



COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION

Stephen C. Brich, P.E.
Commissioner

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December 1, 2020

The Honorable Governor Ralph S. Northam
Members of the Virginia General Assembly

Dear Ladies and Gentlemen:

Section 33.2-1531 of the *Code of Virginia* directs the Commissioner of Highways to report annually on the use of moneys in the Innovation and Technology Transportation Fund (ITTF). This letter provides the information as required by the statute.

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" pertain to projects or programs that reduce congestion, improve mobility, improve safety, provide up-to-date travel data, or improve emergency response.

The Virginia Department of Transportation (VDOT) developed a Transportation Technology Plan that aligned its goals and technology strategies with the purpose of the monies allocated to the ITTF. Projects utilizing ITTF monies originate from the Transportation Technology Plan.

The Transportation Technology Plan was developed to improve the efficiency, safety, and convenience of all modes of transportation throughout the Commonwealth. This plan incorporated recommendations from the VTrans2040 needs assessment for the 12 corridors of statewide significance and other VDOT planning documents. The eight technology strategies of the Transportation Technology Plan are:

1. **Enhance operations traffic management** – to improve corridor efficiency through active traffic management across multiple parallel freeways, arterial highways and transit systems.
2. **Strengthen incident and emergency response** – to detect, respond and clear incidents on the roadway, which include collisions, disabled vehicles, weather events, emergencies, and man-made disasters.

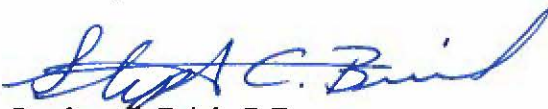
3. **Support multimodal travel promotion** – to increase multimodal travel by increasing access and improving its efficiency.
4. **Manage arterials** – to optimize the performance of arterial roadways through signal operations improvements and performance monitoring.
5. **Furnish traveler information** – to provide real time, multi-corridor and multi-modal travel information to enable pre-trip and in-route trip planning.
6. **Support commercial vehicle/freight** – to manage and support freight mobility.
7. **Conduct emerging technology research** – to promote the development of new technologies to improve safety, convenience and efficiency of travel through connected and autonomous vehicle technologies, and bicycle/pedestrian programs.
8. **Enhance enabling technology infrastructure** – to promote future expansion and resiliency of technologies by deploying and upgrading supporting communication and utility services.

Currently, there is \$124.9 million in allocations identified for projects eligible for ITTF funding (“ITTF Projects”) through FY 2025. This consists of \$121.7 million allocated to the ITTF for FY 2020 through FY 2025 by the Commonwealth Transportation Board (CTB) pursuant to an action dated June 18, 2019, and \$3.2 million of allocations from a portion of the alternative CTB formula funding dedicated to smart roadway technology projects prior to enactment of the ITTF.

In FY 2020, \$3.2 million was allocated to the ITTF. The attached tables provide information concerning ITTF Projects that were allocated funding, incurred expenditures, and /or are ongoing in FY 2020.

If you have any questions, please do not hesitate to contact Catherine McGhee, P.E., Director of Research and Innovation, at 804-916-9508, or me.

Sincerely,



Stephen C. Brich, P.E.

Commissioner of Highways

cc: The Honorable Shannon Valentine
Cathy McGhee, P.E.

Innovation and Technology Transportation Fund

Report to the General Assembly

Section 33.2-1531 of the *Code of Virginia* establishes 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 that reduce congestion, improve mobility, improve safety, provide up-to-date travel data, or improve emergency response.

This report provides an update of the earlier projects and descriptions of the new projects. The graphic below categorizes the new projects according to the ITTF goals to which each project will contribute.

