The Richmond Highway BRT project is funded in part by the Northern Virginia Transportation Authority.

Richmond Highway Bus Rapid Transit
Executive Committee
Meeting #15
June 10, 2022
Agenda

• Project Status
  - Design Progress
  - Zero emission Bus Evaluation
  - Third Party Coordination
  - Right-of-Way Acquisition
  - FTA Coordination

• Station Design: Community Charm

• Action Item: Turn Lane Analysis
  - Survey Results
  - Recommendations

• 12-Month Outlook
Project Progress

Richmond Highway Bus Rapid Transit
Civil Design Progress

- 60% design completed in Spring 2022
- Current focus:
  - VDOT design waivers
  - Pedestrian safety features
  - Stormwater management & landscaping
  - Retaining walls
  - Construction phasing
  - Utility design coordination
  - Developing easement and right-of-way lines
Station Design Progress

- 60% design to be complete in Summer 2022
- **Current focus:**
  - Materials selection
  - Furnishings
  - Structural framing
  - Electrical and communications equipment
  - Pedestrian access
  - Safety and security
Zero Emissions Bus Evaluation (ZEB)

• BRT Study Components
  – Feasibility Analysis
  – Route/Range Modeling
  – Infrastructure Analysis
  – Cost Analysis

• Battery Electric vs. Diesel
  – 25% fuel savings
  – 60% maintenance savings
  – 105% higher capital costs
  – Requires field charging
  – No added facilities costs for diesel operation

• Fuel Cell – Highest Operating/Capital Costs
ZEB Next Steps

1. Develop design plans for the facility
   - Bus storage location
   - Charging infrastructure
   - Power requirements

2. Develop procurement specification & timeline

3. Include in scope, cost & schedule submittals to FTA

4. Briefing to the Board Transportation Committee (BTC) June 14, 2022
Third Party Coordination

- Goal is written agreements with each party; should be completed during FTA Engineering phase so no issues are unresolved during construction

- VDOT
  - Memorandum of understanding to confirm that parties agree to agree and work on project together
  - Followed by Joint Operations and Maintenance Program; process for drafting is established & meetings are scheduled for technical areas (e.g., SWM, traffic signals)

- WMATA
  - Starting process to negotiate lease agreements at Cinder Bed Road operations facility and Huntington bus loop

- Ft. Belvoir
  - Starting process to negotiated Record of Environmental Consideration; other issues to follow
Right-of-Way Acquisition

• FTA-approved early acquisitions are complete
  - Demolition of Alexandria Motel scheduled for Summer 2022

• Group 1 Parcels
  - Appraisals underway
  - Offers to owners going out this month

• Group 2 Parcels
  - Notice sent to owners
  - Appraisals underway

• Information on process can be found on BRT website

• Additional meetings can be scheduled to assist property owners during the process, as requested
FTA Coordination

- Project accepted into “Project Development” stage in March 2020; entry into “Engineering” phase expected fall 2022
  - FTA contribution is set at entry to Engineering
- Approval to enter Engineering includes detailed review of:
  - Scope
  - Schedule
  - Costs
- FTA conducts risk assessment; may assign higher cost or longer schedule based on analysis of risks
- Monthly meetings with FTA staff; weekly meetings with oversights consultant
Community Charm

Richmond Highway Bus Rapid Transit
Vision for Community Charm

Reflect the history, identity and character of the neighborhoods surrounding each station area

Implement community representation by incorporating artwork from local high school students and youth.

Integrate artwork in each station that meets design parameters for an overall unified experience.
Direction from BRT Executive Committee

- On January 21, 2022, FCDOT staff recommended windscreens as the community charm element in the station design.
- BRT team presented the overall themes & an initial outreach plan.
- BRT Executive Committee approved recommendation unanimously.

Which types of station components do you like best in terms of showcasing neighborhood "charm" or characteristics unique to each neighborhood?

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windscreen design</td>
<td>42</td>
</tr>
<tr>
<td>Plaza art/sculpture</td>
<td>36</td>
</tr>
<tr>
<td>Art/interpretive panel</td>
<td>35</td>
</tr>
<tr>
<td>Platform paving design</td>
<td>34</td>
</tr>
<tr>
<td>Railing design</td>
<td>29</td>
</tr>
<tr>
<td>Plaza paving design</td>
<td>23</td>
</tr>
</tbody>
</table>

Per surveys taken in Nov. 2020 and March 2021.
Station Windscreens

- Each station will have a unique artwork/design on the windscreen created by local high school students and youth.
- Public outreach through the public information meeting and mini meetings will narrow down the theme for each station (from previous surveys).

Photos via Chapel Hill Arts
Example of Station Area Themes: Huntington Metro

Per surveys taken in Nov. 2020 and March 2021
Community Outreach Process

Round 1 Mini Meetings
- Gather input on the specific theme(s) for the design
- Based on feedback, determine theme for each station

Narrative
- Planning Dept. (DPD) will develop narratives for each station
- DPD will collaborate with the History Commission

Design
- Students submit designs for each station based on the themes
- Work with Hayfield HS, Potomac HS and South County Teen Center

Round 2 Mini Meetings
- Present the narratives and designs to the public
- Community members offer feedback

Finalize
- Executive Committee votes on final designs
Tentative Schedule

- **June/July 2022**
  - Public Information Meeting

- **July/August 2022**
  - Round 1 Mini Meetings

- **June to December 2022**
  - DPD begins research and develops narratives

- **September to December 2022**
  - Students work on designs

- **Late Winter/Early Spring 2023**
  - Round 2 Mini Meetings

- **Late Spring 2023**
  - Executive Committee votes on designs
**Current Status/Next Steps**

1. Planning the public information meeting and mini meetings over late June and throughout the summer

2. Coordinating with Neighborhood Community Services (NCS) on upcoming summer events
Turn Lane Analysis

Richmond Highway Bus Rapid Transit
Background

- As part of the BRT project design endorsement, the Board of Supervisors directed County staff to evaluate potential design modifications to narrow cross section along Richmond Highway.

