Interstate 95 Corridor Improvement Plan

Nick Donohue
Deputy Secretary of Transportation
October 2019
I-95 Corridor Improvement Plan
District Public Input Meetings

WEDNESDAY, OCTOBER 9,
FREDERICKSBURG DISTRICT
James Monroe High School
2300 Washington Avenue
Fredericksburg, VA 22401
6–8 p.m.

THURSDAY, OCTOBER 17,
NORTHERN VIRGINIA DISTRICT
Freedom High School
15201 Neabsco Mills Road
Woodbridge, VA 22191
6–8 p.m.

TUESDAY, OCTOBER 15, 2019
RICHMOND AND HAMPTON ROADS DISTRICTS
Richmond Marriott Short Pump
4240 Dominion Boulevard
Glen Allen, VA 23060
5–7 p.m.
I-95 Corridor Improvement Plan

- General Assembly passed two resolutions (HJR 581 and SJR 276) requesting a study of I-95

- The I-95 Corridor Improvement Plan will:
  - Identify key problem areas along the corridor
  - Identify potential solutions and areas for additional review and study

- Public meetings will conclude by November 30
- Findings and recommendations reported to the General Assembly in 2020
The Secretary of Transportation and the Commonwealth Transportation Board requested that the study area for the Plan include all 179 miles of I-95 in Virginia.
I-95 Corridor Significance

9.0 Million
Trucks Per Year

Critical North-South Corridor

$195 Billion
in Goods Moved Per Year

~ 21,000
Crashes Over 4 Years

> 3,700 Incidents Per Year
(With Average Clearance Times Almost 2 Hours)

Multimodal Corridor

- Highway
- Metrorail
- VRE
- Vanpool
- Carpooling
- Slugging
- Commuter/Express Bus
- Park and Ride Lots
- Amtrak
Persons Moved on Northbound I-95 in the Morning

- Beltway East of Van Dorn (Exit 173 to Exit 174): 50% Non-SOV
- South of Springfield (Exit 166 to Exit 169): 61% Non-SOV
- Occoquan River (Exit 160 to Exit 161): 61% Non-SOV
- Stafford (Exit 140 to Exit 143): 36% Non-SOV
- North of Thornburg (Exit 118 to Exit 126): 24% Non-SOV
- I-295 North of Richmond (Exit 84 to Exit 86): 15% Non-SOV
- Colonial Heights (Exit 54 to Exit 58): 13% Non-SOV
- Emporia (Exit 4 to Exit 8): 14% Non-SOV

Total Persons Moved = Single-Occupant Vehicle (SOV) Trips + Intercity Rail (Amtrak), Commuter Rail (VRE), Metrorail, Commuter Bus, Vanpool, Slugging and Carpool

Office of the SECRETARY of TRANSPORTATION
Express Lanes move more than twice as many people per lane as general purpose lanes northbound during the morning rush hours.
July Meetings Public Feedback and Survey Results

- Online survey results (MetroQuest)
  - 3,000+ responses
  - 11,700 map markers
- Public meeting dots
- 200 emails
- 40 comment sheets

**NUMBER OF RESPONSES**

- <10
- 10 – 20
- 20 – 50
- 50 – 100
- >100
July Meetings Public Feedback and Survey Results

How often do you typically travel in the I-95 corridor?

- Majority of respondents travel on I-95 several times per week.

- Daily: 46%
- A few times per week: 23%
- A few times per month: 18%
- Occasionally: 13%
- Never: 0%

Never
Occasionally
A few times per month
A few times per week
Daily
July Meetings Public Feedback and Survey Results

One-third of respondents do not use I-95 for work.

Where do your trips on I-95 take you?

- Work/School
- Shopping/Errands
- Visiting Friends/Family
- Traveling Out of State
- Entertainment
- Other

0 500 1,000 1,500 2,000
July Meetings Public Feedback and Survey Results

How far do you typically travel on I-95?

- Nearly a quarter of respondents take trips between 50 and 100 miles.
- 1-10 Miles: 10%
- 10-20 Miles: 24%
- 20-50 Miles: 31%
- 50-100 Miles: 22%
- 100+ Miles: 13%
- 1-10 Miles: 10%
July Meetings Public Feedback and Survey Results

How reliable is your typical trip on I-95?

