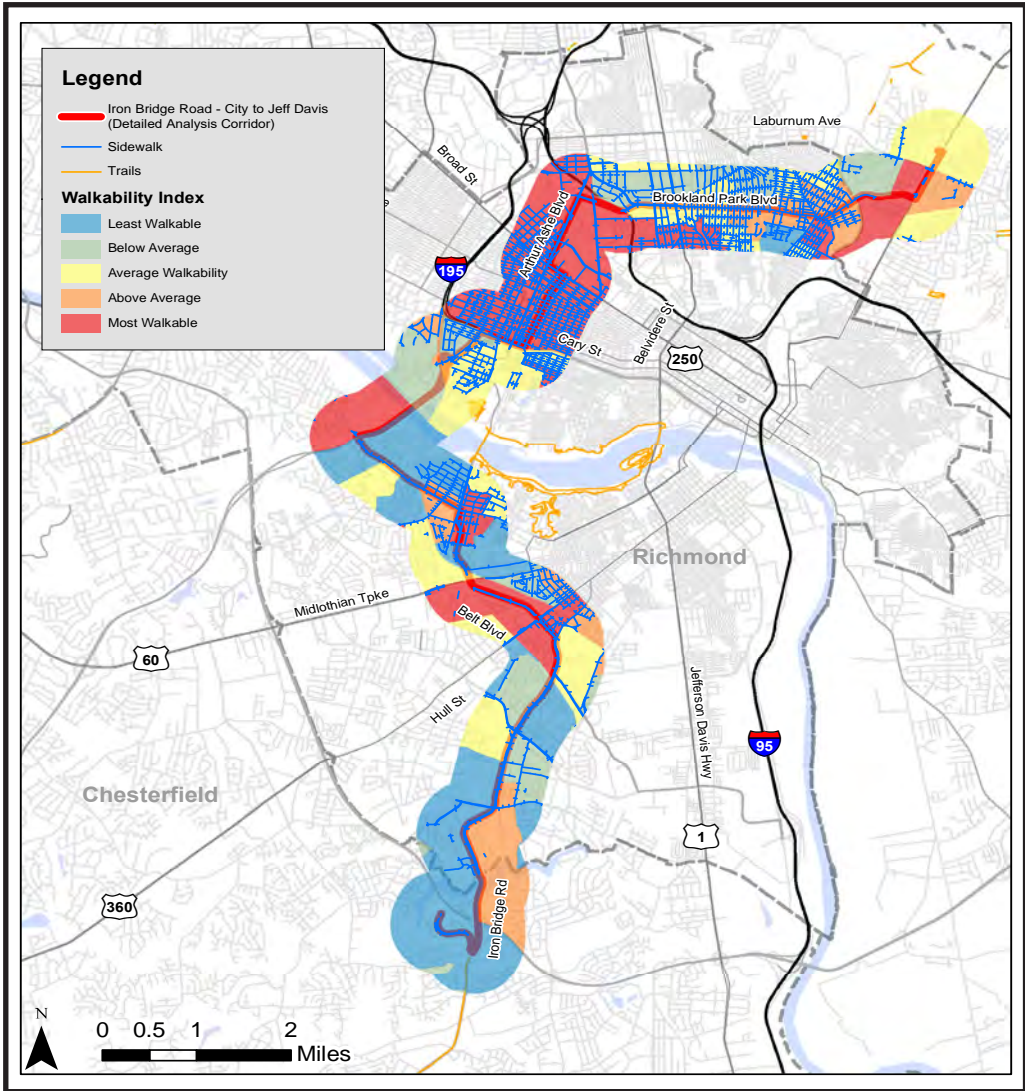
Corridor Description	Major Destinations	Connecting GRTC Service	Overlapping GRTC Service	GRTC Rider Feedback
<ul style="list-style-type: none">Connects East Highland Park, the Fan, and Westover Hills in Richmond to Chesterfield and John Tyler Community College via Brookland Park Boulevard, Arthur Ashe Boulevard, Robinson Street, Powhite Parkway, Forest Hills Boulevard, Westover Hills Boulevard, Belt Boulevard, and Iron Bridge RoadServes Henrico County, City of Richmond, and Chesterfield County	<ul style="list-style-type: none">Highland ParkChildren's Hospital of RichmondThe Diamond and Arthur Ashe Athletic CenterMuseum DistrictFan DistrictCity StadiumSouthside PlazaMcGuire VA HospitalChesterfield Government CenterWalmart - Iron BridgeChesterJohn Tyler Community College	<ul style="list-style-type: none">Routes 1A/B/C (Combined: 15 min., Individual: 60 min.)Routes 2A/B/C (Combined: 15 min., Individual: 60 min.)Route 3A/B/C (Combined: 15 min., Individual: 30 min., Night: 30 min.)Route 5 (Peak/Off-Peak: 15 min., Night: 30 min.)Route 14 (All Day: 30 min.)Route 50 (All Day: 30 min.)Route 76 (Peak: 30 min., Off-Peak: 60 min.)Route 87 (Daytime Only: 60 min.)Route 88 (Peak Only: 30 min.)Route 102X (Seasonal)Pulse BRT (Peak: 10 min., Off-Peak: 15 min., Night: 30 min.)	<ul style="list-style-type: none">Route 20 (All Day: 30 min.)Route 1A (All Day: 30 min.)Route 2A (All Day: 60 min.)Route 2C (Peak: 30 min., Off-Peak: 60 min.)Route 77 (Peak: 30 min., Off-Peak: 60 min.)Route 86 (Daytime Only: 60 min.)	<ul style="list-style-type: none">Interest in increased frequency on existing Route 20 for improved crosstown connections

Iron Bridge Road - City to Jeff Davis Corridor

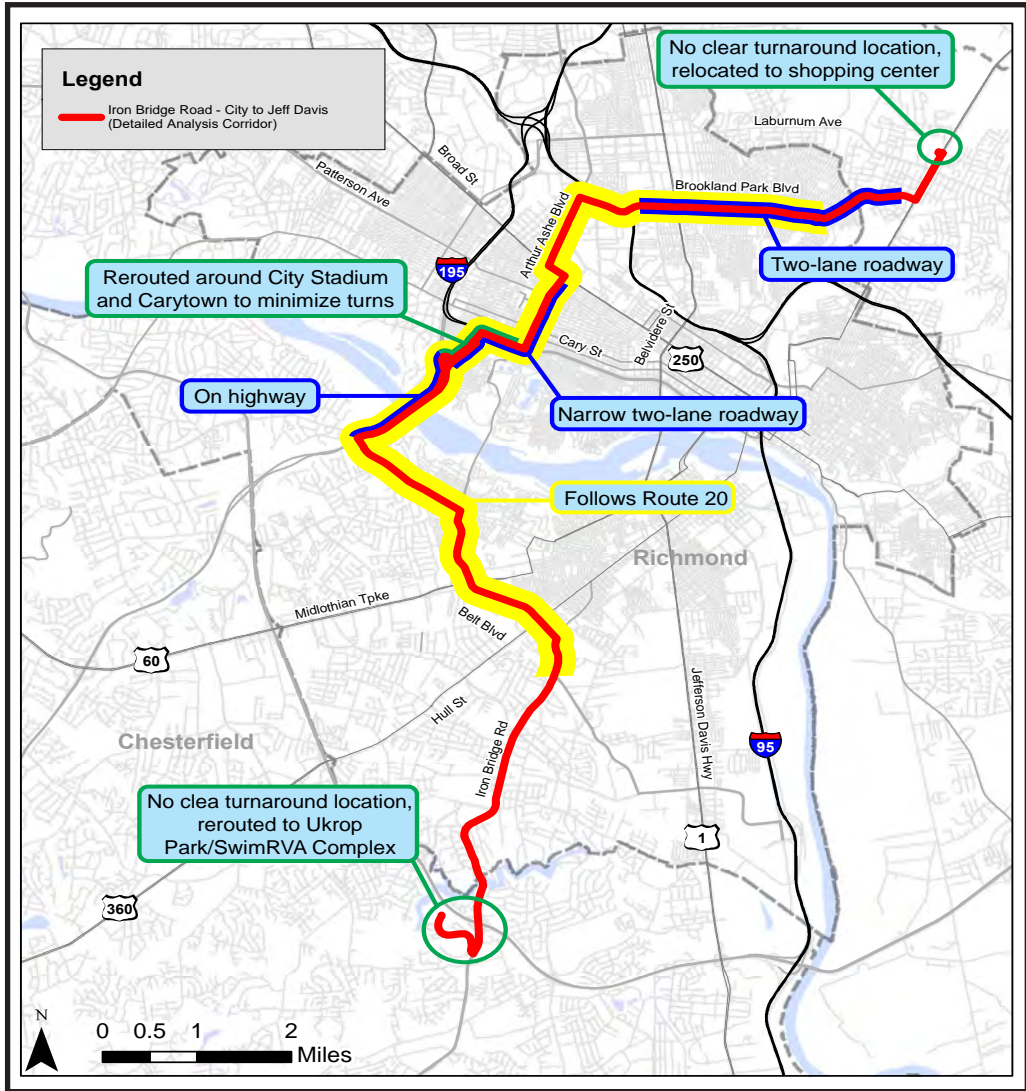
Community Facilities



Pedestrian Network and Connectivity



Roadway Suitability



Corridor Description

- 17 schools and educational facilities
- 3 hospitals and medical facilities
- 12 parks and recreation facilities
- 11 government services and office buildings
- 5 grocery stores

Pedestrian Network Coverage

- Linear feet of roadway - 1,971,914 ft.
- Roadway with access to sidewalks - 1,225,664 ft.
- Pedestrian facility coverage - 62%

Projected Ridership Potential

- Total riders: 1,700 - 2,800
- Boardings per mile: 94 - 155
- Boardings per trip: 22
- Boardings per hour: 20

Potential Future Development

- 10600 Hollyberry Dr: Age-restricted 250-home development near Iron Bridge Parkway
- The Current: 260,000 sq. ft. mixed-use development with 200 apartment units in Scotts Addition.
- The Nest: Mixed-use development in Scotts Addition with 188 apartment units
- The Summit: Mixed-use development on West Broad Street in Scotts Addition with 166 apartment units 8,500 sq. ft. of ground floor retail
- Myers Street Apartments: 218 apartment units with ground-floor retail east of Arthur Ashe Boulevard
- 76-unit affordable housing development on Brookland Park Boulevard on vacant site
- Canopy at Ginter Park: 301-unit apartment complex near Union Presbyterian Seminary
- Scott's View: 364-unit apartment building in Scott's Addition
- 12-story residential tower with 322 units and 50,000 sq. ft. of ground floor retail

M. Route 5 South

Initial Screening

The Route 5 South corridor connects Shockoe Bottom with Varina via Route 5. The corridor also provides a connection to the Pulse BRT in Shockoe Bottom. In the Initial Screening, this corridor ranked low for all data-driven analysis metrics, when compared to other analysis corridors. The Route 5 South Corridor ranked especially low in activity Density, and serviced substantially fewer areas with high worker, transit-dependent, and EJ populations. As a result, the Route 5 South corridor was not recommended for further evaluation.

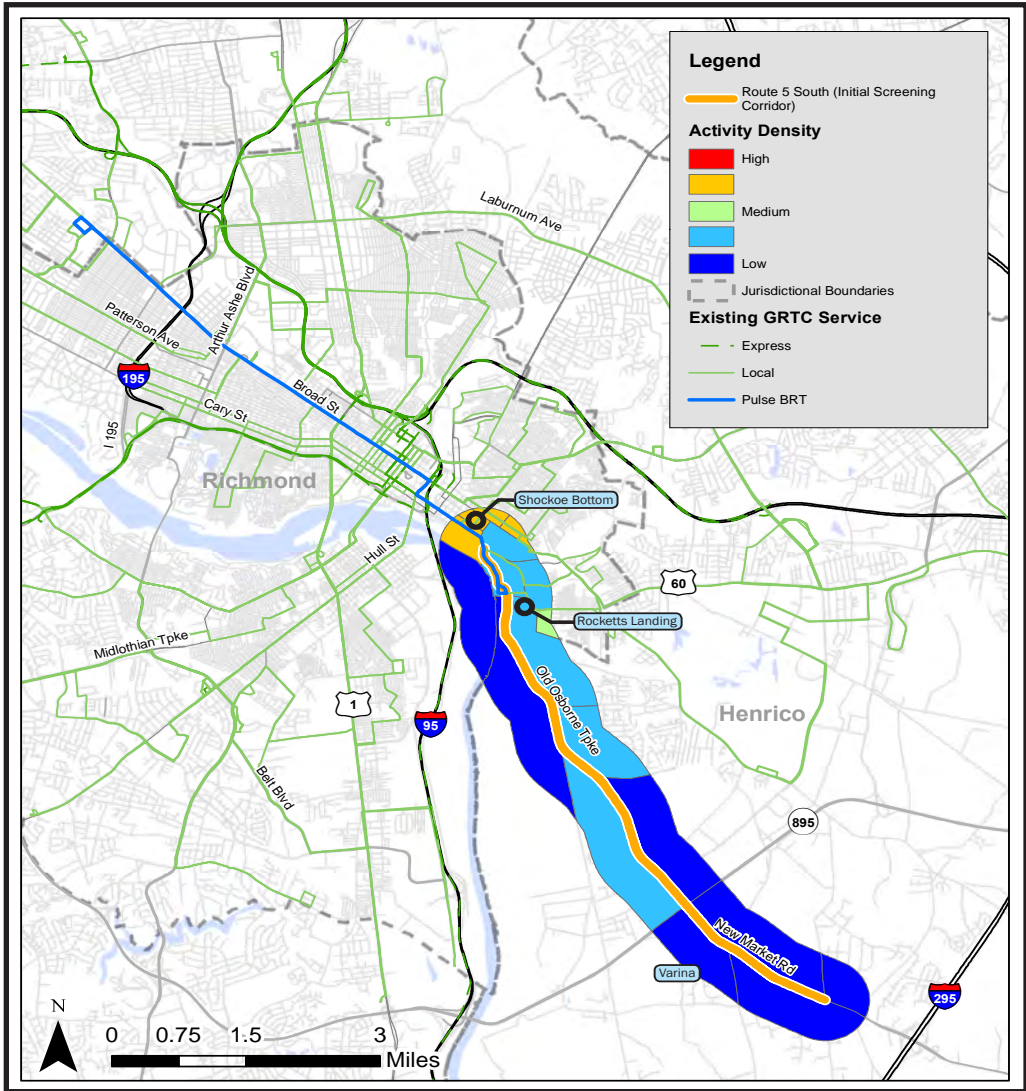
Detailed Analysis

The Route 5 South corridor was not recommended for Detailed Analysis.

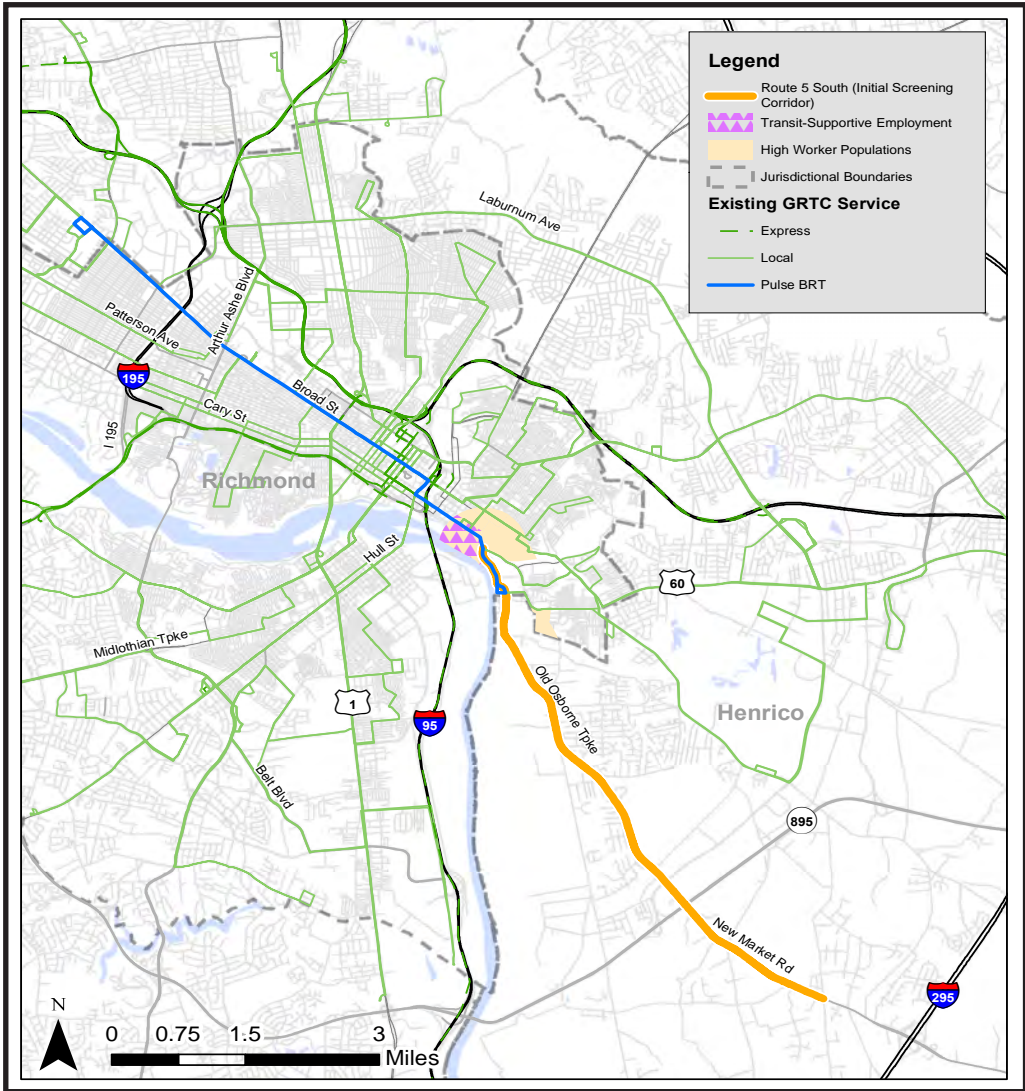
Potential Next Steps

While the Route 5 South corridor was not recommended for near-term high-frequency service, development south of Rocketts Landing should be monitored. As development occurs in this area, additional transit service may be warranted and should be evaluated. Initially, this area may only need lower frequency, coverage-level service. Until this area has the population and employment to support additional service, the current service provided by the Pulse BRT and GRTC Route 4B should meet the existing demand in the corridor.