- Objectives were to enhance:
  - BRT operations
  - Bicycle & pedestrian safety
  - Vehicular safety
  - Intersection Operations
  - Corridor Operations

- 13 intersections evaluated for potential left/right turn lane reductions.

- Analysis was coordinated with VDOT.
Intersections Studied

- Intersections identified for potential turn lane reductions:
  - Richmond Highway cross-section between Furman Lane and Shields Avenue
  - Richmond Highway & North Kings Highway/Shields Avenue
  - Richmond Highway & (New) Furman Lane Extension
  - Richmond Highway & Fordson Road/Boswell Avenue
  - Richmond Highway & Arlington Drive
  - Richmond Highway & Memorial Street
  - Richmond Highway & Beacon Hill Road
  - Richmond Highway & Southgate Drive
  - Richmond Highway & Sherwood Hall Lane
  - Richmond Highway & North Buckman Road/Mount Vernon Highway
  - Richmond Highway & Ladson Lane
  - Richmond Highway & Sacramento Drive/Cooper Road
  - Richmond Highway & Jeff Todd Way/Mount Vernon Memorial Highway
# Recommendations

<table>
<thead>
<tr>
<th>Intersection with Richmond Highway</th>
<th>Potential Modification</th>
<th>Recommended for Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shields Avenue</td>
<td>Remove 2&lt;sup&gt;nd&lt;/sup&gt; left turn lane along northbound Richmond Highway</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Reduce median width on north side of intersection</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Remove dedicated right turn lane along southbound Richmond Highway</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Remove 2&lt;sup&gt;nd&lt;/sup&gt; dedicated right turn lane along eastbound Shields Avenue</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Replace asphalt with landscaped grass median along southbound Richmond Highway south of the intersection</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Remove/reduce the width of the grass medians south of the intersection</td>
<td>No</td>
</tr>
<tr>
<td>Entrance to Kings Crossing</td>
<td>Remove 4&lt;sup&gt;th&lt;/sup&gt; through lane along northbound Richmond Highway</td>
<td>No</td>
</tr>
<tr>
<td>Furman Lane</td>
<td>Replace asphalt lane with grass median</td>
<td>Yes</td>
</tr>
</tbody>
</table>
## Recommendations

<table>
<thead>
<tr>
<th>Intersection with Richmond Highway</th>
<th>Potential Modification</th>
<th>Recommended for Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southgate Drive</td>
<td>Remove through/right turn lane along southbound Richmond Highway</td>
<td>Yes</td>
</tr>
<tr>
<td>Beacon Hill Road</td>
<td>Remove dedicated right turn lane along southbound Richmond Highway</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Remove dedicated right turn lane along northbound Richmond Highway</td>
<td>Yes</td>
</tr>
<tr>
<td>Memorial Street</td>
<td>Remove dedicated right turn lane along eastbound Memorial Street</td>
<td>No (dual purposed for future off-peak parking)</td>
</tr>
<tr>
<td></td>
<td>Remove dedicated right turn lane along southbound Richmond Highway</td>
<td>No</td>
</tr>
<tr>
<td>Arlington Drive</td>
<td>Remove dedicated right turn lane along westbound Arlington Drive</td>
<td>No</td>
</tr>
<tr>
<td>Fordson Road/Boswell Avenue</td>
<td>Remove dedicated right turn lane along eastbound Fordson Road</td>
<td>No</td>
</tr>
<tr>
<td>Sherwood Hall Lane</td>
<td>Remove dedicated right turn lane along northbound Richmond Highway</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Remove 2nd left turn lane along northbound Richmond Highway</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Remove dedicated right turn lane along southbound Richmond Highway</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Remove dedicated right turn lane along eastbound Sherwood Hall Lane</td>
<td>No</td>
</tr>
</tbody>
</table>
## Recommendations

<table>
<thead>
<tr>
<th>Intersection with Richmond Highway</th>
<th>Potential Modification</th>
<th>Recommended for Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ladson Lane</strong></td>
<td>Remove through/right turn lane along southbound Richmond Highway</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Remove dedicated right turn lane along eastbound Ladson Lane</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>North Buckman Road/Mount Vernon Highway</strong></td>
<td>Remove through/right turn lane along eastbound North Buckman Road</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Remove dedicated right turn lane along southbound Richmond Highway</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Remove 2&lt;sup&gt;nd&lt;/sup&gt; left turn lane along southbound Richmond Highway</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Remove dedicated right turn lane along westbound Mount Vernon Highway</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Remove dedicated right turn lane along northbound Richmond Highway</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Remove dedicated northbound left turn lane along Richmond Highway</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Sacramento Drive/Cooper Road</strong></td>
<td>Remove dedicated right turn lane along eastbound Sacramento Drive</td>
<td>No (dual purposed for future off-peak parking)</td>
</tr>
<tr>
<td><strong>Jeff Todd Way/Mount Vernon Memorial Highway</strong></td>
<td>Remove dedicated right turn lane along westbound Mount Vernon Memorial Highway</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Remove 2&lt;sup&gt;nd&lt;/sup&gt; left turn lane along westbound Mount Vernon Memorial Highway</td>
<td>No</td>
</tr>
</tbody>
</table>
Survey Questions

- ZIP Code
- Neighborhood
- Age
- Transit riding frequency
- Driving frequency
- For each intersection studied:
  - Listed the intersection change that was studied along with a note about whether or not the change is recommended by staff
  - Asked, “Do you agree with the staff recommendations about the potential modifications studied for the [intersection] area?”
  - Answer choices were “Yes” / “No” / “No opinion”, with opportunity to provide additional comments
Survey Responses

• Survey and comment period were open May 3 - May 31, 2022.
• There were 430 responses overall, though not all respondents answered all questions.
  - About 200-250 people responded to each of the intersection questions.
• Surveys in English and Spanish were available online as well as on paper at the public meeting on May 3.
ZIP code

