Innovation and Technology Transportation Fund (ITTF)

Report to the General Assembly

2025

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WHAT IS THE ITTF?

Section 33.2-1531 of the Code of Virginia created the Innovation and Technology Transportation Fund (ITTF). ITTF monies are to be used solely for the purposes of funding pilot programs and fully developed initiatives pertaining to high-tech infrastructure improvements.

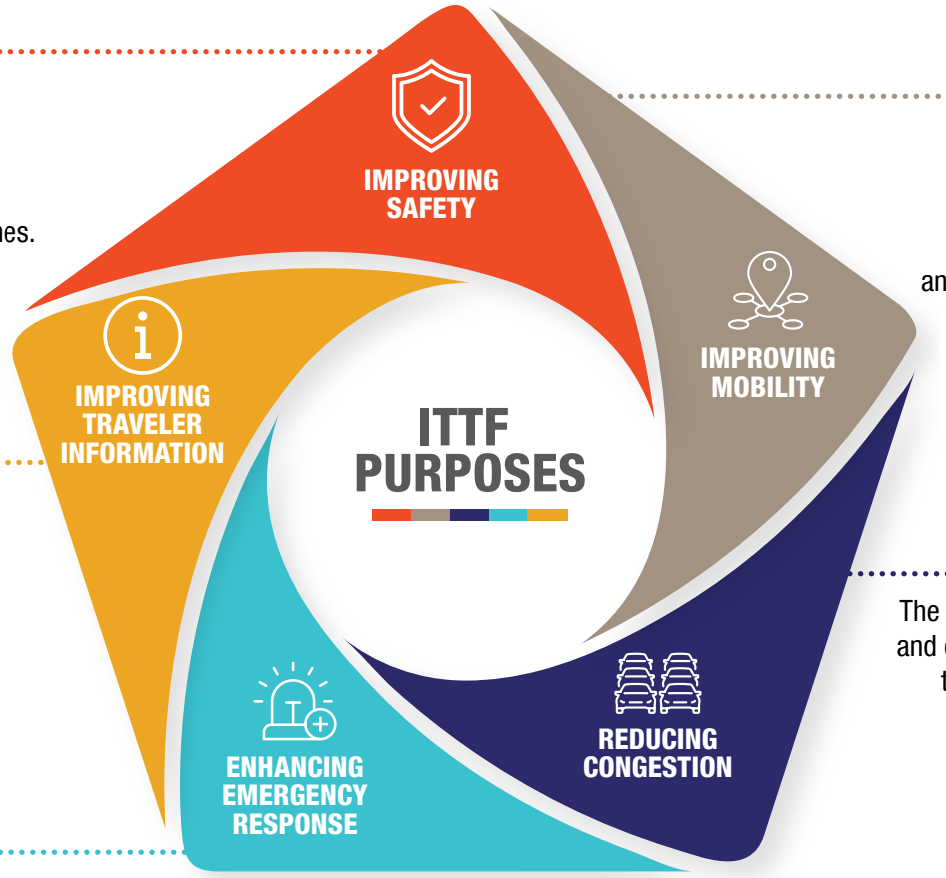
“High-tech infrastructure improvements” relate to projects or programs that reduce congestion, improve mobility, improve safety, provide up-to-date travel data, or improve emergency response.

Section 33.2-1531 further directs the Commissioner of Highways to report annually on the use of monies in the Innovation and Technology Transportation Fund.

ITTF Focuses

The ITTF provides funding specifically for the purposes of funding pilot programs and fully developed initiatives pertaining to high-tech infrastructure improvements:

The ITTF program enhances road safety through innovative technologies and strategies, aligning with the agency's commitment to reducing crashes.



The ITTF program advances mobility through investments in smart infrastructure and transportation innovation, creating a more connected and accessible transportation network for the Commonwealth.

The ITTF program empowers travelers with real-time updates on road conditions, closures, and road impacting events, facilitating more informed and efficient travel.

The ITTF program leverages technology and data-driven approaches to optimize traffic flow, reduce bottlenecks, and improve overall congestion for the traveling public.

The ITTF program integrates technology to expedite first responders' access to incident information, to enable swift and effective responses to critical situations.

ITTF PROGRAM STATUS

ACTIVE PROJECTS

as of August 31, 2025

60
Active Projects

$156.2M
Active Projects Value

COMPLETED PROJECTS

September 2024 – August 2025

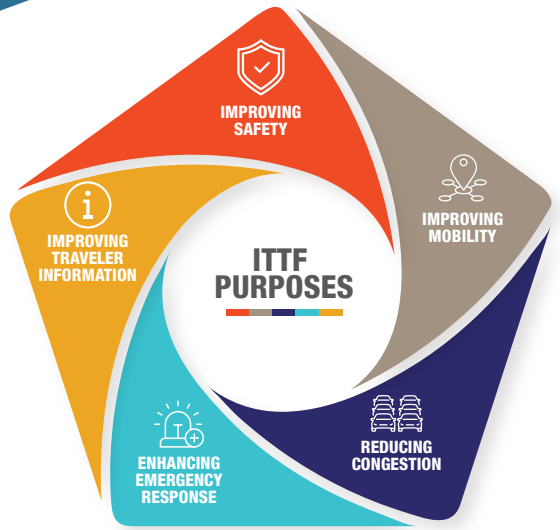
10
Completed Projects

NEW PROJECTS

4
Projects

$21.7M
Projects Value

ITTF FOCUS AREAS



PROJECT STATUS SUMMARY

The duration of each project varies based on its complexity. A simple ITTF project may be completed within a year. Complex projects may take multiple years to complete.

12
Scoping/Study

22
Design

26
Installation

PROJECT EVALUATIONS

This section features on-going, multi-year evaluations of completed projects.