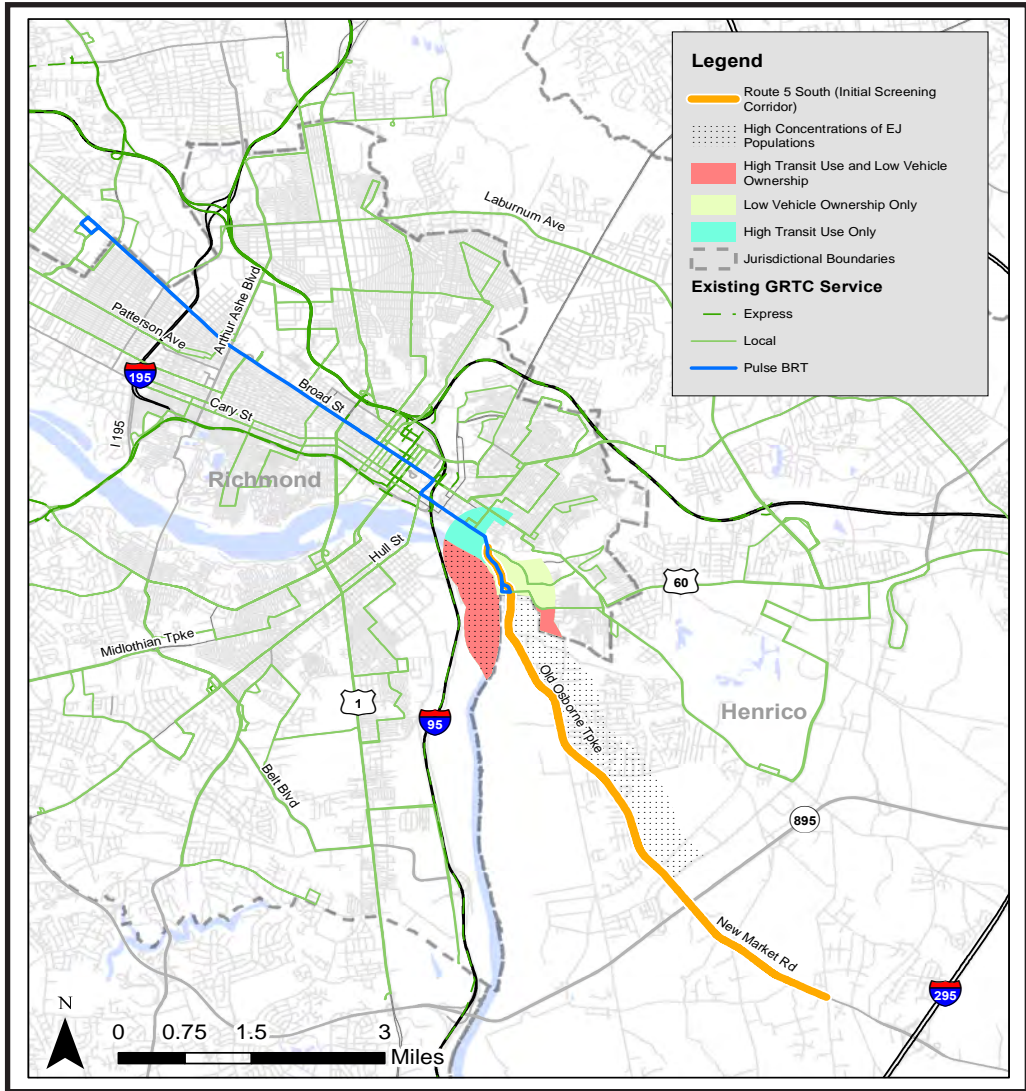
Activity Density



Employment and Workers



Environmental Justice and Transit Dependent



Corridor Description	Major Destinations	Existing Connecting GRTC Service	Existing Overlapping GRTC Service	Potential Future Development
<ul style="list-style-type: none">Connects downtown Richmond to Varina via VA Route 5Serves the City of Richmond and Henrico County	<ul style="list-style-type: none">VarinaRocketts LandingShockoe Bottom	<ul style="list-style-type: none">Route 4A (All Day: 30 min.)Route 12 (All Day: 30 min.)Route 13 (All Day: 30 min.)Route 14 (All Day: 30 min.)	<ul style="list-style-type: none">Pulse BRT (Peak: 10 min., Off-Peak: 15 min., Night: 30 min.)Route 4B (Daytime: 15 min., Night: 30 min.)	<ul style="list-style-type: none">Main 2525: 216-unit apartment building in Shockoe Bottom with ground floor retail

N. Lee Davis Road

Initial Screening

The Lee Davis Road corridor connects Downtown Richmond to Mechanicsville via 4th Avenue, Richmond-Henrico Turnpike, and Mechanicsville Turnpike. In the Initial Screening, this corridor demonstrated high connectivity with transit-dependent populations and moderate activity density, transit-supportive employment, EJ populations, and near-term development, when compared to other analysis corridors. However, the portion of the corridor that showed the highest concentrations of these data-driven analysis metrics, south of Laburnum Avenue, is currently served by the high-frequency service provided by GRTC Route 3. As a result, the Lee Davis Road corridor was not recommended for further evaluation.

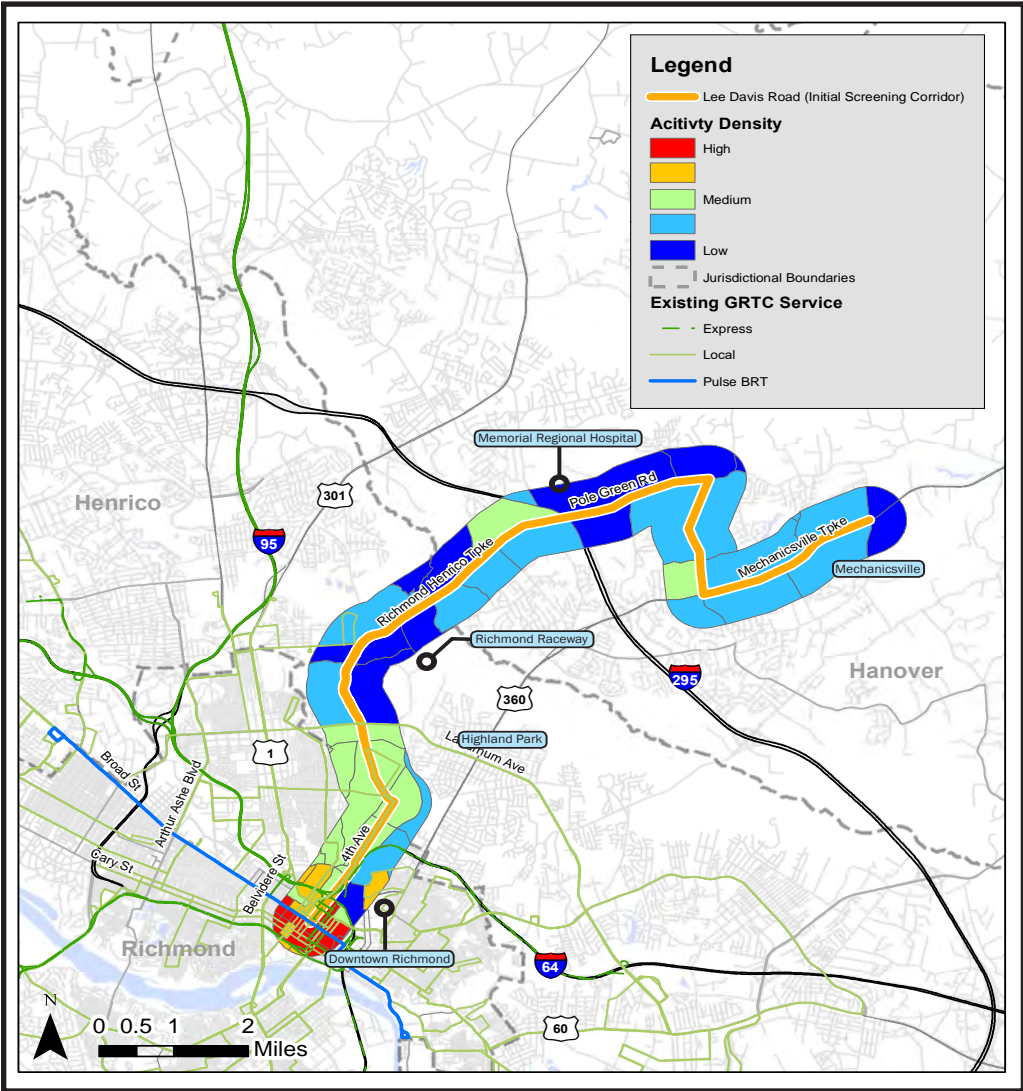
Detailed Analysis

The Lee Davis corridor was not recommended for Detailed Analysis.

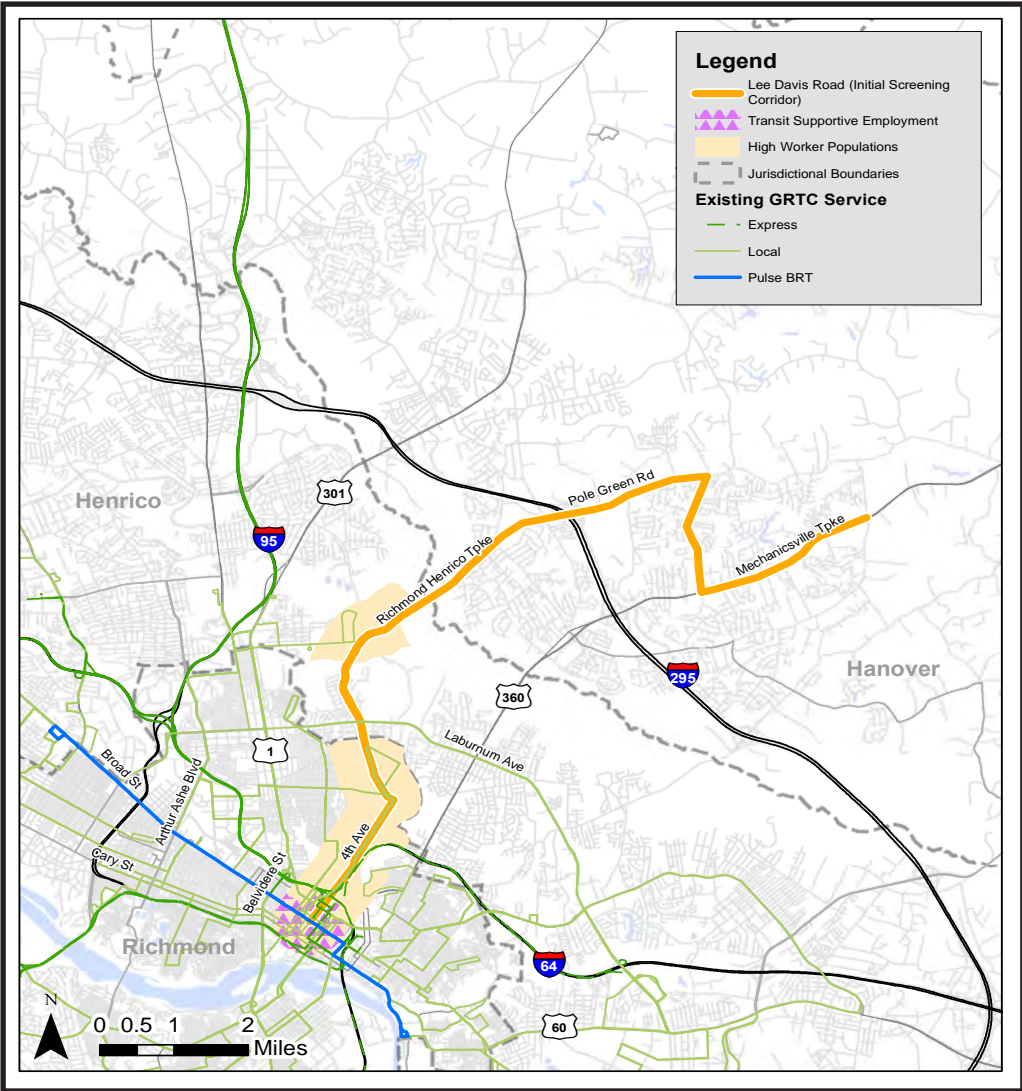
Potential Next Steps

While the Lee Davis Road corridor was not recommended for near-term high-frequency service, the corridor should be studied for potential transit services that could support existing and future land uses and provide improved connections to EJ populations. Similar to the Mechanicsville Turnpike corridor, options to consider in future study could include extensions of the existing GRTC Route 3 or 5 by relocating the northern termini to Laburnum Avenue or Azalea Avenue or for lower-frequency service to Mechanicsville. In addition, express transit service to Mechanicsville and coverage-level transit services along Mechanicsville Turnpike north of I-64 could strengthen network connections in the near-term. Growth of population and employment north of I-64 could make the corridor a viable candidate for high-frequency service in the future.

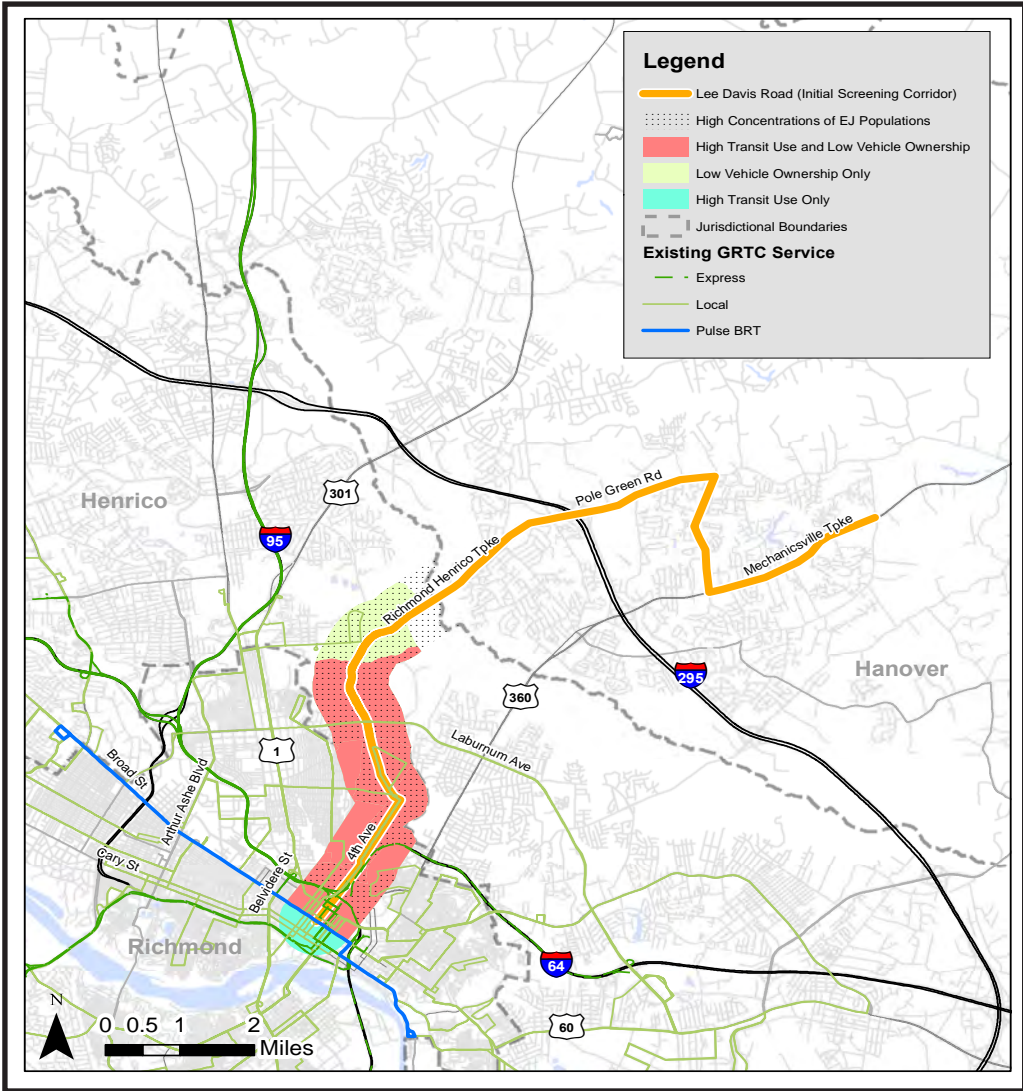
Activity Density



Employment and Workers



Environmental Justice and Transit Dependent



Corridor Description

- Connects downtown Richmond to Mechanicsville via 4th Avenue, Richmond-Henrico Turnpike, and Mechanicsville Turnpike
- Serves the City of Richmond and Henrico County

Major Destinations

- Downtown Richmond
- Highland Park
- Richmond Raceway
- Memorial Regional Hospital
- Mechanicsville

Existing Connecting GRTC Service

- Route 20: (All Day: 30 min.)
- Route 91 (All Day: 60 min.)

Existing Overlapping GRTC Service

- Routes 3A/B/C (Combined: 15 min., Individual: 30 min., Night: 30 min.)

Potential Future Development

- Boxwood Park: Mixed-use community planned at Pole Green Road and Bell Creek Road with 508 units
- The Penny: 167 apartment unit complex with ground floor retail in Jackson Ward

O. Warwick Road

Initial Screening

The Warwick Road corridor connects Chippenham Hospital and Commerce Road Industrial Area. The corridor also connects with several other Greater RVA Transit Vision Plan corridors, including Midlothian Turnpike (C), Iron Bridge Road – City to Jeff Davis (L), and Jeff Davis South to Chester (G). Similar to the West End Route 7 – Regency to Azalea (T) corridor, the Warwick Road corridor has the potential to act as an east-west orbital route, connecting several north-south transit corridors south of the James River. In the Initial Screening, the corridor showed high connectivity to EJ and transit-dependent populations but low activity density, transit supportive employment, and near-term development, when compared to other analysis corridors. Additionally, areas of the corridor with higher employment, such as Chippenham Hospital and Commerce Road Industrial Area could be served by the Midlothian Turnpike (C) and Jeff Davis South to Chester (G) corridors, respectively. As a result, the Warwick Road corridor was not recommended for further evaluation.

