



COMMONWEALTH of VIRGINIA

Commonwealth Transportation Board

W. Sheppard Miller, III
Chairperson

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Agenda item # 8

RESOLUTION OF THE COMMONWEALTH TRANSPORTATION BOARD

January 14, 2025

MOTION

Made By: Mr. Lawson, **Seconded By:** Mr. Laird

Action: Motion Carried, Unanimously

Title: Approval of Interstate 81 Corridor Improvement Program Progress Report and Support for Future Actions Relating to I-81 Improvement Projects

WHEREAS, pursuant to Chapter 743 of the 2018 Acts of Assembly, the General Assembly directed the Commonwealth Transportation Board (the "Board"), to study financing options for improvements to Interstate I-81 (I-81) and, with support from the Office of Intermodal Planning and Investment, to develop and adopt an I-81 Corridor Improvement Plan (the "Plan"); and

WHEREAS, on December 5, 2018, the Board adopted the Plan, which identified targeted improvements for potential financing and evaluated such improvements using the statewide prioritization process; and

WHEREAS, Chapters 837 and 846 of the 2019 Acts of Assembly established Chapter 36 of Title 33.2 of the Code of Virginia (§ 33.2-3600 et seq.), creating the I-81 Corridor Improvement Fund (the "Fund") and directing the Board to establish the I-81 Committee, adopt an I-81 Corridor Improvement Program (the "Program"), update the Program each year, and report annually to the General Assembly the status and progress of implementation of the Program (the "Progress Report"); and

WHEREAS, pursuant to Va. Code § 33.2-3602 (A), the Program shall, at a minimum: (i) allocate year by year the revenues, if any, from the Fund and bond proceeds, if any, backed by

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the Fund to projects and strategies identified in the Plan adopted by the Board; (ii) include a financing plan to support such allocation; and (iii) include a schedule for all new projects and strategies identified in the Plan adopted by the Board; and

WHEREAS, as adopted by the Board in 2018, and in addition to multimodal and operational improvements, the initial Plan identified 106 capital projects for consideration, 64 of which were prioritized for funding, with such projects to be implemented through 2035 based on the current 2024 revenue assumptions and debt model; and

WHEREAS, although not included in the 2018 Plan, the Board modified and fully funded the northbound I-81 widening project between Exit 137 and Exit 128 to include southbound widening (UPC 116197); and

WHEREAS, two prioritized projects from the 2018 Plan have been added to the Six-Year Improvement Program (SYIP) by the Board and funded for preliminary engineering and right-of-way activities as a result of the support provided to the Program by Item 470 of Chapter 2 of the 2024 Special Session I Acts of Assembly (the "Appropriation Act"): (i) the widening I-81 to three lanes northbound and southbound from mile marker (MM) 313 to MM 317 in the Staunton District (UPC 116281) and (ii) the addition of a northbound lane from MM 116 to MM 128 in the Salem District (UPC 116196); and

WHEREAS, candidate projects that were included in the 2018 Plan but that had not yet been prioritized for initial funding due to complexity and risk have now been recommended by the I-81 Committee for advancement as revenues become available: (i) widening of I-81 to three lanes both northbound and southbound between MM 190 and Exit 195 in the Staunton District; (ii) northbound widening of I-81 to three lanes between MM 298 and MM 300 in the Staunton District; (iii) re-alignment of both northbound and southbound I-81 between MM 167 and MM 168 in Salem District; and (iv) southbound I-81 widening to three lanes between MM 195 and MM 200 in Staunton District; and

WHEREAS, pursuant to Va. Code § 33.2-3602 (D), the annual Progress Report submitted to the General Assembly must include, at a minimum: (i) the safety and performance of the I-81 corridor, including the number of incidents, the average duration of incidents, the number and average duration of incidents involving lane closures, and the person-hours of delay along the I-81 corridor; (ii) an assessment of the effectiveness of the operational strategies and capital projects implemented and funded through the Program; (iii) the status of capital projects funded through the Program; and (iv) the current and projected balances of the Fund; and

WHEREAS, the I-81 Committee received a briefing on the above Program progress on December 13, 2024, and that information was captured in the 2024 Progress Report satisfying the above-referenced requirements set forth in Va. Code § 33.2-3602; and

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WHEREAS, the I-81 Committee also recommended that an update to the 2018 Plan be initiated in 2025.

