



COMMONWEALTH of VIRGINIA
Office of the
SECRETARY of TRANSPORTATION

I-81 Corridor Improvement Plan- Update

Deputy Secretary Nick Donohue
Commonwealth Transportation Board
September 17, 2018



I-81 Corridor Improvement Plan

- **Evaluated all 325 miles to determine top problem locations**
 - **Crash frequency**
 - **Crash severity**
 - **Person hours of delay**
 - **Incidents with lane closures > 1 hour**

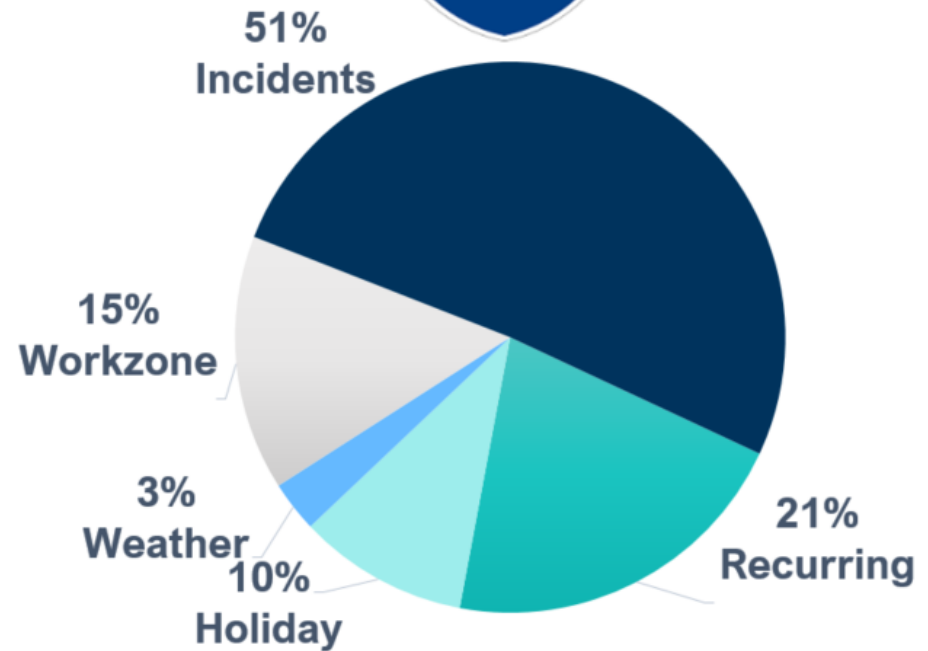
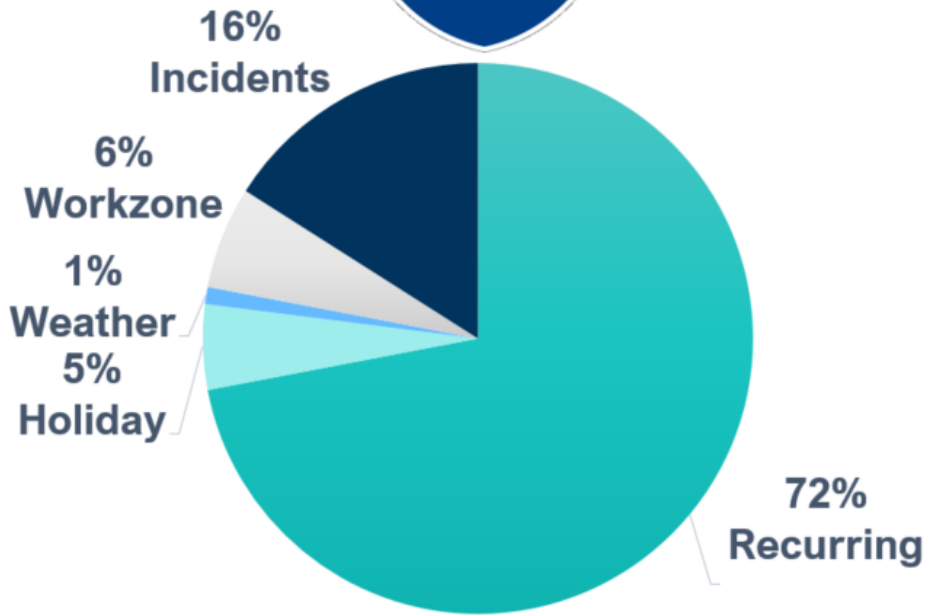
I-81 Public Involvement Summary

