



COMMONWEALTH of VIRGINIA

Commonwealth Transportation Board

Shannon Valentine
Chairperson

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Agenda item # 19

RESOLUTION OF THE COMMONWEALTH TRANSPORTATION BOARD

December 9, 2020

MOTION

Made By: _____ Seconded By: _____

Action: _____

Title: Approval of Interstate 81 Corridor Improvement Program Progress Report

WHEREAS, Chapter 743 of the 2018 Acts of Assembly, the General Assembly directed the Commonwealth Transportation Board (Board), to study financing options for improvements to Interstate I-81 (I-81) with assistance from the Office of Intermodal Planning and Investment (OIPI), Virginia Department of Transportation (VDOT) and Department of Rail and Public Transportation (DRPT), develop and adopt an I-81 Corridor Improvement Plan (Plan); and

WHEREAS, the Board adopted the I-81 Corridor Improvement Plan on December 5, 2018 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 (2019 Acts of Assembly) established Chapter 36 of Title 33.2 of the *Code of Virginia*, creating the I-81 Corridor Improvement Fund, and directing the Board to establish the I-81 Committee, to adopt an I-81 Corridor Improvement Program, to update the Program by July 1st of each year and to report to the General Assembly the status and progress of implementation of the Program (I-81 Corridor Improvement Program Progress Report) by December 15th of each year; and

WHEREAS, pursuant to the 2019 Acts of Assembly, the Board established the I-81 Committee (Committee) on May 15, 2019 ; and

WHEREAS, pursuant to the 2019 Acts of Assembly, the I-81 Corridor Improvement Program shall, at a minimum:

1. 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 in 2018 and as may be adopted from time to time;
2. Include a financing plan to support such allocation; and
3. Include a schedule for all new projects and strategies identified in the Plan adopted by the Board and prior to the adoption of such Program, the Board shall review the recommendations of and consult with the I-81 Committee; and

WHEREAS, pursuant to the 2019 Acts of Assembly, the I-81 Corridor Improvement Program Progress Report must include, at a minimum:

- 1) The safety and performance of the Interstate 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 Interstate 81 corridor;
- 2) An assessment of the effectiveness of the operational strategies and capital projects implemented and funded through the Program;
- 3) The status of capital projects funded through the Program; and
- 4) The current and projected balances of the Fund.

WHEREAS, VDOT updated the I-81 Committee on October 23, 2020 on the project development process, schedule, delivery and financing options and the Committee will be provided with the draft I-81 Corridor Improvement Program Progress Report; and

WHEREAS, given that only approximately one year has transpired between enactment of the I-81 Corridor Improvement Program reporting requirements and the December 2020 due date, insufficient data exists for purposes of completely satisfying the above-referenced requirements set forth in the 2019 Acts of Assembly, which is noted by the 2020 I-81 Corridor Improvement Program Progress Report; and

WHEREAS, based on the foregoing, the purposes of Chapters 837 and 846 relating to development of an I-81 Corridor Improvement Program and update to the Plan have nevertheless been satisfied to the extent feasible.

NOW, THEREFORE, BE IT RESOLVED, the Board approves the annual I-81 Corridor Improvement Program Progress Report, attached hereto as Attachment A, as required by Chapters 837 and 846 of the 2019 Acts of Assembly.

#####

CTB Decision Brief

Approval of the I-81 Corridor Improvement Program Report

Issue: Chapters 837 and 846 of the 2019 Acts of Assembly (2019 Acts of Assembly) established Chapter 36 of Title 33.2 of the *Code of Virginia*, creating the Interstate 81 (I-81) Corridor Improvement Fund, and directing the Commonwealth Transportation Board (Board) to establish the 81 Committee, to adopt an I-81 Corridor Improvement Program, to update the Program by July 1st of each year and to report to the General Assembly the status and progress of implementation of the Program (I-81 Corridor Improvement Program Progress Report) by December 15th of each year. Approval by the Board of the I-81 Corridor Improvement Program Report for 2020 is sought.

Facts: Chapter 743 of the 2018 Virginia Acts of Assembly, the General Assembly of Virginia directed the Board to study financing options for improvements to Interstate I-81 (I-81) with assistance from the Office of Intermodal Planning and Investment (OIP), Virginia Department of Transportation (VDOT) and Department of Rail and Public Transportation (DRPT), and to develop and adopt an I-81 Corridor Improvement Plan (Plan). The Board approved the I-81 Corridor Improvement Plan (Plan) on December 5, 2018 which identified targeted improvements for potential financing and evaluated such improvements using the statewide prioritization process.

The 2019 Acts of Assembly established the I-81 Corridor Improvement Fund and adopt an I-81 Corridor Improvement Program, and established the I-81 Committee. The Act requires an update to the Program by July 1 of each year and to report to the General Assembly on the status of implementation of the Program by December 15 of each year.

Sources of revenues initially for the Fund included a newly-established truck registration fee as well as an I-81 corridor regional fuels tax, and statewide diesel and road taxes. Funds became available July 1, 2019. It was estimated that revenues dedicated to the fund will total \$103 million in fiscal year 2020 and will increase each subsequent year reaching an estimated \$163 million in fiscal year 2025. With the Omnibus Transportation Legislation from the 2020 General Assembly Session (HB 1414/SB 890), the statewide revenue sources are committed to the Commonwealth Transportation Fund beginning in fiscal year 2021. Additional funding, beyond the corridor's fuel tax revenues, is provided through the Interstate Operations and Enhancement Program. The legislation authorized the sale and issuance of bonds with an aggregate principal amount of \$1 billion. This will be reflected in future assumptions. The Board and VDOT will need to incorporate any impact of COVID-19 on the revenues available for the program. New estimates will be available in December 2020.

These funds will support the \$2 billion improvement program. Moneys in the Fund shall only be used for capital, operating, and other improvement costs identified in the Program. Pursuant to the 2019 Acts of Assembly, the I-81 Corridor Improvement Program shall, at a minimum:

1. 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 in 2018 and as may be adopted from time to time;

2. Include a financing plan to support such allocation; and
3. Include a schedule for all new projects and strategies identified in the Plan adopted by the Board.

Prior to the adoption of such Program, the Board shall review the recommendations of and consult with the I-81 Committee.

The current Program schedule consists of 16 projects included in the FY2020-2025 SYIP as adopted by the Board in June and an additional 31 projects amended into the FY2020-2025 SYIP in October of 2019. The FY 2022-2027 SYIP update will include debt assumptions to set expectations for the completion of the capital plan.

Pursuant to the 2019 Acts of Assembly, the I-81 Corridor Improvement Program Progress Report must include, at a minimum:

1. The safety and performance of the Interstate 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 Interstate 81 corridor;
2. An assessment of the effectiveness of the operational strategies and capital projects implemented and funded through the Program;
3. The status of capital projects funded through the Program; and
4. The current and projected balances of the Fund.

2019 was the first year of implementation of operational and capital improvements on the I-81 Corridor. Given that only approximately one year will have transpired between enactment of the reporting requirements and the December 2020 due date, insufficient data exists for purposes of satisfying the above-referenced requirements set forth in the 2019 Acts of Assembly, which is noted in the I-81 Corridor Improvement Program Progress Report. Results will be reported in 2021 based on a minimum of two years of data.

The established I-81 Committee which includes Board members of the Bristol, Salem and Staunton construction districts have received briefings on the status of the Program and met this year on October 23, 2020 and intends to meet December 11, 2020. At this time, the Committee plans to meet two additional times by June 30, 2021.

Recommendations: Approval is recommended for the submission of the annual I-81 Corridor Improvement Program Progress Report, attached hereto as Appendix A.

Decision Brief

Approval of the I-81 Corridor Improvement Program Report

December 9, 2020

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Action Required by CTB: The CTB will be presented with a resolution for a formal vote to approve the annual I-81 Corridor Improvement Program Progress Report. The Board shall report to the Governor and the General Assembly on its recommendations for funding and prioritization of projects by December 15, 2020.

Result, if Approved: If approved, Board authorizes submission of the report.

Options: Approve, Deny, or Defer.

Public Comments/Reactions: None

I-81 Program Progress Report



DECEMBER 2020

Prepared for:



Prepared by:



**Commonwealth
Transportation Board**

I-81 Program Progress Report

Introduction

In April 2019, the Virginia General Assembly enacted legislation that Governor Northam signed into law establishing the Interstate 81 (I-81) Corridor Improvement Program and Fund, which advances the projects identified by the I-81 Corridor Improvement Plan (the Plan) to 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 document the following information.

- ➔ The safety and performance of the I-81 corridor including:
 - ✓ Crash frequency and severity per mile expressed in equivalent property damage only (EPDO) crashes
 - ✓ Person-hours of delay per mile
 - ✓ Frequency of lane-impacting incidents per mile
 - ✓ Duration of a lane closure
- ➔ An assessment of the effectiveness of the operational strategies and capital projects implemented and funded through the Program
- ➔ The status of capital projects funded through the Program
- ➔ The current and projected balances of the Fund

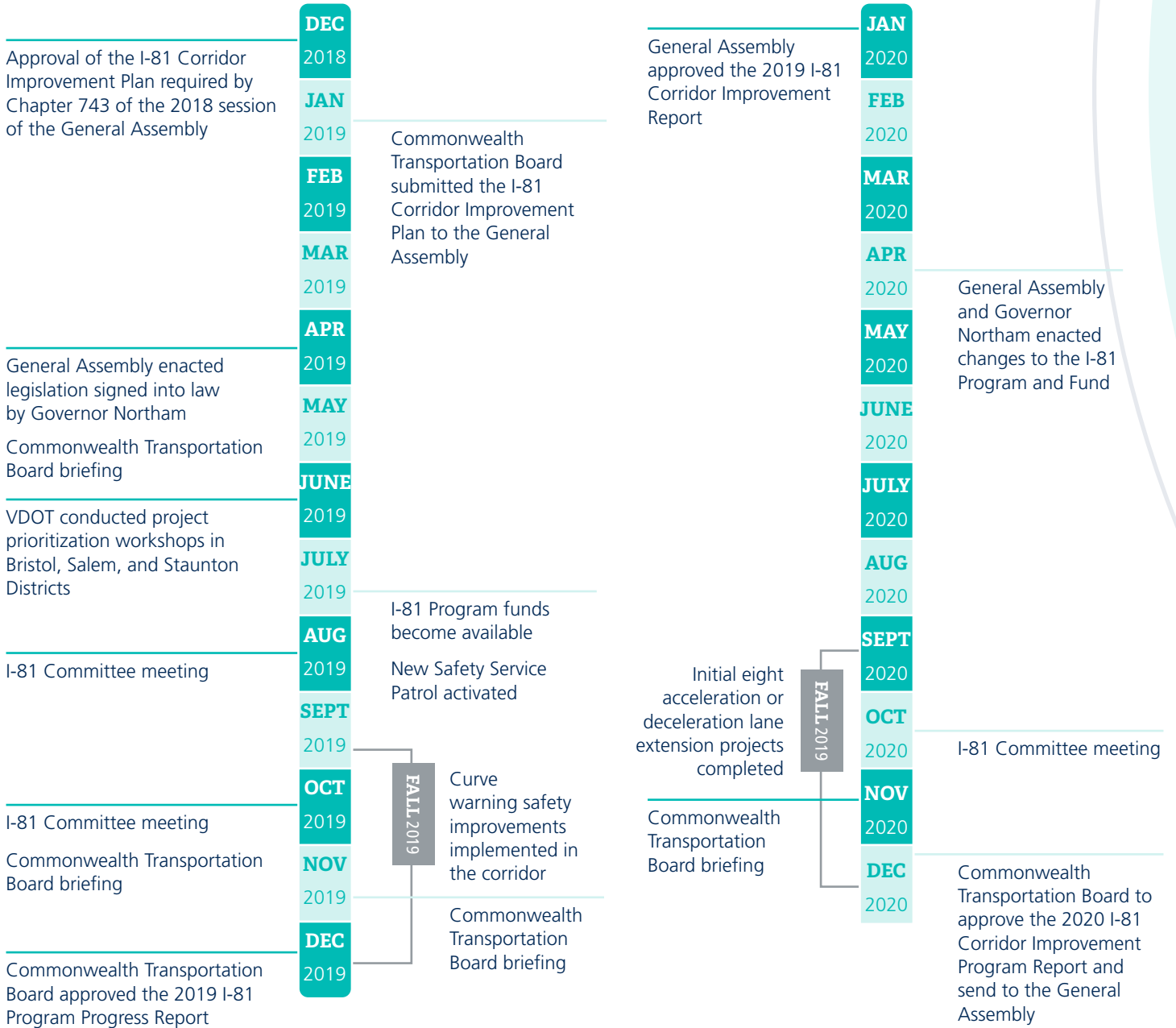


House Bill 2718 (Chapter 837), introduced by Delegates Steve Landes and Terry Austin, and Senate Bill 1716 (Chapter 846), introduced by Senators Mark Obenshain and William Carrico, establish the Program, Fund, and Committee. Governor Ralph Northam announced amendments in March 2019, providing dedicated 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 will support the \$2 billion improvement program. The revenues for the Fund are generated through the creation of a new truck registration fee, an I-81 corridor regional fuels tax, and statewide diesel and road taxes.

During the 2020 General Assembly, House Bill 1414 (Chapter 1230) and Senate Bill 890 (Chapter 1275) made 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 Consumer Price Index
- ➔ Amended the regional fuels tax to only include 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. Previously provided statewide revenue sources are committed to the Commonwealth Transportation Fund beginning in fiscal year 2021.

Timeline of Events



Current and Projected Balances of the Fund

As of December 1, 2019, VDOT documented the current and projected allocations of the Program for the 32 projects added to the Six-Year Improvement Program (SYIP). This information is summarized in **Table 1**. The amounts shown in the table reflect the allocation of funding adopted by the Board on October 17, 2019 for the 32 projects amended to the FY20-25 SYIP. Program information for the 32 capital improvement projects amended to the SYIP and the 16 capital improvement projects yet to be adopted into the SYIP is available in **Appendix A**. The debt was authorized by the General Assembly during the 2020 session; this will be reflected in future assumptions. The Board and VDOT will need to incorporate any impact of COVID-19 on the revenues available for the program. New estimates will be available in December 2020. VDOT will revise the full program schedule to accelerate the remaining 16 projects and present that information to the Committee for review and the Board for consideration and adoption in the FY22-27 SYIP.

Table 1. Current Versus Projected Funds Available Based on the FY20-25 SYIP (in millions of dollars)

	Current	FY21	FY22	FY23	FY24	FY25	FY26	Total
Total Available	103.5	132.0	162.1	163.4	161.9	163.4	163.4	1,049.7
Total Programmed	103.5	122.4	152.5	153.8	161.7	163.2	0	857.1
Total Remaining	0	9.6	9.6	9.6	0.2	0.2	163.4	192.6

The Fund had a balance of \$85.5 million on June 30, 2020 and \$99.7 million on September 30, 2020.