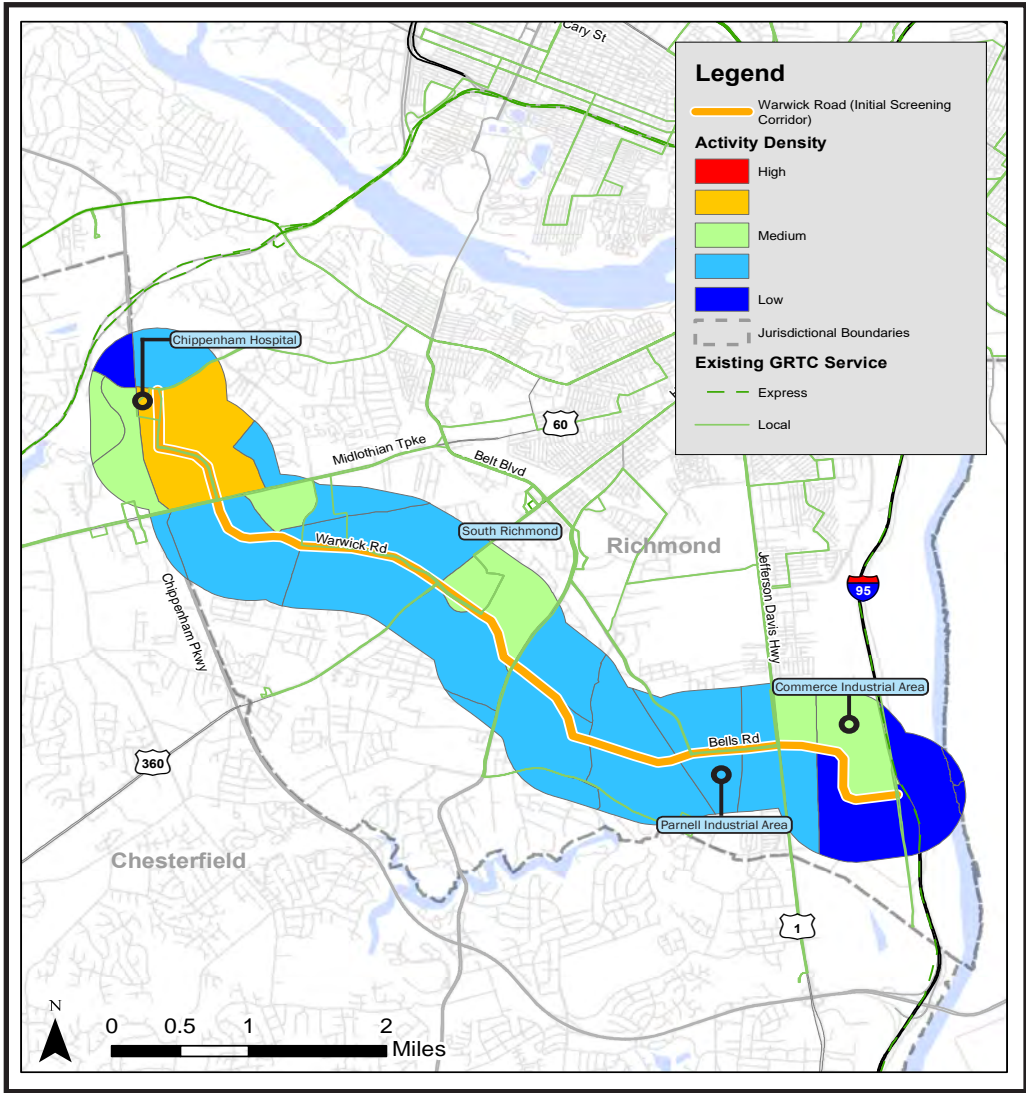
Detailed Analysis

The Warwick Road corridor was not recommended for Detailed Analysis.

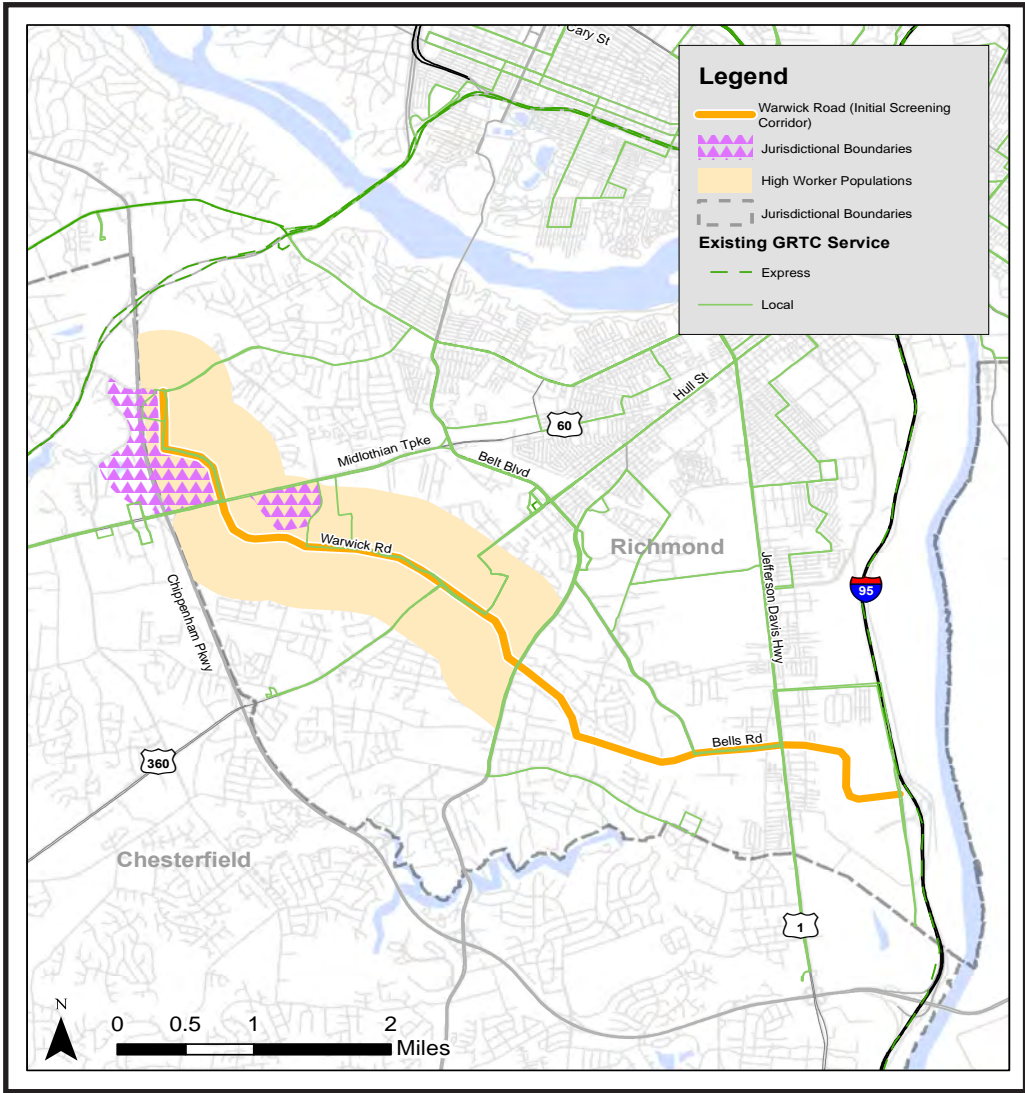
Potential Next Steps

While the Warwick Road corridor was not recommended for near-term high-frequency service, the corridor would provide an important orbital transit connection to several north-south corridors. Given the opportunity to provide connections to employment opportunities for transit-dependent and EJ populations, further study of the Warwick Road corridor for coverage-level frequency in the near term should be considered. Growth of population and employment along the corridor could make the corridor a viable candidate for high-frequency service in the future.

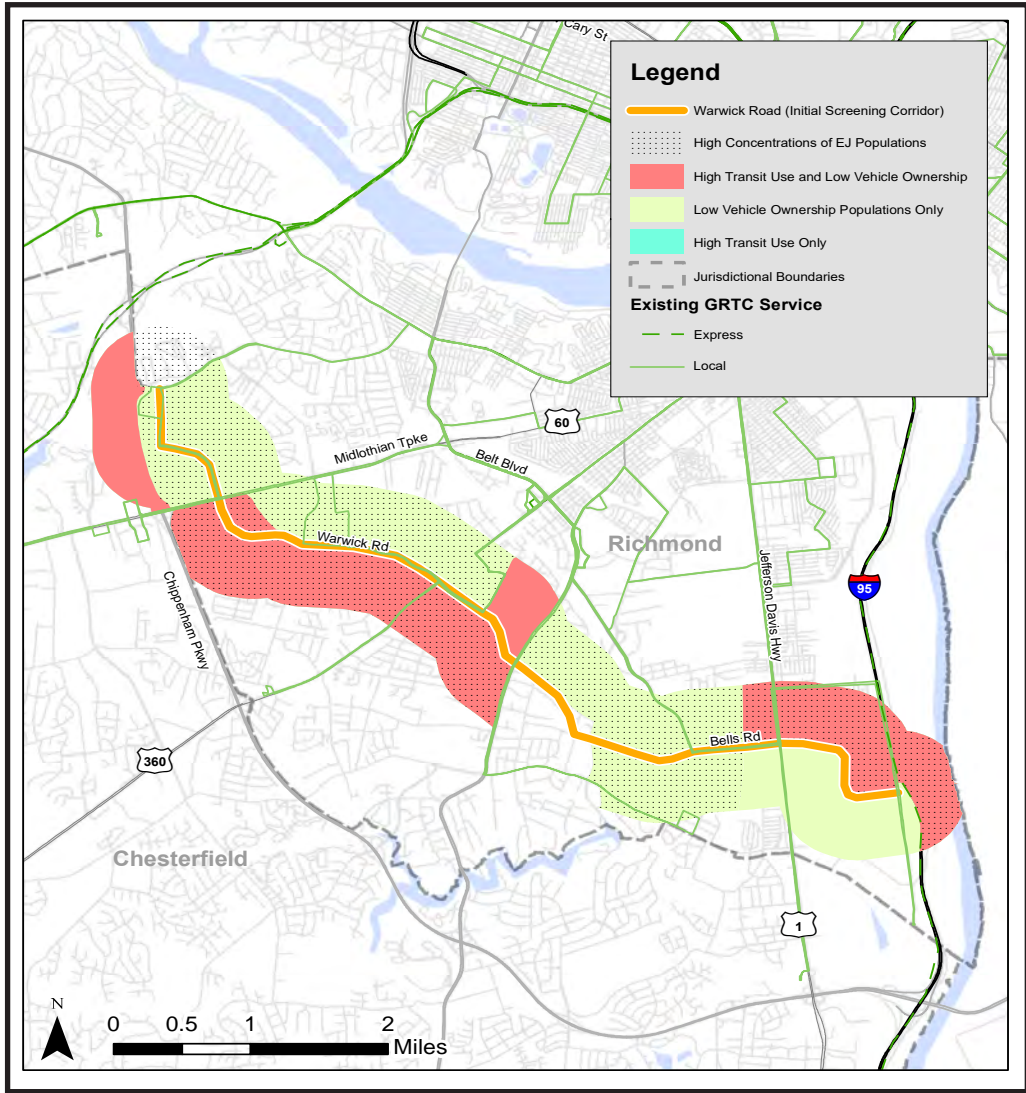
Activity Density



Employment and Workers



Environmental Justice and Transit Dependent



Corridor Description	Major Destinations	Existing Connecting GRTC Service	Existing Overlapping GRTC Service	Potential Future Development
<ul style="list-style-type: none">Connects Chippenham Hospital to Commerce Road Industrial Area via Warwick RoadServes the City of Richmond	<ul style="list-style-type: none">Chippenham HospitalSouth RichmondParnell Industrial AreaCommerce Road Industrial Area	<ul style="list-style-type: none">Routes 3B/C (All Day: 30 min.)Route 86 (Daytime Only: 60 min.)Route 88 (Peak Only: 30 min.)	<ul style="list-style-type: none">Routes 1A/B/C (Combined: 15 min., Individual: 60 min.)Route 2B (All Day: 60 min.)	<ul style="list-style-type: none">None

P. West End and Midlothian

Initial Screening

The West End and Midlothian corridor connects Laurel, Tuckahoe, Bon Air, and Midlothian via Parham Road, Chippenham Parkway, and Huguenot Road. In the Initial Screening, the corridor ranked low for all data-driven analysis metrics except for connectivity to EJ populations, when compared to other analysis corridors. Similar to the West End Route 6 – Staples Mill/ Route 33 (I) and Glenside to Midlothian (J) corridors, the portion of the corridor north of the James River showed higher concentrations of activity density, transit-supportive employment, high worker, and EJ populations than the segment south of the river. In addition, the southern portion of the corridor that runs along Chippenham Parkway and Huguenot Road overlaps with the Glenside to Midlothian (J) and reconfigured West End Route 6 (I) corridors. As a result of this overlap and the higher concentrations of activity density, transit-supportive employment, worker and EJ populations north of the James River, only the portion of the corridor between Regency Square and Reynolds Community College (at the intersection of E Parham Road and Route 1) was recommended for further evaluation in the Detailed Analysis. This partial corridor provides connections to the portions of the Route 1 to Ashland (H), West End Route 7 – Regency to Azalea (T), West End South (E), and West End Route 4 – Pemberton Nuckols (R) corridors recommended for further evaluation.

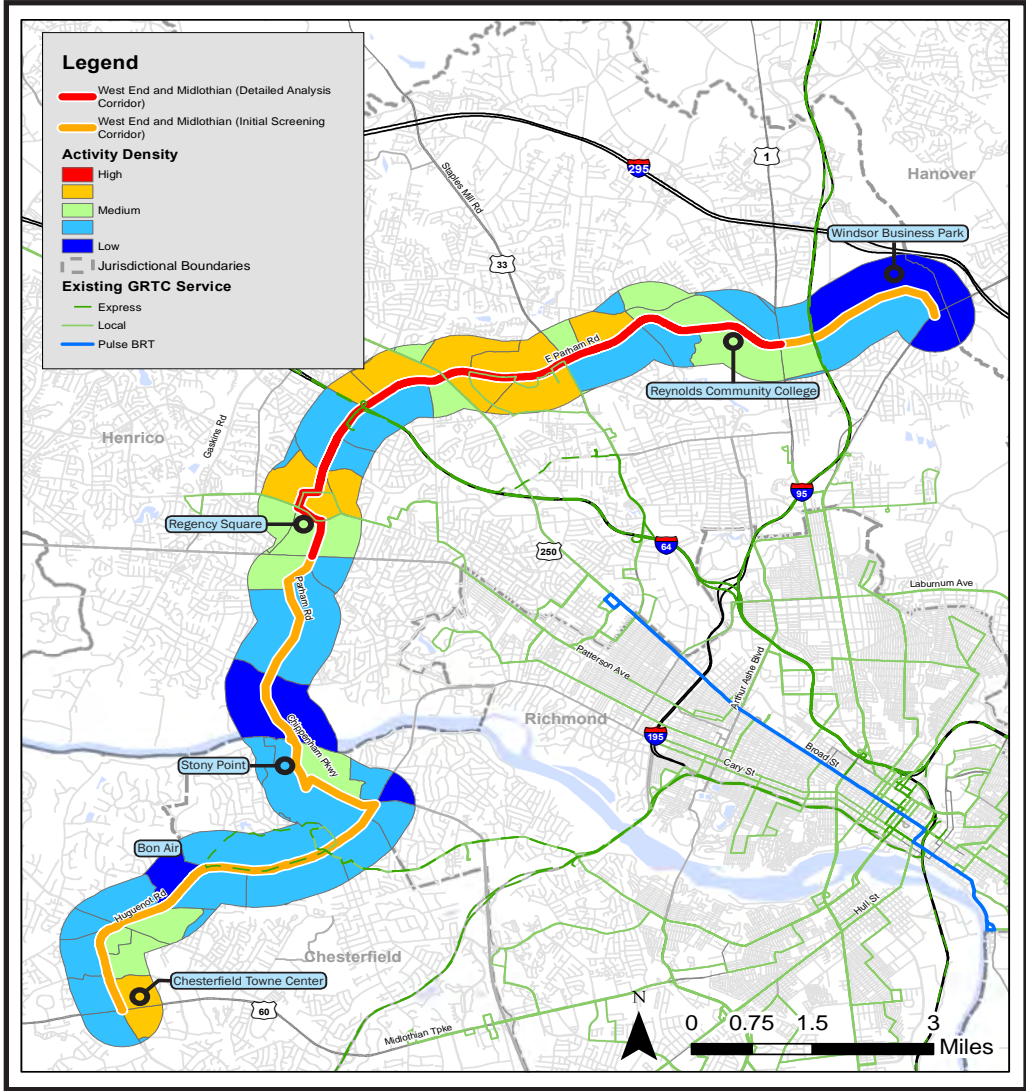
Detailed Analysis

The partial West End and Midlothian corridor evaluated in the Detailed Analysis extended from Regency Square to Reynolds Community College. Despite modifying the corridor to focus service on higher density areas, the Detailed Analysis showed the corridor had low ridership potential and related productivity metrics, as well as available pedestrian facilities, when compared to the other corridors. As a result, the partial West End and Midlothian corridor was not recommended for advancement to the Implementation Feasibility assessment.

