I-81 2025 CORRIDOR IMPROVEMENT PLAN

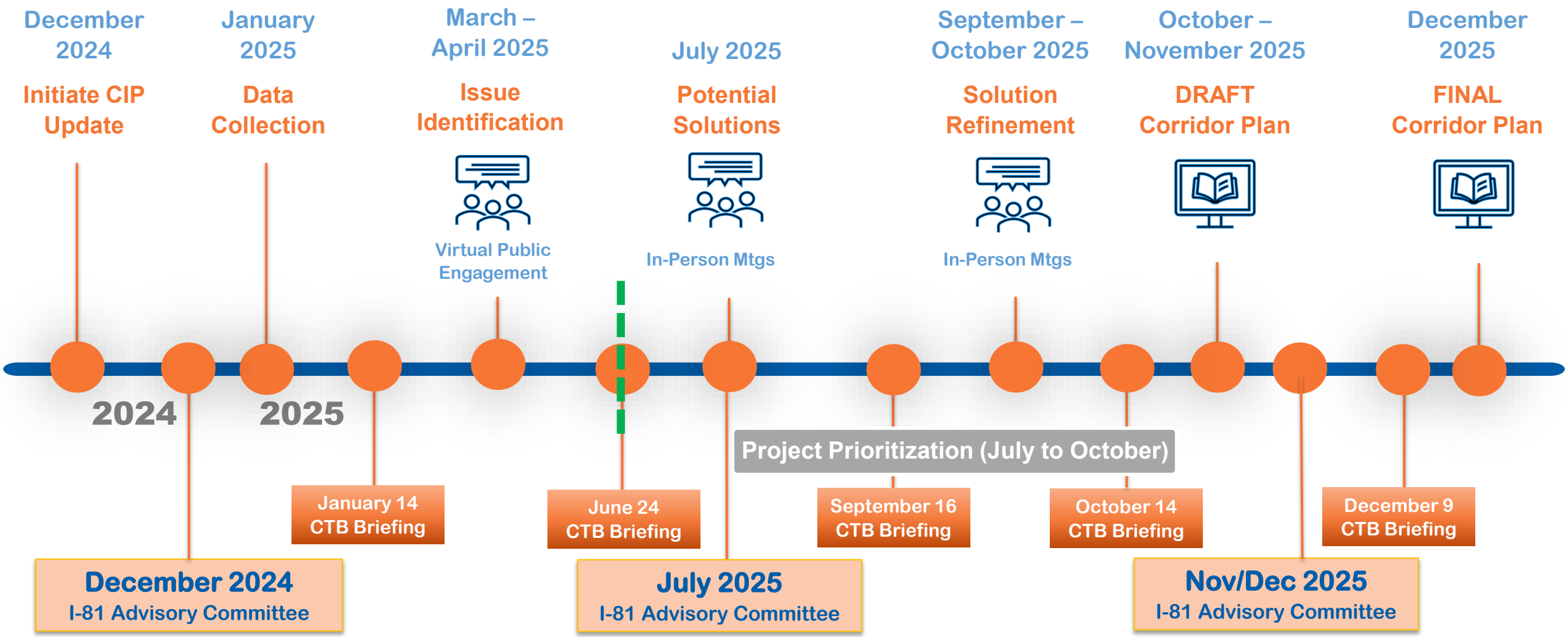
Ben Mannell, AICP

June 24, 2025

2025 I-81 CIP: CTB Update #2 of 5

- I-81 CIP Schedule and Update
- I-81 Corridor Significance and Challenges
- CIP Update- Work to Date
  - Performance Measures
  - Public Feedback from Round 1 Engagement
- Upcoming Round 2 Public Meetings
- Next Steps

CIP Schedule: December 2024 – December 2025



I-81 Corridor Improvement Plan: Update

- 65 projects in the 81 Program have advanced or are advancing to construction
- Next tranche of projects need to be identified
  - Projects are complex and need to be identified early
  - Allows advanced activities- resulting in refined construction costs and shovel-ready projects
- Project identification is performance driven
- Solutions will be identified using a SMART SCALE-like process



