



## COMMONWEALTH of VIRGINIA

### *Commonwealth Transportation Board*

Shannon Valentine  
Chairperson

1401 East Broad Street  
Richmond, Virginia 23219

(804) 786-2701  
Fax: (804) 786-2940

### **COMMONWEALTH TRANSPORTATION BOARD**

We are concerned about your health, and we are committed to do all we can to reduce the risk and spread of novel coronavirus. Governor Ralph Northam declared a state of emergency in Virginia on Thursday, March 12 in response to COVID-19. In light of this action, we have decided to conduct the June 2020 Commonwealth Transportation Board (CTB) meeting using electronic communications in accord with Item 4-0.01.g. of Chapter 1283 (2020 Acts of Assembly), as the COVID-19 emergency makes it impracticable or unsafe to assemble in a single location. The purpose of the meeting is to discuss or transact the business statutorily required or necessary to continue operation of the CTB and the discharge of its lawful purposes, duties, and responsibilities.

All board members will be participating remotely. The public may view the meeting via live stream by clicking the "View video" button at the following link: [http://www.ctb.virginia.gov/public\\_meetings/live\\_stream/default.asp](http://www.ctb.virginia.gov/public_meetings/live_stream/default.asp). There will be opportunity for public comment at the beginning of the June 17, 2020 Action meeting which will start upon adjournment of this meeting. Public comment can be submitted by calling the following telephone number 1-252-858-0120 followed by PIN: 437 401 906# when it is announced that public comment will begin. A caller may be placed on hold until others who have called in earlier have had opportunity to speak.

In the event there is an interruption in the broadcast of the meeting, please call (804) 729-6495.

Should you wish to offer comment regarding how meetings using electronic communications technology compare to traditional meetings when the CTB is physically present, you may complete the FOIA Council's Electronic Meetings Public Comment form appearing at the end of this agenda and submit it to the FOIA Council as described on the Form.

### **WORKSHOP AGENDA**

June 17, 2020  
9:00 a.m.

1. Virginia COVID-19 Traffic Trends  
*Mena Lockwood, Virginia Department of Transportation*
2. Route 340 Improvements Clarke County Virginia  
*Randy Kiser, Virginia Department of Transportation*

Agenda  
Meeting of the Commonwealth Transportation Board  
Workshop Session  
June 17, 2020  
Page 2

3. Federal Transportation Grant Anticipation Notes  
Series 2020  
*Laura Farmer, Virginia Department of Transportation*
4. SMART SCALE Proposed Budget Increase  
I-81 Exit 300 Southbound Acceleration Lane Extension  
UPC 111054 – Staunton District  
*Kimberly Pryor, Virginia Department of Transportation*
5. SMART SCALE Update  
*Chad Tucker, Office of Intermodal Planning and Investment*
6. Master Tolling Agreement Update  
*Stephen Brich, Virginia Department of Transportation*
7. Hampton Roads Express Lanes Overview  
*Stephen Brich, Virginia Department of Transportation*
8. Director's Items  
*Jennifer Mitchell, Virginia Department of Rail & Public Transportation*
9. Commissioner's Items  
*Stephen Brich, Virginia Department of Transportation*
10. Secretary's Items  
*Shannon Valentine, Secretary of Transportation*

## #

# COVID-19 Traffic Trends

Volume, Speed, Crash

**VDOT Traffic Engineering and  
Operations Divisions**

**06/17/20**

# Volume Source

## VDOT Traffic Monitoring System (TMS)



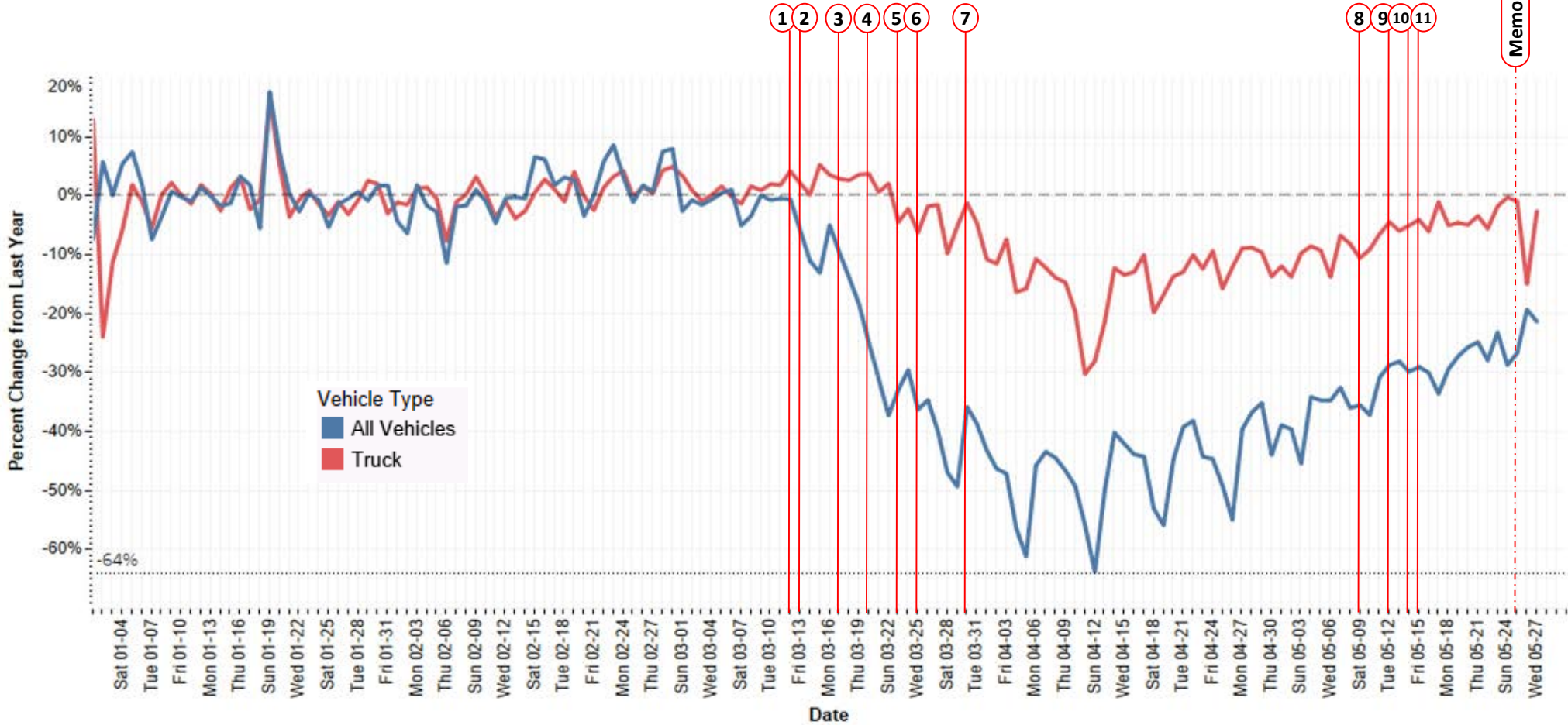
### 512 Continuous Count Stations

- 306 Road Sensors (CCS)
- 206 Non-Intrusive (Radar) Sensors (NCCS)



# Volume Trends

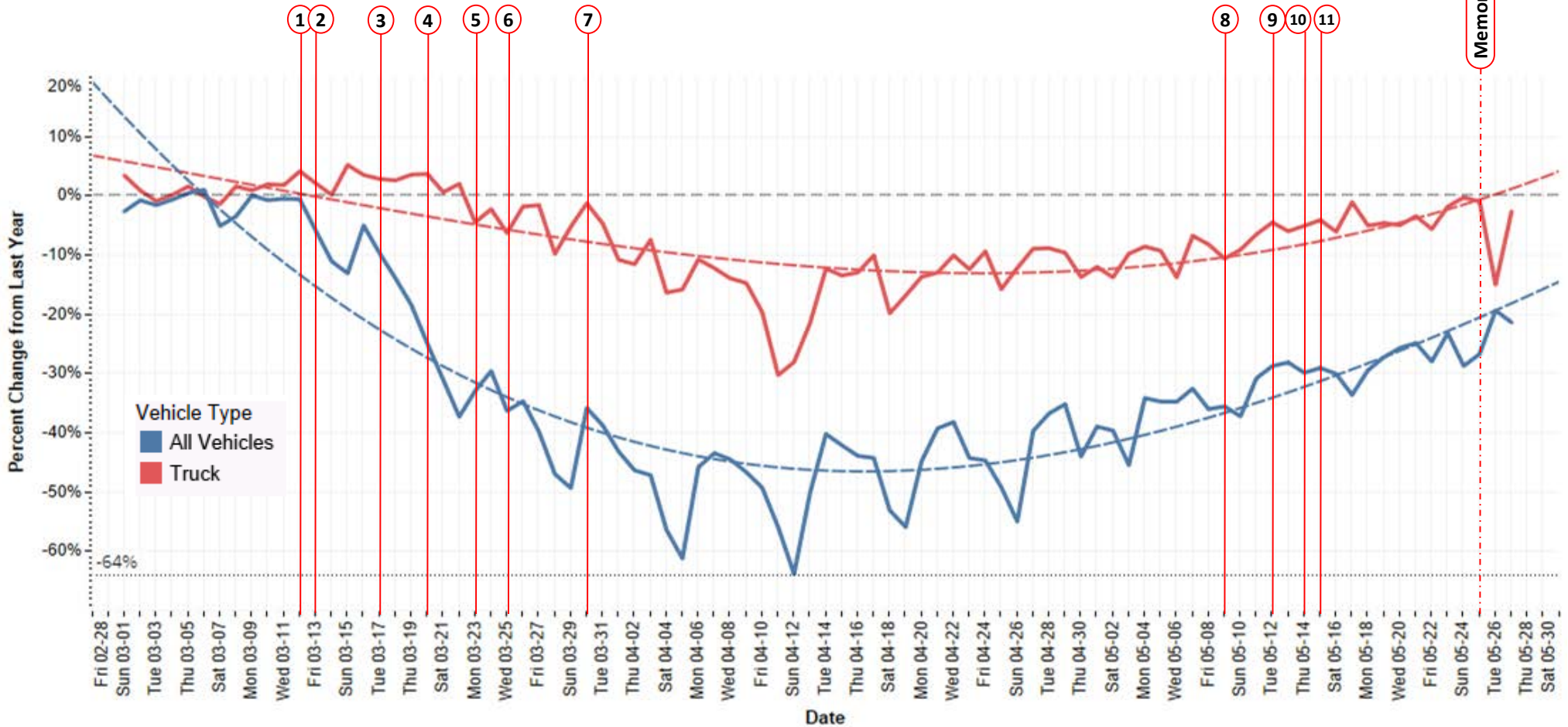
## STATEWIDE DAILY VOLUME CHANGE



#	Date	Governor Action	#	Date	Governor Action
1	3/12	Declares state of emergency	7	3/30	Issues statewide stay-at-home order until June 10
2	3/13	Closes schools for two weeks, beginning 3/16	8	5/09	Phase One will begin no sooner than Friday, 05/15
3	3/17	Advises to avoid non-essential gatherings of more than 10	9	5/12	Delays Phase 1 for Northern Virginia Localities till 05/28
4	3/20	State agencies begin process of implementing telework where possible/applicable	10	5/14	Delays Phase 1 for Accomack County and the City of Richmond till 05/28
5	3/23	Close - Schools for rest of school yr, Non-essential business, Restaurants; No gathering more than 10	11	5/15	Phase One Begins
6	3/25	Directs hospitals to stop elective surgeries			

# Volume Trends

## STATEWIDE DAILY VOLUME CHANGE

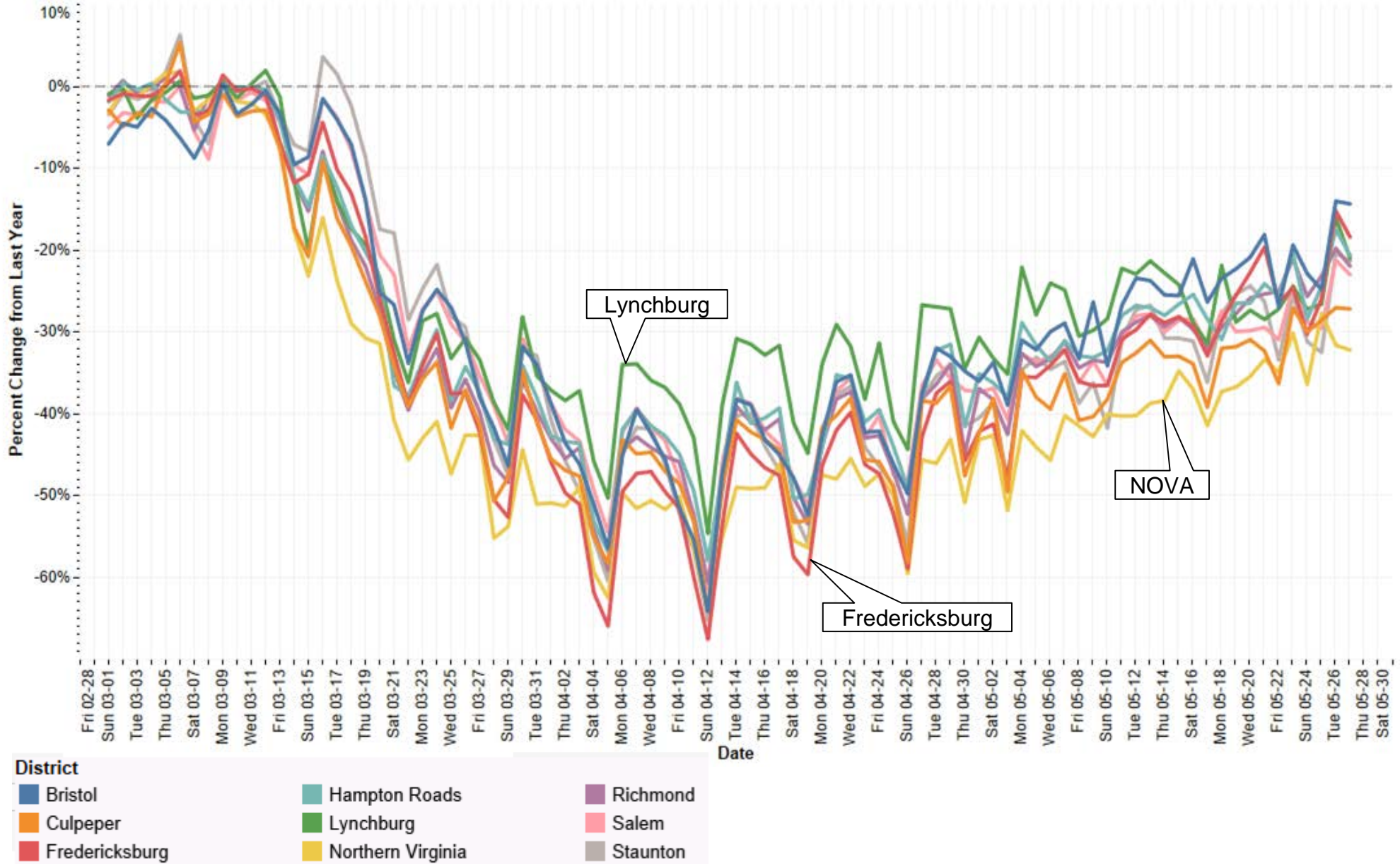


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# Volume Trends

## All Vehicles Volume Change By District (Interstates plus Non-Interstates)

Traffic Volume Change by District

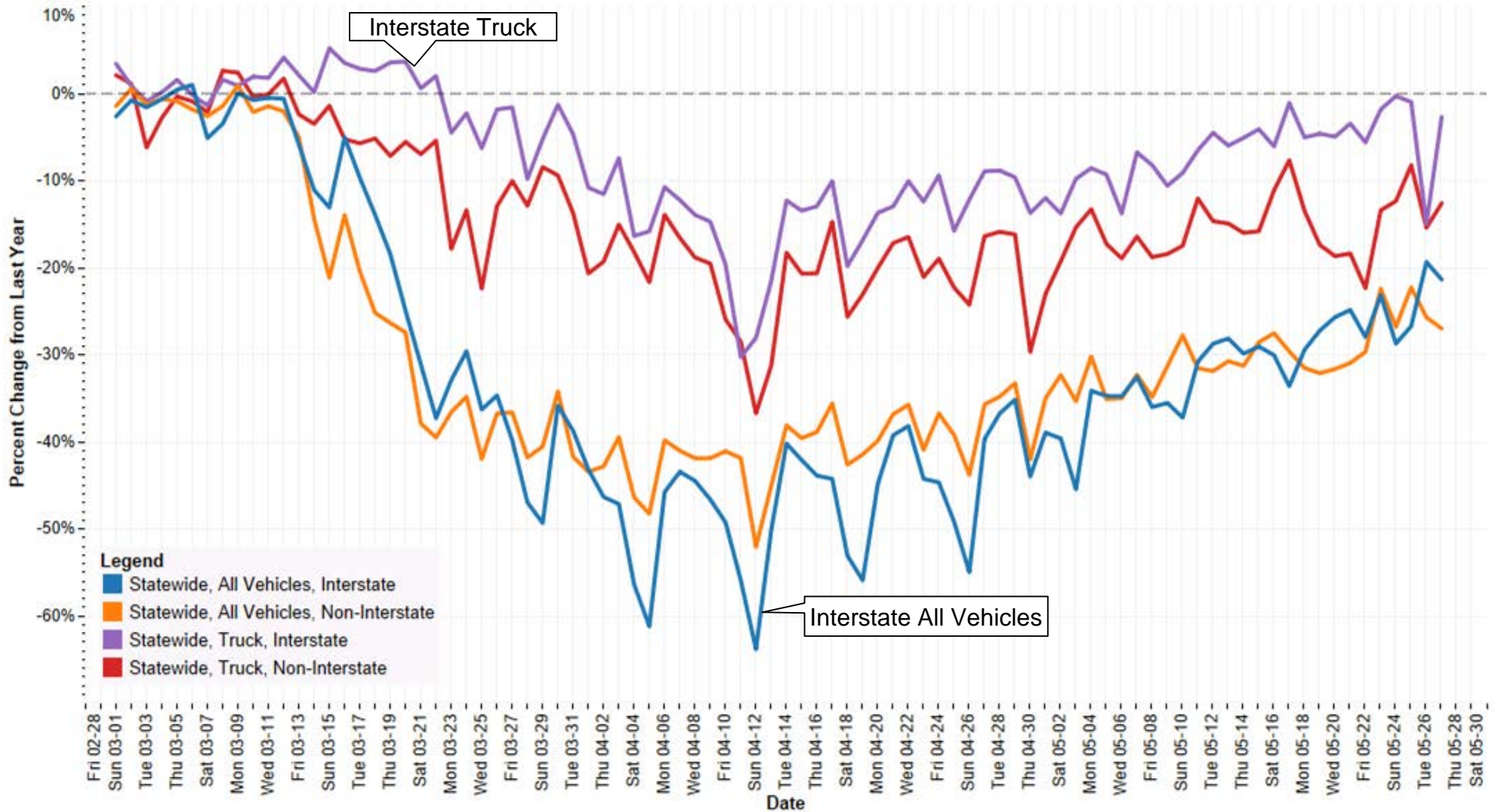




# Volume Trends

## All Vehicles and Truck Daily Volume Change Statewide

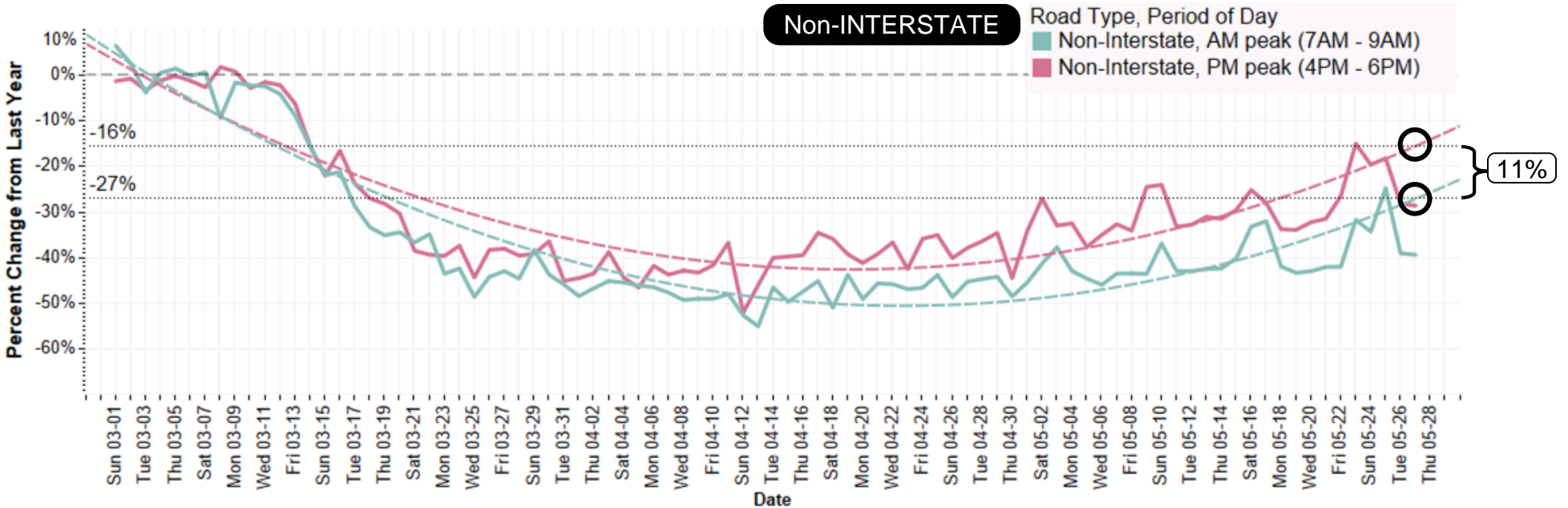
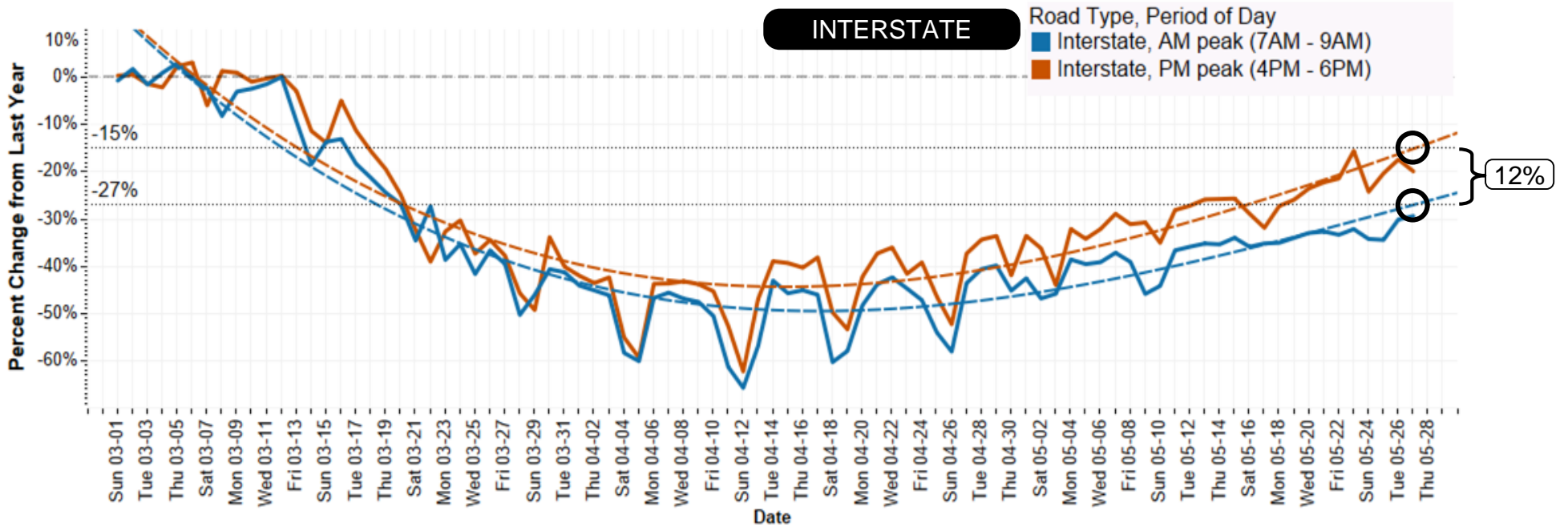
Traffic Volume Change