- **June meeting attendance: 399**
- **June series of meetings- comment forms, email, and phone: 403**
- **Public meeting map display comments: 680**
- **Public comment period closed August 6, 2018**
- **Comments focused on safety, congestion issues- also many concerns about enforcement**

- **August meeting attendance: 260**
- **August series of meetings- comment forms, email and phone: ~200**
- **Webmap comments: ~50**
- **Comment period closes September 30, 2018**
- **Comments have focused on operations, enforcement, revenue generation and specific capital improvements**

I-81 Corridor Operations Plan

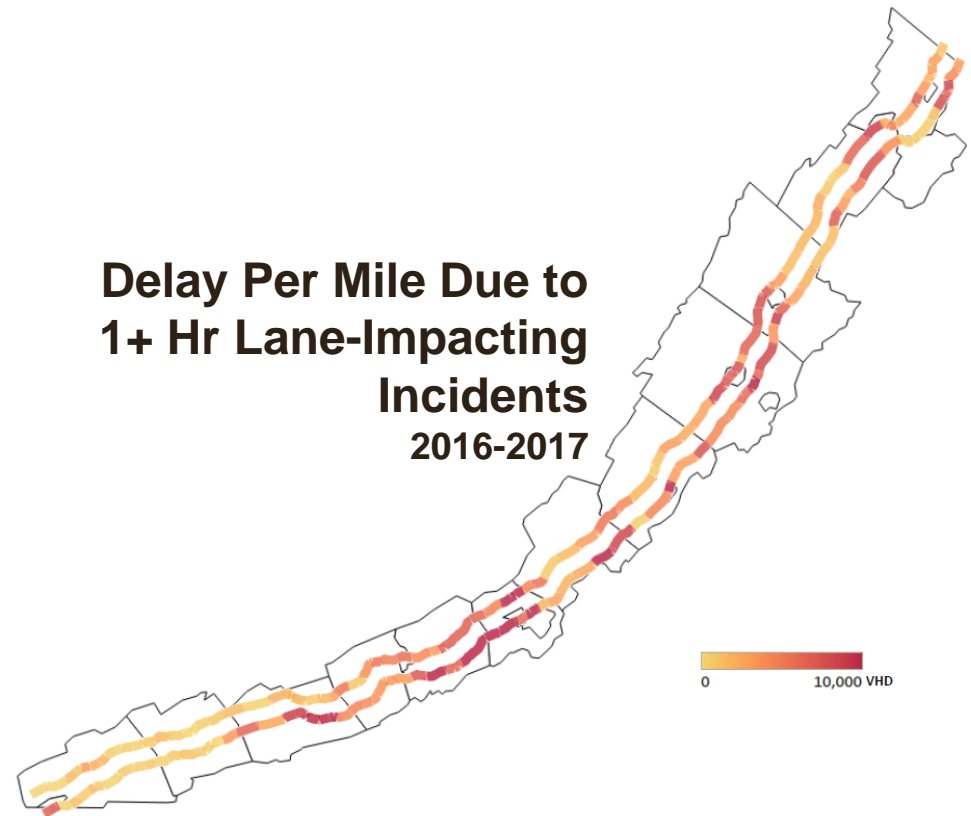
Delay Makes I-81 Unique



Potential Solutions Development

Operations and Incident Management Improvements

- Focused on corridor segments with the highest incident-related delay
- Identified crash hotspots
- Developed corridor-wide operations and incident management upgrade plan