Improve Safety	Reduce Congestion	Improve Traveler Information	Enhance Emergency Response	Improve Mobility
<ul style="list-style-type: none"> • Regional Multimodal Mobility Program • I-95 Active Traffic Management • I-64 Afton Mountain Safety Improvements • Data Analytics for Safety • Cybersecurity Upgrades for Operations • I-81 Innovative Strategies for Operations 	<ul style="list-style-type: none"> • Regional Multimodal Mobility Program • Performance Parking • I-95 Active Traffic Management • Arterial Operations Dashboard • Signal Controller Connectivity • I-64 Afton Mountain Safety Improvements • I-81 Innovative Strategies for Operations 	<ul style="list-style-type: none"> • Regional Multimodal Mobility Program • Performance Parking • I-95 Active Traffic Management • I-64 Afton Mountain Safety Improvements • Data Analytics for Safety • Customer Service Bots • DASH Enhanced Real-time Predictions • Transportation Navigator – One Click Directory • Parking Demand Management 	<ul style="list-style-type: none"> • Signal Controller Connectivity • Data Analytics for Safety • Statewide Fiber Enhancements • Transportation Data Analytics – Commonwealth Data Trust • I-81 Innovative Strategies for Operations • High Speed Communications for Arterials • Statewide Fiber Enhancements 	<ul style="list-style-type: none"> • Hanover Specialized Transit • MicroTransit Pilot • Blacksburg Transit – Neighborhood Services • Regional Microtransit Demonstration • Commute!VA Commuter Ridematching and Incentive

Northern Virginia Regional Multi-modal Mobility Program

Regional Multi-modal Mobility Program (RM3P) takes a collaborative, integrated, and cohesive approach to improve safety, accessibility, and mobility, and mitigate congestion for the traveling public in the Commonwealth of Virginia, especially in the Northern Virginia region. RM3P leverages artificial intelligence (AI) and machine learning algorithms to extract information from multiple data sources to provide real-time information for both system operators and the traveling public. The overall program includes five separate but interrelated projects including the development of:

- Data lake/data store
- Parking availability system to facilitate carpooling and transit use

- Mobility as a service (MaaS) dashboard to identify gaps in service that limit transit use
- Decision support tools that create information from multiple data sources
- Commuter incentive program that will reduce congestion during the worst travel conditions by encouraging commuters to travel at a different time, take a different route, or use a different mode

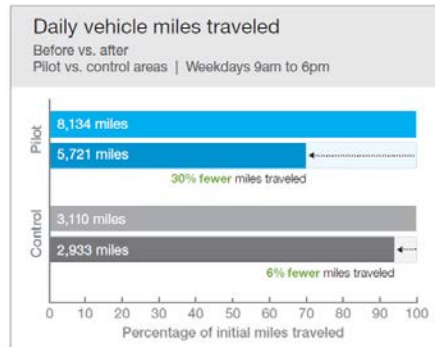
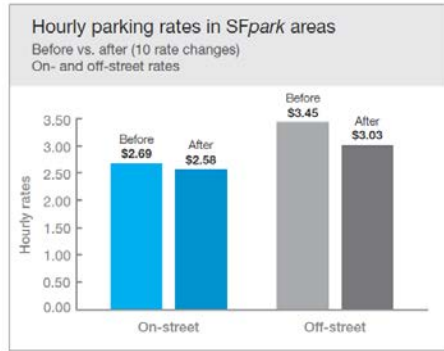
A high level schedule for RM3P is provided below.

March 2019 – July 2019:	Pre-Scoping and securing funding
August 2019 – September 2019:	Program Management Team Selection and project ramp up
October 2019:	Official Project Kickoff Organization setup
October 2019 – April 2020:	<u>Solutioning</u> for 5 Program Elements
February 2020 – July 2020:	Program Element Delivery Team Selection
August 2020 – May 2022:	Development and Delivery (multiple interim deliverables)
June 2021 – September 2022:	Program Element Implementation
April 2020 – October 2022:	Program Evaluation and Closure

As of November 2020, the project is slightly behind schedule due to complications of engaging stakeholders during the COVID-19 pandemic. Requirements documents for each of the program elements have been drafted and a Request for Information was issued. Forty-one responses were received providing valuable insight to the state of the industry and needed adjustments to the requirements and program delivery plan. Final requirements are currently in draft and procurement is anticipated to proceed in early 2021.

Performance Parking in Commercial Corridors

Arlington County experiences high levels of both commuter and commercial traffic. This project will target increases in efficiency for parking in two Metrorail corridors. Smart parking meters will be deployed along with data-driven variable pricing and real-time information to optimize utilization of parking spaces and reduce congestion that results from motorists searching for available parking. A similar program in San Francisco resulted in 25% fewer miles traveled, a reduction in parking search times by 43%, and a 30% decrease in greenhouse gas emissions. Concerns about significant increases in parking costs were shown to be unfounded in San Francisco where average parking rates actually declined.