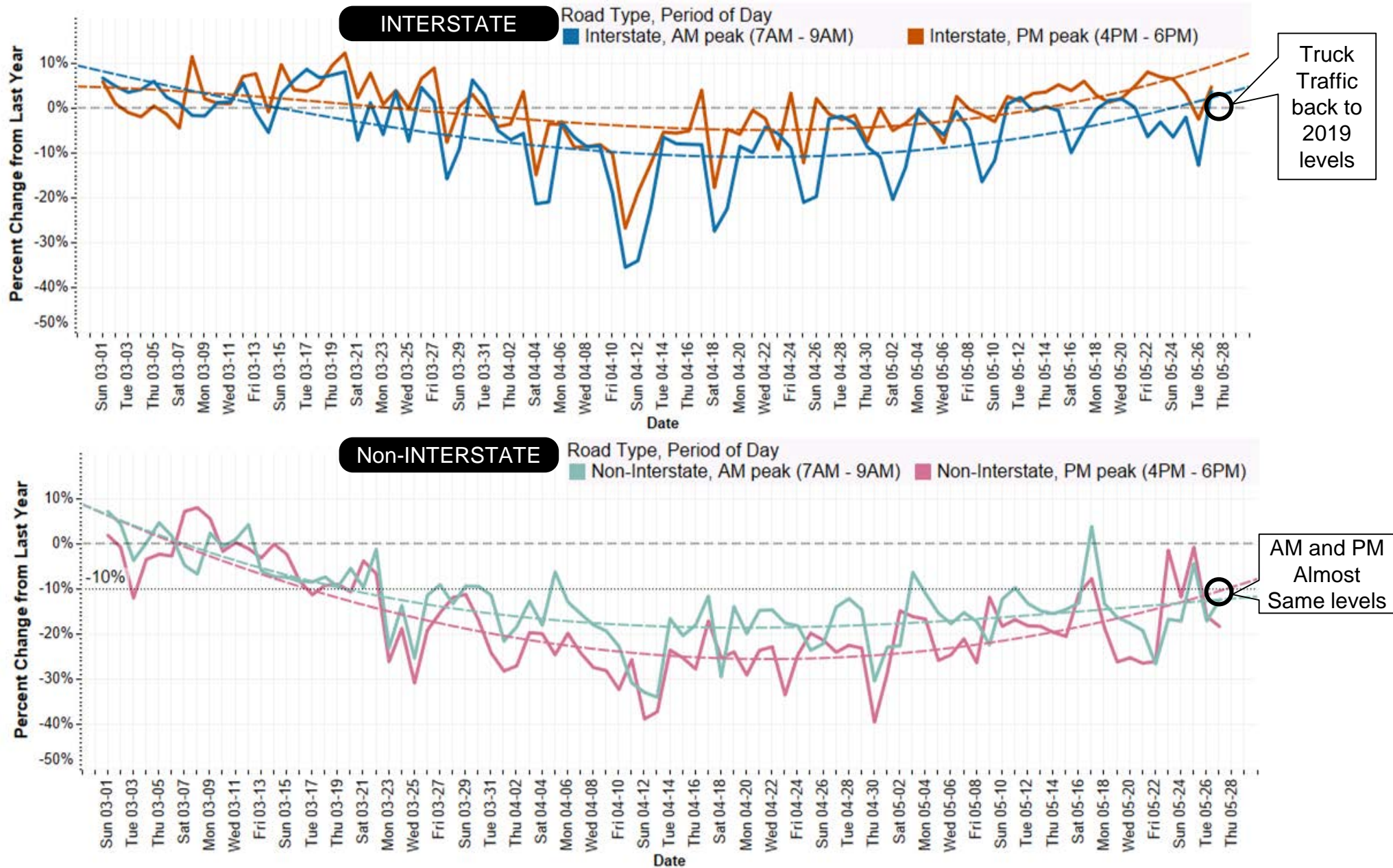
# Volume Trends

## Statewide Peak Period Volume Change for All Vehicles



# Volume Trends

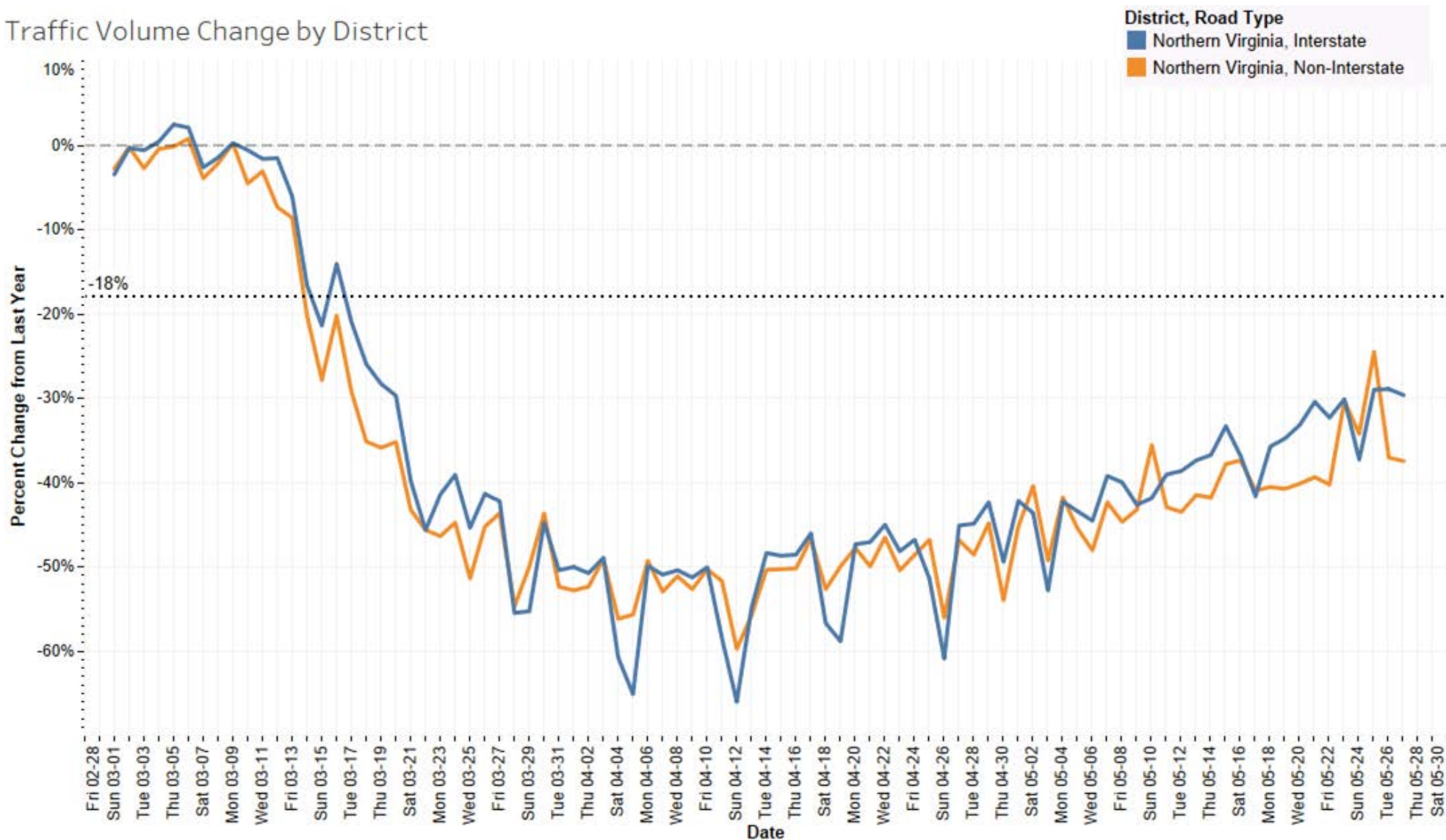
## Statewide Peak Period Volume Change for Trucks



# Volume Trends

## All Vehicles Daily Volume Change in Northern Virginia

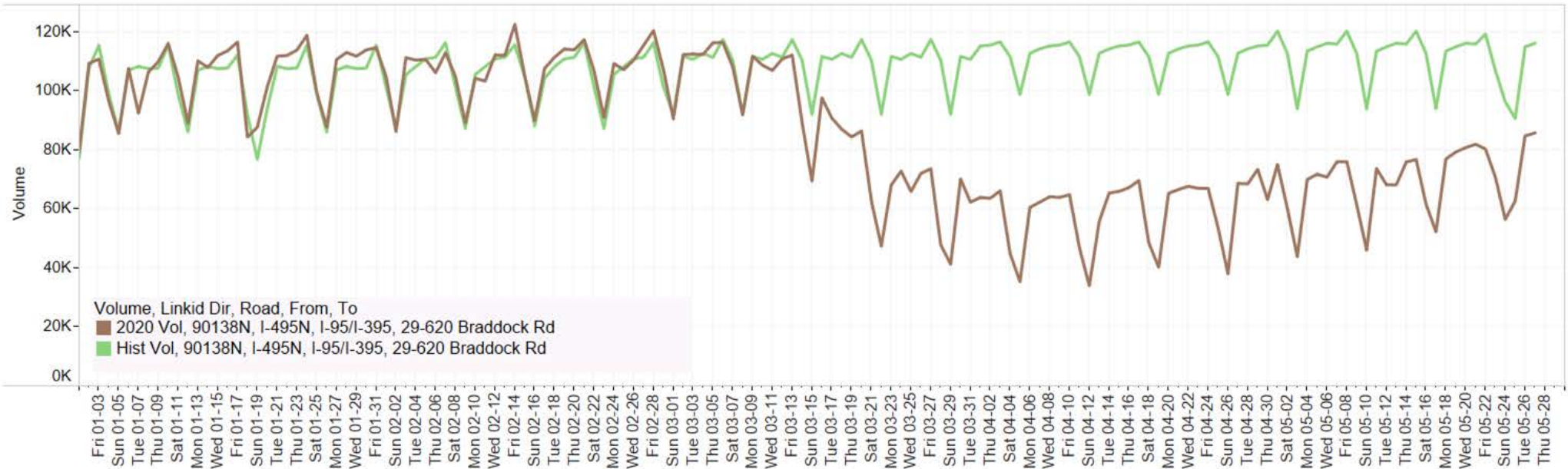
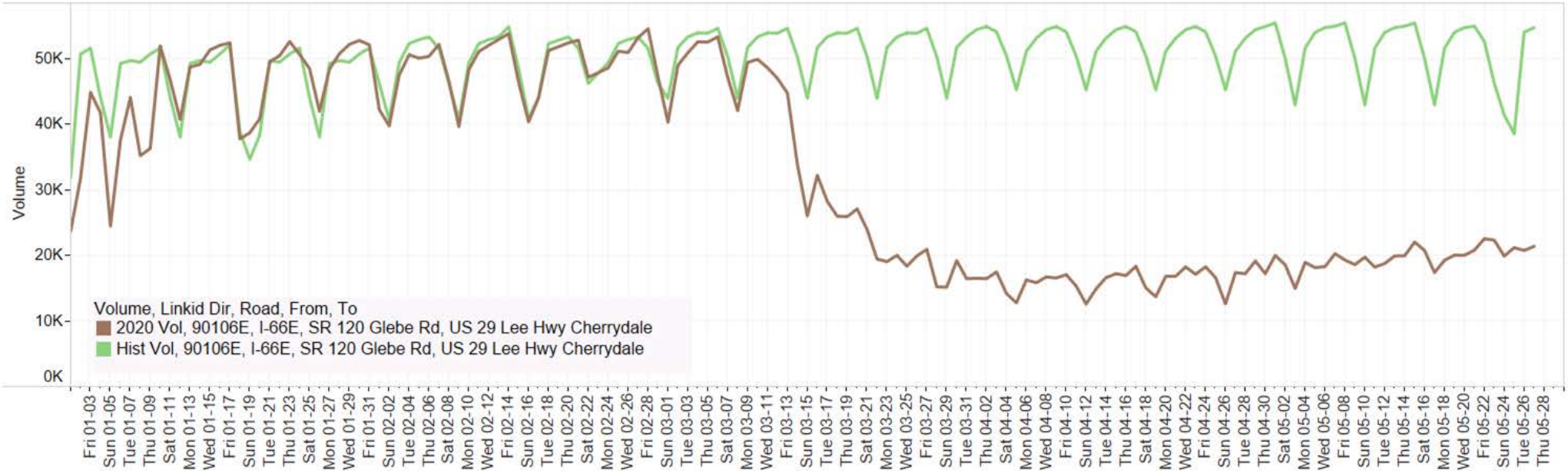
Traffic Volume Change by District





# Volume Trends

## All Vehicles Daily Volume in Northern Virginia

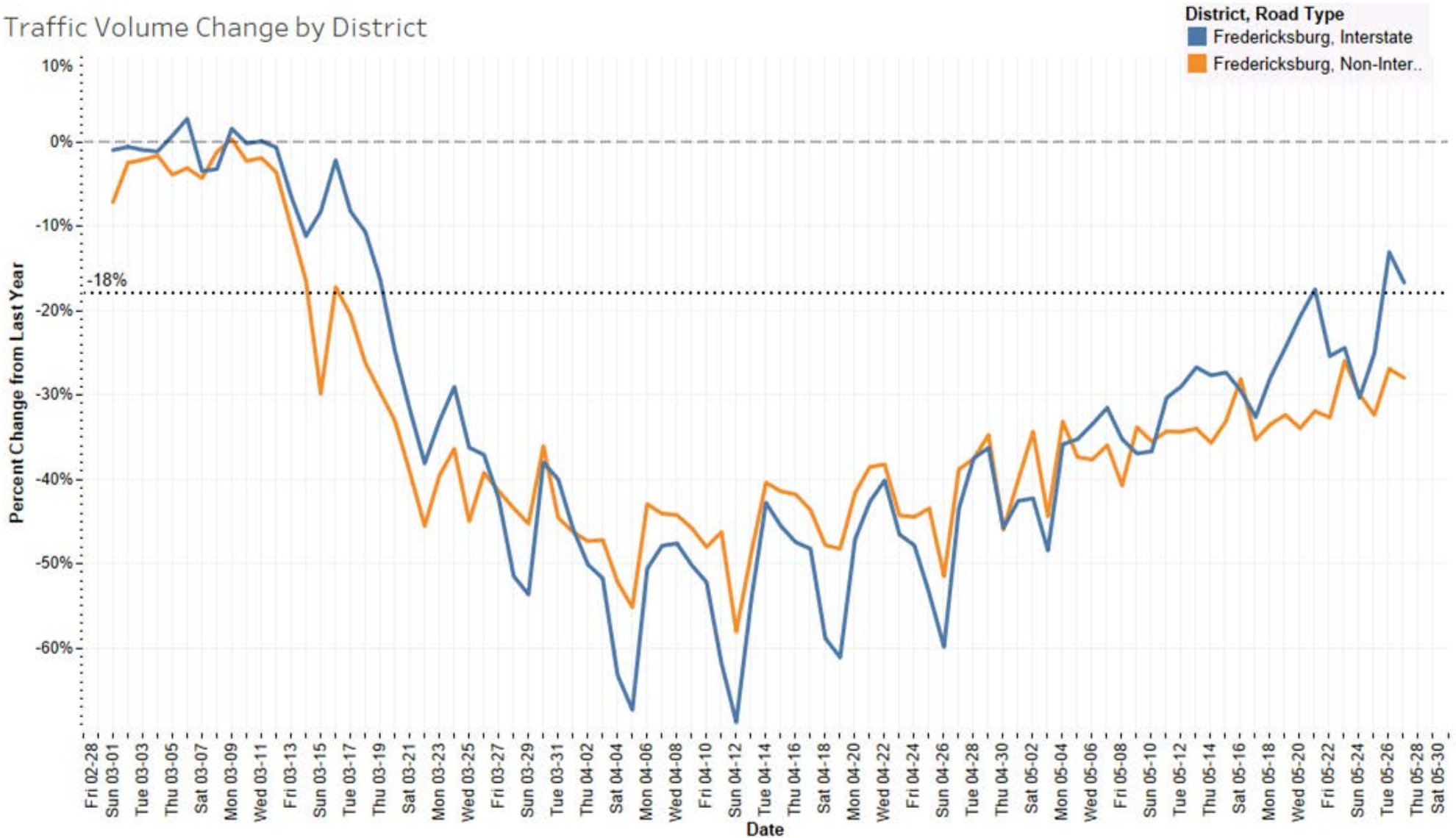




# Volume Trends

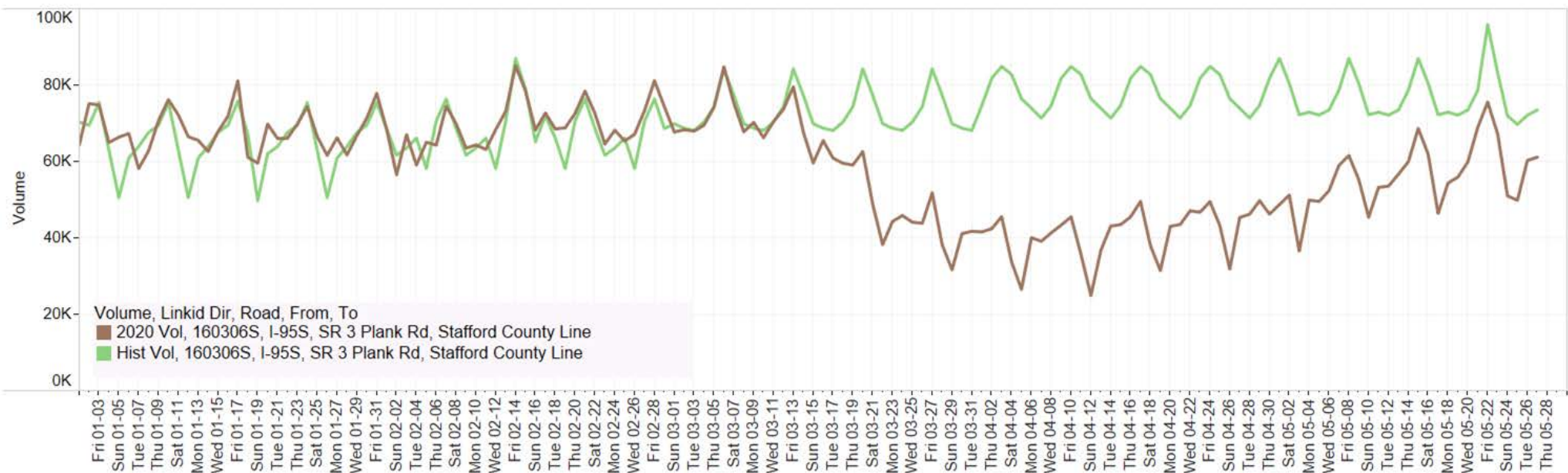
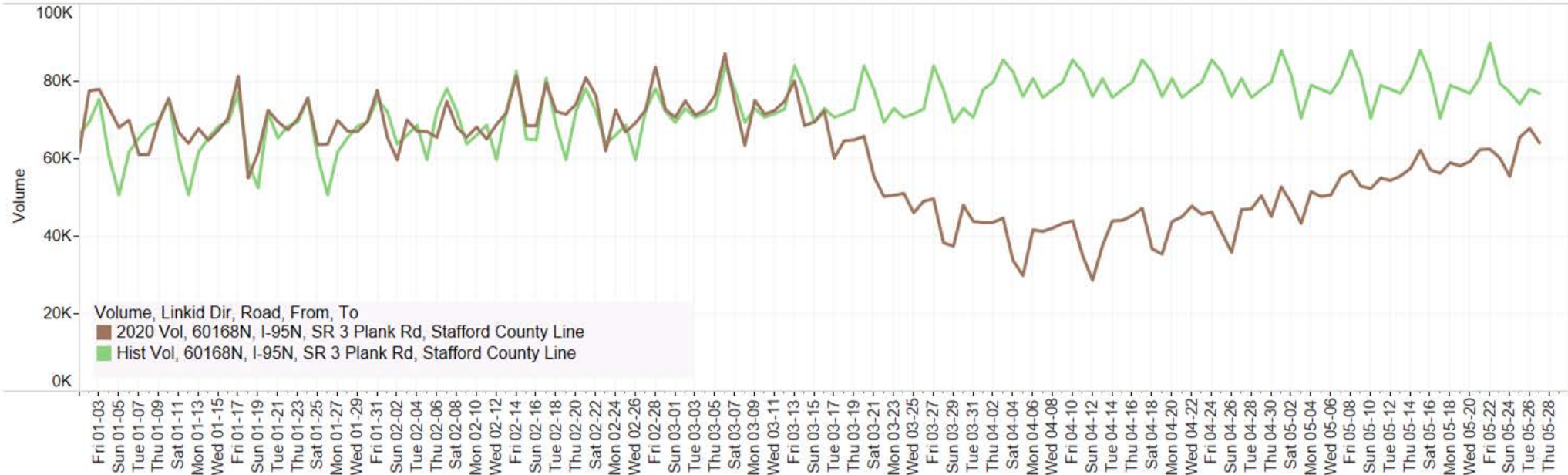
## All Vehicles Daily Volume Change in Fredericksburg

Traffic Volume Change by District



# Volume Trends

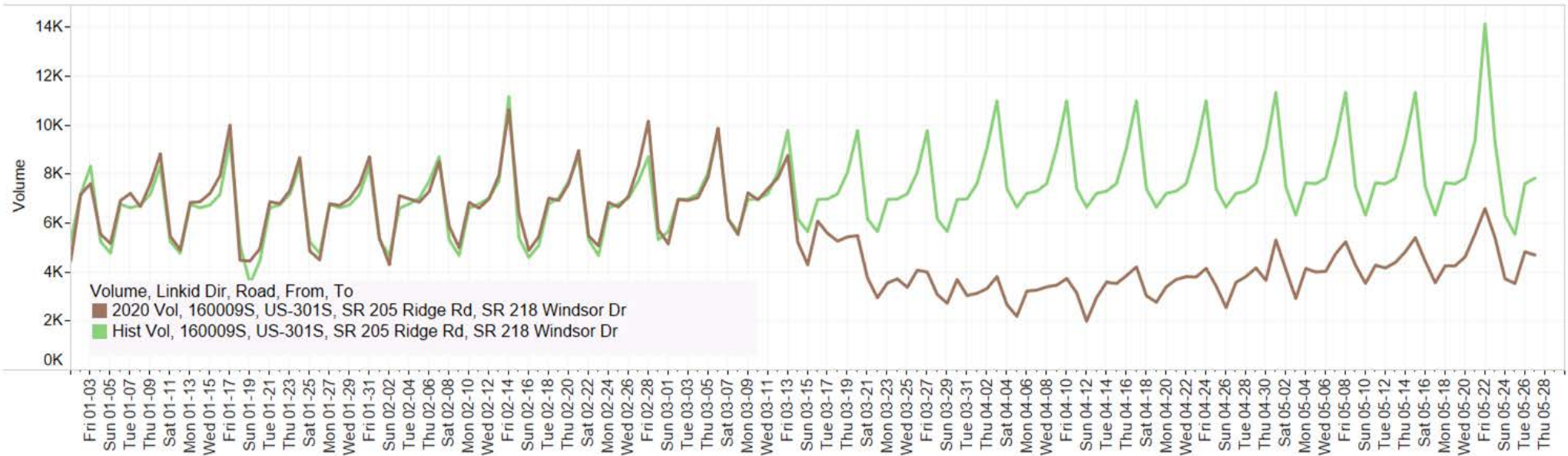
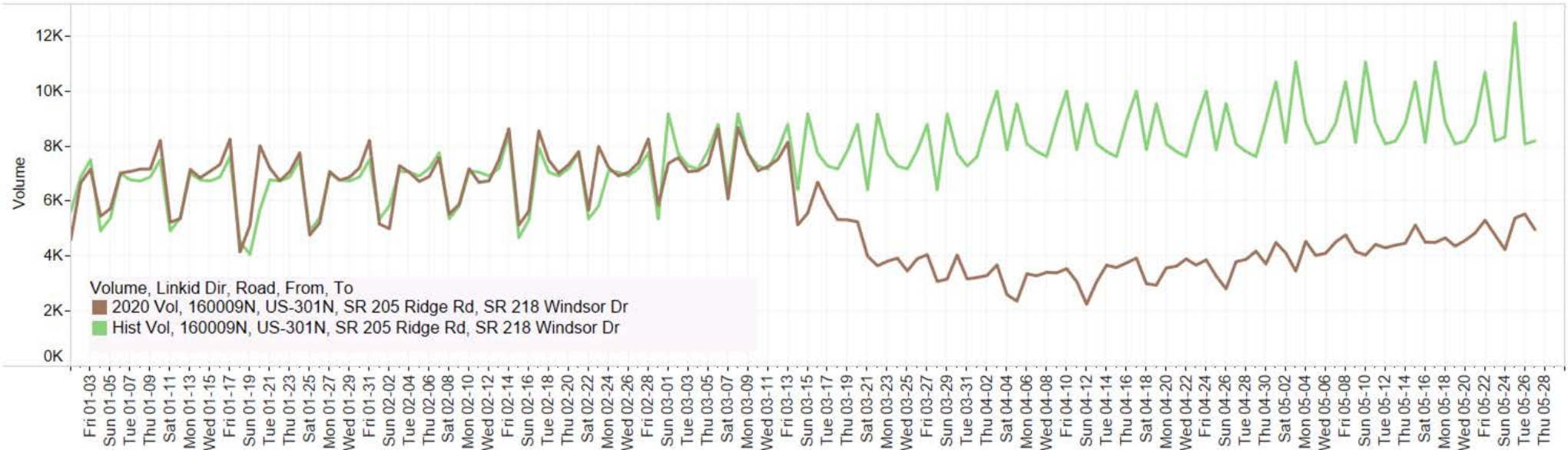
## All Vehicles Daily Volume in Fredericksburg





