



Virginia's Involvement in Connected Vehicles

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Cooperative Transportation Systems Pooled Fund Study

- The Pooled Fund Study (PFS) is a partnership of transportation agencies who have established a program to facilitate the development and evaluation of Connected Vehicle applications
- The program will prepare state and local transportation agencies for the deployment of Connected Vehicle technologies
- The program will result in the following outcomes:
 - Development and demonstration of Connected Vehicle-enabled system operations algorithms, tools and applications
 - Preparation for field demonstration tests
 - Lessons learned and identification of issues from field demonstrations



Cooperative Transportation Systems Pooled Fund Study

- The PFS was initiated as a phased program

Phase I - Research to educate to connected vehicle technologies

Phase II - Develop and field testing connected vehicle applications

Phase III – Continue develop and field testing connected vehicle applications

Dynamic Mobility Application – Develop and field test a Multi-modal Intelligent Traffic Signal System

July 2009

July 2012

July 2015

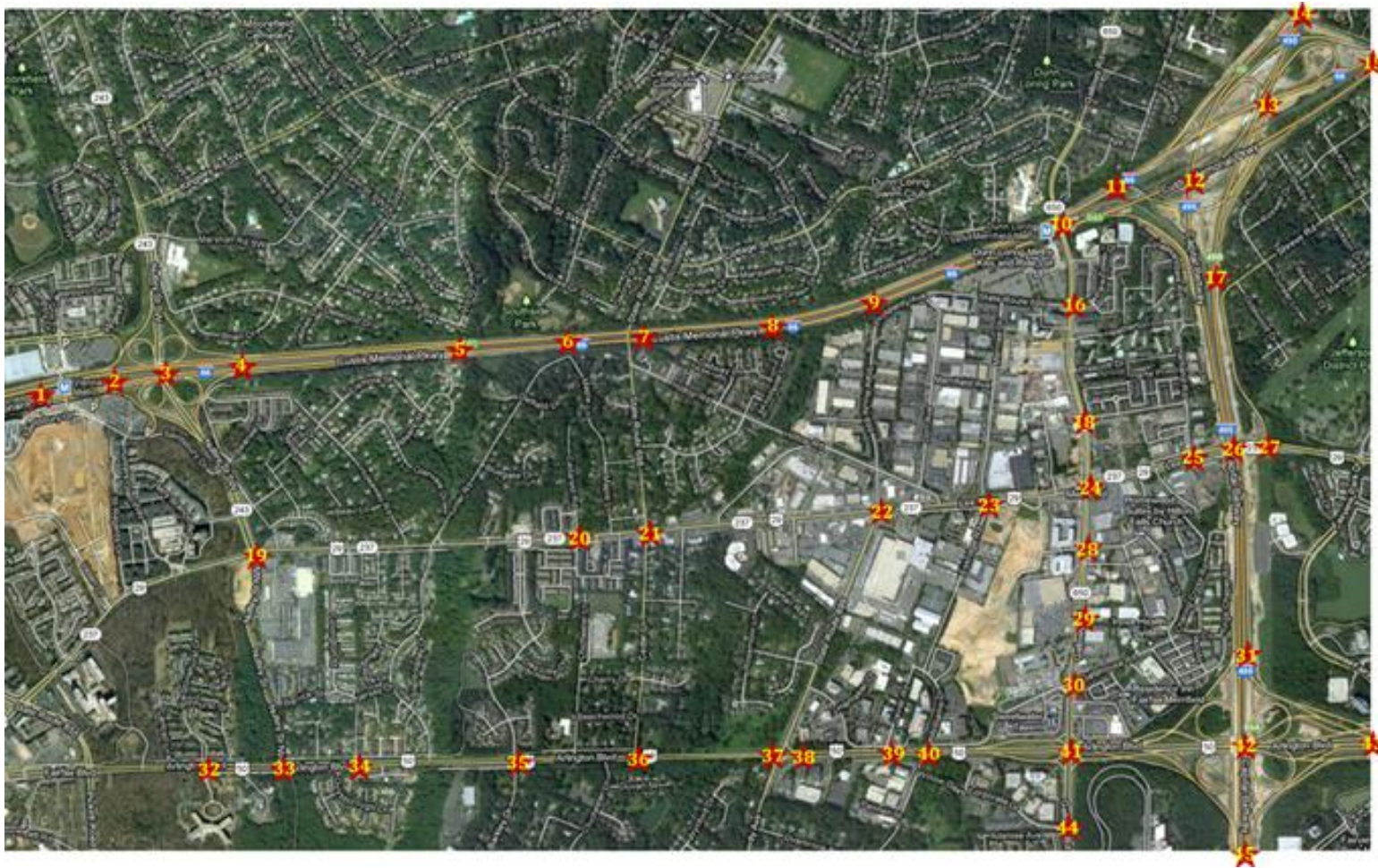
July 2017

Virginia Connected Vehicle Test Bed

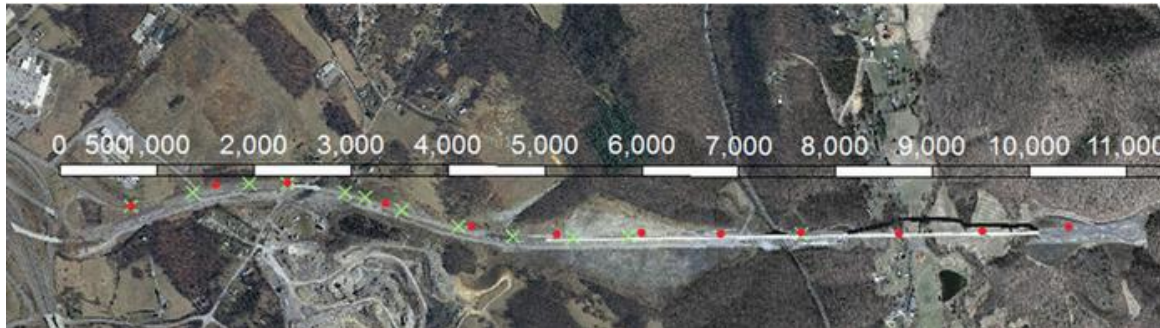
- With VDOT's support, Virginia Tech, University of Virginia, and Morgan State University have developed a Tier 1 University Transportation Center (UTC)
- Center will focus on research, education and workforce development for the Connected Vehicle/Infrastructure (CVI) environment
- CVI-UTC will use current facilities, equipment and technical support to develop and test CVI applications and technology
- Test beds in Fairfax and Blacksburg (Smart Road at VTTI)



