

# I-81 PROGRAM PROGRESS REPORT

December 2024

Prepared for:



Prepared by:



Commonwealth  
Transportation Board



# INTRODUCTION

In April 2019, the Virginia General Assembly enacted legislation that Governor Ralph Northam signed into law establishing the Interstate 81 (I-81) Corridor Improvement Program and Fund, which advances the projects identified in the I-81 Corridor Improvement Plan (the Plan) for implementation. The Plan was approved by the Commonwealth Transportation Board (the Board) in December 2018 following an evaluation of the corridor. Chapters 837 and 846 of the 2019 Virginia Acts of Assembly specify the roles and responsibilities of the Board and the I-81 Committee (the Committee) to enact the I-81 Corridor Improvement Program (the Program) and Fund (the Fund).

## LEGISLATIVE REQUIREMENTS

Section 33.2-3602 of the legislation requires the Board, in consultation with the Committee, to report to the General Assembly by December 15 of each year “regarding the status and progress of implementation of the Program.” This report is mandated to include the following information.

- ▶ An evaluation of safety and performance of I-81 using the following measures of effectiveness
  - ▶ **Crash frequency and severity:** the number of crashes, weighted by severity using the equivalent property damage only (EPDO) scale, summarized per mile
  - ▶ **Total delay:** the total person-hours of delay caused by the impacts of congestion, incidents, and weather events, summarized per mile
  - ▶ **Lane-impacting incident frequency:** the number of incidents (e.g., crashes, disabled vehicles, vehicle fires) that lead to at least one lane of the interstate being closed for an hour or more, summarized per mile
  - ▶ **Lane-impacting incident duration:** the duration in hours of at least one lane of the interstate being closed due to an incident for an hour or more
- ▶ An assessment of the effectiveness of the operational strategies and capital improvement projects implemented and funded through the Program
- ▶ The status of capital improvement projects funded through the Program
- ▶ The current and projected balances of the Fund

House Bill 2718 (Chapter 837), introduced by Delegates Steve Landes and Terry Austin, and Senate Bill 1716 (Chapter 846), introduced by Senators Mark Obenshain and William Carrico, established the I-81 Corridor Improvement Program, Fund, and Committee. Governor Ralph Northam announced amendments to the bills in March 2019, which provided dedicated annual funding to the corridor, estimated initially at \$103 million in fiscal year 2020 and growing to an estimated \$163 million in fiscal year 2025. These funds supported the \$2 billion improvement program (cost estimates as of the 2018 Plan). The revenues for the Fund were provided through the creation of a new truck registration fee and the establishment of an I-81 corridor regional fuels tax, a statewide diesel tax, and a statewide road tax.

During the 2020 General Assembly, House Bill 1414 (Chapter 1230) and Senate Bill 890 (Chapter 1275) included the following changes to the Program and Fund.

- ▶ Authorized the sale and issuance of bonds with an aggregate principal amount of \$1 billion
- ▶ Converted the regional fuels tax to a cents per gallon tax with the opportunity for annual growth based on the Consumer Price Index
- ▶ Amended the regional fuels tax to include only localities through which I-81 passes or cities wholly encompassed by a county through which I-81 passes
- ▶ Allocated additional funding for the corridor through the Interstate Operations and Enhancement Program (IOEP). Previously provided statewide revenue sources were committed to the Commonwealth Transportation Fund beginning in fiscal year 2021

# I-81 PROGRAM PROGRESS REPORT

## TIMELINE OF EVENTS

|   |                     |  |  |                     |   |
|---|---------------------|--|--|---------------------|---|
| 2022 I-81 Corridor Improvement Report submitted to the General Assembly                               | <b>JAN</b><br>2023  |  | 2023 I-81 Corridor Improvement Report submitted to the General Assembly    | <b>JAN</b><br>2024  | Construction of widening project in Roanoke and Botetourt Counties begins   |
|   | <b>FEB</b><br>2023  |  |  | <b>FEB</b><br>2024  |   |
|   | <b>MAR</b><br>2023  |  |  | <b>MAR</b><br>2024  |   |
| Construction of City of Staunton and Augusta County widening project between Exits 221 and 225 begins | <b>APR</b><br>2023  | Construction of the Smyth County auxiliary lane project completed, the first auxiliary lane project completed in the I-81 Corridor Improvement Program |  | <b>APR</b><br>2024  |   |
|   | <b>MAY</b><br>2023  |  |  | <b>MAY</b><br>2024  |   |
|   | <b>JUNE</b><br>2023 |  |  | <b>JUNE</b><br>2024 |   |
| Construction of two truck climbing lane projects in Washington County begins                          | <b>JULY</b><br>2023 | Construction of two acceleration and two deceleration lane extension projects in Smyth County completed  | Construction of deceleration lane extension project in Wythe County begins | <b>JULY</b><br>2024 |   |
|   | <b>AUG</b><br>2023  |  |  | <b>AUG</b><br>2024  |   |
|   | <b>SEPT</b><br>2023 |  | Construction of widening project in Shenandoah and Warren Counties begins  | <b>SEPT</b><br>2024 |   |
|   | <b>OCT</b><br>2023  |  |  | <b>OCT</b><br>2024  | Construction of two truck climbing lane projects in Augusta County begins   |
|   | <b>NOV</b><br>2023  |  |  | <b>NOV</b><br>2024  |   |
| Construction of truck climbing lane project in Smyth County completed                                 | <b>DEC</b><br>2023  | Commonwealth Transportation Board approved the 2023 I-81 Annual Progress Report and sent it to the General Assembly                                    |  | <b>DEC</b><br>2024  | Commonwealth Transportation Board to approve the 2024 I-81 Annual Progress Report and send it to the General Assembly |
|   |                     |  |  |                     |   |

## I-81 PROGRAM PROGRESS REPORT

# CURRENT AND PROJECTED BALANCES OF THE FUND

As of September 2024, the Virginia Department of Transportation (VDOT) documented the current and projected funds available in the Program. The current and projected balances of the Fund are summarized in **Table 1**, of which all available funds are expected to be allocated to projects within the Program. The amounts shown in the table reflect the allocation of funding adopted by the Board on June 18, 2024, for the capital projects programmed into the Fiscal Year 2025-2030 Six-Year Improvement Program (SYIP). Estimated schedule information for capital improvement projects is available in **Appendix A** and can be found online at [www.improve81.org](http://www.improve81.org).