Status of Projects Funded Through the Program

The FY20-25 SYIP was adopted by the Board on July 1, 2019, which included operational improvements and 40 of the 56 capital improvement projects identified in the Plan. The safety service patrol improvements identified in the Plan were implemented in July 2019. Before the end of 2020, the initial eight acceleration and deceleration lane extension projects, eight curve improvement projects, and most of the new camera installations will be completed. **Figure 1** outlines the status of the projects based on project type. A table and map summarizing the status of individual capital improvement projects can be found in **Appendix B**.

Performance of the I-81 Corridor

The study team prepared graphics in **Figure 2** through **Figure 5** to show how the four performance measures have changed since 2017. These figures also show completed capital improvement projects and projects that are still underway or planned. The performance measures documented in the Plan and adopted by the Board in late 2018 were through 2017. Crash data were compared between three 5-year periods: 2013-2017, 2014-2018, and 2015-2019. 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 three 2-year periods: 2016-2017, 2017-2018, and 2018-2019. The study team calculated delay data for all three two-year periods using an updated methodology from what was used in the Plan. The resulting 2016-2017 delays generally mimic trends outlined in the Plan.

Figure 1. Status of Capital Projects Funded Through the Program

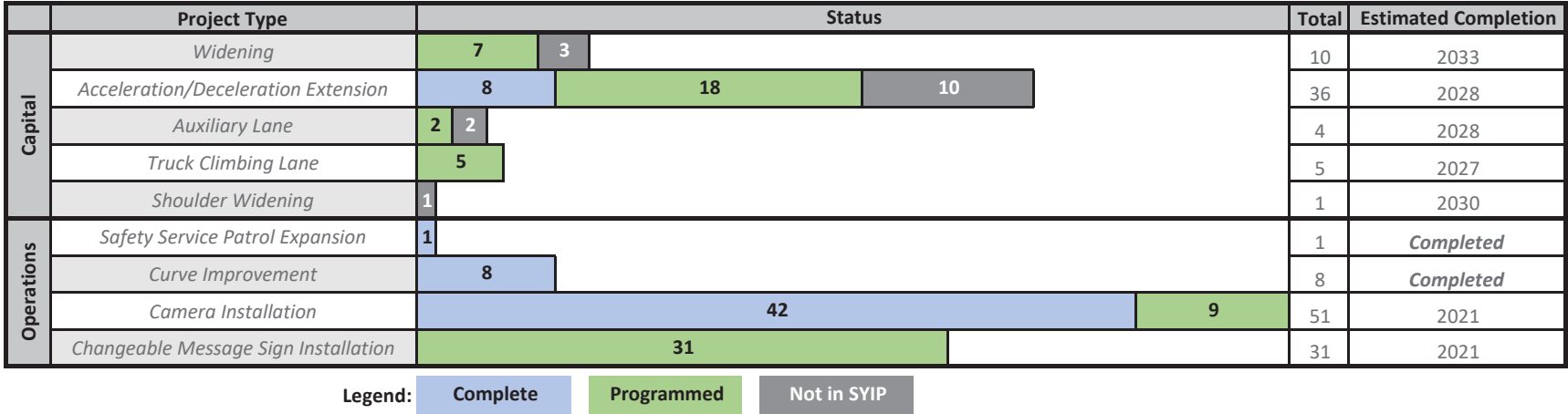


Figure 2. Annual Equivalent Property Damage Only Crashes per Mile

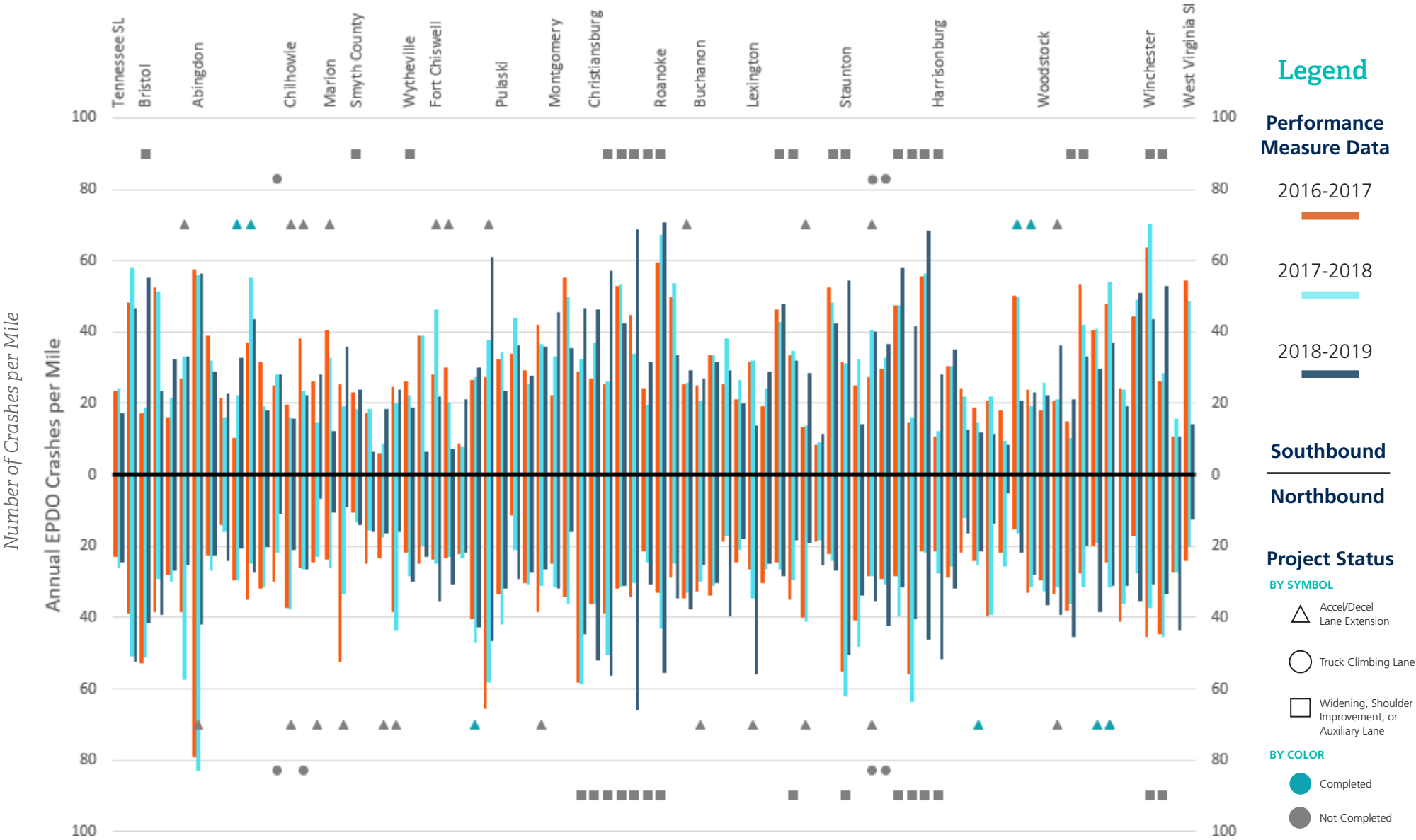


Figure 3. Annual Person-Hours of Delay per Mile

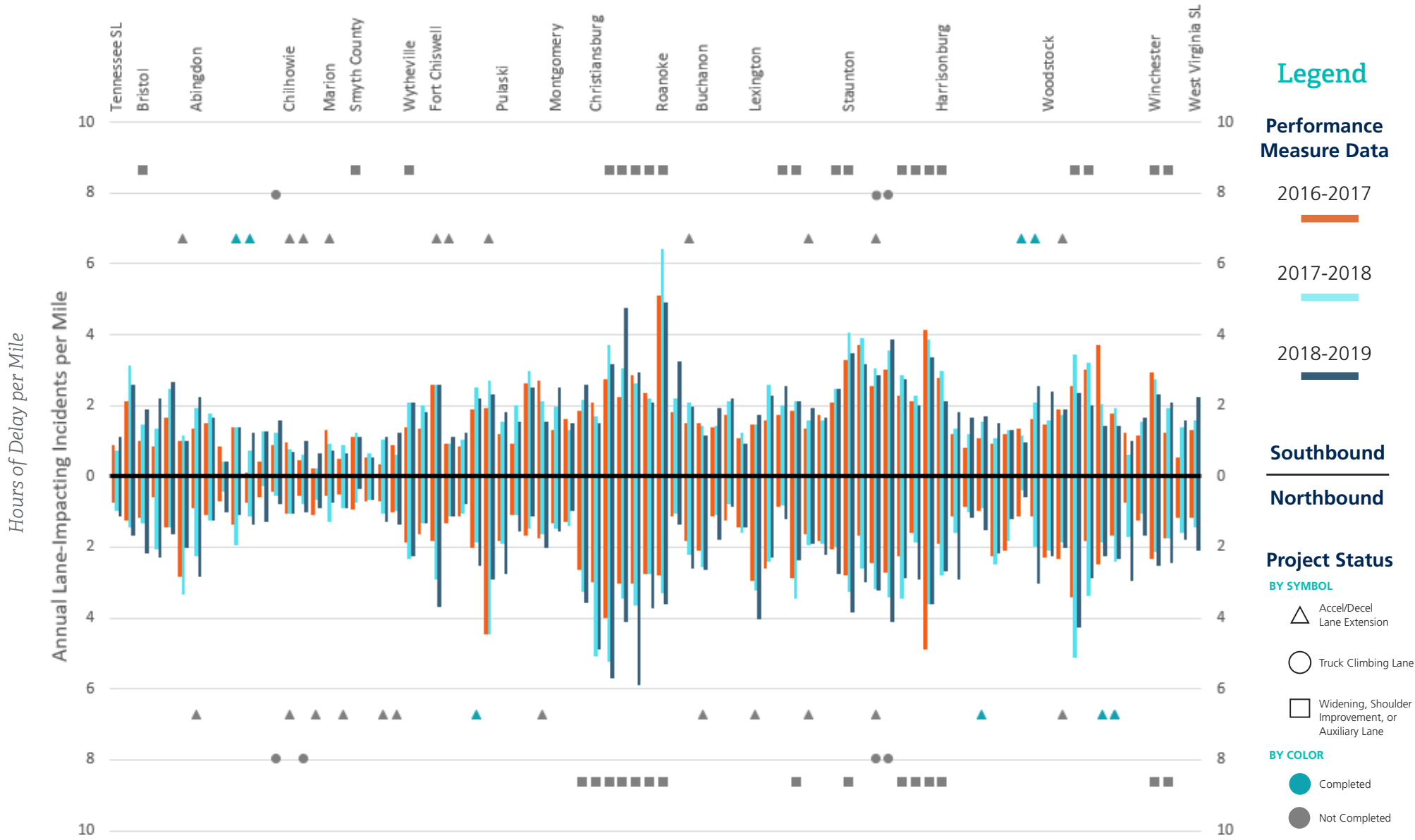


Figure 4. Annual Lane-Impacting Incidents per Mile

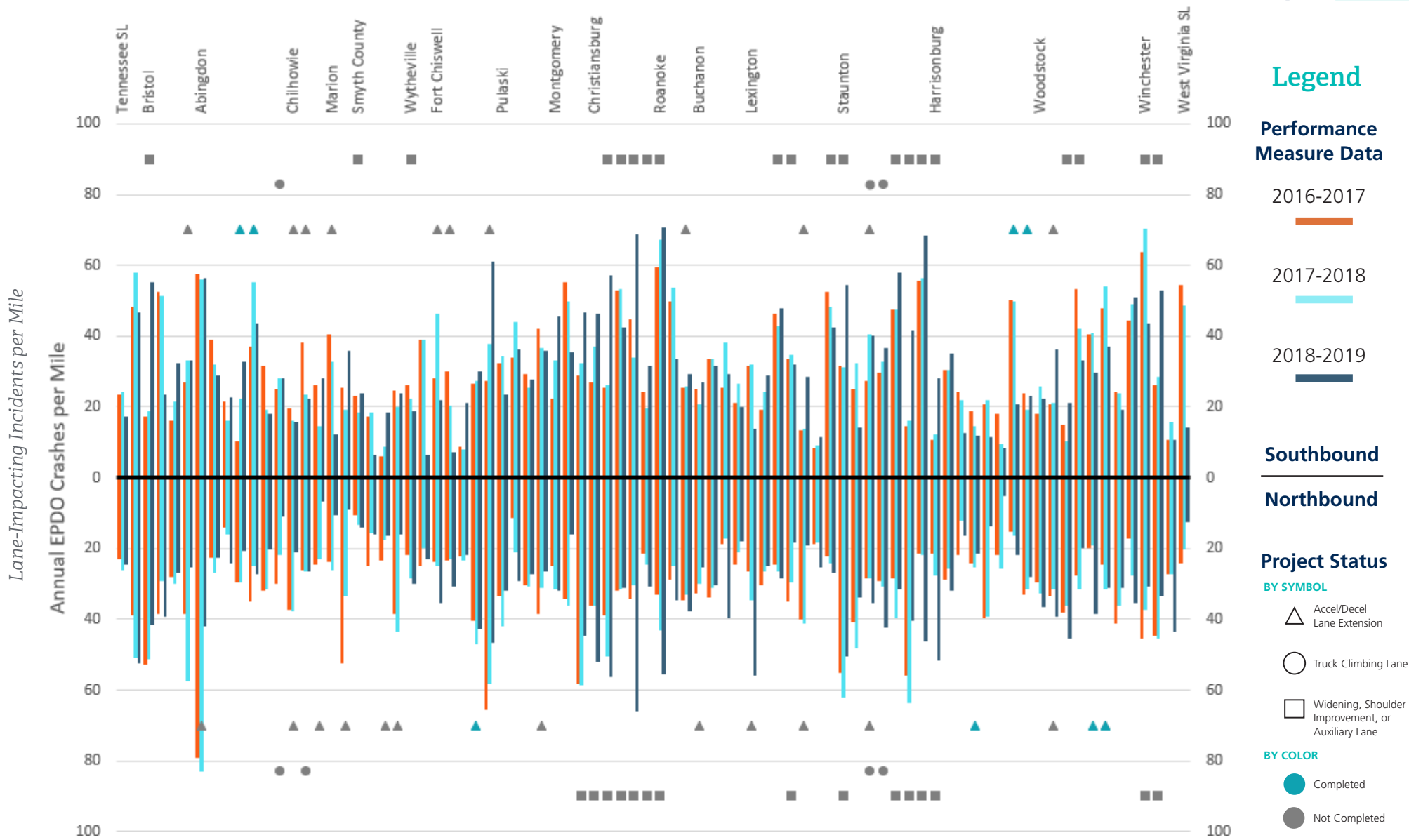
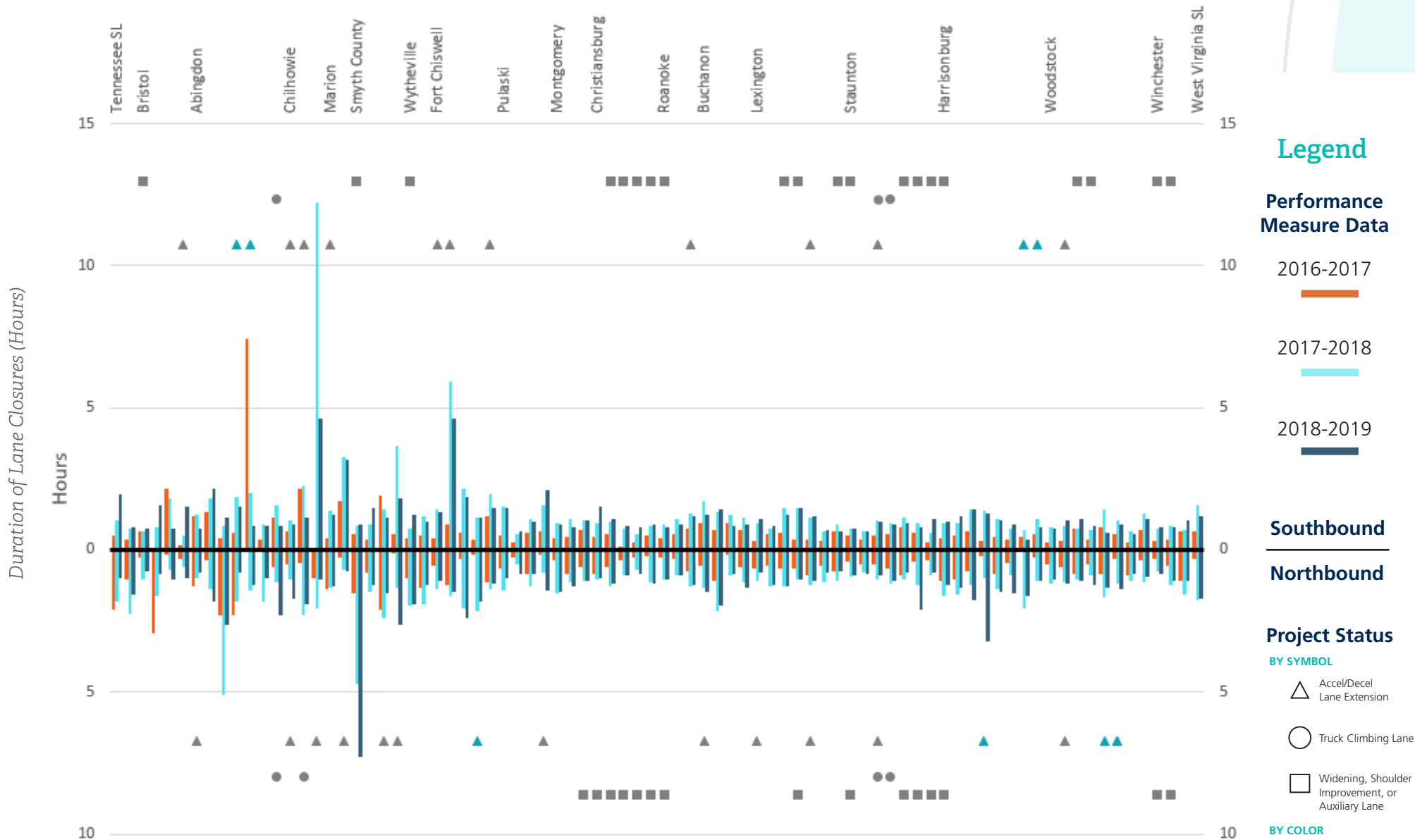