Arlington County Dynamic Parking Pricing

ITTF PURPOSES

2025 UPDATE

- The Arlington County Performance Parking Pricing Pilot is in its second year.
- Public awareness of pricing changes increased with each quarterly pricing change.
- VDOT and Arlington County continue to evaluate the project's impact.

PROJECT DESCRIPTION

- The Arlington County-managed project implemented a data-driven, variable-pricing system and a traveler information system for parking on metered blocks in Arlington County's two Metrorail corridors (Rosslyn-Ballston and Pentagon City/Crystal City) and in up to three County-owned, off-street parking areas within those corridors that are regulated using parking meters.
- The system includes technology to detect parking space occupancy, integrate with the existing payment methods, and apply dynamic pricing for 4,563 metered on-street spaces and three off-street, paid-parking facilities in the two major Metrorail corridors in Arlington.
- The project's purpose is to make priority parking spaces more available by increasing their turnover rate through pricing and information, and to reduce the negative impacts associated with the search for metered parking, such as double parking, cruising for parking, erratic and dangerous driving behavior, extra VMT, and emissions from search time.

Overview

Location	Arlington County
VDOT District	Northern Virginia
Route	Clarendon Blvd., Wilson Blvd., Fairfax Dr.
City/County	Arlington County
Project Cost	$5,099,284
2025 Milestones	Dynamic Parking Pricing has been active since November 2023. Evaluation report will be completed in early 2026.

Project Characteristics (2024 data)

Vehicle Hours of Delay	227,400
Vehicle Hours Cost of Delay	$9.5M

Results

Focus	Metrics	2024/2025 Evaluation Results
Congestion	Vehicle Hours of Delay(VHD)	Nominal reduction in VHD.
Congestion	Increased Road Capacity	Saturday data shows higher price sensitivity and shifting parking preferences. 2025 data suggests possible trend in behavior changes in high-demand areas (needs further study).
Information	Increased Parking Information	Apps for parking information and availability are steadily increasing. Public perception of parking experience remains stable.

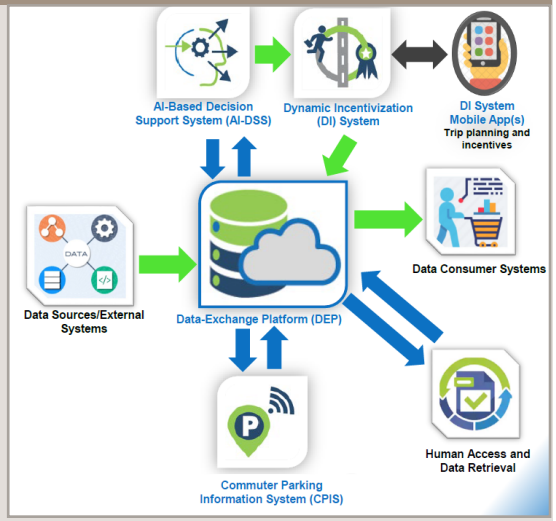
Regional Multi-Modal Mobility Program (RM3P) Data-Exchange Platform (DEP)

ITTF PURPOSES

2025 UPDATE

- The RM3P Data-Exchange Platform has been operational for 3 years.
- VDOT continues to monitor the success of the Data-Exchange Platform and number of data requests.

PROJECT DESCRIPTION



- The Data-Exchange Platform is a key component of Regional Multi-Modal Mobility Program (RM3P), a program to improve mobility in Northern Virginia and Metropolitan Fredericksburg. The Data-Exchange Platform will support the AI-Decision Support, Dynamic Incentivization, and Commuter Parking Information System which form the RM3P effort.
- RM3P will ultimately improve mobility by using a new AI-based decision support system to manage major incidents, and by providing greater information for motorists about travel and parking resources and incentives for travelers to consider alternate modes, routes, and departure times.
- The Data-Exchange Platform is a continuously updated, cloud-based data storage and exchange system that will support the RM3P program, travel routes, modes, and schedules during congestion events. These tools are dependent on the availability of real-time data.
- The Data-Exchange Platform includes highway, bicycle, parking, signal, tolling and transit related data from both public and private sector entities. Data includes, but is not limited to volumes, speeds, state of play, toll rates, etc.

Overview

Location	Greater Northern Virginia, Fredericksburg
VDOT District	Northern Virginia, Fredericksburg
Route	Multiple Routes
City/County	Northern Virginia and Metropolitan Fredericksburg area
Project Cost	$2,775,000
2025 Milestones	Added 21 data sources. Observed greater use of data from the tool.

Projected Benefits

The DEP is the foundation of the RM3P program. It provides data for the three other RM3P elements to function. The three other elements are the AI-Based Decision Support System, Dynamic Incentivization, and Commuter Parking Information Services. Additional benefits will accrue to these other RM3P initiatives.

- Establishes a regional repository for the storing, sharing, and exchange of multi-modal operations data.
- Brings financial efficiency to RM3P activities.
- Streamlines easy data access with effective filtering tools.
- Supports the capabilities of the broader RM3P program to:
  - Promote coordinated responses to travel disruptions.
  - Potentially improve safety by removing hazards more rapidly.
  - Promote multi-modal collaborative planning.
  - Implement an incentives program enabling travelers to make informed travel choices.
  - Encourage informed redirection of travel to alternative routes and modes during major incidents and intense congestion.

Results

Focus	Metrics	Year 2023	Year 2024	Jan - Sep 2025
Information	Data Requests	74,296	3,197,704	7,917,260

I-95 Variable Speed Limit (VSL) System

ITTF PURPOSES

2025 UPDATE

- VDOT's Research Council continues to monitor the success of the I-95 VSL system, which continues to yield positive results.
- Another detector was placed at the north end of the study area to provide additional downstream data and improve proactive management of traffic in the corridor.
- The I-95 NB Rappahannock Bridge construction project was completed in May 2024. This project may have influenced the amount of congestion and hence the potential for crashes.