I-81 Corridor Significance



325-mile

CORRIDOR WITHIN VIRGINIA



30

COLLEGES AND UNIVERSITIES



13

COUNTIES



45

CITIES AND TOWNS



1.4 BILLION

TRUCK VMT ANNUALLY



43%

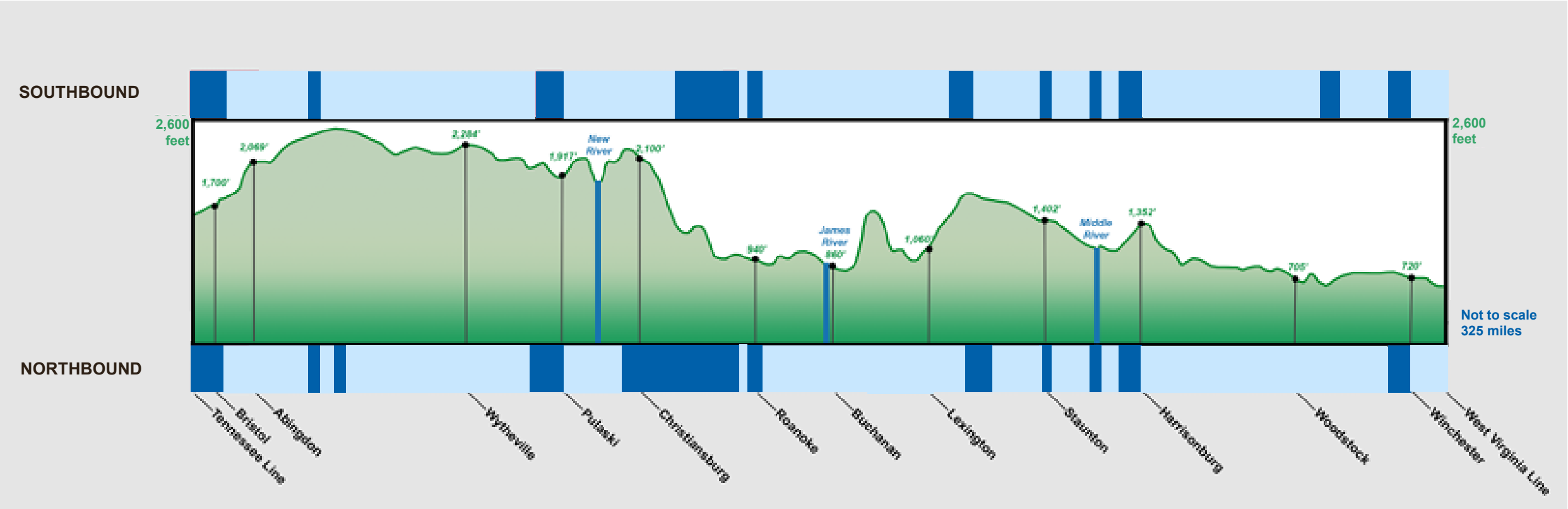
OF STATEWIDE INTERSTATE TRUCK VMT



$300+ BILLION

IN GOODS PER YEAR

I-81 Corridor Challenges: Trucks and Terrain Impacts



LEGEND:

PLANNED OR CONSTRUCTED 3-LANE SECTION

2-LANE SECTION

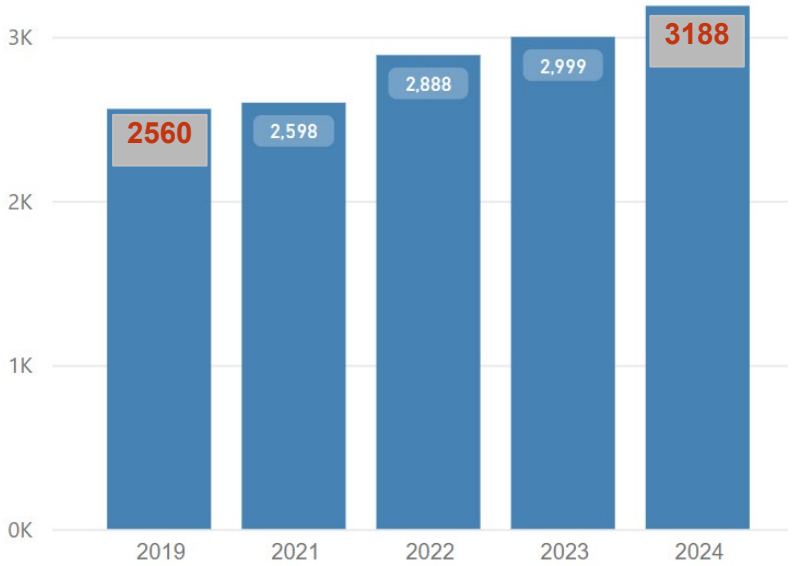
I-81 Corridor Challenges: Trucks and Terrain Impacts