*Table 1: Current Versus Projected Funds Available Based on the FY 2025-2030 SYIP (in millions of dollars)*

| Source                        | Through FY 2024 | FY 2025              | FY 2026              | FY 2027        | FY 2028        | FY 2029        | FY 2030        | Total            |
|-------------------------------|-----------------|----------------------|----------------------|----------------|----------------|----------------|----------------|------------------|
| I-81 Regional Fuels Tax       | \$380.3         | \$90.2               | \$93.2               | \$95.2         | \$97.3         | \$99.5         | \$101.6        | <b>\$957.3</b>   |
| I-81 Allocation from IOEP     | \$354.8         | \$84.5               | \$114.7              | \$118.7        | \$123.2        | \$133.3        | \$138.5        | <b>\$1,067.7</b> |
| Other Sources                 | \$29.3          | \$112.0 <sup>1</sup> | \$175.0 <sup>2</sup> | \$0.0          | \$0.0          | \$0.0          | \$0.0          | <b>\$316.3</b>   |
| Interest Income <sup>3</sup>  | \$29.9          | \$0.0                | \$0.0                | \$0.0          | \$0.0          | \$0.0          | \$0.0          | <b>\$29.9</b>    |
| <b>Subtotal</b>               | <b>\$794.3</b>  | <b>\$286.7</b>       | <b>\$382.9</b>       | <b>\$213.9</b> | <b>\$220.5</b> | <b>\$232.8</b> | <b>\$240.1</b> | <b>\$2,371.2</b> |
| Planned Debt for Construction | \$199.4         | \$199.4              | \$0.0                | \$334.2        | \$0.0          | \$0.0          | \$266.9        | \$999.9          |
| <b>Total</b>                  | <b>\$993.7</b>  | <b>\$486.1</b>       | <b>\$382.9</b>       | <b>\$548.1</b> | <b>\$220.5</b> | <b>\$232.8</b> | <b>\$507.0</b> | <b>\$3,371.1</b> |

*Sources:*

*Regional Fuels Tax estimate provided by the Virginia Department of Taxation, December 2023*

*Interstate Operations and Enhancement Program, Commonwealth Transportation Fund Six-Year Financial Plan, June 2024*

*Notes:*

*FY = Fiscal Year*

<sup>1</sup>*From General Fund revenues and the Highway Infrastructure Programs Community Project Grant*

<sup>2</sup>*From General Fund Surplus dedicated to I-81 (subject to future appropriation)*

<sup>3</sup>*Includes interest income and towing recovery revenue*

In 2020, the General Assembly passed legislation that limited the imposition of regional fuels taxes to only those localities through which I-81 passes. This adjustment to the original fuel tax mechanism is not anticipated to impact the financial health of the Fund. Furthermore, per the 2020 Interstate Operations and Enhancement Program (IOEP) omnibus legislation, I-81 receives an allocation of funds from the IOEP equal to the ratio of I-81 vehicle miles traveled (VMT) by vehicle Class 6 or higher to total VMT on all interstates in Virginia. Beginning in FY21, the truck registration fees and road tax revenue from the Program were dedicated to the Commonwealth Transportation Fund. Adoption of the FY22-27 SYIP included a plan for financing the Program and estimated proceeds from I-81 bonds and Transportation Infrastructure Finance and Innovation Act (TIFIA) financing.

# STATUS OF PROJECTS FUNDED THROUGH THE PROGRAM

The FY25 SYIP adopted by the Board on June 18, 2024, included operational improvements and 29 capital improvement projects identified in the Plan. In 2021, the camera and changeable message sign installations were completed along with the three ramp extension construction projects in the Staunton District. Major progress was made on the acceleration and deceleration lane extension projects with 7 projects finishing construction in 2023. The Smyth County auxiliary lane project was also completed in 2023, which was the first completed auxiliary lane project in the I-81 corridor improvement program. In addition, a high friction overlay project was completed in Smyth County in 2023. In 2024, construction continued on several widening, truck climbing lane, auxiliary lane, and acceleration/deceleration lane extension projects in the Bristol, Salem, and Staunton districts.

**Figure 1** outlines the status of the projects as of August 2024 based on project type. Project ID 60 was rescoped from a shoulder improvement project to a road widening project in 2024. In the 2023 I-81 Progress Report, Project ID 20 was categorized as an auxiliary lane project, but it was recently rescoped from an acceleration lane extension project to a high friction overlay and animal control fence project. Project ID 20 is classified as a curve improvement project in this Progress Report. A table summarizing the status of individual capital improvement projects is in **Appendix B**.

Figure 1: Status of Projects Funded Through the Program

| Project Type |  | Status | Total Projects | Estimated Completion |
|--------------|--|--------|----------------|----------------------|
| Capital      | Widening                                 | 11     | 11             | 2034                 |
|              | Acceleration/Deceleration Lane Extension | 24     | 35             | 2031                 |
|              | Auxiliary Lane                           | 1      | 4              | 2028                 |
|              | Truck Climbing Lane                      | 1      | 5              | 2027                 |
|              | Curve Improvements                       | 9      | 9              | Completed            |
| Operations   | Safety Service Patrol Expansion          | 1      | 1              | Completed            |
|              | Towing and Recovery Incentive Program    | 1      | 1              | Completed            |
|              | Camera Installation                      | 42     | 42             | Completed            |
|              | Changeable Message Sign Installation     | 30     | 30             | Completed            |

**Legend:** Complete Programmed

Source: Virginia Department of Transportation, 2024

# PERFORMANCE OF THE I-81 CORRIDOR

**Figure 2** through **Figure 5** show how the four performance measures changed over three multi-year periods for the eight years between 2016 and 2023. These figures also show the capital improvement projects that were completed and the ones that are still underway or planned for construction. The performance measures documented in the Plan and adopted by the Board in late 2018 were based on data through 2017. The emergence of the COVID-19 pandemic in 2020 caused a 15% reduction in total vehicle-miles traveled (VMT) on I-81, while VMT returned to pre-pandemic levels in 2021. As a result, 2020 data was removed from the multi-year performance measure analysis for this report as reduced travel on I-81 skewed the data when compared to other years.