I-81 Corridor Operations Plan

Key components include—

- **Changeable message signs and cameras**
- **Expanded safety service patrols**
- **Detour routes and improvements to parallel facilities**
- **Contract emergency clearance**
- **Truck parking enhancements**

Operations Improvements

Cameras and Changeable Message Signs (CMS)

- **Cameras (*eyes on the road*)**
 - Detect incidents faster
- **CMS (*communicate with you*)**
 - Inform motorists in real-time
 - Provide information in advance of major incidents
 - Alternative route, travel time

Detecting incidents, communicating information in real-time, allowing you to make informed decisions— a coordinated approach that keeps you moving



Operations Improvements

Safety Service Patrols (SSP)

- Safety vehicles that cover the interstate with services to stranded motorists
- Benefits
 - *Actively seeking events*
 - *Often first to arrive*
 - *Can move fender benders from travel lane*
 - *Call appropriate resources and start on-site traffic control*



Operations Improvements

Parallel Facilities

- **Why is upgrading parallel facilities important for I-81?**
 - Keeps you moving when there is an incident
 - Provides you with an alternative route
 - Helps you get around the incident
 - Helps you avoid back-ups
- **Includes:**
 - Incident management plans
 - Traffic signal operations and communications
 - Changeable message signs (CMS)
 - Geometric improvements
 - Bridge improvements
 - Signs and pavement marking