- Trucks use more highway space than passenger cars
  - Level terrain: 1 truck = 2 passenger car equivalent (PCE)
  - Mountainous terrain: 1 truck = 15 PCE
- I-81 corridor truck volumes are compounded by terrain
- Top 5 PCE locations
  - Salem
  - Roanoke
  - Harrisonburg
  - Winchester
  - Wytheville



I-81 Corridor Challenges: Safety and Reliability

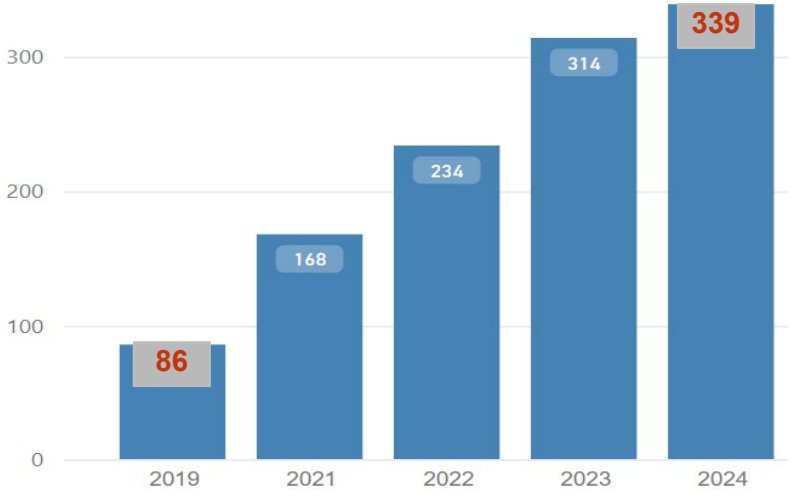
All I-81 Crashes





~14,000 crashes involving all vehicles

I-81 Work Zone Crashes





~4,700 crashes involving large trucks



18 crashes

with clearance times greater than 4 hours in 2024

67% decrease compared to 2019

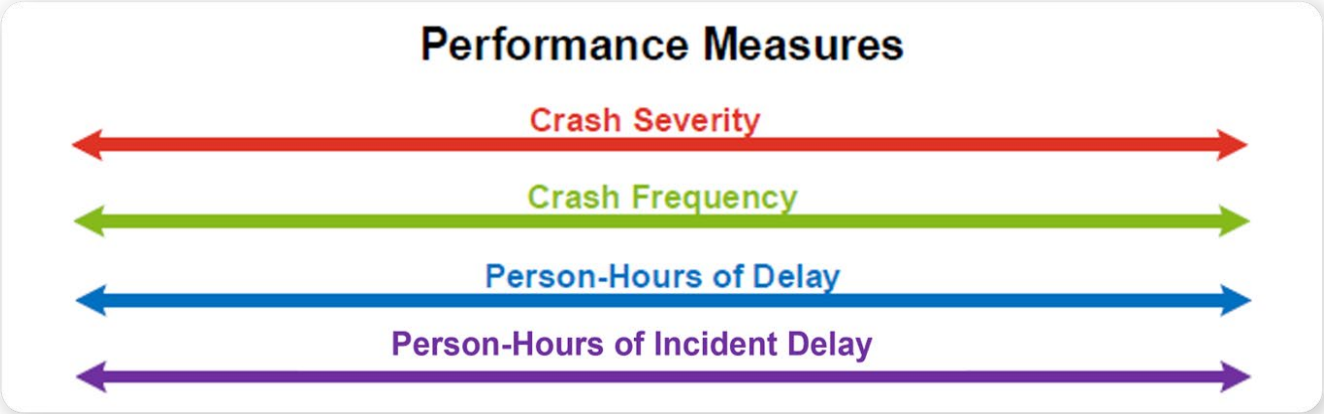
I-81 CIP Update: Work to Date

- Performance measures analysis- complete
- Round 1 public engagement- complete
  - Performance measures and public validation
  - Feedback on issues
- Potential solutions development- underway
- Preparation for Round 2 public meetings- underway