<table>
<thead>
<tr>
<th>ZIP Code</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>22303</td>
<td>79</td>
</tr>
<tr>
<td>22307</td>
<td>25</td>
</tr>
<tr>
<td>22308</td>
<td>81</td>
</tr>
<tr>
<td>22121</td>
<td>1</td>
</tr>
<tr>
<td>22309</td>
<td>126</td>
</tr>
<tr>
<td>22060</td>
<td>0</td>
</tr>
<tr>
<td>22310</td>
<td>14</td>
</tr>
</tbody>
</table>
Age

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 18</td>
<td>0</td>
</tr>
<tr>
<td>18 to 24</td>
<td>5</td>
</tr>
<tr>
<td>25 to 34</td>
<td>34</td>
</tr>
<tr>
<td>35 to 44</td>
<td>78</td>
</tr>
<tr>
<td>45 to 54</td>
<td>75</td>
</tr>
<tr>
<td>55 to 64</td>
<td>84</td>
</tr>
<tr>
<td>65 to 74</td>
<td>84</td>
</tr>
<tr>
<td>75 to 84</td>
<td>44</td>
</tr>
<tr>
<td>85 or older</td>
<td>11</td>
</tr>
</tbody>
</table>
Travel Habits Today

- **Ride Transit**
  - Every day: 13
  - Multiple times per week: 60
  - Monthly: 50
  - A few times per year: 191
  - Never: 111

- **Drive**
  - Every day: 178
  - Multiple times per week: 212
  - Monthly: 22
  - A few times per year: 13
  - Never: 1
All Intersections

Design & Response
Potential modifications: Remove/ reduce the width of the grass medians north and south of the intersection at Shields Avenue
- Median width necessary for proper clearance behind the southbound Penn Daw BRT platform
PENN DAW AREA – SHIELDS AVE

Potential modification: Removal of southbound right turn (SBR) lane along Richmond Highway

• Impact to max queues:
  • AM: 275’ to 300’
  • PM: 1400’ to 1600’

<table>
<thead>
<tr>
<th>Intersection Delay (sec.)</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SB R</td>
<td>SB Approach</td>
</tr>
<tr>
<td>Base Design</td>
<td>23.5</td>
<td>28.9</td>
</tr>
<tr>
<td>Lane Reduction</td>
<td>27.7</td>
<td>29.2</td>
</tr>
</tbody>
</table>

Findings for Removal of Southbound Right Turn Lane

<table>
<thead>
<tr>
<th></th>
<th>BRT impact</th>
<th>Ped. crossing distance</th>
<th>Walk time for signal</th>
<th>Potential conflicts Delay</th>
<th>Existing lane (Y/N)</th>
<th>Cost impacts/other considerations</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>No impact</td>
<td></td>
<td>11-foot reduction</td>
<td>Potential 3 sec. reduction</td>
<td>Potential increase for rear-ends</td>
<td>Yes (shared thru/right)</td>
<td>VDOT Design Waiver</td>
<td>Remove</td>
</tr>
</tbody>
</table>

Legend:
- Potential modifications for analysis/evaluation
- Change not proposed for inclusion in design
- Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel
Do you agree with the staff recommendations about the potential modifications studied for the Penn Daw area?

- Remove 2nd left turn lane along northbound Richmond Highway (Not Recommended by Staff)
  - Yes: 50%
  - No: 25%
  - No opinion: 20%
- Reduce median width on north side of intersection (Recommended by Staff)
  - Yes: 56%
  - No: 20%
  - No opinion: 18%
- Remove dedicated right turn lane along southbound Richmond Highway (Recommended by Staff)
  - Yes: 51%
  - No: 33%
  - No opinion: 12%
- Remove 2nd dedicated right turn lane along eastbound Shields Avenue (Not Recommended by Staff)
  - Yes: 45%
  - No: 27%
  - No opinion: 19%
- Replace asphalt with landscaped grass median along southbound Richmond Highway south of the intersection (Recommended by Staff)
  - Yes: 66%
  - No: 19%
  - No opinion: 12%
- Remove/reduce the width of the grass medians south of the intersection (Not Recommended by Staff)
  - Yes: 49%
  - No: 26%
  - No opinion: 18%
- Remove 4th through lane along northbound Richmond Highway (Not Recommended by Staff)
  - Yes: 50%
  - No: 26%
  - No opinion: 17%
NEW FURMAN LANE EXTENSION

Potential modification: Grass median added to the design and 4\textsuperscript{th} thru lane removed
Do you agree with the staff recommendation about the potential modification studied for the Furman Lane intersection?

- Yes: 59%
- No: 28%
- No opinion: 13%

Replace asphalt lane with grass median (Recommended by Staff)
SOUTHGATE DRIVE

Potential modification: Removal of southbound thru/right turn lane (SBR) along Richmond Highway

<table>
<thead>
<tr>
<th>Intersection Delay (sec.)</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SB R</td>
<td>SB Approach</td>
</tr>
<tr>
<td>Base Design</td>
<td>14.7</td>
<td>34.8</td>
</tr>
<tr>
<td>Lane Reduction</td>
<td>26.2</td>
<td>42.5</td>
</tr>
</tbody>
</table>

Findings for Removal of SB Thru/Right Turn Lane

- **BRT impact**: No impact
- **Ped. crossing distance**: 11-foot reduction
- **Walk time for signal**: Potential 3 sec. reduction
- **Potential conflicts**: Potential increase for rear-ends
- **Delay**: Increased SB delay (20+ sec.)
- **Existing lane (Y/N)**: Yes
- **Cost impacts/other considerations**: Additional project cost, VDOT Design Waiver
- **Recommendation**: Remove

**Legend**

- Potential modifications for analysis/evaluation
- Change not proposed for inclusion in design
- Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel
Do you agree with the staff recommendation about the potential modification studied for the Southgate Drive intersection?