# Volume Trends

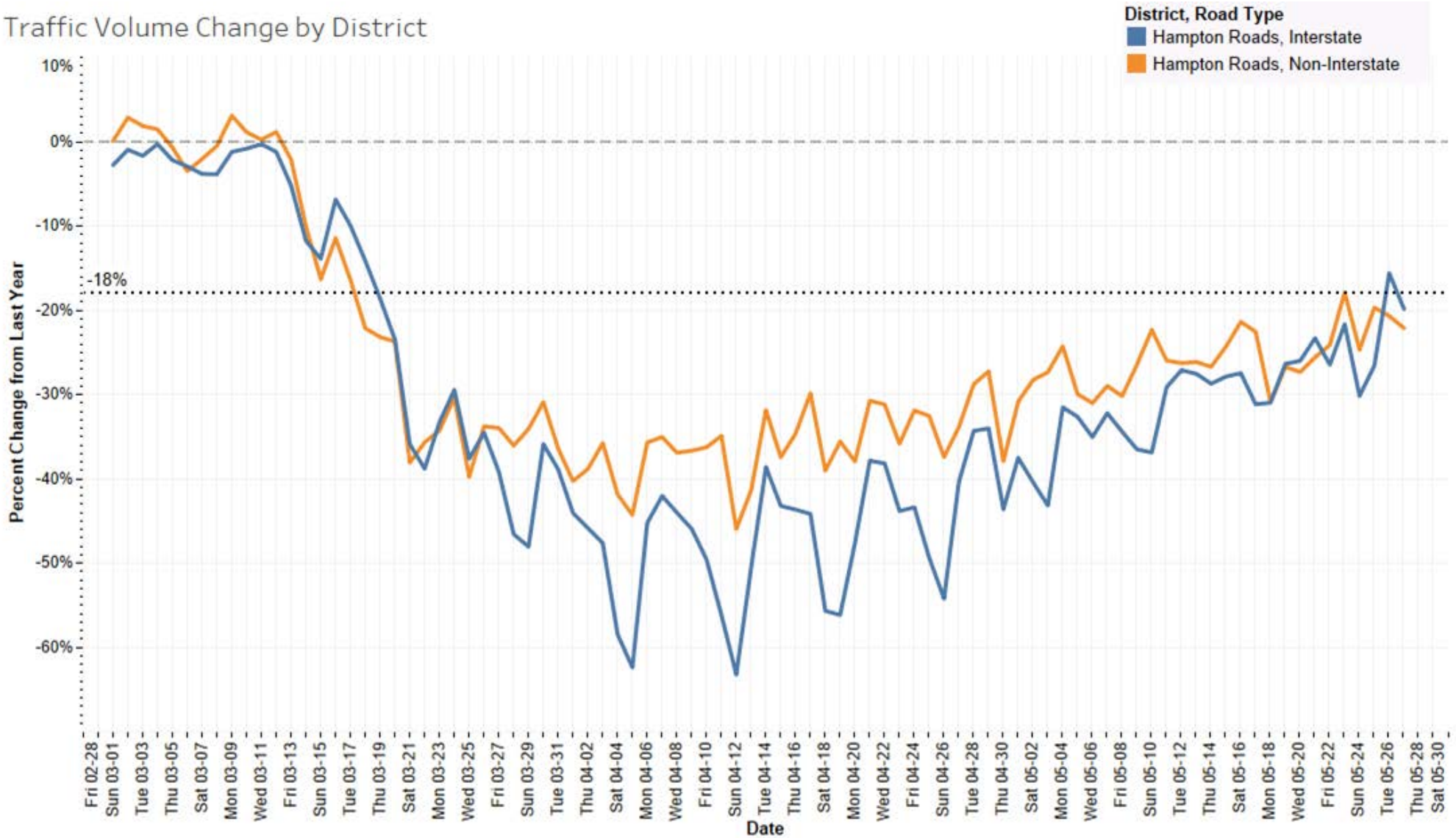
## All Vehicles Daily Volume in Fredericksburg



# Volume Trends

## All Vehicles Daily Volume Change in Hampton Roads

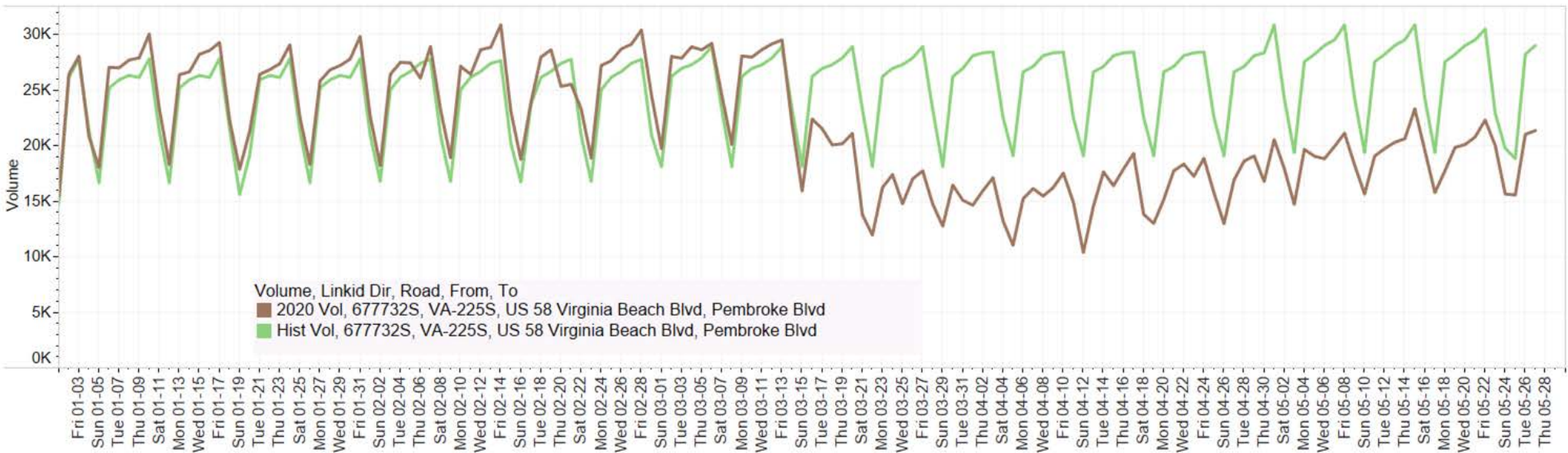
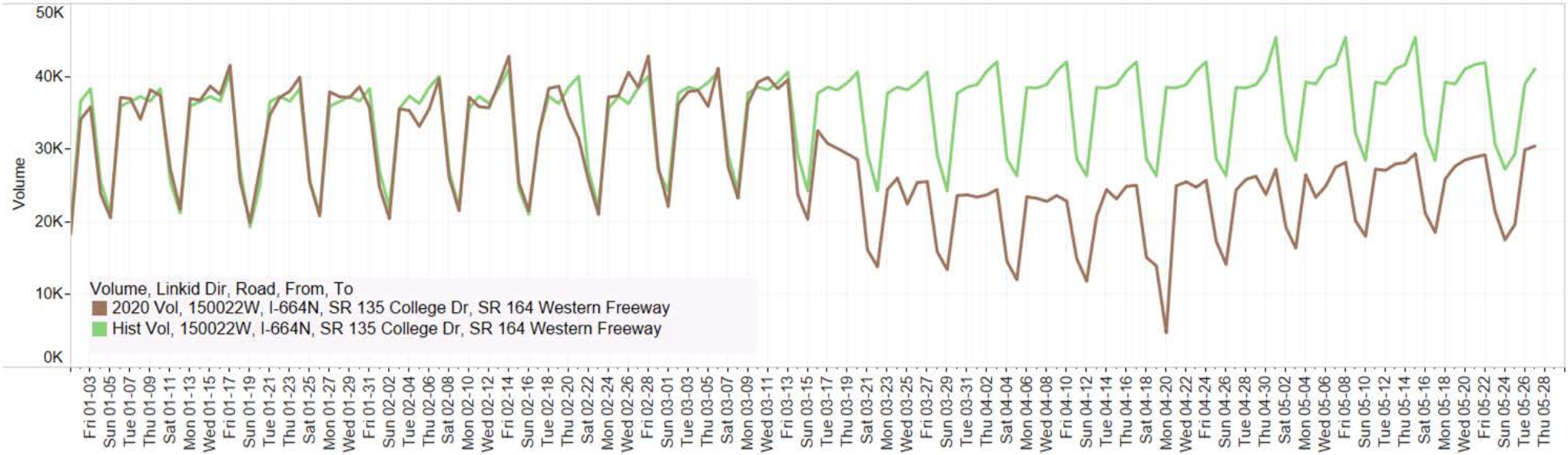
Traffic Volume Change by District





# Volume Trends

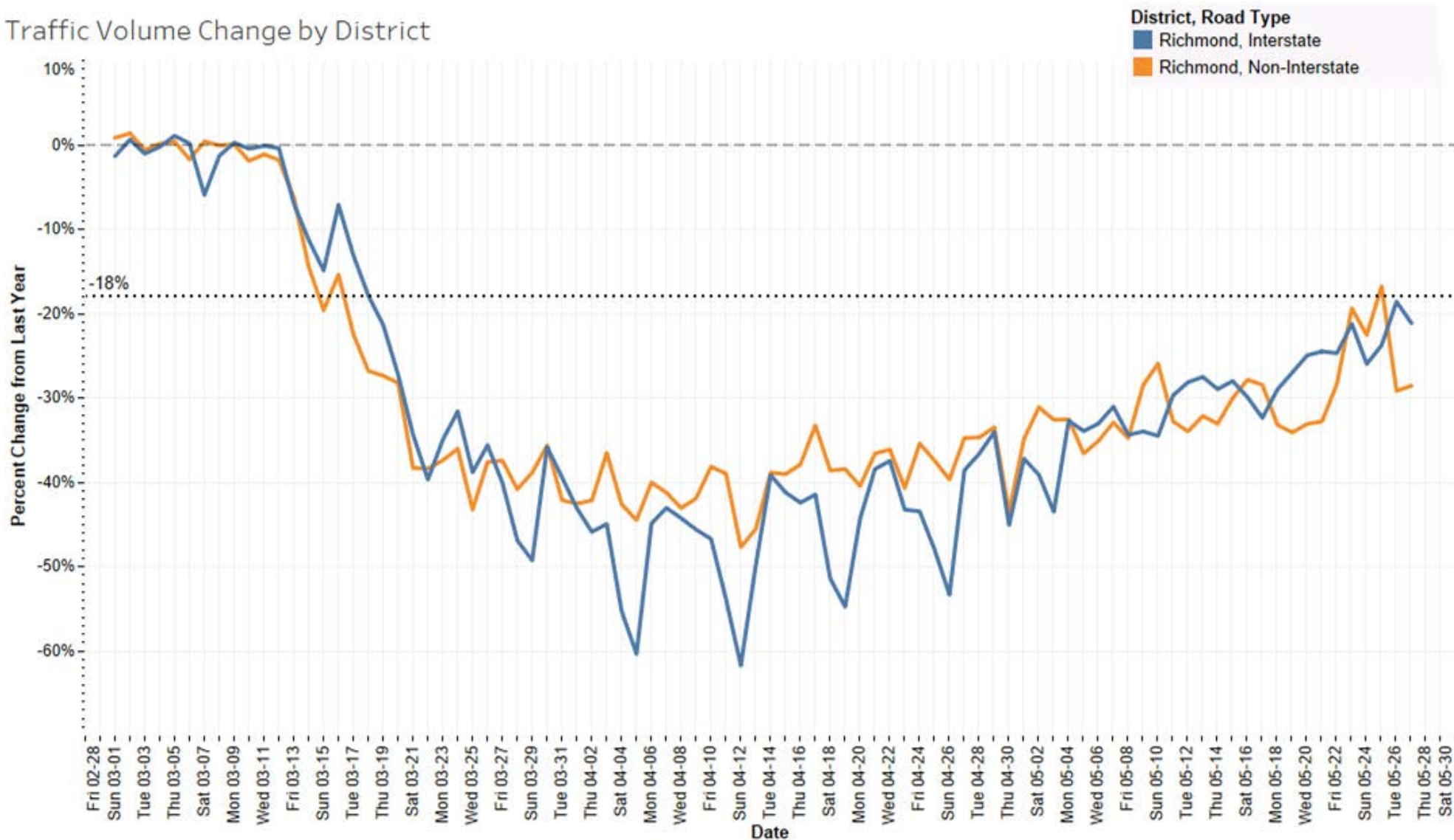
## All Vehicles Daily Volume in Hampton Roads



# Volume Trends

## All Vehicles Daily Volume Change in Richmond

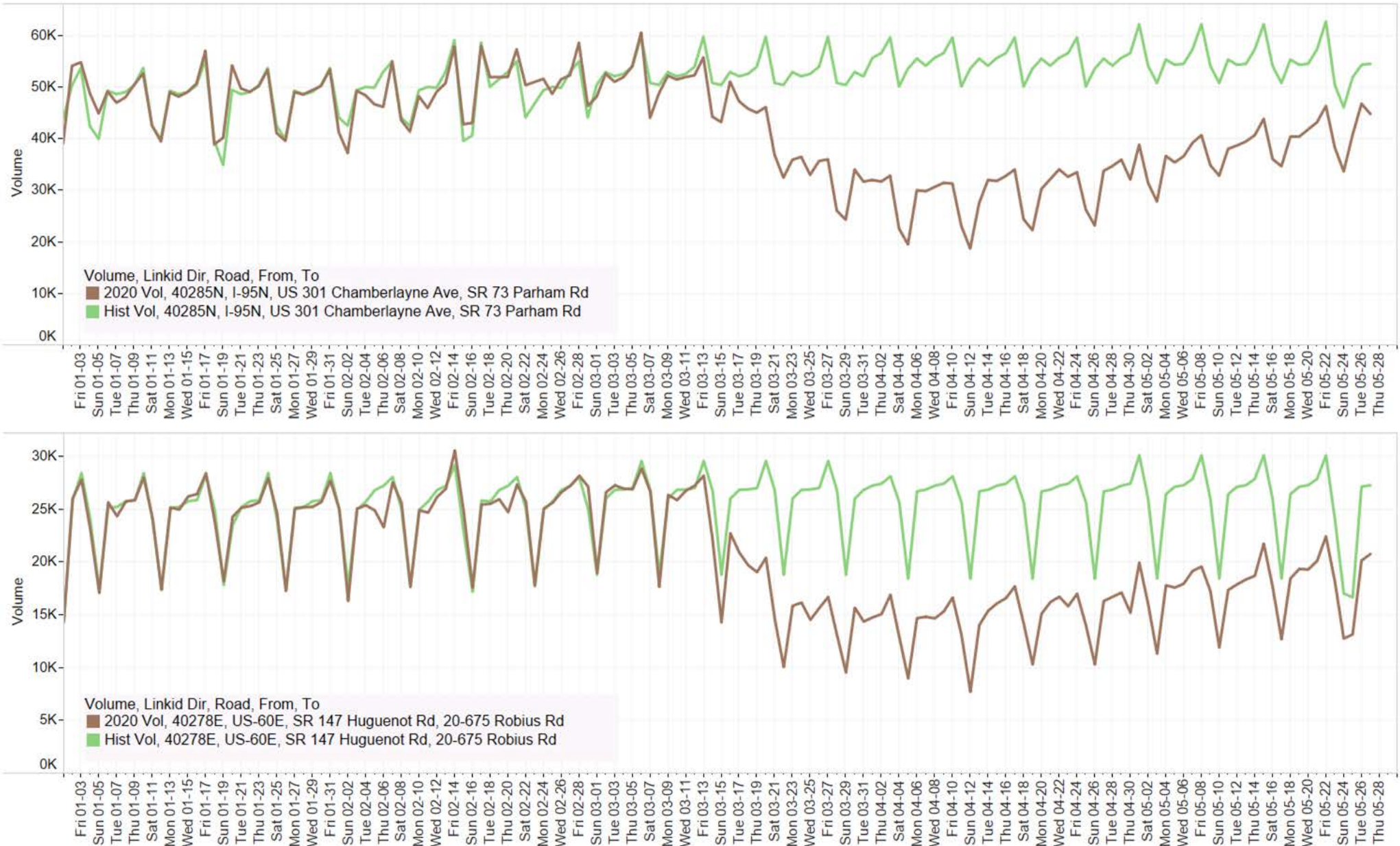
Traffic Volume Change by District





# Volume Trends

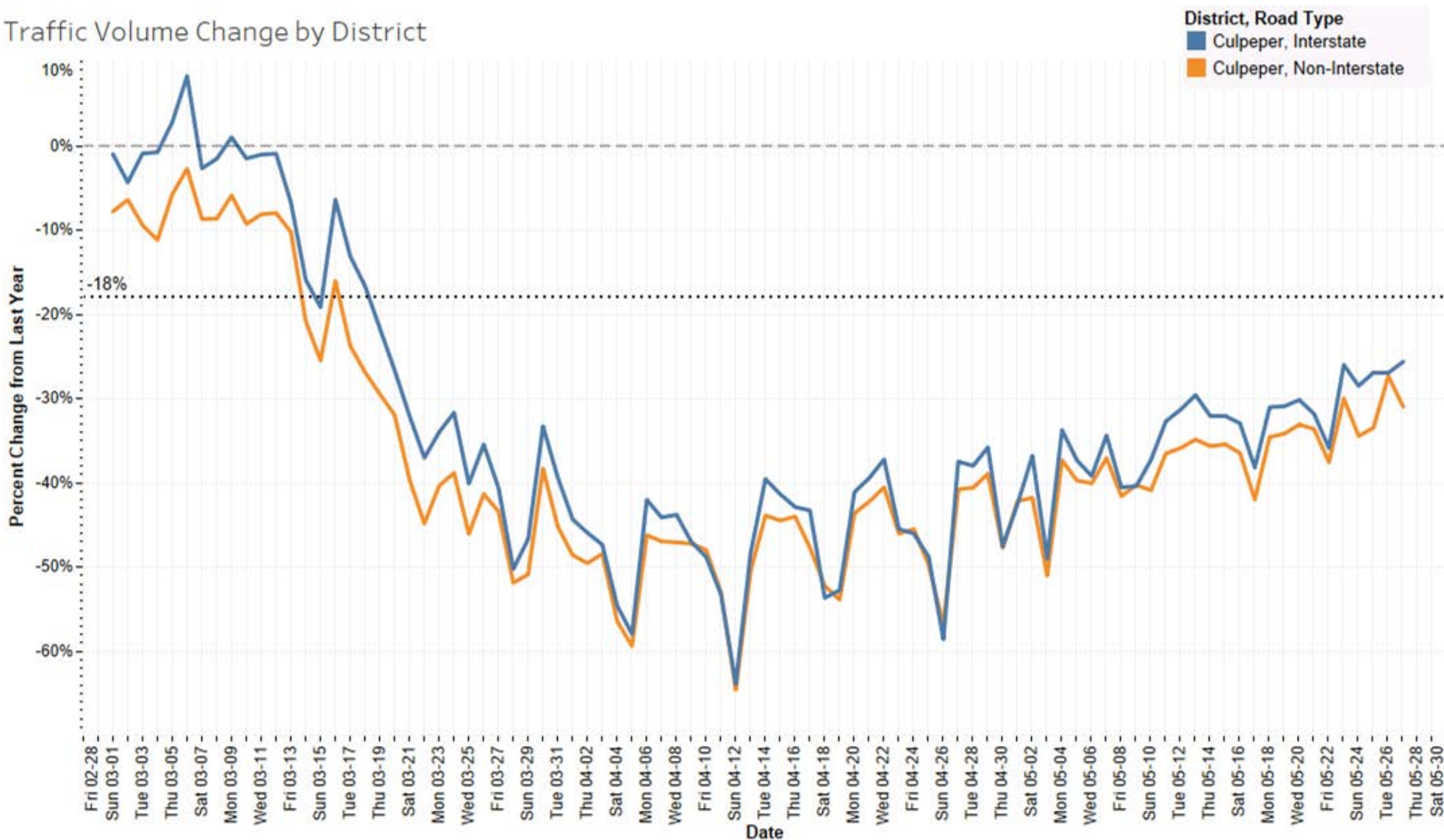
## All Vehicles Daily Volume in Richmond



