Virginia’s Involvement in Connected Vehicles

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June 6, 2014
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
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• 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

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.
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
  [http://cts.virginia.edu/CTSPFS_1.html](http://cts.virginia.edu/CTSPFS_1.html)
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