Crash data was compared between three five-year periods not including 2020 data: 2016-2021, 2017-2022, and 2018-2023. A supplementary histogram displaying crash frequency and severity per mile for truck-related crashes is included in **Appendix C**. Delay and incident data were compared for the three two-year periods: 2019-2021, 2021-2022, and 2022-2023. Data for 2020 was also excluded from 2019-2021 results. In 2021, VDOT completed upgrading the statewide Advanced Traffic Management System (ATMS), which is used to report the occurrence of lane-impacting incidents and their duration. The lane-impacting incident and duration data for 2019 was updated in this report using the dataset from the new ATMS platform to be consistent with data from 2021 and later.

To illustrate how the program of projects impacts I-81 performance, the study team relied on a minimum of one year of data following the implementation of the program or project. **Table 2** through **Table 5** summarize corridor-wide statistics for each two- or five-year period for the four performance measures. The performance measure data has fluctuated on a segment-by-segment and corridor-wide basis in the years since the plan was developed. The total person-hours of delay decreased by 11.5% between 2022 and 2023. Total EPDO crashes also decreased by 4.7% over the five-year period ending in 2023 compared to the five-year period ending in 2022. The number of lane-impacting incidents lasting one hour or longer and the duration of lane closures due to lane-impacting incidents lasting one hour or longer has steadily increased when comparing the two-year data periods presented in **Table 3** and **Table 4**. The sharpest increase in both performance measures occurred between 2022 and 2023, with the number of lane-impacting incidents lasting one hour or longer increasing by 43.6% and the total duration of lane closures due to incidents lasting one hour or longer increasing by 71.1% year-over-year.

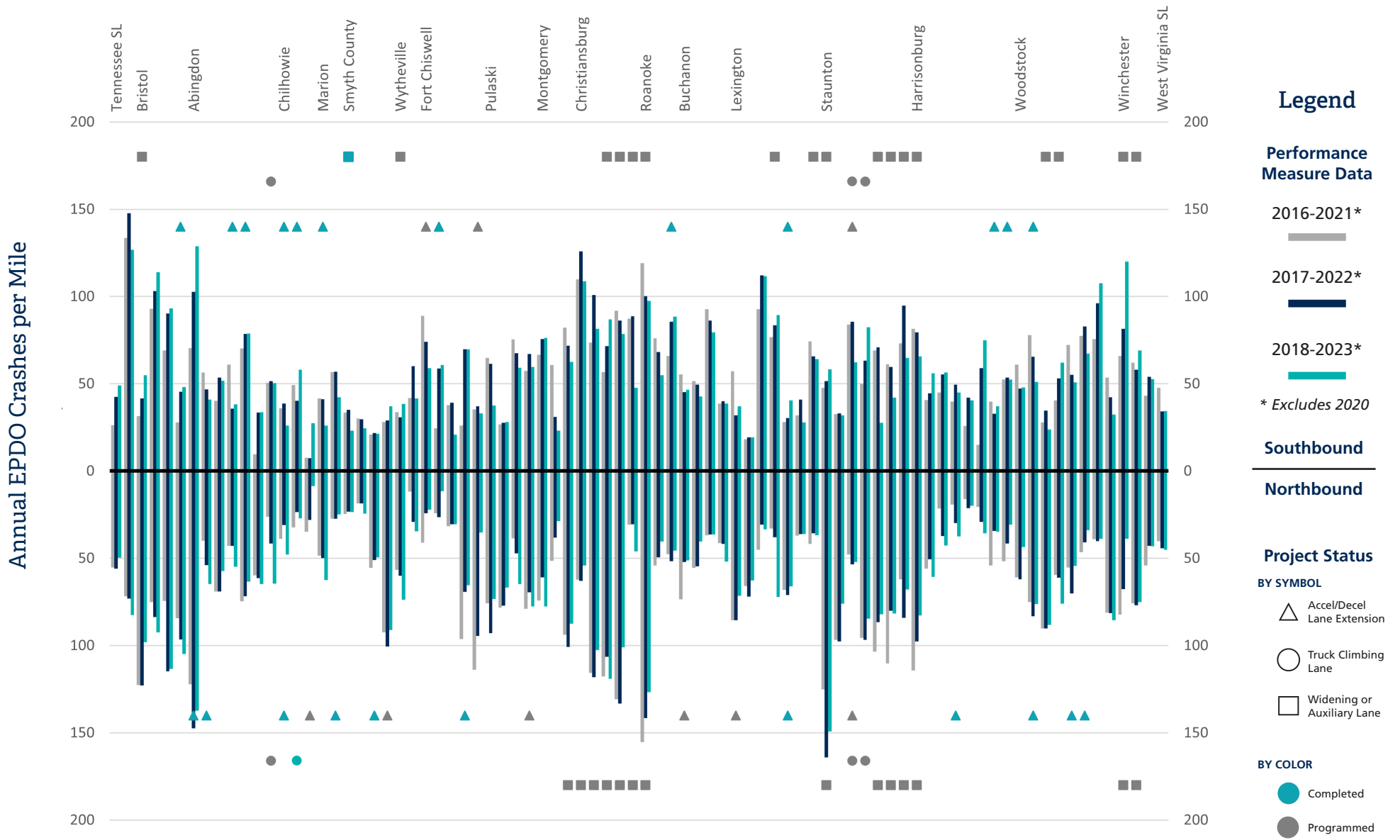
One potential cause of the increased number and duration of lane closures is work zone related incidents. For example, the increase in lane-impacting incidents over one hour is overrepresented between Exits 137 and 141, which overlaps with the ongoing Roanoke County widening project between Exits 137 and 141. Substantial construction in this area started in 2023 including bridge repairs in July, traffic shifts in August, and pavement overlay in October. The number of lane-impacting incidents over one hour increased by 57.4% between 2022 and 2023 in this project area. Furthermore, the number of crashes in this project area increased by 44.5% between 2022 and 2023 per VDOT Roadway Network System crash reports. This increase in the number of crashes was driven by an increase in work zone related crashes, which increased by 70.7%. Throughout the entire I-81 corridor, work zone related crashes increased by 34.2% between 2022 and 2023. As the construction of multiple I-81 widening projects begin in the coming years, the frequency of crashes and lane-impacting incidents will likely increase due to the presence of work zones. VDOT should continue to investigate strategies to reduce the frequency of work zone related crashes along the I-81 corridor.