Figure 5. Average Duration of Lane Closures (Hours)



To show the effectiveness of the program of projects, the study team will rely on a minimum of one year of data following the implementation of the Program or Project. Since several roadway capital improvement projects were completed in late 2019 or 2020, it is not yet possible to make discernible observations about the impact of completed construction projects on the performance measures using data through 2019.

Table 2 through **Table 5** contain corridorwide summaries for each 2- or 5-year period for the four performance measures. The performance measure data has fluctuated on a segment-by-segment and corridorwide basis in the years since the Plan was developed; the number of lane-impacting incidents and hours of lane closures have increased, while the person-hours of delay and number of EPDO crashes have decreased.

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

- ➔ The data has fluctuated in the years since the Plan was developed
- ➔ Performance measure data for 2020 and potentially future years will not be reflective of a typical year due to COVID-19

Table 2. EPDO Crashes

Years	Northbound	Southbound	Total	Total Percent Change from Previous Period
2013-2017	51,016	47,661	98,677	-
2014-2018	51,639	49,109	100,748	2%
2015-2019	49,095	50,012	99,107	-2%

Table 3. Person-Hours of Delay

Years	Northbound	Southbound	Total	Total Percent Change from Previous Period
2016-2017	2,326	1,838	4,164	-
2017-2018	2,325	1,919	4,244	2%
2018-2019	2,116	1,471	3,587	-15%

Table 4. Lane-Impacting Incidents

Years	Northbound	Southbound	Total	Total Percent Change from Previous Period
2016-2017	1,464	1,384	2,848	-
2017-2018	1,694	1,622	3,316	16%
2018-2019	1,894	1,691	3,585	8%

Table 5. Hours of Lane Closures

Years	Northbound	Southbound	Total	Total Percent Change from Previous Period
2016-2017	1,798	1,478	3,276	-
2017-2018	2,139	1,794	3,932	20%
2018-2019	2,329	1,812	4,141	5%

Commonwealth Transportation Board Activities

In 2020, the Office of the Secretary of Transportation, in cooperation with VDOT, delivered one I-81 briefing to the Board. According to the legislation, the Board must submit an annual progress report to the General Assembly by December 15 of each year.

November 2020 Commonwealth Transportation Board Briefing

The I-81 Program Delivery Director briefed the Board at its workshop on November 24 on the status of the Program. The Program Delivery Director provided two data updates:

- ➔ Traffic volume comparisons between 2019 and 2020 to show the impact of COVID-19 on passenger car and truck travel
- ➔ Performance measures updates including data through 2019

The Program Delivery Director discussed the status and anticipated completion dates for the operational, arterial, and capital improvement projects throughout the corridor. The presentation also included information on the 2020 fiscal year performance. The November presentation delivered to the Board can be found in **Appendix D**.

I-81 Committee Activities

Following the April 2019 Board meeting, the Committee was established to advise and make recommendations to the Board regarding the development of the Program. The Committee consists of 15 voting members—seven Virginia lawmakers, three Board members representing the VDOT Bristol, Salem, and Staunton construction districts, and the five chairs of the planning district commissions in the corridor. The two ex-officio and nonvoting members of the Committee are the VDOT Commissioner and the Virginia Department of Rail and Public Transportation (DRPT) Director. The legislation requires the Committee to hold public meetings at least four times each year and to consult with interested stakeholders. Due to constraints posed by COVID-19, the Committee met twice in 2020 in October and December.

October 2020 Committee Meeting

The Committee met virtually on October 23, 2020. The I-81 Program Delivery Director presented traffic volume comparisons between 2019 and 2020 to show the impact of COVID-19 on passenger car and truck travel and the status of the operational, arterial, and capital improvement projects throughout the corridor. The I-81 Program Delivery Director highlighted the following conclusions:

- ➔ All 18 SYIP projects in Bristol District are completed or under design
- ➔ All six SYIP projects in Salem District are completed or under design
- ➔ Fourteen of the 16 SYIP projects in Staunton District are completed or under design
- ➔ Operations improvements, including traffic cameras, changeable message signs, curve improvements, and safety service patrol are largely complete or ahead of schedule
- ➔ All arterial improvements are under design

The October presentation delivered to the Committee can be found in **Appendix E**.

Next Steps

Many of the capital improvement projects will continue into the design phase, either by VDOT staff, on-call consultants, or project-specific consultants. The following projects were advertised in 2020 and will be under design once a consultant is procured.

- ➔ Southbound acceleration lane extension at Exit 17 – advertised in September 2020
- ➔ Widening projects in Salem District – advertised in October 2020
 - ✓ Widen to three lanes between mile marker (MM) 136 and MM 139
 - ✓ Widen to three lanes between MM 139 and Exit 141
- ➔ Ramp extension projects in Staunton District (bundled into one contract) – advertised in December 2020
 - ✓ Northbound acceleration lane extension at truck scales (MM 304)
 - ✓ Northbound acceleration lane extension at Exit 291
 - ✓ Southbound acceleration lane extension at Exit 296

Additionally, the following operations projects will make continued progress in 2020.

- ➔ The remaining traffic cameras will be installed with electric services and VA 511 integration
- ➔ The Towing and Recovery Incentive Program (TRIP) will be executed
- ➔ Construction will begin on arterial improvements

APPENDICES

Appendix A: Preliminary Capital Improvement Project Schedule

Appendix B: Capital Improvement Projects Summary Map and Table

Appendix C: Crash Frequency and Severity per Mile for Truck-related Crashes

Appendix D: Commonwealth Transportation Board November 2020 PowerPoint Presentation

Appendix E: October I-81 Committee PowerPoint Presentation

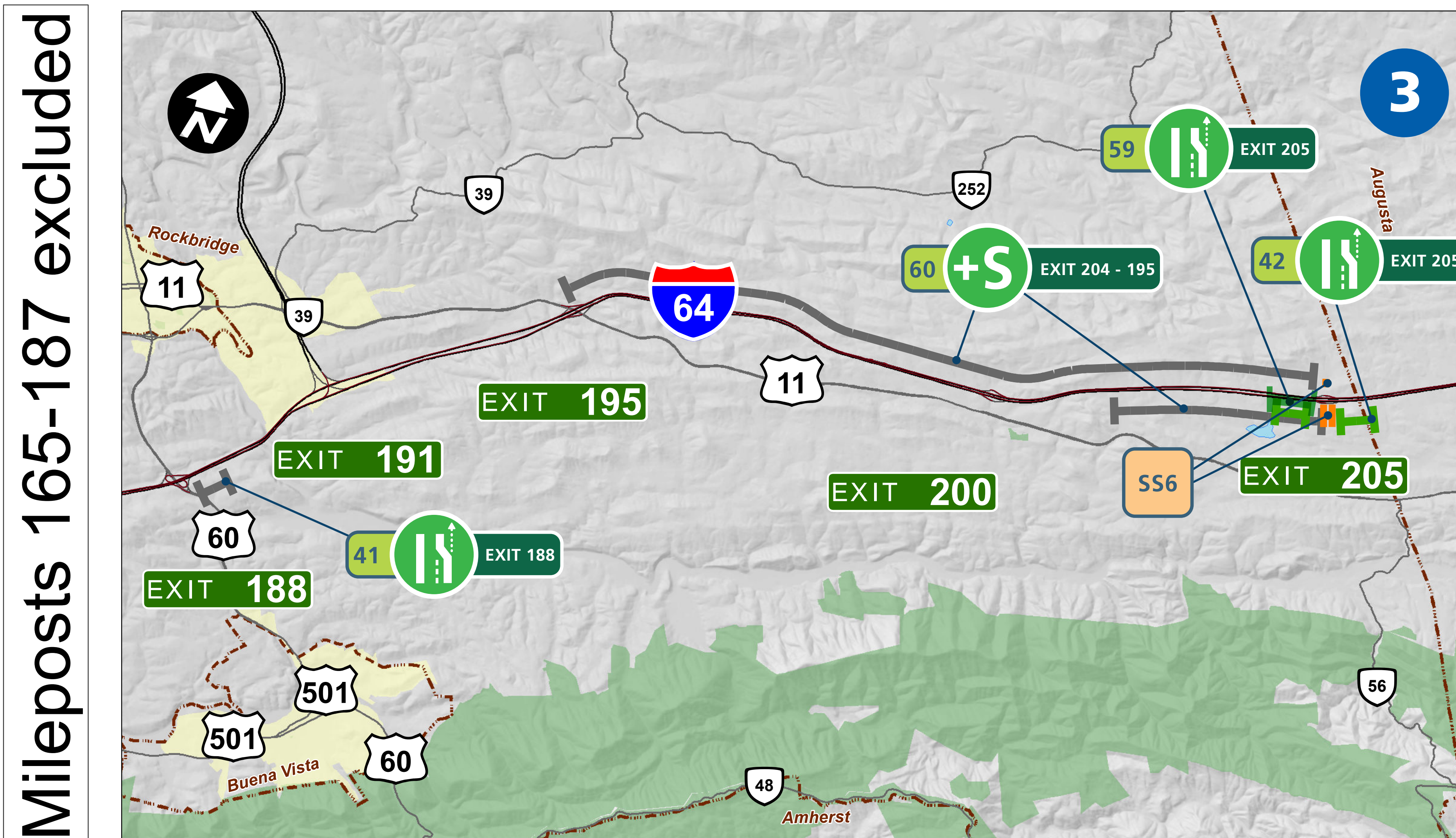
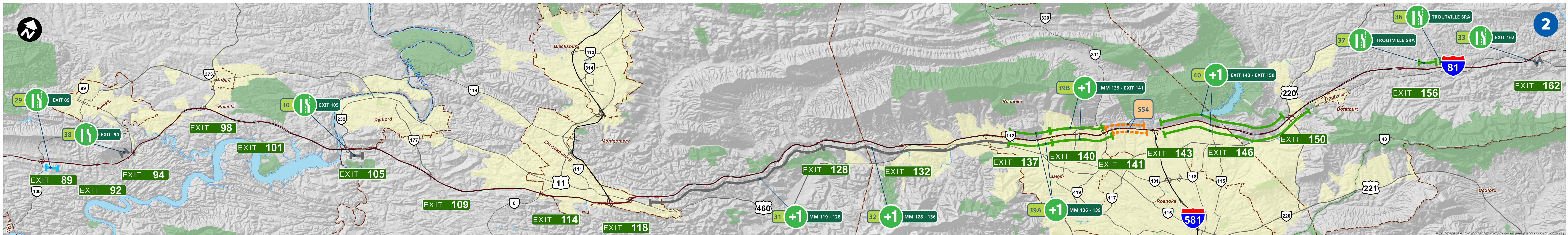
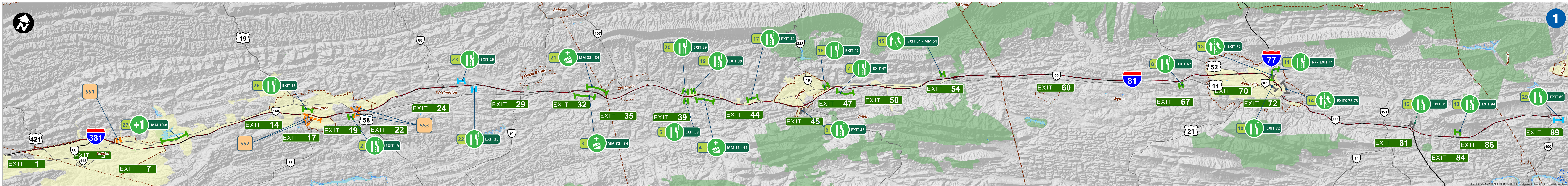