Project Purpose

VDOT has installed variable speed limits on the I-95 northbound corridor between mile markers 115 and 130 in Caroline and Spotsylvania Counties. This is to address crashes caused by unexpected speed differentials when encountering congestion or lane-impacting events. LED signs displaying variable speed limits along with dynamic message boards provide real-time information to drivers. The speed limits are reduced only when necessary based on traffic speed and volume data collected by vehicle detectors. Enforcement authorities have access to real-time changes in the posted speed limits.

Project Description

- Install detectors, signs and cameras for the VSL (funded via I-95 Corridor program)
- Develop the algorithm to assess traffic detector data to change the highway speed limits (ITTF funded)

Overview

Location	I-95 in Spotsylvania County/City of Fredericksburg
VDOT District	Fredericksburg
Route	I-95
City/County	Fredericksburg, Spotsylvania, Caroline
Project Cost	$2,404,000 (ITTF Funding for the I-95 VSL Algorithm)
2025 Milestones	Year 3 evaluation conducted. Project complete.

Roadway Characteristics

Crashes	2024-2025	2023–2024	2022–2023	2021 Pre-Implementation
Total Crashes	205	247	286	291
Fatal + Injury Crashes	56	51	58	67
Daily Traffic Volume	52-63K	50-63K	49-57K	47-57K

Results

Safety 2024 – 2025

Total Crashes	86 fewer crashes from year prior to activation (-29.6%)
Fatal + Injury Crashes	11 fewer crashes from year prior to activation (-16.4%)

Mobility (based on data from 6 AM-8 PM)

In 2024-2025, average travel times over the entire week have declined 13.8% versus the year prior to VSL activation. Sunday average travel time has declined 19.6%.

In 2024-2025, reliability has improved by an average of 37.6% over the entire week relative to the year before activation.

Fiber Network Stability Enhancement

ITTF PURPOSES

2025 UPDATE

- North/South Fiber Route completed.

PROJECT DESCRIPTION

- VDOT has a Fiber Network that utilizes a combination of VDOT-owned fiber as well as fibers obtained through Resource Sharing Agreements (RSA). This network connects VDOT's Traffic Operations Centers (TOC) to multiple traffic control and monitoring devices, and to two data centers that host critical Traffic Operations systems.
- Prior to this project, VDOT's five TOC's had a core communication ring (see diagram to the right). If the fiber was cut in two points, VDOT could lose access to multiple devices and communications to other TOC's and data centers.
- The purpose of this project is to enhance fiber network stability by creating an additional fiber ring. This additional fiber ring enhances the resiliency of the network with a redundant path.

Overview

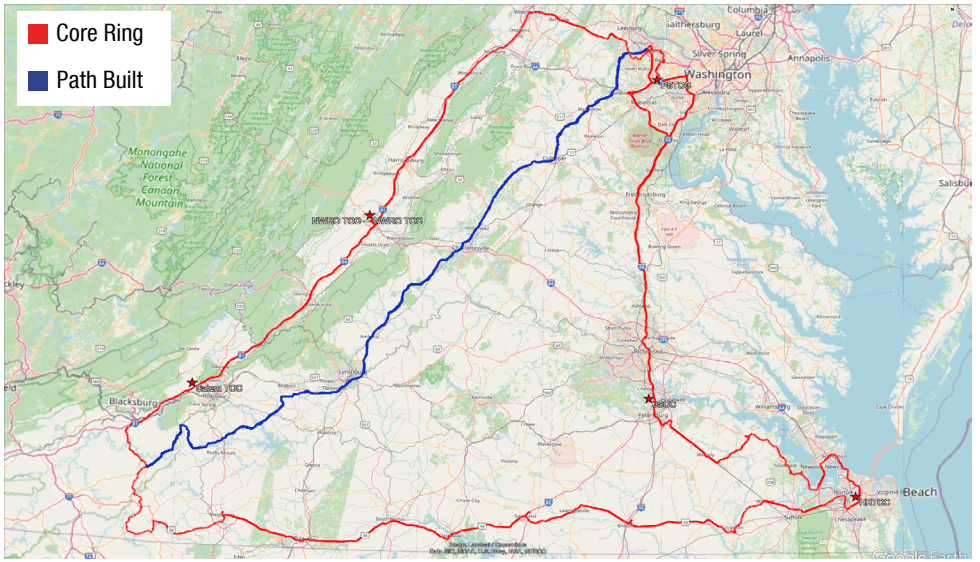
Location	Statewide
VDOT District	Multiple
City/County	Multiple
Project Cost	$2,987,000
2025 Milestones	North/South route completed. Evaluation began.

Project Characteristics (2024 data)

Miles of fiber on new North/South corridor (blue line)	271
Number of better protected ITS devices on fiber	2,624
Number of better protected traffic signals	3,062
Miles of lighted fiber (Core Ring + North/South corridor)	1,256 miles

Results

Focus	Metrics	2024-2025	2023-2024
Travel Data	Service-impacting fiber cuts resulting in loss of access to statewide Traffic Operations systems	0	1
Other	Reduction in rescheduling of construction activities	6	10



RECENTLY COMPLETED PROJECTS

This section discusses projects that were completed between September 1, 2024, and August 30, 2025. The evaluation of these projects are underway and will be discussed in future reports.