Performance Measures Used

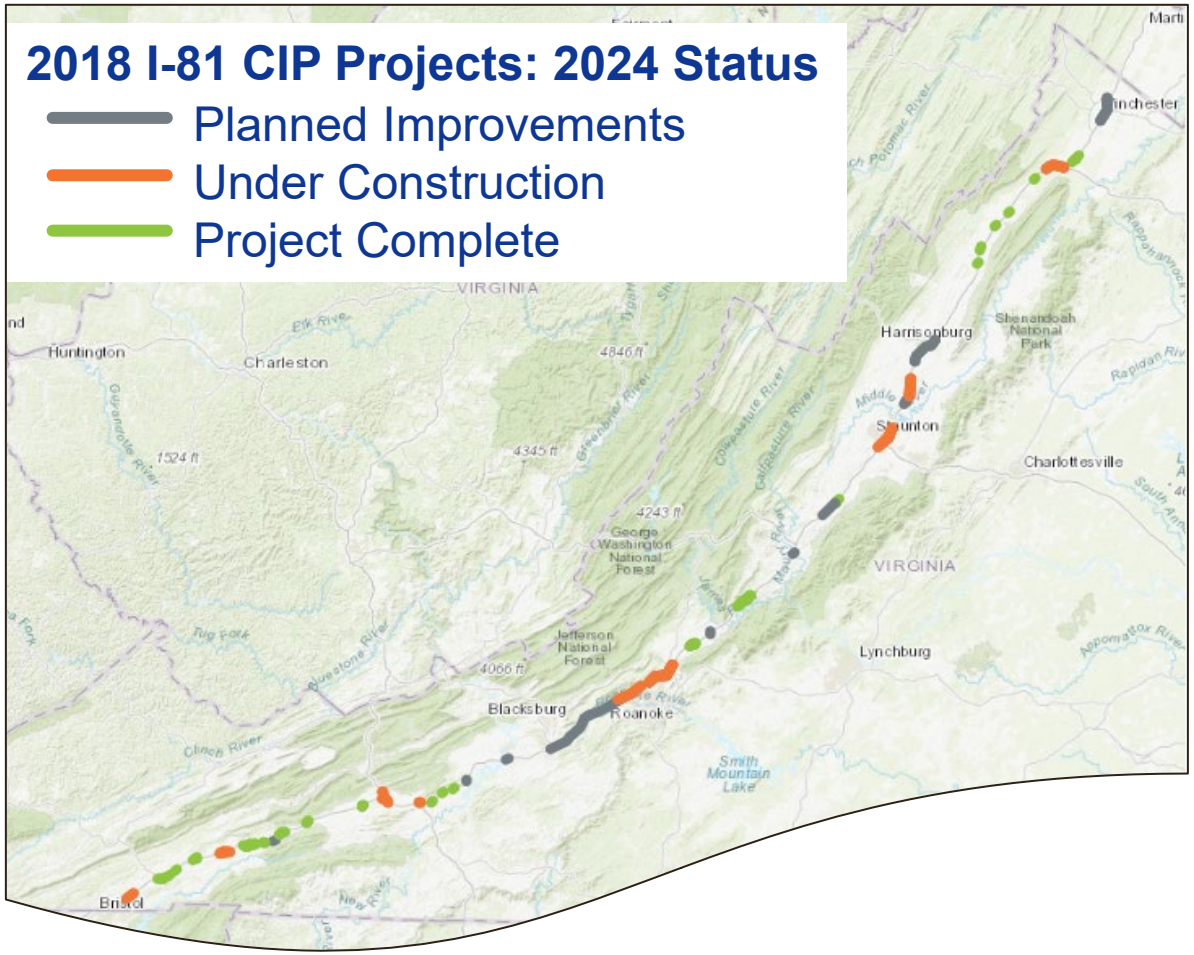
Goal: Determine the top 25% of one-mile segments for the following performance measures in both directions of I-81

Crash Severity	fatal and severe injury crashes over the last 5 years
Crash Frequency	rate of crashes during the last 5 years
Person-hours of Delay	hours of delay caused by congestion, incidents and weather events
Person-hours of Incident Delay	incidents or crashes that least to at least one lane of the interstate being closed an hour or more



Data Analysis Assumptions

- **Exclude 2020 data**
  - **5-year dataset: 2019 & 2021-2024**
- **Exclude one-mile segments in 2018 I-81 CIP with widening and truck climbing projects already programmed for improvement**