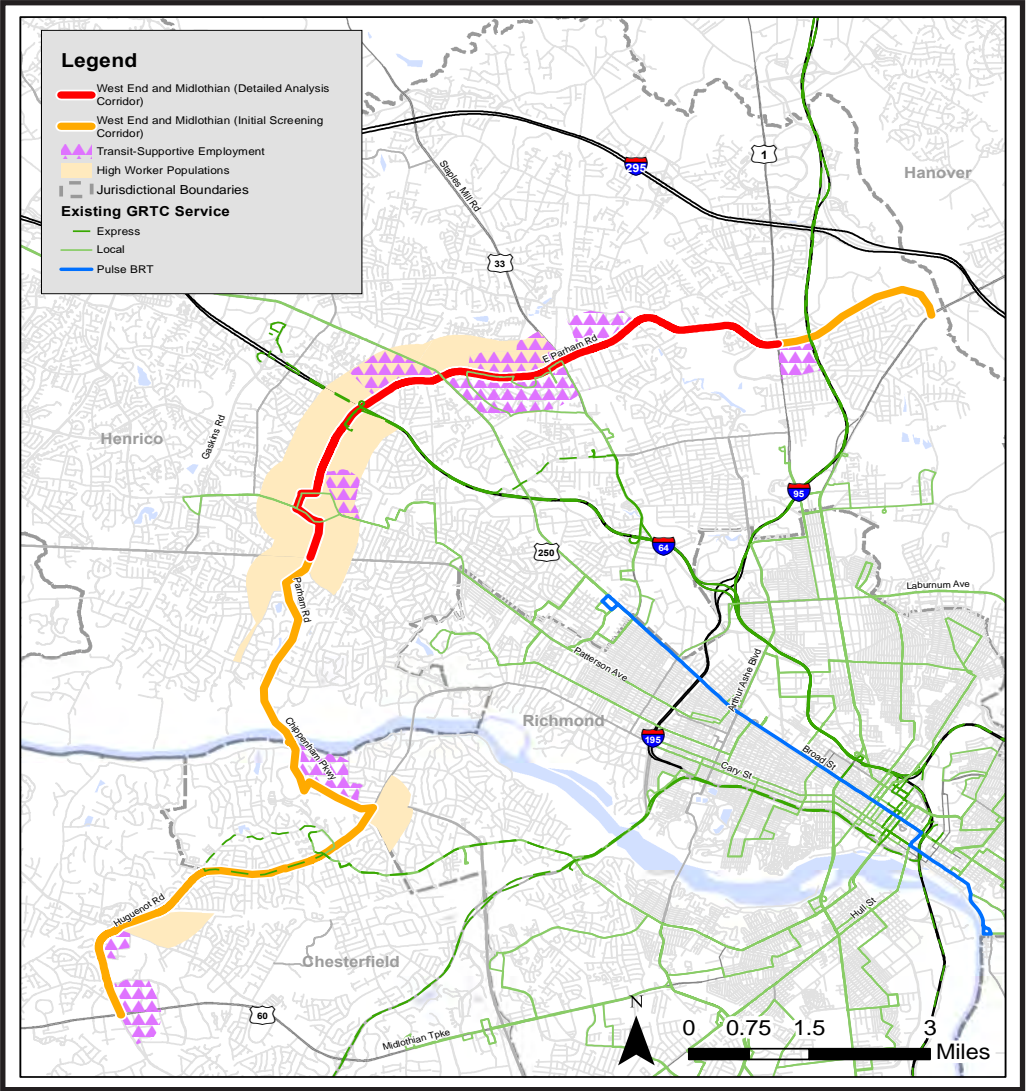
Potential Next Steps

In the near-term, the West End to Midlothian corridor should be studied for potential coverage-level service to strengthen network connections. The corridor may have value to residents as an orbital route that provides connections to other corridors with higher frequency. Some areas with a potential need for transit service along the corridor include the mixed-use development recently approved at Regency Square and community facilities along Parham Road. Development along the route, especially at Regency Square should continue to be monitored. As development occurs, high-frequency service may be warranted.

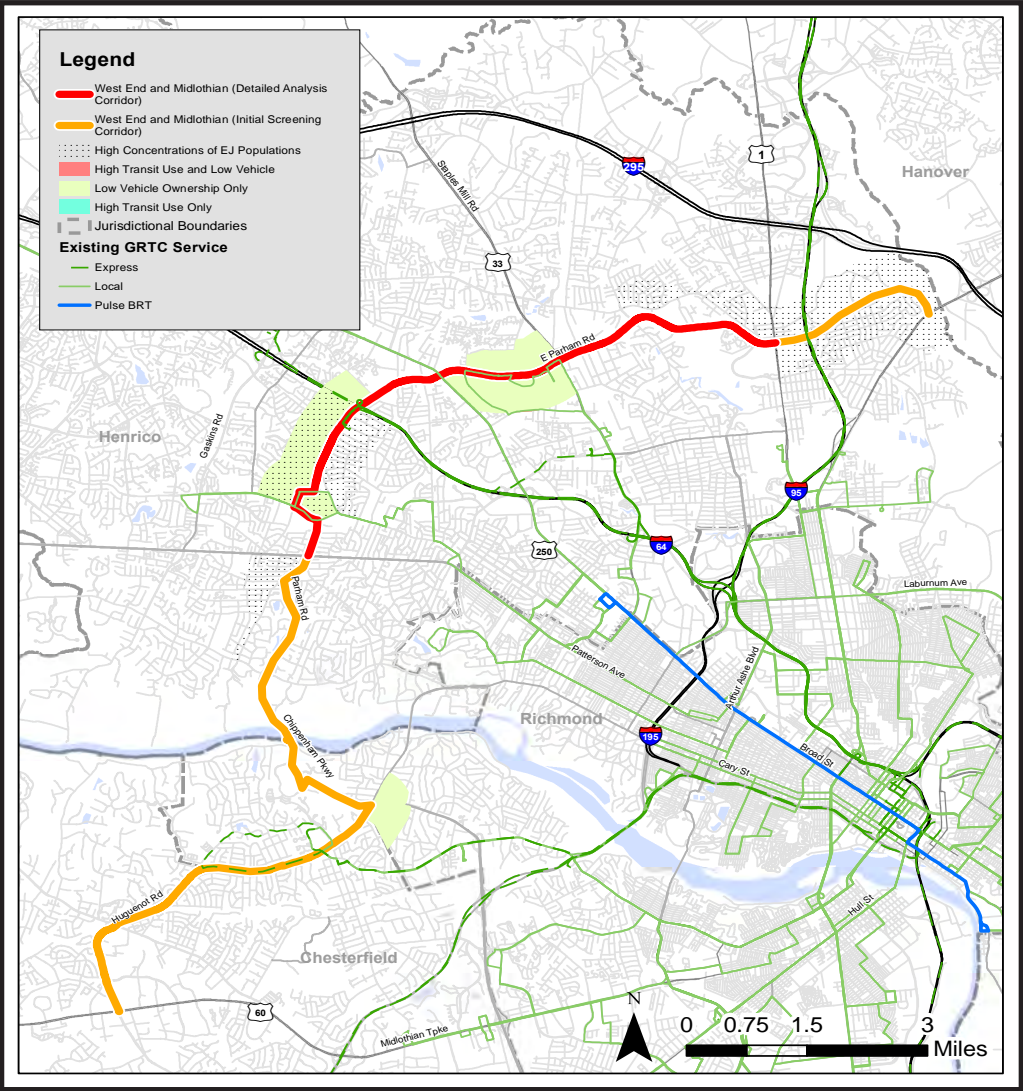
Activity Density



Employment and Workers



Environmental Justice and Transit Dependent



Corridor Description

- Connects Laurel, Tuckahoe, Bon Air, and Midlothian via Parham Road, Chippenham Parkway, and Huguenot Road
- Serves Henrico County, City of Richmond, and Chesterfield County

Major Destinations

- Windsor Business Park
- Reynolds Community College
- West Broad Street
- Regency Square
- Stony Point
- Bon Air
- Chesterfield Towne Center

Connecting GRTC Service

- Route 2A (All Day: 60 min.)
- Route 18 (Weekdays Only: 60 min.)
- Route 19 (All Day: 30 min.)
- Route 23X (PM Peak Only: 15 min.)
- Route 26X (Peak Only: 25 min.)

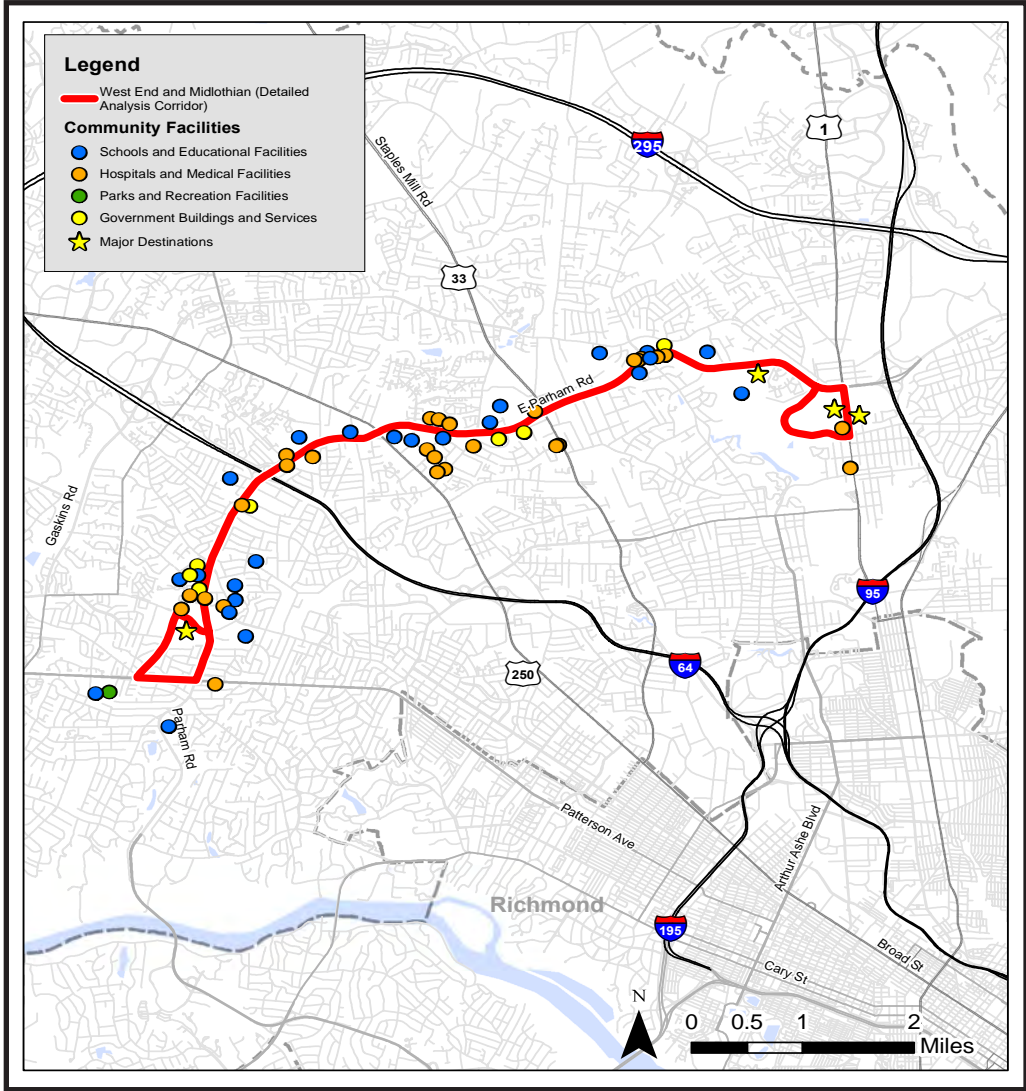
Overlapping GRTC Service

- Route 64X (Peak Only: 30 min.)
- Route 79 (Peak: 30 min., Off-Peak: 60 min.)

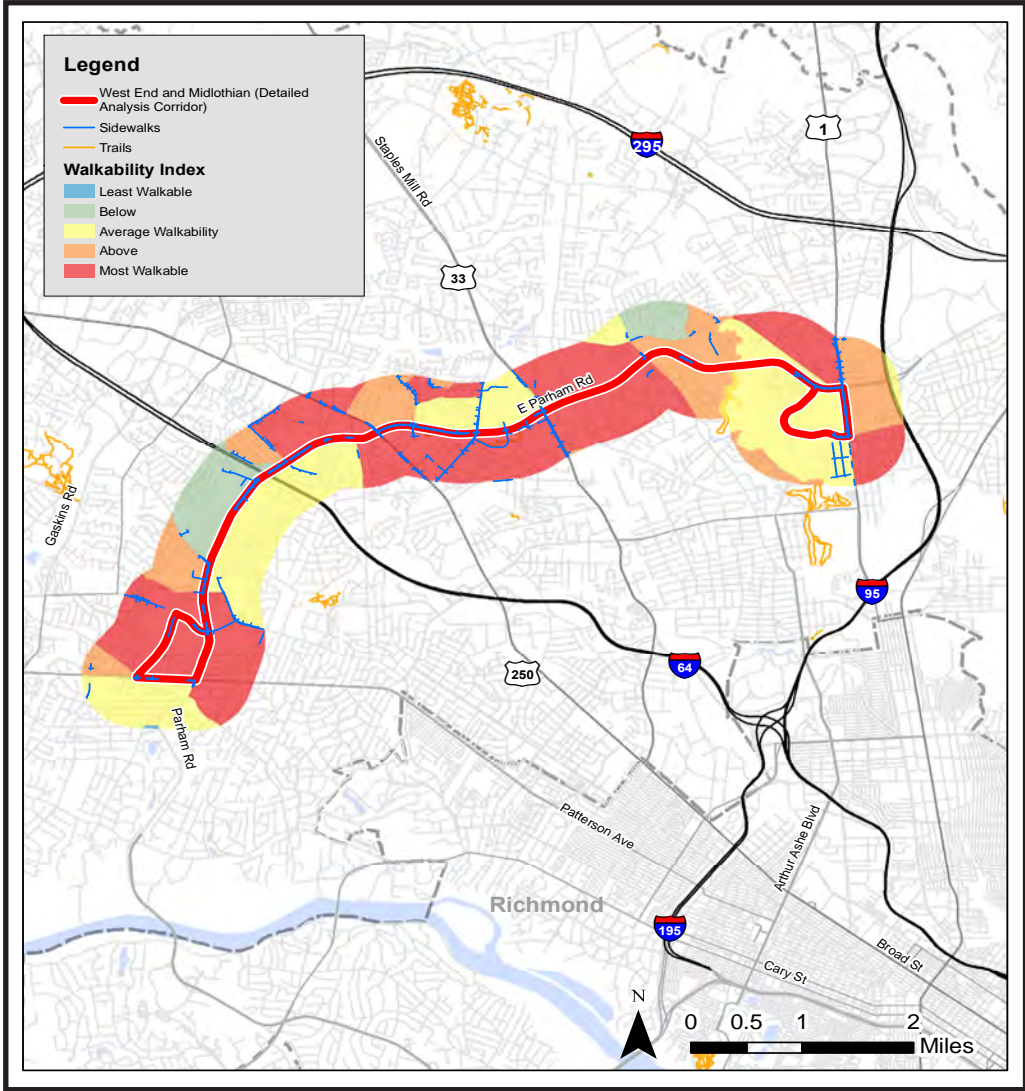
GRTC Feedback

- Interest in providing orbital service on Parham Road to link Staples Mill, West Broad Street, and Regency Square.

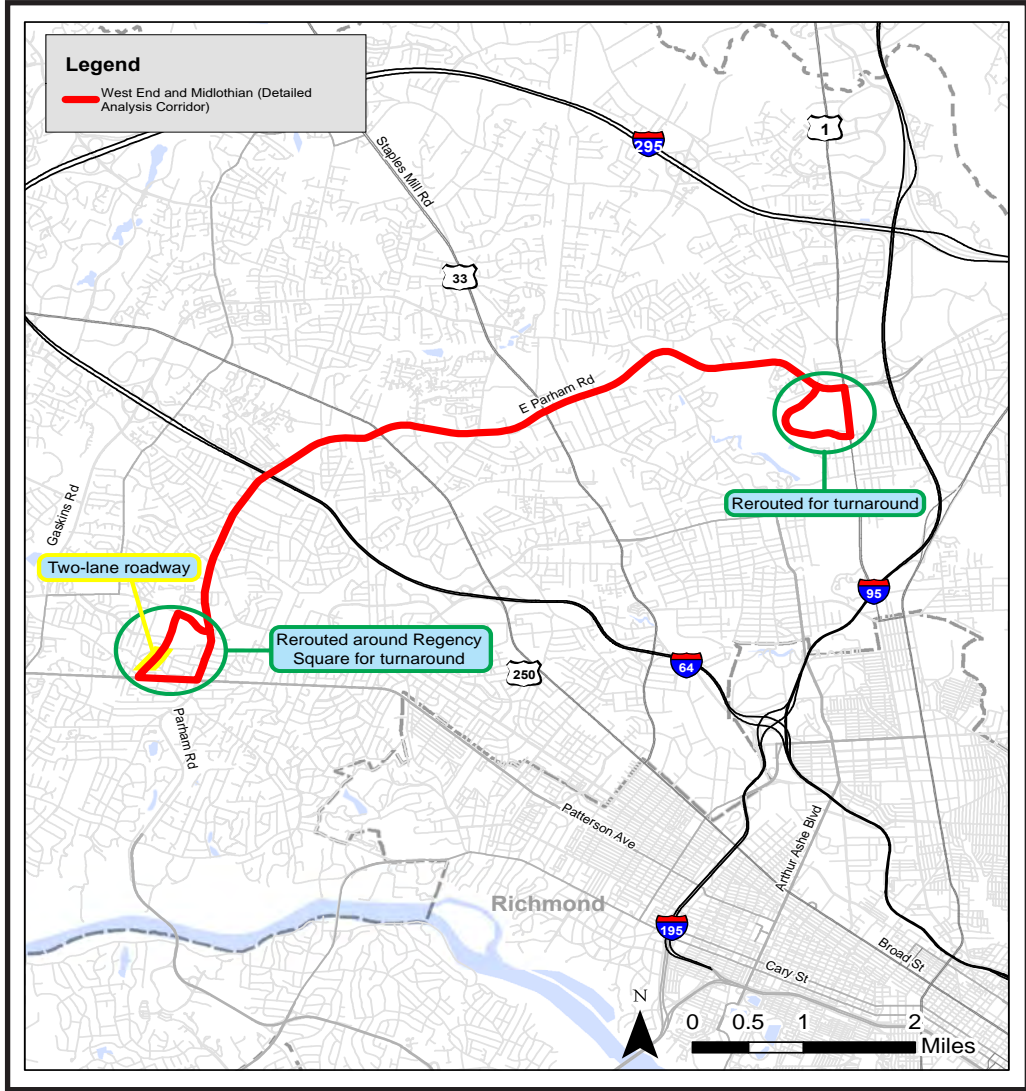
Community Facilities



Pedestrian Network and Connectivity



Roadway Suitability



Community Facilities

- 23 schools and educational facilities
- 27 hospitals and medical facilities
- 1 park and recreation facility
- 7 government services office buildings
- 9 grocery stores

Pedestrian Network Coverage

- Linear feet of roadway - 825,331 ft.
- Roadway with access to sidewalks - 158,796 ft.
- Pedestrian facility coverage - 19%

Projected Ridership Potential

- Total riders: 700 - 1,200
- Boardings per mile: 63 - 108
- Boardings per trip: 9
- Boardings per hour: 14

Potential Future Development

- West Chase Townhomes: Nearly 200-townhome complex off Parham Road in Henrico
- Publix at Huguenot Village: New grocery store on Huguenot Road
- Brook Villa Apartments: 84 apartments on Brook Road south of Parham Road
- Glens at Scott Place: 115 townhomes at the intersection of E. Parham and Scott Road
- ReTreat at One: 348 condos and townhomes at the intersection of Brook Road and Georgia Avenue

Q. West End Route 3 – Lauderdale

Initial Screening

The West End Route 3 – Lauderdale corridor connects Short Pump and Tuckahoe via Lauderdale Drive and Patterson Avenue. In the Initial Screening, this corridor demonstrated moderate activity density and high worker populations but limited opportunities to provide connections to transit-supportive employment, EJ populations, and transit-dependent populations, when compared to other analysis corridors. The two termini of the route, Short Pump and the Village Shopping Center, were also served by the Broad Street – Short Pump (A) and West End South (E) corridors, respectively. As a result, the West End Route 3 – Lauderdale corridor was not recommended for further evaluation.