Appendix A: Preliminary Capital Improvement Project Schedule

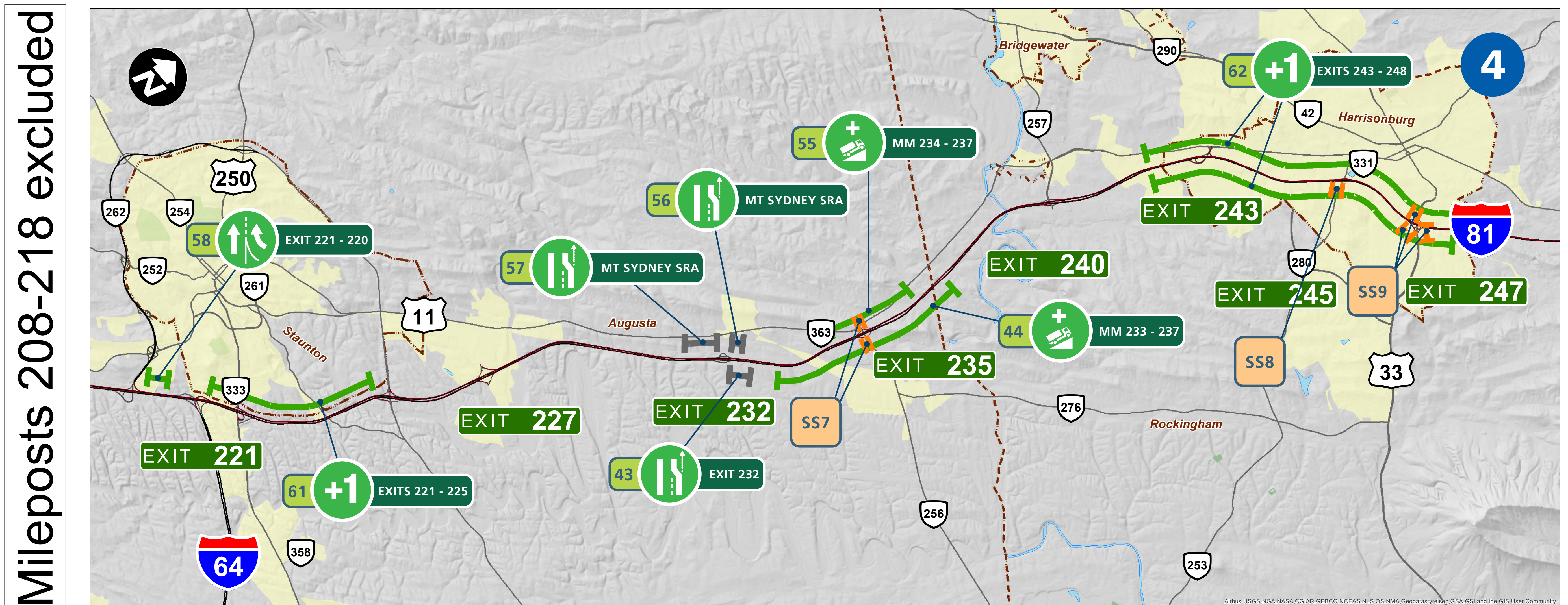


Appendix B: Capital Improvement Projects Summary Map and Table

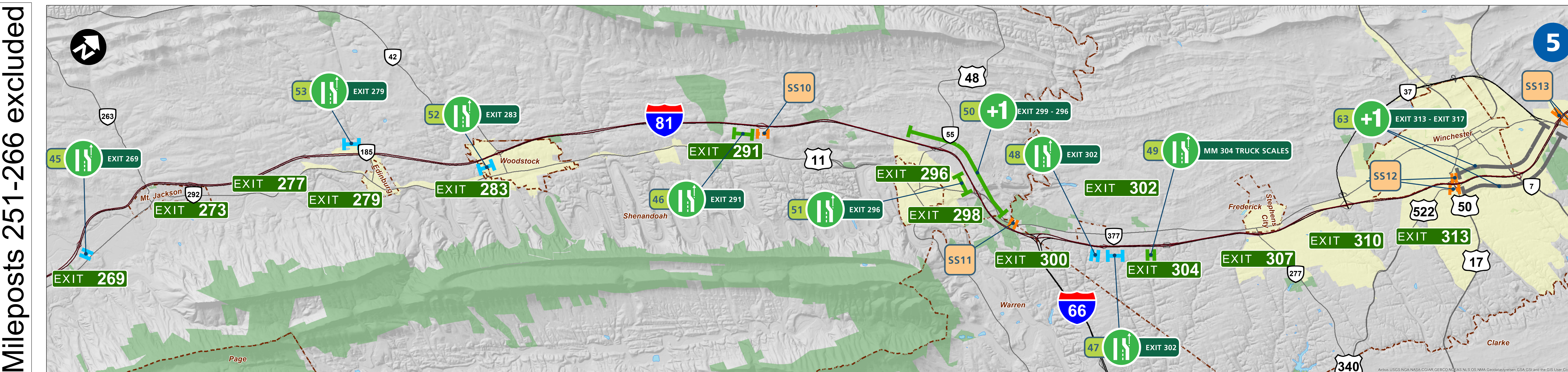




Mileposts 165-187 excluded



Mileposts 208-218 excluded



Mileposts 251-266 excluded

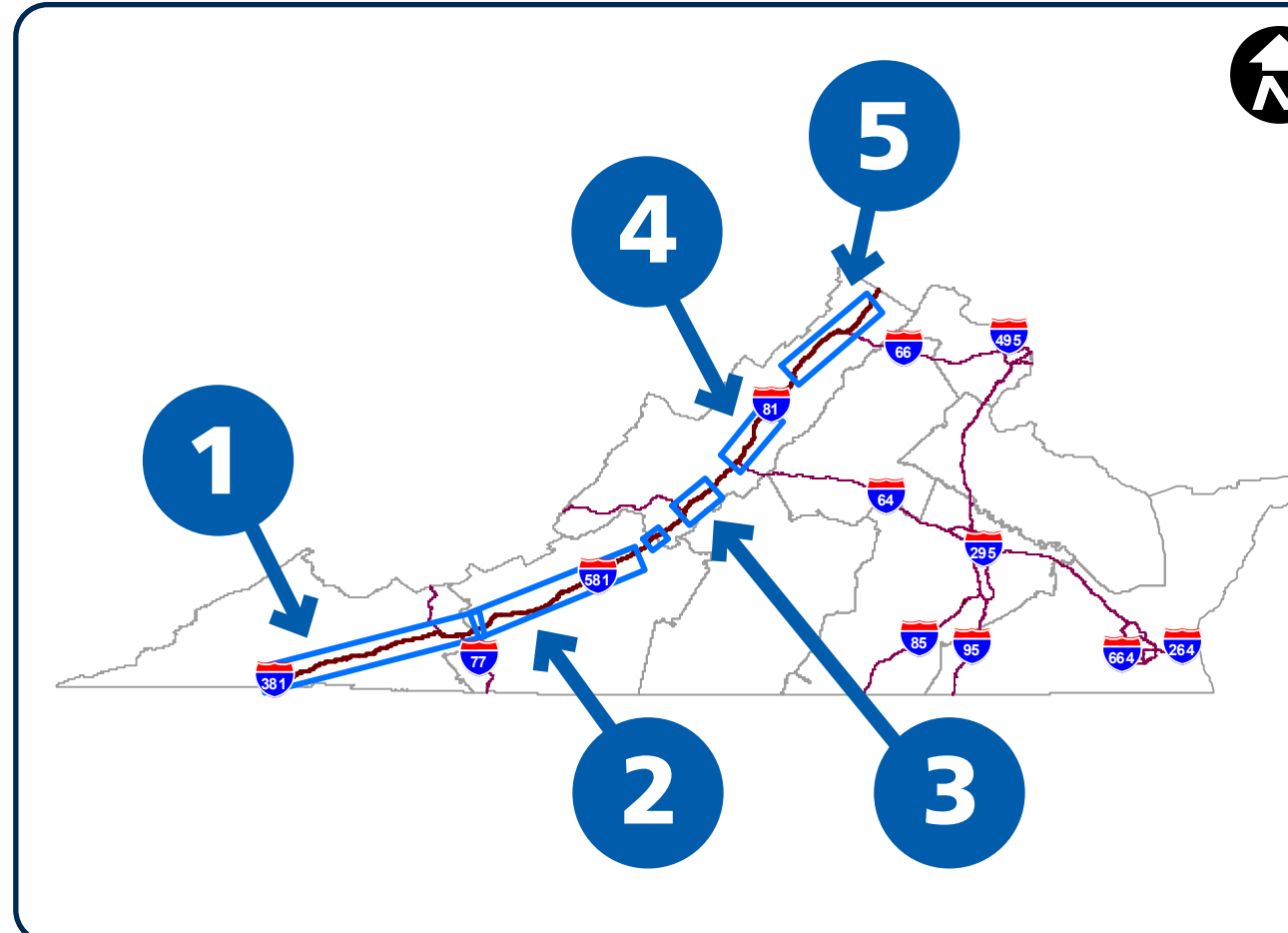
LEGEND

Infrastructure

- +1 Widen by One Lane
- + Add Truck Climbing Lane
- +S Shoulder Widening
- Extend Acceleration/Deceleration Lane
- Add Auxiliary Lane

Improvements

- SYIP Projects Complete
- SYIP Projects Programmed
- Not in SYIP
- SMART SCALE Funded Project



December 4, 2020



I-81 CORRIDOR IMPROVEMENT PLAN

RECOMMENDED IMPROVEMENTS

Study Project ID	UPC	District	Jurisdiction(s)	Direction	Mile Marker			Improvement Description
					From	to	To	
63	116281	Staunton	Frederick County / Winchester	Both Directions	313.8	to	317.5	Widen to three lanes between Exit 313 and Exit 317
49	115803	Staunton	Frederick County	NB only	303.7	to	303.9	Truck scales acceleration lane extension
47	116236	Staunton	Frederick County	NB only	302.5	to	302.9	Exit 302 acceleration lane extension
48	115870	Staunton	Frederick County	NB only	302.1	to	302.2	Exit 302 deceleration lane extension
51	116244	Staunton	Shenandoah County	SB only	296.3	to	296.7	Exit 296 acceleration lane extension
50	116268	Staunton	Shenandoah County / Warren County / Frederick County	SB only	295.7	to	299.2	Widen to three lanes between Exit 299 and Exit 296
46	116270	Staunton	Shenandoah County	NB only	290.6	to	291.1	Exit 291 acceleration lane extension
52	115804	Staunton	Shenandoah County	SB only	282.9	to	283.3	Exit 283 acceleration lane extension
53	116243	Staunton	Shenandoah County	SB only	278.7	to	279.2	Exit 279 acceleration lane extension
45	115802	Staunton	Shenandoah County	NB only	268.8	to	268.9	Exit 269 deceleration lane extension
62	116280	Staunton	Rockingham County / Harrisonburg	Both Directions	242.2	to	248.1	Widen to three lanes between Exit 243 and Exit 248
55	116278	Staunton	Augusta County	SB only	234.6	to	236.5	Weyers Cave truck climbing lane
44	116277	Staunton	Augusta County / Rockingham County	NB only	233.3	to	237.4	Weyers Cave truck climbing lane
56	116275	Staunton	Augusta County	SB only	232.7	to	232.9	Mt. Sidney Rest Area deceleration lane extension
57	116276	Staunton	Augusta County	SB only	231.9	to	232.5	Mt. Sidney Rest Area acceleration lane extension
43	116271	Staunton	Augusta County	NB only	232.4	to	232.8	Mt. Sidney Rest Area acceleration lane extension
61	116269	Staunton	Augusta County / Staunton	Both Directions	221.8	to	225.3	Widen to three lanes between Exit 221 and Exit 225
58	116279	Staunton	Augusta County	SB only	221.2	to	221.5	Add auxiliary lane between Exit 220 and Exit 221
42	115801	Staunton	Rockbridge County	NB only	205.3	to	205.7	Exit 205 acceleration lane extension
59	116245	Staunton	Rockbridge County	SB only	204.7	to	205.2	Exit 205 acceleration lane extension
60	116282	Staunton	Rockbridge County	SB only	195.1	to	204.5	Rockbridge County shoulder improvements
41	116246	Staunton	Rockbridge County	NB only	189	to	189.4	Exit 188 acceleration lane extension
33	116199	Salem	Buchanan / Botetourt County	NB only	162.4	to	162.9	Exit 162 acceleration lane extension
36	116202	Salem	Botetourt County	SB only	158.2	to	158.4	Troutville Safety Rest Area deceleration lane extension
37		Salem	Botetourt County	SB only	157.2	to	158	Troutville Safety Rest Area acceleration lane extension
40	116201	Salem	Roanoke / Roanoke County	Both Directions	144.2	to	151.3	Widen to three lanes between Exit 143 and Exit 150
39B	116203	Salem	Salem / Roanoke County	Both Directions	139	to	141	Widen to three lanes between MM 139 and Exit 141
39A		Salem	Salem / Roanoke County	Both Directions	136	to	139	Widen to three lanes between MM 136 to MM 139
32	116197	Salem	Montgomery County / Roanoke County / Salem	NB only	128.4	to	136	Widen to three lanes from Exit 128 to MM 136
31	116196	Salem	Christiansburg / Montgomery County	NB only	116	to	128.4	Widen to three lanes from MM 116 to Exit 128
30	116198	Salem	Radford / Montgomery County	NB only	105.5	to	106	Exit 105 acceleration lane extension
38	116200	Salem	Pulaski / Pulaski County	SB only	93.7	to	94.2	Exit 94 acceleration lane extension
29	115795	Salem	Pulaski County	NB only	90.2	to	90.7	Exit 89 acceleration lane extension
12	116165	Bristol	Wythe County	SB only	84.3	to	84.5	Exit 84 deceleration lane extension
13	116166	Bristol	Wythe County	SB only	81.7	to	81.9	Exit 81 deceleration lane extension
18	116175	Bristol	Wythe County	SB only	41.6 (I-77)	to	41.8 (I-77)	Add auxiliary lane between Exit 40 on I-77 and Exit 72 on I-81 and extend acceleration lane from I-77 SB to I-81 SB
14	116168	Bristol	Wytheville	SB only	73.2	to	73.8	Add auxiliary lane between Exit 73 and Exit 72
11	116164	Bristol	Wytheville	NB only	73	to	42.9 (I-77)	I-77 deceleration lane extension and reconfigure off-ramp
10	116163	Bristol	Wytheville	NB only	72.7	to	72.9	Exit 72 deceleration lane extension
8	116162	Bristol	Wytheville	NB only	67.3	to	67.4	Exit 67 deceleration lane extension
15	116169	Bristol	Smyth County	SB only	54.1	to	54.4	Add auxiliary lane between Exit 54 and Smyth Safety Rest Area
7	116161	Bristol	Marion / Smyth County	NB only	48.1	to	48.9	Exit 47 acceleration lane extension
16	116158	Bristol	Marion / Smyth County	SB only	47.4	to	47.6	Exit 47 acceleration lane extension
6	116160	Bristol	Marion / Smyth County	NB only	45.5	to	45.6	Exit 45 deceleration lane extension
17	116167	Bristol	Marion / Smyth County	SB only	42.8	to	43	Exit 44 acceleration lane extension
4	116157	Bristol	Chilhowie / Smyth County	NB only	39.5	to	40.6	Add truck climbing lane
19	116174	Bristol	Smyth County	SB only	39.4	to	39.5	Exit 39 deceleration lane extension
5	116159	Bristol	Smyth County	NB only	38.9	to	39	Exit 39 deceleration lane extension
20	116173	Bristol	Smyth County	SB only	38.7	to	38.9	Exit 39 acceleration lane extension
21	116172	Bristol	Washington County	SB only	33	to	34	Add truck climbing lane
3	116156	Bristol	Chilhowie / Washington County	NB only	32.4	to	33.5	Add truck climbing lane
22	115345	Bristol	Washington County	SB only	26.7	to	26.8	Exit 26 deceleration lane extension
23	115346	Bristol	Washington County	SB only	25.9	to	26.1	Exit 26 acceleration lane extension
2	116155	Bristol	Abingdon / Washington County	NB only	19.2	to	19.3	Exit 19 deceleration lane extension
26	116171	Bristol	Abingdon	SB only	16.6	to	16.7	Exit 17 acceleration lane extension
27	116170	Bristol	Bristol / Washington County	SB only	8.1	to	9.7	Widen to three lanes

