I-81 Corridor Improvement Plan

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Deputy Secretary of Transportation
October 29, 2018
I-81 Corridor Improvement Plan

- Summary of public feedback
- Prioritization of potential improvements
- Overview of recommended improvement package
- Financing options
- On-going items that require additional work
- Next steps
I-81 Corridor Improvement Plan
Public Involvement- Summary

• Meeting attendance at 8 Public Meetings: 659

• Location specific comments: 762

• General Comments via forms, email, and phone: 617

• Comments focused on safety, congestion issues- also many concerns about enforcement
I-81 Public Involvement Summary
June 1 - September 30th

General Corridor Comments

- Congestion (237, 39%)
- Policy (173, 29%)
- Safety (197, 32%)
I-81 Corridor Plan
Operations Solutions- Foundation for Corridor-wide Improvements
I-81 Corridor
Delay Makes I-81 Unique

- 16% Incidents
- 6% Workzone
- 1% Weather
- 5% Holiday
- 72% Recurring

- 51% Incidents
- 15% Workzone
- 3% Weather
- 10% Holiday
- 21% Recurring
Operations Improvements

Key Components

- Changeable message signs and cameras
- Expanded safety service patrols
- Contract emergency clearance
- Detour routes and improvements to parallel facilities
- Operations improvements total $40M - funded off the top
On-Going Items
On-Going Items

• Several key items require extensive coordination with external parties
  – Truck parking solutions
  – Speed enforcement
  – Multimodal and local street improvements
Truck Parking

- Truck Parking Preference Survey Results:
  - Long-Term Parking – 76% prefer private rest areas
  - Short-Term Parking – 56% prefer public rest areas

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<th></th>
<th>Current Supply</th>
<th>Estimated Current Need</th>
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<tr>
<td>Northbound</td>
<td>1,550</td>
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<tr>
<td>Southbound</td>
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<td>Totals</td>
<td>3,450</td>
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Truck Parking

- Currently a 9:1 ratio of private truck parking spaces to public truck parking spaces along the length of the I-81 corridor in Virginia

- Opportunities exist for adding both public and private truck parking spaces

- Focus on locations that allow drivers to maximize their driving time
Truck Parking - Recommendations

• Establish Truck Parking Solution Task Force
  o Coordinate with private truck parking providers

• Implementation of mobile technology with widespread participation by private truck parking providers
  o Provide truckers with certainty of parking through reservation system

• Investigate opportunities to fund expansion of public and private truck parking in targeted locations
Speed Enforcement – Public Feedback

Would you support additional speed enforcement on the I-81 corridor?

- 23 (27%): Do not Support
- 61 (73%): Support
Would you support reducing the posted speed limit on the I-81 corridor?

- Do not Support: 47 (57%)
- Support: 35 (43%)
Speed Enforcement - Recommendations

- Establish 81 Speed Enforcement Task Force
- Coordinate with local and state law enforcement to determine strategies
- Examine differences in existing enforcement practices throughout the corridor
- Evaluate technology solutions to assist with enforcement
Multimodal Improvements

- New Virginia Breeze bus service has carried 14,000 riders in 10 months – exceeding projected ridership by more than 240%.

- More than 200,000 riders on 81 corridor state supported Amtrak service – a 9% increase from last year.

- ~70 million tons of freight moved by rail each year.
I-81 Corridor Rail Investment

REF - $70.1 M
- 2nd Mainline Improvements, Tunnel Clearances, and Siding Extension
- Since 2006

RPF - $9.3 M
- Shenandoah Valley Railroad
- Winchester & Western Railroad
- Since 2006

RIA - $12.3 M
- 31 Projects
- 15 Years

IPROC - $100 M
- Extension of Amtrak Service: LYN - Roanoke
- NS Mainline Capacity Improvements
- Signal Upgrades

Amtrak Operating Support - $3.6M
- FY19 – FY24
- Service between Roanoke and the Northeast
I-81 Corridor Rail Investment: Examples of Spurring Economic Development

- **Houff Corporation – Railside Industries**
  - $450,000 Rail Industrial Access Grant
  - 17,415 trucks off road during 5-year performance period
  - 28 new full-time jobs
  - Located on Shenandoah Valley Railroad

