



ITTF PROGRAM UPDATE

July 2024 Innovation Subcommittee Briefing

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July 16, 2024

Agenda

- 2023 Report
- 2024 New Projects
- 2025 Program Changes

Innovation & Technology Transportation Fund

Funds pilot programs and fully developed high-tech infrastructure improvements with a focus on:

1. Reducing congestion
2. Improving mobility
3. Improving safety
4. Providing up-to-date travel data
5. Improving emergency response

ITTF 2023 Reporting – General Assembly Report



Posted at <https://rga.lis.virginia.gov>

I-95 Variable Speed Limit (VSL) System

ITTF PURPOSES

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 between 35 mph and 65-70 mph, 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.

Description (ITTF Funded Portion for I-95 VSL)

- Develop the algorithms for the I-95 Variable Speed Limit technology.
- From 115 to 130 (15 miles), VSL is located on I-95 NB. It includes:
 - Algorithm Enhancements for Work Zones
 - Automated Detector Monitoring and Alerts
 - Active System Management
 - System Evaluation Support

Description (Other Funding Sources for I-95 VSL)

- System integration
- I-95 VSL Infrastructure (detectors, signs, cameras)

Overview

| | | |
|-----------------|--|--|
| Location | I-95 in Spotsylvania County/City of Fredericksburg | |
| VDOT District | Fredericksburg | |
| Route | I-95 | |
| City/County | Fredericksburg, Spotsylvania, Caroline | |
| Category | Advanced Roadway Technology | |
| Project Cost | \$2,404,000 (ITTF Funding for the I-95 VSL Algorithm) | |
| 2023 Milestones | Construction complete. System operational, June 2022. Evaluations completed, 2023. | |

Roadway Characteristics

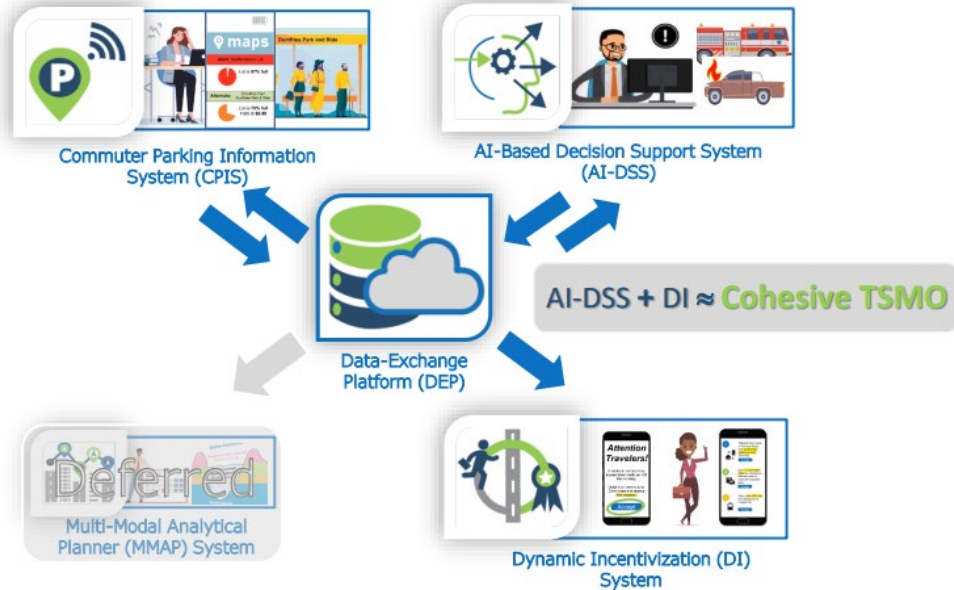
| Metric | 2021 Pre-Implementation | 2023 Post-Implementation |
|---------------------------------------|-------------------------|---|
| Annual Vehicle Hours of Delay | 775K | 764K |
| Annual Vehicle Hours Cost of Delay | \$29.9M | \$29.5M |
| All Crashes | 291 | 286 |
| Fatal+Injury Crashes | 67 | 58 |
| Daily Traffic Volumes | 47K – 57K (2021) | 49K – 57K (2022) 2023 data not available |
| Weekend Days with Speeds Below 20 MPH | 63 | 51 |

Benefits

| Focus | Metrics | Results |
|------------|------------------------------|---|
| Safety | Reduction in crashes | Fatal + Injury Crashes: 13.6% Reduction Rear-End Crashes: 10.7% Reduction Sideswipe Crashes: 2.7% Reduction |
| Mobility | Travel Time Index | Sunday travel times declined by 8.2% and reliability improved by 14.4% |
| Congestion | Vehicle Hours of Delay (VHD) | Continuing evaluation |