- Never Reliable: 15%
- Mostly Reliable: 21%
- Sometimes Reliable: 30%
- Often Not Reliable: 33%
- Always Reliable: 1%

78% of respondents rate trip as sometimes reliable or worse.
July Meetings Public Feedback and Survey Results

What potential improvements would enhance your use of other modes?

- Improved Metrorail service: 1,200
- Improved VRE service: 800
- Real-time info on commuting options: 400
- Financial incentives for new modes: 200
- Improved commuter bus service: 100
- Enhanced walking and biking: 50
- Improved car/vanpooling options: 40
- Additional Park & Ride spaces/lots: 30
- Improved waiting areas/shelters: 20
- Improved intercity rail service: 10

* Improved intercity rail service option added in the middle of the survey: about 25% selected this option

Improvements to Metrorail or VRE services were the most attractive options.
July Meetings Public Feedback and Survey Results

How often do you use the I-95 Express Lanes?

- Never: 32%
- Occasionally: 32%
- A few times per week: 10%
- A few times per month: 14%
- Daily: 12%
- Daily: 10%

78% of respondents have either an E-ZPass or E-Zpass Flex
Reviewed entire I-95 corridor to identify areas for improvement based on identified problems:

- Safety: crash frequency and severity
- Congestion: person-hours of delay
- Resiliency: incidents or crashes causing lane closures greater than one hour

**Performance Measures**

1. Crash frequency and severity
2. Crash severity rate
3. Total delay
4. Incident delay
Suite of Improvements

Focus Areas

- OPERATIONS ON I-95
- PARALLEL FACILITIES (Routes 1 and 301)
- CAPITAL PROJECTS ON I-95
- MULTIMODAL (rail, bus, carpool, park and ride)

Data-driven approach incorporating performance measures

GOALS

To provide faster, safer, and more reliable travel along the I-95 corridor
Sample Operational Improvements

**CCTV Cameras**
Detect incidents and provide situational awareness of incidents

**Changeable Message Signs**
Informs drivers of conditions ahead

**Safety Service Patrol**
Provide incident scene support and help stranded motorists

**Quick Clearance Towing Programs**
Contract towing services that are activated as incidents are detected

**Variable Speed Limits**
Adjustable speed limits that change to reduce traffic congestion
Operational Improvements
Potential Benefits

**Quick Clearance Towing Program**
Incident clearance times reduced by up to 2 hours per incident

**Safety Service Patrols**
Incident duration reduced by 25% when SSP is on-site

**Variable Speed Limits**
Reduce crashes by 30% and increase vehicle throughput by 7%

**Unmanned Aerial Systems (UAS)**
Crash investigation time reduced by up to 2 hours

**Queue Warning System**
Crashes reduced by up to 44%

**Ramp Metering**
7% reduction in travel times on I-95
Parallel Facilities Improvements

Improvements considered for traffic incident management

- Message signs
- Traffic control personnel
- Communications upgrades
- Traffic signal operations
- Intersection improvements
- Sign improvements
Highway Capital Improvements

Improvements considered

- Interchange modification and/or reconfiguration
- Acceleration/deceleration lane extensions
- Hard shoulder running lanes
- Auxiliary lanes
- Additional general purpose lanes
- Express lanes
- Ramp widening
- Shoulder widening
- Curve improvements
- Drainage improvements
Multimodal Improvements

Improvements considered

- Long Bridge
- Intercity passenger rail
- Commuter rail
- Commuter bus
- Park & Ride lots
- TDM strategies (carpooling, vanpooling, and slugging)
Highway Capacity Improvement Scenario Analyses (Exit 118 to Exit 170)

Analysis Summary

• Adding one, two, and three additional general purpose lanes in each direction
• Used regional travel demand model for analysis
• Assumed open to traffic in 2030
• Analyzed performance through 2040
• Analyzed speed change along the 52-mile corridor
## Peak Period Speed Results after Widening

<table>
<thead>
<tr>
<th>Scenario</th>
<th>2019</th>
<th>2030</th>
<th>2030 w/ 1 new GP lane</th>
<th>2040 w/ 1 new GP lane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exit 170 (I-395/I-495)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exit 160 (Route 123)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exit 143 (Garrisonville Rd)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exit 130 (Route 3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exit 118 (Thornburg)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Legend</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 60 mph</td>
<td></td>
</tr>
<tr>
<td>&lt; 10 mph</td>
<td></td>
</tr>
</tbody>
</table>
Peak Period Speed Results after Widening