# Volume Trends

## All Vehicles Daily Volume Change in Culpeper

Traffic Volume Change by District

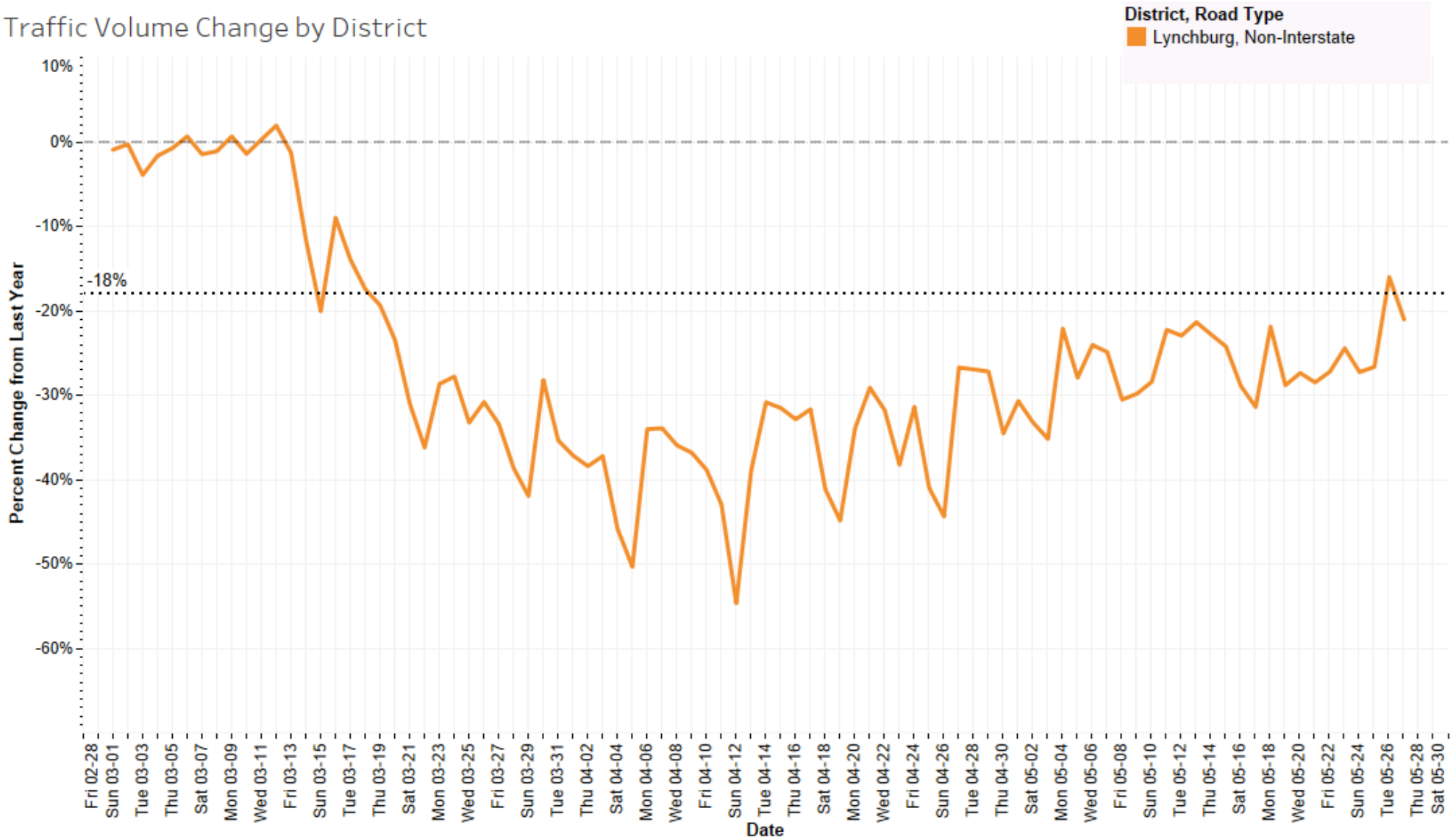




# Volume Trends

## All Vehicles Daily Volume Change in Lynchburg

Traffic Volume Change by District

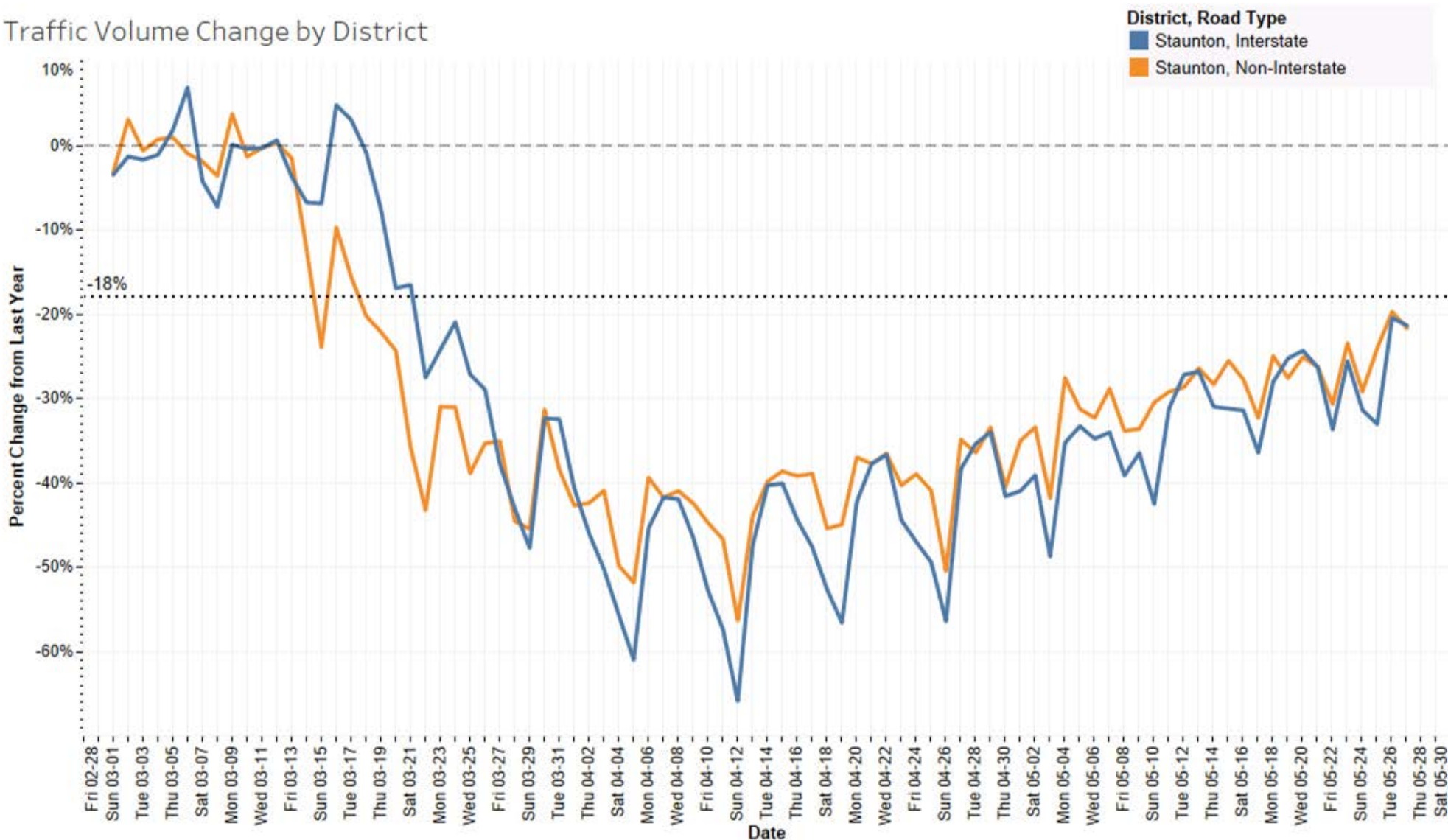


Lynchburg does not have Interstate

# Volume Trends

## All Vehicles Daily Volume Change in Staunton

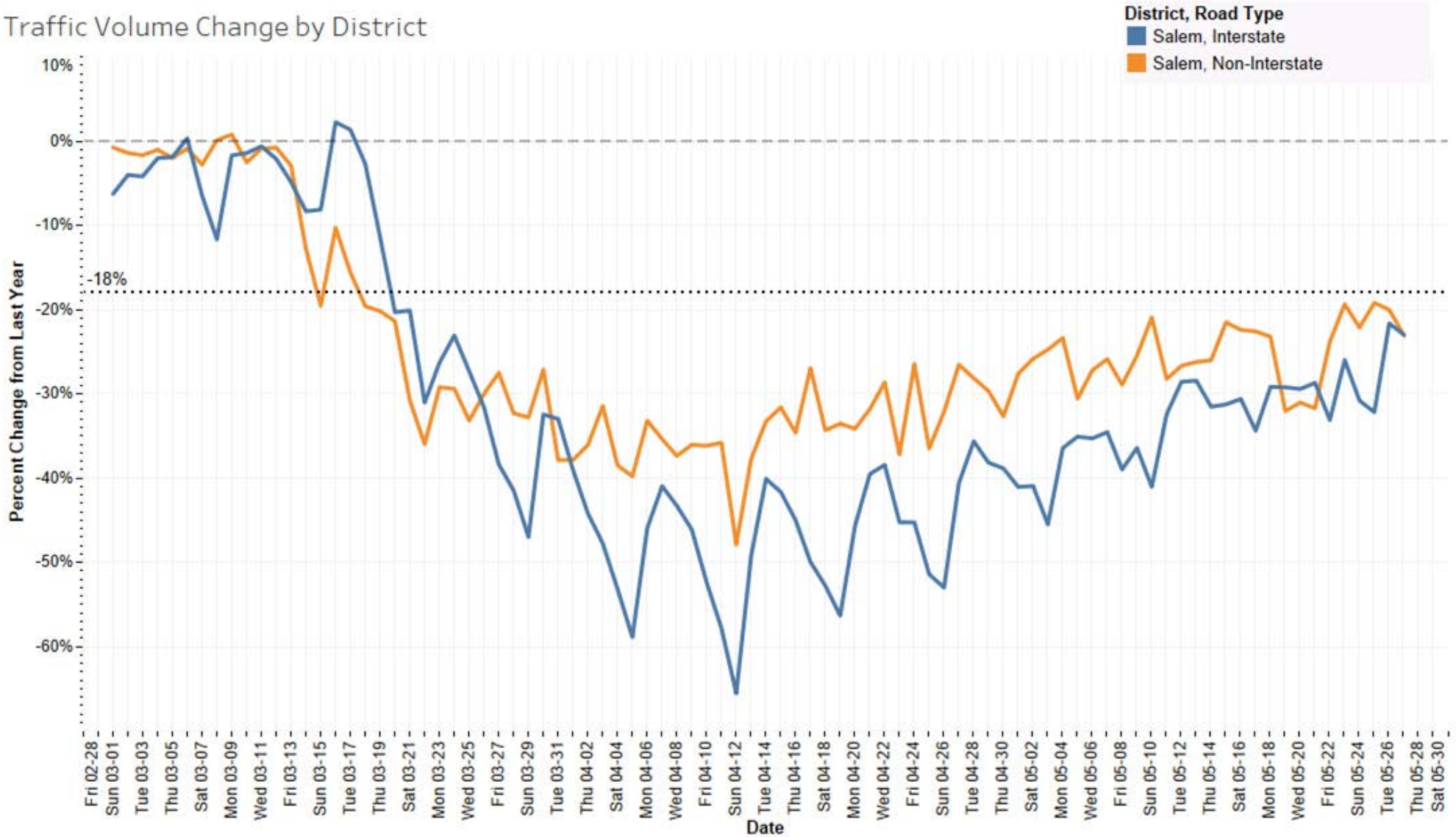
Traffic Volume Change by District



# Volume Trends

## All Vehicles Daily Volume Change in Salem

Traffic Volume Change by District

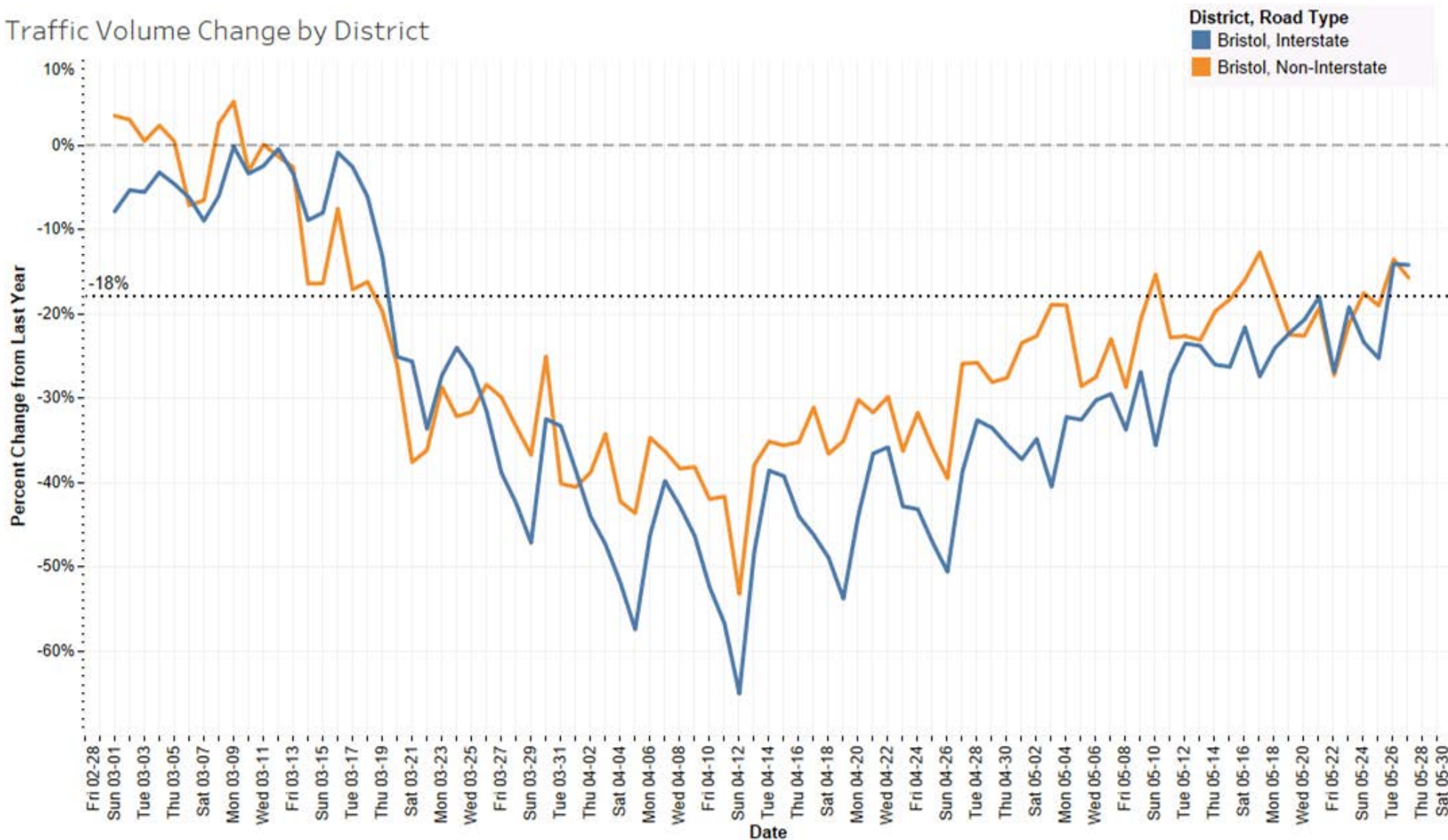




# Volume Trends

## All Vehicles Daily Volume Change in Bristol

Traffic Volume Change by District

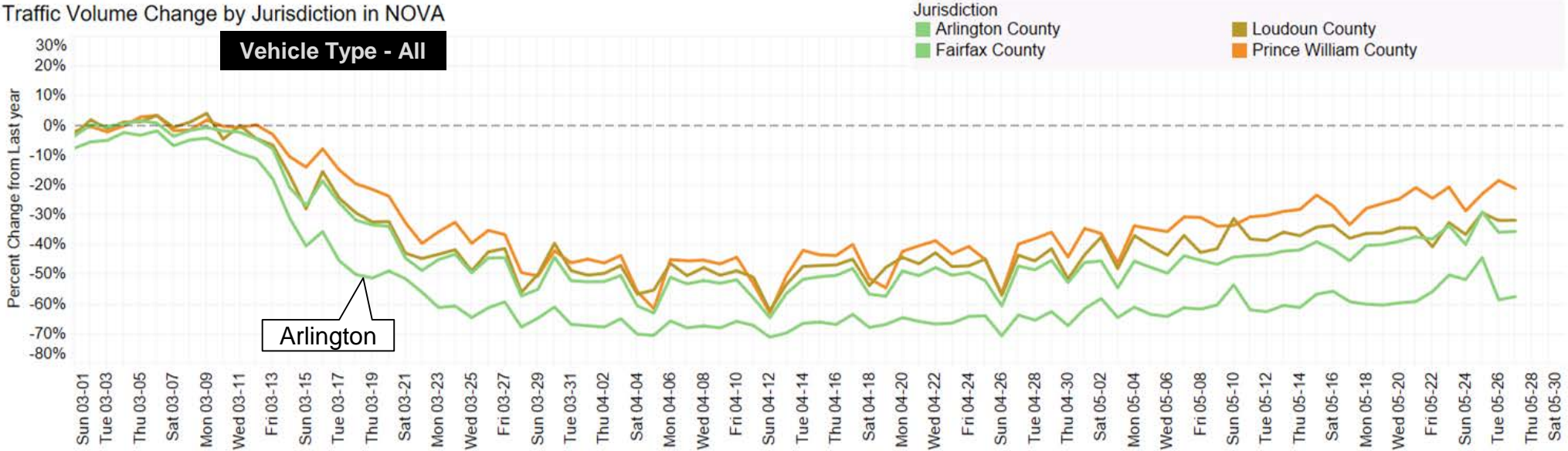


# Volume Trends

## Volume Change by Jurisdiction

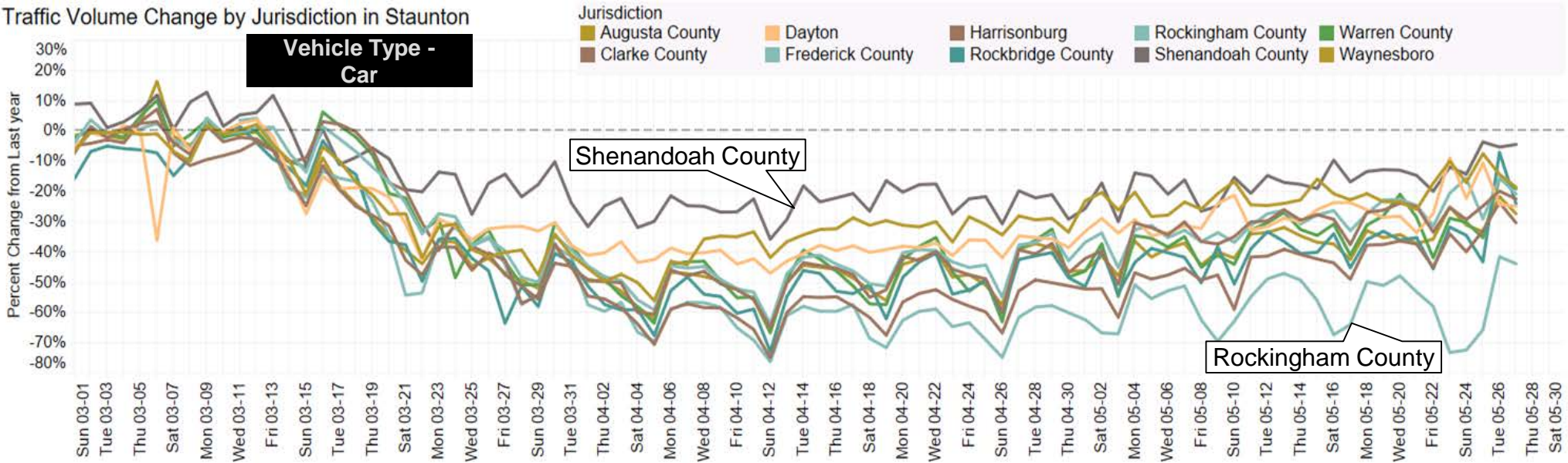
Traffic Volume Change by Jurisdiction in NOVA

Vehicle Type - All



Traffic Volume Change by Jurisdiction in Staunton

Vehicle Type - Car





# Speed Trends Based on INRIX Data

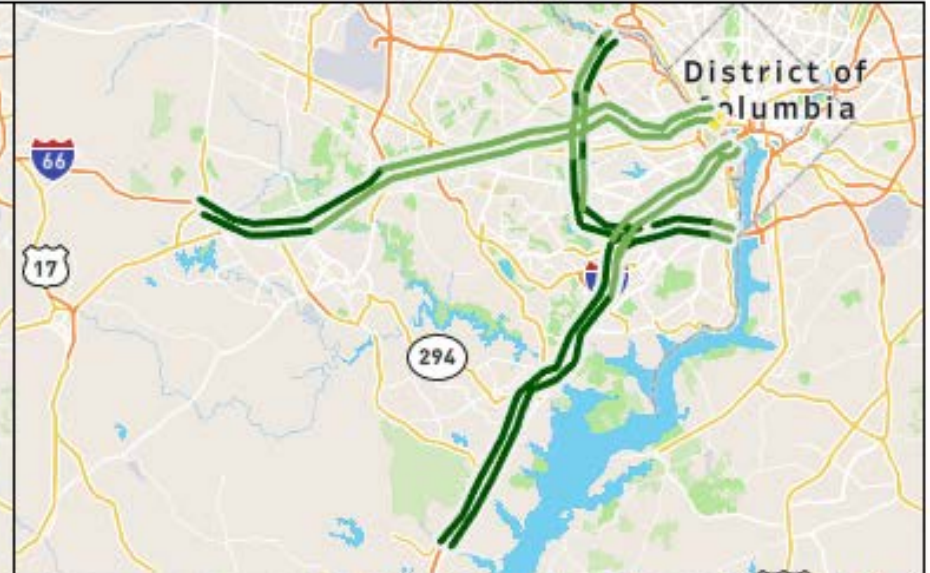
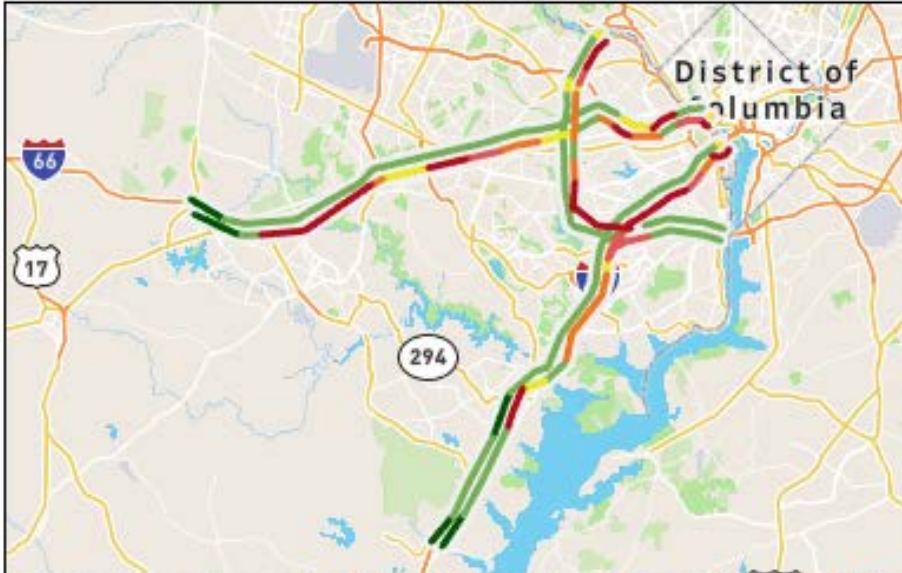
## Northern Virginia District - Weekday