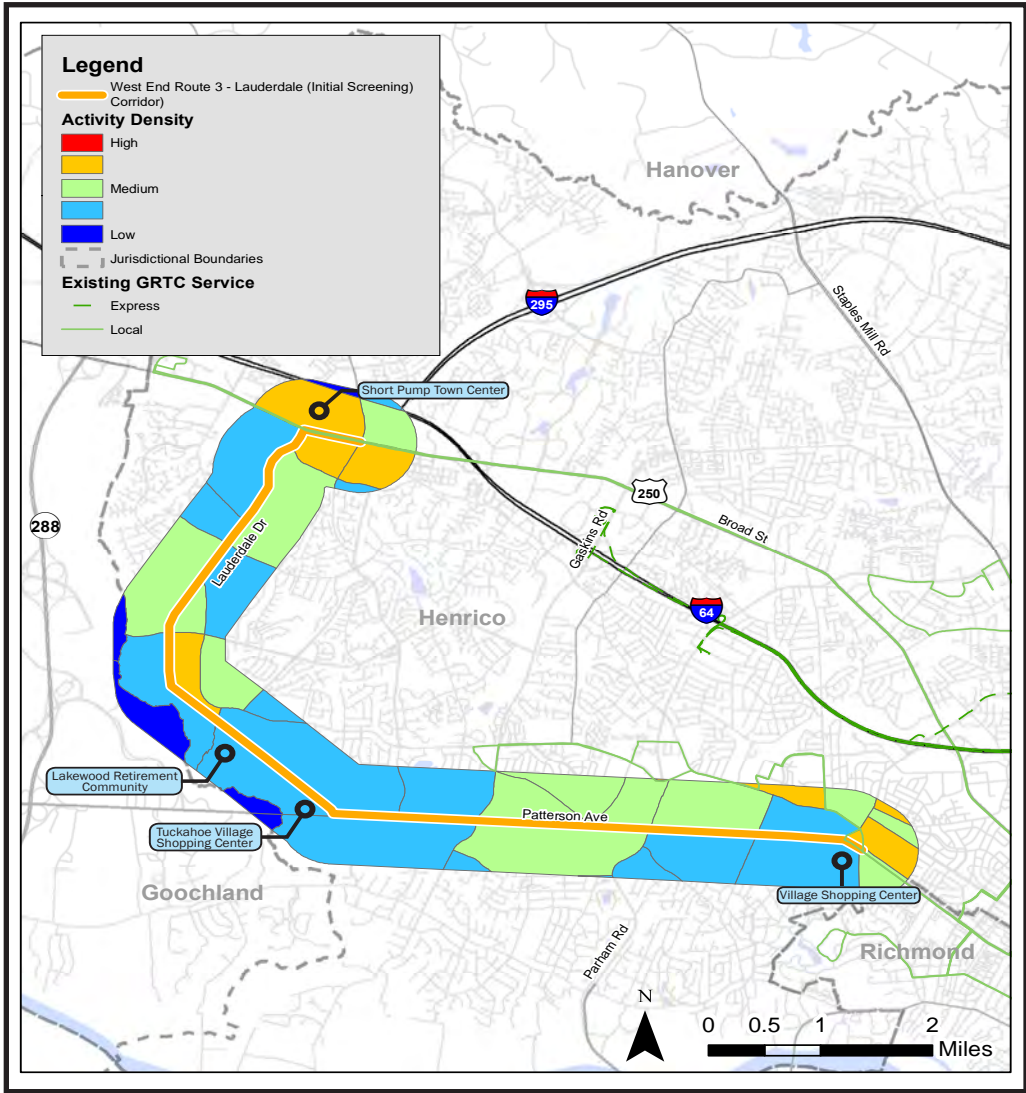
Detailed Analysis

The West End Route 3 - Lauderdale corridor was not recommended for Detailed Analysis.

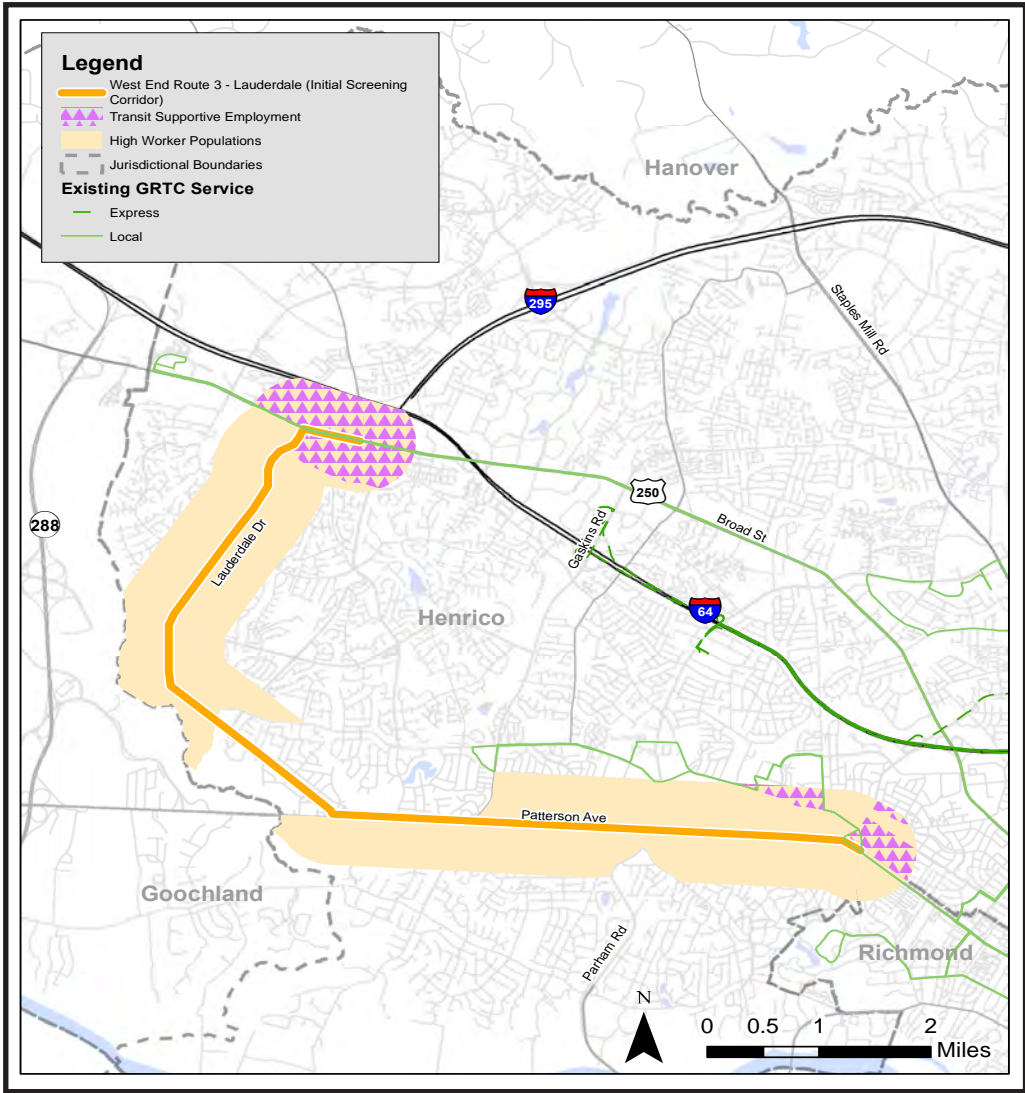
Potential Next Steps

While the West End Route 3 – Lauderdale corridor was not recommended for near-term high-frequency service, the corridor should be studied for potential coverage-level service. One consideration for the quieter residential areas with populations of low-income and/or elderly residents along this corridor may be a micro-transit type of service that could provide connections to more frequently served corridors. Higher frequency service would require growth of population and employment along the corridor.

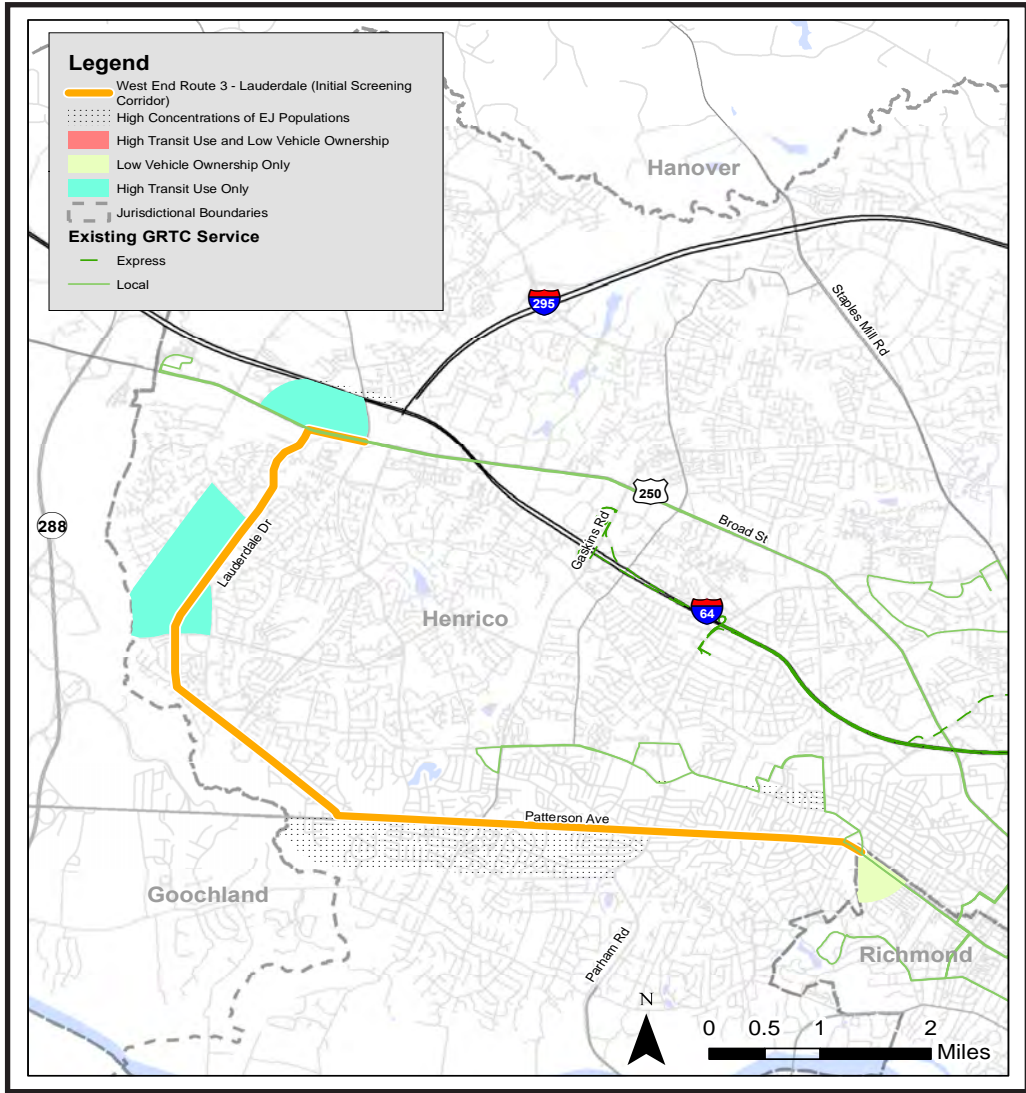
Activity Density



Employment and Workers



Environmental Justice and Transit Dependent



Corridor Description	Major Destinations	Existing Connecting GRTC Service	Existing Overlapping GRTC Service	Potential Future Development
<ul style="list-style-type: none">Connects Short Pump and Tuckahoe via Lauderdale Drive and Patterson AvenueServes Henrico County	<ul style="list-style-type: none">Short Pump Town CenterLakewood Retirement CommunityTuckahoe Village Shopping CenterVillage Shopping Center	<ul style="list-style-type: none">Route 19 (All Day: 30 min.)Route 79 (Peak: 30 min., Off-Peak: 60 min.)	<ul style="list-style-type: none">None	<ul style="list-style-type: none">None

R. West End Route 4 – Pemberton to Nuckols

Initial Screening

The West End Route 4 – Pemberton to Nuckols corridor connects Wyndham to Regency Square via Pemberton and Nuckols Roads in Henrico County. In the Initial Screening, the corridor demonstrated high connectivity to working and EJ populations and moderate activity density and transit-supportive employment, when compared to other analysis corridors. The highest concentrations of activity density on the corridor were between I-295 and Patterson Avenue, a portion of the corridor with notable employment locations including Innsbrook and Regency Square. As a result, only the portion of the corridor between Innsbrook at Cox Road and Regency Square was recommended for further evaluation in the Detailed Analysis.

Detailed Analysis

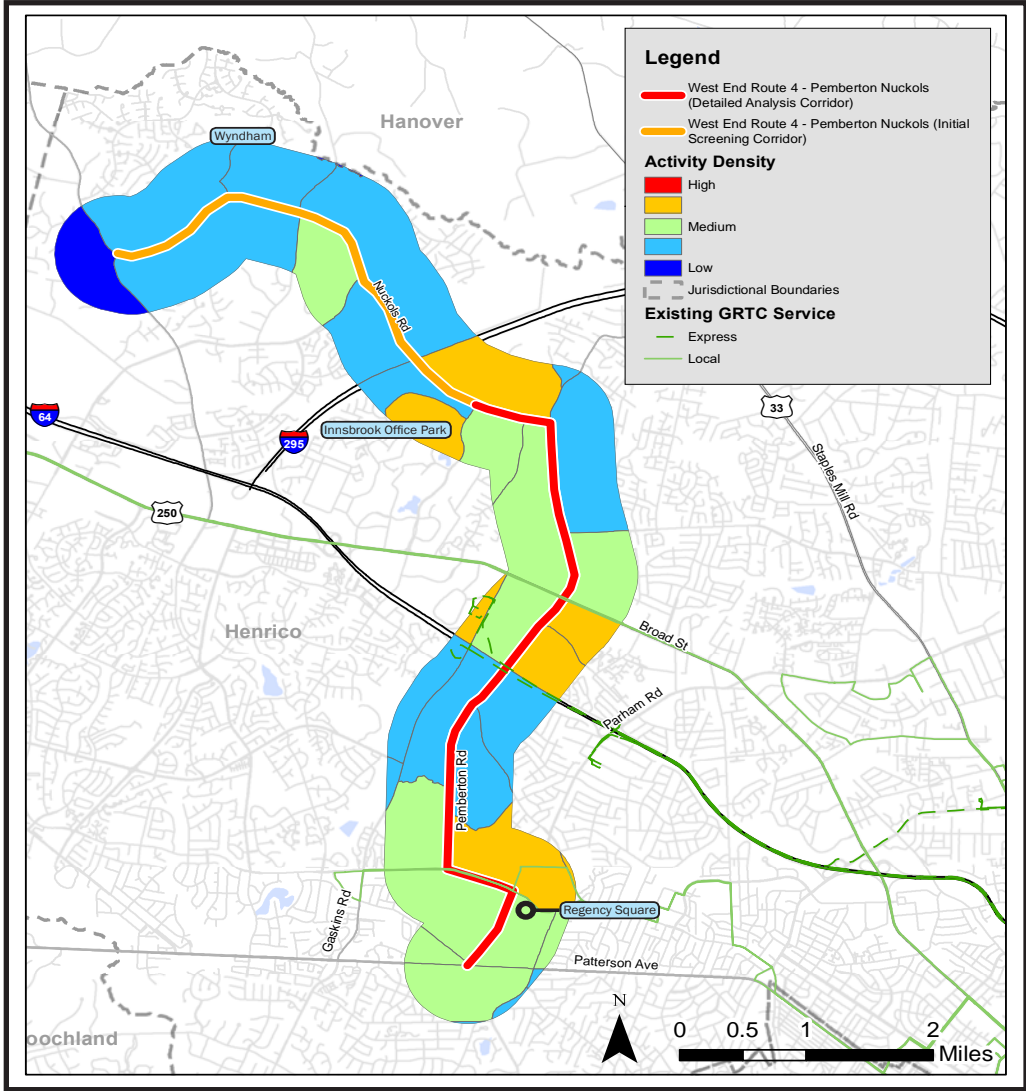
The partial West End Route 4 – Pemberton to Nuckols corridor evaluated in the Detailed Analysis extended from Cox Road to Regency Square. Despite modifying the corridor to focus service on higher density areas, the Detailed Analysis showed the corridor had low ridership potential and related productivity metrics, connections to community facilities, and availability of pedestrian facilities, when compared to the other corridors. As a result, the West End Route 4 – Pemberton to Nuckols corridor was not recommended for advancement to the Implementation Feasibility assessment.