Example Incident Management Plan

Operations Improvements: Parallel Facilities

Sample detour plan for incident between Exit 222 and Exit 225



Message Signs

Inform the public of a change in traffic patterns during an incident



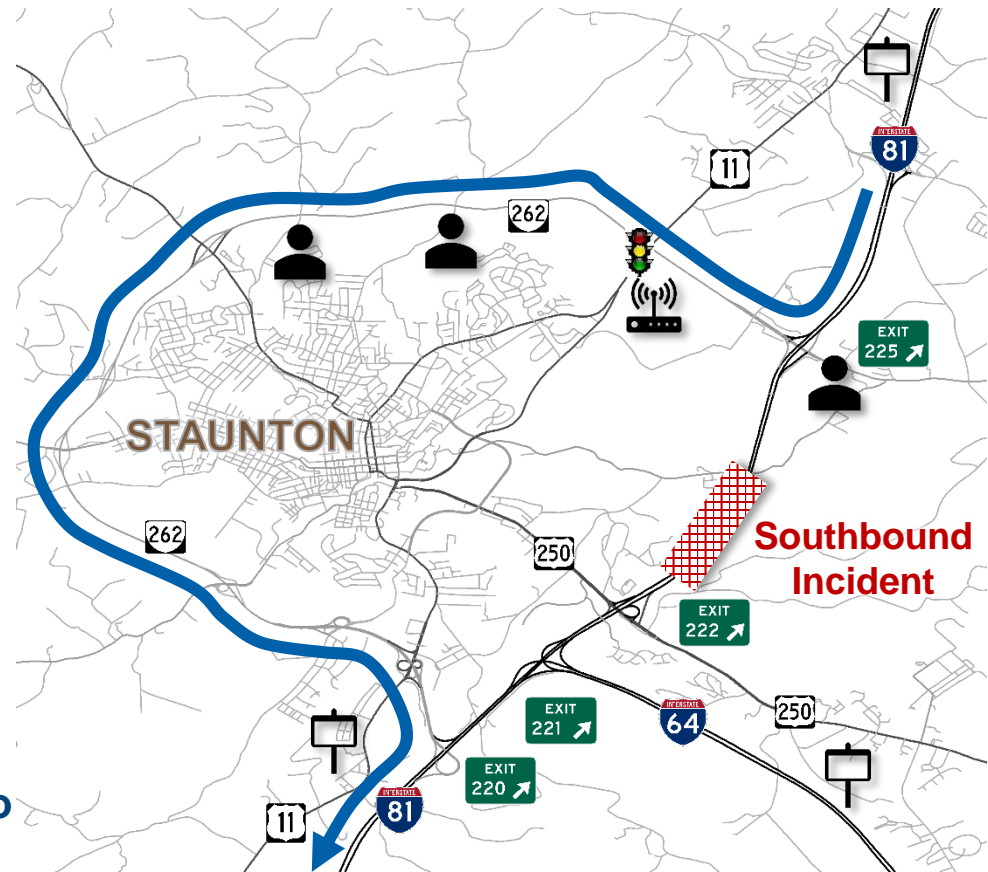
Traffic Control Personnel

Provide manual control of intersections during an incident



Traffic Signal Operations

Provides remote capabilities to the traffic signal to adapt to incident traffic patterns



Example Incident Management Scenario

Operations Improvements: Parallel Facilities

- 4 hour full closure + 4 hours single-lane closure
- Detour route: US Route 262 (1 traffic signal)

- Improvements

- New cameras
- New message signs
- Communications
- Traffic signal upgrades

Scenario	I-81 Queue Length (mi)	I-81 Travel Time (min)	Route 262 Travel Time (min)
No incident			15
Incident with no Improvements	17.1	186	28
Incident with Improvements	9.2	141	19

Operations Improvements

Contract Emergency Clearance

- Dedicated response time
- Dedicated clearance services with proper equipment
- Safely moves large vehicles out of travel lane
- Reduces incident duration for complicated events
- Gets traffic moving again



With this program in place, a four-hour incident could be reduced to three hours

Operations Improvements

Truck Parking Solutions

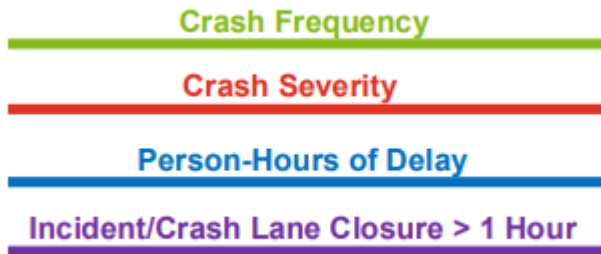
- Strategic locations for truck parking
- Real-time truck parking information
- Reduce impacts of trucks parking on shoulders and ramps
- Benefits
 - Provides safe spaces for truck parking
 - Enhances corridor safety for all users
 - Assists truckers with complying with hours of service regulations



63% of truck drivers spend over 15 minutes looking for parking between 4PM and midnight; many stop driving nearly an hour early to secure a safe spot to park