- Yes: 52%
- No: 37%
- No opinion: 11%

Remove through/right turn lane along southbound Richmond Highway (Recommended by Staff)
BEACON HILL ROAD - NORTHBOUND

Potential modification: Removal of northbound right turn (NBR) lane along Richmond Highway

<table>
<thead>
<tr>
<th>Intersection Delay (sec.)</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NB R</td>
<td>NB Approach</td>
</tr>
<tr>
<td>Base Design</td>
<td>3.6</td>
<td>41.7</td>
</tr>
<tr>
<td>Lane Reduction</td>
<td>40.6</td>
<td>43.9</td>
</tr>
</tbody>
</table>

Findings for Removal of NB Right Turn Lane

- **BRT impact**: No impact
- **Ped. crossing distance**: 11-foot reduction
- **Walk time for signal**: Potential 3 sec. reduction
- **Potential conflicts**: Potential increase for rear-ends
- **Delay**: Increased SBR delay (20+ sec.)
- **Existing lane (Y/N)**: Yes
- **Cost impacts/other considerations**: VDOT Design Waiver
- **Recommendation**: Remove

---

**LEGEND**

- Potential modifications for analysis/evaluation
- Change not proposed for inclusion in design
- Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel
BEACON HILL ROAD - SOUTHBOUND

Potential modification: Removal of southbound thru/right turn lane (SBR) along Richmond Highway

Intersection Delay (sec.)

<table>
<thead>
<tr>
<th></th>
<th>AM Peak Hour</th>
<th></th>
<th>PM Peak Hour</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SB</td>
<td>Approach</td>
<td>Overall</td>
<td>SB</td>
</tr>
<tr>
<td>Base Design</td>
<td>18.7</td>
<td>22.6</td>
<td>51.5</td>
<td>32.0</td>
</tr>
<tr>
<td>Lane Reduction</td>
<td>16.1</td>
<td>20.3</td>
<td>51.0</td>
<td>46.4</td>
</tr>
</tbody>
</table>

Findings for Removal of SB Thru/Right Turn Lane

<table>
<thead>
<tr>
<th>Findings</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRT impact</td>
<td>Potential impact</td>
</tr>
<tr>
<td>Ped. crossing distance</td>
<td>11-foot reduction</td>
</tr>
<tr>
<td>Walk time for signal</td>
<td>Potential 3 sec. reduction</td>
</tr>
<tr>
<td>Potential conflicts</td>
<td>Potential increase for rear-ends</td>
</tr>
<tr>
<td>Delay</td>
<td>Increased SBR delay [20+ sec.]</td>
</tr>
<tr>
<td>Existing lane (Y/N)</td>
<td>Yes</td>
</tr>
<tr>
<td>Cost impacts/other considerations</td>
<td>Additional project cost, VDOT Design Waiver</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Do not remove</td>
</tr>
</tbody>
</table>

Maximum Queue Lengths

Base Design AM
Base Design PM
Lane Reduction AM
Lane Reduction PM
Queue Length XXX (feet)

LEGEND

Potential modifications for analysis/evaluation
Change not proposed for inclusion in design
Change proposed for inclusion in design
Direction of Northbound Richmond Highway Travel

Still under review
Beacon Hill Road

Do you agree with the staff recommendations about the potential modifications studied for the Beacon Hill Road intersection?

- Remove dedicated right turn lane along southbound Richmond Highway (Not Recommended by Staff)
  - Yes: 54%
  - No: 34%
  - No opinion: 10%

- Remove dedicated right turn lane along northbound Richmond Highway (Recommended by Staff)
  - Yes: 49%
  - No: 41%
  - No opinion: 9%
MEMORIAL STREET - SOUTHBOUND

Potential modification: Removal of southbound right turn (SBR) lane along Richmond Highway

- Impacts at Beacon Hill Road affect the results for Memorial Street SB approach by metering in the PM

<table>
<thead>
<tr>
<th>Intersection Delay (sec.)</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SB</td>
<td>Approach</td>
</tr>
<tr>
<td>Base Design</td>
<td>8.5</td>
<td>25.8</td>
</tr>
<tr>
<td>Lane Reduction</td>
<td>15.1</td>
<td>26.3</td>
</tr>
</tbody>
</table>

Findings for Removal of SB Right Turn Lane

- BRT impact: Potential impact
- Ped. crossing distance: 11-foot reduction
- Walk time for signal: Potential 3 sec. reduction
- Potential conflicts: Potential increase for rear-ends
- Delay: Increased SBR delay (20+ sec.)
- Existing lane (Y/N): Yes
- Cost impacts/other considerations: Additional project cost
- Recommendation: Do not remove

LEGEND

- Potential modifications for analysis/evaluation
- Change not proposed for inclusion in design
- Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel
MEMORIAL STREET - EASTBOUND

Potential modification: Removal of eastbound right turn

- As development occurs, lane will be dual purposed for future off-peak parking.

<table>
<thead>
<tr>
<th>Intersection Delay (sec.)</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EB R</td>
<td>EB Approach</td>
</tr>
<tr>
<td>Base Design</td>
<td>35.6</td>
<td>69.7</td>
</tr>
<tr>
<td>Lane Reduction</td>
<td>150.6</td>
<td>171.8</td>
</tr>
</tbody>
</table>

Findings for Removal of EB Right Turn Lane

<table>
<thead>
<tr>
<th>Findings</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BRT impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Ped. crossing distance</td>
<td>11-foot reduction</td>
</tr>
<tr>
<td>Walk time for signal</td>
<td>With mainline green</td>
</tr>
<tr>
<td>Potential conflicts</td>
<td>Potential increase for rear-ends</td>
</tr>
<tr>
<td>Delay</td>
<td>Increased EB delay (100+ sec.)</td>
</tr>
<tr>
<td>Existing lane (Y/N)</td>
<td>Yes</td>
</tr>
<tr>
<td>Cost impacts/other considerations</td>
<td>Additional project cost, possible VDOT design waiver</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Do not remove</td>
</tr>
</tbody>
</table>

Potential for removal of right turn lane

LEGEND

Potential modifications for analysis/evaluation

Change not proposed for inclusion in design

Change proposed for inclusion in design

Direction of Northbound Richmond Highway Travel
Memorial Street

Do you agree with the staff recommendations about the potential modifications studied for the Memorial Street intersection?