NOW, THEREFORE, BE IT RESOLVED, that the Board approves the annual I-81 Corridor Improvement Program Progress Report, attached hereto as Appendix A, as required by Va. Code § 33.2-3602 and directs that such Progress Report be submitted to the General Assembly, in accordance with the processes required for submission of such reports.

BE IT FURTHER RESOLVED, that the Board recommends fully funding those projects prioritized by the 2018 Plan but funded only through the preliminary engineering and right of way phases, as funding becomes available.

BE IT FURTHER RESOLVED, that the Board directs the Department to reanalyze the most complex, highest risk candidate projects described above, which were identified in the 2018 Plan but had not yet been prioritized for funding, and report the findings prior to the Board's advancement of the projects to the SYIP.

BE IT FURTHER RESOLVED, that an update to the I-81 Corridor Improvement Plan be initiated immediately.

####

CTB Decision Brief

Approval of the I-81 Corridor Improvement Program Progress Report and Support for Future Actions Relating to I-81 Improvement Projects

Issue: Approval by the Commonwealth Transportation Board (the “Board”) is sought to submit the annual I-81 Corridor Improvement Program Progress Report for 2024 (the “Progress Report”) to the General Assembly, as required by Va. Code § 33.2-3602. In addition, acknowledgement and support of the Board is sought for future actions needed to implement the I-81 Corridor Improvement Program (the “Program”).

Facts: Chapter 36 of Title 33.2 of the Code of Virginia (§ 33.2-3600 et seq.) creates the Interstate 81 (I-81) Corridor Improvement Fund (the “Fund”) and directs the Board to establish the I-81 Committee, adopt the Program, update the Program each year, and report annually to the General Assembly on the status and progress of implementation of the Program (the “Progress Report”).

In conjunction with the Program, the General Assembly directed the Board to study financing options for improvements to I-81 and, with assistance from the Office of Intermodal Planning and Investment (OIPI), to develop and adopt an I-81 Corridor Improvement Plan (the “Plan”). The Board approved the initial Plan on December 5, 2018, which identified targeted improvements for potential financing and evaluated such improvements using the statewide prioritization process.

Ppursuant to Va. Code § 33.2-3602, the Program shall, at a minimum: (i) allocate year by year the revenues, if any, from the Fund and bond proceeds, if any, backed by the Fund to projects and strategies identified in the Plan adopted by the Board; (ii) include a financing plan to support such allocation; and (iii) include a schedule for all new projects and strategies identified in the Plan adopted by the Board. The Board must also update the Program by July 1 of each year and to report to the General Assembly on the status of Program implementation by December 15 of each year (the “Progress Report”).

Revenue sources initially dedicated to the Fund include a newly established truck registration fee, an I-81 corridor regional fuels tax, and statewide diesel and road taxes. Funds to support the Program became available July 1, 2019.

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, however, is not anticipated to impact the financial health of the Fund. Furthermore, as per the 2020 Interstate Operations and Enhancement Program (IOEP) omnibus legislation, I-81 receives an allocation of funds from the IOEP that is equal to the ratio of (i) vehicle miles travelled (VMT) on I-81 by vehicle Class 6 or higher to (ii) the total VMT by vehicle Class 6 or higher on all Interstate highways. Beginning in FY21, the truck registration fees and road tax revenue from the Program were dedicated to the Fund. Adoption of the FY25 Six-Year Improvement Program (SYIP) included a plan for financing the Program and estimated proceeds from I-81 bonds and Transportation Infrastructure Finance and Innovation Act financing.

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The current and projected allocations of the Program based on the FY25 SYIP is reflected in the following table.

Fiscal Year	FY25*	FY26	FY27**	FY28	FY29	FY30**	Total**
Total Available	\$1,479.8	\$382.9	\$548.1.3	\$220.5	\$232.8	507.0	\$3,371.1

*FY25 and prior years

**Allocations include planned debt financing

In addition to multimodal and operational improvements, the initial 2018 Plan identified 106 capital projects for consideration and prioritized 64 projects for funding, with projects to be implemented through 2035 based on the current revenue assumptions and debt model.