ITTF PURPOSES

Description

- This project developed the setup for the Transportation Operations Service Center (TOSC) to monitor the transportation communications network for both network connection issues and cyber security events. This project connected all ITS and traffic signal devices with advanced applications to manage the status of these devices.
- To promote the resiliency of the devices, VDOT first developed a state-owned fiber optic network, with a shared resource fiber optic network, to provide communications versus using leased communications. VDOT is developing redundant communication paths or rings to its critical devices. VDOT also promoted its resilience by securing an on-call maintenance contract.
- To further promote the resilience of transportation technology devices and signals, VDOT developed a TOSC. The TOSC manages both a Network Operations Center and a Security Operations Center using advanced messaging tools including VDOT's Operations Technology Service and Asset Management System (OTSaAM).
- This project provided the necessary tools to advance the TOSC, which is unique at a state Department of Transportation. The fundamental goal of the TOSC is to reduce device down time by monitoring and diagnosing issues proactively in the TOSC environment to then dispatch the best resources or to redirect communications to the device.

Benefits

Focus	Metrics	Anticipated Results
Travel Data	Increase the number of detected network issues and cyber security issues for transportation technology devices	Greater situation awareness by detecting more events proactively

Overview

Location	Statewide
VDOT District	Statewide
City/County	Multiple
Project Cost	$346,433
2025 Milestones	Project completed. Evaluation began.

Transportation Technology Devices (2024 data)

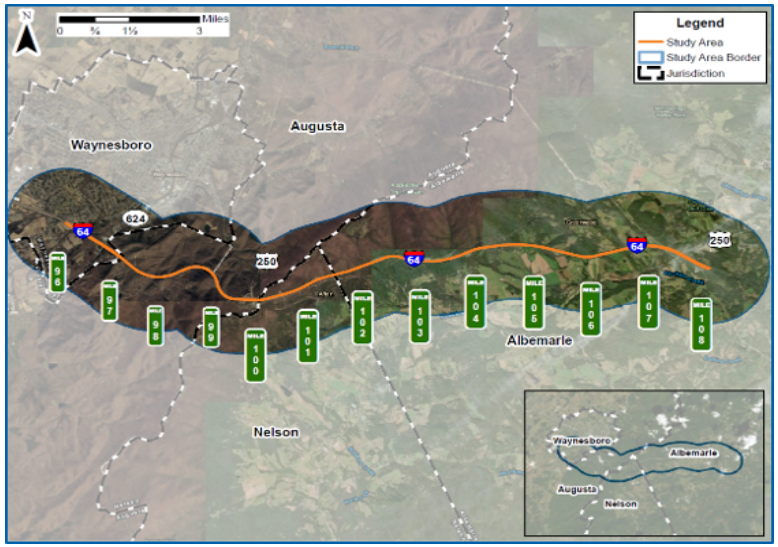
Miles of lighted fiber	1,256
Number of ITS devices on fiber	2,624
Number of traffic signals on fiber	3,062
Number of detected events	596

I-64 Afton Mountain Queue Warning System

ITTF PURPOSES

Description

- The Afton Mountain crossing on I-64 presents many challenges including fog events and commercial vehicles traveling at low speeds. Both events can contribute to traffic congestion. Traffic congestion can cause secondary events such as rear-end collisions.
- This project developed a new Congestion Warning System (CWS) that will analyze data from existing and new detector stations, notify Transportation Operations Center staff, and disseminate messaging to sign infrastructure.
- The project integrated the CWS with the Advanced Traffic Management System (ATMS) to automate detection messaging. By-lane traffic sensors are used to detect and notify travelers of upcoming congestion.
- This project is part of a larger effort to improve the safety on I-64 as it crosses Afton Mountain. A concurrent project to improve the lighting system is underway. Both projects will be evaluated concurrently.



Overview

Location	Afton Mountain
VDOT District	Culpeper, Staunton
Route	I-64
City/County	Albemarle, Nelson, Augusta
Project Cost	$3,900,000
2025 Milestones	Project completed.

Roadway Characteristics (2024 data)

Total # Incidents	650
Total # Secondary Incidents	16
Daily Traffic Volume	19,469
Vehicle Hours of Delay	42,908
Vehicle Hours Cost of Delay	$1.8M

Benefits

Focus	Metrics	Anticipated Results
Safety	Collisions	Reduction of primary and secondary events
Congestion	Vehicle Hours of Delay (VHD)	Reduction in VHD
Information	Number of congestion notifications	Greater frequency of notification

Monitor Merrimac Memorial Bridge Tunnel Traffic Improvements

ITTF PURPOSES

Description

- Upgrade dynamic message signs (DMS) and communications to integrate the signs with VDOT's cloud-based Advanced Traffic Management System (ATMS). VDOT recently updated this system to provide redundant operations to promote resiliency of vital transportation infrastructure.
- A total of 5 advanced DMS units were installed at the I-664 Monitor Merrimac Memorial Bridge Tunnel (MMMBT). Advanced messaging can now be provided in a more timely manner via the ATMS to support incident and emergency operation events, resulting in fewer traffic incidents and traffic backups during lane closure events.

Overview

Location	Monitor Merrimac Bridge Tunnel
VDOT District	Hampton Roads
Route	I-664
City/County	Suffolk
Project Cost	$6,413,000
2025 Milestones	Project completed.

Roadway Characteristics (2024 data)

Vehicle Hours of Delay	564K
Vehicle Hours Cost of Delay	$23M
Total # Incidents/Year	1,886
Daily Traffic Volume	69,367
Travel Time Index	1.16

Benefits

Focus	Metrics	Anticipated Results
Safety	Collisions	Fewer secondary crashes
Mobility	Travel Time Index	Fewer VHD for construction and maintenance events with lane closures
Travel Data	# Response Plans # Notifications	Increase use of DMS to provide real time travel data to motorists

ITTF PURPOSES

Description

- ATSPM will offer VDOT the ability to manage its traffic signal program proactively by updating signal retimings based on performance and data.
- The ATSPM effort consists of projects including (1) high speed communications, (2) advanced traffic controllers (ATC), (3) configuration of a Central Traffic Signal System (CTSS), (4) deployment of the traffic signal software system, CTSS, and (5) configuration and activation of the ATSPM.
- VDOT established multiple projects to advance the ATSPM. The following table defines the foundational projects completed in 2025.
- The ATSPM's full deployment is funded by multiple funding sources.