Potential Next Steps

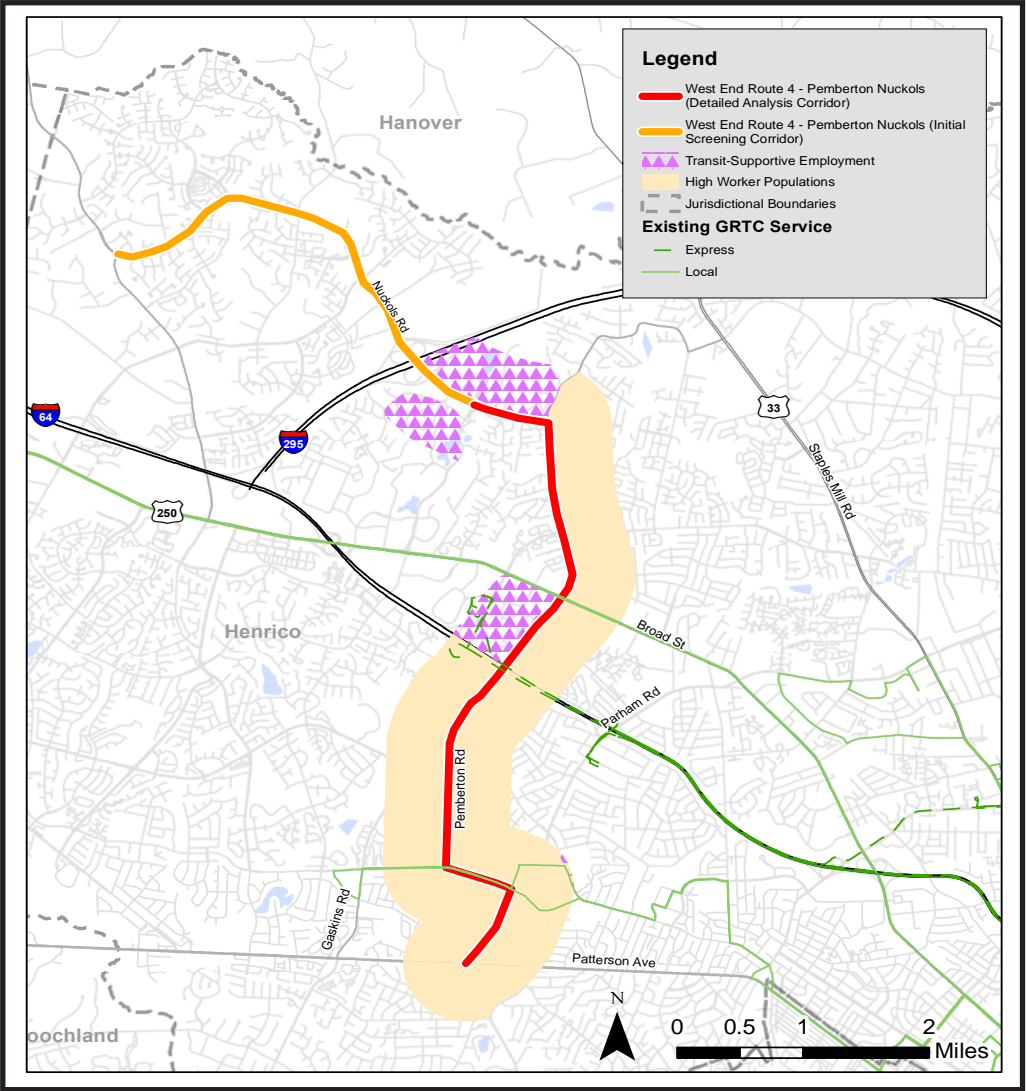
In the near-term, the West End Route 4 – Pemberton to Nuckols corridor should be studied for potential coverage-level service to strengthen network connections. One area for consideration of transit service is Innsbrook, which could benefit from transit connections to serve commercial and office uses near Broad Street and near Nuckols Road. Given the existing lack of pedestrian facilities in this area, investment in sidewalks in the corridor should also be considered as part of any transit service improvement. There is some interest in transit service in the corridor, particularly to Innsbrook, but the current densities and available and planned pedestrian facilities would not be supportive of a high-frequency service.

West End Route 4 - Pemberton Nuckols Corridor

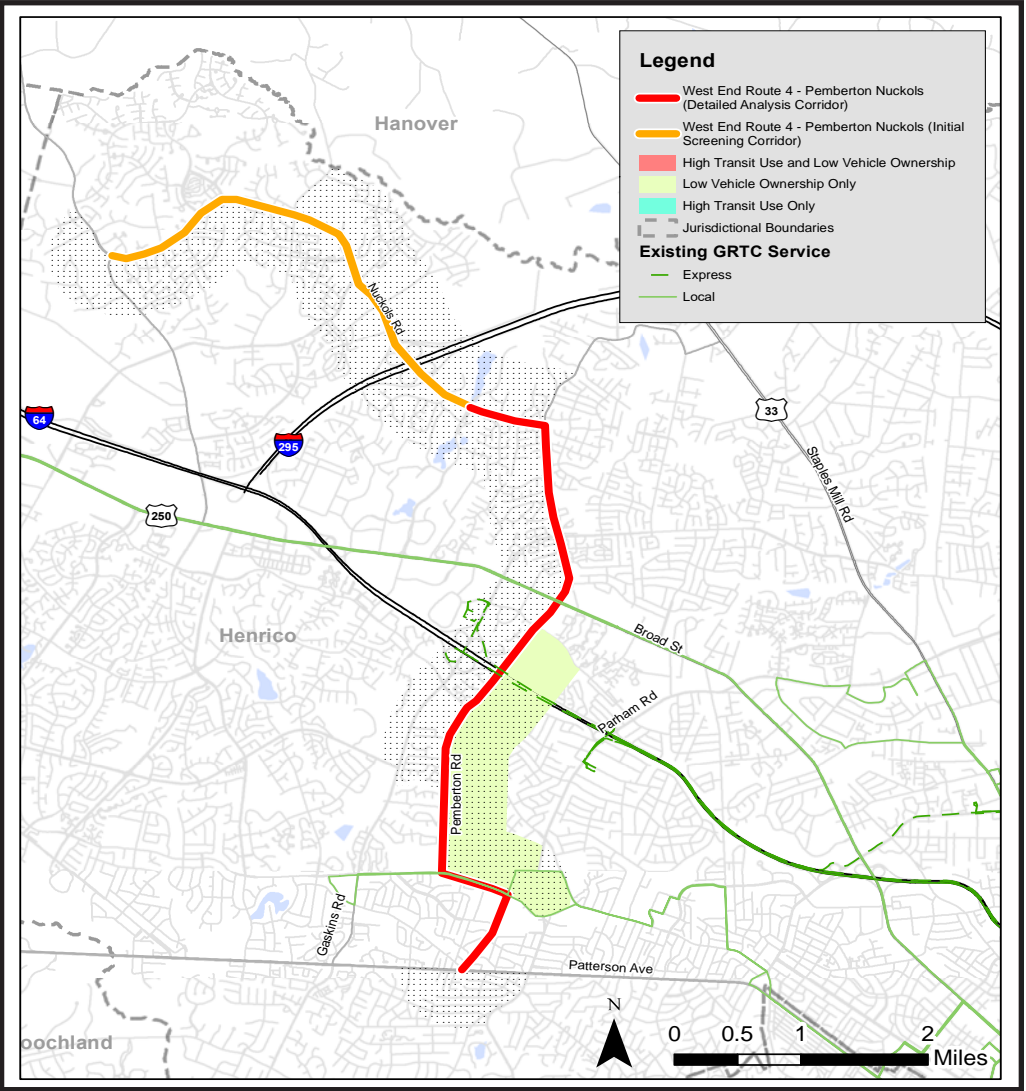
Activity Density



Employment and Workers



Environmental Justice and Transit Dependent



Corridor Description

- Connects Wyndham to Regency Square via Pemberton Road and Nuckols Road
- Serves Henrico County

Major Destinations

- Wyndham
- Innsbrook Office Park
- West Broad Street
- Regency Square

Existing Connecting GRTC Service

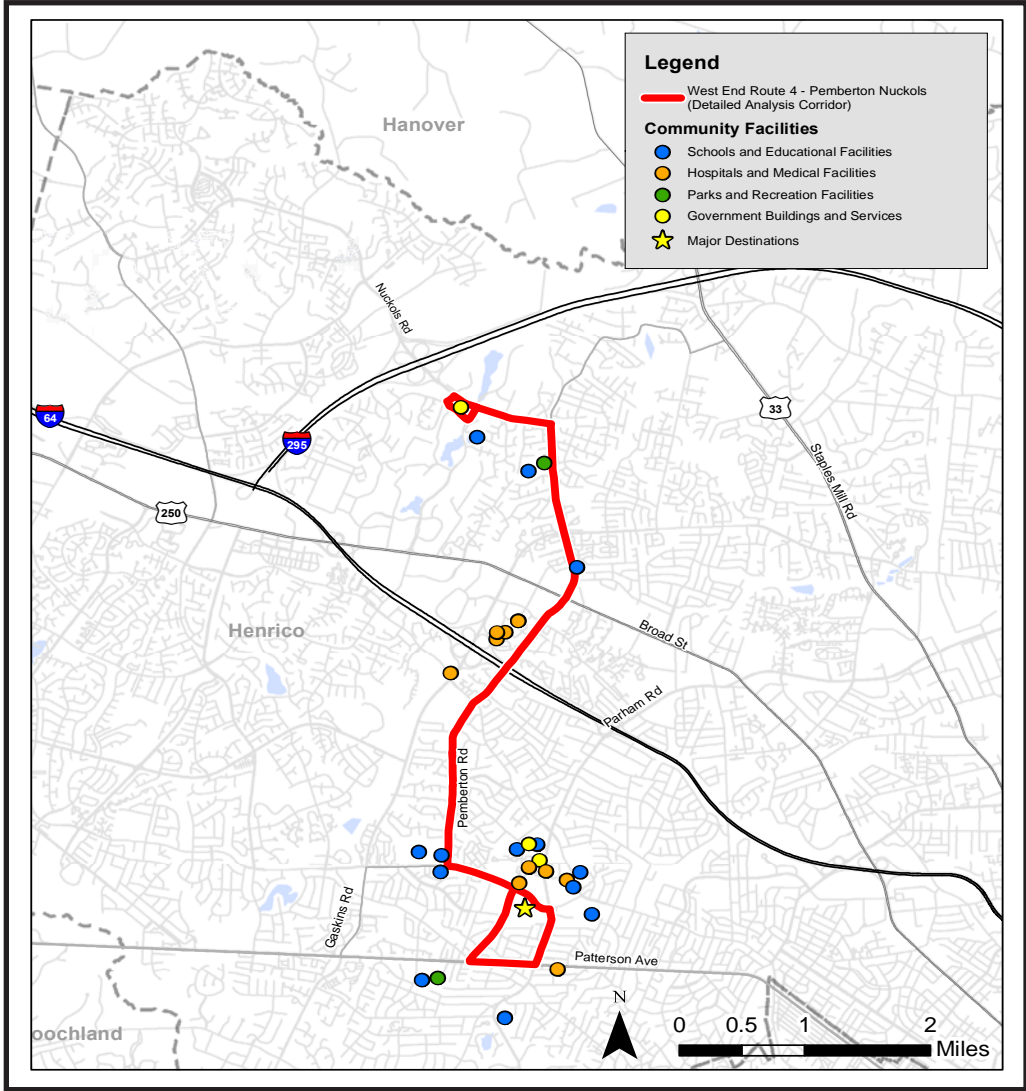
- Route 19 (All Day: 30 min.)
- Route 79 (Peak: 30 min., Off-Peak: 60 min.)

Existing Overlapping GRTC Service

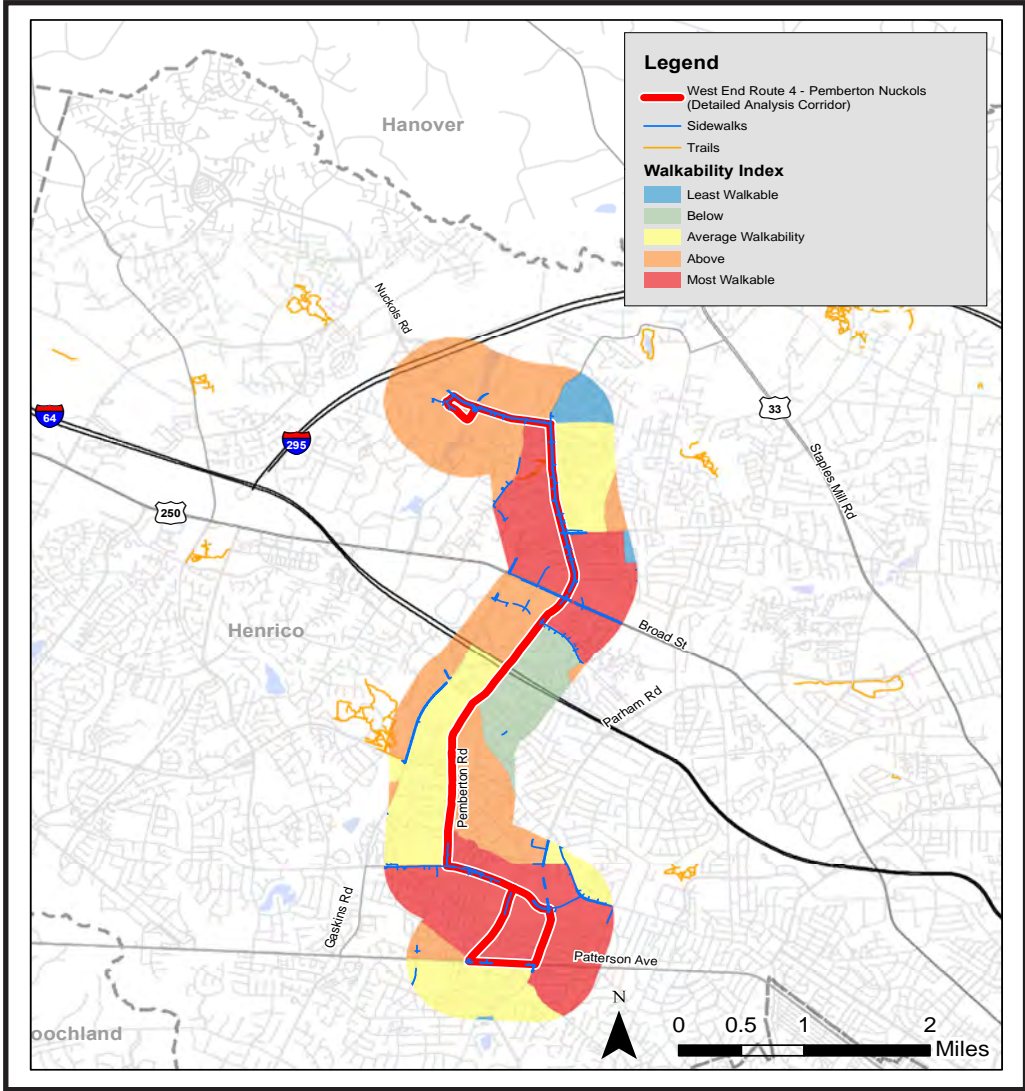
- None

West End Route 4 - Pemberton Nuckols Corridor

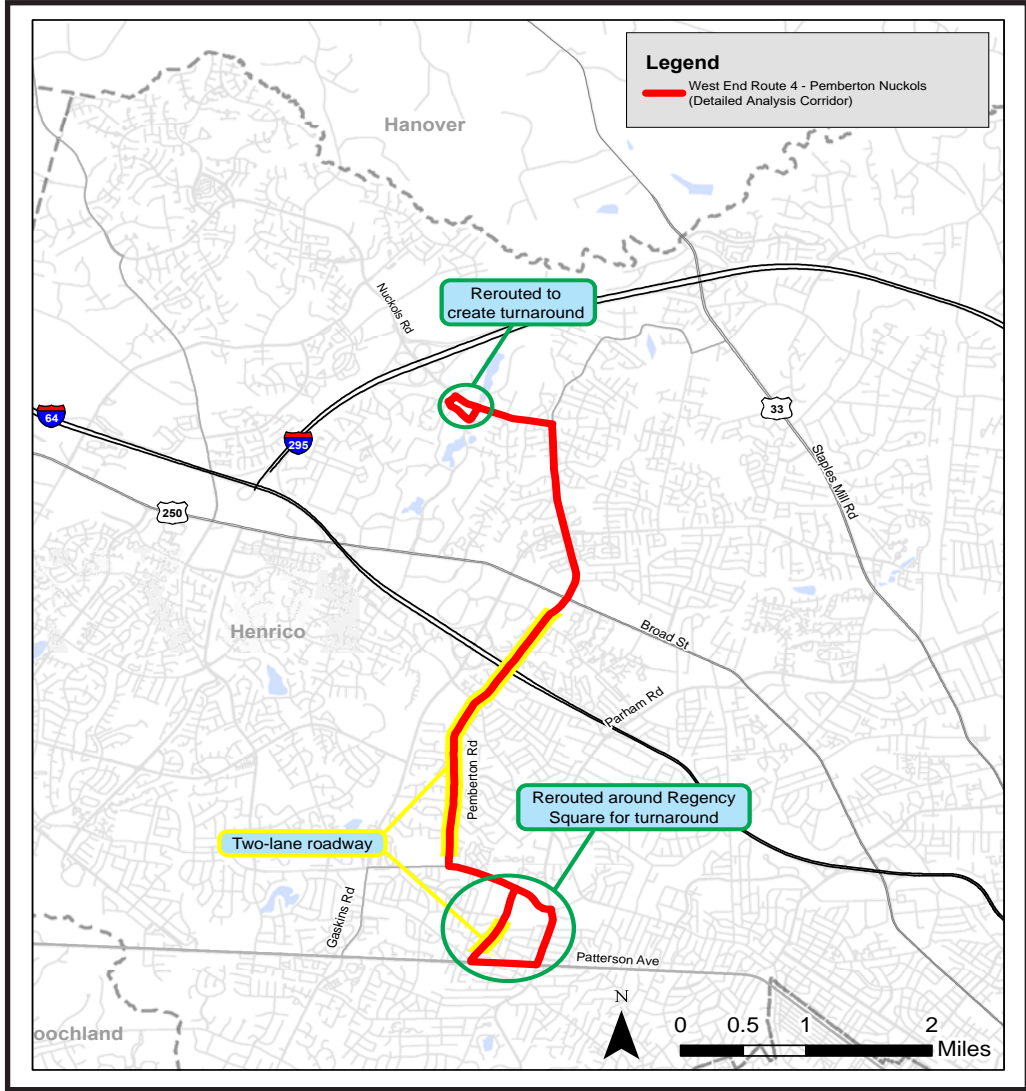
Community Facilities



Pedestrian Network and Connectivity



Roadway Suitability



Community Facilities

- 13 schools and educational facilities
- 11 hospitals and medical facilities
- 2 parks and recreation facilities
- 3 government services and office buildings
- 7 grocery stores

Pedestrian Network Coverage

- Linear feet of roadway - 673,356 ft.
- Roadway with access to sidewalks - 115,904 ft.
- Pedestrian facility coverage - 17%

Projected Ridership Potential

- Total riders: 500 - 900
- Boardings per mile: 61 - 110
- Boardings per trip: 7
- Boardings per hour: 13

Potential Future Development

- Regency Square: Redevelopment of abandoned big-box retail into 1,250 apartments

S. West End Route 5 – Innsbrook

Initial Screening

The West End Route 5 – Innsbrook corridor connects Innsbrook with Regency Square, two high employment locations in Henrico County. In the Initial Screening, this corridor demonstrated moderate activity density and high transit-supportive employment, worker populations, and EJ populations, when compared to other analysis corridors. However, the route configuration proposed for this corridor in the Greater RVA Transit Vision Plan requires a direct connection between Cox Road and Church Road, which does not currently exist. Moreover, the high employment around Regency Square and Innsbrook was also served by the recommended West End Route 4 – Pemberton Nuckols. As a result, the West End Route 5 – Innsbrook corridor was not recommended for further evaluation.