Although not included in the 2018 Plan, in 2024 the Board modified and fully funded the northbound I-81 widening project between Exit 137 and Exit 128 in the Salem District (UPC 116197) to include southbound widening as well.

The Board added two prioritized projects from the 2018 Plan to the SYIP and provided funding for preliminary engineering and right-of-way activities as a result of the additional support provided by Item 470 of Chapter 2 of the 2024 Special Session I Acts of Assembly (the “Appropriation Act”). These two projects are (i) the widening to three lanes northbound and southbound from MM 313 to MM 317 in the Staunton District (UPC 116281); and (ii) the addition of northbound lane from mile marker (MM) 116 to MM 128 in the Salem District (UPC 116196).

Of the 64 prioritized capital projects identified in the 2018 Plan, 34 have been completed. In its adopting of the FY25-30 SYIP on June 18, 2024, the Board included both the operational improvements and the remaining prioritized capital improvement projects identified in the Plan.

Candidate projects listed below that were included in the 2018 Plan but not yet prioritized for initial funding due to complexity and risk have now been identified by the I-81 Committee for advancement as revenues become available:

- Widening of I-81 to three lanes both northbound and southbound between MM 190 and Exit 195 in the Staunton District;
- Northbound widening of I-81 to three lanes between MM 298 and MM 300 in the Staunton District;
- Re-alignment of both northbound and southbound I-81 between MM 167 and MM 168 in Salem District; and
- Southbound I-81 widening to three lanes between MM 195 and MM 200 in Staunton District.

Pursuant to Va. Code § 33.2-3602 (D), the Progress Report must include, at a minimum: (i) the safety and performance of the I-81 corridor, including the number of incidents, the average duration of incidents, the number and average duration of incidents involving lane closures, and the person-hours of delay along the I-81 corridor; (ii) an assessment of the effectiveness of the operational strategies and capital projects implemented and funded through the Program; (iii) the

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status of capital projects funded through the Program; and (iv) the current and projected balances of the Fund.

The 2024 Progress Report reflects the minimum requirements as required by § 33.2-3602 and the I-81 Committee, which includes Board members of the Bristol, Salem, and Staunton construction districts, received briefings on the status of the Program and met on December 13, 2024. The I-81 Committee was provided the draft I-81 Corridor Improvement Program Progress Report for review and comment.

Recommendations: Approval is recommended for the submission of the 2024 Progress Report to the General Assembly, attached hereto as Appendix A.

In addition, it is recommended that the Board acknowledge and support:

1. The remaining two projects prioritized in the 2018 Plan by fully funding such projects in the SYIP, in the following order, at such time updated revenues are available:
 - The widening I-81 to three lanes northbound and southbound from MM 313 to MM 317 (UPC 116281); and
 - The addition of a northbound lane from mile marker (MM) 116 to MM 128 (UPC 116196)
2. The candidate projects that were included in the 2018 Plan but that had not yet been prioritized for initial funding due to complexity and risk have now been recommended by the I-81 Committee for advancement as revenues become available:
 - The widening of I-81 to three lanes both northbound and southbound between MM 190 and Exit 195 in the Staunton District;
 - The northbound widening of I-81 to three lanes between MM 298 and MM 300 in the Staunton District;
 - The re-alignment of both northbound and southbound I-81 between MM 167 and MM 168 in Salem District; and
 - The widening of southbound I-81 to three lanes between MM 195 and MM 200 in Staunton District.
3. Initiating an update to the 2018 Plan.

Action Required by CTB: The Board will be presented with a resolution for a formal vote to approve the 2024 Progress Report for submission to the General Assembly regarding the status and progress of implementation of the Program. In addition, the resolution will provide the Board's acknowledgement and support for the recommended actions relating to the above-referenced I-81 candidate projects, as well as directing an update to the 2018 Plan.

Result, if Approved: If approved, the 2024 Progress Report will be submitted to the General Assembly. Further, acknowledgement and support of the Board will be documented to fully fund the remaining two projects; advance the complex, high risk projects for funding; and approve an update to the 2018 Plan.

Options: Approve, Deny, or Defer.

