Greater RVA Transit Vision Plan: Phase 2

Evaluating High-Frequency Corridors for Near-Term Implementation

Community Transportation Advisory Committee
March 19, 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

- Activity Density
- Employment & Workers
- Environmental Justice & Transit-Dependency
- Existing Network Layout
- Near-Term Development
- Steering Committee Feedback

Detailed Analysis

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

Recommendation Development

WE ARE HERE
Selected Screening Analysis Corridors

Legend

- Selected Screening Analysis Corridors
- Phase 1 (2017) Corridors
- Existing GRTC Service
  - Regular
  - Express
  - Pulse BRT
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  
E. West End South  
H. Route 1 to Ashland  
I. West End Route 6 – Staples Mill/Route 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
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></th>
<th></th>
<th>Boardings per Mile</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>per Trip</td>
<td>per Hour</td>
</tr>
<tr>
<td>E - West End South</td>
<td>2,400</td>
<td>4,100</td>
<td>151</td>
<td>258</td>
<td>32</td>
<td>28</td>
</tr>
<tr>
<td>D - Midlothian Turnpike</td>
<td>2,300</td>
<td>3,900</td>
<td>161</td>
<td>266</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>G - Jeff Davis South to Chester</td>
<td>2,000</td>
<td>3,400</td>
<td>120</td>
<td>204</td>
<td>26</td>
<td>22</td>
</tr>
<tr>
<td>H - Route 1 to Ashland</td>
<td>1,900</td>
<td>3,100</td>
<td>176</td>
<td>287</td>
<td>25</td>
<td>32</td>
</tr>
<tr>
<td>L - Iron Bridge Road Jeff Davis</td>
<td>1,700</td>
<td>2,800</td>
<td>94</td>
<td>155</td>
<td>22</td>
<td>20</td>
</tr>
<tr>
<td>F - Airport Via Route 60</td>
<td>1,500</td>
<td>2,500</td>
<td>143</td>
<td>238</td>
<td>20</td>
<td>26</td>
</tr>
<tr>
<td>I - West End Route 6 - Staples Mill</td>
<td>1,300</td>
<td>2,200</td>
<td>73</td>
<td>119</td>
<td>17</td>
<td>16</td>
</tr>
<tr>
<td>A - Broad Street to Short Pump</td>
<td>1,000</td>
<td>1,700</td>
<td>87</td>
<td>148</td>
<td>13</td>
<td>19</td>
</tr>
<tr>
<td>T - West End Route 7 - Regency to Azalea</td>
<td>900</td>
<td>1,400</td>
<td>77</td>
<td>120</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>P - West End and Midlothian</td>
<td>700</td>
<td>1,200</td>
<td>63</td>
<td>108</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td>J - Glenside to Midlothian</td>
<td>600</td>
<td>1,100</td>
<td>69</td>
<td>126</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>R - West End Route 4 - Pemberton Nuckols</td>
<td>500</td>
<td>900</td>
<td>61</td>
<td>110</td>
<td>7</td>
<td>13</td>
</tr>
</tbody>
</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>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Low: &lt;1,200 Med: 1,200-2,400 High: &gt;2,400</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>D</td>
<td>Low: &lt;100 Med: 100-200 High: &gt;200</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Low: &lt;15 Med: 15-25 High: &gt;25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Low: &lt;16 Med: 16-25 High: &gt;25</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>G</td>
<td>Low: &lt;45 Med: 45-65 High: &gt;65</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>H</td>
<td>Low: &lt;40% Med: 40%-60% High: &gt;60%</td>
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<tr>
<td>I</td>
<td>Low: 7.8-8.3 Med: 8.3-8.8 High: 8.8-9.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>J</td>
<td>Low: &lt;1200 Med: 1200-2400 High: &gt;2400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>Low: &lt;10 Med: 10-20 High: &gt;20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>Low: &lt;100 Med: 100-200 High: &gt;200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>Low: &lt;15 Med: 15-25 High: &gt;25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>Low: &lt;16 Med: 16-25 High: &gt;25</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
## Recommended Near-Term High-Frequency Corridors

<table>
<thead>
<tr>
<th>Recommended for Near-Term</th>
<th>Not Recommended for Near-Term</th>
</tr>
</thead>
</table>
| A. Broad Street – Short Pump  
(Willow Lawn to Bon Secours Short Pump) | G. Jeff Davis South to Chester  
(Downtown Richmond to John Tyler Community College) |
| D. Midlothian Turnpike  
(Downtown Richmond to Huguenot Road) | I. West End Route 6 – Staples Mill/Route 33  
(Midlothian Turnpike to Hungary Road) |
| E. West End South  
(Downtown Richmond to Regency Square) | J. Glenside to Midlothian  
(University of Richmond to Brook Road) |
| F. Airport via Route 60  
(Downtown Richmond to Richmond Airport) | L. Iron Bridge Road – City to Jeff Davis  
(Laburnum Avenue to Chippenham Parkway) |
| H. Route 1 to Ashland  
(Downtown Richmond to Parham Road) | P. West End and Midlothian  
(Regency Square to Brook Road) |
|                          | R. West End Route 4 – Pemberton/Nuckols  
(Regency Square to Cox Road) |
|                          | 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
Additional details

- See following slides for more detail on screening analysis
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