SMART SCALE

ID	UPC	District	Direction	Location	Description (Year Construction Starts)
SS1	105309	Bristol	SB only	Exit 5	Exit 5 - widen Route 11 (Lee Highway) & widen I-81 off-ramps (2021)
SS2	109419	Bristol	NB only	Exit 17	Exit 17 interchange improvements (2021)
SS3	109440	Bristol	Both Directions	Exit 19	Exit 19 interchange improvements (2020)
SS4	108906, 111373	Salem	Both Directions	Exit 141 to 143	Add auxiliary lanes between Exit 141 and Exit 143 (2019)
SS5*	111359	Salem	SB only	MM 167.4 to MM 169.5	Safety improvements between MM 167.4 to MM 169.5 (2020)
SS6	109370	Staunton	Both Directions	Exit 205	Exit 205 ramp terminal intersection improvements (2021)
SS7	111055	Staunton	Both Directions	Exit 235	Exit 235 access improvements (2021)
SS8	108809	Staunton	NB only	Exit 245	Exit 245 interchange improvements (2019)
SS9	111230	Staunton	Both Directions	Exit 247	Exit 247 interchange improvements (2022)
SS10	115129	Staunton	NB only	Exit 291	Exit 291 northbound ramp widening (2028)
SS11	111054	Staunton	SB only	Exit 300	Exit 300 acceleration lane extension (2021)
SS12	115717	Staunton	Both	Exit 313	Exit 313 bridge capacity improvement (2028)
SS13	115181	Staunton	Both Directions	Exit 317	Exit 317 acceleration and deceleration lane extensions (2028)

LEGEND

- SYIP Projects Complete
- SYIP Projects Programmed
- Not in SYIP
- SMART SCALE Funded Project

December 4, 2020

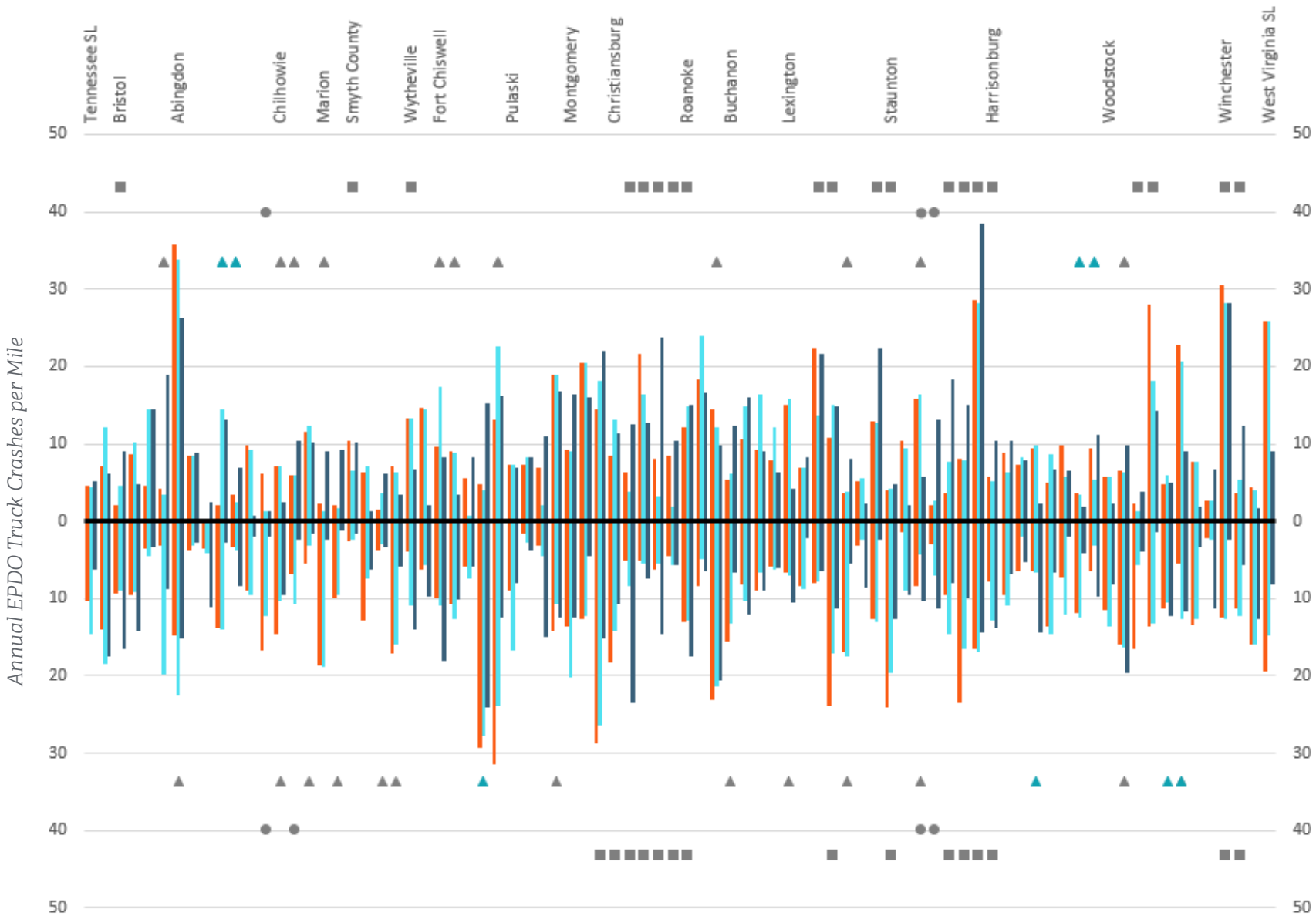


* SS5 - Project is not depicted on map.



Appendix C: Crash frequency and Severity per Mile for Truck-related Crashes





Legend

Performance Measure Data

2016-2017

2017-2018

2018-2019

Southbound

Northbound

Project Status

BY SYMBOL

△ Accel/Decel Lane Extension

○ Truck Climbing Lane

□ Widening, Shoulder Improvement, or Auxiliary Lane

BY COLOR

● Completed

● Not Completed



*Appendix D: Commonwealth Transportation Board November 2020
PowerPoint Presentation*





COMMONWEALTH of VIRGINIA
Office of the
SECRETARY of TRANSPORTATION

Interstate 81 Corridor Improvement Program and Fund Update

Commonwealth Transportation Board Meeting
November 2020



Agenda

2019 Acts of Assembly

COVID-19 Traffic Impacts in I-81 Corridor

Performance Measures Comparison

Project Development Process

Assessment of Strategies

Annual Program Allocations and Financing Plan

Takeaway Scorecard

2019 Acts of Assembly

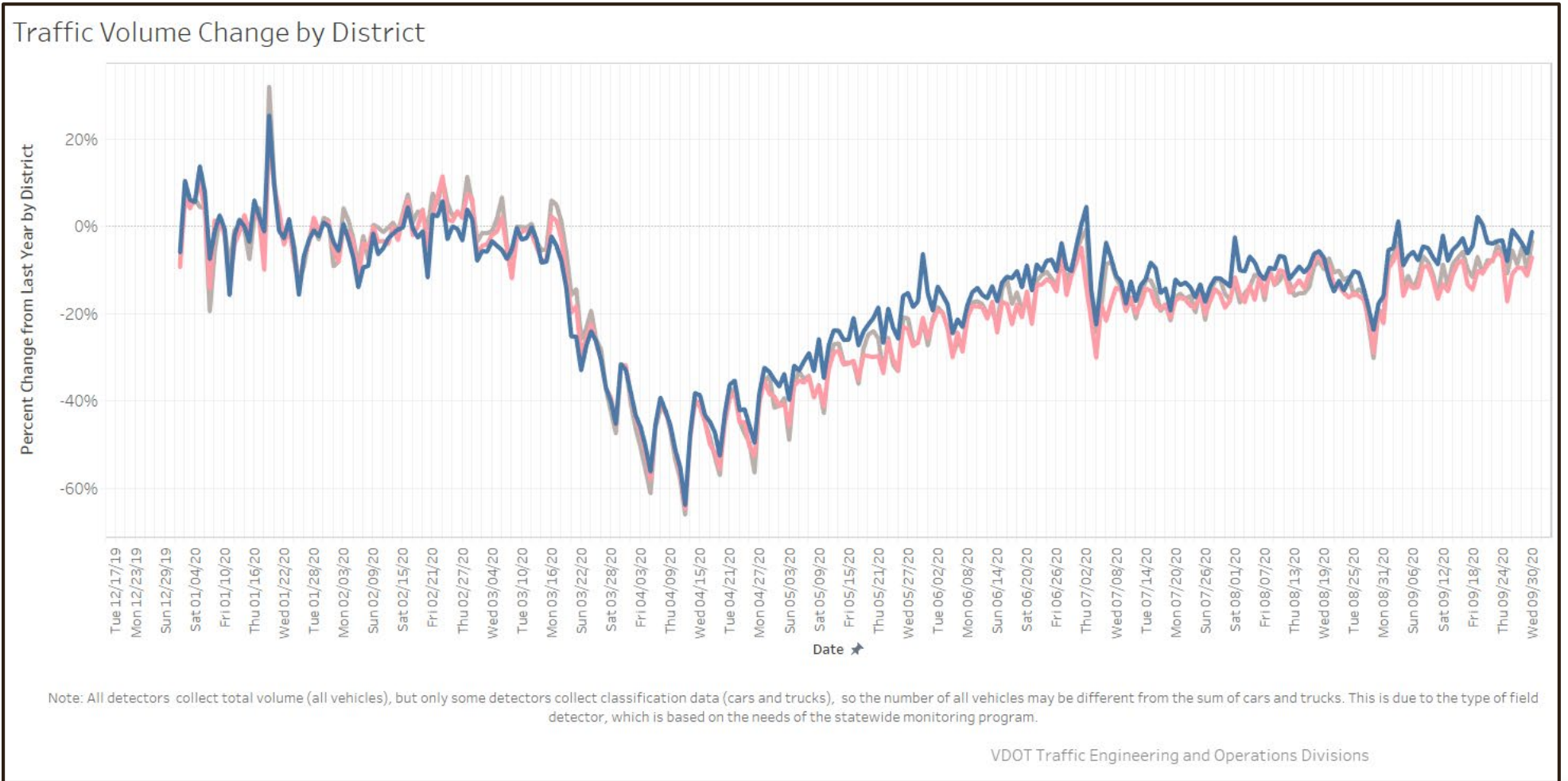
- Chapters 837 and 846 – CTB Report Requirements
- Report by December 15 to General Assembly
 - Performance of the I-81 corridor
 - Effectiveness of operational strategies and capital improvements
 - Status of projects
 - Current and projected I-81 Fund balance
- Annual program allocation
- Financing plan
- Schedule of projects and strategies