Public Comments/Reactions: None

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

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	\$957.3
I-81 Allocation from IOEP	\$354.8	\$84.5	\$114.7	\$118.7	\$123.2	\$133.3	\$138.5	\$1,067.7
Other Sources	\$29.3	\$112.0 ¹	\$175.0 ²	\$0.0	\$0.0	\$0.0	\$0.0	\$316.3
Interest Income ³	\$29.9	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$29.9
Subtotal	\$794.3	\$286.7	\$382.9	\$213.9	\$220.5	\$232.8	\$240.1	\$2,371.2
Planned Debt for Construction	\$199.4	\$199.4	\$0.0	\$334.2	\$0.0	\$0.0	\$266.9	\$999.9
Total	\$993.7	\$486.1	\$382.9	\$548.1	\$220.5	\$232.8	\$507.0	\$3,371.1

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

¹*From General Fund revenues and the Highway Infrastructure Programs Community Project Grant*

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

³*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.

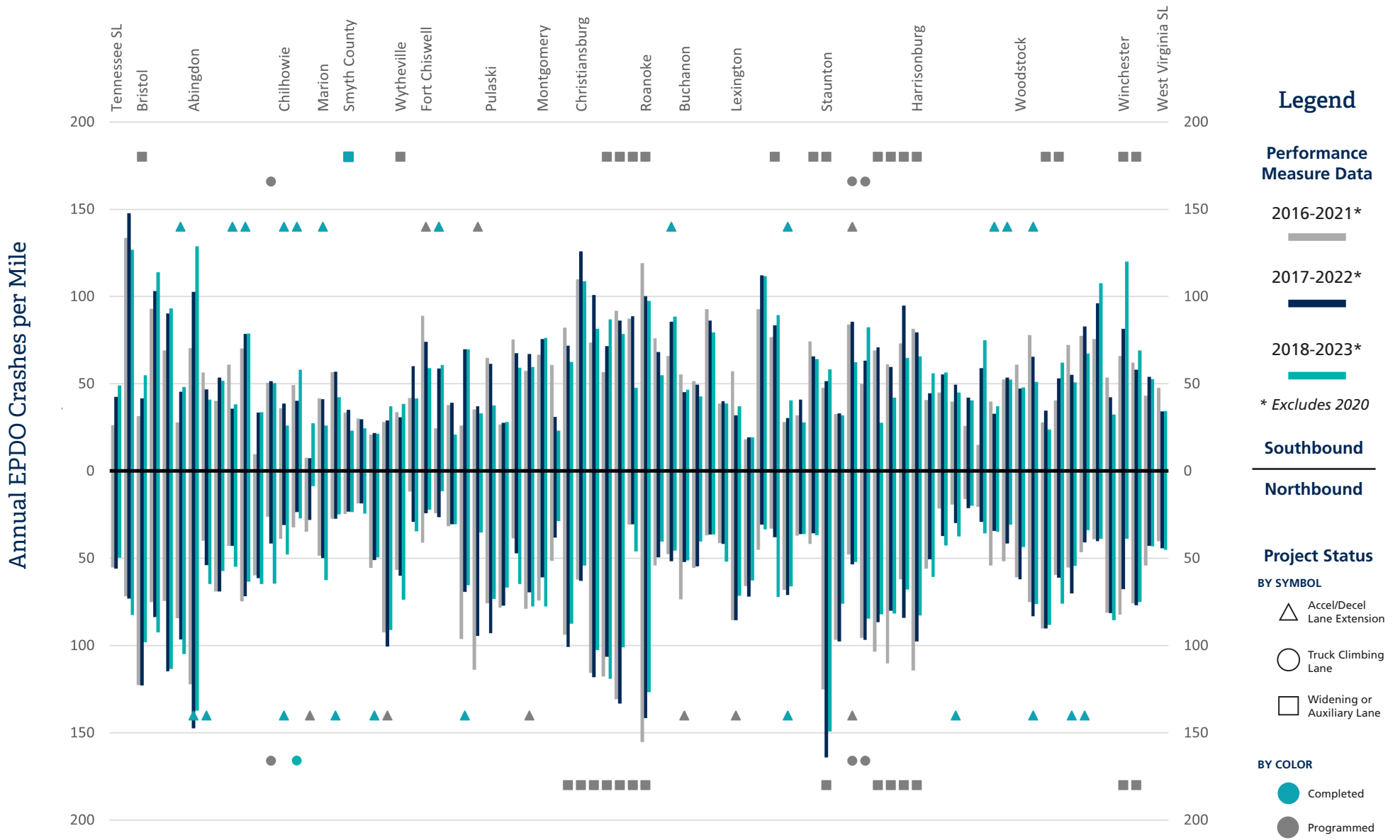
One potential cause of the increased number and duration of lane closures is work zone related incidents. For example, the increase in lane-impacting incidents over one hour is overrepresented between Exits 137 and 141, which overlaps with the ongoing Roanoke County widening project between Exits 137 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