This project will be managed locally by Arlington County. The grant agreement between the Virginia Department of Transportation (VDOT) and the County has been drafted and is scheduled for County Board action in December 2020. The County is developing the Request for Proposals that will award a consultant with a contract to design and install the required hardware and software.

I-95 Variable Speed Limits

The Interstate 95 corridor is one of the busiest commuter corridors in the Commonwealth while also serving a high number of long-distance travelers. As a result, significant congestion occurs both during the weekday peak periods and during weekend travel times. In general, solutions to commuter-based congestion are different than solutions that target congestion stemming from weekend or long distance travel patterns. Variable speed limits (VSL), or “speed harmonization,” is a solution that can target both forms of travel delay. By managing the flow of traffic, VSLs can decrease the impact of queuing by reducing the speed of traffic as it approaches a slowdown. Slowing traffic down gradually rather than having hard braking at the end of a queue keeps the overall traffic stream moving smoother and reduces the frequency of rear-end collisions. VSL deployments in Germany have resulted in 5-15% reductions in travel time, 30% reductions in crashes, and 5% increases in throughput. It should be noted that many European countries that experience these benefits have automated speed enforcement as a key part of their deployments. When VSL was deployed on I-66 in Northern Virginia several years ago, benefits were limited due to low rates of compliance with posted speeds. The I-95 deployment will include speed-monitoring capability combined with vehicle identification so that individual drivers can be contacted and provided educational information regarding the benefits of VSL. The compliance data collected will also be useful in determining ways to make VSL more effective in Virginia.

VSL were also identified as an improvement strategy within the I-95 Corridor Improvement Plan. As a result, this effort is underway with funding from both the CIP and ITTF. A draft concept of operations has been developed. The section of I-95 between mile-markers 115 and 130 in the northbound direction has been identified as the pilot location. The area is characterized by day-to-day speed variability and high crash rates. The deployment of VSL in

this corridor is anticipated to reduce speed variability, improve throughput, and reduce crashes by lowering speeds in response to prevailing travel conditions.

I-81 Operational Improvements

The I-81 Corridor Improvement Study identified a number of operational improvements that would enhance incident management and reduce delays. Many of these improvements included the deployment of additional field devices such as cameras and dynamic message signs to detect problems and disseminate real-time information to the public. Funds allocated through the ITTF program will use those devices and the data they collect to further improve traffic flow and safety throughout the corridor. Several emphasis areas have been identified for consideration including:

- Commercial vehicle operations and safety
 - Truck parking
 - Decision support/routing
 - Speed differentials
- Incident and work zone management
 - Real-time information
 - Diversion route operations (including traffic signals)
 - Predictive data analytics
- Speed management and enforcement
- Queue warning and management

A stakeholder group has been formed and has begun to evaluate the corridor in segments to identify opportunities for innovative strategies that can help to mitigate existing operational challenges.

I-64 Operational Improvements

I-64 west of Charlottesville experiences a higher than normal crash rate. A steep grade, frequent fog, and a high number of animal-vehicle collisions all contribute to the crash rate. A number of potential improvements have been considered to enhance safety through the corridor. “Smart” roadway lighting and a congestion management system including cameras and dynamic message signs were determined to be the most effective options, given the characteristics of the corridor.

Design work is underway for a congestion warning system for the WB and EB grades and interchange lighting at Exit 99. These systems will be designed for automatic and remote/manual activation and monitoring by the Staunton Transportation Operations Center. Lighting will be designed and placed for enhanced visibility in fog. The Exit 99 lighting will be used for fog events and night driving conditions. A draft concept of operations was prepared at

the end of October 2020 and is now under review by VDOT, which will drive the design requirements for the congestion warning and lighting systems, as well as any fog detection system software integration for control & monitoring. Concept approval is anticipated by mid-November 2020. Design of 60% Preliminary Field Inspection plans is scheduled from November 2020 to March 2021. Final plans and a construction bid package (ready for advertisement) are currently on schedule for August 2021. If a public hearing is requested, this date could be pushed out to October 2021.