ITTF 2023 Reporting Examples

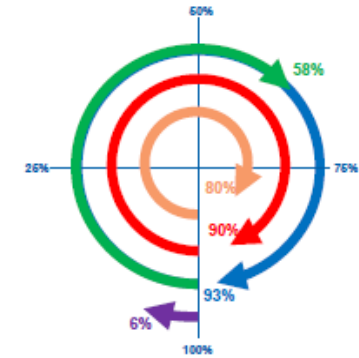
RM3P Data Exchange Platform (completed)



Advancing Automated Traffic Signal Performance Measures - ATSPM (8 completed projects to advance the effort)

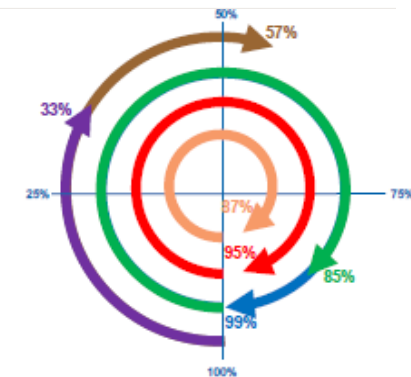
3,137 Traffic Signals Statewide

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



3,153 Traffic Signals Statewide

- High Speed Communications (2738 – 87%)
- ATC / D4 Migration (2999 – 95%)
- KITS Configured (3116 – 99%)
- KITS Live (2685 – 85%)
- ATSPM Configured (1795 – 57%)
- ATSPM Active (1049 – 33%)



ITTF 2024 New Projects

Eighteen new projects have been included in the SYP. These projects include a focus on:

- Advanced Tunnel Operations tools to improve mobility and safety
- Traffic Operations systems advancement including Integrated Corridor Management & ATSPM to reduce congestion and improve safety
- Advanced Technology/Strategy Development for real time data collection and monitoring

ITTF 2024 New Projects

| # | District | UPC | Description | Location | Total Cost |
|----|----------------------------|--------|---|--|--------------|
| 1 | Bristol | 126100 | Tunnel Work Zone/ Automated Lane Closure Technology | Big Walker Mtn Tunnel | \$2,250,000 |
| 2 | Bristol | 125207 | Traffic Queue Detection w/ Automated Messaging | I-77, I-81 | \$1,700,000 |
| 3 | Bristol | 125208 | Tunnel Thermal Detection (Cameras & Sensors) | Big Walker Mtn Tunnel | \$875,000 |
| 4 | Bristol | 125206 | Tunnel Hazmat Placard Readers | Big Walker Mtn Tunnel | \$875,000 |
| 5 | CO-TMPD | T29378 | Sidewalk & Crosswalk Management Tool | Statewide | \$350,000 |
| 6 | CO-TOD | T29376 | Transportation Technology Fiber Communication (17 Breakout Projects) | Statewide | \$25,000,000 |
| 7 | CO-TOD | T29379 | Signal Controllers & CPU Enhancements for ATSPM advancement | Northern Virginia | \$2,000,000 |
| 8 | Culpeper | 125829 | ATSPM projects with LIDAR detection/data collection | Culpeper: US 29, US 250, VA 3 (~9 locations) | \$873,000 |
| 9 | Staunton/ Salem/Bristol | 125726 | I-81 Advanced Monitoring Display Tool | Staunton & Salem Traffic Operation Centers | \$1,000,000 |
| 10 | Hampton Rds | 125029 | Hampton Roads Signal Preemption for Emergency Response | Districtwide (9 total) | \$175,000 |
| 11 | Hampton Rds | 125032 | Crash Notification System (advanced portable camera trailers) @ work zones & tunnels | Districtwide | \$500,000 |

ITTF 2024 New Projects

| # | District | UPC | Description | Location | Total Cost |
|---------------|-------------|--------|--|---|---------------------|
| 12 | Hampton Rds | 125031 | Hampton Roads District Annex – Communication Connectivity to access traffic signal and the ATMS network. | Suffolk: Portsmouth Blvd, Nansemond Pwky | \$420,000 |
| 13 | Hampton Rds | 125048 | Integrated Corridor Management (traffic routing between MMMBT and the James River Bridge) | Newport News, Suffolk, Isle of Wight | \$4,840,000 |
| 14 | Lynchburg | 126015 | High Speed Communications for Traffic Signals | 11 locations | \$1,400,000 |
| 15 | Lynchburg | 126014 | ATSPM Upgrades & Corridor Retiming Enhancements | US 221, 460, 501, 29 ~20 potential locations | \$1,070,000 |
| 16 | Richmond | 125376 | Ramp Preemption System (prevent backup on main line routes) | 15 potential locations | \$750,000 |
| 17 | Richmond | 125374 | Red Light Extend on High Speed/Volume Truck Routes | 50+ potential locations | \$500,000 |
| 18 | Salem | T29336 | Portable ITS Cameras for Incident Monitoring | Districtwide | \$100,000 |
| Total: | | | | | \$44,678,000 |

ITTF 2025 Program Changes

Accept Applications via the **Smart Portal**

(Tentative Open Date = October 2024)