- Remove dedicated right turn lane along eastbound Memorial Street (Not Recommended by Staff - Considered for Off-Peak Parking)
  - Yes: 56%
  - No: 30%
  - No opinion: 14%

- Remove dedicated right turn lane along southbound Richmond Highway (Not Recommended by Staff)
  - Yes: 55%
  - No: 31%
  - No opinion: 14%
ARLINGTON DRIVE

Potential modification: Removal of westbound right turn (WBR) lane along Arlington Drive

<table>
<thead>
<tr>
<th>Intersection Delay (sec.)</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WB R</td>
<td>WB Approach</td>
</tr>
<tr>
<td>Base Design</td>
<td>13.1</td>
<td>28.9</td>
</tr>
<tr>
<td>Lane Reduction</td>
<td>67.9</td>
<td>73.0</td>
</tr>
</tbody>
</table>

Findings for Removal of WB Right Turn Lane

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BRT impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Ped. crossing distance</td>
<td>11 foot reduction</td>
</tr>
<tr>
<td>Walk time for signal</td>
<td>With mainline green</td>
</tr>
<tr>
<td>Potential conflicts</td>
<td>Potential increase for rear-ends</td>
</tr>
<tr>
<td>Delay</td>
<td>Increased WB delay (45 sec.)</td>
</tr>
<tr>
<td>Existing lane (Y/N)</td>
<td>Yes</td>
</tr>
<tr>
<td>Cost impacts/other considerations</td>
<td>Additional project cost, possible VDOT design waiver</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Do not remove</td>
</tr>
</tbody>
</table>

LEGEND

- Potential modifications for analysis/evaluation
- Change not proposed for inclusion in design
- Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel
Arlington Drive

Do you agree with the staff recommendation about the potential modification studied for the Arlington Drive intersection?

- Yes: 57%
- No: 21%
- No opinion: 22%

Remove dedicated right turn lane along westbound Arlington Drive (Not Recommended by Staff)
**FORDSON RD / BOSWELL AVE**

Potential modification: Removal of eastbound right turn (EBR) lane along Fordson Road

### Intersection Delay (sec.)

<table>
<thead>
<tr>
<th></th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EB R</td>
<td>EB Approach</td>
</tr>
<tr>
<td>Base Design</td>
<td>42.5</td>
<td>64.4</td>
</tr>
<tr>
<td>Lane Reduction</td>
<td>144.7</td>
<td>161.7</td>
</tr>
</tbody>
</table>

### Findings for Removal of EB Right Turn Lane

<table>
<thead>
<tr>
<th>Findings</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRT impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Ped. crossing distance</td>
<td>11-foot reduction</td>
</tr>
<tr>
<td>Walk time for signal</td>
<td>With mainline green</td>
</tr>
<tr>
<td>Potential conflicts</td>
<td>Potential increase for rear-ends</td>
</tr>
<tr>
<td>Delay</td>
<td>Increased EB delay (100-300 sec.)</td>
</tr>
<tr>
<td>Existing lane (Y/N)</td>
<td>Yes</td>
</tr>
<tr>
<td>Cost impacts/other considerations</td>
<td>Additional project cost, possible VDOT design waiver</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Do not remove</td>
</tr>
</tbody>
</table>

**LEGEND**

- Potential modifications for analysis/evaluation
- Change not proposed for inclusion in design
- Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel
Fordson/Boswell

Do you agree with the staff recommendation about the potential modification studied for the Fordson Road/Boswell Avenue intersection?

- Yes: 64%
- No: 26%
- No opinion: 9%

Remove dedicated right turn lane along eastbound Fordson Road (Not Recommended by Staff)
### SHERWOOD HALL LANE - NORTHBOUND

#### Intersection Delay (sec.)

<table>
<thead>
<tr>
<th></th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NB R</td>
<td>NB L</td>
</tr>
<tr>
<td>Base Design</td>
<td>15.8</td>
<td>83.4</td>
</tr>
<tr>
<td>Lane Reduction</td>
<td>18.5</td>
<td>98.7</td>
</tr>
</tbody>
</table>

#### Findings for Removal

<table>
<thead>
<tr>
<th></th>
<th>Findings for Removal of SB Right Turn Lane</th>
<th>Findings for Removal of NB Left Turn Lane</th>
<th>Findings for Removal of NB Right Turn Lane</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRT impact</td>
<td>No impact</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Ped. crossing distance</td>
<td>11-foot reduction</td>
<td>6-foot reduction</td>
<td>11-foot reduction</td>
</tr>
<tr>
<td>Walk time for signal</td>
<td>Potential 3 sec. reduction</td>
<td>Potential 2 sec. reduction</td>
<td>Potential 3 sec. reduction</td>
</tr>
<tr>
<td>Potential conflicts</td>
<td>Potential increase for rear-ends</td>
<td>Potential increase for rear-ends</td>
<td>Potential increase for rear-ends</td>
</tr>
<tr>
<td>Delay</td>
<td>N/A</td>
<td>Increased Overall delay (12 sec.)</td>
<td>Increased SBR delay (20+ sec.)</td>
</tr>
<tr>
<td>Existing lane (Y/N)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes (channelized turn)</td>
</tr>
<tr>
<td>Cost impacts/other considerations</td>
<td>Additional project cost</td>
<td>Additional project cost</td>
<td>Additional project cost, VDOT Design Waiver</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Remove</td>
<td>Remove</td>
<td>Do not remove</td>
</tr>
</tbody>
</table>

#### Potential for removal of second left turn lane (NB)

- Potential for removal of SB right turn lane
- Potential for removal of NB right turn lane

#### Potential for removal of SB right turn lane

#### Potential for removal of NB right turn lane

---

**Legend**

- Potential modifications for analysis/evaluation
- Change not proposed for inclusion in design
- Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel
SHERWOOD HALL LANE - EASTBOUND

Potential modification: Removal of eastbound right turn lane (EBR) along Sherwood Hall Lane

<table>
<thead>
<tr>
<th>Intersection Delay (sec.)</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EB R</td>
<td>EB Approach</td>
</tr>
<tr>
<td>Base Design</td>
<td>6.9</td>
<td>60.3</td>
</tr>
<tr>
<td>Lane Reduction</td>
<td>34.3</td>
<td>64.8</td>
</tr>
</tbody>
</table>