Potential Capital Projects

- Reviewed each problem area identified by performance measures



- Determined contributing factors

Contributing Factors



Traffic Volume



Grade



Curve



Ramp Spacing



Merge/Diverge Area



- Developed potential solutions based identified contributing factors

Potential Capital Projects

• Types of Solutions

– Widening

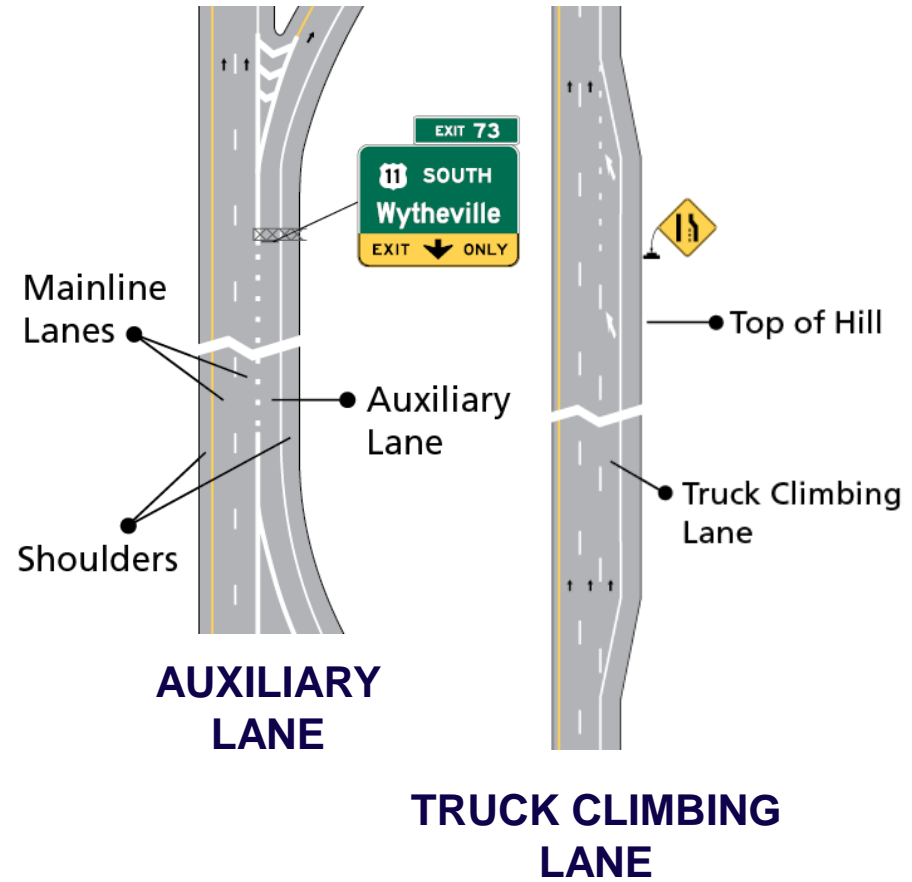
- Third through lane
- Auxiliary lane
- Truck climbing lane

– Acceleration and deceleration lane extensions

– Curve improvements

– Interchange improvements

- Ramp modifications
- Ramp intersection improvements



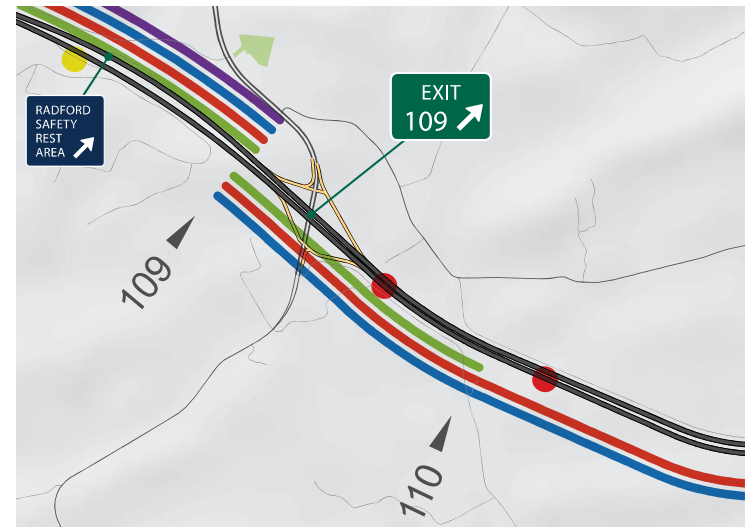
Potential Capital Projects - Note

- *Some of the top problem areas cannot be addressed with infrastructure solutions*
- **Over 850 fatal and severe injury crashes between 2012-2016 reviewed on the I-81 corridor**

Example:

MM 109 - Northbound

- 1. Drunk driver and a driver with a diabetic emergency**
- 2. A driver struck a maintenance worker clearing roadway debris**



2 Severe Injury Crashes

Potential Projects Summary

District	Widening	Truck Climbing Lanes	Auxiliary Lanes	Acceleration Lane Ext.	Deceleration Lane Ext.	Curve Improvement	Shoulder Widening	Interchange	Number of Improvements	Number of corridor miles
Bristol	1	0	3	6	8	4	0	1	23	15.8
Salem	7	1	5	10	5	3	0	0	33	87.3
Staunton	9	2	7	12	12	1	3	0	46	74.8
Total Improvements	17	3	15	28	25	8	3	1		
Total Corridor Miles	100.5	8	20	14.8	4.7	14	13	2.5		