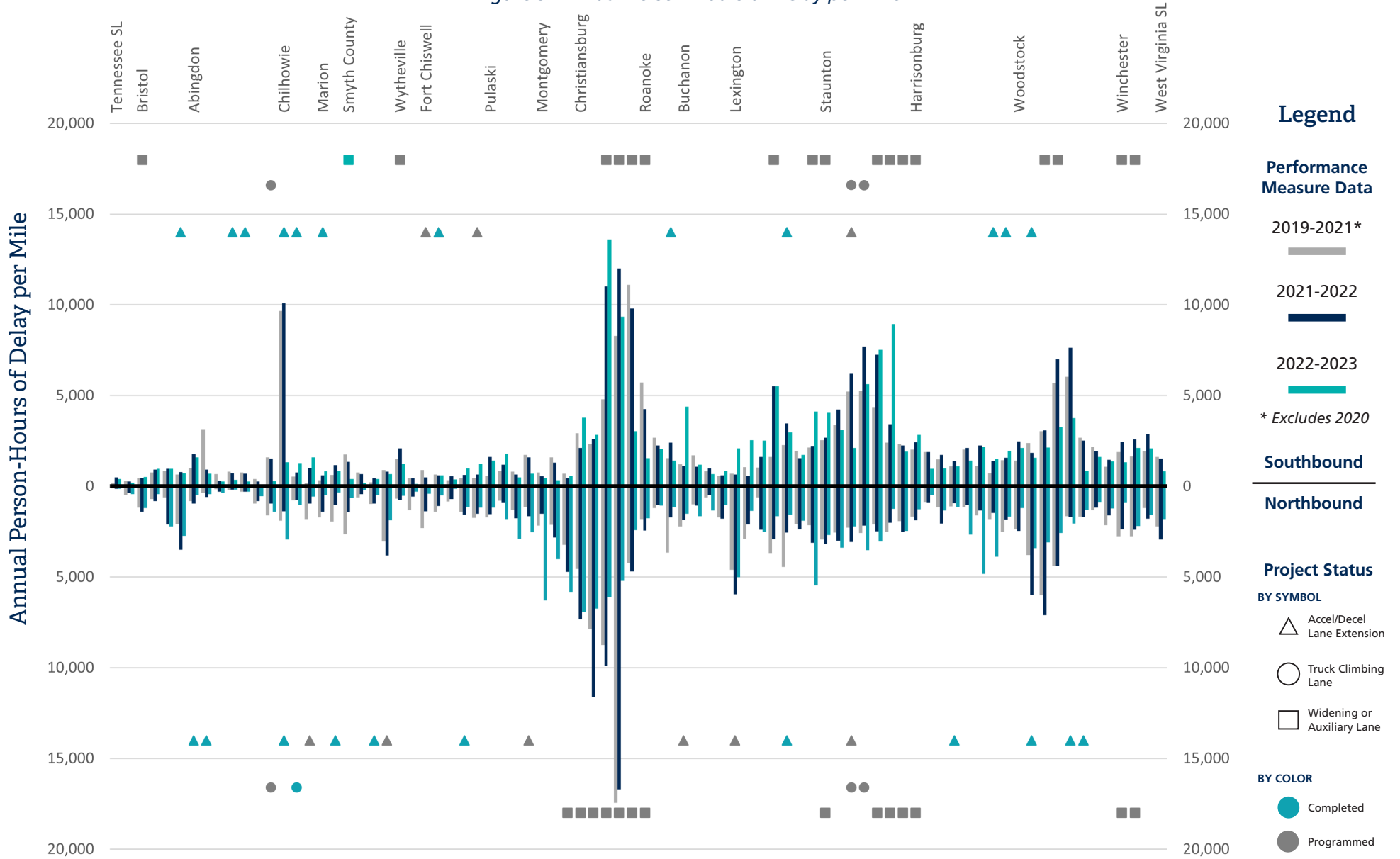
Figure 2: Annual EPDO Crashes per Mile



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