- **Shenandoah Valley Railroad**
  - $3.1M Rail Preservation Fund investment since 2006
  - 52,074 trucks off road
  - Preservation Fund investment has aided SVRR in doubling customer base
Passenger and Freight Rail

• Engage Norfolk-Southern on potential of 2nd train along the 81 corridor as well as extension of the Roanoke Train to Christiansburg

• Efforts underway with DRPT and Virginia Economic Development Partnership to improve strategies for marketing rail-served sites in the corridor
  o These efforts will remain on-going

• Rail Industrial Access Fund can establish ‘last-mile’ connections for distribution and manufacturing facilities
  o Will coordinate with VEDP to help market program to businesses along the corridor
I-81 Corridor Plan
Capital Solutions
August: Potential Capital Improvements

- Reviewed each problem area identified by performance measures
- Determined contributing factors
  - Traffic Volume
  - Grade
  - Curve
  - Ramp Spacing
  - Merge/Diverge Area
- Developed potential solutions based identified contributing factors
Prioritization of Potential Capital Improvements

• Focused on an improvement package of approximately $2 billion – approximately ½ of cost of potential improvements

• Evaluated all potential capital improvements using SMART SCALE-like process with benefits determined as follows:
  – 40% based on person hours of delay
  – 40% based on change in crash frequency
  – 20% based on change in access to jobs
Prioritization of Potential Capital Improvements

• Bristol - $252M
  – 26/26 potential solutions recommended for funding
    – Proposed 77/81 interchange solution was re-scoped to provide 50% of benefits for 12% of the original scope’s cost

• Salem - $882M
  – 22/33 potential solutions recommended for funding

• Staunton - $886M
  – 24/46 potential solutions recommended for funding
Summary Benefit Results from Prioritized Potential Solutions

- By deploying $2 billion of capital improvements along the I-81 corridor:
  - Annual vehicle hours of delay will be reduced, on average, by more than 6 million
    - Trucks will capture more than 3.6 million vehicle hours of annual delay reductions
    - Reductions related to construction of capital improvements responsible for more than 90% of these results; operational improvements and reductions due to fewer accidents account for remaining share
  - Annual statistical crashes are anticipated to be reduced, on average, by almost 450 across the entire corridor
    - Approximately 29% of the reduction in annual statistical crashes (representing almost 130 crashes) involve an injury

* Estimated based on the share of vehicle delays generated by projects included in list of $2 B improvements compared to total vehicle delays generated by all improvements considered in the corridor. Estimate includes benefits related to Operational Improvements
I-81 Financing Options
I-81 Financing Options

- Legislation provided direction on the financing options to be considered
  - Evaluate feasibility of using toll financing
  - Do not consider tolls on commuters
  - May consider tolls on heavy commercial vehicles
  - May consider High Occupancy Toll Lanes
  - Evaluate other financing means

- Financing options should be sufficient to fund recommended package of capital improvements and incident management strategies
Key Financial Plan Assumptions

- Use official Department of Taxation forecasts for revenue and inflation growth
  - Steady 2.6% CPI applied to proposed capital solutions
  - Steady 2.0% regional sales tax growth from 2017 Official Revenue Estimate and Constrained Long Range Plan (CLRP)
  - Varying 1.02%, 0.46%, 0.47% regional motor fuels tax growth from Official Estimate and CLRP with 1.02% growth in early years
- New operational improvements are paid annually out of dedicated revenue stream
- Apply historical trends for traffic growth
  - 1.7% for trucks
  - 0.7% for autos
Key Financial Plan Assumptions
Regional Taxes

- Regions impacted by a potential motor fuels or retail sales and use tax for I-81 Corridor
Key Financial Plan Assumptions  
Traffic and Tolls

• Collect per mile tolls without using a toll booth via:
  • Transponder (E-ZPass)
  • Video (image-based)
  • I-81 Commuter Annual Pass

• Toll Gantry Locations – Six along corridor
  • Between urbanized areas
  • Parsing of ~50-60 miles
Key Definitions

**Heavy Commercial Vehicle or “Trucks”**

- No uniform definition of term
- Study assumed FHWA Classes 6 – 13
- Surrounding states define similarly but lower axles (Class 5)
Key Assumptions
Toll Rates

