



Virginia Center *for* Transportation
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Taking the First Steps Towards Connected Vehicle Deployment – Virginia’s CV Research Program

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VCTIR

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Connected Vehicle Technology

- Provide connectivity:
 - Among vehicles to enable crash prevention
 - Between vehicles and the infrastructure to enable safety, mobility, and environmental benefits
 - Among vehicles, infrastructure, and wireless devices to provide continuous real-time connectivity to all system users.



Why is Virginia Investing in Connected Vehicles?

- Virginia's urban areas have some of the worst congestion in the country
- Traffic crashes killed 775 people on Virginia roads in 2012, another 67,004 were injured
- Traditional countermeasures can no longer address the safety and mobility challenges



So what will our investment get us?

- AASHTO Footprint Analysis presents several potential benefits:
 - Highway crashes will be dramatically reduced when vehicles can sense and communicate the events and hazards around them
 - Mobility will be improved when all users in all modes have access to substantially more up-to-date, accurate, and comprehensive information on travel conditions and options and system operators have actionable information and tools to affect performance
 - Environmental impacts of vehicles and travel can be reduced when travelers can make informed decisions about modes and routes



That sounds great, but how will it work?

- Benefits will accrue through the deployment of applications – both V2V and V2I
- As a public agency, VDOT is focusing on V2I applications
- V2V applications are included in our research program through our university partnerships



Potential V2I Safety Applications

- Red light violation warning
- Curve speed warning
- Stop sign gap assist
- Spot weather impact warning
- Reduced speed/Work zone warning