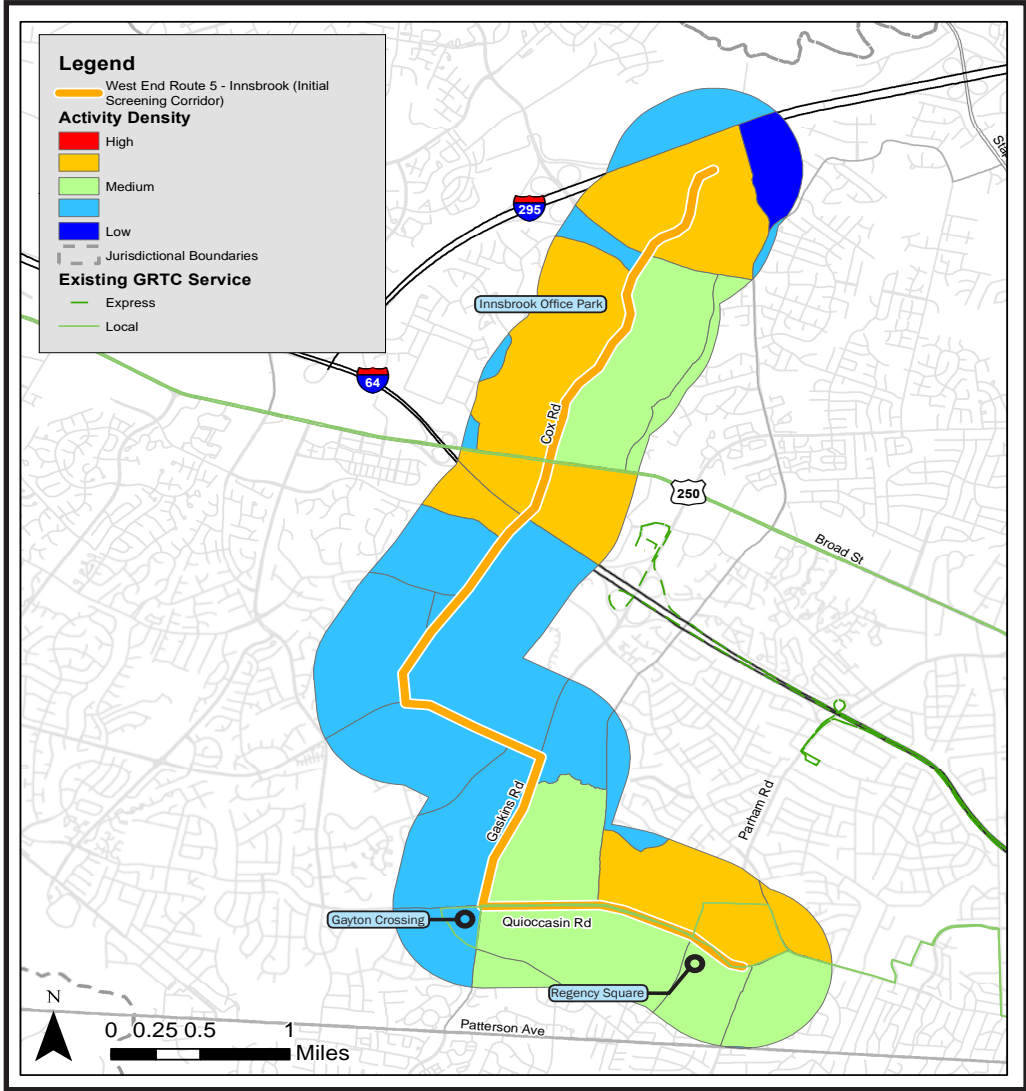
Detailed Analysis

The West End Route 5 – Innsbrook corridor was not recommended for Detailed Analysis.

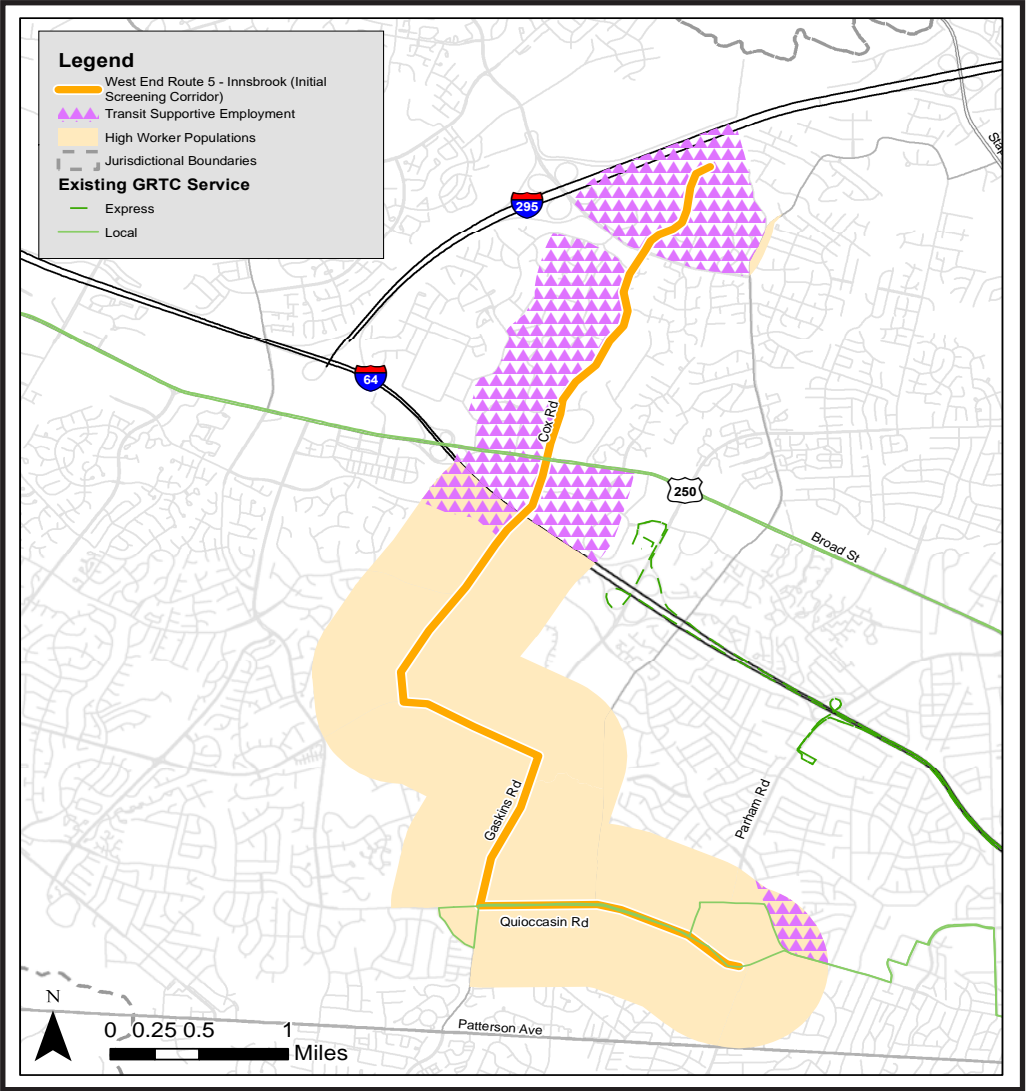
Potential Next Steps

While the West End Route 5 – Innsbrook corridor was not recommended for near-term high-frequency transit service, portions of the corridor, particularly around Innsbrook, could benefit from connections to transit and should be studied for potential near-term coverage service. However, given the lack of pedestrian facilities, particularly near Broad Street where GRTC Route 19 currently provides service, investment in pedestrian infrastructure should be considered with any transit service that is implemented in the corridor. In addition, should the roadway connection between Cox Road and Church Road be constructed, further evaluation of this corridor for high-frequency service should be considered.

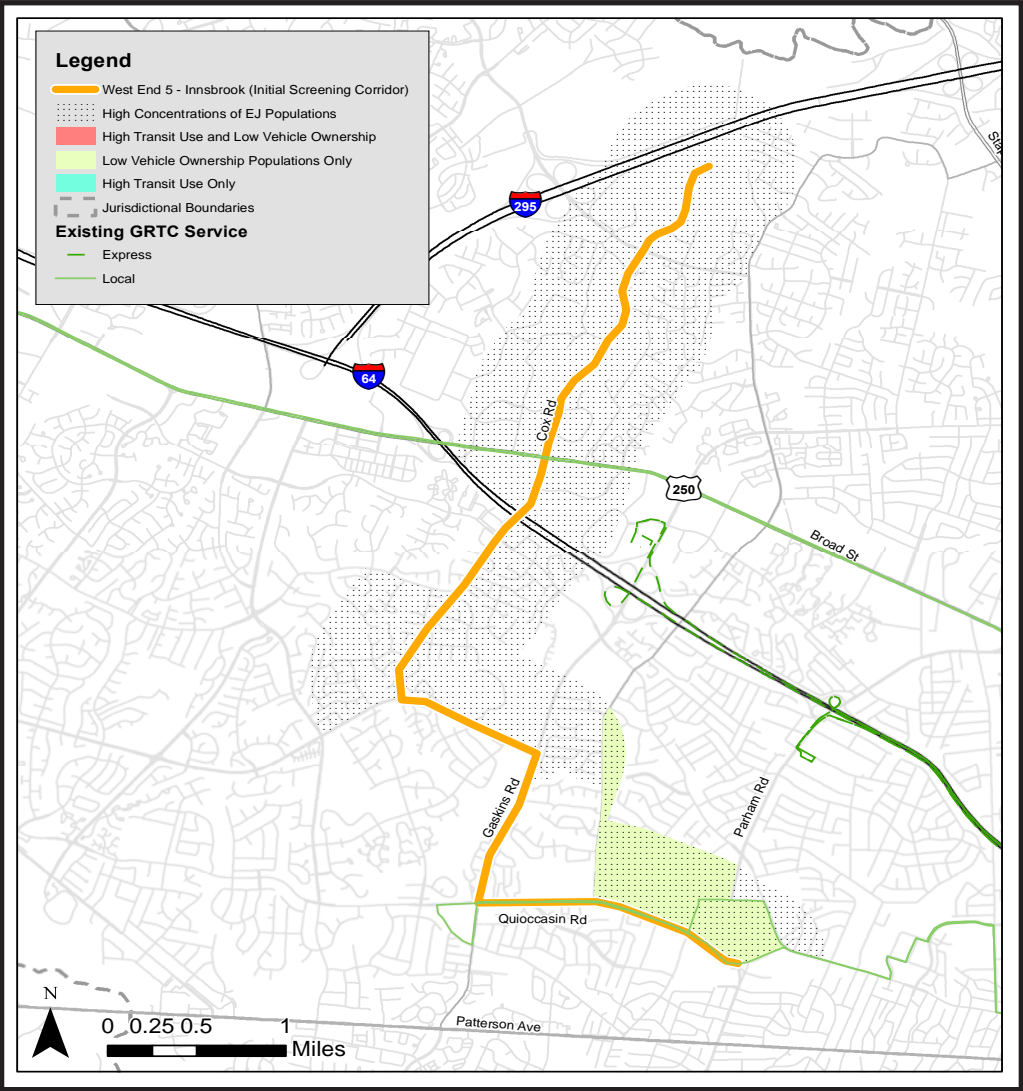
Activity Density



Employment and Workers



Environmental Justice and Transit Dependent



Corridor Description	Major Destinations	Existing Connecting GRTC Service	Existing Overlapping GRTC Service	Potential Future Development
<ul style="list-style-type: none">Connects Innsbrook to Regency Square via Cox Road, Gaskins Road, and Quioccasin RoadServes Henrico County	<ul style="list-style-type: none">Innsbrook Office ParkWest Broad StreetGayton CrossingRegency Square	<ul style="list-style-type: none">Route 19 (All Day: 30 min.)Route 79 (Peak: 30 min., Off-Peak: 60 min.)	<ul style="list-style-type: none">None	<ul style="list-style-type: none">Innslake Place: 350-unit apartment complex at Innslake Drive and Dominion Boulevard

T. West End Route 7 – Regency to Azalea

Initial Screening

The West End Route 7 – Regency to Azalea corridor connects Regency Square and Azalea Avenue, running east-west through Henrico County. This corridor also connects with several north-south Greater RVA Transit Vision Plan corridors, including the Broad Street – Short Pump (A), Glenside to Midlothian (J), Route 1 to Ashland (H), and West End Route 6 – Staples Mill/Route 33 (I). The West End Route 7 – Regency to Azalea corridor has the potential to provide a useful crosstown connection. In the Initial Screening, the corridor showed high connectivity to worker population and moderate activity density, transit-supportive employment, EJ populations, and transit-dependent populations, when compared to other analysis corridors. The full West End Route 7 – Regency to Azalea corridor proposed in the Greater RVA Transit Vision Plan was recommended for further study in the Detailed Analysis.

Detailed Analysis

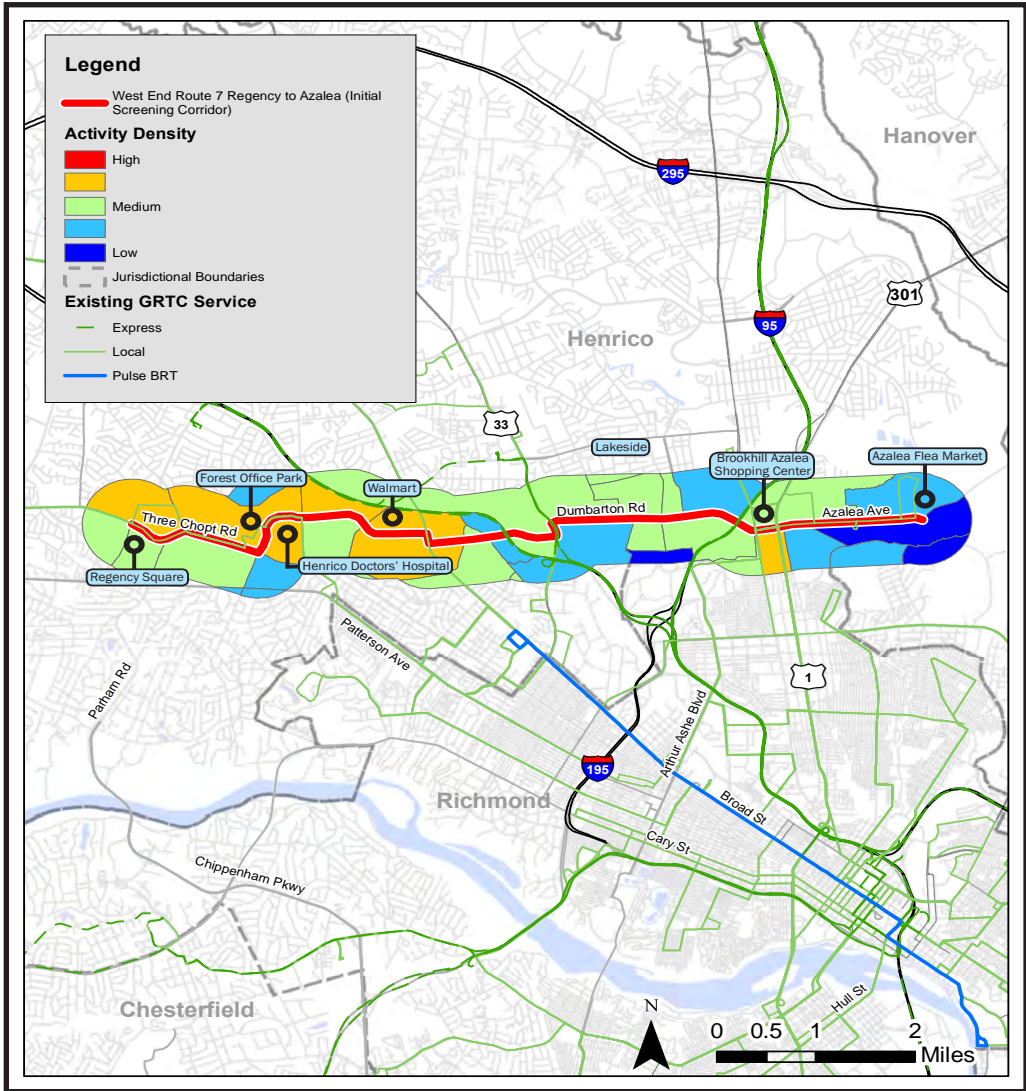
In the Detailed Analysis, the West End Route 7 – Regency to Azalea corridor showed low ridership potential and related productivity metrics as well as available pedestrian facilities, when compared to the other corridors. The corridor did have moderate connections to community facilities and walkability; however, this corridor was not a priority for Henrico County as a near-term high-frequency corridor. As a result, the West End Route 7 – Regency to Azalea corridor was not recommended for advancement to the Implementation Feasibility assessment.