Overview

Location	Statewide
Foundation Projects Cost	$8,131,000
2025 Milestones	Three ATSPM foundation projects completed.
Delivery Date	ATSPM targeted completion is December 2026.

ATSPM Foundation Elements Advancement

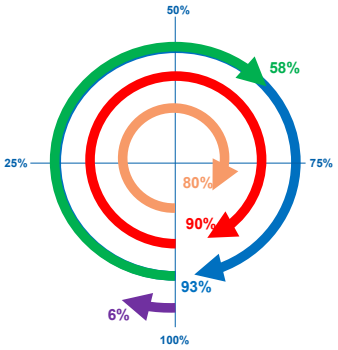
Focus	Metrics	Anticipated Results
Safety	Collisions	Reduced number and reduced severity
Mobility	Travel Time Reliability	Improved reliability with vehicle detection
Congestion	Vehicle Hours of Delay (VHD)	Less delay waiting for traffic lights
Emergency Response	Incident Duration	First responders able to reach incidents faster with emergency vehicle preemption
Information	Information for Connected Vehicles	Increased real-time intersection operation data without additional cost

ATSPM Progress – for the foundational projects

January 2022

3,137 Traffic Signals Statewide

- High Speed Communications (2506 – 80%)
- ATC / D4 Migration (2808 – 90%)
- CTSS Deployment (Configured – 2915 – 93%)
- CTSS Deployment (Live – 1829 – 58%)
- ATSPM (Active – 196 – 6%)

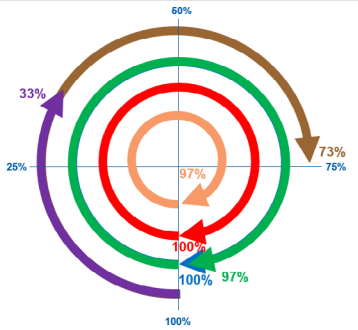


With ITTF and Other Funding

September 2025

3,184 Traffic Signals Statewide

- High Speed Communications (3064 – 97%)
- ATC / D4 Migration (3184 – 100%)
- CTSS Configured (3184 – 100%)
- CTSS Live (3064 – 97%)
- ATSPM Configured (2314 – 73%)
- ATSPM Active (1043 – 33%)



ITTF PURPOSES

Description

- Study focused on the feasibility of using animal detection and driver warning systems with an emphasis on preventing elk strikes along Route 460 in Buchanan County. The population of elk is increasing in this area of Virginia.
- Findings of the study indicate that a pilot test would be feasible on Route 460. Several potential technologies were identified, including radar, short and long-range thermal cameras, and buried cable systems.
- A reduction in animal-vehicle collisions may occur when similar animal detection technologies are introduced.

Photo Credit: Nicholas Huff

Overview

Location	Southwest Virginia
VDOT District	Bristol
Route	U.S. 460 (Kentucky state line to Grundy)
City/County	Buchanan County
Project Cost	Study - $170K; Pilot Project - $640K
2025 Milestones	Pilot installation is complete. Dynamic message signs are currently going through testing and evaluation.

Roadway Characteristics (2024 data)

Daily Traffic Volume	3,458
Historical # Animal Strikes/Year	6

Benefits

Focus	Metrics	Anticipated Results
Safety	Animal Collisions	Fewer events
	Secondary Incidents	Fewer events
Travel Data	# Notifications	Improved situational awareness

Regional Multi-Modal Mobility Program (RM3P) Northern Virginia Dynamic Incentivization

ITTF PURPOSES

Description

- This project is part of the larger RM3P initiative, which includes an AI-based Decision Support System, a Commuter Parking Information System, and a Data-Exchange Platform.
- Dynamic Incentivization is a data-driven system that incentivizes drivers to modify their travel mode choices and behaviors based on real-time travel events and conditions impacting mobility in the Northern Virginia area.
- The incentives will be offered dynamically, when the transportation system is congested, to encourage travelers to modify their travel modes and time of travel, thereby reducing the impact of adverse events and benefiting overall transportation network performance for all users.
- The incentives will be offered through an app called GoMyWayVA™.
- The effort extends the incentivization concepts, used in Northern Virginia during major construction projects and as rewards for non-drive alone trips, to responding day-to-day to significant recurring and non-recurring congestion events.
- The Dynamic Incentivization project is jointly managed by the Virginia Department of Transportation and the Department of Rail & Public Transportation.

Overview

Location	Greater Northern Virginia
VDOT District	Northern Virginia
Route	Multiple Routes
City/County	District Wide
Project Cost	$3,500,000
2025 Milestones	Program launched in 2025.
Delivery Date	Initial launch complete, 1 year evaluation due October 2026

Roadway Characteristics – All of Northern Virginia District (2024 data)

Vehicle Hours of Delay	11.9M
Vehicle Hours Cost of Delay	$321M
Total # Lane Impacting Incidents	14,386
Median Incident Duration	32 minutes
Daily Traffic Volume	Varies by road

Benefits

Focus	Metrics	Anticipated Results
Mobility	Travel Time Index	Improved travel times with travel behavior changes, reducing volumes A 3% - 10% improvement in reliability with all RM3P projects
	HOT/HOV Lane Use Transit Use	Increase in usage
Congestion	Vehicle Hours of Delay (VHD)	Reduction in VHD when all RM3P programs are implemented.
	Volume	Changes in volumes during peak periods or events
Travel Data	# Incentives Used # Users	Increased awareness