Findings for Removal of EB Right Turn Lane

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BRT impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Ped. crossing distance</td>
<td>11 foot reduction</td>
</tr>
<tr>
<td>Walk time for signal</td>
<td>With mainline green</td>
</tr>
<tr>
<td>Potential conflicts</td>
<td>Potential increase for rear-ends</td>
</tr>
<tr>
<td>Delay</td>
<td>Increased EB delay (180 sec.)</td>
</tr>
<tr>
<td>Existing lane (Y/N)</td>
<td>Yes</td>
</tr>
<tr>
<td>Cost impacts/other considerations</td>
<td>Additional project cost</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Do not remove</td>
</tr>
</tbody>
</table>

LEGEND

- Potential modifications for analysis/evaluation
- Change not proposed for inclusion in design
- Change proposed for inclusion in design
Sherwood Hall Lane

Do you agree with the staff recommendations about the potential modifications studied for the Sherwood Hall Lane intersection?

- Remove dedicated right turn lane along northbound Richmond Highway (Not Recommended by Staff): 64% Yes, 25% No, 9% No opinion
- Remove 2nd left turn lane along northbound Richmond Highway (Recommended by Staff): 58% Yes, 33% No, 7% No opinion
- Remove dedicated right turn lane along southbound Richmond Highway (Recommended by Staff): 51% Yes, 40% No, 6% No opinion
- Remove dedicated right turn lane along eastbound Sherwood Hall Lane (Not Recommended by Staff): 65% Yes, 22% No, 9% No opinion
LADSON LANE - SOUTHBOUND

Potential modification: Removal of southbound thru/right lane (SBR) along Richmond Highway

<table>
<thead>
<tr>
<th>Intersection Delay (sec.)</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SB R</td>
<td>SB Approach</td>
</tr>
<tr>
<td>Base Design</td>
<td>5.9</td>
<td>6.0</td>
</tr>
<tr>
<td>Lane Reduction</td>
<td>6.3</td>
<td>11.0</td>
</tr>
</tbody>
</table>

Findings for Removal of SB Thru/Right Lane

- **BRT impact**: No impact
- **Ped. crossing distance**: 11-foot reduction
- **Walk time for signal**: Potential 3 sec. reduction
- **Potential conflicts**: Potential increase for rear-ends (50% increase)
- **Delay**: Increased SBR delay (20+ sec.)
- **Existing lane (Y/N)**: Yes (right turn only lane)
- **Cost impacts/other considerations**: Additional project cost, VDOT Design Waiver
- **Recommendation**: Do not remove

Note: SB right/thru lane provides storage for heavy SB right turn at Buckman.

Legend:
- **Potential modifications for analysis/evaluation**
- **Change not proposed for inclusion in design**
- **Change proposed for inclusion in design**

Remove thru/right turn lane

Maximum Queue Lengths

- Base Design AM
- Base Design PM
- Lane Reduction AM
- Lane Reduction PM
- Queue Length: XXX (feet)
**LADSON LANE - EASTBOUND**

Potential modification: Removal of eastbound right turn (EBR) lane along Ladson Lane

<table>
<thead>
<tr>
<th>Intersection Delay (sec.)</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EB R</td>
<td>EB Approach</td>
</tr>
<tr>
<td>Base Design</td>
<td>56.6</td>
<td>76.1</td>
</tr>
<tr>
<td>Lane Reduction</td>
<td>96.6</td>
<td>92.2</td>
</tr>
<tr>
<td></td>
<td>EB R</td>
<td>EB Approach</td>
</tr>
<tr>
<td>Base Design</td>
<td>45.0</td>
<td>55.6</td>
</tr>
<tr>
<td>Lane Reduction</td>
<td>50.1</td>
<td>64.2</td>
</tr>
</tbody>
</table>

**Findings for Removal of EB Right Turn Lane**

- **BRT impact**: No impact
- **Ped. crossing distance**: 11-foot reduction
- **Walk time for signal**: With mainline green
- **Potential conflicts**: Potential increase for rear-ends
- **Delay**: Increased EBR delay (40 sec.)
- **Existing lane (Y/N)**: Yes
- **Cost impacts/other considerations**: Additional project cost, possible VDOT design waiver
- **Recommendation**: Remove

Legend:
- Potential modifications for analysis/evaluation
- Change not proposed for inclusion in design
- Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel
Do you agree with the staff recommendations about the potential modifications studied for the Ladson Lane intersection?

- **Remove through/right turn lane along southbound Richmond Highway (Not Recommended by Staff)**
  - Yes: 53%
  - No: 27%
  - No opinion: 21%

- **Remove dedicated right turn lane along eastbound Ladson Lane (Recommended by Staff)**
  - Yes: 50%
  - No: 27%
  - No opinion: 21%
**BUCKMAN RD/MT VERNON HWY - EASTBOUND**

Potential modification: Removal of eastbound lane (EBR) along Mt Vernon Hwy

<table>
<thead>
<tr>
<th>Intersection Delay (sec.)</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EB R</td>
<td>EB Approach</td>
</tr>
<tr>
<td>Base Design</td>
<td>12.5</td>
<td>76.3</td>
</tr>
<tr>
<td>Lane Reduction</td>
<td>43.2</td>
<td>75.5</td>
</tr>
</tbody>
</table>

**Findings for Removal of EB Right Turn Lane**

<table>
<thead>
<tr>
<th>BRT impact</th>
<th>No impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ped. crossing distance</td>
<td>11-foot reduction</td>
</tr>
<tr>
<td>Walk time for signal</td>
<td>With mainline green</td>
</tr>
<tr>
<td>Potential conflicts</td>
<td>Potential increase for rear-ends</td>
</tr>
<tr>
<td>Delay</td>
<td>Increased EBR delay (30-40 sec.)</td>
</tr>
<tr>
<td>Existing lane (Y/N)</td>
<td>No</td>
</tr>
<tr>
<td>Cost impacts/other considerations</td>
<td>Blocking of driveways</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Remove</td>
</tr>
</tbody>
</table>