Potential Next Steps

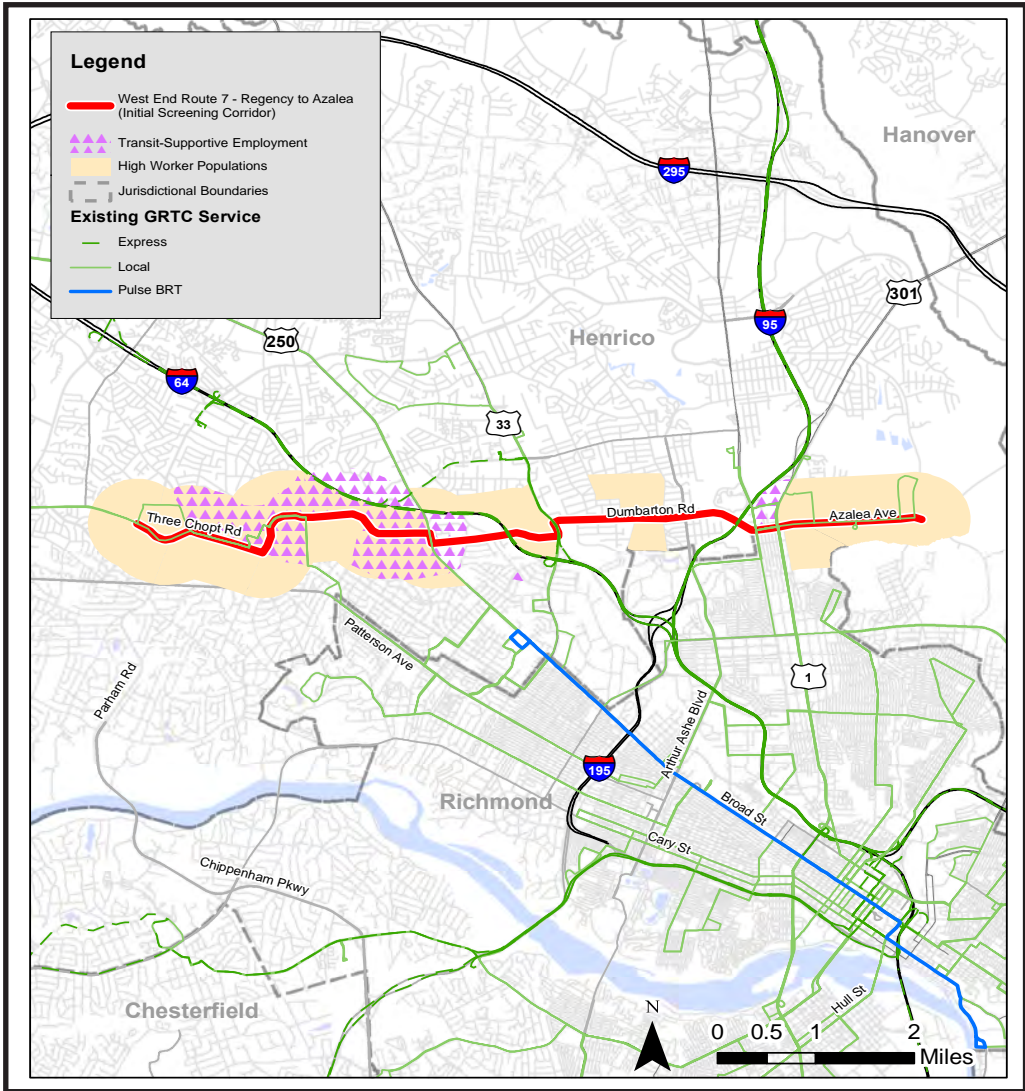
In the near term, the West End Route 7 – Regency to Azalea corridor should be studied for potential coverage-level service to strengthen network connections. The corridor may have value to residents as an orbital route that provides connections to community facilities and to other corridors with higher frequency. Growth of population and employment along the corridor could make the corridor a viable candidate for high-frequency service in the future.

West End Route 7 - Regency to Azalea Corridor

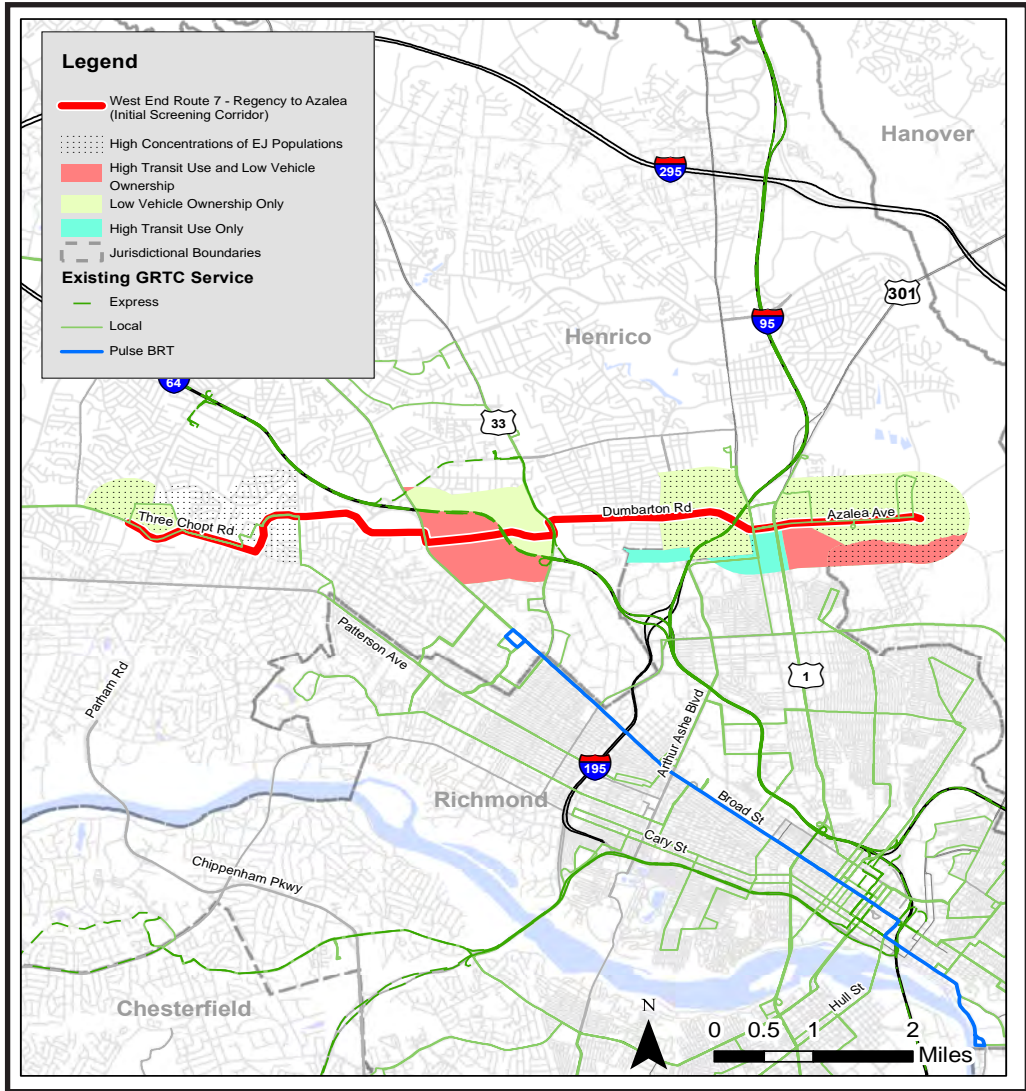
Activity Density



Employment and Workers



Environmental Justice and Transit Dependent



Corridor Description

- Connects Regency Square to areas east of Lakeside via Forest Avenue, Dumbarton Road, and Azalea Avenue
- Serves Henrico County

Major Destinations

- Regency Square
- Forest Office Park
- Henrico Doctors' Hospital
- Walmart - Glenside
- West Broad Street
- Lakeside
- Brookhill Azalea Shopping Center
- Azalea Flea Market

Existing Connecting GRTC Service

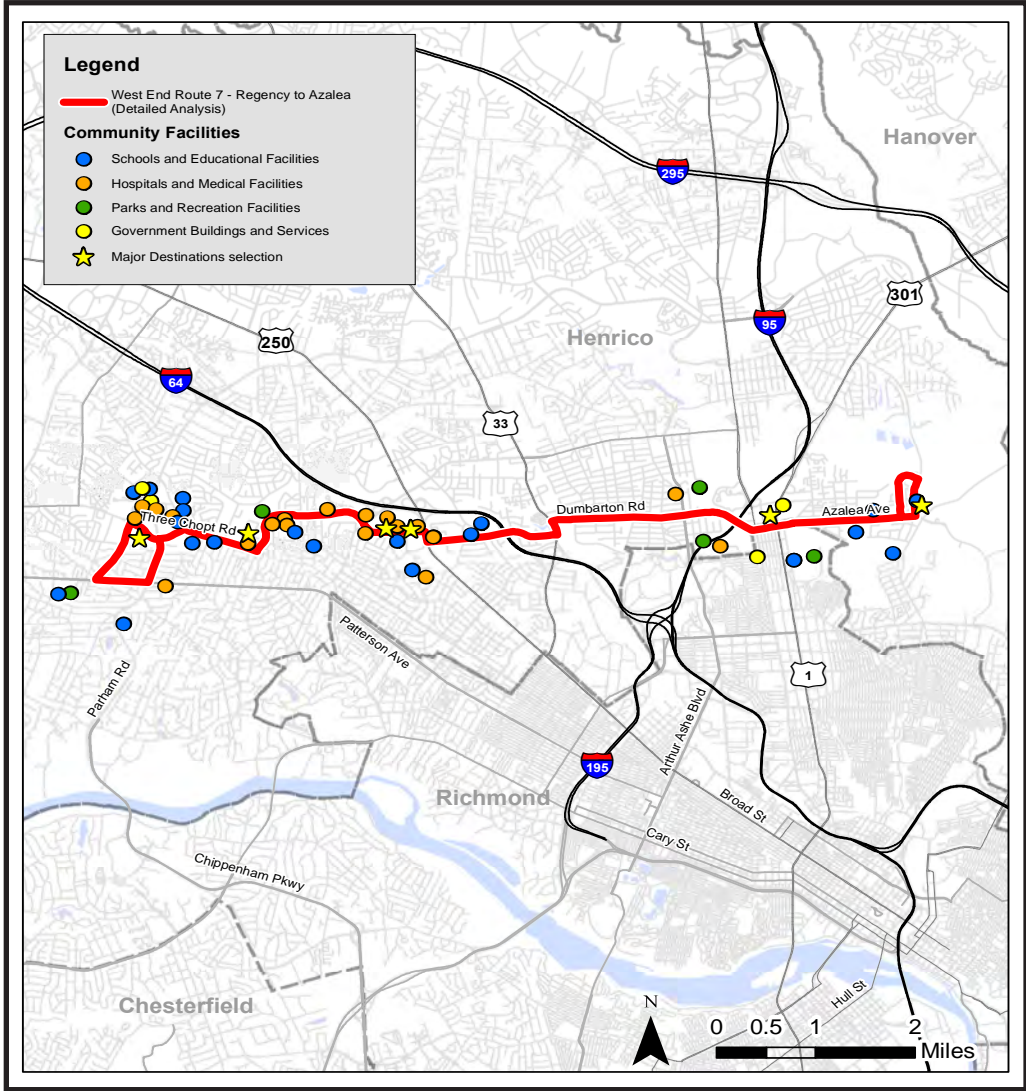
- Routes 1A/B/C (Combined: 15 min., Individual: 60 min.)
- Route 14 (All Day: 30 min.)
- Route 18 (Weekdays Only: 60 min.)
- Route 19 (All Day: 30 min.)
- Route 93 (Peak Only: 40 min.)
- Pulse BRT (Peak: 10 min., Off-Peak: 15 min., Night: 30 min.)

Existing Overlapping GRTC Service

- Route 79 (Peak: 30 min., Off-Peak: 60 min.)

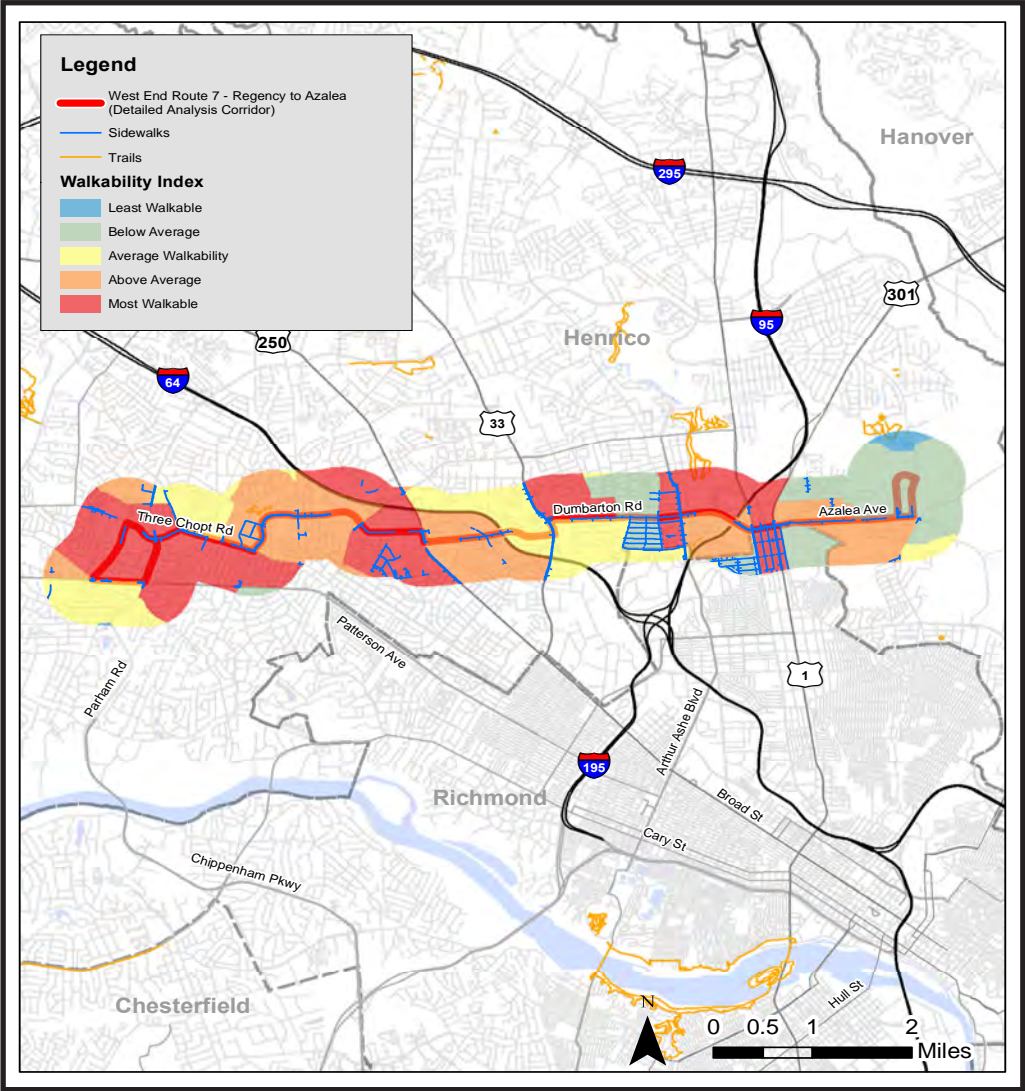
West End Route 7 - Regency to Azalea Corridor

Community Facilities



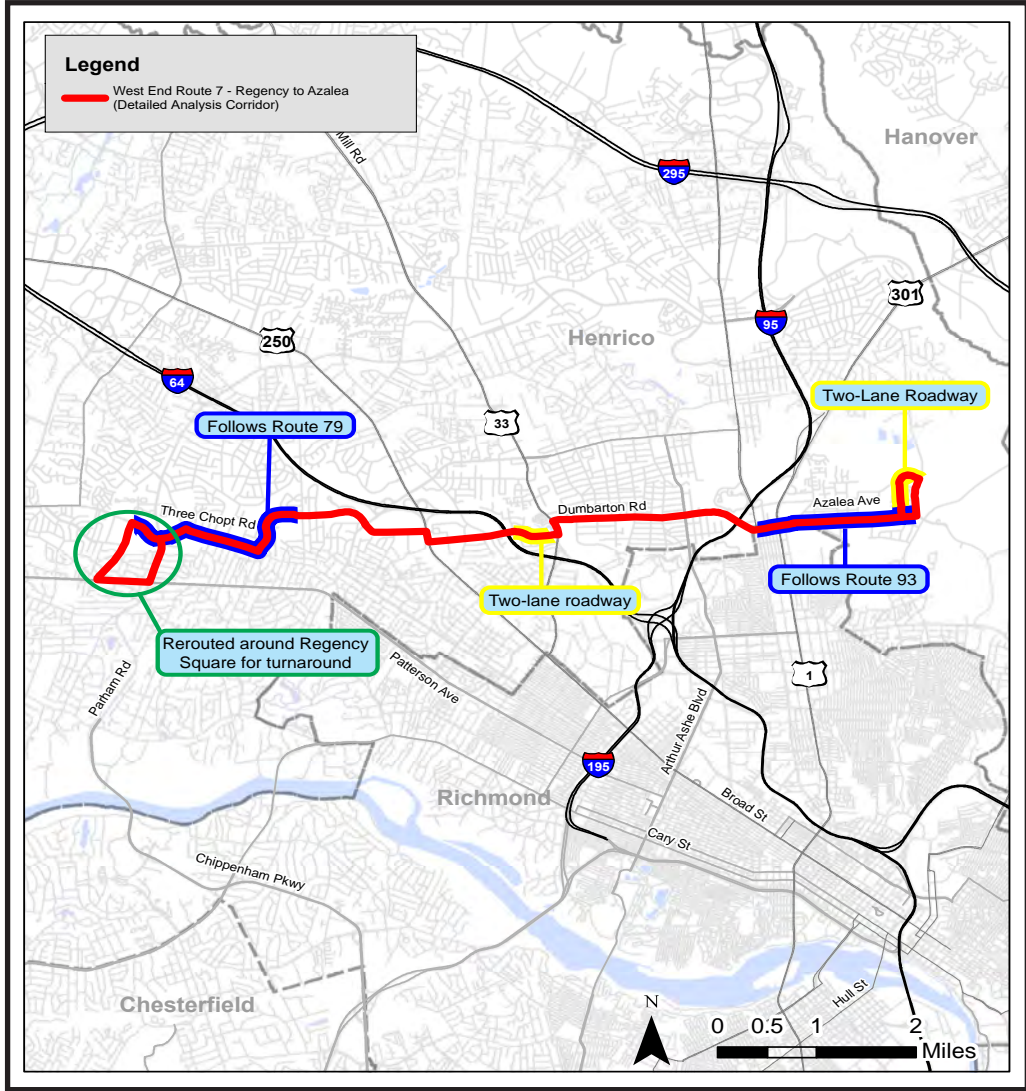
- Community Facilities**
- 22 schools and educational facilities
 - 19 hospitals and medical facilities
 - 6 parks and recreation facilities
 - 3 government services and office buildings
 - 7 grocery stores

Pedestrian Network and Connectivity



- Pedestrian Network Coverage**
- Linear feet of roadway - 891,789 ft.
 - Roadway with access to sidewalks - 223,501 ft.
 - Pedestrian facility coverage - 25%

Roadway Suitability



- Projected Ridership Potential**
- Total riders: 900 - 1,400
 - Boardings per mile: 77 - 120
 - Boardings per trip: 12
 - Boardings per hour: 17
- Potential Future Development**
- Wilton Commerce Park: 5.1-acre commercial, office, and industrial complex near Hermitage Industrial Center
 - Regency Square: Redevelopment of abandoned big-box retail into 1,250 apartments
 - The Neighborhood of Libbie Mill Midtown: Mixed-use community currently under construction, planned for 2,093 residences at build-out