GoMyWayVA™

Project Partnering Agencies

VDOT Virginia Department of Transportation

DRPT Virginia Department of Rail and Public Transportation

Northern Virginia Transportation Authority

Regional TDM Partners

Reward Contributors

FY26 INTRODUCED ITTF PROJECTS

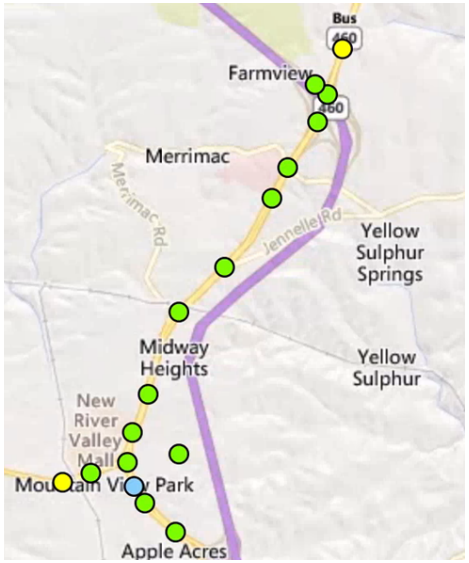
This section defines all new ITTF projects using the FY26 allocation.

Adaptive Signal Control and Detection Upgrades on Route 460B in Christiansburg

ITTF PURPOSES

Description

- This project aims to deploy Adaptive Traffic Signal Control, which is currently available through the Central Traffic Signal System statewide central traffic signal management software initiative. Implementing this system is expected to improve traffic conditions by adapting to unexpected traffic conditions that may arise.
- The deployment includes vehicle detection upgrades at the intersections to provide lane-by-lane detection at the stop bar on all approaches and advanced detection on the mainline. The corridor identified for the deployment is Route 460/Business in Christiansburg and encompasses 17 intersections.



Overview

Location	17 intersections between Farmview Rd and Professional Park Dr in Christiansburg
VDOT District	Salem
Route	US 460 Business
City/County	Christiansburg
Innovative Elements	Advanced Traffic Signal Technologies
Project Cost	$1,110,000
Delivery Date	September 2026

Roadway Characteristics (2024 data)

Vehicle Hours of Delay (VHD)	26,000
Vehicle Hours Cost of Delay	$1.1M
Total Crashes	85
Vehicle Miles Traveled	12M
Travel Time Index	1.10

Benefits

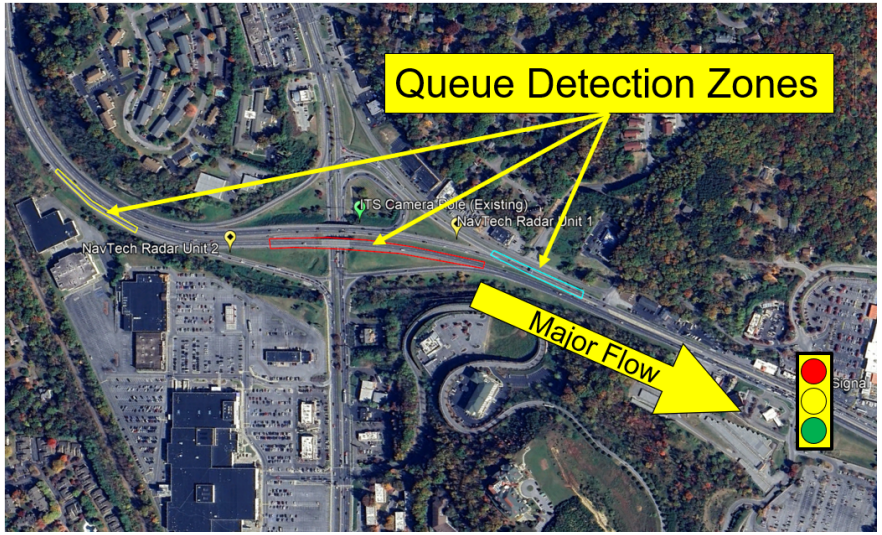
Focus	Metrics	Anticipated Results
Safety	Collisions	Reduced number of rear end collisions
Mobility	Travel Time Index	Improved reliability with vehicle detection
Congestion	Vehicle Hours of Delay (VHD)	Reduction in VHD

Interchange Queue Monitoring System & Traffic-Responsive Control on Route 220 in Roanoke

ITTF PURPOSES

Description

- The southern end of the I-581/Route 220 freeway transitions to a 4-lane signalized arterial in a busy commercial area. The first signal is approximately 2600 feet from the interchange at Route 419, and the southbound approach commonly backs up to the interchange.
- This project will install a NavTech radar system that can measure queue lengths in the interchange area, and use the existing Central Traffic Signal System traffic-responsive functionality to trigger a signal timing plan to clear the queue on Route 220.



Overview

Location	Multiple traffic intersections
VDOT District	Salem
Route	US 220
City/County	Roanoke
Innovative Elements	Advanced Traffic Signal Technologies
Project Cost	$530,000
Delivery Date	August 2026

Roadway Characteristics (2024 data)

Vehicle Hours of Delay	63,000
Vehicle Hours Cost of Delay	$2.6M
Total Crashes	144
Vehicle Miles Traveled	77M
Travel Time Index	1.03

Benefits

Focus	Metrics	Anticipated Results
Safety	Collisions	Reduction in queuing is expected to result in fewer rear-end collisions.
Mobility	Travel Time Index	Improved reliability is expected due to reduced queuing.
Congestion	Vehicle Hours of Delay (VHD)	NavTech radar system will continuously monitor traffic queues, allowing for necessary adjustments to be made to reduce VHD.

Scalable Digital Models with Smart Mobility Integration for the City of Alexandria

ITTF PURPOSES

Description

- This project will create a new, easy-to-use system that brings together data from many city sources—like traffic signals, parking, street assets, and environmental sensors—into one connected platform. Using this data, the project will build a "digital twin," a virtual version of the city that can model how things work in real time. An advanced large language model will then help staff explore the data, test different scenarios, and get useful insights to make better decisions about traffic and transportation management.