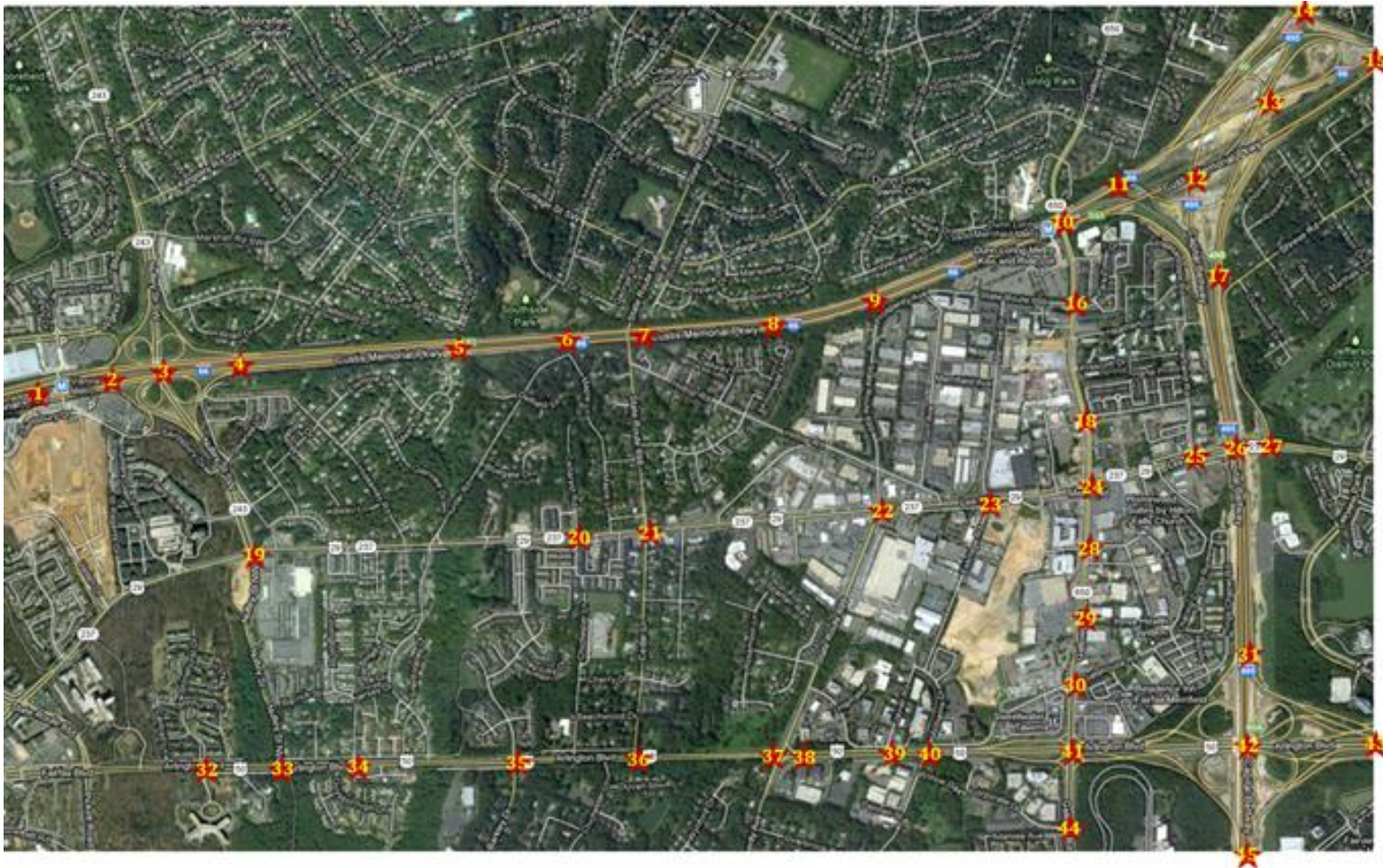


Potential Mobility Applications

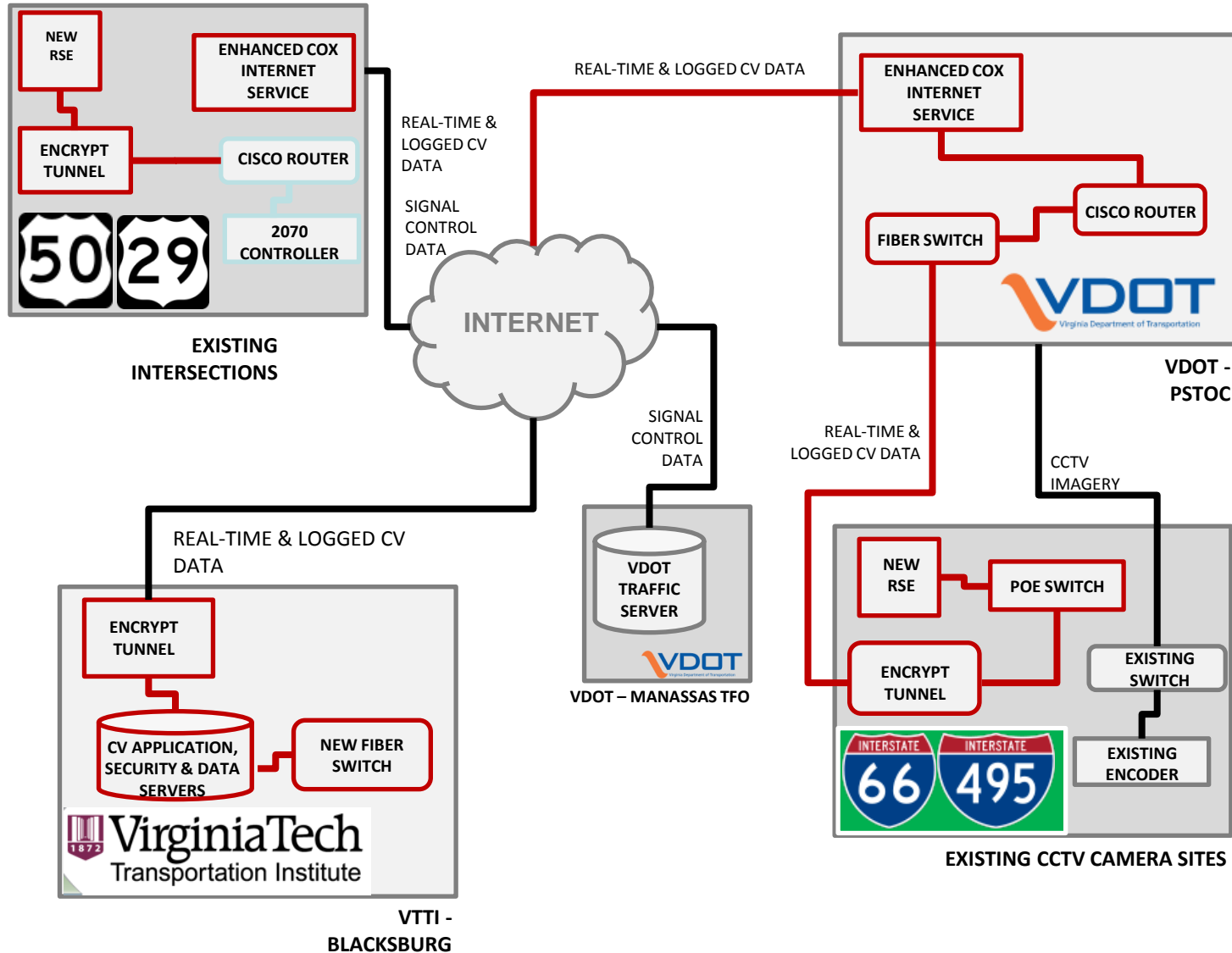
- Motorist advisories and warnings
- Real-time route specific weather information
- Advanced traveler information
- Freight real-time traveler information with performance monitoring
- Transit signal priority
- Emergency Vehicle preemption



Road Side Infrastructure – Northern Virginia

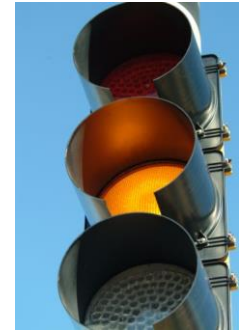


Network Architecture



VDOT CV Application Priorities

- Traffic signal applications
- Pedestrian safety
- Expanded DMS (or radio) messaging
 - Incident details
 - Vehicle size restrictions (height/weight)
 - Diversion/alternative routes
- Work zone safety
- Weather-related traffic advisories





Google

self-driving car

6VVA091

https://www.youtube.com/watch?feature=player_detailpage&v=odgQpa1pUUE

Our next steps

- Initiate final round of UTC research projects – focus on test bed
- Increase the number of equipped vehicles regularly traveling through the test bed corridor
- Establish and extend partnerships that will enhance our program



Additional Information

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