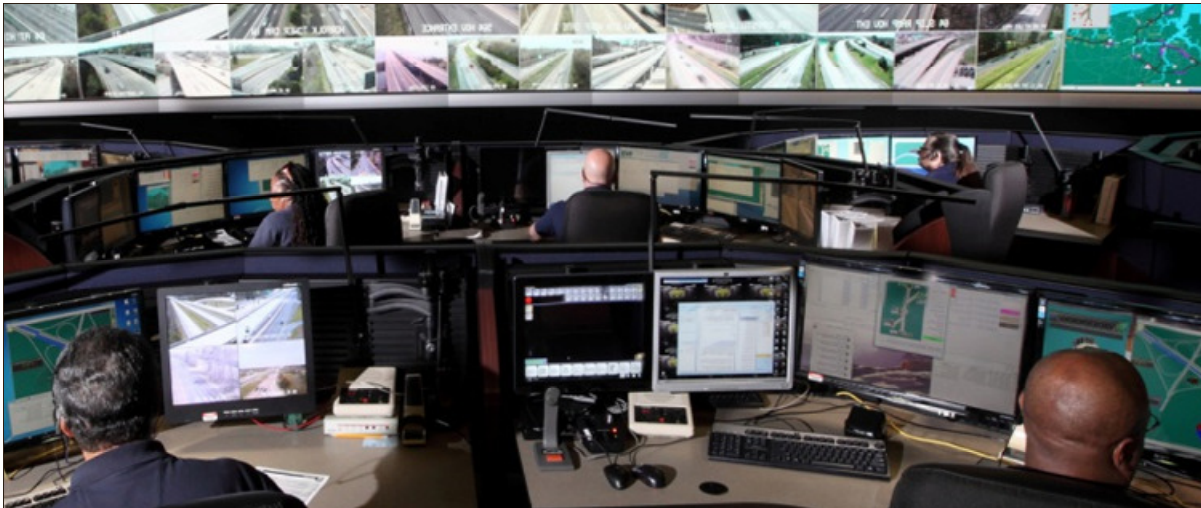




Driving Transportation Solutions through Technology

January 19, 2016



Virginia Beach
Oceanfront Via



43

MIN

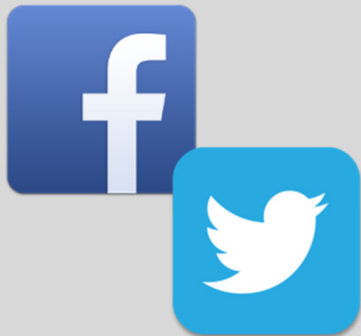


63

MIN

The power of technology

VDOT
Virginia Department of Transportation





Transportation Technology Plan

The plan drives programs and investments by:

1. Focusing on Corridors of Statewide Significance
2. Supporting mode switch and multi-modal travel
3. Improving efficiency and reliability
4. Reducing incident duration
5. Optimizing system throughput
6. Using a quantitative, data-driven project selection process

New statewide technology pilot programs

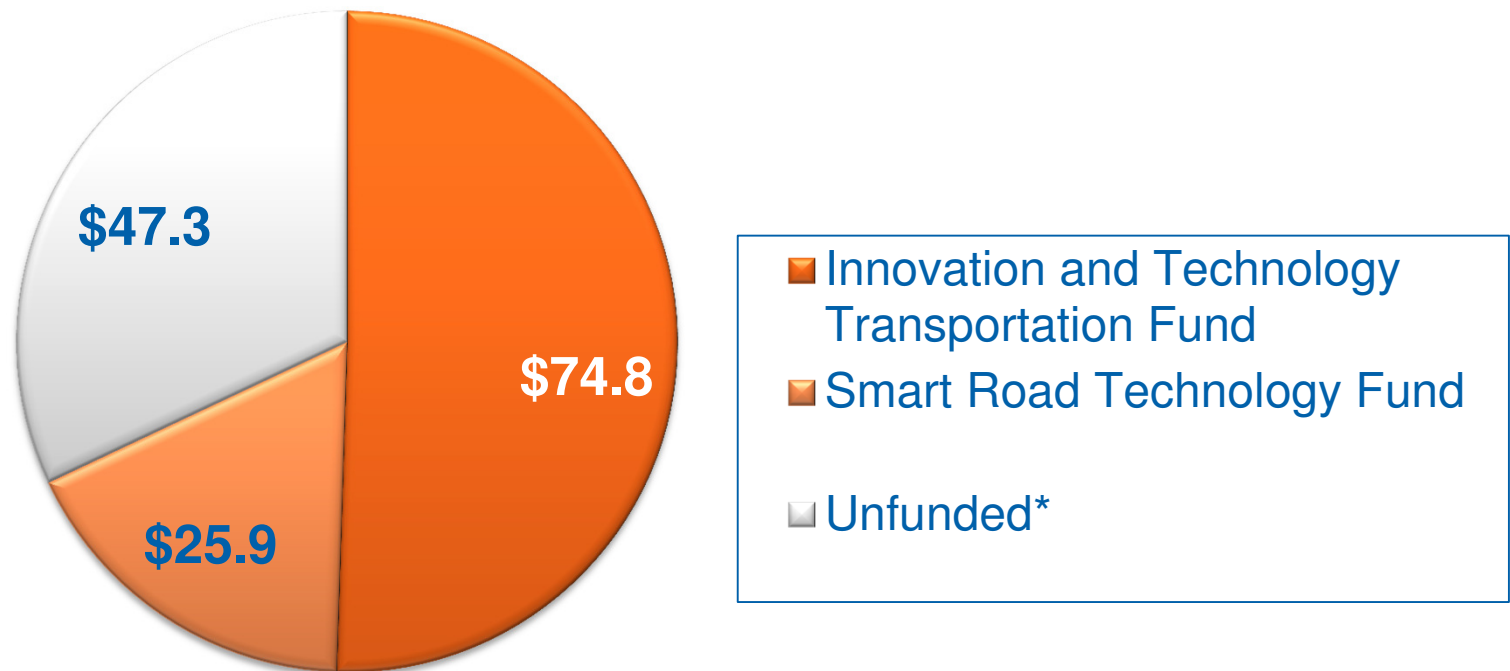
- 11 Programs
- 5-year cost: \$31,501,000