Data Analytics for Safety

VDOT, like other state DOTs, uses a wealth of data to identify safety challenges and appropriate mitigation strategies. Traditionally, this data has focused on historical traffic and crash data. More recently, the addition of other data sources has proven to be beneficial in determining both safety priorities as well as ways to address them. For example, pavement friction data combined with crash data has been valuable in identifying locations where high friction surfaces can greatly reduce the occurrence of roadway departure crashes. This project will explore a variety of additional data sources including census data, land use data, enhanced weather data, special event data, alcohol data (locations of sales and use), other health-related data, and data from the Virginia Department of Education to identify correlations with roadway safety. Artificial Intelligence and machine learning will be applied to the data to create information regarding crash likelihood and potential mitigation strategies that could be beneficial in reducing crash risk.

An early draft of requirements for this effort identified similarities with other efforts underway simultaneously. Additionally, an effort led by the Commonwealth's Chief Data Officer and the Commonwealth Data Trust offered an opportunity to create a data platform for both internal data analytics and public data sharing. As a result, the analytics portion of this effort is on hold while the data platform is established. Initial analytics capabilities are anticipated in mid- to late-2021.

Arterial Operations Dashboard

The "Arterial Operations Dashboard" is a reporting tool that can provide travel time information and signal performance information in a single tool. The tool will be implemented on our arterials across the Commonwealth, beginning with the Corridors of Statewide Significance (CoSS). This 24/7 performance data will facilitate better management of arterials during incidents on the interstates when there are detours and rerouting of traffic, as well as for general every-day use. It is important to note that the tool can be applied to signals owned and operated by our locality partners in addition to VDOT signals.

Overall, the arterial operations dashboard will:

- Leverage ongoing efforts to upgrade signal controllers and deploy a central signal system to provide performance metrics on arterials statewide that enable improved real-time operations.
- Provide metrics on signal performance and travel time reliability in one tool

- Begin with an initial deployment on 70 corridor segments (1,128 intersections) ***including corridors through about 50 localities and towns***

The arterial operations dashboard project will be integrated into the deployment of the statewide central signal software platform. Delays in full deployment of the central system due to cloud services provisioning and security configurations have impacted the full roll-out of the dashboard. Several pilot deployments have provided valuable information that will inform the full deployment of both the automated traffic signal performance metrics (ATSPM) and the dashboard. Additionally, MOUs with localities, specifically in the I-81 corridor, are under development to facilitate the sharing of signal data from localities to the dashboard.

High Speed Communications for Signalized Intersections

VDOT currently operates and maintains over 3,000 signalized intersections across the Commonwealth. In addition to being vital to normal operations on the arterial network, those intersections are often required to serve much higher volumes of traffic when an incident or other special event occurs. The ability to respond to changes in demand, modify signal timing parameters in real-time, and monitor the flow of traffic is critical from both a local operations and system-wide perspective. Currently, approximately 35% of VDOT traffic signals lack sufficient communications to operate at peak efficiency. A communications master plan has been developed and identifies gaps in VDOT's communications network - including these intersections – and an implementation plan is under development that will prioritize the elimination of those gaps. When complete, this effort will contribute to enhanced incident management, improved safety and operations, and reduced overall agency costs by eliminating leased lines.

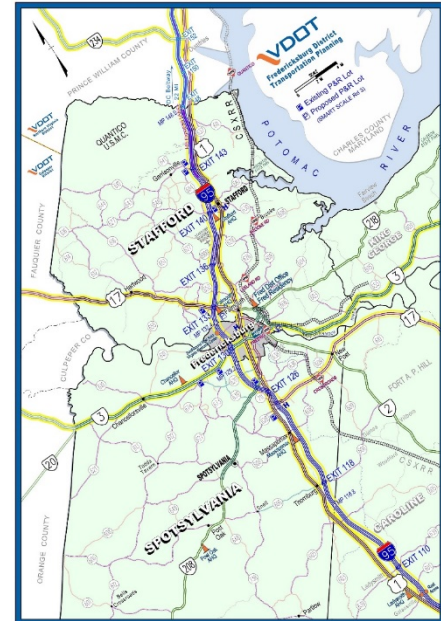
Currently, 20 design projects are underway across the five VDOT Regions. Construction is underway on several projects in the Eastern, Central, and Northern Regions with construction soon to follow in both the Northwest and Southwest regions. All projects will be complete by the end of 2021.