Performance Measures Summary

Milepost	District	Number of One-Mile Segments (both directions) in the Top 25% by Performance Measure			
		Crash Severity	Crash Frequency	Person Hours of Delay	Person Hours of Incident Delay
0–88	Bristol	44	49	9	2
88–175	Salem	30	33	29	23
175–325	Staunton	59	49	93	109

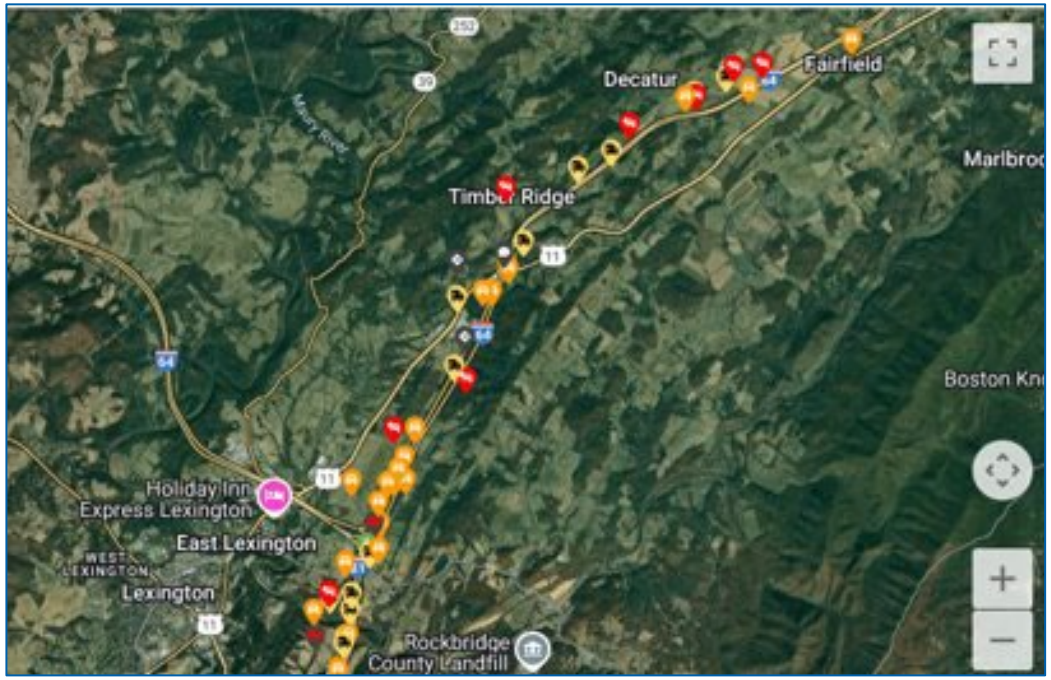
Round 1 Public Outreach (Virtual)- Problem Identification

- Open April 1-15, 2025

VIRTUAL ENGAGEMENT

4,000
COMMENTS

4,700
PARTICIPANTS



- Performance measures identified, public asked to validate based on their driving experience
- Location-specific issues identified and written comments provided

Round 1 Public Outreach Feedback Summary

Location-Specific Issue Identification by District

Issue Type	Bristol	Salem	Staunton	Total
1. Congestion	85 (36%)	145 (31%)	557 (42%)	787 (39%)
2. Truck Operations	59 (25%)	122 (26%)	269 (20%)	450 (22%)
3. Safety	42 (18%)	79 (16%)	301 (23%)	422 (21%)
4. Speeding and Aggressive Driving	24 (10%)	75 (16%)	122 (9%)	211 (10%)
5. Geometry	12 (5%)	33 (7%)	39 (3%)	84 (4%)
6. Pavement Markings and Signing	8 (3%)	7 (1%)	21 (2%)	36 (2%)
7. Other	5 (2%)	14 (3%)	19 (1%)	38 (2%)
All	235	457	1,318	2,010

- Participant-identified
- Top four issue types accounted for 92% of the total identified