**Potential for removal thru/right and reduce to 4 lanes**

**Legend**

- Potential modifications for analysis/evaluation
- ✗ Change not proposed for inclusion in design
- ✔️ Change proposed for inclusion in design
- ➤ Direction of Northbound Richmond Highway Travel
BUCKMAN RD/MT VERNON HWY - SOUTHBOUND

Potential modifications: Removal of southbound right (SBR) and left turn (SBL) lanes along Richmond Highway

<table>
<thead>
<tr>
<th>Intersection Delay (sec.)</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBR</td>
<td>SB L</td>
<td>SB Approach</td>
</tr>
<tr>
<td>Base Design</td>
<td>11.9</td>
<td>66.8</td>
</tr>
<tr>
<td>Lane Reduction</td>
<td>27.0</td>
<td>197.9</td>
</tr>
</tbody>
</table>

Findings for Removal of SB Left Turn Lane
- BRT impact: No impact
- Ped. crossing distance: No impact
- Walk time for signal: Potential 3 sec. reduction
- Potential conflicts: No potential conflicts
- Delay: Increased LT delay (130 sec.)
- Existing lane (Y/N): No
- Cost impacts/other considerations: N/A
- Recommendation: Do not remove

Findings for Removal of SB Right Turn Lane
- BRT impact: No impact
- Ped. crossing distance: No impact
- Walk time for signal: Potential 3 sec. reduction
- Potential conflicts: Potential increase for rear-ends
- Delay: Increased SBR delay (17 sec.)
- Existing lane (Y/N): Yes
- Cost impacts/other considerations: VDOT Design Waiver
- Recommendation: Do not remove

Legend:
- Potential modifications for analysis/evaluation
- Change not proposed for inclusion in design
- Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel
BUCKMAN RD/MT VERNON HWY - WESTBOUND

Potential modification: Removal of westbound right turn (WBR) lane along Mt Vernon Hwy

<table>
<thead>
<tr>
<th>Intersection Delay (sec.)</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WB R</td>
<td>WB Approach</td>
</tr>
<tr>
<td>Base Design</td>
<td>67.0</td>
<td>67.4</td>
</tr>
<tr>
<td>Lane Reduction</td>
<td>102.9</td>
<td>100.8</td>
</tr>
</tbody>
</table>

Findings for Removal of WB Right Turn Lane

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BRT impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Ped. crossing distance</td>
<td>11-foot reduction</td>
</tr>
<tr>
<td>Walk time for signal</td>
<td>With mainline green</td>
</tr>
<tr>
<td>Potential conflicts</td>
<td>Potential increase for rear-ends</td>
</tr>
<tr>
<td>Delay</td>
<td>Increased WB delay (3.5 sec.)</td>
</tr>
<tr>
<td>Existing lane (Y/N)</td>
<td>No</td>
</tr>
<tr>
<td>Cost impacts/other considerations</td>
<td>None</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Do not remove</td>
</tr>
</tbody>
</table>

Legend

- Potential modifications for analysis/evaluation
- Change not proposed for inclusion in design
- Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel
BUCKMAN RD/MT VERNON HWY - NORTHBOUND

Potential modifications: Removal of northbound right (NBR) and left turn (NBL) lanes along Richmond Highway

### Intersection Delay (sec.)

<table>
<thead>
<tr>
<th></th>
<th>AM Peak Hour</th>
<th></th>
<th>PM Peak Hour</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NBR</td>
<td>NB L</td>
<td>Overall</td>
<td>NBR</td>
</tr>
<tr>
<td></td>
<td>Approach</td>
<td>Intersection</td>
<td></td>
<td>Approach</td>
</tr>
<tr>
<td>Base Design</td>
<td>13.9</td>
<td>57.7</td>
<td>50.0</td>
<td>47.2</td>
</tr>
<tr>
<td>Lane Reduction</td>
<td>50.0</td>
<td>N/A</td>
<td>50.9</td>
<td>59.0</td>
</tr>
</tbody>
</table>

### Findings for Removal of NB Left Turn Lane

- **BRT impact**: No impact
- **Ped. crossing distance**: 6-foot reduction
- **Walk time for signal**: Potential 2 sec. reduction
- **Potential conflicts**: N/A
- **Delay**: Increased LT delay (130 sec.)
- **Existing lane (Y/N)**: Yes
- **Cost impacts/other considerations**: Left turns would be restricted, volumes would need to shift to Janna Lee or Ladson
- **Recommendation**: Remove

### Findings for Removal of NB Right Turn Lane

- **BRT impact**: No impact
- **Ped. crossing distance**: 11-foot reduction
- **Walk time for signal**: Potential 3 sec. reduction
- **Potential conflicts**: N/A
- **Delay**: Increased SBR delay (35 sec.)
- **Existing lane (Y/N)**: Yes
- **Cost impacts/other considerations**: Additional project cost, VDOT Design Waiver
- **Recommendation**: Remove

---

**Legend**

- Blue: Potential modifications for analysis/evaluation
- Gray: Change not proposed for inclusion in design
- Green: Change proposed for inclusion in design
- Gray arrow: Direction of Northbound Richmond Highway Travel
North Buckman Rd/Mount Vernon Hwy

Do you agree with the staff recommendations about the potential modifications studied for the North Buckman Road/Mount Vernon Highway intersection?