Parking Demand Management System

There are a number of park-and-ride lots in the I-95 corridor that serve transit and ridesharing. As commuters approach these lots, there is currently no information available on the status of parking availability. This project will deploy sensors at the entrance and exit points of the parking lots to determine the number of available spaces in real-time. Dynamic message signs

will be deployed to provide information prior to the exit. Additionally, the data will be made available for third party applications that can more broadly disseminate the data.

In the summer of 2020, VDOT was awarded a federal grant under the Advanced Transportation and Congestion Management Technologies Deployment program to extend the geographic scope of the parking and Decision Support System elements of RM3P south in to Fredericksburg. As a result, the parking demand management system effort will be closely coordinated with RM3P and deployed in sync with that effort.



Cybersecurity enhancements for Operations Technology

VDOT's operations program includes a large number of field devices and each of those is a potential point of vulnerability if the proper cybersecurity controls and processes are not in place. This project will contribute to a larger effort of fully securing the Operations Technology network. Collaboration with the Virginia Information Technology Agency (VITA) is underway to fully design and deploy appropriate strategies.

Pilot Program for Innovation

There are a number of small companies located in Virginia that are creating innovative solutions for many of the transportation challenges we face. This program will provide VDOT with the opportunity to partner with the Center for Innovative Technology to put out calls for solutions to specific challenges among their network of small and start-up Virginia-based companies. Responses would then be evaluated and one or more would be selected for piloting and evaluation. The Commonwealth Transportation Board Innovation and Technology Subcommittee will help to determine the highest priority challenges and the potential innovations to pilot. This will have dual benefits of both improving transportation and providing economic development opportunities to Virginia companies.

It is anticipated that the first solicitation of project proposals will be offered in summer 2021.

Innovation Program for Localities

Many transportation challenges are encountered at the local level and would benefit from locally derived solutions. This program will allow localities to submit proposals for funding within the ITTF program. All proposals will be required to meet the criteria described in the Code of Virginia (reduce congestion, improve mobility, improve safety, provide up-to-date travel data, or improve emergency response) and any selected projects will be fully evaluated for potential

deployment in other areas of the Commonwealth. The CTB Subcommittee on Innovation and Technology will help to determine which proposals will be funded.

It is anticipated that localities will be invited to submit proposals for innovative project funding in the fall of 2021.

Statewide Technology for Operations

There are a number of technologies that have been tested or piloted elsewhere that could provide significant benefit(s) to Virginia. This project will select a small number of initiatives for deployment and evaluation to determine the best path forward for optimal statewide deployment. Some possible technologies include:

- Customer service bots – automated systems that are capable of handling routine or low-priority calls during high volume events to free customer service agents for higher priority issues
- Worker alert system – alert system that would provide a geo-fenced presence alert through third party apps or agency developed systems when workers are at risk of being struck by an errant vehicle
- Virtual Active Traffic Management (ATM) – utilizes wireless communications and Smartphone-based apps to provide the benefits of an ATM without the heavy infrastructure investment

Selected projects will begin in 2021.

In addition to projects approved by the CTB in June 2019, there are six projects that were added in the fall of 2020. Each of these projects is described below.

Regional Microtransit Demonstration Project

This project with Hampton Roads Transit (HRT) will plan, deploy, and evaluate performance of on-demand microtransit services in two service zones over a six-month demonstration. The new service will focus on shared rides in small vehicles for short-distance trips (less than 4 miles) in Virginia Beach and Newport News.

Neighborhood Services Blacksburg

Blacksburg Transit will provide neighborhood flex/demand response service connecting areas outside of the current service area to four designated fixed route bus stops. The reservation based system will work with a 24 hour notice and operate two vehicles from 7 a.m. to 7 p.m., Monday-Friday, and 11 a.m. to 7 p.m., Saturday-Sunday.

DASH Enhanced Real-Time Predictions

DASH (Alexandria) will test two enhancements of their real-time bus arrival time prediction engine to provide more accurate real-time information to riders regarding service disruptions or delays. Data will be integrated into their prediction engine from 29 traffic sensors and use an algorithm called the Kalman filter, which allows predictions to adjust based on what other buses on a route are doing.