May 2019

May 2020

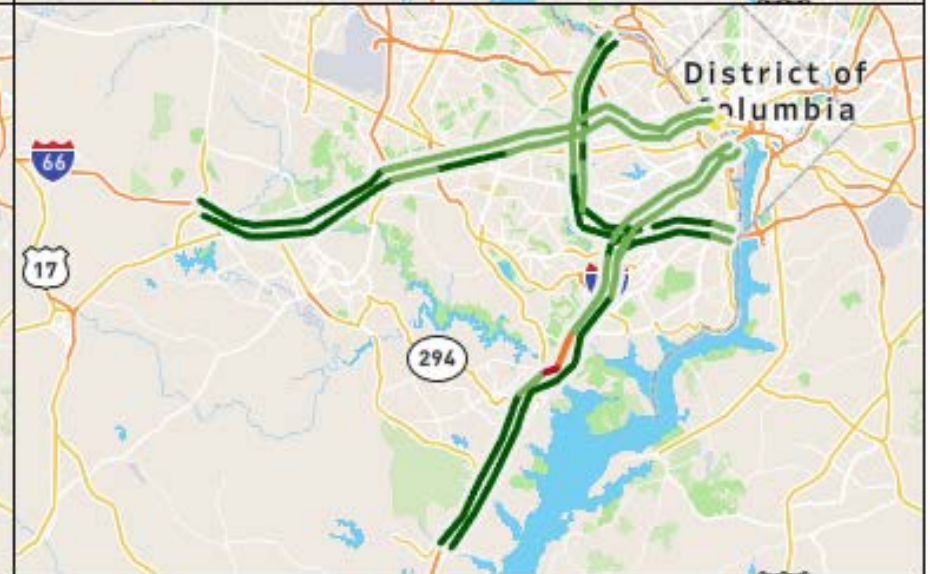
8 - 9 AM

AM Peak Hour



5 - 6 PM

PM Peak Hour



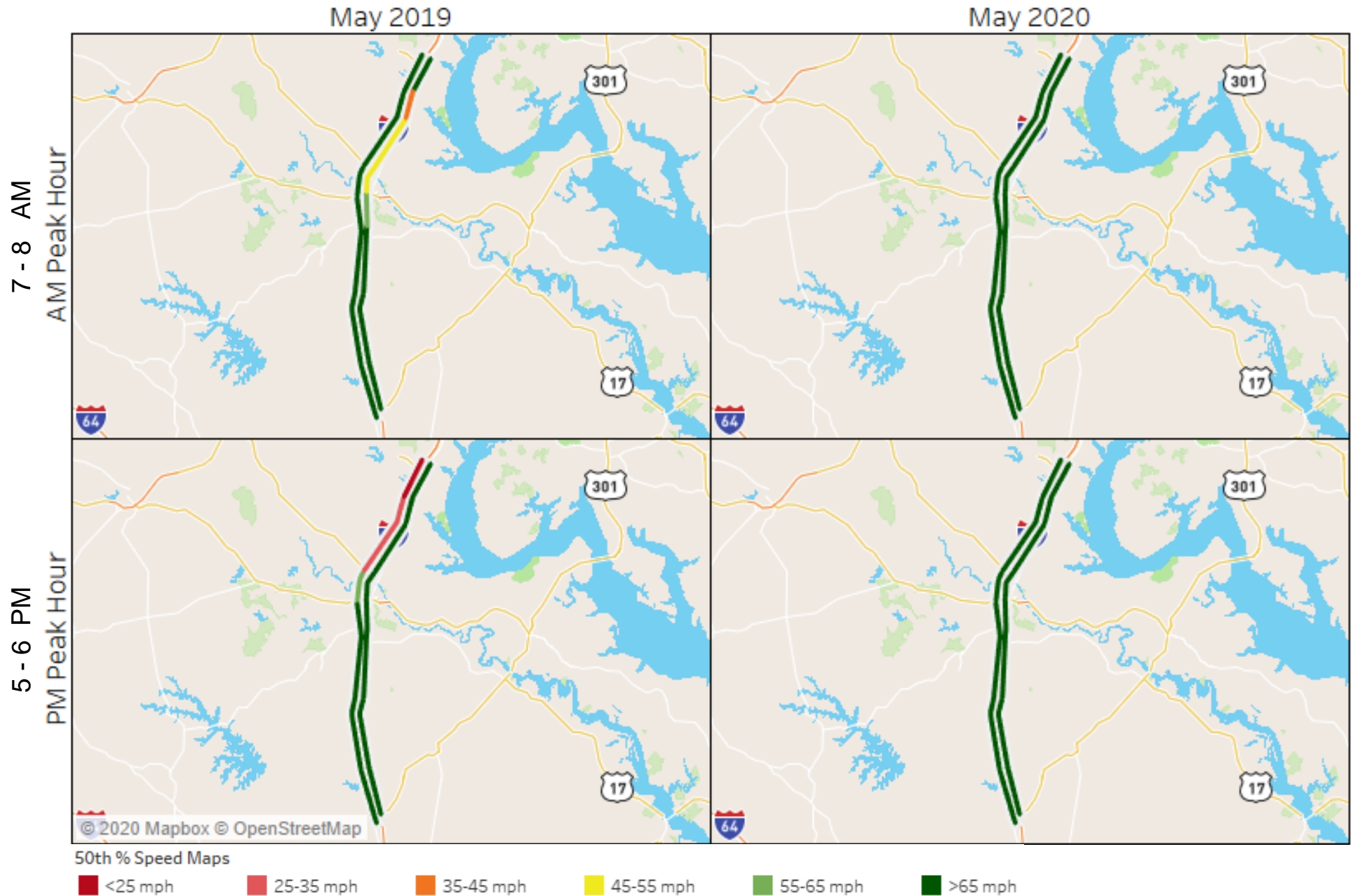
50th % Speed Maps





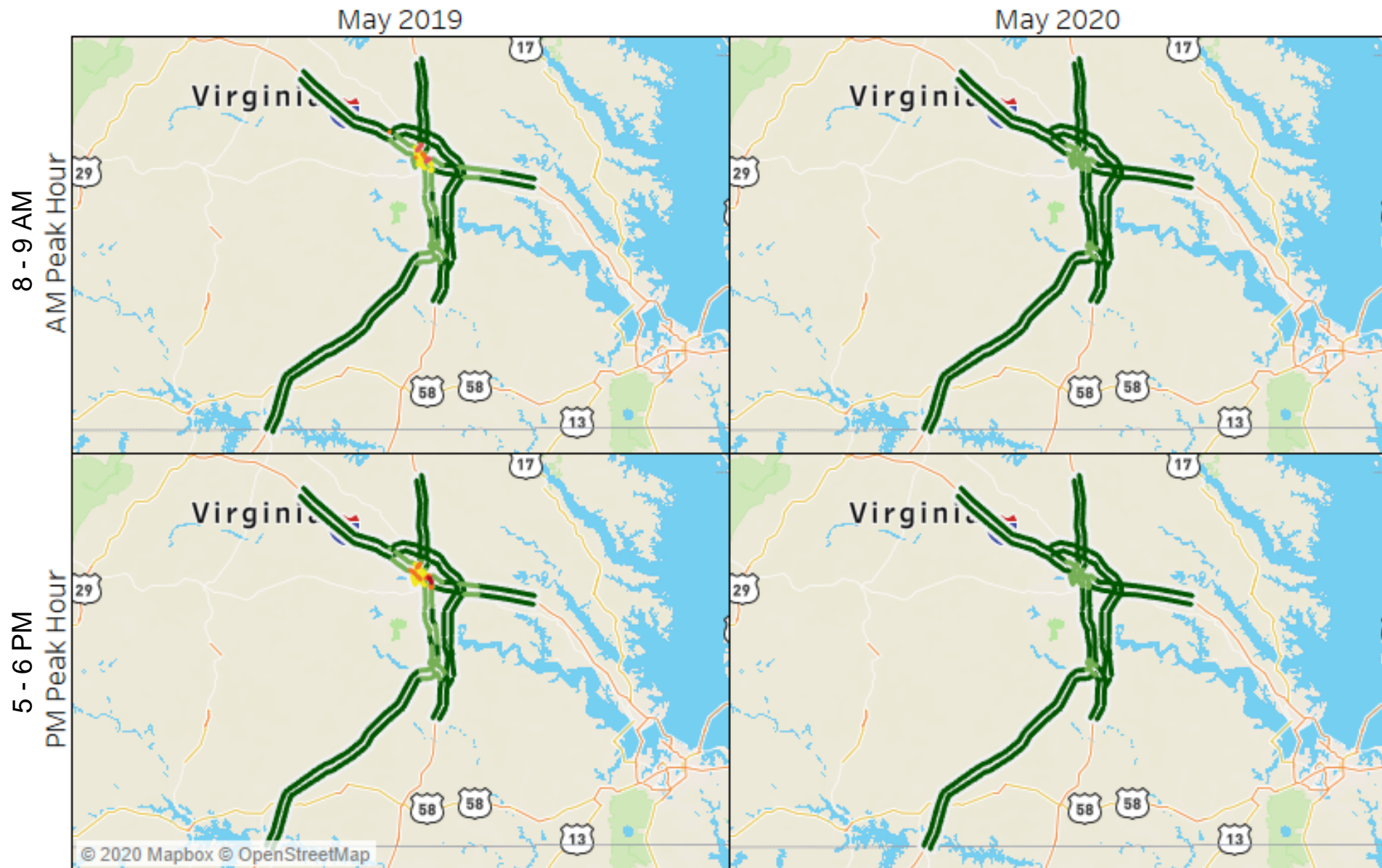
# Speed Trends Based on INRIX Data

## Fredericksburg District - Weekday



# Speed Trends Based on INRIX Data

## Richmond District - Weekday

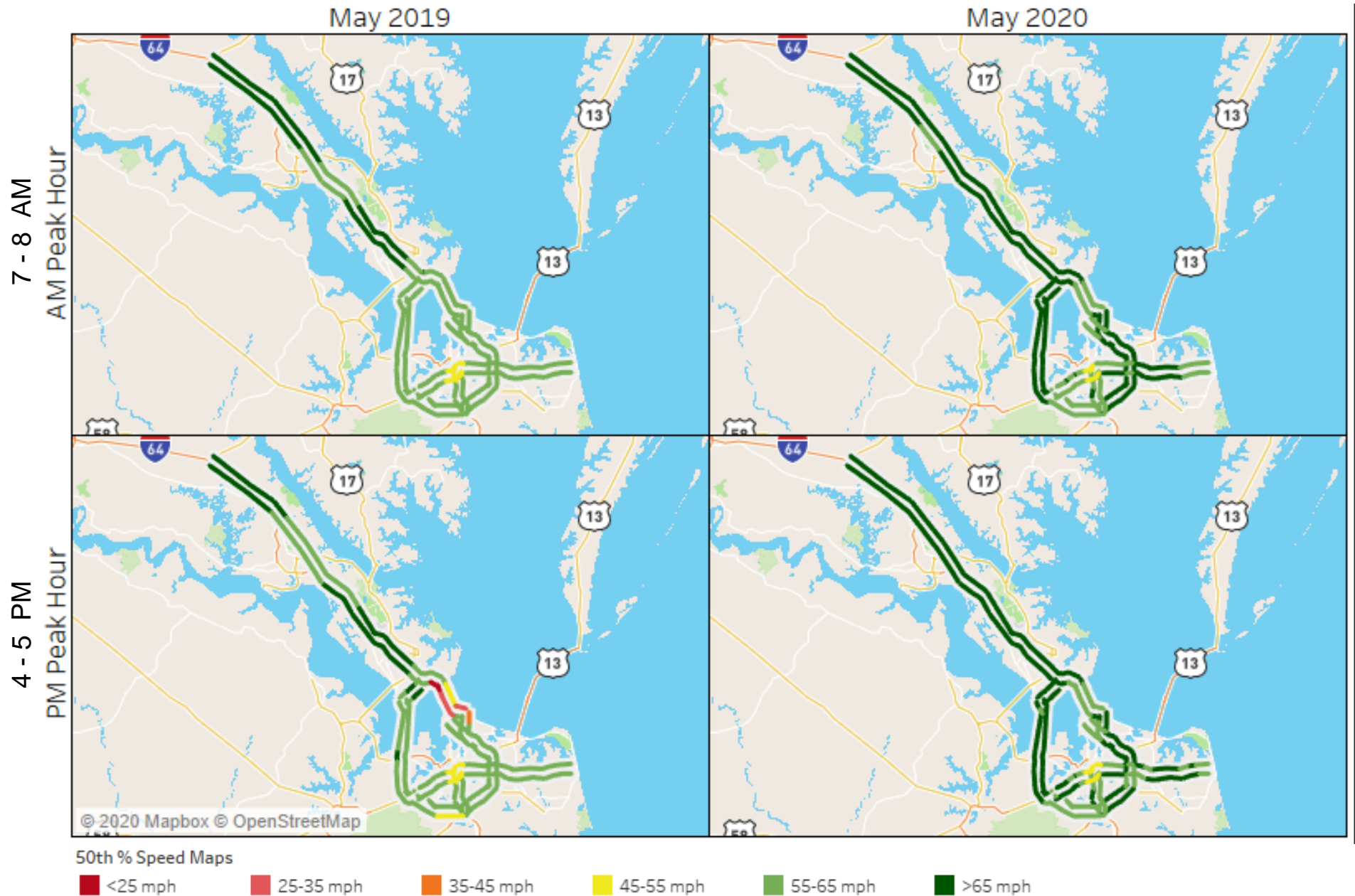


50th % Speed Maps



# Speed Trends Based on INRIX Data

## Hampton Roads District - Weekday

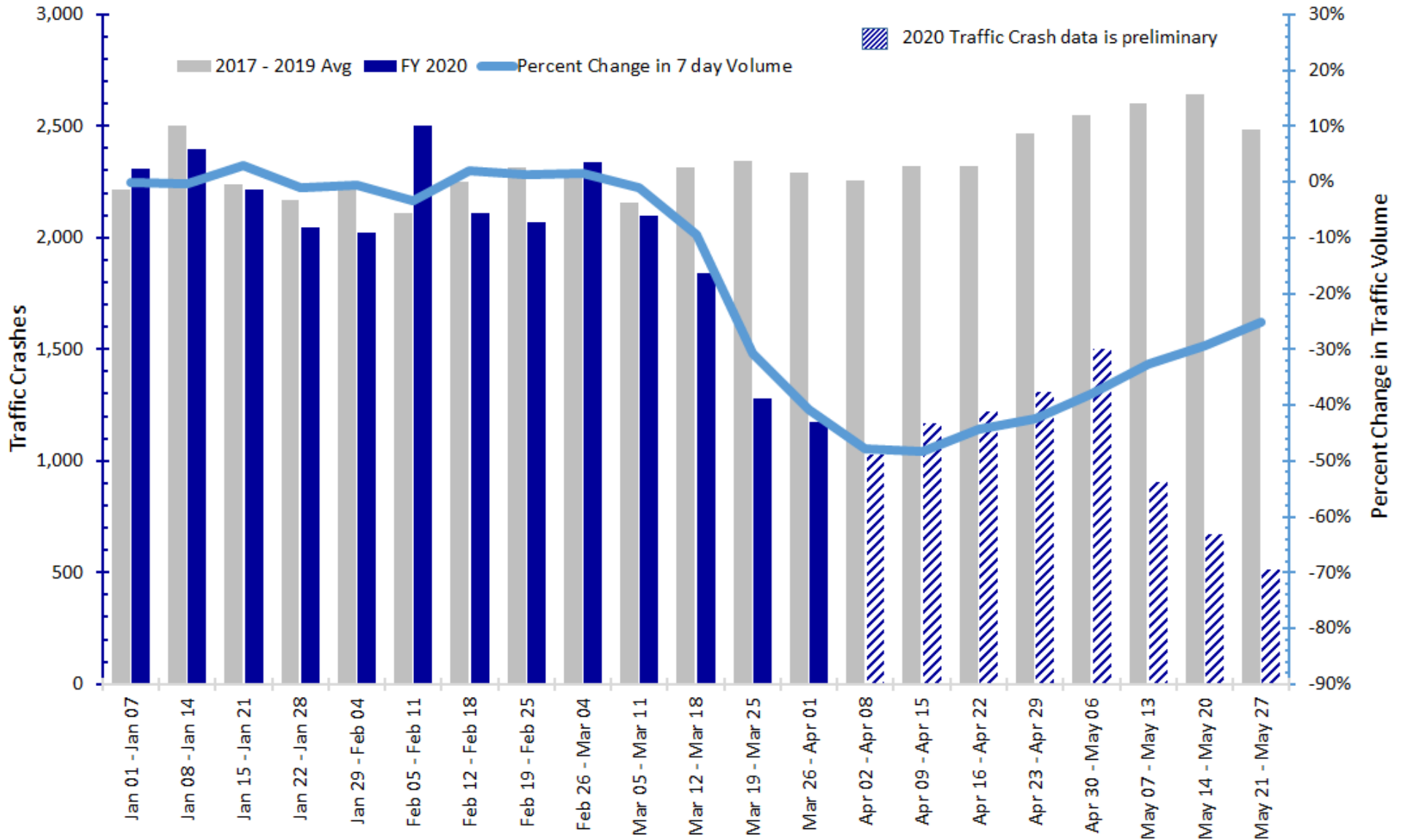




# Weekly Traffic Crash

## Statewide All Systems

Weekly Traffic Crashes - from January 1 to May 28



# Questions?

Mena Lockwood, P.E., Assistant State Traffic Engineer, [mena.lockwood@vdot.virginia.gov](mailto:mena.lockwood@vdot.virginia.gov)

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# ROUTE 340 IMPROVEMENTS CLARKE COUNTY VIRGINIA

Interstate Agreement to Allow Design and Construction by West Virginia

## Commonwealth Transportation Board Briefing

 Randy Kiser, P.E.

District Engineer

Staunton District

June 16, 2020

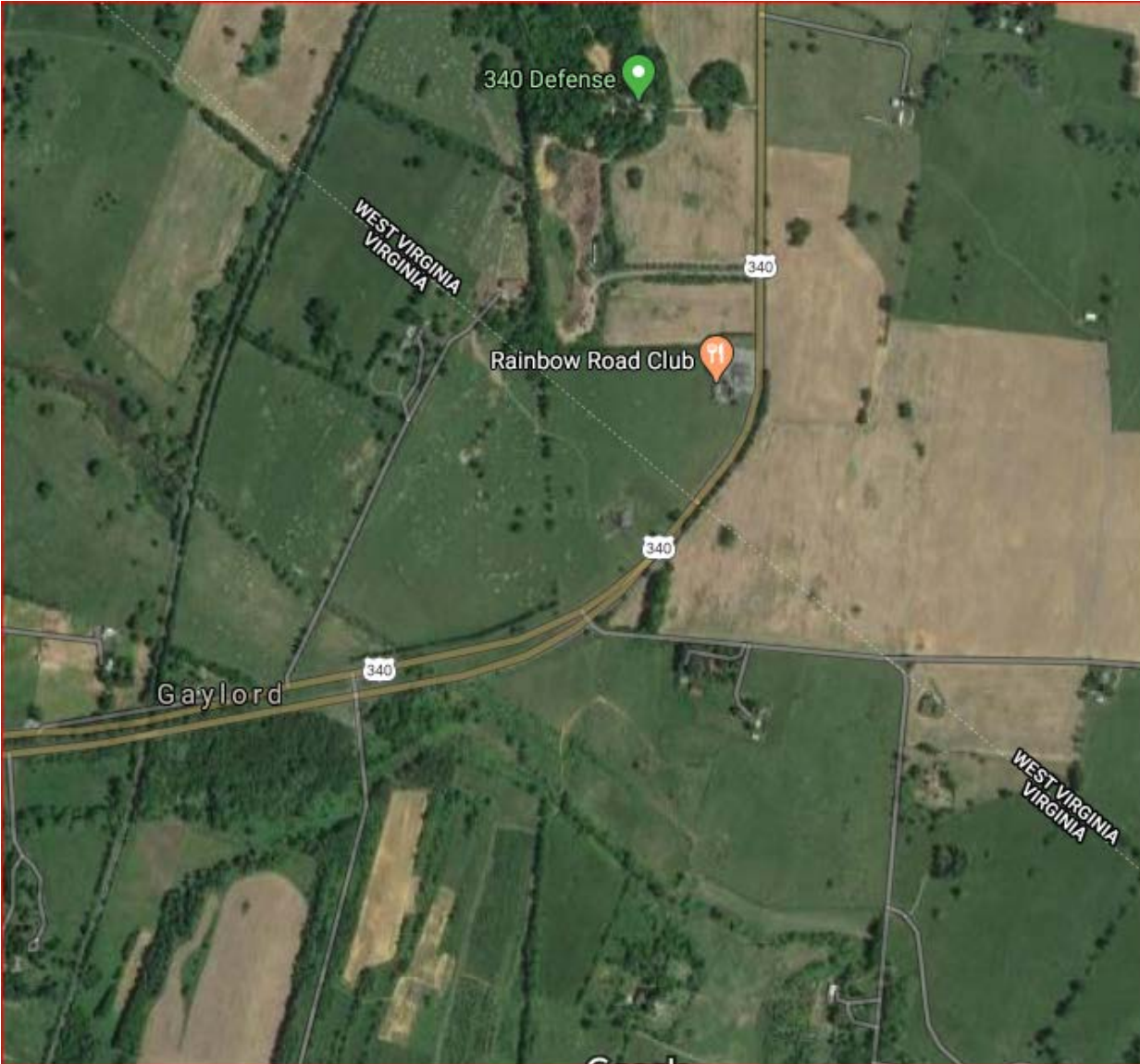




Route 340, looking South from W. Virginia Line

## Overview

- Background
- VA Code Section 33.2-221 (B)
- Interstate Agreement with West Virginia



## Background

- Existing configuration of U.S. 340 at the Clarke County, Virginia and Jefferson County, West Virginia line.
- West Virginia wishes to construct a 4 lane facility and construct a tie-in to the existing 4 lane facility in Virginia.
- West Virginia to award design build contract in August 2020.
- Anticipated completion – Spring 2024

# VA Code 33.2-221(B)

**Pursuant VA Code § 33.2-221 (B):**

**The Board shall have the power and duty to enter into all contracts with other states necessary for the proper coordination of the location, construction, maintenance, improvement, and operation of transportation systems, including the systems of state highways with the highways of such other states, and where necessary, seek the approval of such contracts by the Congress of the United States.**



# U.S. 340 Improvement Agreement with West Virginia

- **Virginia and West Virginia propose a highway improvement project to improve the existing two-lane section of United States 340, which is between the existing four-lane roadway section in Clarke County, Virginia and the existing four-lane section of the Charles Town Bypass in Jefferson County, West Virginia.**
  - **In Virginia, the length is approximately 0.19 mile.**
  - **In West Virginia, the length is approximately 4.10 miles.**

# U.S. 340 Improvement Agreement with West Virginia

- **West Virginia would be the lead agency who would design and construct the Project under the West Virginia Highways Design Build Program.**
- **The Design Build Contractor would be responsible for maintenance of the Project during the construction phase.**
  - **West Virginia shall be responsible for the lead construction supervision of the project and shall provide for construction engineering means, including the review of shop drawings as required.**
  - **Virginia shall have approval of contractors or materials in that portion of the project situated within Virginia.**
  - **Virginia and West Virginia will be responsible for the continuing maintenance of their respective sections of the Project once complete.**

# U.S. 340 Improvement Agreement with West Virginia

- **Virginia and West Virginia shall bear 100% of the cost of construction of their portion of the Project, including any change orders within their respective states.**
  - **The total estimated cost of construction of the project is \$35.6 M and only includes design and construction costs.**
  - **In Virginia, the cost share is 4.52% (\$1.6 M)**
  - **In West Virginia, the cost share is 95.48%.**
  - **A Right of Way phase is not anticipated for the portion of the work in Virginia.**
  - **Based on Virginia's cost estimate, Virginia is benefiting from West Virginia's economy of scale.**



# U.S. 340 Improvement Agreement with West Virginia

- **The agreement states that West Virginia shall invoice Virginia annually beginning on or about July 1, 2020, or after the Project is successfully let and awarded and substantial work is underway/completed in Virginia, whichever occurs later.**
  - **1/5 of Virginia's 4.52% share of the lump sum bid price for a period of up to 5 years.**
  - **West Virginia will balance bill if completed sooner than 5 years.**

# U.S. 340 Improvement Agreement with West Virginia

## Next steps:

**VDOT will present CTB with a resolution, authorizing the Commissioner to execute the U.S. 340 Improvement Agreement with West Virginia.**

**Once the Agreement is executed and the project begins, VDOT will be reimbursing West Virginia for the design and construction costs for the project in Virginia, not to exceed the limits set out in the Agreement.**

**Once the work is complete and has been inspected and achieves final acceptance by Virginia, Virginia will add the modified mileage into the Primary System of highways for future maintenance.**



# **Federal Transportation Grant Anticipation Notes Series 2020**

**June 17, 2020**

**Laura Farmer**

**Chief Financial Officer**



# Commonwealth Transportation Board: Federal Transportation Grant Anticipation Notes, Series 2020

<b>Summary Terms of Offering*</b>	
<b>Issuer</b>	Commonwealth Transportation Board
<b>Projects</b>	Projects with GARVEE allocations in the Six-Year Improvement Program (SYIP)
<b>Anticipated Ratings</b>	Double-A Category
<b>Pricing Date</b>	September 2020
<b>Security</b>	The Series 2020 bonds are payable from and secured by revenues (i) first, from Project specific reimbursements, (ii) legally available revenues from the TTF, and (iii) from other such funds designated by the General Assembly for such purposes.
<b>Par (in millions)</b>	\$130 million*
<b>Structure</b>	Serial Bonds 2020 - 2035
<b>Final Maturity (years)</b>	15

\* Preliminary and subject to change

# **GARVEE Program Overview**

**Chapter 830 and 868 of the Acts of Assembly of 2011 authorized issuance of \$1.2 billion of GARVEEs**

**Successor program to Federal Highway Reimbursement Anticipation Notes (FRANs) authorized in 2000**

**Limits outstanding GARVEEs and FRANs to \$1.2 billion**

**Limits maturity to 20 years**

**Secured first by project specific federal reimbursements and then by:**

- Legally available revenues from TTF
- Other such funds designated by the General Assembly for such purposes

**All FRANs were retired in September 2015**

**Memorandum of Agreement (MOA) with Federal Highway Administration (FHWA) for GARVEE program was executed in December 2011 and updated in November 2019**

**Exhibit A of MOA identifies approved GARVEE supported projects and has been amended to incorporate additional projects to be supported by this sale**

# **GARVEE Issues**

**The CTB has issued six series of GARVEEs from 2012 to 2018**

**Issuances have totaled just more than \$1.3 billion over that period**

**GARVEEs have supported Downtown and Midtown Tunnels, Martin Luther King Expressway, I-95 Express Lanes, Route 460 Corridor Development Project, I-495 Express Lanes Shoulder Use**

**Beginning in 2017, GARVEEs have been used to support projects selected through SMART SCALE**

**Proceeds from the 2020 issue will provide continued support to projects funded previously with GARVEE bonds and 2018 SMART SCALE projects**



