Greater RVA Transit Vision Plan: Phase 2

Evaluating High-Frequency Corridors for Near-Term Implementation

TPO Policy Board Briefing
February 6, 2020
Project Purpose

- Build upon the Greater RVA Transit Vision Plan Phase 1 (2017) and recent transit improvements in the Richmond Region

- Identify recommendations for high-frequency routes that can be implemented in the near-term to advance toward the long-term vision
Analysis Methodology

Screening → Detailed Analysis → Recommendation Development

Phase 1 Corridor Review:
- Activity Density
- Employment & Workers
- Environmental Justice & Transit-Dependency
- Existing Network Layout
- Near-Term Development
- Steering Committee Feedback

Initial Phase 2 Segment Analysis:
- Potential Ridership
- Community Resources
- Pedestrian Facilities
- Roadway Characteristics

Refined Phase 2 Segment Analysis:
- O&M Cost Estimates
- Capital Cost Estimates
- Return on Investment
- Funding Resources

WE ARE HERE
Screening Analysis Corridors

Legend

- Selected Screening Analysis Corridors
- Phase 1 (2017) Corridors

Existing GRTC Service
- Regular
- Express
- Pulse BRT

Locations:
- Short Pump
- Regency Square
- University of Richmond
- Chesterfield Towne Center
- Chippenham Hospital
- Reynolds Community College
- Richmond Airport
- VA Hospital
- John Tyler Community College
- Henrico County Courts
- Reynolds Community College
- Richmond
- Chippenham
- John Tyler Community College
- University of Richmond
- Chesterfield Towne Center
- Chippenham Hospital
- Reynolds Community College
- Richmond Airport
- VA Hospital
- John Tyler Community College
- Henrico County Courts
Selected Analysis Corridors

Full Phase 1 Corridors:
A. Broad Street – Short Pump
F. Airport via Route 60
G. Jeff Davis South to Chester
T. West End Route 7 – Regency to Azalea

Partial Phase 1 Corridors:
D. Midlothian Turnpike
   (Downtown Richmond to Huguenot Road)
E. West End South
   (Downtown Richmond to Regency Square)
H. Route 1 to Ashland
   (Downtown Richmond to Parham Road)
I. West End Route 6 – Staples Mill/Route 33
   (Midlothian Turnpike to Hungary Road)
J. Glenside to Midlothian
   (University of Richmond to Brook Road)
L. Iron Bridge Road – City to Jeff Davis
   (Laburnum Avenue to Chippenham Parkway)
P. West End and Midlothian
   (Regency Square to Brook Road)
R. West End Route 4 – Pemberton Nuckols
   (Regency Square to Cox Road)
Detailed Analysis

- Further evaluation of corridors identified in the screening phase
- Detailed analysis evaluated:
  - Access to community facilities
  - Walkability
  - Pedestrian network and connectivity
  - Roadway suitability
  - Ridership potential
## Potential Ridership Summary

<table>
<thead>
<tr>
<th>Corridor</th>
<th>Ridership</th>
<th>Boardings per Mile</th>
<th>Boardings per Trip</th>
<th>Boardings per Hour</th>
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<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
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<tr>
<td>E - West End South</td>
<td>2,400</td>
<td>4,100</td>
<td>151</td>
<td>258</td>
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<tr>
<td>D - Midlothian Turnpike</td>
<td>2,300</td>
<td>3,900</td>
<td>161</td>
<td>266</td>
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<tr>
<td>G - Jeff Davis South to Chester</td>
<td>2,000</td>
<td>3,400</td>
<td>120</td>
<td>204</td>
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<tr>
<td>H - Route 1 to Ashland</td>
<td>1,900</td>
<td>3,100</td>
<td>176</td>
<td>287</td>
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<td>L - Iron Bridge Road Jeff Davis</td>
<td>1,700</td>
<td>2,800</td>
<td>94</td>
<td>155</td>
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<tr>
<td>F - Airport Via Route 60</td>
<td>1,500</td>
<td>2,500</td>
<td>143</td>
<td>238</td>
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<tr>
<td>I - West End Route 6 - Staples Mill</td>
<td>1,300</td>
<td>2,200</td>
<td>73</td>
<td>119</td>
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<tr>
<td>A - Broad Street to Short Pump</td>
<td>1,000</td>
<td>1,700</td>
<td>87</td>
<td>148</td>
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<tr>
<td>T - West End Route 7 - Regency to Azalea</td>
<td>900</td>
<td>1,400</td>
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<td>120</td>
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<td>P - West End and Midlothian</td>
<td>700</td>
<td>1,200</td>
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<tr>
<td>J - Glenside to Midlothian</td>
<td>600</td>
<td>1,100</td>
<td>69</td>
<td>126</td>
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<tr>
<td>R - West End Route 4 - Pemberton Nuckols</td>
<td>500</td>
<td>900</td>
<td>61</td>
<td>110</td>
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</table>