<table>
<thead>
<tr>
<th>Scenario</th>
<th>2019</th>
<th>2030</th>
<th>2030 w/ 2 new GP lanes</th>
<th>2040 w/ 2 new GP lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exit 170 (I-395/I-495)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exit 160 (Route 123)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exit 143 (Garrisonville Rd)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exit 130 (Route 3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exit 118 (Thornburg)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend

- ≥ 60 mph
- < 10 mph
## Peak Period Speed Results after Widening

<table>
<thead>
<tr>
<th>Scenario</th>
<th>2019</th>
<th>2040 w/ 1 new GP lane</th>
<th>2040 w/ 2 new GP lanes</th>
<th>2040 w/ 3 new GP lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exit 170 (I-395/I-495)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exit 160 (Route 123)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exit 143 (Garrisonville Rd)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exit 130 (Route 3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exit 118 (Thornburg)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Legend
- ≥ 60 mph
- < 10 mph
Latent Demand
Change in Daily Volume with an Additional Lane

Legend

<table>
<thead>
<tr>
<th>Decrease*</th>
<th>0-5%</th>
<th>5-10%</th>
<th>10-20%</th>
<th>&gt;20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase*</td>
<td>0-5%</td>
<td>5-10%</td>
<td>10-20%</td>
<td>&gt;20%</td>
</tr>
</tbody>
</table>

*Percent change in daily volume from the 2030 No-Build scenario to the 2030 scenario with one additional lane on I-95
Fourth Lane Project
Exit 166 to Exit 160

• I-95 was widened to four lanes in each direction in 2011

• Average travel speeds in 2018 were down 7.5% compared with 2009
  • 22.3 mph (2009) versus 20.6 mph (2018)
Improvement Highlights

Specific Focus Areas

- Occoquan (near Exit 160)
- I-95/I-64 overlap (Richmond)
- Multimodal improvements
Focus Area: Occoquan
2015-2018 Annual Delay Summary
One-Mile Segments

<table>
<thead>
<tr>
<th>Mile Post</th>
<th>Annual Person-Hours of Delay</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td></td>
</tr>
<tr>
<td>70</td>
<td></td>
</tr>
<tr>
<td>80</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td></td>
</tr>
<tr>
<td>110</td>
<td></td>
</tr>
<tr>
<td>120</td>
<td></td>
</tr>
<tr>
<td>130</td>
<td></td>
</tr>
<tr>
<td>140</td>
<td></td>
</tr>
<tr>
<td>150</td>
<td></td>
</tr>
<tr>
<td>160</td>
<td></td>
</tr>
<tr>
<td>170</td>
<td></td>
</tr>
<tr>
<td>178</td>
<td></td>
</tr>
</tbody>
</table>

- **Southbound**
- **Northbound**
- **Top 25%**
Focus Area: I-95/I-64 Overlap
Proposed Improvements

- **Proposed Lane Reconfiguration**
  I-95 S to Arthur Ashe Boulevard

- **Proposed Ramp Reconfiguration**
  Laburnum Avenue to I-95 N

- **Proposed Reconfiguration**
  7th Street @ I-95 & I-64 Interchange

- **Proposed Ramp Reconfiguration**
  I-95 N @ Exit 74C & Oliver Hill Way
Proposed New Ramp: Laburnum Avenue to I-95 Northbound

- New access to I-95 N from W Laburnum Avenue
- Close Arthur Ashe Boulevard on-ramp to I-95 N to eliminate weave on I-95 N
- Create dual-lane exit to I-64 W
- I-95 N reduced to 2 lanes between I-64 W off-ramp and I-64/I-195 on-ramp
Proposed Lane Reconfiguration: I-95 South to Arthur Ashe Boulevard

- Dual-lane exit from I-95 S onto Arthur Ashe Boulevard ramp (Exit 78)
- I-95 S reduced from 3 to 2 lanes between Exit 79 and I-64/I-195 on-ramp
- Expected to decrease rear-end crashes
Proposed Reconfiguration: 7th St. @ I-95/I-64 E Interchange

• Alternate access from both I-64 E and I-95 N into downtown Richmond and VCU Hospital, a major traffic generator
Proposed Ramp Reconfiguration: I-95 N @ Exit 74C & Oliver Hill Way