In future years, it will continue to be challenging to evaluate the impact of completed construction projects on the performance measures for multiple reasons.

- Data fluctuated in the years following the creation of the Plan
- Performance measure impacts of active work zones
- Performance measure data for 2020 do not reflect a typical year due to COVID-19 impacts
- Lack of sufficient time for project implementation and subsequent performance measure evaluation

# I-81 PROGRAM PROGRESS REPORT

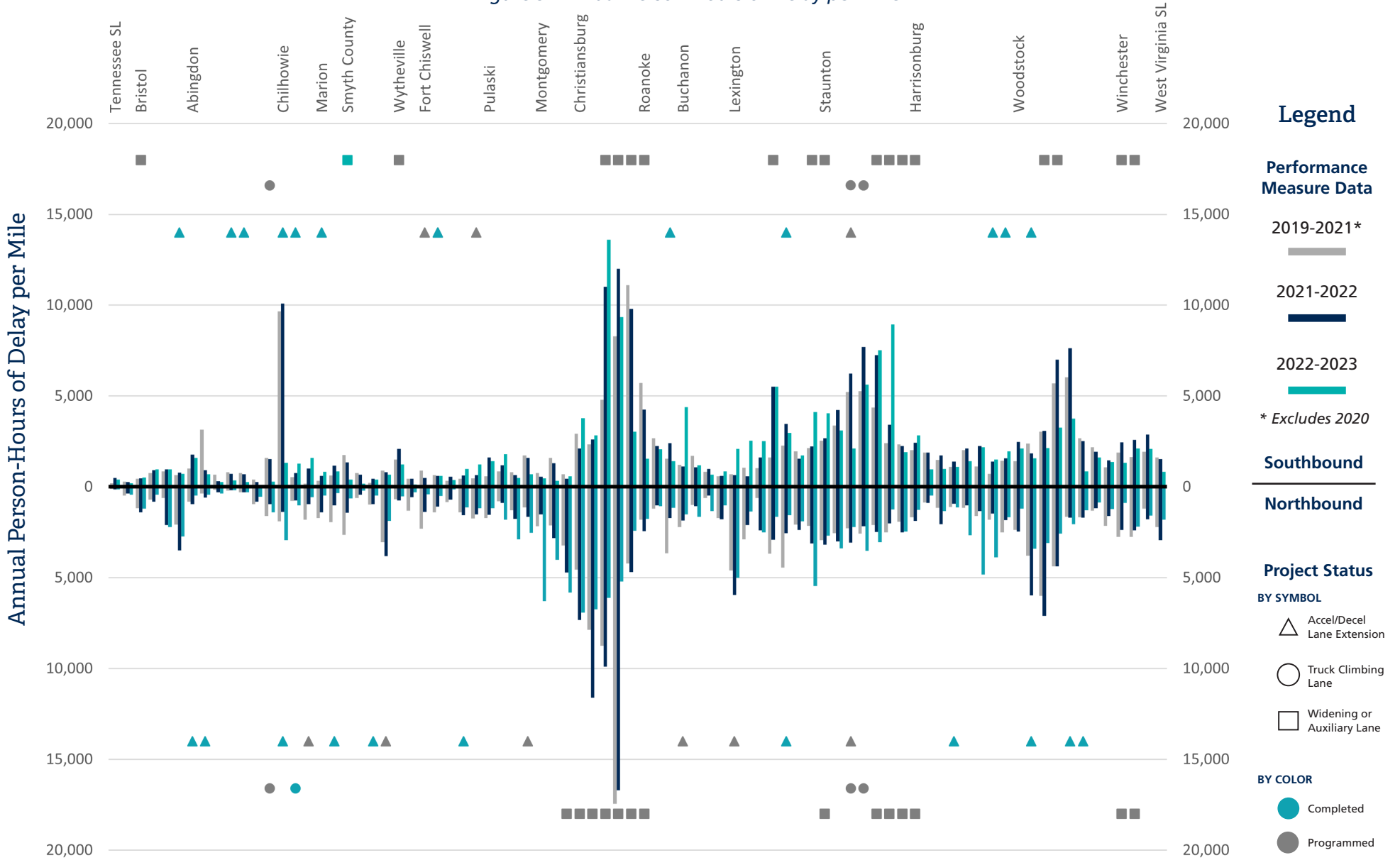
Figure 2: Annual EPDO Crashes per Mile



Note: EPDO weighting methodology was updated in this report to be consistent with EPDO weights defined in the SMART SCALE Round 6 Technical Guide