Round 1 Public Outreach Feedback Summary Continued

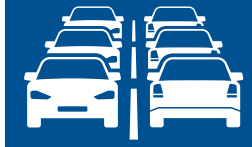
Top 10 Written Comment Themes



Need for additional lanes- 22%



Short/poorly designed ramps- 6%



Congestion and backups- 20%



Interchange and weigh station geometry- 5%



Heavy truck volumes- 19%



Pavement and drainage issues- 2%



Frequent crashes and safety concerns- 14%



Noise and local impacts- 1%



Aggressive/high-speed driving- 10%

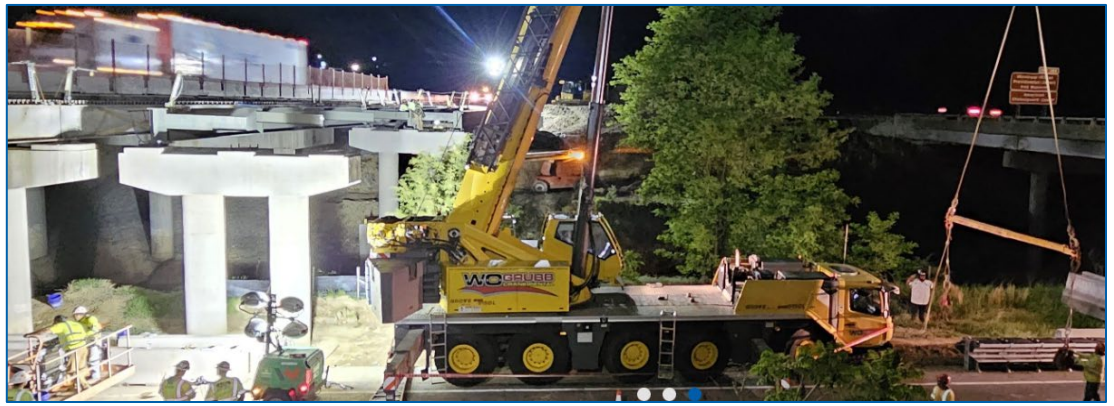


Insufficient truck parking- 1%

Round 1 Public Outreach Comments by District

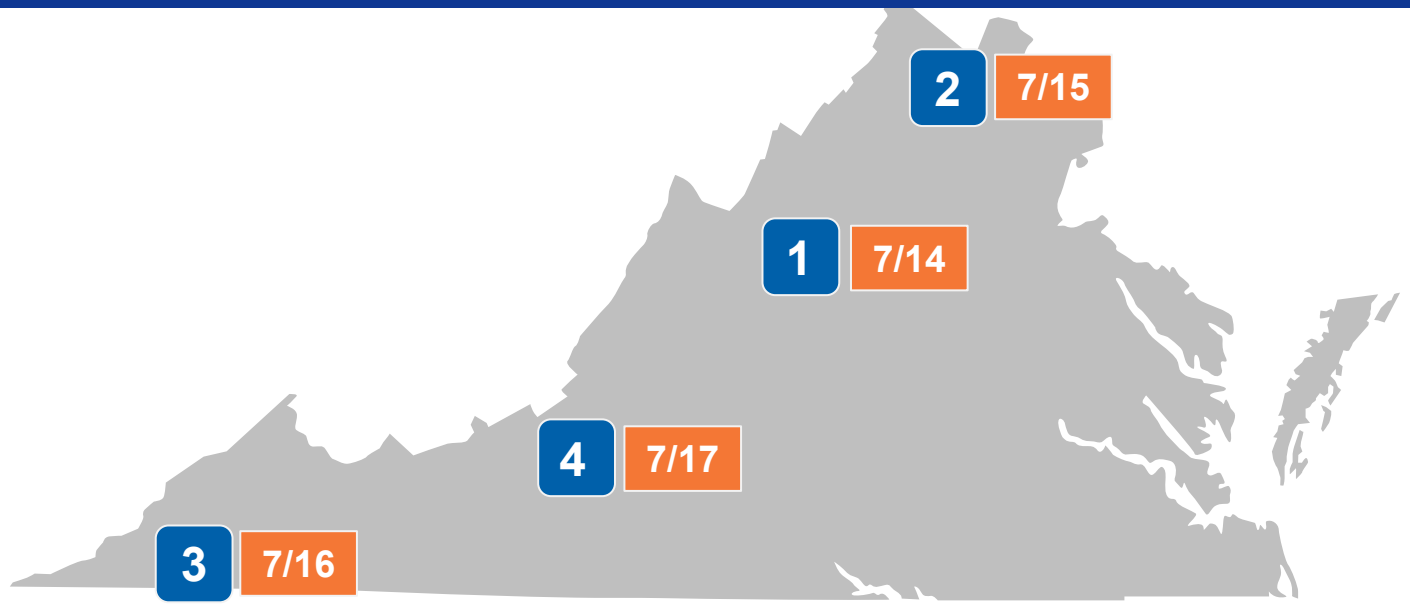
- **Written comment themes from each District:**
  - Congestion or capacity concerns
  - Truck volumes
  - Interchange and ramp design
- **Comments on the above issues were focused in areas where there are currently programmed projects with construction activity or activity starting in the next 2-3 years**