COVID-19 Traffic Impacts - All Vehicles

All Vehicle Types

District

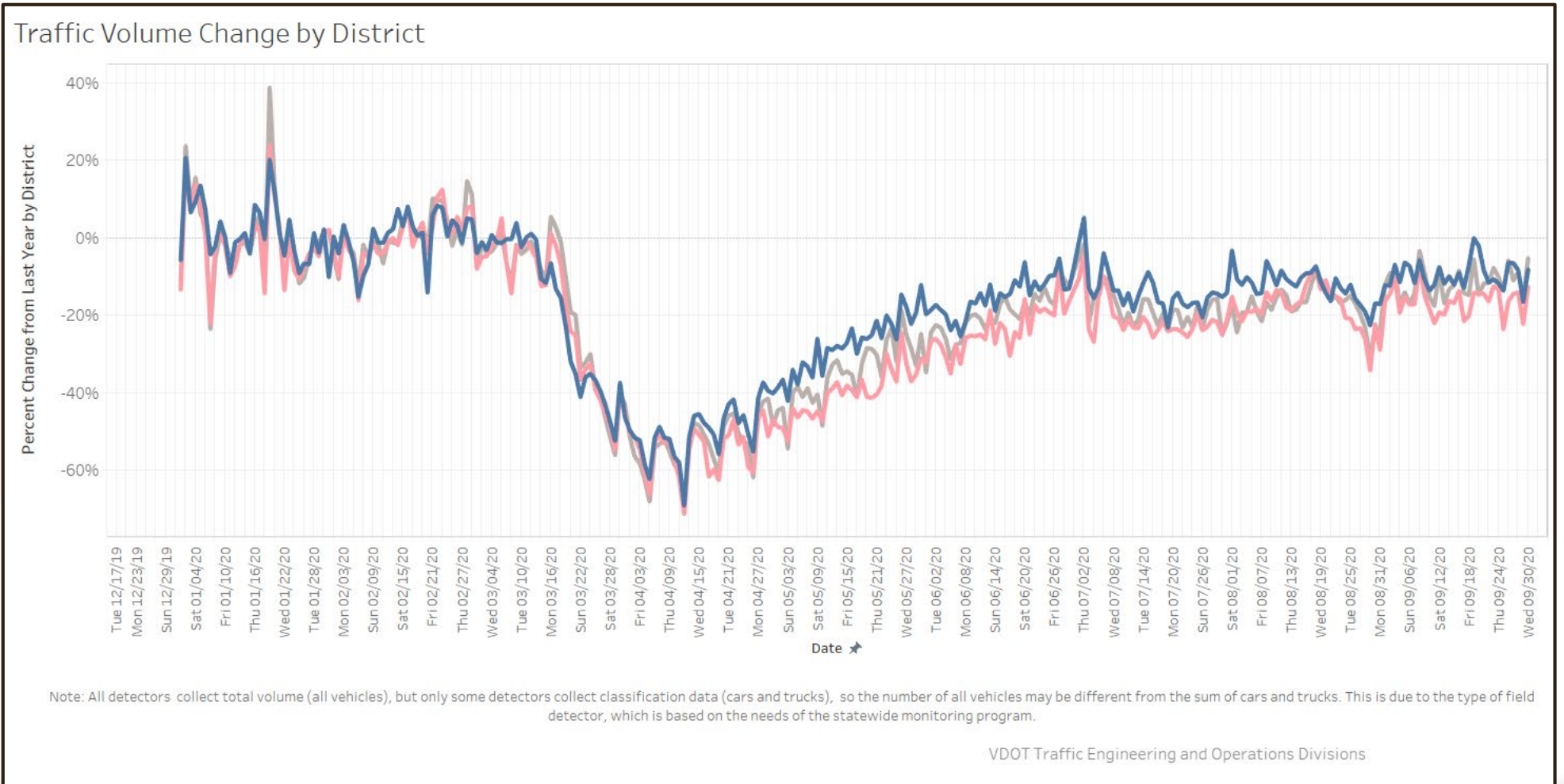
- Bristol
- Salem
- Staunton



COVID-19 Traffic Impacts - Passenger Vehicles

Passenger Vehicles Only

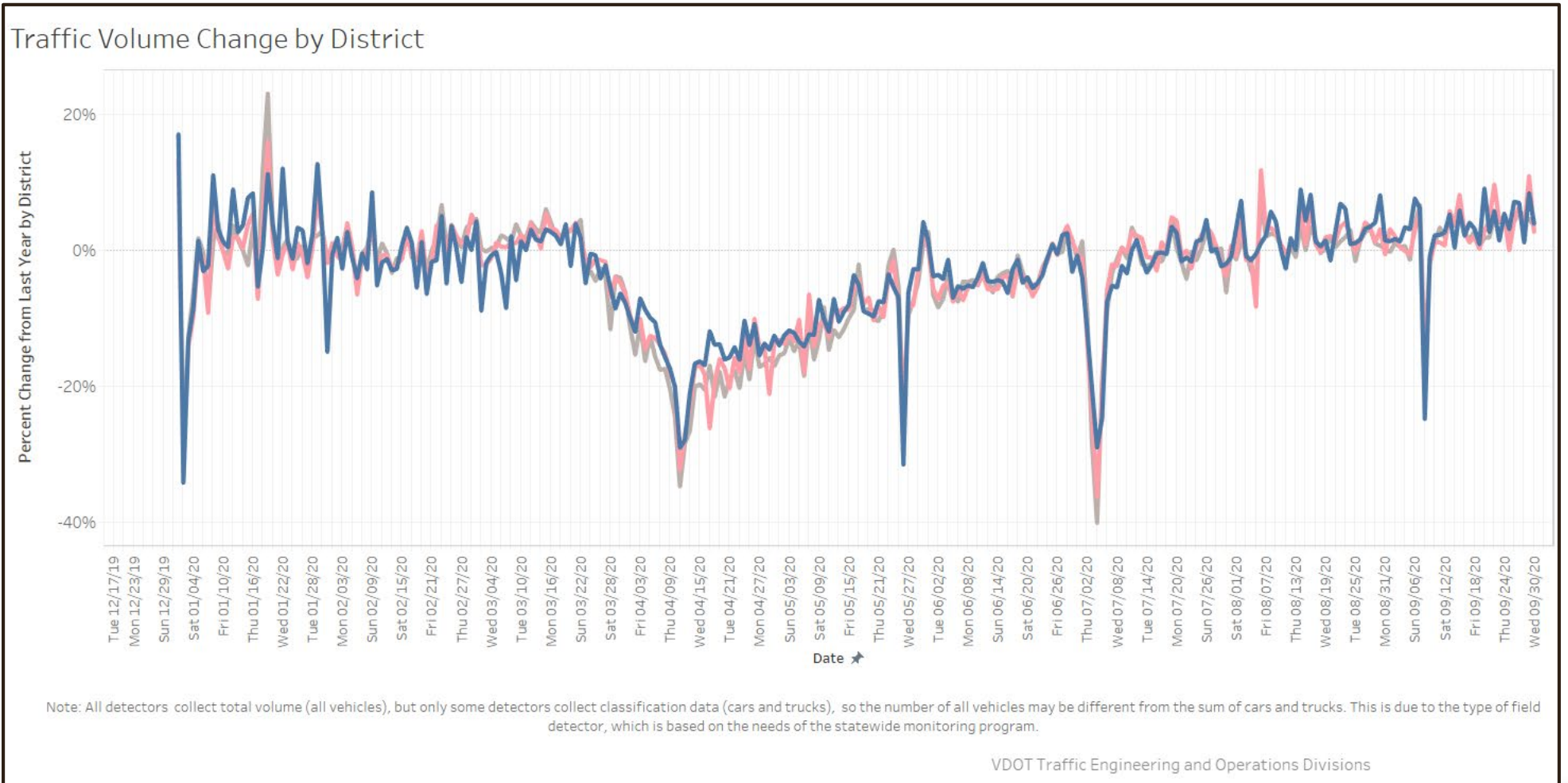
District
■ Bristol
■ Salem
■ Staunton



COVID-19 Traffic Impacts - Trucks

Trucks Only

District
■ Bristol
■ Salem
■ Staunton



Performance Measures - Baseline

Safety and Performance of I-81

- Crash frequency and severity
- Person-hours of delay
- Number of incidents involving lane closures
- Average duration of incidents involving lane closures

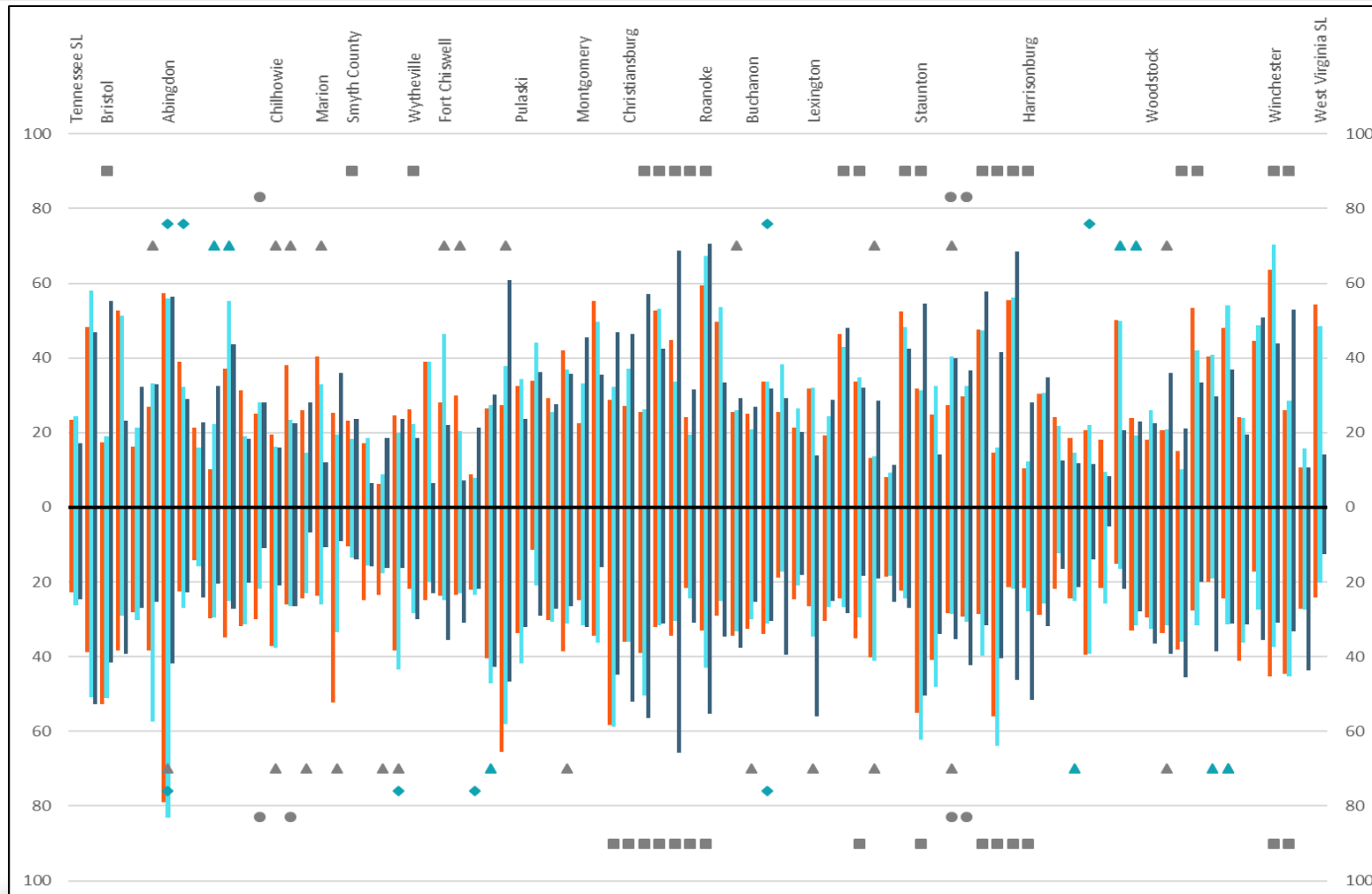
Performance Measures - Baseline Comparison

Comparison of I-81 Corridor Improvement Plan performance measures

Start Year	End Year	Person Hours of Delay (Thousands)			Lane-Impacting Incidents			Hours of Lane Closures		
		Northbound	Southbound	Total	Northbound	Southbound	Total	Northbound	Southbound	Total
2017	2018	2,325	1,919	4,244	1,694	1,622	3,316	2,139	1,794	3,932
2018	2019	2,116	1,471	3,587	1,894	1,691	3,585	2,329	1,812	4,141
Percent Change		-9%	-23%	-15%	12%	4%	8%	9%	1%	5%

Start Year	End Year	EPDO Crashes		
		Northbound	Southbound	Total
2014	2018	51,639	49,109	100,748
2015	2019	49,095	50,012	99,107
Percent Change		-5%	2%	-2%

Performance Measures - Annual EPDO Crashes per Mile



Legend

SOUTHBOUND
NORTHBOUND
AXIS

Performance Measure Data

- 2013-2017 (Orange)
- 2014-2018 (Cyan)
- 2015-2019 (Dark Blue)

Project Status

By Symbol

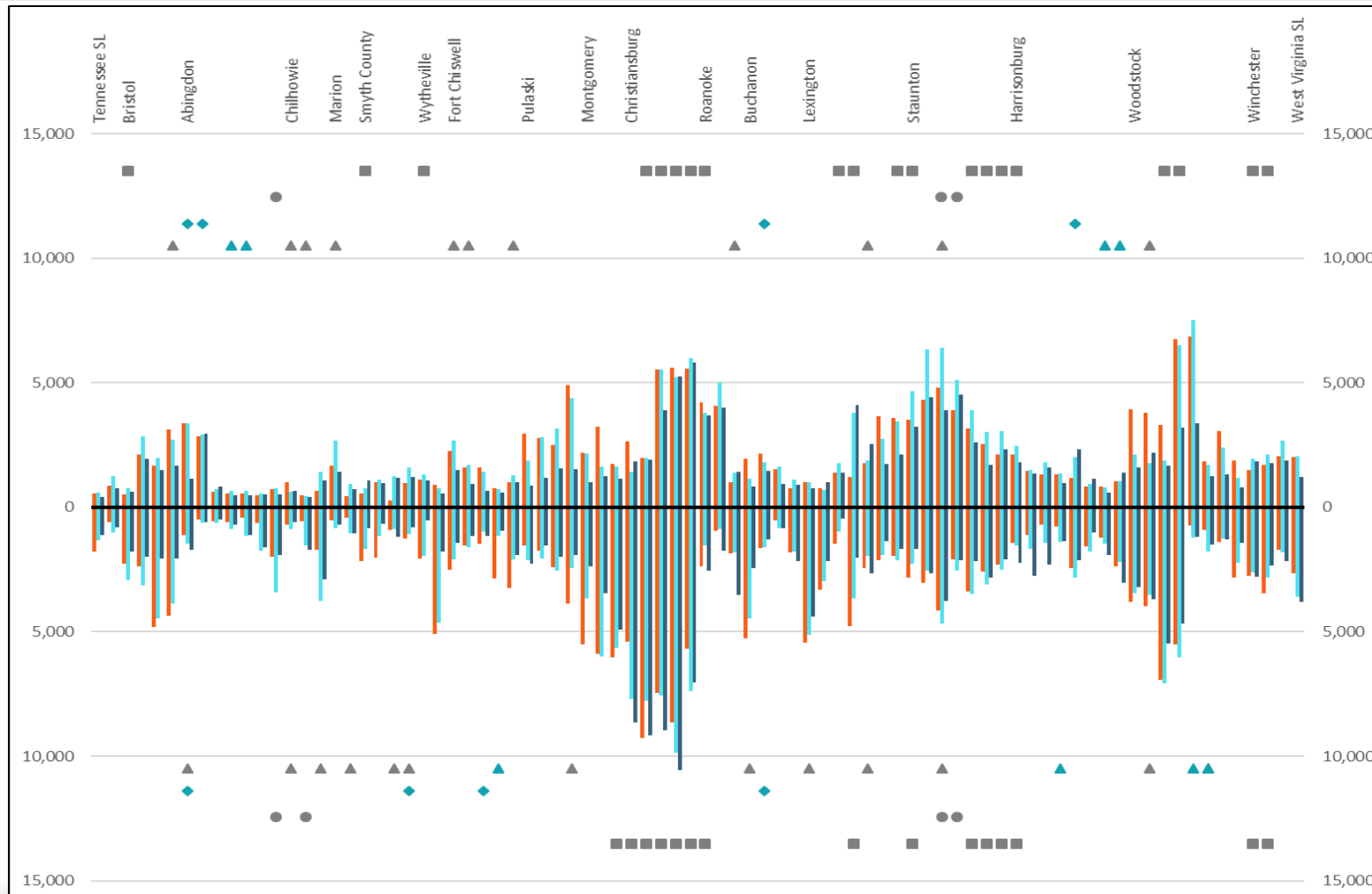
- △ Accel/Decel Lane Extension
- ◇ Curve Improvement
- Truck Climbing Lane
- Widening, Shoulder Improvement, or Auxiliary Lane