- Remove through/right turn lane along eastbound North Buckman Road (Recommended by Staff)
  - Yes: 58%
  - No: 24%
  - No opinion: 16%

- Remove dedicated right turn lane along southbound Richmond Highway (Not Recommended by Staff)
  - Yes: 55%
  - No: 27%
  - No opinion: 15%

- Remove 2nd left turn lane along southbound Richmond Highway (Not Recommended by Staff)
  - Yes: 52%
  - No: 28%
  - No opinion: 17%

- Remove dedicated right turn lane along westbound Mount Vernon Highway (Not Recommended by Staff)
  - Yes: 54%
  - No: 28%
  - No opinion: 16%

- Remove dedicated right turn lane along northbound Richmond Highway (Recommended by Staff)
  - Yes: 54%
  - No: 31%
  - No opinion: 14%

- Remove dedicated northbound left turn lane along Richmond Highway (Recommended by Staff)
  - Yes: 52%
  - No: 33%
  - No opinion: 14%
SACRAMENTO DR/COOPER RD - EASTBOUND

Potential modification: Removal of eastbound right turn

- As development occurs, lane will be dual purposed for future off-peak parking

<table>
<thead>
<tr>
<th>Intersection Delay (sec.)</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EB R</td>
<td>EB Approach</td>
</tr>
<tr>
<td>Base Design</td>
<td>39.0</td>
<td>58.8</td>
</tr>
<tr>
<td>Lane Reduction</td>
<td>41.0</td>
<td>58.9</td>
</tr>
</tbody>
</table>

Findings for Removal of EB Right Turn Lane

- BRT impact: No impact
- Ped. crossing distance: 11-foot reduction
- Walk time for signal: With mainline green
- Potential conflicts: Potential increase for rear-ends
- Delay: Increased northbound left/southbound left delay (35 sec.)
- Existing lane (Y/N): No (combining intersections)
- Cost impacts/other considerations: Blocking of driveways, economic development impact
- Recommendation: Do not remove

Legend:
- Potential modifications for analysis/evaluation
- Change not proposed for inclusion in design
- Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel
Sacramento Dr/Cooper Rd

Do you agree with the staff recommendation about the potential modification studied for the Sacramento Drive/Cooper Road intersection?

- **Yes**: 57%
- **No**: 27%
- **No opinion**: 16%

Remove dedicated right turn lane along eastbound Sacramento Drive (Not Recommended by Staff - Considered for Off-Peak Parking)
JEFF TODD WAY/MT VERNON - WESTBOUND

Potential modifications: Removal of westbound left (WBL) and right turn (WBR) lanes along Mt Vernon Hwy

<table>
<thead>
<tr>
<th>Intersection Delay (sec.)</th>
<th>AM Peak Hour</th>
<th>Overall Intersection</th>
<th>PM Peak Hour</th>
<th>Overall Intersection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WB R</td>
<td>WB L</td>
<td>WB Approach</td>
<td>WB R</td>
</tr>
<tr>
<td>Base Design</td>
<td>6.0</td>
<td>83.1</td>
<td>73.3</td>
<td>33.4</td>
</tr>
<tr>
<td>Lane Reduction</td>
<td>48.6</td>
<td>127.9</td>
<td>94.3</td>
<td>37.0</td>
</tr>
</tbody>
</table>

Findings for Removal of WB Left Turn Lane

- BRT impact: No impact
- Ped. crossing distance: 11-foot reduction
- Walk time for signal: With mainline green
- Potential conflicts: Potential increase for rear-ends
- Delay: Increased WBL delay (40-45 sec.)
- Existing lane (Y/N): Yes
- Cost impacts/other considerations: Additional project cost
- Recommendation: Do not remove

Findings for Removal of WB Right Turn Lane

- BRT impact: No impact
- Ped. crossing distance: 11-foot reduction
- Walk time for signal: With mainline green
- Potential conflicts: Potential increase for rear-ends
- Delay: Increased WBR delay (40-70 sec.)
- Existing lane (Y/N): No
- Cost impacts/other considerations: Previously requested by the public
- Recommendation: Do not remove/Lanes reconfigured

Legend:
- Blue square with white border: Potential modifications for analysis/evaluation
- Red cross with white border: Change not proposed for inclusion in design
- Green checkmark: Change proposed for inclusion in design
- Arrows: Direction of Northbound Richmond Highway Travel
Jeff Todd Way/Mount Vernon Memorial Hwy

Do you agree with the staff recommendations about the potential modifications studied for the Jeff Todd Way/Mount Vernon Memorial Highway intersection?

- Remove dedicated right turn lane along westbound Mount Vernon Memorial Highway (Not Recommended by Staff)
  - Yes: 66%
  - No: 18%
  - No opinion: 15%

- Remove 2nd left turn lane along westbound Mount Vernon Memorial Highway (Not Recommended by Staff)
  - Yes: 65%
  - No: 20%
  - No opinion: 15%
Public Response

• Preliminary recommendations presented at a public meeting followed by on-line survey

• Survey questions
  – Zipcode
  – Neighborhood
  – Age
  – Transit riding frequency
  – Driving frequency
  – For each intersection studied:
    • Do you agree with the staff recommendations about the potential modifications studied for the [intersection] area?
    • Answer choices were “Yes” / “No” / “No opinion”, with opportunity to provide additional comments

➔ Survey responses generally support staff recommendations
Executive Committee Action

Adoption of resolution approving the updated designs for the following intersections as recommended by staff.

- Richmond Highway cross-section between Furman Lane and Shields Avenue
- Richmond Highway and North Kings Highway/Shields Avenue
- Richmond Highway and (New) Furman Lane Extension
- Richmond Highway and Fordson Road/ Boswell Avenue
- Richmond Highway and Arlington Drive
- Richmond Highway and Memorial Street
- Richmond Highway and Southgate Drive
- Richmond Highway and Beacon Hill Road-Northbound
- Richmond Highway and Sherwood Hall Lane
- Richmond Highway and North Buckman Road/Mount Vernon Highway
- Richmond Highway and Ladson Lane
- Richmond Highway and Sacramento Drive/Cooper Road
- Richmond Highway and Jeff Todd Way/Mount Vernon Memorial Highway
12-Month Outlook

- FTA Risk Assessment (June-September 2022)
  - Risk Workshop June 21-23, 2022
- Community Charm public information meeting and mini-meetings (Summer 2022)
- Approval to Enter FTA Engineering (November 2022)
- 90% Design milestone (March 2023)
- Right-of-way acquisition/demolition (Ongoing)
- Third Party coordination (Ongoing)
- Utility coordination (Ongoing)