Overview

Location	Multiple intersections in the North Potomac Yard area
VDOT District	Northern Virginia
Route	Multiple
City/County	Alexandria
Innovative Elements	Digital Twin
Project Cost	$1,950,000
Delivery Date	July 2029

Roadway Characteristics - City of Alexandria (2024 data)

Vehicle Hours of Delay	1.2M
Vehicle Hours Cost of Delay	$50.3M
Total Crashes	131
Vehicle Miles Traveled	720.7M

Benefits

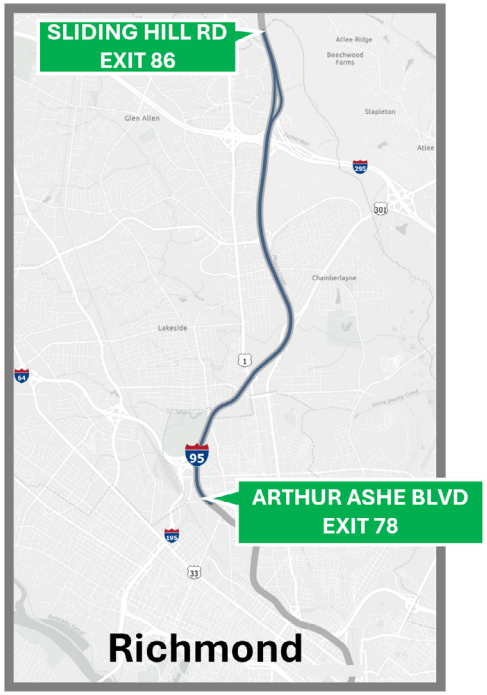
Focus	Metrics	Anticipated Results
Safety	Collisions	Fewer crashes
Mobility	Multi-modal Throughput	Improved multi-modal throughput
Congestion	Vehicle Hours of Delay (VHD)	Reduce VHD
Travel Data	# of Integrated Data Sources	Increase travel data sources

Next Generation Traffic Operations Data Service - Greater Richmond

ITTF PURPOSES

Description

- This project is taking a new approach to deploying innovative technology by providing Data-as-a-Service to VDOT. It will integrate data from new field devices and external sources to provide high-fidelity, low-latency data to the Richmond Travel Operations Center (TOC) for more proactive and efficient traffic management and incident response. Along with providing data to the TOC to aid in decision-making, certain data from the system may be pushed directly to third-party applications for driver awareness. The project will also prepare the corridor for the future of Connected and Automated Vehicles (CAV) and help VDOT evaluate the solution's viability for other critical corridors in the Commonwealth.
- The project will be located on I-95 in Richmond and Henrico County between mile markers 78 and 86.



Overview

Location	I-95 MM78-MM86
VDOT District	Richmond
Route	I-95
City/County	City of Richmond, Henrico County, Hanover County
Innovative Elements	Advanced Traffic Management Technologies Connected and Automated Vehicles
Project Cost	$19,500,000
Delivery Date	September 2030

Roadway Characteristics (2024 data)

Vehicle Hours of Delay	203K
Vehicle Hours Cost of Delay	$8.4M
Total Crashes	223
Vehicle Miles Traveled	359M

Benefits

Focus	Metrics	Anticipated Results
Safety	Collisions	Fewer crashes
Mobility	Travel Time Index	Improved reliability
Congestion	Vehicle Hours of Delay (VHD)	Reduction in VHD
Emergency Response	Response Time Clearance Time	Emergency response time is expected to improve
Travel Data	Additional Data Source	Increased data provided to improve situational awareness

APPENDIX

The Appendix contains a list of all active ITTF projects effective August 31, 2025.

#	UPC	VDOT District	Description	$	Current Phase	Tentative Delivery Date
1	128154	Salem	Adaptive Signal Control and Detection for Route 460	$1,110,000	Scoping	September 2026
2	128190	Salem	Interchange Queue Monitoring	$530,000	Scoping	August 2026
3	T30479	Northern Virginia	Scalable Digital Models	$1,950,000	Scoping	July 2029
4	127235	Richmond	Next Generation Traffic Operations Data Service – Greater Richmond	$19,500,000	Scoping	September 2030
5	125726	Staunton	Staunton & Salem Traffic Operation System Advanced Corridor Monitoring	$1,000,000	Scoping	October 2026
6	126014	Lynchburg	Districtwide Signal Data Collection	$735,000	Scoping	May 2028
7	126358	Staunton	Fiber: I-81, I-66, Rte 211 & 29	$1,790,990	Scoping	December 2027
8	126702	Fredericksburg	Fiber: Route 17	$2,235,480	Scoping	May 2027
9	126703	Fredericksburg	Fiber: I-95	$1,371,710	Scoping	October 2026
10	127090	Statewide	Traffic Operations Management System Enhancement	$1,000,000	Scoping	May 2026
11	127902	Staunton	Ramp Speed Warning Systems	$2,000,000	Scoping	November 2026
12	125374	Richmond	Red Light Extension on High Speed/Volume Truck Routes	$500,000	Scoping	August 2027
13	121564	Statewide	Leveraging Connected Car Data for Improved Safety	$500,000	Scoping - Study	December 2025
14	121653	Statewide	Northern Virginia/Fredericksburg Cooperative Freeway Management (Connected Vehicles)	$3,000,000	Scoping - Study	August 2026
15	121670	Statewide	Advanced Road Weather Information System Study	$500,000	Scoping - Study	August 2026