# I-81 PROGRAM PROGRESS REPORT

Figure 3: Annual Person-Hours of Delay per Mile

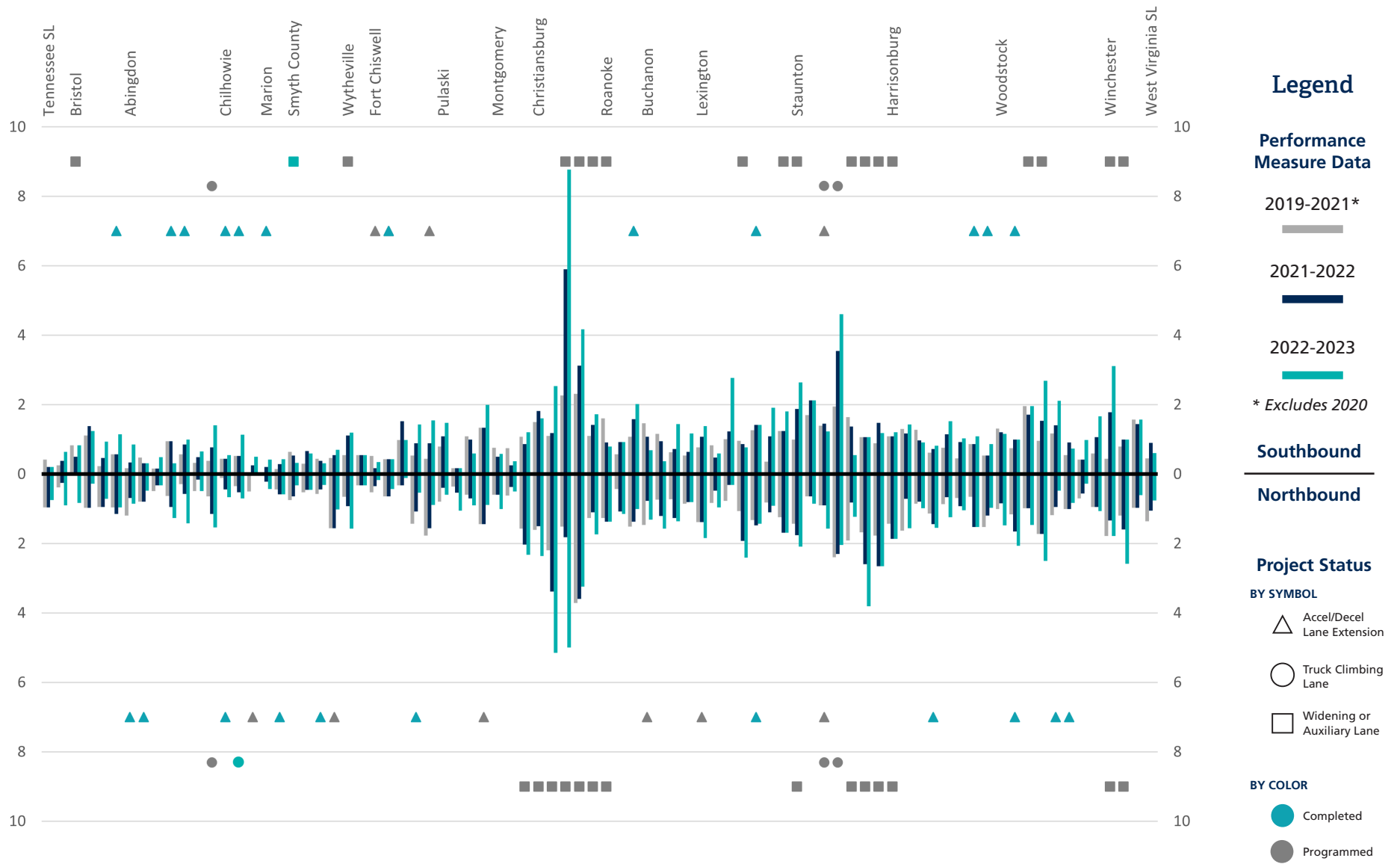




# I-81 PROGRAM PROGRESS REPORT

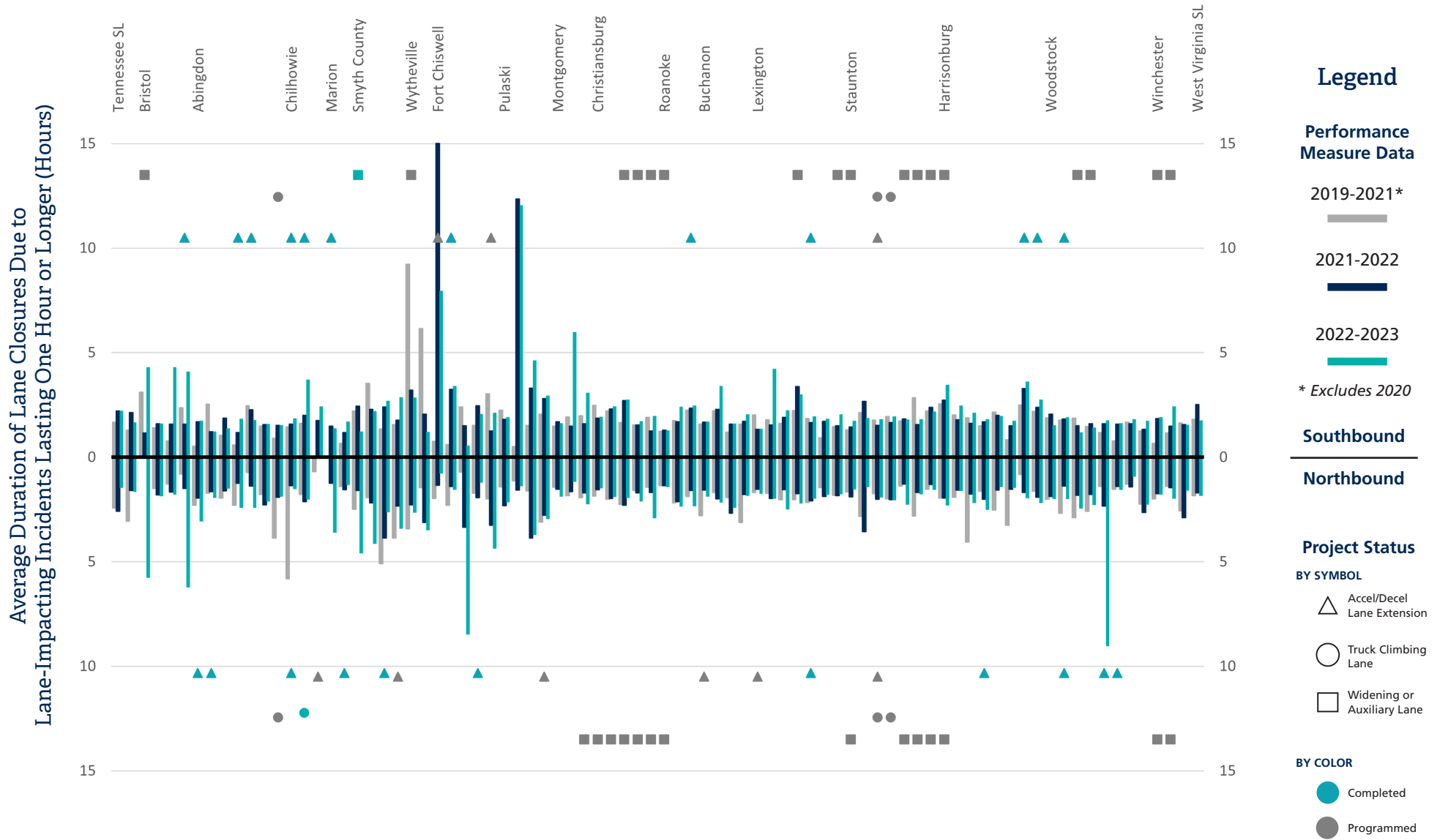
Figure 4: Annual Lane Impacting Incidents Lasting One Hour or Longer, per Mile