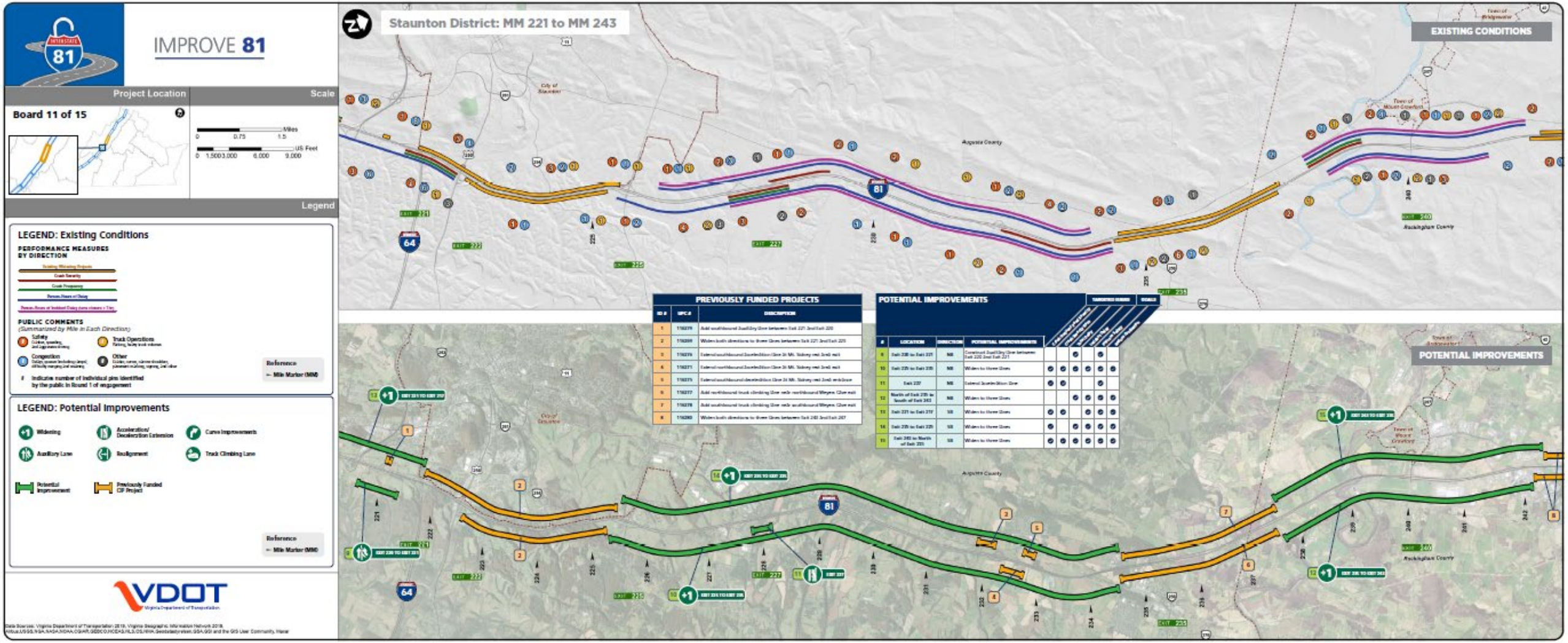
Round 2 Public Meetings- Potential Solutions

- **Four in-person meetings held week of July 14th**
- **Maps with potential solutions driven by performance measures**
  - Capital
  - Operations
- **Survey to gather public comment on potential solutions**
- **Meeting materials and survey will be posted on-line**



1. Staunton South- Blue Ridge Community College 5-7pm
2. Staunton North- Shenandoah University 4-6pm
3. Bristol Hilton Garden Inn (Exit 7) 5-7pm
4. Salem Civic Center 5-7pm

I-81 CIP Board – Draft Example



Next Steps

- Study team will use public feedback from the July meetings to help further refine recommended solutions
- Fall public meetings
  - Present refined solutions that have been prioritized using a SMART SCALE-like process
- Present refined solutions to the I-81 Advisory Committee and CTB
- Anticipate adopting updated Corridor Improvement Plan in December

Questions and Comments

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