#	UPC	VDOT District	Description	$	Current Phase	Tentative Delivery Date
16	127004	Statewide	Statewide Sidewalk and Crosswalk Management Tool	$350,000	Scoping - Study	July 2028
17	107058	Hampton Roads	Newport News Citywide Signal Retiming	$1,910,000	Design	November 2026
18	119199	Statewide	Smarter Lighting Initiative	$500,000	Design	December 2025
19	119332	Statewide	Data Drive Management Program for Pavement	$370,000	Design	November 2025
20	121643	Statewide	Smart Intersection Deployment Support	$1,000,000	Design	May 2026
21	121648	Culpeper	Advanced Interchange Lighting at Exit 99 Afton Mtn	$2,888,000	Design	July 2028
22	121698	Northern Virginia	Dynamic Ramp Metering for I-66 & I-395	$1,100,000	Design	November 2026
23	122147	Richmond	Hard Shoulder Running Technology Implementation for State Route 288	$31,561,735	Design	March 2028
24	122904	Statewide	Connected Work Zones	$700,000	Design	December 2026
25	125030	Hampton Roads	I-664 / Bridge Road Integrated Corridor Management	$4,840,000	Design	May 2027
26	125206	Bristol	Big Walker Mountain Tunnel Hazmat Placard Reader	$875,000	Design	July 2028
27	125207	Bristol	Traffic Queue Detection - I-81/I-77 Corridor	$1,853,680	Design	July 2028
28	125208	Bristol	Big Walker Mountain Tunnel Tube Thermal Detection	$954,100	Design	July 2028
29	125376	Richmond	Install Ramp Pre-emption Systems	$748,899	Design	August 2027
30	126100	Bristol	Big Walker Mountain Tunnel Work Zone Management	$3,004,335	Design	July 2028

#	UPC	VDOT District	Description	$	Current Phase	Tentative Delivery Date
31	126226	Hampton Roads	Fiber: Route 17 Coleman Bridge	$6,410,590	Design	December 2026
32	126241	Hampton Roads	Hampton Roads Bridge Tunnel Over-Height Technology - Systems Integration	$3,996,742	Design	June 2027
33	126282	Bristol	Fiber: Point Broadband Coal Loop	$1,547,406	Design	June 2026
34	126297	Richmond	Fiber: I-295	$920,300	Design	May 2026
35	126357	Staunton	Fiber: I-81 North Gap	$7,882,490	Design	December 2027
36	126454	Salem	Portable ITS Cameras for Incident Monitoring	$100,000	Design	December 2025
37	126589	Lynchburg	Fiber: Districtwide	$934,000	Design	June 2028
38	126758	Culpeper	Fiber: Route 29 & 229	$266,585	Design	October 2027
39	111892	Statewide	Active Traffic Management System Enhancements (Releases 1, 2, 3, & 4)	$12,223,789	Installation (Release 4)	May 2026
40	115832	Northern Virginia	Performance Parking Deployment in Commercial Corridors	$5,593,494	Installation	December 2025
41	115854	Statewide	Arterial Operations Program Management Dashboard	$1,250,000	Installation	November 2025
42	115855	Statewide	High Speed Communications Design Arterials - Statewide	$788,851	Installation	January 2026
43	116811	Statewide	High Speed Communications Arterials - Southwest	$307,775	Installation	December 2025
44	119406	Statewide	Automated Speed Enforcement Project	$1,500,000	Installation	June 2026
45	119408	Lynchburg	High-Water Monitoring System - Lynchburg	$670,000	Installation	July 2026

#	UPC	VDOT District	Description	$	Current Phase	Tentative Delivery Date
46	119720	Statewide	Regional Multi-Modal Mobility Program - Decision Support System & AI Tool	$8,390,000	Installation	November 2027
47	119721	Statewide	Regional Multi-Modal Mobility Program - Dynamic Incentivization	$3,500,000	Installation	September 2026
48	120369	Statewide	Regional Multi-Modal Mobility Program - Commuter Parking Information System	$4,800,000	Installation	November 2027
49	121654	Statewide	Advanced Traffic Operations Support Center	$1,000,000	Installation	March 2026
50	121667	Statewide	Regional Multi-Modal Mobility Program - Supporting Data Services	$5,000,000	Installation	September 2028
51	121668	Statewide	Real Time Information Dissemination for Commercial Motor Vehicles	$1,000,000	Installation	June 2026
52	121775	Lynchburg	Automated Traffic Signal Performance Measures - Technical Upgrades and Enhancements	$708,621	Installation	December 2025
53	122764	Hampton Roads	Hampton Roads Bridge Tunnel Over-Height Technology - Civil Work	$9,000,000	Installation	July 2026
54	125029	Hampton Roads	Hampton Roads Signal Preemption	$161,000	Installation	December 2025
55	125123	Statewide	Regional Multi-Modal Mobility Program - Management and Integration	$4,000,000	Installation	December 2027
56	125829	Culpeper	Automated Traffic Signal Performance Measures - Culpeper District US 29, US 250, VA 3	$873,000	Installation	November 2026
57	126015	Lynchburg	Automated Traffic Signal Performance Measures - Lynchburg District	$1,010,528	Installation	November 2025
58	126208	Hampton Roads	Fiber: Williamsburg Route 603 & Route 60	$600,127	Installation	November 2025
59	126225	Bristol	Animal Detection and Driving Warning System on Corridor Q	$640,001	Installation	October 2026
60	126278	Northern Virginia	Fiber: US 29 Gainsville	$270,021	Installation	February 2026

#	UPC	VDOT District	Description	$	Current Phase	Tentative Delivery Date
61	126405	Northern Virginia	Fiber: Node 9 to Node 12	$1,299,300	Installation	December 2026
62	126760	Northern Virginia	Traffic Signal Controller and CPU Enhancements	$2,000,000	Installation	March 2026
63	126987	Fredericksburg	Fiber: Route 29 & 229	$209,988	Installation	November 2025
64	126988	Fredericksburg	Fiber: Route 3	$58,522	Installation	November 2025

Innovation and Technology Transportation Fund (ITTF)

Report to the General Assembly

2025