Annual Lane Impacting Incidents Lasting One Hour or Longer, per Mile



# I-81 PROGRAM PROGRESS REPORT

Figure 5: Average Duration of Lane Closures Due to Lane-Impacting Incidents Lasting One Hour or Longer (Hours)



## I-81 PROGRAM PROGRESS REPORT

Table 2: Total EPDO Crashes, Excluding 2020 Data

| End of Five-Year Period | Northbound | Southbound | Total   | Percent Change from Previous Period |
|-------------------------|------------|------------|---------|-------------------------------------|
| 2021                    | 99,984     | 91,025     | 191,009 | -                                   |
| 2022                    | 100,502    | 96,329     | 196,831 | +3.0%                               |
| 2023                    | 96,587     | 91,066     | 187,653 | -4.7%                               |

Table 3: Total Person-Hours of Delay (Thousands)

| End of Two-Year Period | Northbound | Southbound | Total | Percent Change from Previous Period |
|------------------------|------------|------------|-------|-------------------------------------|
| 2021*                  | 1,959      | 1,453      | 3,412 | -                                   |
| 2022                   | 1,813      | 1,714      | 3,527 | +3.4%                               |
| 2023                   | 1,548      | 1,431      | 2,979 | -15.5%                              |

\*2019-2021 without 2020 data

Table 4: Total Lane-Impacting Incidents Lasting One Hour or Longer

| End of Two-Year Period | Northbound | Southbound | Total | Percent Change from Previous Period |
|------------------------|------------|------------|-------|-------------------------------------|
| 2021*                  | 781        | 667        | 1,448 | -                                   |
| 2022                   | 820        | 784        | 1,604 | +10.8%                              |
| 2023                   | 974        | 960        | 1,934 | +20.6%                              |

\*2019-2021 without 2020 data

Table 5: Total Hours of Lane Closures Due to Lane-Impacting Incidents Lasting One Hour or Longer

| End of Two-Year Period | Northbound | Southbound | Total | Percent Change from Previous Period |
|------------------------|------------|------------|-------|-------------------------------------|
| 2021*                  | 1,668      | 1,300      | 2,968 | -                                   |
| 2022                   | 1,574      | 1,530      | 3,104 | +4.6%                               |
| 2023                   | 2,079      | 2,124      | 4,203 | +35.4%                              |

\*2019-2021 without 2020 data

# MULTIMODAL IMPROVEMENTS TO THE I-81 CORRIDOR

Along with the capital and operational improvements included in the I-81 Corridor Improvement Plan, several multimodal improvements were planned and then implemented to provide meaningful bus transit and rail connections throughout the I-81 corridor. The Virginia Breeze bus system consists of four intercity bus routes, two of which parallel the I-81 corridor. The Valley Flyer routes between Blacksburg and Washington, D.C. and the Highlands Rhythm routes between Bristol and Washington D.C. During FY24, the on-time performance for these services was 70% and the percent of fare revenues compared to total operating cost (farebox recovery rate) was 58%. Combined ridership for both routes in FY24 was 47,036.

The I-81 Multimodal Corridor Improvement Plan also includes expansion of passenger and freight rail in the New River Valley. With the addition of a second roundtrip on the Washington-Roanoke Route in July 2022, FY 2023 saw record-high ridership for Amtrak along the I-81 corridor with a 43.1% increase in ridership on the Washington-Roanoke Route compared to FY 2022. In Sept of 2024, negotiations were finalized with Norfolk Southern to improve the rail systems near the I-81 corridor. The improvements consist of:

- Purchasing the Manassas Line, including Seminary Yard for future VRE storage.
- Adding a second track 7 miles south of Manassas and extending the route between Roanoke and Washington, D.C. to include New River Valley
- Initiating a second Amtrak train on the Roanoke Route in 2022
- Improving the Roanoke yard with a passenger bypass track to improve efficiency of passenger trains traversing the yard
- Securing a site at Cambria in the New River Valley for a passenger station to extend service beyond Roanoke, with a provision for a service facility at Radford to store and service Amtrak equipment.

Construction of these improvements are expected to be complete in 2026, excluding the construction of the new train station at New River Valley. The New River Valley Amtrak station is approaching the completion of 60% engineering for passenger platforms and a train layover facility in Radford. These elements are targeting completion in 2027. The Cambria Amtrak Station building is under development by the New River Valley Station Authority; once 30% engineering is completed for the building a precise timeline for the project will be developed.

## COMMONWEALTH TRANSPORTATION BOARD ACTIVITIES

As of December 2024, VDOT plans to deliver an I-81 Corridor Improvement Program update to the Commonwealth Transportation Board in January 2025. According to the legislation, the Board must submit an annual progress report to the General Assembly by December 15, 2024.

## I-81 ADVISORY COMMITTEE MEETING, DECEMBER 2024

VDOT delivered an I-81 Corridor Improvement Program update to the I-81 Advisory Committee on December 13, 2024. More details and materials from the meeting are available on the Improve 81 website ([improve81.vdot.virginia.gov](https://improve81.vdot.virginia.gov)).

### NEXT STEPS

Most of the capital improvement projects are either under construction or in the design phase. Construction will continue or be completed on the following projects in 2025.

- Bristol District
  - Widen to three lanes between Exit 10 and Exit 7 (southbound only)
  - Add truck climbing lanes between MM 32 and MM 34 (both directions)
  - Extend deceleration lane at Exit 72 (northbound only)
  - Add auxiliary lane between I-77 Exit 40 and I-81 Exit 72 and extend acceleration lane (southbound only)
  - Add auxiliary lane between Exit 73 and Exit 72 (southbound only)
  - Extend I-77 deceleration lane and reconfigure off-ramp (I-81 MM 73 to I-77 MM 42.9)
  - Extend deceleration lane at Exit 81 (southbound only)
- Salem District
  - Widen to three lanes between Exit 137 and Exit 140 (both directions)
  - Widen to three lanes between Exit 140 and Exit 141 (both directions)
  - Widen to three lanes between Exit 143 and Exit 150 (both directions)
- Staunton District
  - Add auxiliary lane between Exit 221 and Exit 220 (southbound only)
  - Widen to three lanes between Exit 221 and Exit 225 (both directions)
  - Add truck climbing lane at Weyers Cave (MM 234 to 237) (both directions)
  - Widen to three lanes between MM 299 and MM 296 (southbound only)

In addition, construction will begin in 2025 at the following locations.