New corridor-specific projects

- 55 projects
- 5-year cost: \$116,630,212

Transportation Technology Plan guides \$148.1 Million of Investments

Funding Sources (in \$M)



**Candidate transportation projects selected as funding becomes available.*

Continued *innovative technology* will provide a positive return on investment.

- In 2014, there were **15.7 million vehicle hours of delay** on our interstate system (64, 66, 77, 81 and 95).
- These delays **cost the commonwealth \$376 million in lost economic productivity.**

Reduction in Delay	Reduced Hours	Savings	Five-Year Return on Investment
5%	0.78M	\$18.8M	1.26
10%	1.57M	\$37.6M	2.51

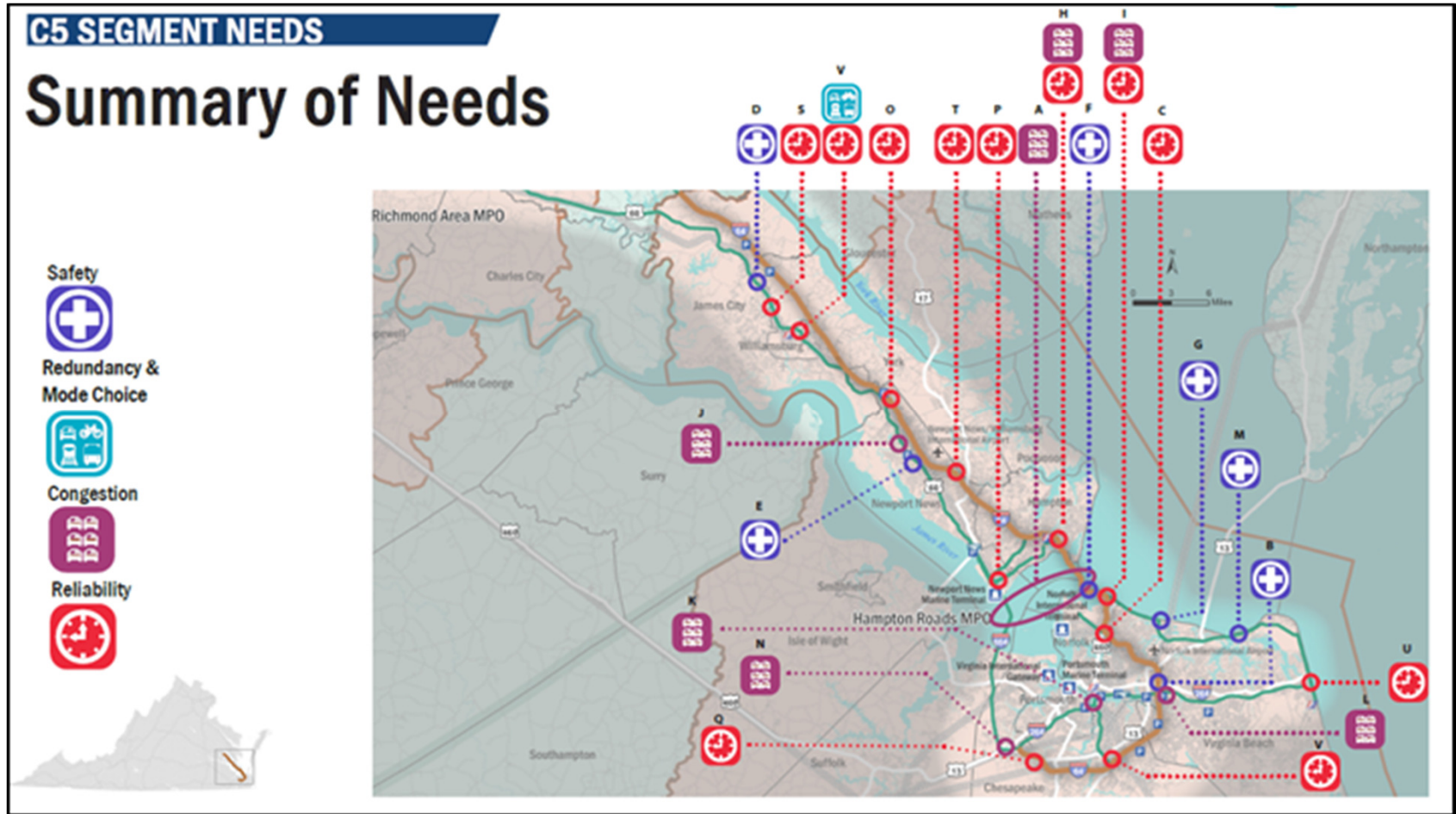
Solutions

Example: Active Traffic Management



TTP Project Development

Corridor Example: I-64 (Segment C5)









Source: VTrans2040 Multimodal Transportation Plan
 Corridors of Statewide Significance Needs Assessment – East-West Corridor

TTP Project Development

Corridor Example: I-64 (Segment C5)

Needs Assessment Report

Item	Need
A 	Congestion between I-64 Hampton & Norfolk
D 	US60 between Lightfoot Road & Rt 612 - Crashes
F 	Severe crashes – South end of HRBT
I  	I-64 HRBT to I-564 – Significant delay
P 	Delay near I-64 MMMBT

Technology Solutions

Project	Addressed Need
I-64 Active Traffic Management	A, I
US60 Arterial Operations	A, D
HRBT Tunnel Traffic & Safety System	F
I-64 HRBT Overheight Detectors	I
MMMBT Tunnel Traffic & Safety System	P



Pilot Programs

Technology Project	Addressed Need
511 Enhancements	A, I, P



TTP Project Scoring

TTP Plan Objectives	Ranking Criteria	Criteria Scoring
Increase mobility by improving access to multimodal options	Supports multimodal travel	No = 0 Yes – one mode = 1 Yes – two or more modes = 2
Improve transportation system efficiency by mitigating recurring and non-recurring sources of congestion	Reduce the number of vehicle hours of delay per year	No impact to VHD = 0 VHD < 600,000 hours/year = 1 VHD ≥ 600,000 hours/year = 2