Potential Projects Development

- **Estimated cost corridor-wide ~\$3.3 billion**
 - **\$500M in the Bristol District**
 - **\$1.6B in the Salem District**
 - **\$1.2B in the Staunton District**

- **Potential projects will be prioritized based on their congestion, safety, and accessibility benefits relative to cost**

Major Interstate Corridor Funding SMART SCALE vs. Other Resources

Interstate	SMART SCALE	Regional/Tolls/Other
I-64	\$397	\$1,179
I-66	0	\$2,680
I-77	\$5	0
I-81	\$168	0
I-85	0	0
I-95/I-395	\$220	\$940

Figures in millions

Potential Funding Options

- **Heavy commercial vehicle tolling options –**
 - \$50-\$200M/year
- **Regional 2.1% motor fuels tax –**
 - \$60-\$70M/year
- **Regional 0.7% retail sales and use tax –**
 - \$90-\$100M/year
- **Regional taxes would impact all localities in PDCs 3, 4, 5, 6, 7**

All funding options require General Assembly legislation

Tolling and Potential Tolling Revenue

- **What is open road tolling?**
 - Collect tolls without using a toll booth
 - Heavy commercial trucks
- **Who approves tolling process?**
 - Virginia Legislature
 - Federal Highway Administration

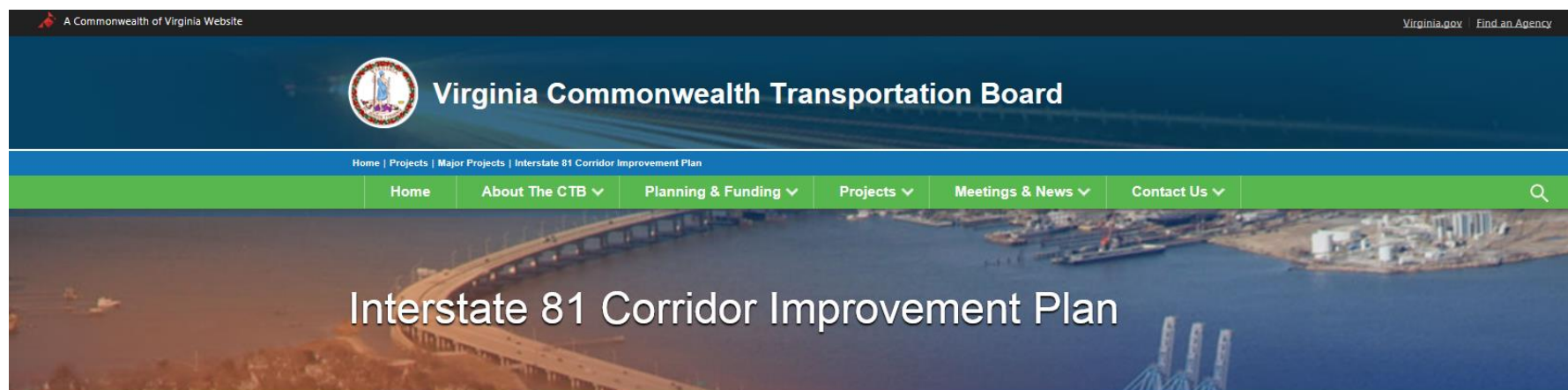


Toll revenues may only be used to benefit the corridor on which they were collected.

Next Steps

- **October Public Meetings throughout the Corridor**
- **Commonwealth Transportation Board briefing on draft plan at its October meeting**
- **Commonwealth Transportation Board consideration of final plan at its December meeting**
- **Plan to be submitted to the General Assembly no later than the first day of the 2019 Session**

Providing Feedback...VA81Corridor.org



Project website: <http://www.VA81Corridor.org>

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