- Bristol District
  - Extend deceleration lane at Exit 45 (northbound only)
- Salem District
  - Extend acceleration lane at Exit 94 (southbound only)
  - Extend acceleration lane at Exit 105 (northbound only)
  - Widen to three lanes between Exit 128 and Exit 137 (both directions)
- Staunton District
  - Extend acceleration lane at Exit 188 (northbound only)
  - Widen to three lanes between Exit 243 and Exit 247 (both directions)

# APPENDICES



**Appendix A:** Preliminary Capital Improvement Project Schedule

**Appendix B:** Improvements Summary Table

**Appendix C:** Crash Frequency and Severity Per Mile for Truck-Related Crashes

# Appendix A:

## Preliminary Capital Improvement Project Schedule





# Appendix B:

## Improvements Summary Table

# RECOMMENDED IMPROVEMENTS

| Study Project ID | UPC    | District | Jurisdiction(s)                                      | Direction       | Mile Marker |    |             | Improvement Description   |
|------------------|--------|----------|--|-----------------|-------------|----|-------------|---|
|                  |        |          |  |                 | From        |    | To          |   |
| 27               | 116170 | Bristol  | Washington County / Bristol                          | SB only         | 8.0         | to | 9.9         | Widen to three lanes between Exit 10 and Exit 7                                       |
| 26               | 116171 | Bristol  | Abingdon   | SB only         | 16.5        | to | 16.8        | Extend acceleration lane at Exit 17   |
| 25               | 115394 | Bristol  | Abingdon   | SB only         | 17.6        | to | 17.6        | Curve improvements (flashing chevrons)  |
| 1                | 115393 | Bristol  | Abingdon   | NB only         | 17.9        | to | 17.9        | Curve improvements (flashing chevrons)  |
| 2                | 116155 | Bristol  | Washington County / Abingdon                         | NB only         | 19.1        | to | 19.4        | Extend deceleration lane at Exit 19   |
| 24               | 115395 | Bristol  | Washington County                                    | SB only         | 21.5        | to | 21.5        | Curve improvements (flashing chevrons)  |
| 23               | 115346 | Bristol  | Washington County                                    | SB only         | 26.1        | to | 25.9        | Extend acceleration lane at Exit 26   |
| 22               | 115345 | Bristol  | Washington County                                    | SB only         | 26.8        | to | 26.7        | Extend deceleration lane at Exit 26   |
| 3                | 116156 | Bristol  | Washington County                                    | NB only         | 32.5        | to | 33.5        | Add truck climbing lane   |
| 21               | 116172 | Bristol  | Washington County                                    | SB only         | 32.8        | to | 34.3        | Add truck climbing lane   |
| 20               | 116173 | Bristol  | Smyth County   | SB only         | 38.1        | to | 39.2        | Install high friction overlay and animal control fence                                |
| 5                | 116159 | Bristol  | Smyth County   | NB only         | 38.6        | to | 38.9        | Extend deceleration lane at Exit 39   |
| 19               | 116174 | Bristol  | Smyth County   | SB only         | 39.4        | to | 39.7        | Extend deceleration lane at Exit 39   |
| 4                | 116157 | Bristol  | Smyth County   | NB only         | 39.5        | to | 40.8        | Add truck climbing lane   |
| 17               | 116167 | Bristol  | Smyth County / Marion                                | SB only         | 42.8        | to | 43.1        | Extend acceleration lane at Exit 44   |
| 6                | 116160 | Bristol  | Smyth County / Marion                                | NB only         | 45.1        | to | 45.7        | Extend deceleration lane at Exit 45   |
| 16               | 116158 | Bristol  | Smyth County / Marion                                | SB only         | 47.3        | to | 47.7        | Extend acceleration lane at Exit 47   |
| 7                | 116161 | Bristol  | Smyth County / Marion                                | NB only         | 48.1        | to | 48.9        | Extend acceleration lane at Exit 47   |
| 15               | 116169 | Bristol  | Smyth County   | SB only         | 54.1        | to | 54.5        | Add auxiliary lane between Exit 54 and Smyth Safety Rest Area                         |
| 8                | 116162 | Bristol  | Wytheville   | NB only         | 67.1        | to | 67.4        | Extend deceleration lane at Exit 67   |
| 9                | 115600 | Bristol  | Wytheville   | NB only         | 67.6        | to | 67.6        | Curve improvements (flashing chevrons)  |
| 10               | 116163 | Bristol  | Wytheville   | NB only         | 72.5        | to | 73.3        | Extend deceleration lane at Exit 72   |
| 18               | 116175 | Bristol  | Wythe County   | SB only         | 72.7        | to | 73.4        | Add auxiliary lane between I-77 Exit 40 and I-81 Exit 72 and extend acceleration lane |
| 11               | 116164 | Bristol  | Wytheville   | NB only         | 73.0 (I-81) | to | 42.9 (I-77) | Extend I-77 deceleration lane and reconfigure off-ramp                                |
| 14               | 116168 | Bristol  | Wytheville   | SB only         | 73.2        | to | 73.8        | Add auxiliary lane between Exit 73 and Exit 72  |
| 13               | 116166 | Bristol  | Wythe County   | SB only         | 81.7        | to | 81.9        | Extend deceleration lane at Exit 81   |
| 12               | 116165 | Bristol  | Wythe County   | SB only         | 84.3        | to | 84.6        | Extend deceleration lane at Exit 84   |
| 28               | 115794 | Salem    | Pulaski County                                       | NB only         | 88.0        | to | 88.0        | Curve improvements (flashing chevrons)  |
| 29               | 115795 | Salem    | Pulaski County                                       | NB only         | 90.2        | to | 90.7        | Extend acceleration lane at Exit 89   |
| 38               | 116200 | Salem    | Pulaski County / Pulaski                             | SB only         | 94.2        | to | 93.7        | Extend acceleration lane at Exit 94   |
| 30               | 116198 | Salem    | Montgomery County / Radford                          | NB only         | 105.5       | to | 106.0       | Extend acceleration lane at Exit 105  |
| 31               | 116196 | Salem    | Montgomery County / Christianburg                    | NB only         | 116.2       | to | 128.4       | Widen to three lanes between MM116 and Exit 128                                       |
| 32               | 116197 | Salem    | Montgomery County / Roanoke County / Salem           | Both Directions | 128.4       | to | 137.1       | Widen to three lanes between Exit 128 and Exit 137                                    |