By Color

- Completed (Cyan)
- Not Completed (Grey)

Corridor Summary: EPDO Crashes			
Years	Northbound	Southbound	Total
2013-2017	51,016	47,661	98,677
2014-2018	51,639	49,109	100,748
2015-2019	49,095	50,012	99,107

Performance Measures - Annual Person-Hours of Delay per Mile



Legend

SOUTHBOUND AXIS
NORTHBOUND

Performance Measure Data

- █ 2016-2017
- █ 2017-2018
- █ 2018-2019

Project Status

By Symbol

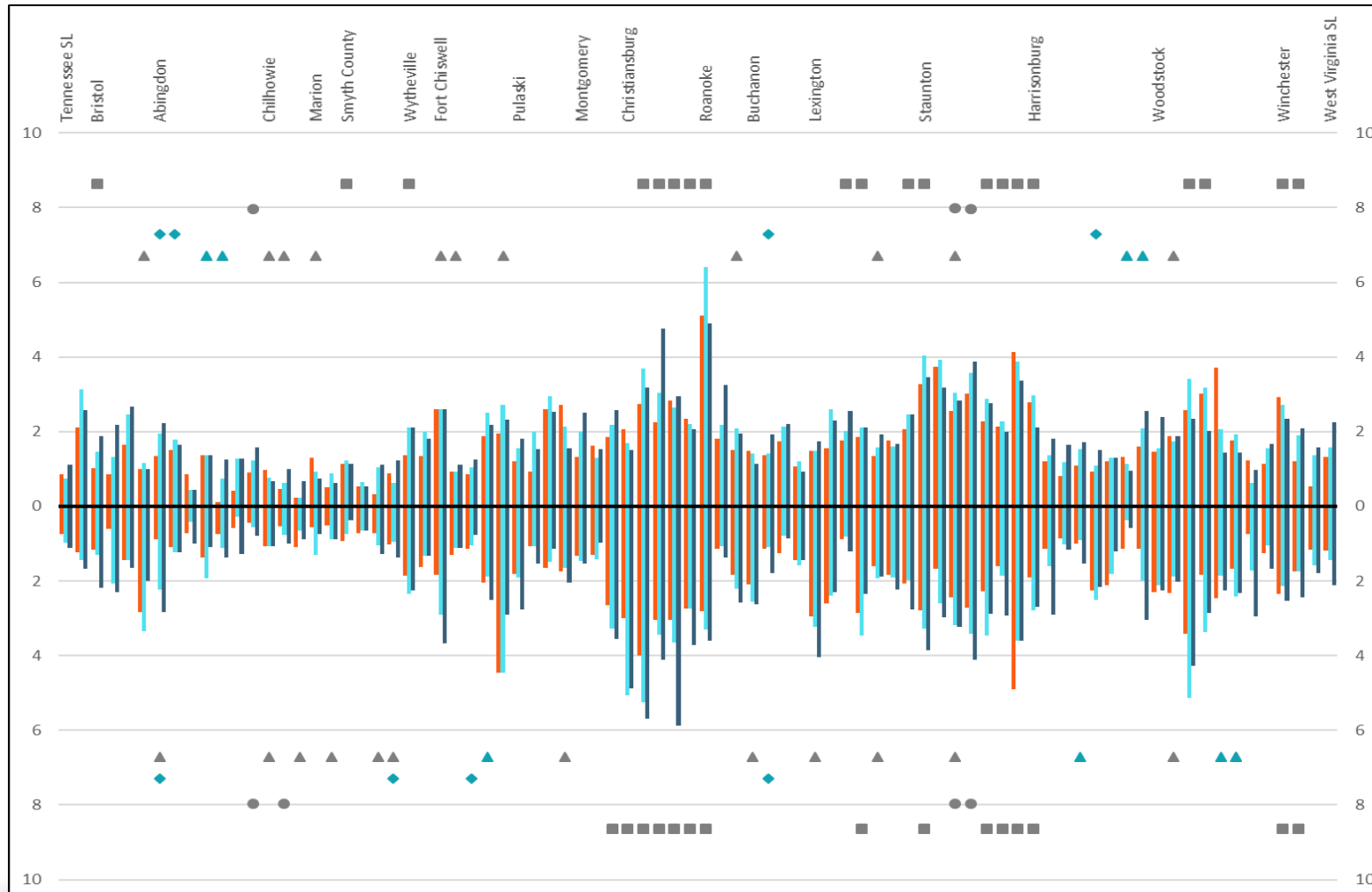
- △ Accel/Decel Lane Extension
- ◇ Curve Improvement
- Truck Climbing Lane
- Widening, Shoulder Improvement, or Auxiliary Lane

By Color

- Completed
- Not Completed

Corridor Summary: Person-Hours of Delay (Thousands)			
Years	Northbound	Southbound	Total
2016-2017	2,326	1,838	4,164
2017-2018	2,325	1,919	4,244
2018-2019	2,116	1,471	3,587

Performance Measures - Annual Lane-Impacting Incidents per Mile



Legend

SOUTHBOUND
NORTHBOUND
AXIS

Performance Measure Data

- 2016-2017
- 2017-2018
- 2018-2019

Project Status

By Symbol

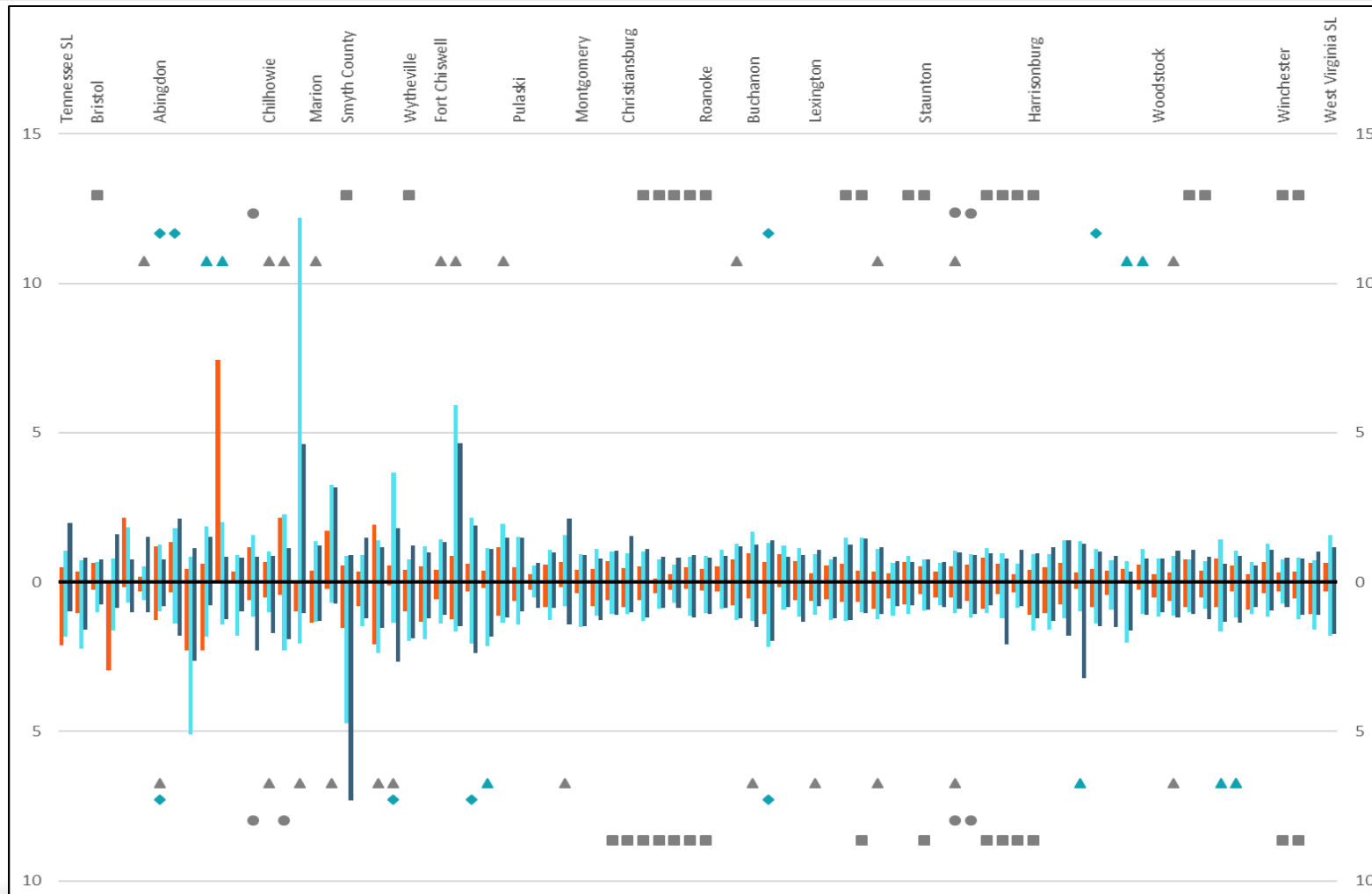
- △ Accel/Decel Lane Extension
- ◇ Curve Improvement
- Truck Climbing Lane
- Widening, Shoulder Improvement, or Auxiliary Lane

By Color

- Completed
- Not Completed

Corridor Summary: Lane-Impacting Incidents			
Years	Northbound	Southbound	Total
2016-2017	1,464	1,384	2,848
2017-2018	1,694	1,622	3,316
2018-2019	1,894	1,691	3,585

Performance Measures - Average Duration of a Lane Closure (Hours)



Legend

SOUTHBOUND
NORTHBOUND
AXIS

Performance Measure Data

- 2016-2017 (Orange)
- 2017-2018 (Cyan)
- 2018-2019 (Dark Blue)

Project Status

By Symbol

- △ Accel/Decel Lane Extension
- ◇ Curve Improvement
- Truck Climbing Lane
- Widening, Shoulder Improvement, or Auxiliary Lane

By Color

- Completed (Cyan)
- Not Completed (Grey)

Corridor Summary: Hours of Lane Closures

Years	Northbound	Southbound	Total
2016-2017	1,798	1,478	3,276
2017-2018	2,139	1,794	3,932
2018-2019	2,329	1,812	4,141

Operational Improvement Project Status

Operational Improvement Type	Status
Curve Improvements (static and flashing chevrons)	✓
Safety Service Patrol Enhancements	✓
Lift and Tow	✓
Towing and Recovery Incentive Program (TRIP)	March 2021
Traffic Camera Installations	42 cameras on VA 511 8 awaiting VA 511 integration 1 awaiting electric service installation
Changeable Message Signs	Under construction Ahead of schedule Fixed completion date: October 28, 2021



Arterial Improvement Project Status

Corridor-wide Arterial Improvements

- Traffic signal upgrades
 - Planning and design underway in concert with coordination with localities for traffic signal system integration into the VDOT central signal system along entire corridor
- Parallel route upgrades
 - Minor geometric improvement projects to facilitate access to and from I-81 during incidents under design for construction in the near future

Project Development Process - Capital Projects



Capital Improvement Project Status - Bristol District

- 7 projects under design by VDOT staff
- 6 projects under design by on-call consultant
- 2 projects under design by project-specific consultant (procured)
- 1 design-build project under design for December 2020/January 2021 advertisement
- 2 projects - construction complete
- **Of the 18 SYIP projects in Bristol, all are currently under design or have construction completed**



Exit 26 Washington County

Southbound
acceleration and
deceleration lane
extensions



Capital Improvement Project Status - Salem District

- 2 projects under design by VDOT staff
- 0 projects under design by on-call consultant
- 1 project under design by project-specific consultant (procured)
- 2 design-build projects, bundled and advertised (Request for Qualifications), Request for Proposals was advertised in October 2020
- 1 project - construction complete
- **Of the 6 SYIP projects in Salem, all are currently under design or construction**



Exit 89 Pulaski County

Northbound deceleration lane extension



Capital Improvement Project Status - Staunton District

- 6 projects under design by VDOT staff
- 1 project under design by on-call consultant
- 2 projects under design by project-specific consultants (procured)
- 0 design-build projects
- 2 projects, bundled are currently under contract negotiation for design services (Weyers Cave northbound and southbound truck climbing lanes)
- 5 projects – construction complete
- **Of the 16 current SYIP projects in the Staunton District, 14 are currently under design or have completed construction**



**Exit 269 -
Shenandoah
County**

**Northbound
deceleration
lane extension**

Exit 283 - Shenandoah County
Southbound acceleration lane extension



Fiscal Year 2020 Performance (in millions)

Interstate 81 Improvement Fund

Source	Estimate (February 2020)	Actual Collections
Regional Fuels Tax	\$55.0	\$69.8
Truck Registration Fee (IRP/License Fee)	30.2	19.3
Road Tax	6.8	3.3
Interest	-	0.7
TOTAL	\$92.0	\$93.1
Project Expenditures through June 30, 2020		\$7.6
Cash Balance on June 30, 2020		\$85.5

Takeaway Scorecard

Activity	Status	Anticipated Completion
Curve improvements (8)	Complete	Fall 2019
Initial accel/decel lane extensions (8)	Complete	Fall 2020
Safety Service Patrol Expansion	Complete	July 2019
Additional Cameras (51)	Nearly Complete	Spring 2021
Additional Changeable Message Signs	Underway	October 2021
Arterial Upgrades	Underway	Varies by project
Remaining capital projects (32)	Underway	Varies by project

Study Website Improve81.org

IMPROVE 81



What Is The I-81 Improvement Program?

The I-81 Corridor Improvement Program consists of innovative, targeted improvements that will have a substantial effect on the safety and reliability of a critical portion of our nation's infrastructure.