Road Side Infrastructure – Northern Virginia



Road Side Infrastructure – Smart Road

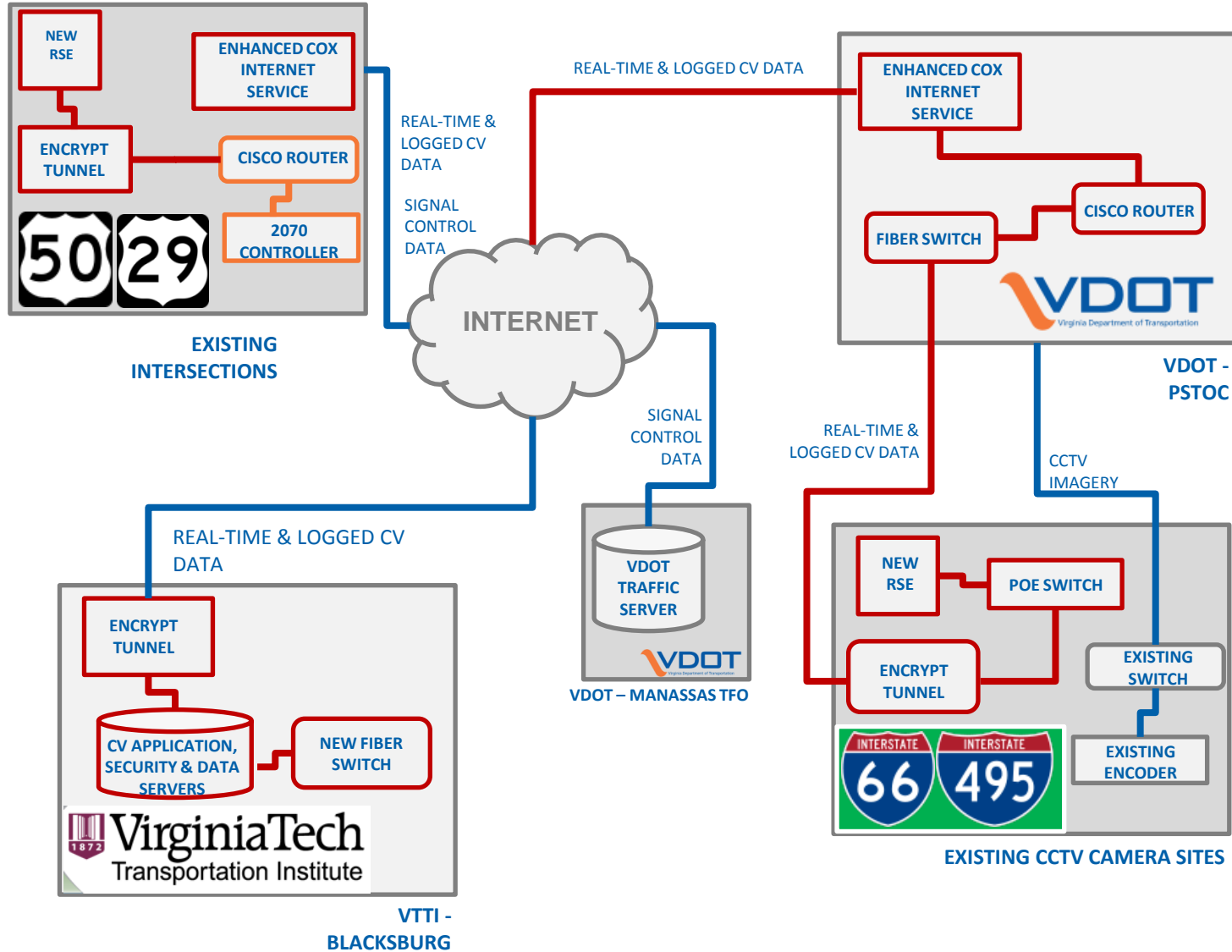


VA Testbed – Road Side Equipment

- Savari StreetWAVE is a fixed wireless gateway that will be mounted on CCTV poles along the freeway and traffic signals along the arterials



Network Architecture



Connected Vehicle Test Bed Expansion

Work planned in FY15

- **The Fairfax Test Bed will expand to align with the project limits of the Active Traffic Management (ATM) Project on I-66, and will include:**
 - 25 RSEs to expand the Northern Virginia Test Bed on I-66 between Vienna and Gainesville (25 miles)
 - Recruit and equip vehicles that regularly travel through the I-66 test bed
- **Specific work will focus on integrating CV data from the test bed with real-time operations in the TOC**
 - Refine and deploy backend communications
 - Refine the V2I application server
 - Develop and test cellular communications messages and protocols
 - Develop, test and deploy data archiving plan (to include data sharing)
 - Security credential management

Considerations

- **Roadside Equipment is still maturing**
- **Legacy equipment and communications systems in the field**
- **Communications system (uncertain impacts to existing capacity)**
- **Standards are not fully developed**
- **Coordination between state and local agencies is key to ensure consistency and interoperability**

Additional Information

- **Cooperative Transportation Systems Pooled Fund Study**
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