Transportation Navigator - One Click Directory

As part of the Federal Transit Administration's Mobility for All Grant Program, DRPT is collaborating with VirginiaNavigator, a Chesterfield County non-profit, to develop the TransportationNavigator website. The site will provide an online directory of transportation information including a one-click directory of public, human service and specialized transportation providers, programs and services. This resource will help connect Virginia's most vulnerable citizens, including individuals with disabilities, seniors, veterans and individuals with opioid use disorder, to essential transportation services in their communities.

Commute!VA Commuter Ridematching and Incentive

DRPT will enhance the Commute!VA platform through the launch of a mobile application and expansion of services to include Guaranteed Ride Home through Transportation Network Company (TNC) partnerships and dynamic carpooling and incentivization.

Statewide Fiber Network Enhancements

VDOT continues to address the recommendations that resulted from the development of a Communications Master Plan. Several recommendations directly impact the ability to deploy innovative strategies that are part of the ITTF program. This effort will seek to close the communications gaps that exist between VDOT facilities and field equipment to facilitate better traffic and incident management.

Transportation Data Analytics

As discussed above in relation to the Safety Data Analytics effort, the need for a common data platform to support analytics across a range of technical areas was identified. Additionally, the desire to provide broader access to transportation data through the Commonwealth Data Trust resulted in additional requirements. This effort will establish the protocols, processes and systems required to provide that access for both internal and external use.

The following tables provide a summary of all projects receiving ITTF allocations through FY20.

“ITTF Projects” Allocated Funding in FY20

UPC / Location	Project Purpose	Funding Allocation FY20 Final SYIP	Expenditures to Date	Expenditures FY20	Status
115854	Arterial Operations Dashboard	\$322,226	\$0	\$0	Pre-scoping underway
115855	High Speed Communication for Arterials	\$1,000,000	\$143,372	\$76,342	Underway
T21588	ITTF Balance Entry	\$1,900,000	\$0	\$0	This line item is a funding source for breakout projects
Grand Total FY-20 Funding Allocation		\$3,222,226			

Breakout Projects/Ongoing/Completed Projects

UPC / Location	Project Purpose	Total Allocations	Expenditures to Date	Status
105369 Richmond	Prepare design plans for signal improvements for Route 1 from Caroline County to Colonial Heights to improve traffic flow	\$525,000	\$447,076	Final segments in design.
105380 Bristol	Improve traffic management at the Big Walker Mountain Tunnel	\$368,233	\$242,984	Project will address Fire and Life Safety deficiencies. Work temporarily paused pending outcome of a related study.
105381 Bristol	Improve traffic management at the East River Mountain Tunnel	\$588,233	\$230,371	Project will address Fire and Life Safety deficiencies. Work temporarily paused pending outcome of a related study.
105404 Hampton Roads	Signal improvements for US 60 between New Kent and Newport News to improve traffic flow	\$385,000	\$277,435	Complete, project closeout process underway
105443 Fredericksburg	I-95 Corridor Technology on Rt. 1, 17; Signal Communications Camera – Prince William to Hanover to improve situation awareness and the management of traffic	\$540,000	\$539,035	Much of design work is complete and projects have moved to construction (see 107663).
105444 Richmond	Signal improvements for US 60 between New Kent and Richmond to improve traffic flow	\$180,000	\$97,560	Construction underway.
107663 Fredericksburg	Intelligent Transportation System Deployment – District wide Fredericksburg District – Deployment of various signal related technology	\$3,800,000	\$859,033	Construction underway on signal upgrades as designed in 105443.