Appendix E: October I-81 Committee PowerPoint Presentation



IMPROVE 81

I-81 CORRIDOR IMPROVEMENT PROGRAM

I-81 Committee Briefing

Dave Covington, PE

I-81 Program Delivery Director

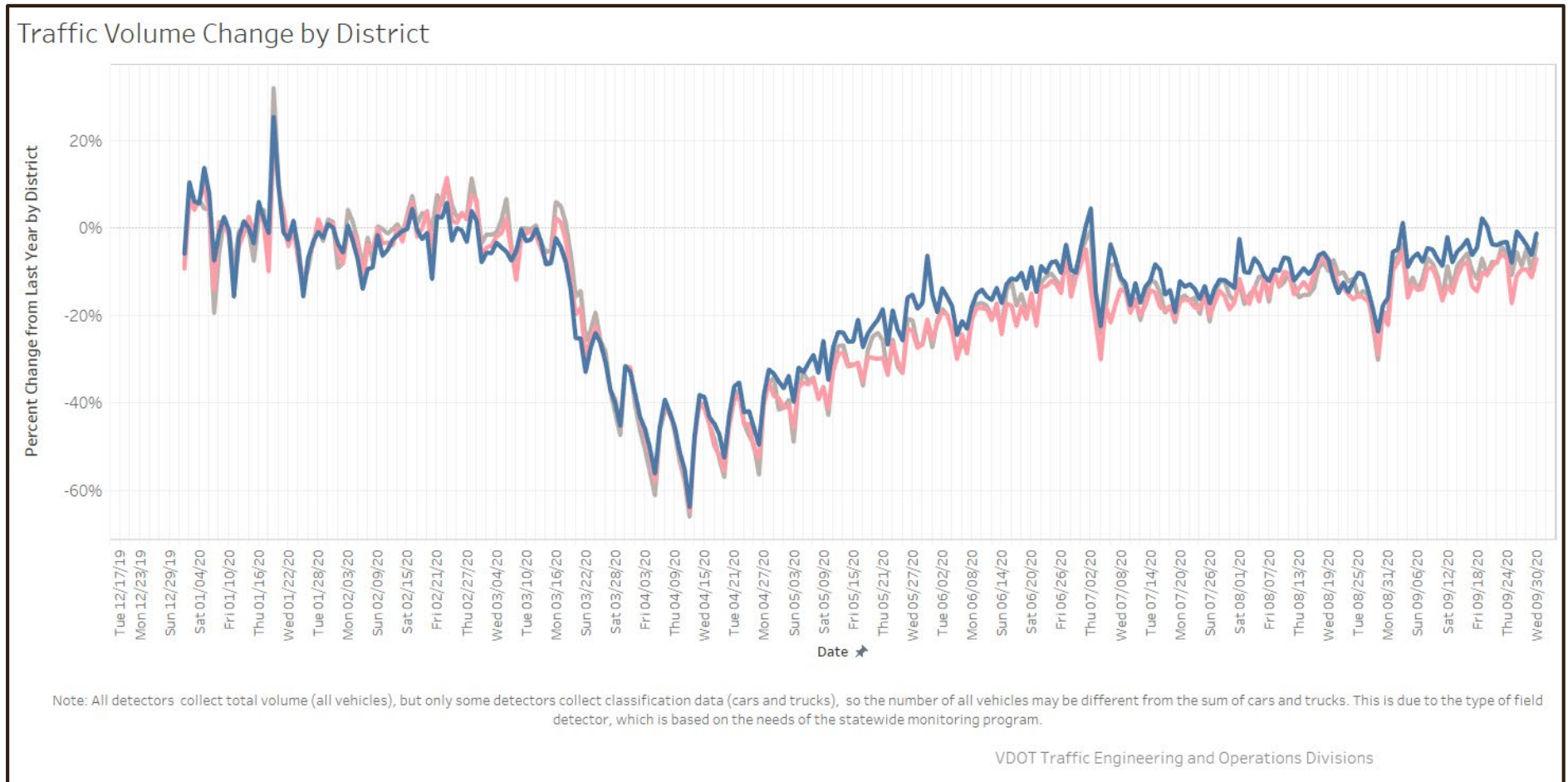
October 23, 2020

I-81 Corridor Traffic Impacts Related to COVID-19

All Vehicle Types

District

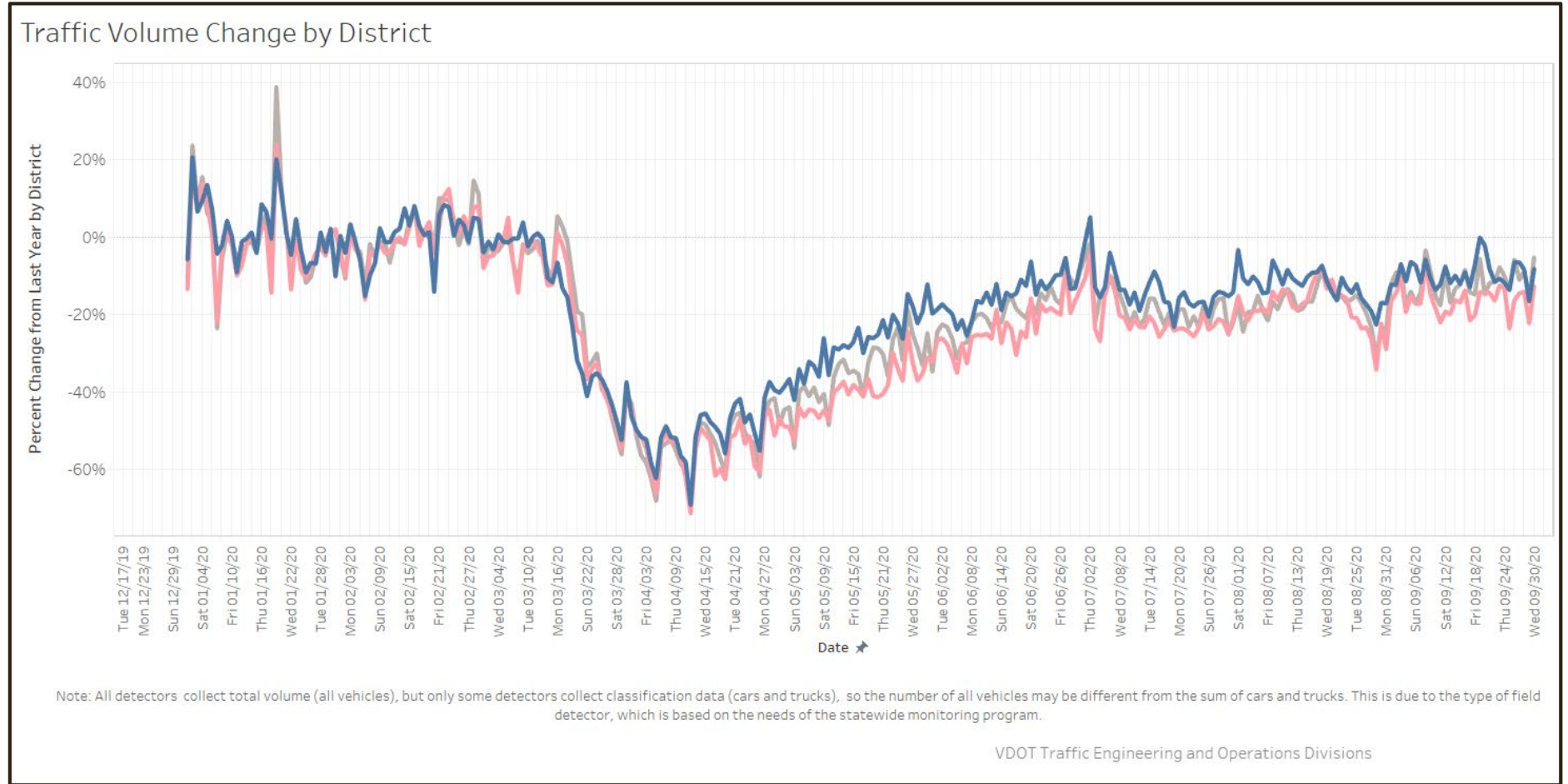
- Bristol
- Salem
- Staunton



I-81 Corridor Traffic Impacts Related to COVID-19

Passenger Vehicles Only

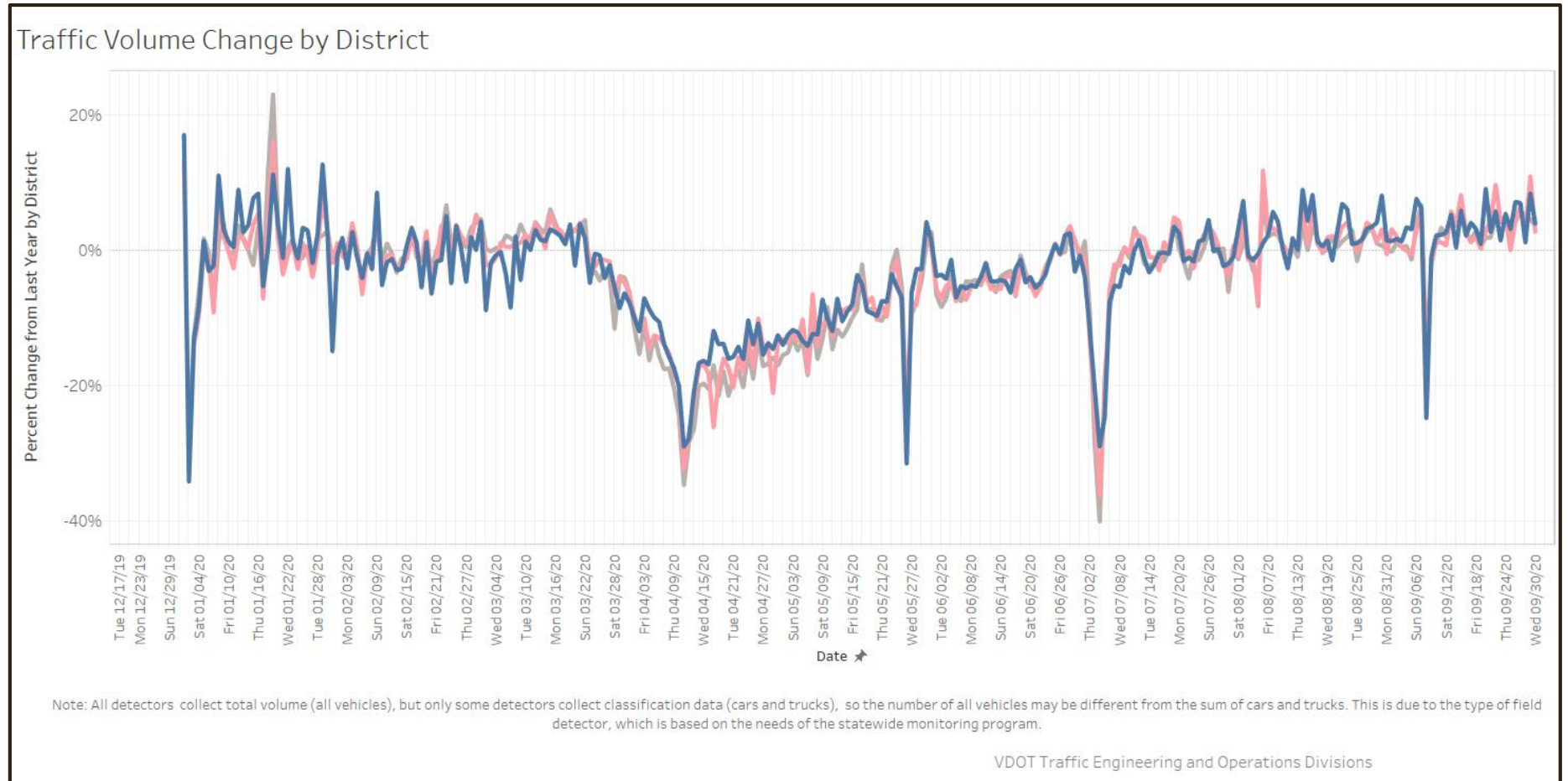
- District
- Bristol
 - Salem
 - Staunton



I-81 Corridor Traffic Impacts Related to COVID-19

Trucks Only

- District
- Bristol
 - Salem
 - Staunton



Project Development Process (Capital Projects)



Capital Improvement Project Status - Bristol

Bristol District

- 7 projects under design by VDOT staff
- 6 projects under design by on-call consultant
- 2 projects under design by project-specific consultant (procured)
- 1 Design-Build project under design for December 2020/January 2021 advertisement
- 2 projects – Construction Complete
- Of the 18 current SYIP projects in the District, all are currently under design or have completed construction

Capital Improvement Project Status - Salem

Salem District

- 2 projects under design by VDOT staff
- 0 projects under design by on-call consultant
- 1 project under design by project-specific consultant (procured)
- 2 Design-Build projects, bundled and advertised (Request for Qualifications), Request for Proposals will be advertised in October 2020.
- 1 project - Construction Complete
- Of the 6 current SYIP projects in the District, all are currently under design or have completed construction

Capital Improvement Project Status - Staunton

Staunton District

- 6 projects under design by VDOT staff
- 1 project under design by on-call consultant
- 2 projects under design by project-specific consultants (procured)
- 0 Design-Build projects
- 5 projects – Construction Complete
- Of the 16 current SYIP projects in the District, 14 are currently under design or have completed construction
- 2 projects, bundled, are currently under contract negotiation for design services (Weyers Cave Truck Climbing Lanes NB and SB)

Operational Improvement Project Status

Corridor-wide Operational Improvements

- Curve Improvements (static and flashing Chevron signs) - Complete
- Safety Service Patrol Enhancements – Complete
- Lift and Tow - Complete
- Towing and Recovery Incentive Program – Underway with implementation scheduled for March 2021
- Traffic Camera Installations – 42 cameras now on VA 511, 8 awaiting integration to VA 511 (viewable to the Traffic Operations Center), 1 awaiting electric service installation.
- Changeable (Digital) Message Signs – Under construction, ahead of schedule, fixed completion date October 28, 2021

Arterial Improvement Project Status

Corridor-wide Arterial Improvements

- Signal upgrades –
 - Planning and design underway in concert with locality coordination for signal system integration into VDOT central signal system in all three Districts.
- Parallel Route upgrades –
 - Minor geometric improvement projects to facilitate access to and from I-81 during incidents under design for construction in the near future.

Communications Status

Corridor-wide Communications

- Development of Communications Plan – Complete
 - Communications Plan has been updated based on COVID-19 guidelines, specifically related to public involvement and in-person communication events.
- Development of Program-specific website – Complete
 - improve81.org
- Informational Products on website:
 - Development of Briefing Package – Complete
 - Development of Speaker's Bureau – Complete

Takeaway Scorecard

Activity	Status	Anticipated Completion
Curve improvements (8)	Complete	Fall 2019
Initial accel/decel lane extensions (8)	Complete	Fall 2020
Safety Service Patrol Expansion	Complete	July 2019
Additional Cameras (51)	Nearly Complete	Spring 2020
Additional Changeable Message Signs	Underway	October 2021
Arterial Upgrades	Underway	Varies by project
Remaining capital projects (32)	Underway	Varies by project

Next Steps

- Continue Design of Capital Improvement Projects
- Complete Traffic Camera Installations (Electric service and VA 511 Integration)
- Complete Procurement of Program's First Design-Build Contract in Salem District (Exit 137 – Exit 141)
- Advertise Ramp Extension projects in Staunton District (December). Includes Exit 304, Exit 296, and Exit 291 bundled into a single construction contract
- Award Project ID 26 (MM 16.6 – MM 16.7 SB) construction contract (Advertised September 8th)
- Advertise Single Phase Design Build Project in Bristol District
- Begin Arterial Improvements construction
- Execute TRIP Program