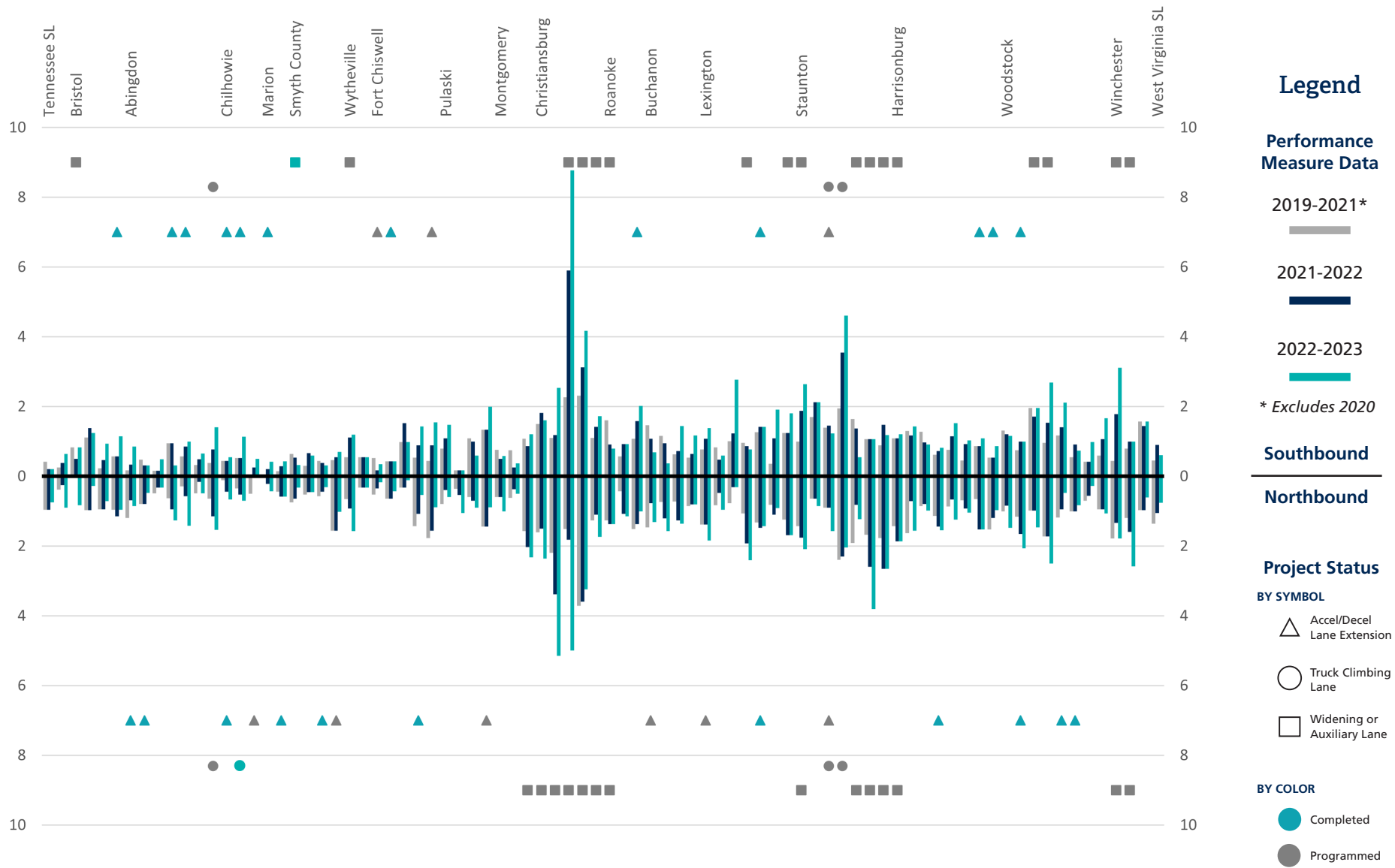
Figure 3: Annual Person-Hours of Delay per Mile