| 39A              | 116203 | Salem    | Roanoke County / Salem                               | Both Directions | 136.0       | to | 139.0       | Widen to three lanes between Exit 137 and Exit 140                                    |
| 39B              |        | Salem    | Roanoke County / Salem                               | Both Directions | 139.0       | to | 142.0       | Widen to three lanes between Exit 140 and Exit 141                                    |
| 40               | 116201 | Salem    | Roanoke County / Botetourt County                    | Both Directions | 144.2       | to | 151.3       | Widen to three lanes between Exit 143 and Exit 150                                    |
| 37               | 116202 | Salem    | Botetourt County                                     | SB only         | 158.0       | to | 157.2       | Extend acceleration lane at Troutville Safety Rest Area                               |
| 36               |        | Salem    | Botetourt County                                     | SB only         | 158.4       | to | 158.2       | Extend deceleration lane at Troutville Safety Rest Area                               |
| 33               | 116199 | Salem    | Botetourt County / Buchanan                          | NB only         | 162.4       | to | 162.9       | Extend acceleration lane at Exit 162  |
| 34               | --     | Salem    | Botetourt County                                     | NB only         | 171.7       | to | 175.6       | Curve improvements (flashing chevrons)  |
| 35               | --     | Salem    | Botetourt County                                     | SB only         | 175.3       | to | 171.4       | Curve improvements (flashing chevrons)  |
| 41               | 116246 | Staunton | Rockbridge County                                    | NB only         | 189.0       | to | 189.4       | Acceleration Lane Extension at Exit 188   |
| 60               | 116282 | Staunton | Rockbridge County                                    | SB only         | 200.5       | to | 205.0       | Widen to three lanes between Exit 205 and Exit 200                                    |
| 59               | 116245 | Staunton | Rockbridge County                                    | SB only         | 204.9       | to | 204.6       | Acceleration Lane Extension at Exit 205   |
| 42               | 115801 | Staunton | Rockbridge County                                    | NB only         | 205.3       | to | 205.7       | Acceleration Lane Extension at Exit 205   |
| 58               | 116279 | Staunton | Augusta County                                       | SB only         | 221.2       | to | 221.0       | Add Auxiliary Lane between Exit 221 and Exit 220                                      |
| 61               | 116269 | Staunton | Augusta County / Staunton                            | Both Directions | 221.4       | to | 225.6       | Widen to three lanes between Exit 221 and Exit 225                                    |
| 43               | 116271 | Staunton | Augusta County                                       | NB only         | 232.4       | to | 232.8       | Acceleration Lane Extension at Northbound Mt Sidney Rest Area                         |
| 57               | 116276 | Staunton | Augusta County                                       | SB only         | 232.5       | to | 231.9       | Acceleration Lane Extension at Southbound Mt Sidney Rest Area                         |
| 56               | 116275 | Staunton | Augusta County                                       | SB only         | 232.9       | to | 232.7       | Deceleration Lane Extension at Southbound Mt Sidney Rest Area                         |
| 44               | 116277 | Staunton | Augusta County / Rockingham County                   | NB only         | 234.1       | to | 237.7       | Truck Climbing Lane at Weyers Cave (Northbound)                                       |
| 55               | 116278 | Staunton | Augusta County                                       | SB only         | 237.9       | to | 234.2       | Truck Climbing Lane at Weyers Cave (Southbound)                                       |
| 62               | 116280 | Staunton | Rockingham County / Harrisonburg                     | Both Directions | 242.0       | to | 248.8       | Widen to three lanes between Exit 243 and Exit 247                                    |
| 45               | 115802 | Staunton | Shenandoah County                                    | NB only         | 268.8       | to | 268.9       | Deceleration Lane Extension at Exit 269   |
| 54               | 115848 | Staunton | Shenandoah County                                    | SB only         | 272.7       | to | 271.8       | Curve Improvements (Flashing Chevrons)  |
| 53               | 116243 | Staunton | Shenandoah County                                    | SB only         | 278.6       | to | 278.4       | Acceleration Lane Extension at Exit 279   |
| 52               | 115804 | Staunton | Shenandoah County                                    | SB only         | 282.8       | to | 282.6       | Acceleration Lane Extension at Exit 283   |
| 46               | 116270 | Staunton | Shenandoah County                                    | NB only         | 291.8       | to | 292.1       | Acceleration Lane Extension at Exit 291   |
| 51               | 116244 | Staunton | Shenandoah County                                    | SB only         | 296.1       | to | 296.0       | Acceleration Lane Extension at Exit 296   |
| 50               | 116268 | Staunton | Shenandoah County / Warren County / Frederick County | SB only         | 299.6       | to | 295.4       | Widen to three lanes between MM299 and MM296  |
| 48               | 115870 | Staunton | Frederick County                                     | NB only         | 302.0       | to | 302.2       | Deceleration Lane Extension at Exit 302   |
| 47               | 116236 | Staunton | Frederick County                                     | NB only         | 302.6       | to | 302.9       | Acceleration Lane Extension at Exit 302   |
| 49               | 115803 | Staunton | Frederick County                                     | NB only         | 303.5       | to | 303.8       | Deceleration Lane Extension at Truck Scales (MM 304)                                  |
| 63               | 116281 | Staunton | Frederick County / Winchester                        | Both Directions | 313.8       | to | 317.5       | Widen to three lanes between Exit 313 and Exit 317                                    |

## LEGEND

■ SYIP Projects Complete    ■ SYIP Projects Programmed

# Appendix C:

## Crash Frequency and Severity Per Mile for Truck-Related Crashes

# I-81 PROGRAM PROGRESS REPORT

Annual EPDO Truck Crashes per Mile