## **Debt Service for GARVEE Bonds**

**Virginia's GARVEE bonds are secured first by project specific federal reimbursements and then by:**

**legally available revenues from the TTF**

**other such funds designated by the General Assembly for such purposes**

**Bond issuances are limited:**

**Maximum outstanding amount cannot exceed \$1.2 billion**

**Debt service must have 4x coverage**

**After this sale:**

**Outstanding GARVEEs - \$911.7 million (additional revolving authorization provided to SMART SCALE in future years)**

**Coverage – greater than 10x**

**Next sale anticipated for Fall 2021 and is estimated to be \$140 million**

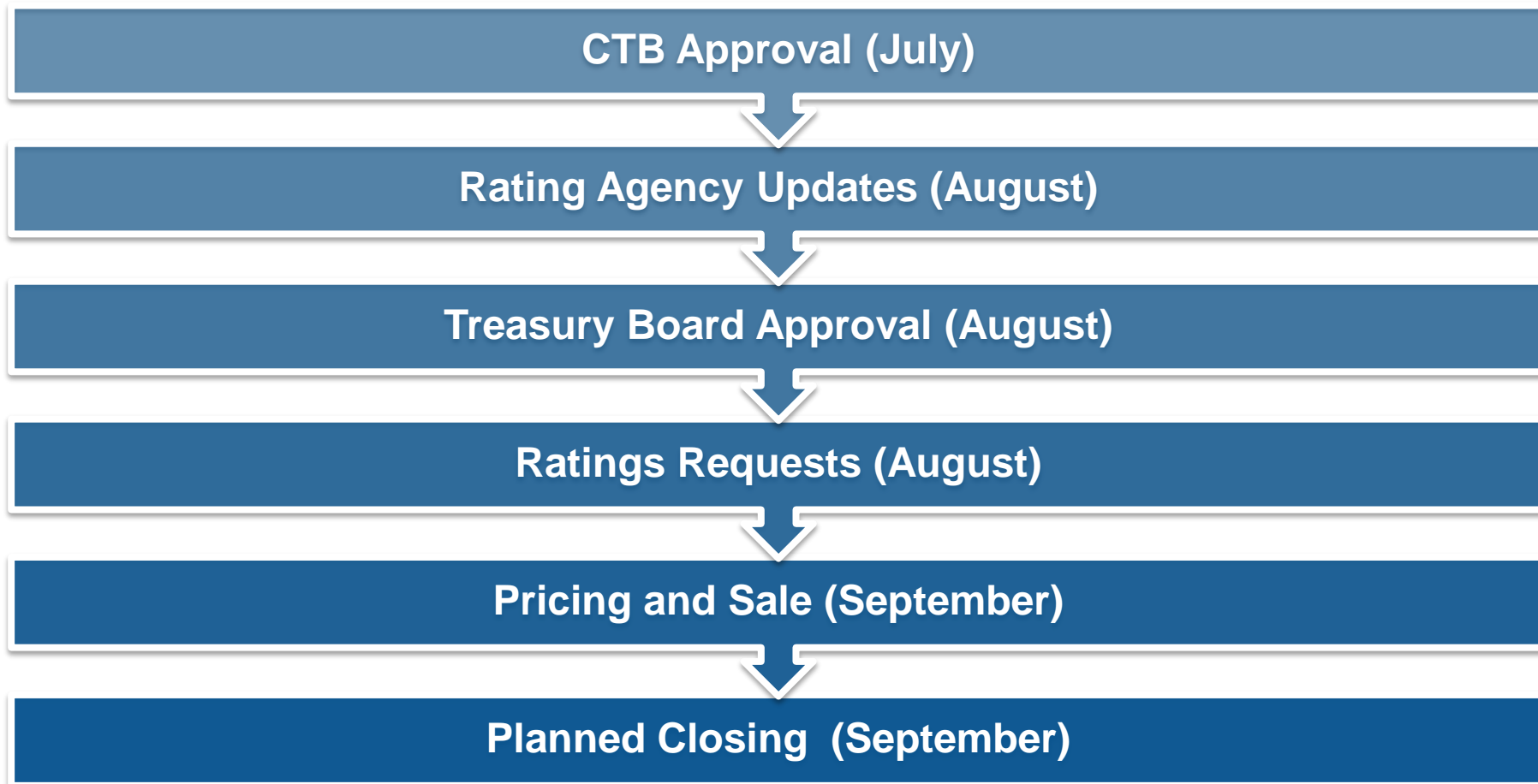
# Recent GARVEE Transactions

## Pricings (2019 – 2020 YTD)

	Rhode Island DOT	District of Columbia	State of Ohio	Common-wealth of Massachusetts	Mississippi Development Bank	State of Florida	State of North Carolina	Idaho Housing and Finance Association	Missouri DOT	State of Louisiana	Arizona Transportation Board	CTB
<b>Ratings (M/S/F)</b>	A2/AA-/	A2/AA-/	Aa2/AA-/	Aa2/AAA-/	Aa3/AA-/	A1/AA/A+	A2/AA/A+	A2/-/A+	Aa1/AA+/AA	-/AA-/	Aa2/AA+/AA	Aa1/AA+/AA+
<b>Pricing Date</b>	May 5, 2020	Jan 28, 2020	Dec 4, 2019	Nov 14, 2019	Oct 31, 2019	Oct 10, 2019	May 23, 2019	May 1, 2019	Apr 9, 2019	Apr 4, 2019	Mar 26, 2019	Nov 14, 2018
<b>Additional Security</b>	Stand Alone	Stand Alone	Other lawfully available funds, including State Highway Fund monies	Excess monies available from Commonwealth Transportation Fund (CTF) <sup>(2)</sup>	State Highway Fund monies (subject to annual appropriation)	Stand Alone	Stand Alone	Availability of certain State Highway Revenues <sup>(4)</sup> (subject to appropriation)	Subordinate Pledge from State Road Fund monies	Stand Alone	Other lawfully available funds, including State Highway Fund (SHF) and Regional Area Road Fund (RARF) monies	Discretionary Pledge of TTF Revenues and Other Funds (subject to appropriation)
<b>Series</b>	Series 2020A	Series 2020	Series 2019-1	2019 Series A	Series 2019	Series 2019A	Series 2019	2019 Series A	Series A 2019	Series 2019A	Series 2019A	Series 2018
<b>Par (\$MM)</b>	165.215	277.710	180.100	53.500	49.035	123.225	600.000	122.130	102.705	185.000	62.465	75.750
<b>Structure</b>	Serial 2021 - 2035	Serial 2020 - 2034	Serial 2020 - 2031	Serial 2026 - 2027	Serial 2020 - 2030	Serial 2020 - 2031	Serial 2020 - 2034	Serial 2020, 2030 - 2037	Serial	Serial 2020 - 2031	Serial 2020 - 2034	Serial 2019 - 2033
<b>Final Maturity (Years)</b>	15 Years	15 Years	12 Years	8 Years	11 Years	12 Years	15 Years	18 Years	6 Years	12 Years	15 Years	15 Years
<b>All-in Rate<sup>(1)</sup></b>	2.68%	1.97%	1.65%	1.89%	2.55% <sup>(3)</sup>	1.60%	2.40%	3.24%	1.77%	2.33%	2.42%	3.05%

(1) Approximate All-in TIC based on information found in Official Statements (2) CTF monies consist primarily of motor vehicle fuel taxes and registration fees collected in the Commonwealth (3) Taxable bonds (4) Not a legal pledge, but is made available subject to appropriation

# Next Steps for Virginia's Seventh GARVEE Issue





# **SMART SCALE PROPOSED BUDGET INCREASE**

## **I-81 EXIT 300 SOUTHBOUND ACCELERATION LANE EXTENSION**

### **UPC 111054 – STAUNTON DISTRICT**

Commonwealth Transportation Board

Kimberly Pryor – Director, Infrastructure Investment

*June 2020*

# SMART SCALE Policy

## CTB Policy for Scope Changes and/or Budget Increases, February 2020

- A project that has been selected for funding must be re-scored and the funding decision re-evaluated if there are significant changes to either the scope or cost of the project, such that the anticipated benefits relative to funding requested would have substantially changed.
- If an estimate increases prior to project advertisement or contract award that exceeds the following thresholds, and the applicant is not covering the increased cost with other funds, Board action is required to approve the budget increase:
  - » i. Total Cost Estimate <\$5 million: 20% increase in funding requested
  - » ii. Total Cost Estimate \$5 million to \$10 million: \$1 million or greater increase in funding requested
  - » iii. Total Cost Estimate > \$10 million: 10% increase in funding requested; \$5 million maximum increase in funding requested

# Project Information

## I-81 Exit 300 Southbound Acceleration Lane Extension (UPC 111054)

- Submitted by Northern Shenandoah Valley Regional Commission in Round 2 of SMART SCALE
  - Total Original Project Cost: \$3,437,422
  - Total SMART SCALE Request: \$3,437,422
  - Request funded with HPP funds
- Project is VDOT administered
  - Construction scheduled to begin FY22
- Original Scope Included:
  - Extend acceleration lane onto I-81 southbound from westbound I-66
  - Widen the existing southbound bridge over Water Plant Road to accommodate the extended lane

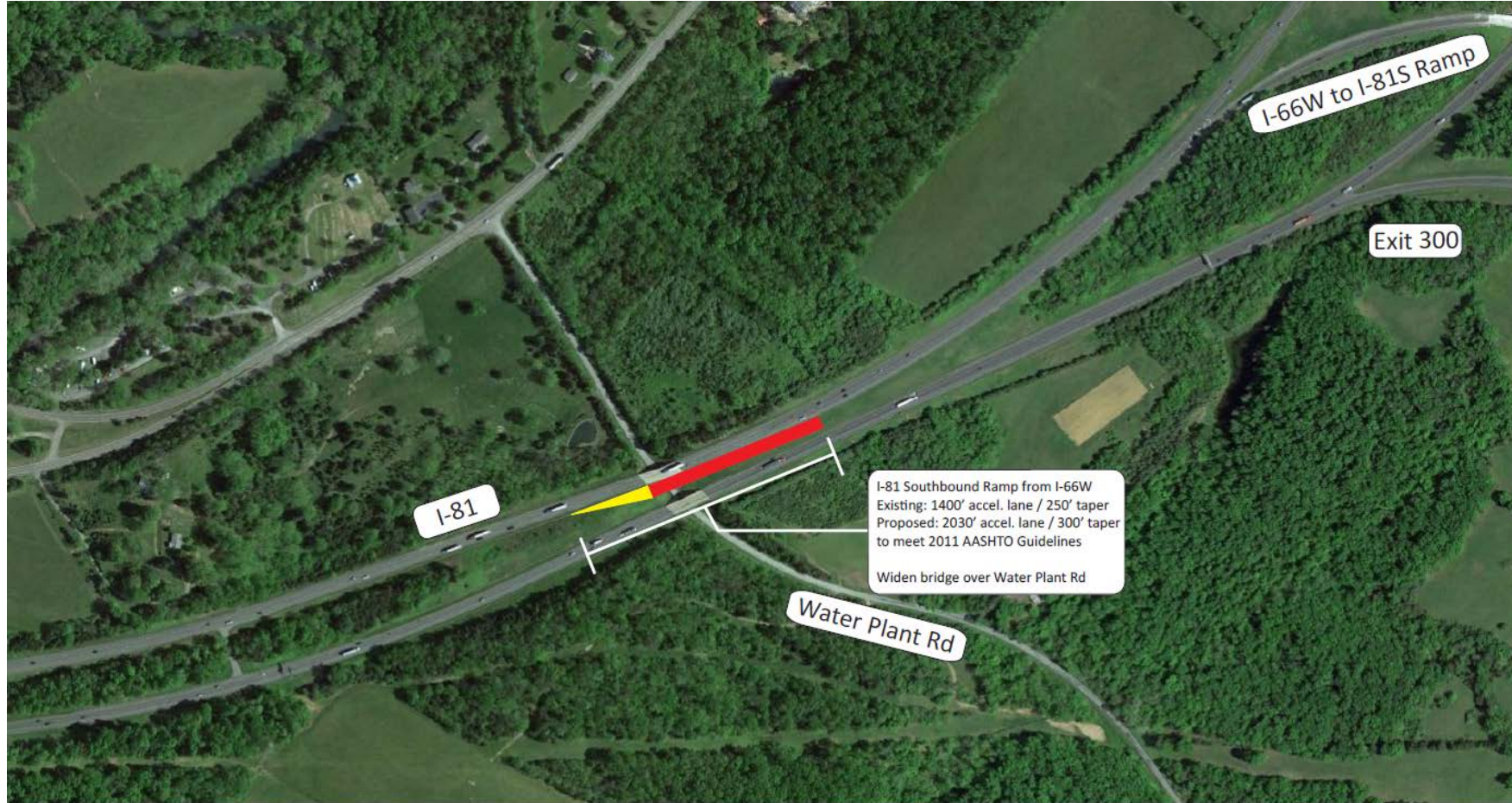


# Change in Project Design

## What changed after Project Selection?

- Issues were identified related to the bridge widening component of the project
- VDOT Structure and Bridge guidance recommends bridge replacement when one of two conditions prevails:
  1. The presence of reactive aggregate that would lead to alkali-silica reaction (ASR), a condition that causes rapid expansion of concrete in the presence of moisture and compromises any bridge component where it is present
  2. When rehabilitation of a component or the entire structure exceeds 65% of the replacement cost, replacement of the affected component or the entire bridge is warranted
- In this case, both conditions prevail
- Replacement of the bridge is deemed the most appropriate course of action to accommodate the widening

# Project Location



Interstate 81 Exit 300 - Improvement Sketch  
Warren County, VA  
September 20, 2016  
Not to Scale

# Project Budget Increase

- **Estimated cost of revised design is \$8.5M**
  - Increase of \$5.1M or 148% increase
  - Sufficient deallocated HPP funds are available to cover the increase

	Original Application	Current
Total \$	\$3.4M	\$8.5M
SMART SCALE \$	\$3.4 (HPP)	\$8.5M (increase of \$5.1M)
Score	11.1	4.5
Funding Scenario	9/19	16/19
Expenditures as of 5/28/20	\$225,962	



# Recommendation for Action

- **Approve Budget Increase Request**
  - Fund increase from surplus HPP balances
  - Of available surplus HPP balances, \$4,966,206 was released from projects in Staunton District

HPP Surplus Funds	Amount
Surplus	\$46,452,997
Less Proposed Budget Increase for UPC 111054	\$5,097,874
<b>Total Remaining</b>	<b>\$41,355,123</b>





COMMONWEALTH of VIRGINIA

Office of the

SECRETARY of TRANSPORTATION

# CTB Update

SMART SCALE Round 4

and

Performance Based Planning Demo



# Summary



- Update on current round of SMART SCALE
- Update on Performance Based Planning Pilots
  - NOVA
  - Culpeper
  - Salem



# SMART SCALE Round 4



- 484 pre-applications submitted
  - Includes 2 placeholder for CTB
  - \$7.5B total project cost

District	Total Cost (millions)	# of pre-apps
Bristol	\$ 156.6	35
Culpeper	\$ 389.8	42
Fredericksburg	\$ 500.5	41
Hampton Roads	\$ 1,311.3	62
Lynchburg	\$ 328.2	33
Northern Virginia	\$ 3,084.4	45
Richmond	\$ 937.6	98
Salem	\$ 571.1	66
Staunton	\$ 227.4	62

# Round 4 Pre-Application Stats

## Primary Request Type



- **Principal Improvement Type**
  - Highway: 365
  - Bike/Pedestrian: 96
  - Bus Transit: 14
  - Rail Transit: 2
  - Rail Freight: 1
  - TDM: 6

# SMART SCALE Round 4



- No significant issues during pre-app period
- Pre-screening is underway
  - Keys Questions - Does the project meet:
    - VTrans need,
    - Eligibility requirements, and
    - Readiness requirements
- Final full application opens June 19th with submission deadline of August 3rd

# Round 4 Flexibility



- Impact of COVID-19
- Need for flexibility on deadlines related to:
  - Resolutions of support
  - Documentation for leveraged funding



# Performance-Based Planning Demo



- Performance based programming

- SMART SCALE
- SGR
- HSIP

Success here depends on...

effort here

- Performance Based Planning/Project Development

- Rethinking how to solve transportation problems
- District/DRPT/OIPI examined projects from Round 3 of SMART SCALE to identify candidates - identified projects in Culpeper, NOVA and Salem

# Performance-Based Planning

Does this decision  
tree make sense?



New  
Engine



New  
Car



# Performance-Based Planning



**SMART  
SCALE**

*Funding the Right  
Transportation Projects  
in Virginia*

Or is this more  
logical...

Understand  
the problem



Develop/Test  
Solutions



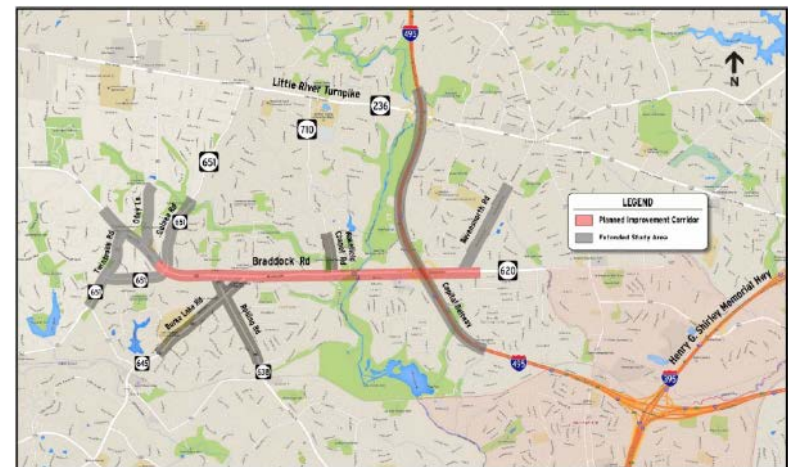
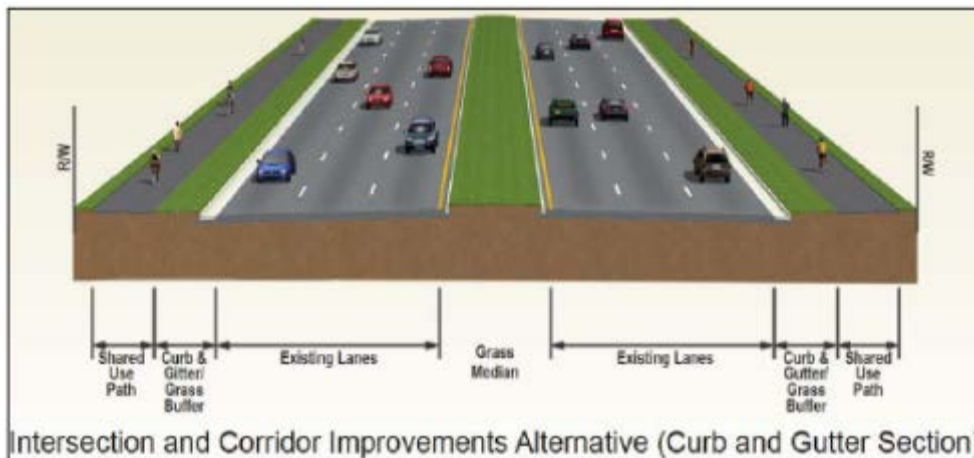
# Performance-Based Planning

## Fairfax County - Braddock Road Phase 1



## Fairfax County - Braddock Road Phase 1

- Strong project focused on multi-modal improvements
- Included multiple intersection improvements
- Achieved strong Safety, Accessibility, and Environmental Scores
- Low congestion score
- Round 3 request of **\$79.9M**





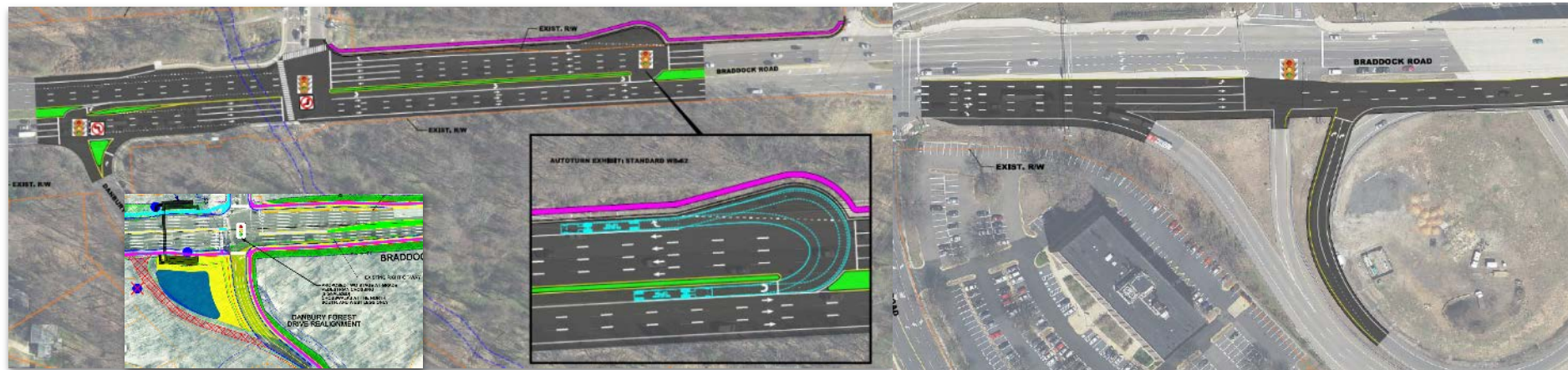
# Performance-Based Planning

## Fairfax County - Braddock Road Phase 1



## Fairfax County - Braddock Road Phase 1

- Assessed areas driving higher costs and reduced benefits
- Identified alternatives that met needs through equal or better options - with reduced impacts and costs
- Projected to **reduce cost by 15-20%** and significantly **increase congestion mitigation score**



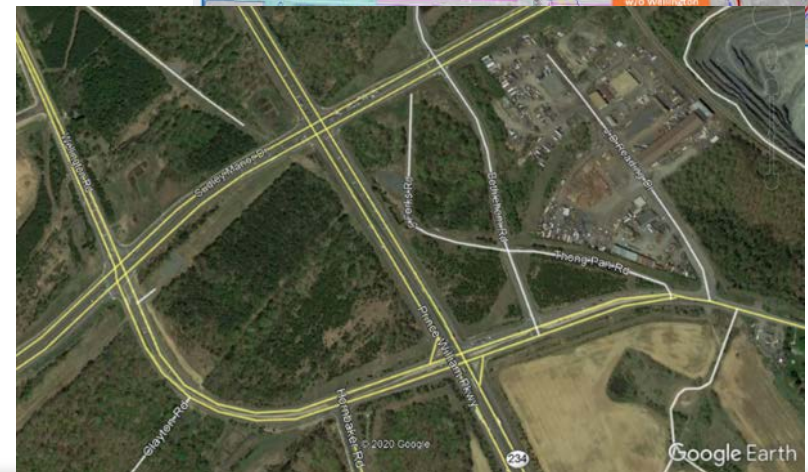
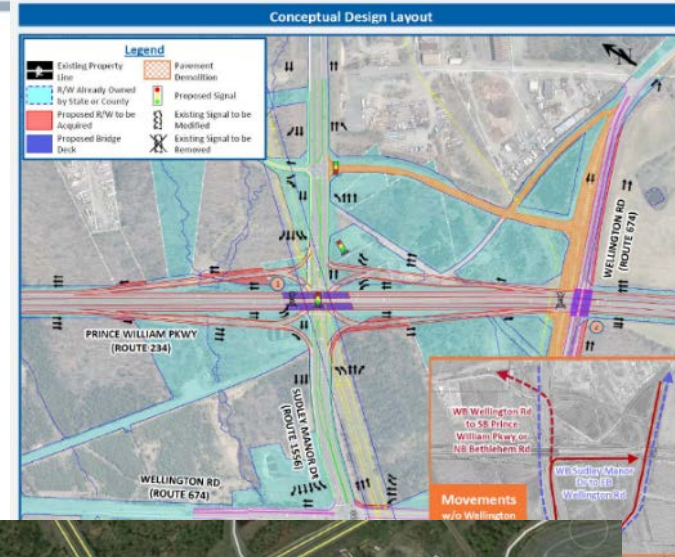
# Performance-Based Planning

## Prince William Parkway at Sudley Manor Drive & Wellington Road



### Prince William County - Prince William Parkway at Sudley Manor Drive & Wellington Road

- Next intersection downstream from Ball's Ford intersection
- High traffic & congestion area
- Initial Round 3 project included two grade separations with a Single Point Urban Interchange
- Gas line impacts
- Total cost over **\$177M**





# Performance-Based Planning

## Prince William Parkway at Sudley Manor Drive & Wellington Road



## Prince William County - Prince William Parkway at Sudley Manor Drive & Wellington Road

- Assessed alternative ways to meet the purpose/need of original project
- Developed alternatives that lower cost while still achieving long term benefit and congestion mitigation
- Projected to reduce cost 30-40% and shorten construction time
- Eliminate two signals on PWP



# Performance-Based Planning

## Loudoun County - US-15 Lucketts Area



## Loudoun County - US-15 Lucketts Area

- High priority safety and congestion area
- Context sensitivity to village/local environment with school and historic considerations - RW constraints
- Strong need for improvements - safety and congestion
- Current long-term solution is to bypass Lucketts