I-81 PROGRAM PROGRESS REPORT

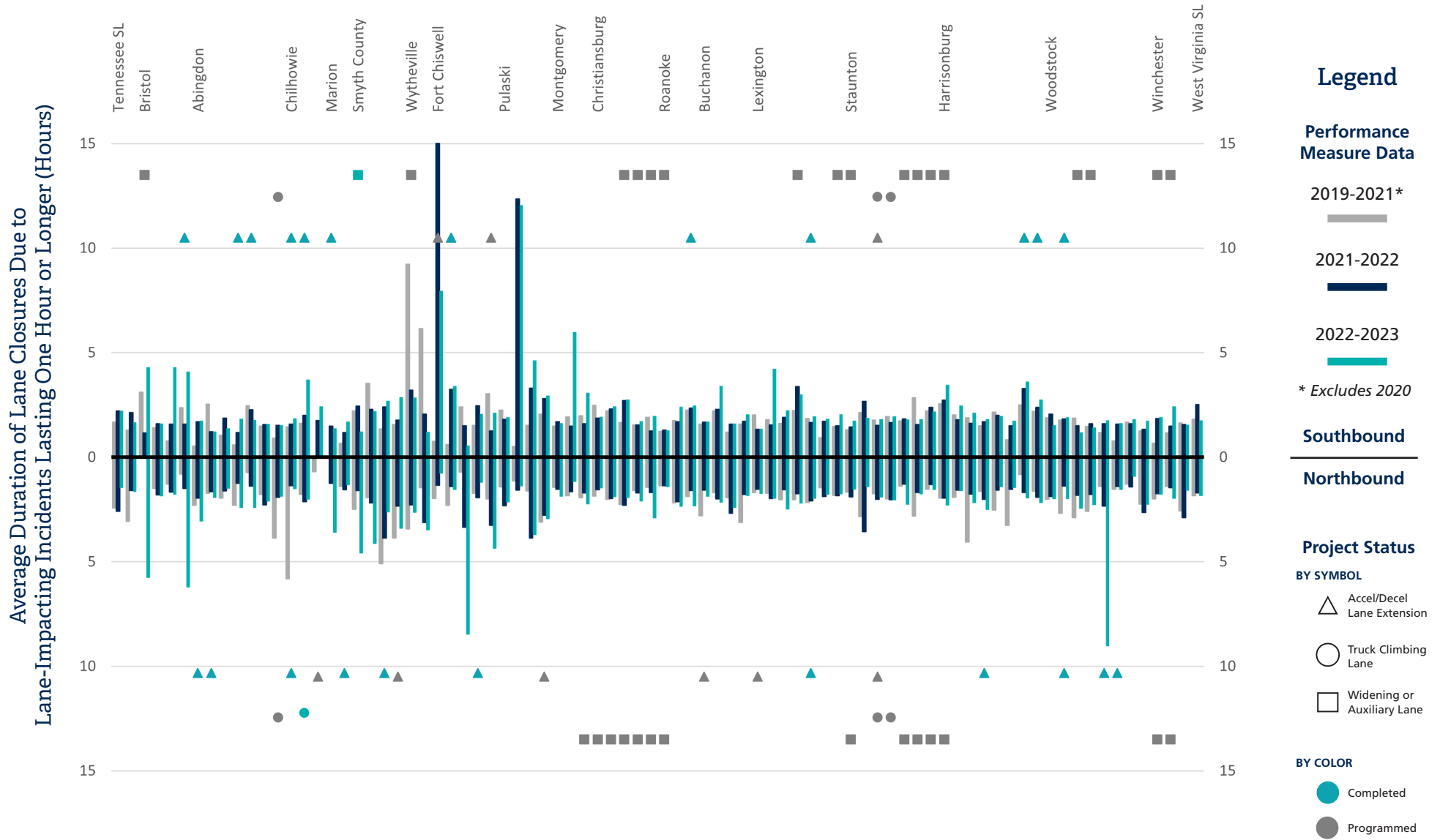
Figure 4: Annual Lane Impacting Incidents Lasting One Hour or Longer, per Mile

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).

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