	Reduce the buffer time index	No impact to Buffer Time Index = 0 Buffer Time Index < 0.2 = 1 Buffer Time Index ≥ 0.2 = 2
Reduce median duration of incidents	Supports improved incident management	None = 0 Limited = 1 Substantial = 2
Optimize system throughput by improving freeway, arterial and transit operations, encouraging route and mode switch.	Optimize system throughput	No = 0 Limited = 1 Substantial = 2
Accelerate deployment of projects with near-term benefits	Project Readiness	3+ years to deployment = 0 1-3 years to deployment = 1 Immediate deployment = 2

Top 3 Projects (ranked)

Project	Location	Cost
I-64 HRBT Overheight Detection	Hampton Roads (I-64 corridor)	\$0.9M
I-95 / I-395 ICM: Multimodal Traveler Info	Washington to NC (I-95 corridor)	\$5.7M
US60/US17/VA143 & 199 Arterial Improvements	East-West (I-64); Coastal (US17)	\$1.6M

See attachment for project details.

Other Notable Projects

Project	Location	Cost
I-95 Richmond Active Traffic Management	Richmond (I-95 corridor)	\$6.0M
US11 Arterial Operations	Crescent (I-81 corridor)	\$4.8M
Real-Time Parking at WMATA Stations	Northern Virginia (I-66 corridor)	\$1.0M
Advanced Towing & Recovery Program	Statewide	\$4.0M
Transit Efficiency Projects	Statewide	\$2.5M

See attachment for project details.

ITTF Funding Request

	FY17	FY18	FY19	FY20	FY21	5 YR Total
Proposed ITTF allocation	\$8.1	\$8.9	\$7.9	\$25	\$25	\$74.9

- **20 projects** are recommended to advance using ITTF
- These represent the **highest ranking projects** from the plan and include **key statewide initiatives**

The funding request seeks:

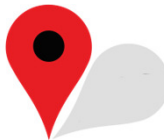
- The **return of \$24,900,000 in funds** previously allocated to ITS projects in FY17-FY19 and reassigned to support HB2, and;
- **Full funding of the program at \$25,000,000/year** in FY20 and FY21 per *COV* § 33.2-370.



Technology & Transportation: Through the Ages



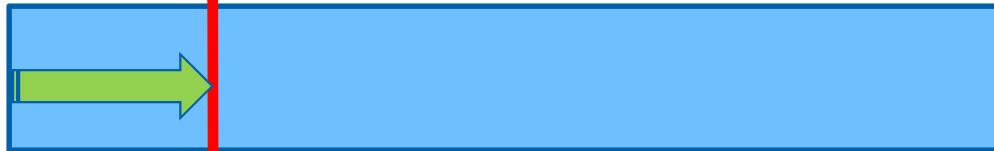
(YOU ARE HERE)



Age of Deployment



Age of Integration



Connected Vehicles and Beyond???