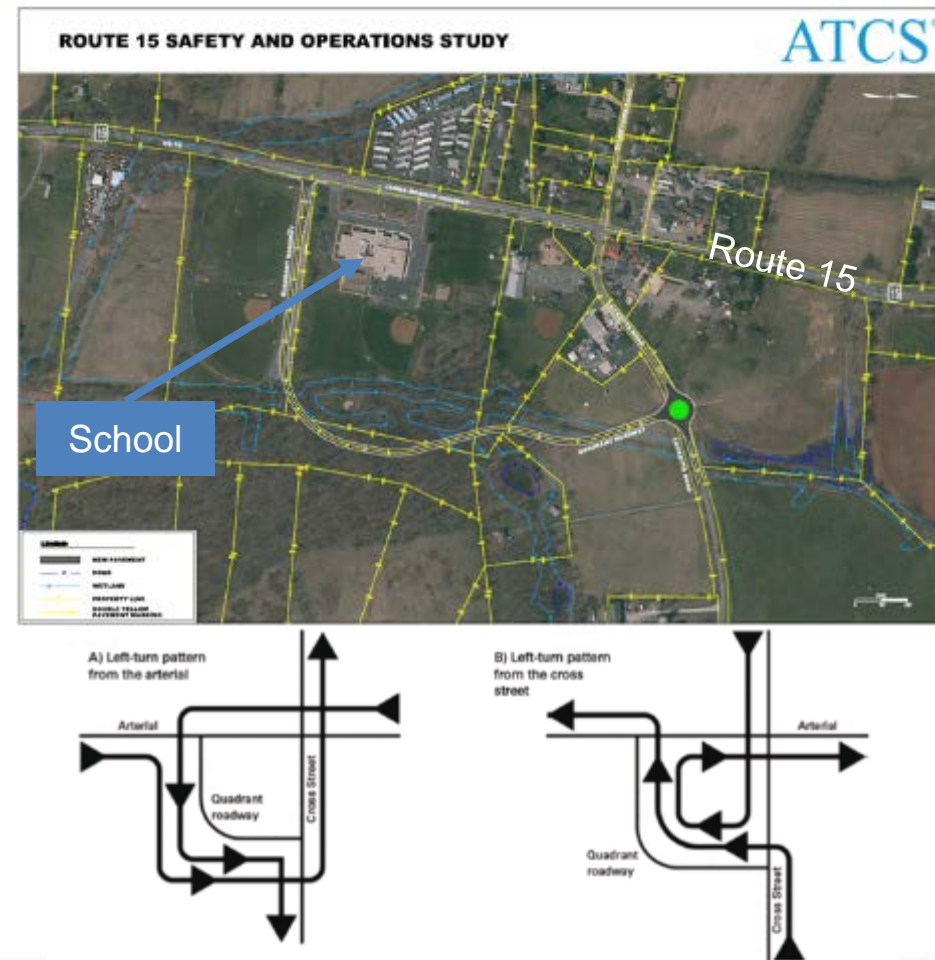


# Performance-Based Planning

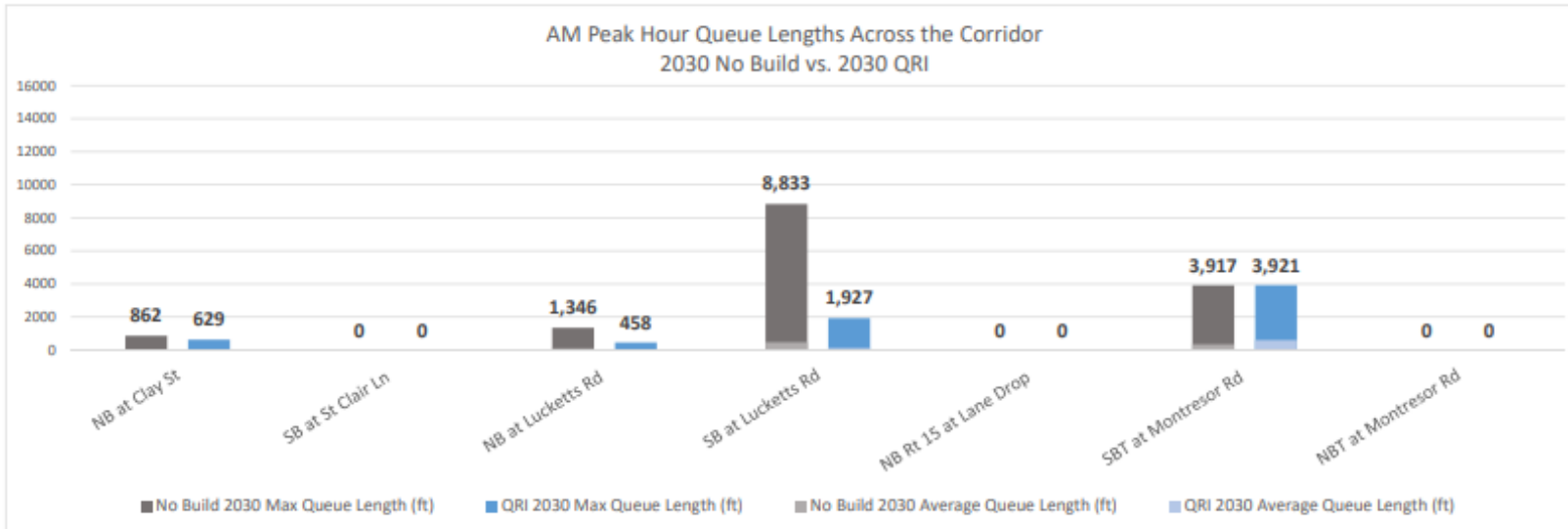
## Loudoun County - US-15 Lucketts Area

## Loudoun County - US-15 Lucketts Area

- Working with District and County on options to reduce costs and impacts while addressing congestion/safety
- Quadrant roadway under evaluation
- Reduced signal phases and conflict points
- Opportunity to relocate school access to quadrant roadway



# Performance-Based Planning Loudoun County - US-15 Lucketts Area



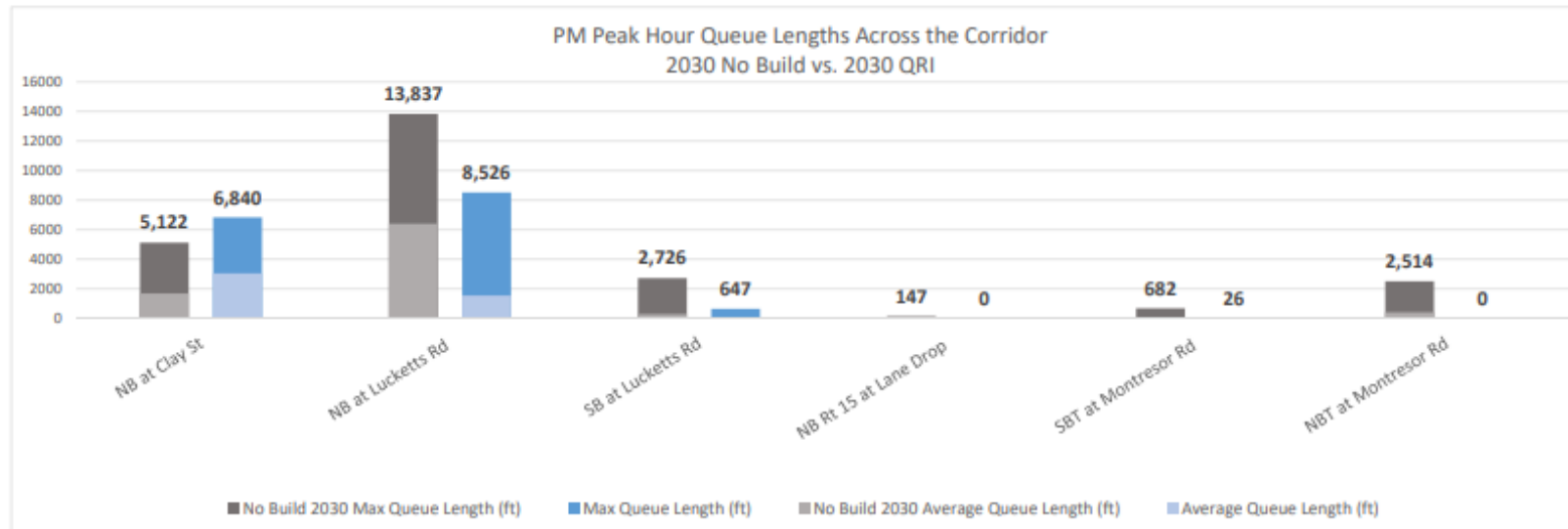
Decrease in average AM queues

**21%**

Decrease in maximum AM queues

**54%**

Comparing 2030 No Build to the 2030 QRI concept



Decrease in average PM queues

**48%**

Decrease in maximum AM queues

**36%**

Comparing 2030 No Build to the 2030 QRI concept

# Performance-Based Planning

## Route 28 - Centreville Road



**Centreville Road (VA 28) -**  
between Prince William / Fairfax County line at  
the bridge over Bull Run  
and  
Blooms Quarry Lane / Old Centreville Road  
intersection at the Prince William County /  
City of Manassas Park line

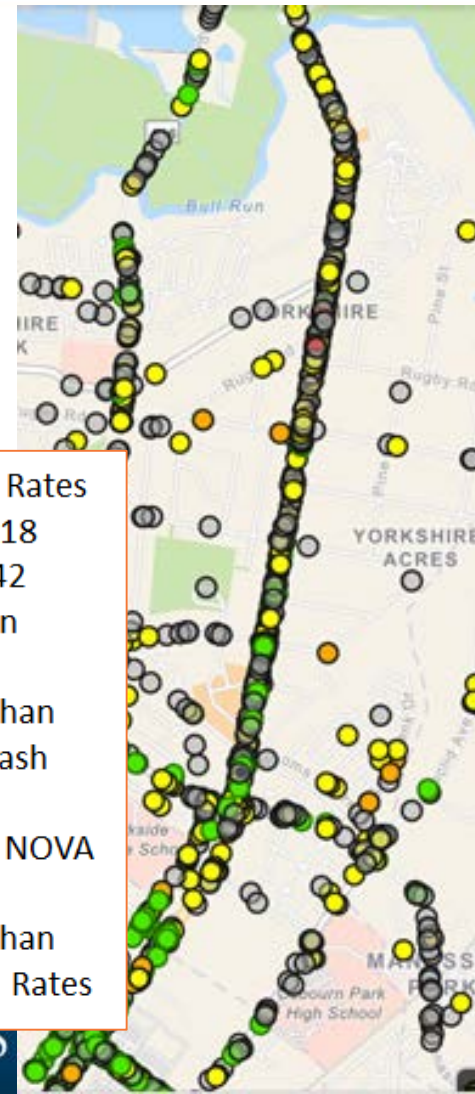
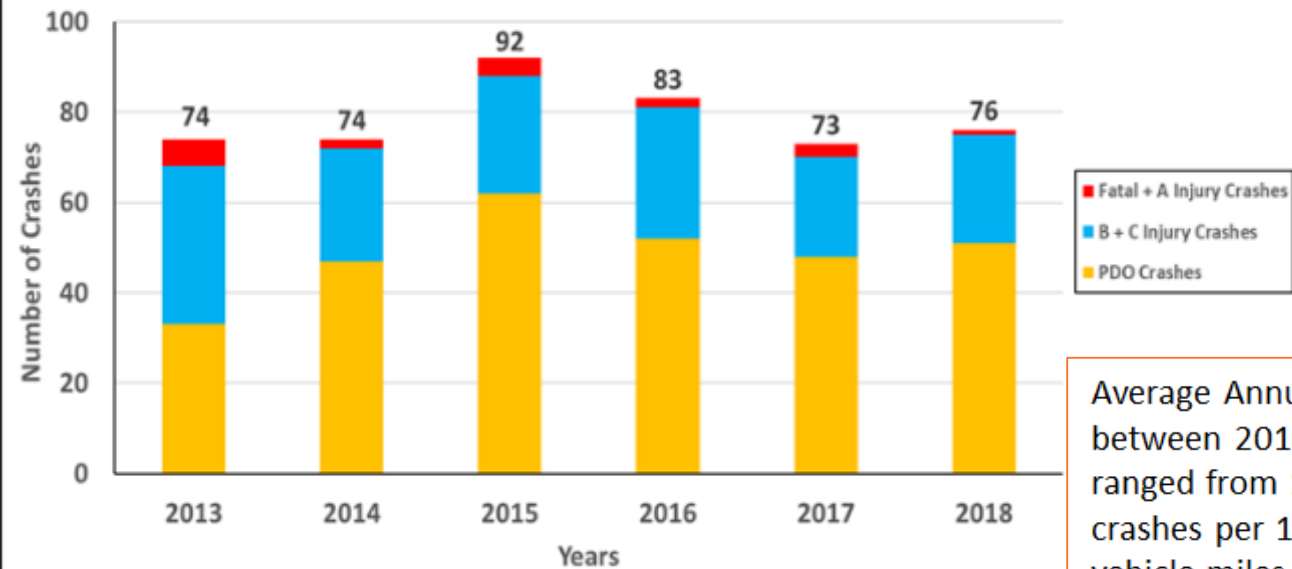
- High traffic volumes: 2,500-2,700 vehicles per hour in northbound in AM and southbound in the PM
- 100 driveways over 2 miles
- 5 lane cross-section with center two-way left turn only lane



# Performance-Based Planning

## Route 28 - Centreville Road

Summary of Reported Crashes within Centreville Road Study Area Limits  
From 2013 through 2018



Average Annual Crash Rates between 2013 and 2018 ranged from 193 to 242 crashes per 100 million vehicle miles.

- **50 to 78%** higher than Average Annual Crash Rates for Primary Highways in VDOT NOVA District.
- **50 to 88%** higher than Statewide Average Rates



# Performance-Based Planning

## Route 28 - Centreville Road

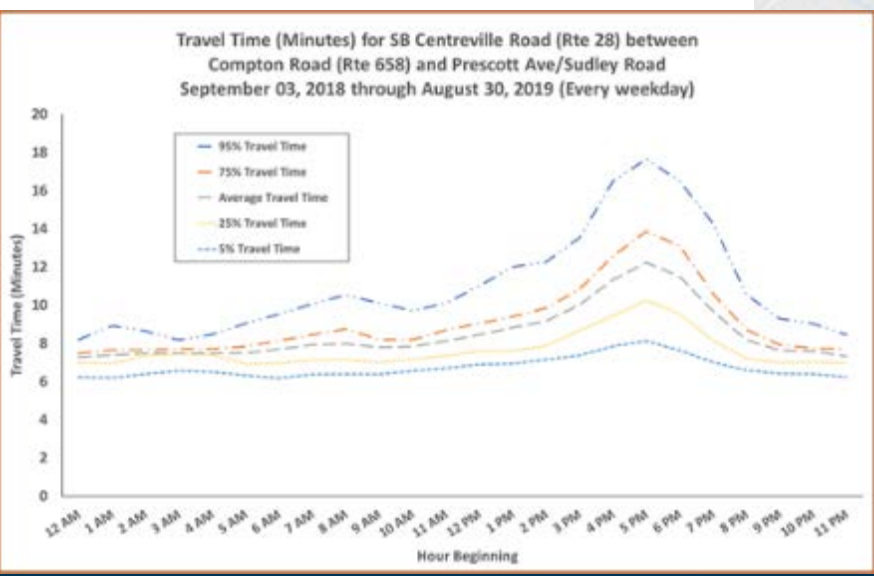
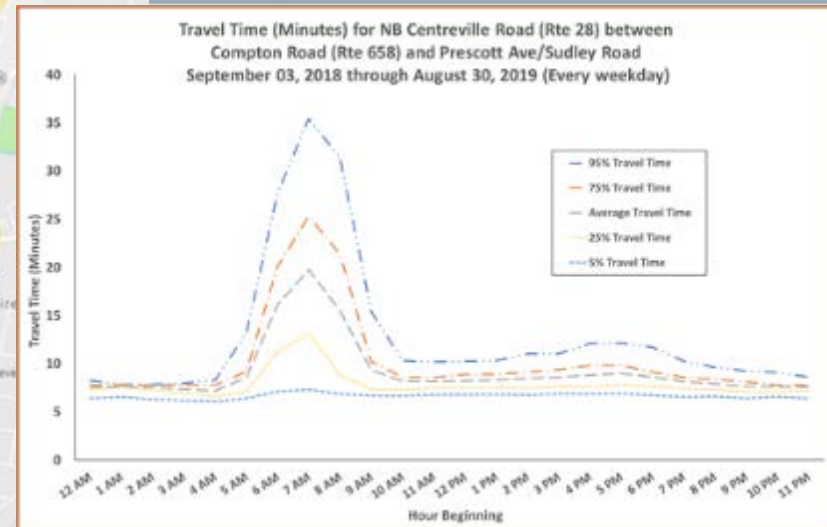


### Route 28 Bypass

Total Cost: **\$300M**

Existing funding \$95M in NVTA funds

Concerns with cost, environmental impacts, ROW impacts, constructability, neighborhood impacts, alignment



Even with a bypass, the **existing roadway needs improvements** for mobility and safety

# Performance-Based Planning

## Route 28 - Centreville Road

Orchard Bridge Drive

Able to reduce signal phases and give more time to through traffic

Yorkshire Lane

Fire Station off Patton Ln  
(further west)

EMERGENCY VEHICLE  
CROSS OVER

Leland Drive

Reduction in  
conflict points  
leads to improved  
safety



# Performance-Based Planning

## Route 28 - Centreville Road



Significant  
reduction in  
delay and  
increase in  
throughput

**50% reduction**  
in fatal and injury  
crashes

*Current estimate  
between **\$30-40M***

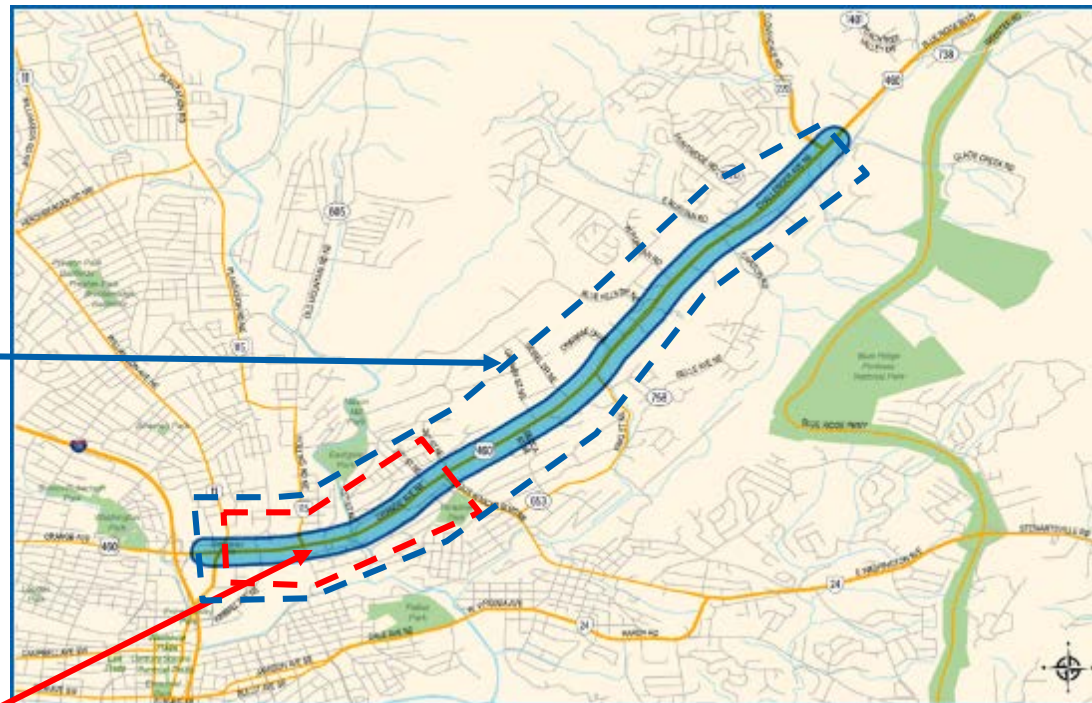


# Performance-Based Planning

## Route 460 - Orange Avenue

### Background

- 4.8 mile Arterial Preservation effort led by Salem District
- 36 intersections
  - 12 signals
  - 1 emergency
  - 16 unsignalized
  - 7 crossovers
- Round 3 project to widen to 6 lanes from Hollins to Gus Nicks
- Round 3 cost - **\$77M**



**Challenge:** Preserve existing capacity and get 6-lanes of performance on existing 4-lane facility



# Performance-Based Planning

## Route 460 - Orange Avenue



**50% reduction in delay** and improved safety due to signaling the weave from I-581

# Performance-Based Planning

## Route 460 - Orange Avenue



**44% reduction in delay**  
**78% reduction in conflict points**



# Performance-Based Planning

## Route 460 - Orange Avenue



**37% reduction in delay**  
**52% reduction in intersection conflict points**

# Performance-Based Planning

## Route 460 - Orange Avenue



**36% reduction in delays; 25% reduction in conflict points**

**53% reduction in conflict points**





# Performance-Based Planning

## Route 460 - Orange Avenue

### 2040 As Proposed

- **27% reduction** in AM peak *delay*
- **37% reduction** in PM peak *delay*
- **38% reduction** in *conflict points* which will reduce crashes



**Current SMART SCALE applications cover 25 study intersections estimates at \$40M**

# Performance-Based Planning

## Route 29 / Hydraulic Road



### Background

- A **\$200M** package was applied for in SMART SCALE Round 3 to address the Route 29 / Hydraulic Road intersection
  - Route 29 / Hydraulic Partial Grade Separation
  - Zan Road Overpass, Hillsdale Drive Extended, Relocated 250 WB Off Ramp and Overpass from Angus Road to Holiday Drive
- Projects did not score well in Round 3
- VDOT District Planning led an effort to cost solution
- **\$18M** in funds available to leverage to solutions





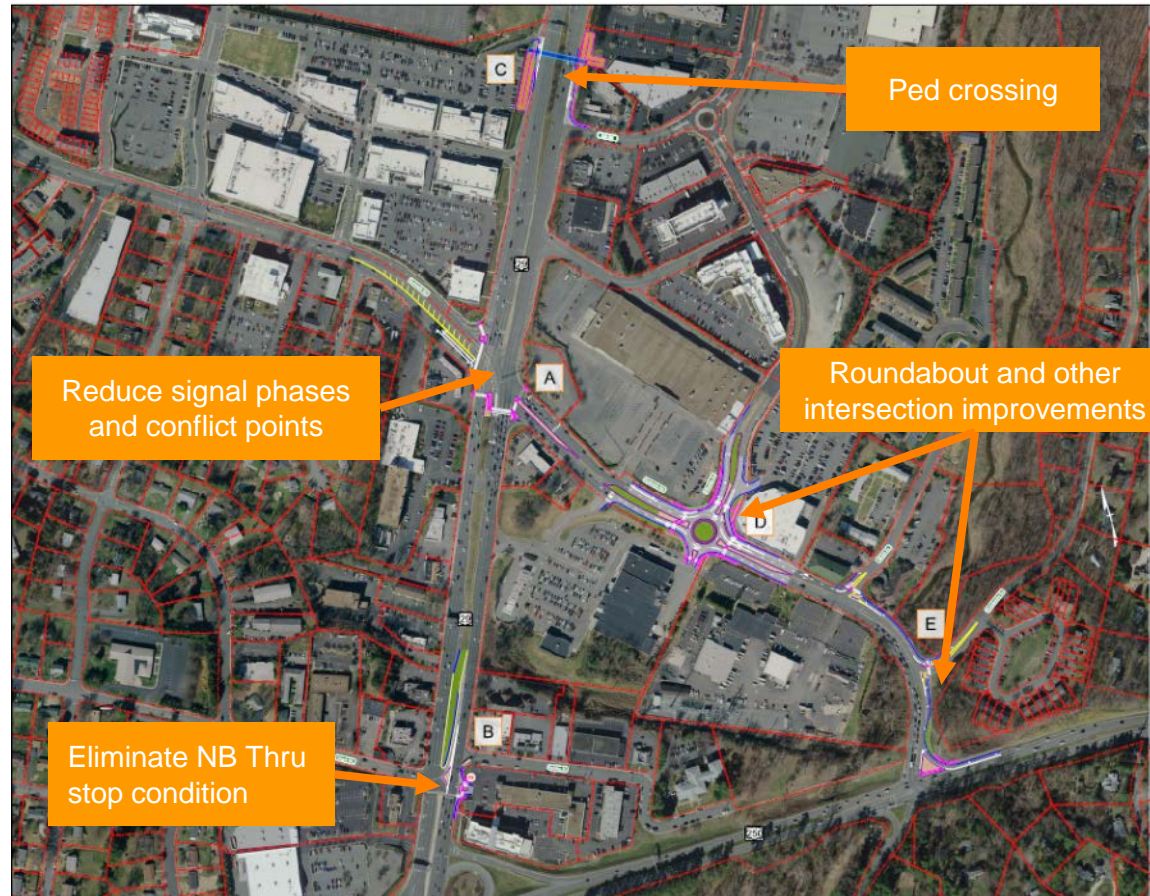
# Performance-Based Planning

## Route 29 / Hydraulic Road

### 2040 PM peak

- **15% delay and 40% conflict point reduction** at Route 29 / Hydraulic
- **45% delay and 75% conflict point reduction** at Route 29 / Angus Road
- **60% delay and 80% conflict point reduction** at Hydraulic Road / Hillsdale Road

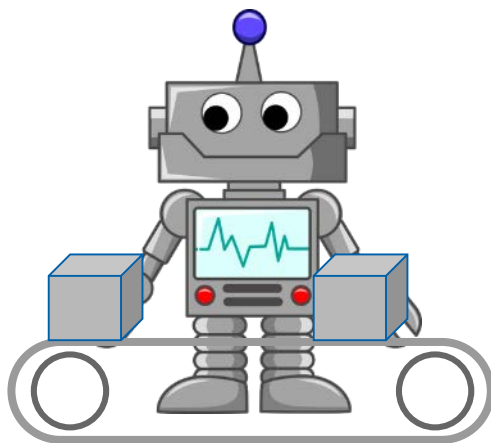
**Revised solution package  
estimated at \$25M**



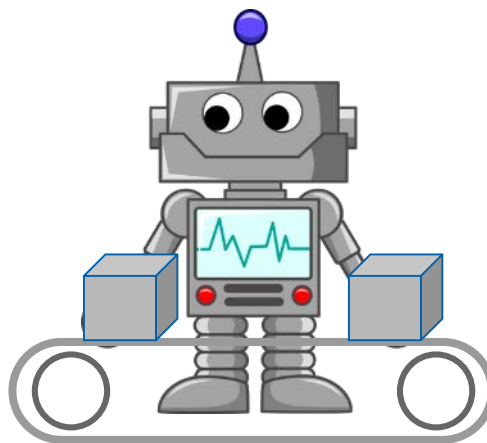
# Transportation as a System

## Assembly Line Illustration

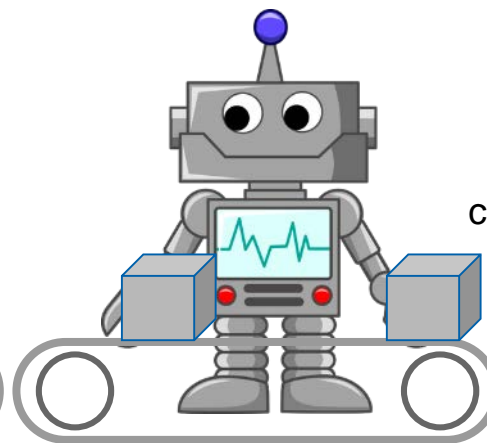
Each station can process  
100 widgets per hour