UPC / Location	Project Purpose	Total Allocations	Expenditures to Date	Status
107818 Richmond	Intelligent Transportation System Deployment – Districtwide Richmond District – Deployment of various signal related technology	\$3,366,250	\$1,887,231	This project will upgrade and install traffic signal technology to include IP addressable high speed communications, ATC cabinets, and ATC controllers at various signals across Richmond District. Work for 24 intersections is complete, 14 more are in construction and the remaining 13 will be under construction in early 2021.
108666 Hampton Roads	MMBT Tunnel	\$43,469	\$43,469	Procurement underway – advertised 10/8/2020. ITTF provides supplemental funding to the project.
109482 Richmond	Richmond Transportation Operations Center	\$10,000,000	\$10,000,000	Construction underway; funds transferred to Capital Outlay Fund to fully fund project
109506 Statewide	Statewide Communitywide Adaptive Signal Control	\$638,399	\$0	This line item is a funding source for breakout projects; awaiting additional funding to develop a new breakout project.
109545 Statewide	Statewide Emerging Technology	\$700,000	\$0	This line item is a funding source for breakout projects
111613 Statewide	Statewide Truck Parking Management System – Phase 2 to improve safety for commercial vehicle operations	\$1,807,000	\$292,543	This project is on hold pending the recommendations of the I-81 Truck Parking Task Force.
111892 Statewide	Advanced Traffic Management System – Phases 1,2,3,4 to support implementation / upgrades to advanced traffic management system; This is VDOT’s Master Traffic Control System	\$10,900,000	\$8,139,180	The project will be complete by the end of FY21 to include the delivery of Release 3 in Eastern Region which will bring all 5 TOCs on the Statewide ATMS. Release 4 will replace VATraffic and LCAMS.

UPC / Location	Project Purpose	Total Allocations	Expenditures to Date	Status
112254 Statewide	Pedestrian Collision Avoidance System to improve transit travel times & transit system reliability	\$250,000	\$225,712	<p>The Driver Assistance System Demonstration Project is slowly wrapping up as participating transit agencies approach the one-year timeframe for the testing of the Mobileye Shield+ systems. The installation and training for each agency rolled out depending on when the agency procured their systems with WMATA as the last transit agency beginning their testing in December 2019. To date, all participating transit agencies have been operating with the Mobileye Shield+ systems in both live and stealth mode with the data being collected and analyzed by VTRC. Some transit agencies have also distributed and returned operator surveys as part of the project evaluation.</p>
112895 Statewide	Statewide Advanced Traffic Signal Controllers	\$3,000,000	\$1,140,712	<p>Approximately 2,280 of 3,123 signal controllers have been migrated to the new standard. Bristol, Lynchburg, and Salem Districts have completed their migrations and Fredericksburg, Hampton Roads, Staunton, and Culpeper are expected to complete migration in 2021. Richmond District is expected to complete migration in 2022. NOVA completed migration in 2018 under a separate funding source.</p>

UPC / Location	Project Purpose	Total Allocations	Expenditures to Date	Status
114400 Statewide	Drone Technology	\$250,000	\$256,531	VSP has acquired 8 drones and 2 laser-based Leica stations but have not yet been able to deploy them due to competing priorities from COVID and civil unrest. Once deployed, data will be collected on scene clearance times with the different equipment.
115850 Statewide	I-95 VSL Compliance Monitoring	\$3,588,835	\$0	Pre-Scoping underway
115853 Statewide	Data Analytics for Safety	\$1,500,000	\$0	Awaiting additional funding for project start
115866 Statewide	Northern VA Regional Multi-modal Mobility Program	\$8,500,000	\$0	This line item is a funding source for breakout projects
115867 Statewide	I-64 Afton Mountain Safety Improvements	\$5,000,000	\$0	This line item is a funding source for breakout projects
115868 Statewide	Pilot Program with CIT Partnership	\$250,000	\$0	This line item is a funding source for breakout projects
115869 Statewide	Statewide Technology for Operations	\$513,491	\$0	This line item is a funding source for breakout projects
115881 Statewide	Cybersecurity Upgrades / Enhancements for Operations	\$2,000,000	\$0	This line item is a funding source for breakout projects

UPC / Location	Project Purpose	Total Allocations	Expenditures to Date	Status
116719 Statewide	High Speed Communications Arterials - Eastern	\$258,000	\$141,195	Construction underway
116803 Statewide	High Speed Communications Arterials - Northwest	\$490,000	\$0	Construction underway
116804 Statewide	High Speed Communications Arterials - Central	\$500,000	\$0	Pre-scoping underway
116811 Statewide	High Speed Communications Arterials - Southwest	\$800,000	\$0	PE underway
117246 Hampton Roads	I64 Corridor Tech Adv-60, 143, 199 Signal Communication Cameras	\$750,000	\$179,519	PE underway
117424 Northern VA	High Speed Communications Arterials - Northern	\$49,000	\$0	Awarded
117733 Statewide	High Speed Communications Arterials – North West #2	\$260,000	\$0	Pre-scoping underway, scheduled for 2021 award