- Separates I-95 N to I-64 E traffic eliminating a weave
- I-95 N dual-lane off-ramp to Broad Street
- All current movements maintained
- Eliminates major weave area on I-95 N and expected to reduce weaving crashes
Potential Improvements

GOALS
To provide faster, safer, and more reliable travel along the I-95 corridor

• Additional general purpose lanes do not address these goals on the I-95 corridor
• Recommending a multifaceted, multimodal approach
  • Suite of operational upgrades
  • Additional VRE service/ Amtrak and rail upgrades
  • Additional commuter bus service
  • Expansion of and/or new park and ride lots
  • Rideshare programs: partner with DOD, specifically Fort Belvoir
  • Hard shoulder running off-peak period (Exit 133 to Exit 160) in both directions
  • Studies to make I-95 express lanes bi-directional, adding express lanes between I-495 and Woodrow Wilson Bridge, and interchange improvements
Opportunities to provide fast and reliable trips along the 95 Corridor

- Transit and carpooling offer best opportunities
- Today over 60% of persons moved between Occoquan and I-495 are SOV
- 20-25% increase of transit and carpooling between Spotsylvania County and Dumfries would help improve I-95 performance
Persons Moved Summary

- Multimodal solutions offer opportunities to address peak period conditions at lower cost than large-scale widening of the I-95

1. One new general purpose lane

[Diagram: Bus + 2 new VRE trains = 2,200-2,400 people per hour]

2. New bus service + 2 new VRE trains = ~2,000 people per hour

3. New bus service + 4 new VRE trains = ~3,500 people per hour
Potential Improvements Boards

- Existing performance measures
- Funded projects descriptions
- Potential improvements descriptions
- Public comments
- Funded projects
- Potential improvements

Office of the SECRETARY of TRANSPORTATION
Potential Improvements that Require Further Study Boards

Project types

- Interchange improvements without sufficient operational and safety analyses
- Bi-directional express lanes
- Park and ride lots requiring a location study
Other Major Improvement Recommendations Requiring Further Study

- **I-95/I-495 express lanes**
  - Between Exit 170 and Woodrow Wilson Bridge

- **Bi-directional I-95 express lanes**
  - Between southern terminus and Exit 170

- **Sample interchange evaluations**
  - Exit 160 (Occoquan)
  - Exit 156 (Dale City)
  - Exit 143 (Garrisonville)
  - Exit 126 (Massaponax)
Other Major Improvement
Recommendations Requiring Further Study

Sample interchange evaluations

- Exit 83 (Parham Rd)
- Exit 80 (Hermitage Rd)
- Exit 79 (I-64 W)
- Exit 69 (Bells Rd)

- Exit 53 (Southpark Blvd)
- Exit 48 (Wagner Rd)
- Exit 11 (Emporia)
Additional Boards

**Operations**
- Operational and Freeway Improvement Strategies
- Quick Clearance Towing and Safety Service Patrol Coverage
- Arterial Strategies to Improve Incident Management

**Multimodal**
- Potential Multimodal Improvements
- Long Bridge Project Summary
- DC2RVA Intercity Passenger Rail Improvements
Next Steps

• Commonwealth Transportation Board updates

• October public meetings
  • Review improvement recommendations

• November public meetings
  • Review refined improvement recommendation packages
Providing Feedback…VA95Corridor.org

Virginia Commonwealth Transportation Board

Interstate 95 Corridor Improvement Plan

What's Being Done

The Commonwealth Transportation Board (CTB), supported by the Virginia Department of Transportation (VDOT), the Department of Motor Vehicles, and the Virginia State Police, will study Interstate 95 (I-95) to identify priorities as well as potential revenue sources that could be dedicated to improvements.

As directed in Senate Joint Resolution 276 and House Joint Resolution 581 during the 2019 General Assembly, the study team will identify targeted improvements and incident management strategies for the corridor, as well as financing options for suggested projects.

The Commonwealth Transportation Board (CTB) will receive briefings during the study time frame.

View the first CTB presentation briefing, held in April 2019.

View the CTB’s study launch announcement.

Begin date: April 2019

Localities: Counties of Caroline, Chesterfield, Fairfax, Greensville, Hanover, Henrico, Prince George, Prince William, Spotsylvania, Stafford, Sussex and cities of Alexandria, Emporia, Fredericksburg Colonial Heights, Petersburg and Richmond

Districts: Northern Virginia, Fredericksburg, Richmond and Hampton Roads

Contact: Ben Mannell, project manager