Station 1

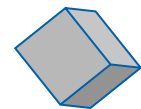


Station 2



Station 3

100 widgets  
completed per hour



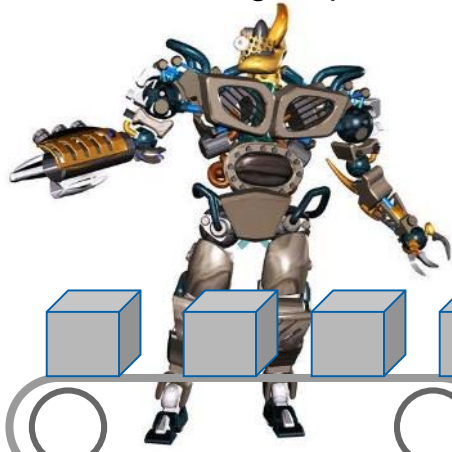


# Transportation as a System

## Assembly Line Illustration

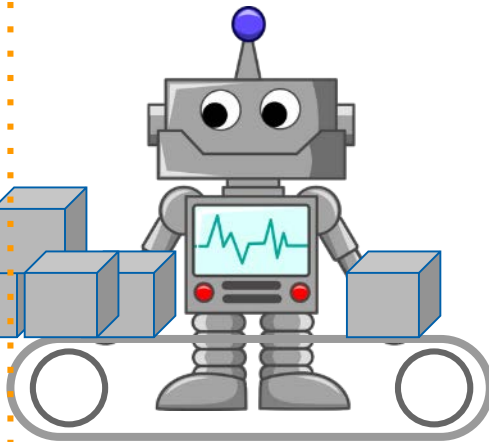
Alternative 1

Station 1 upgraded and can now process 200 widgets per hour

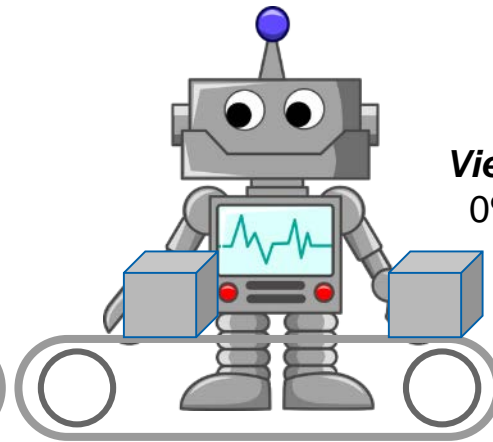


Station 1

**Viewed as a project:**  
100% improvement  
in Station 1 output

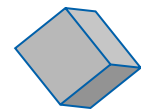


Station 2



Station 3

**Viewed as a System:**  
0% improvement in  
system output

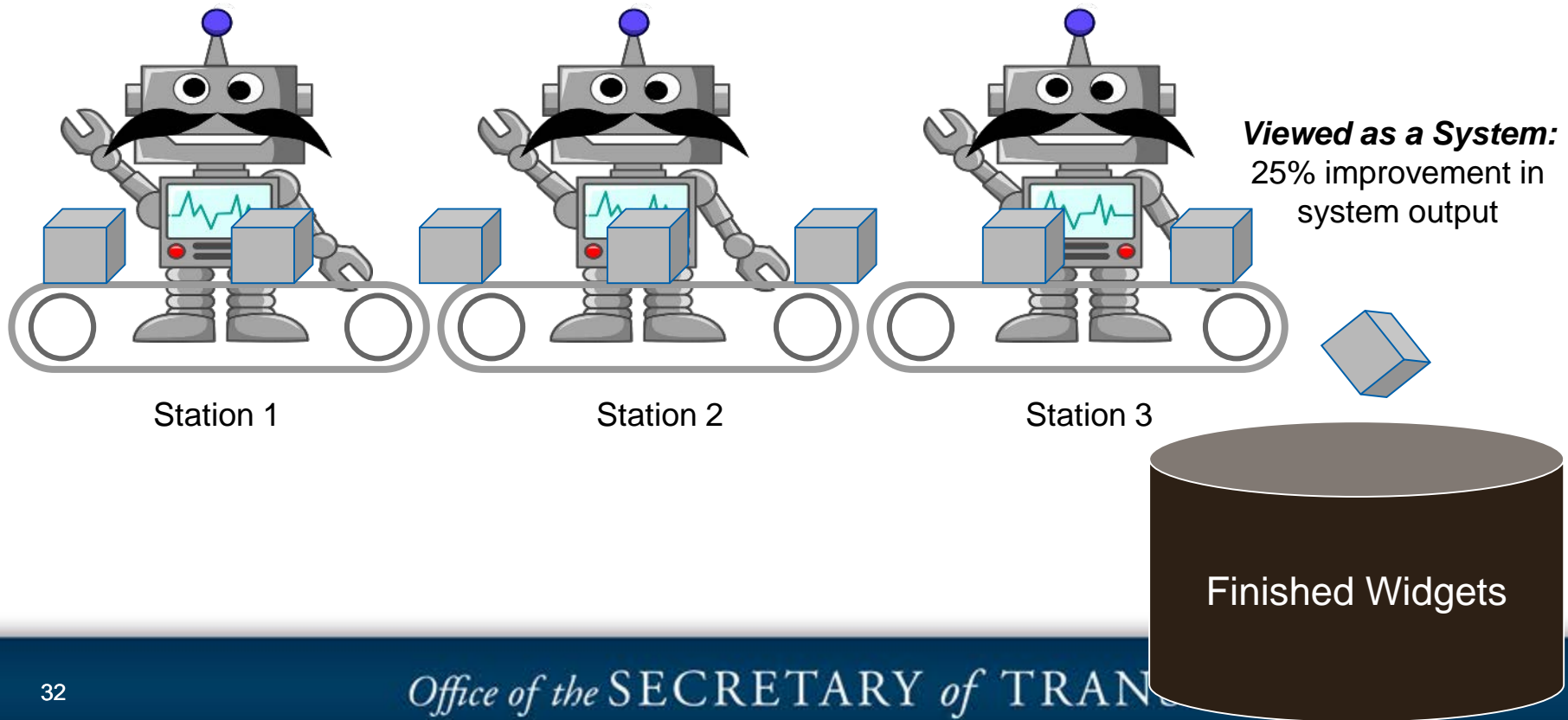


# Transportation as a System

## Assembly Line Illustration

All 3 stations upgraded to  
process 125 widgets per hour

Alternative 2





**SMART  
SCALE**

*Funding the Right  
Transportation Projects  
in Virginia*

# Questions

# **MASTER TOLLING AGREEMENT UPDATE**

## **HAMPTON ROADS EXPRESS LANE NETWORK**

**Stephen C. Brich, P.E. – VDOT Commissioner**

**June 17, 2020**



# Master Tolling Agreement Development

**Through the HRBT Project Administration and Funding Agreement (PAFA) VDOT committed to work collaboratively with HRTPO and HRTAC to:**

- Find best operational solutions
- Define appropriate tolling policies
- Investigate financial mechanisms available to CTB and HRTAC

**While PAFA required Master Tolling Agreement (MTA) with HRTAC by Oct. 31, 2019**

- Operations Study finalized in late fall 2019
- Discussion on entity to issue debt extended
  - HB1438 (2020 GA Session) provides authority to HRTAC to impose and collect tolls

# Master Tolling Agreement Update

- **CTB authorized the execution of HRBT PAFA between HRTAC and VDOT in March 2019**
  - Whereby requiring Master Tolling Agreement (MTA)
- **MTA execution prior to HRBT full notice to proceed (NTP) issued per HRTAC request**
  - Earliest full NTP mid-July 2020
- **VDOT and HRTAC have collaboratively developed draft MTA**
  - Majority of broad terms agreed to
  - Continue to collaborate on outstanding items
- **MTA requires execution from CTB, VDOT and HRTAC**

# Master Tolling Agreement Major Terms

## I-64 Hampton Roads Express Lane (HREL) Network

- **Defines the initial HREL**
  - I-64 and Jefferson Avenue to I-64/I-264/I-664 Bowers Hill
- **Sequencing and implementation**
  - Goal is to create a contiguous and continuous network
- **Sequencing based on project schedules and operations**
- **Allows for mutually agreed additions to initial HREL**

# Master Tolling Agreement Major Terms

## Procurement and Completion of HREL

- **VDOT responsible for design, right-of-way and construction**
- **HRTAC participates in procurement**
- **Continued collaboration on traffic and revenue studies**
- **Funding of HREL**
  - HRTAC funding plan
  - VDOT assistance with TIFIA and other financing
- **VDOT continue to own the HREL**



# Master Tolling Agreement Major Terms

## Tolling Operations and Maintenance

- **Operations and maintenance performed initially by VDOT then transitioned to HRTAC**
  - Earliest transition – High Rise Bridge segment toll day one
  - Latest transition – HRBT toll day one
  - HRTAC may enter into mutually agreeable contract with VDOT to provide tolling O&M
- **VDOT responsible for roadway operations and maintenance**
  - Includes snow, ice and debris

# Master Tolling Agreement Major Terms

## Tolling Policy and Procedure

- Designation of the initial HREL as HOT Lanes
- Agree to have HRTAC exercise its tolling authority for HREL
- HRTAC has right and responsibility to set initial tolling policy
  - Hours of operation
  - Toll points
  - Comply with federal + state laws/regulations
  - Allow for safe operations between HOT and adjacent GP lanes
  - Prohibit use of toll booths (Electronic tolling only)
- Toll policy modifications to require review by Toll Policy Committee
  - 6 members (3 HRTAC and 3 Secretary of Transportation appointed)
- Toll rate to be set dynamically based on congestion
- Toll enforcement will be the responsibility of the operator
- Criteria established for Commissioner to suspend tolling
- Express agreement to provide free means of travel along corridor

# Master Tolling Agreement Major Terms

- **Toll Revenues and Toll Backed Debt**
  - Establishes priority use of debt proceeds and toll revenues
  - HRTAC to regularly submit financial models
  - Parties agree to cooperate to maximize the proceeds from TIFIA
    - Minimum of \$345M debt proceeds applied to HRBT, as stipulated in PAFA
- **Naming rights**
  - Hampton Roads Express Lanes
- **Compensation event**
- **Dispute resolution process**

# Master Tolling Agreement Major Terms

- **Outstanding Issues to be Resolved**
  - Toll Policy Committee dispute resolution
  - Compensation Event





# HAMPTON ROADS EXPRESS LANE NETWORK UPDATE

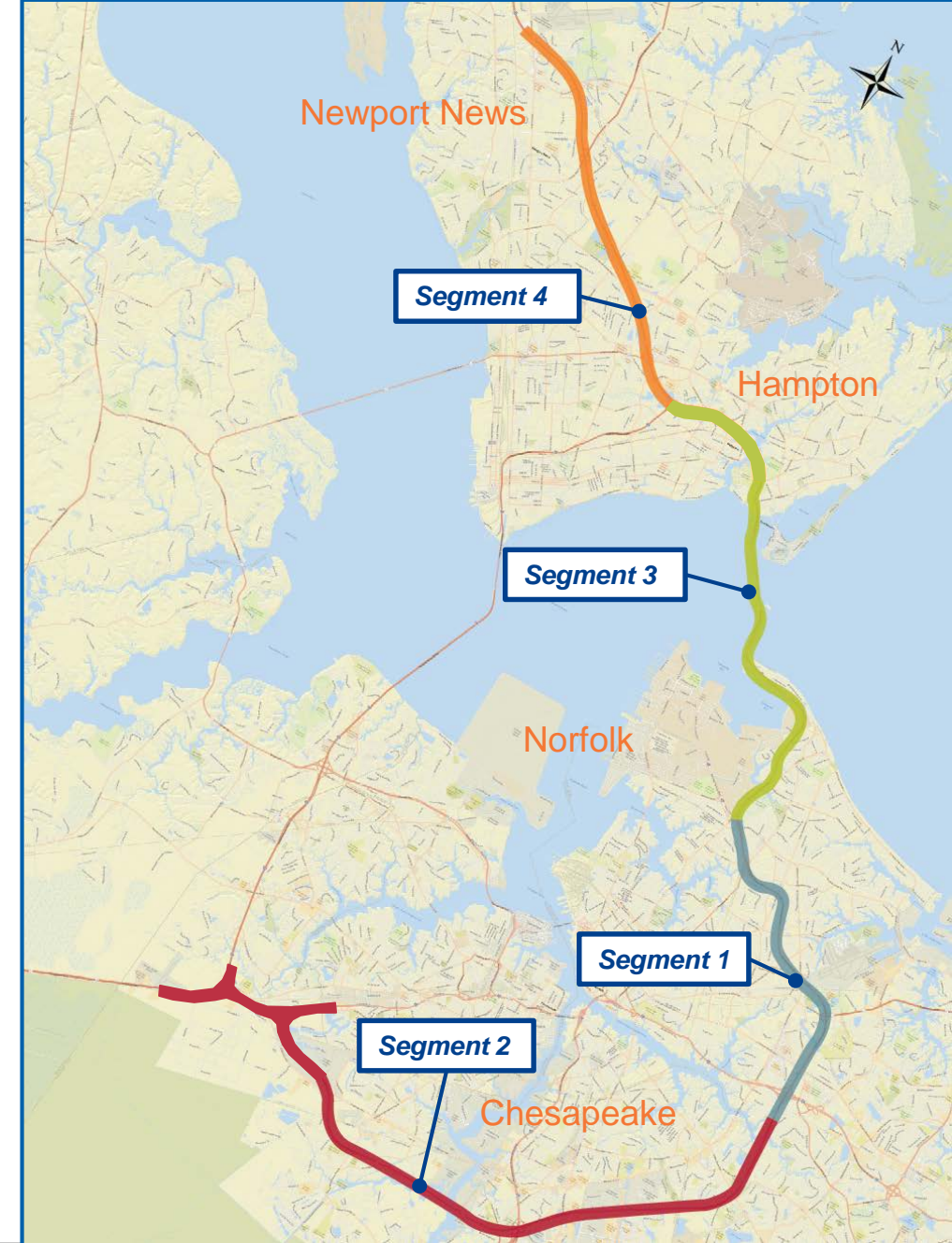
Stephen C. Brich, P.E. – VDOT Commissioner

June 17, 2020

# Hampton Roads Express Lane Network

## Background

- Operational Analysis initiated in December 2018
- Presented Results of Analysis and Proposed Scenarios of the HREL Network
  - HRTPO/HRTAC Joint Session September 2019
  - CTB October 2019



# Hampton Road Express Lane Network

## Regional Approvals and Authorizations

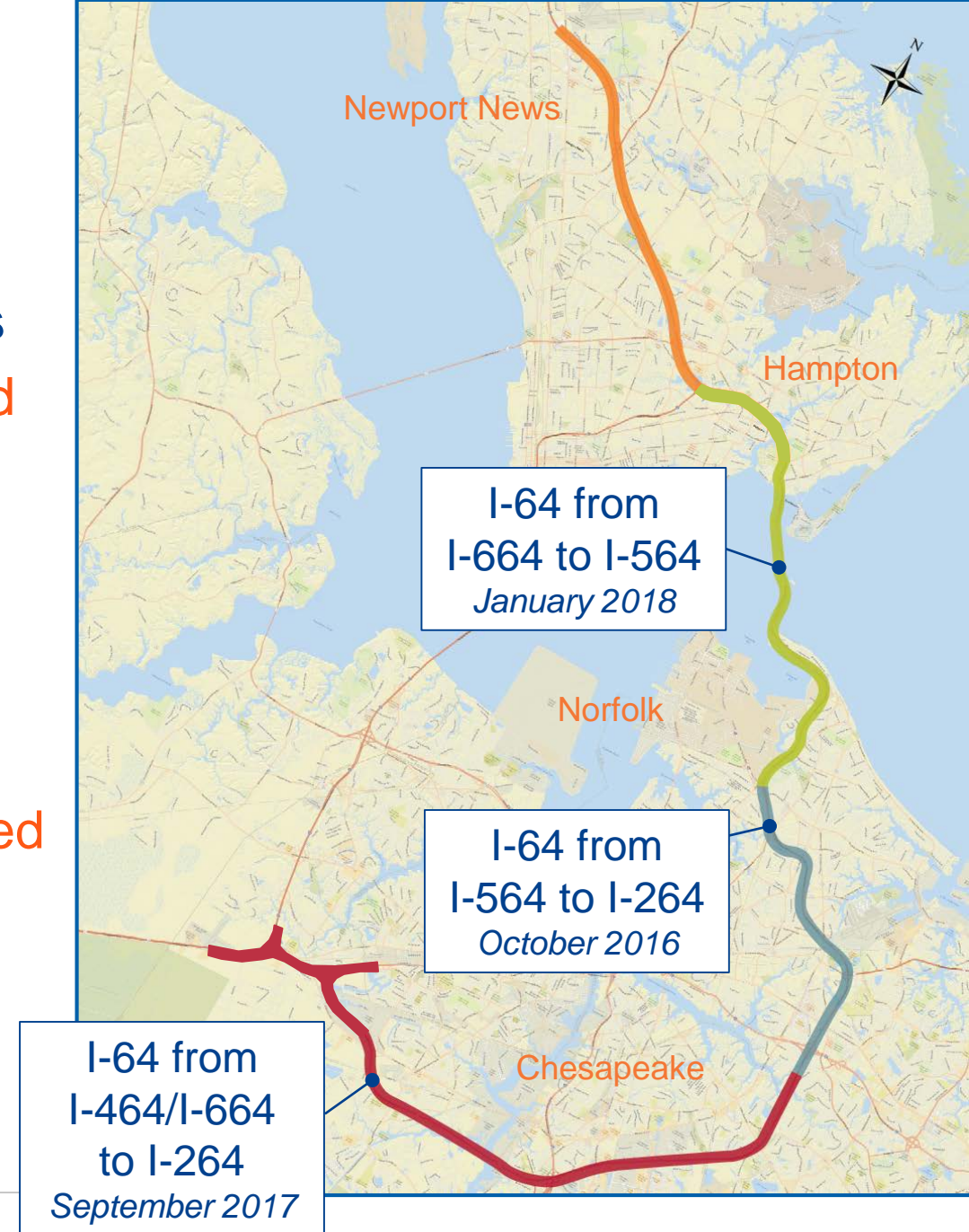
- HRTPO Approved and Adopted on May 21, 2020
  - *“...hereby identifies and adopts the Regional Express Lanes Network...to collectively provide the greatest impact on reducing congestion for the greatest number of citizens residing in Hampton Roads and requests the HRTAC pursue development of a funding, development and implementation plan for the Express Lanes Network to be advanced by HRTAC based on project readiness.”*
- HRTAC Special Meeting on May 28, 2020 voted to fund the HREL Network in the FY21-FY26 Plan of Finance – Six Year Operating and Capital Program.



# Hampton Roads Express Lane Network

## Previous CTB Designation of HOT Lane Segments

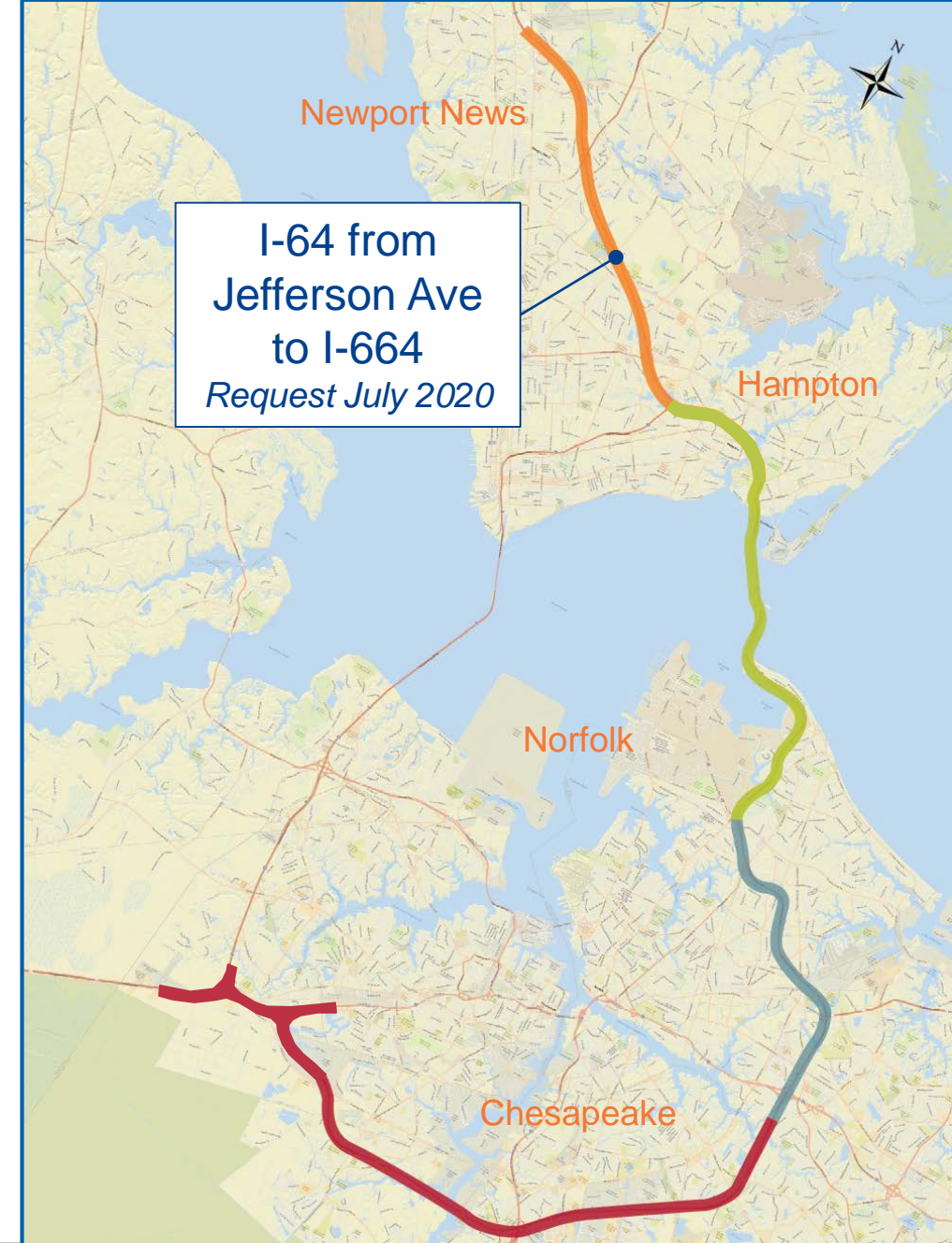
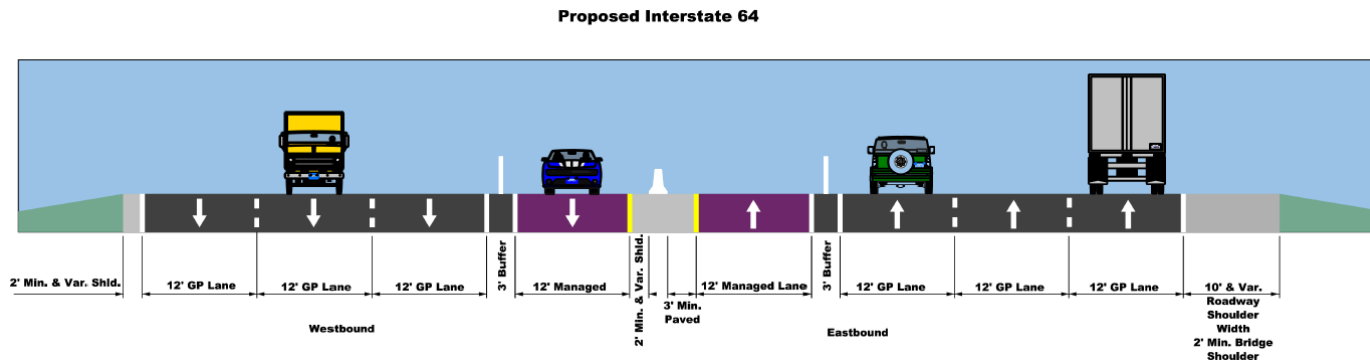
- October 19, 2016 – CTB Resolution #2 designated HOT Lanes on Interstate 64 from Interstate 564 to Interstate 264
- September 20, 2017 – CTB Resolution #8 designated HOT Lanes on Interstate 64 from I-664/I-264 Interchange to Interstate 264
- January 10, 2018 – CTB Resolution #12 designated HOT Lanes on Interstate 64 from Interstate 664 to Interstate 564.



# Hampton Roads Express Lane Network

Designation of HOT Lanes on I-64 from Jefferson Ave to I-664 will complete the HREL Network as proposed.

- Existing HOV Lane will be converted to HOT



# Hampton Roads Express Lane Network

## Next Steps:

- Finalize the Master Tolling Agreement
- Collaborate on Tolling Policy with Region
- Complete Traffic and Revenue Study
- Continue to Advance HREL to Construction