• Plan examining various approaches to tolling

• Toll rates will vary between trucks and autos
  • Trucks – less than $0.17 per mile
  • Autos (non-commuters) – 1/3 to 2/3s of truck toll rate
  • Must be paid using transponder, sticker or by video

• Time of Day Tolling
  • Tolls would be variable with higher during ‘day-time’ – roughly 6:00am to 9:00pm and lower from 9:00pm to 6:00am
  • Goal is to encourage more efficient use of the corridor
I-81 Traffic by Time of Day

I-81 Traffic During 24-Hour Period*

*Time of Day studies at key locations throughout the corridor
Key Assumptions
Toll Rates

- **I-81 Commuter Annual Pass**
  - Explored in the financial analysis
  - Allows "autos" ability to pay an annual fee for unlimited use of the facility
  - Fee would not exceed cost of round-trip "auto" toll on I-81
  - Fee could be collected through DMV
  - Pass would be offered to auto commuters and other auto corridor users

- **Users of the corridor without I-81 Commuter Annual Pass would pay full auto toll rate**
Debt Financing Assumptions

• Debt financing cannot impact Commonwealth’s debt capacity

• To assure bondholders that assets are kept in state of good repair O&M costs must be clearly defined; assumption is that dedicated I-81 revenue will pay for on-going operational and revenue collection costs only (operational improvements and tolling O&M)

• Term of debt will be 30 years or more based on useful life of assets being constructed; interest rates range between 3.5 & 4.5%

• Toll-supported debt – Assume Bond ratings are Aaa/AAA/AAA for toll revenue (9c) bonds issued by the Commonwealth and/or federal TIFIA Loan Program
Debt Financing Assumptions

• Tax-supported debt - Assume Bond ratings of Aa2/AA/AA for special tax bonds supported by tax revenues directed to and issued by a regional authority

  • Hampton Roads Transportation Accountability Commission has issued $500 million with plans for $1.2 billion by 2020
  
  • Northern Virginia Transportation Authority has issued $60 million in debt and $1.2 billion in pay-as-you go projects
## Financing Options to Support
Recommend $2B Program of Projects

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<th>Regional Tax Option</th>
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<th>Revenue Generated</th>
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<td>Retail Sales and Use Tax</td>
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<tr>
<td>Regional Fuels Tax</td>
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<th>Tolling Option</th>
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<td>Commuter Annual Pass</td>
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* Figures in millions
Economic Impact Analysis
Economic Impact Analysis

- Analyzed economic impacts of investment in improvements to the I-81 corridor and their impacts at the state level

- Analyzed the impact of heavy commercial vehicle tolls on Virginia agriculture, manufacturing, and logistics sectors
Economic Impact Analysis- Preliminary
State Level Economic Impact

• If all 105 projects ($4.1 billion) are funded by 2060, $7.2 billion in additional economic output will be generated in Virginia

• The $2 billion recommend program (72 projects) will generate almost $3.5 billion in additional economic output in Virginia
  – Direct result of the expenditures related to the construction of the capital improvements
  – 19,800+ job/years, $1.2 billion in labor income
Economic Impact Analysis - Preliminary

Economic Impact of Tolling Heavy Commercial Vehicles

• Investments generate improved traffic conditions in the corridor that reduce the cost of doing business for trucking companies

• Between 2020-2060, these reduced costs ($4.6 billion) for companies serving Virginia-based industries is higher than the payment of the toll for those companies to use I-81 ($3.2 billion)

  – Reduced costs include: travel time savings, operational costs savings via less fuel spent, less overtime payments to drivers and less out-of-pocket costs related to crashes

• Net reduction in trucking costs at the state level of up to $1.4 billion over a 40-year period

• Positive economic impacts to manufacturing (up to $422 million); agriculture (up to $26.1 million); and logistics (up to $18.4 million) over a 40-year period*

* trucking cost reductions applied to individual industries based on their share of Statewide trucking expenditures
Next Steps

• Feedback from Commonwealth Transportation Board
• Revise draft report, as appropriate, based on feedback
• Board to consider final report at December meeting
• Final report to be submitted to General Assembly by the first day of the 2019 session
Project website: http://www.VA81Corridor.org

Project e-mail address: VA81CorridorPlan@OIPI.Virginia.gov