* Blue corridors include Downtown Richmond

Note: Corridor ridership potential is **inclusive of existing ridership**. Therefore, net new ridership in a corridor with existing service would be less than shown in ridership range.
## Corridor Comparison

<table>
<thead>
<tr>
<th>Corridor</th>
<th>Ridership (daily riders)</th>
<th>Boardings per Mile</th>
<th>Boardings per Trip</th>
<th>Boardings per Hour</th>
<th>Community Facilities (# w/in 0.5 mi)</th>
<th>Connected Ped Areas (% ped facility coverage)</th>
<th>Walkability (average score)</th>
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</table>
Recommended Near-Term High-Frequency Corridors

**Recommended for Near-Term**

- A. Broad Street – Short Pump  
  (Willow Lawn to Bon Secours Short Pump)
- D. Midlothian Turnpike  
  (Downtown Richmond to Huguenot Road)
- E. West End South  
  (Downtown Richmond to Regency Square)
- F. Airport via Route 60  
  (Downtown Richmond to Richmond Airport)
- H. Route 1 to Ashland  
  (Downtown Richmond to Parham Road)

**Not Recommended for Near-Term**

- G. Jeff Davis South to Chester  
  (Downtown Richmond to John Tyler Community College)
- I. West End Route 6 – Staples Mill/Route 33  
  (Midlothian Turnpike to Hungary Road)
- J. Glenside to Midlothian  
  (University of Richmond to Brook Road)
- L. Iron Bridge Road – City to Jeff Davis  
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- T. West End Route 7 – Regency to Azalea  
  (Regency Square to Richmond Henrico Turnpike)
Recommended Near-Term High-Frequency Corridors

Legend:
- Recommended Near-Term High-Frequency Corridors
- Selected Screening Analysis Corridors
- Phase 1 (2017) Corridors
Next Steps

- Summarize screening and detailed analysis results in Tech Memo
- Evaluate costs for recommended routes
  - Operating and maintenance cost estimates
  - Capital cost estimates
  - Potential funding sources
- Prioritize corridors for near-term implementation
- Review prioritized results at Steering Committee Meeting #3
Community Facilities

- Identified community facilities within ½ mile of route
  - Schools and Educational Facilities
  - Hospitals and Medical Facilities
  - Parks and Recreation Facilities
  - Government Buildings and Services
  - Major Destinations
- Grocery Stores
  (reviewed but not shown)
**Walkability**

- Highlighted areas that *might* be desirable to walk in if safe walking conditions are available
  - Based on EPA’s walkability index
Pedestrian Network

- Evaluated existing pedestrian infrastructure
  - Percent of roadway network within ½ mile of route with sidewalk
Pedestrian Connectivity

- Overlap of walkability index score and existing pedestrian infrastructure identifies areas where investment in pedestrian infrastructure may be needed to support connections to transit.
Roadway Suitability

- Reviewed roadway characteristics of routes and identified:
  - One-way streets
  - Two-lane roads
  - Difficult turning radii
  - Unsignalized left-turn movements
  - Turnaround locations
  - Alignment with existing GRTC routes