Leveraging Connected and Automated Vehicle Innovations for Safer Roads

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VDOT’s Mission and Vision for its Connected and Automated Vehicle Program

• VDOT’s Mission:
VDOT will plan, deliver, operate and maintain a transportation system that is safe, enables easy movement of people and goods, enhances the economy and improves our quality of life.

• VDOT’s Vision, as it relates to Connected and Automated Vehicles:
To capitalize on the safety and operational benefits of Connected and Automated Vehicle technologies to meet the goals and objectives of its business plan.
To position Virginia as the most attractive state for industry to deploy, test, operate and evolve Connected and Automated Vehicle products and services.
To achieve this, VDOT will leverage key resources unique to Virginia, including:

- **VDOT owned and operated roadways with diverse urban, suburban, and rural characteristics.**
- **An “Open-for-business” regulatory environment for innovative transportation solutions.**
- **Mature, robust, and supported networking and cloud-based data services.**
- **Trusted world-class research and testing capabilities.**
- **Local leadership & expertise in cybersecurity, including military partners, as well as a highly trained workforce to support the technology sector.**
Why Connect? What Benefits Can We Expect?

National Timeline for Application Adoption and Associated Mobility Benefits

- Cooperative Adaptive Cruise Control
- Traffic Jam Assist
- Platooning
- Forward Collision Avoidance
- Adaptive Cruise Control
- TJA

(Source: USDOT, FHWA-JPO-16-229)
DEPLOYMENTS
Virginia Connected Corridor (VCC)

In 2014, VDOT and VTTI introduced the Virginia Connected Corridors (VCC) initiative

- Smart Road in Blacksburg, VA
- Northern Virginia Connected-Vehicle Test Bed in Fairfax Co., VA
- One of the most congested corridors in the U.S.

Mission: Provide an open connected vehicle environment where concepts can be developed, tested, deployed, and evaluated in real world operating environments.
Virginia Connected Corridors is an Opportunity to Accelerate Deployment

• The VCC is focused on addressing several transportation challenges and providing opportunities to the CV industry

• The VCC environment includes:
  - CV technology on both closed and live roadways in Virginia
  - Support for third-party application development
  - Data services, Application Program Interfaces (APIs) and reference applications
  - Corridor visualization application

• The VCC will facilitate deployment and integration of connected vehicle data and applications into VDOT Operations
Virginia Automated Corridor (VAC)

Mission:
Provide an automation-friendly but challenging environment to test and evaluate automated vehicles

Allows users to develop and test certification protocols

Progress is rapid, efficient, and achieved at reasonable cost
New Initiatives Trending in Virginia

- Virginia Automated 20XX Strategic Plan
- Autonomous Systems Center of Excellence

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Governor McAuliffe Announces Establishment of Commonwealth’s Autonomous Systems Center of Excellence

~CoE designed to lead the expansion of the autonomous systems industry in Virginia~

DALLAS—Governor Terry McAuliffe today announced the establishment of the Autonomous Systems Center of Excellence to champion the expansion of this important industry in the Commonwealth, while speaking at the Association for
Anticipated Safety Impacts:
Findings from US Department of Transportation

• Red Light Violation Warning and Pedestrian in Signalized Crosswalk Warning applications together have the potential to address more than 250,000 crashes and 2,000 fatalities each year nationwide.

• The Curve Speed Warning application has the potential to address more than 169,000 crashes and 5,000 fatal crashes per year nationwide.

Sources: FHWA-JPO-16-272 and NHTSA-11078-101414-v2a
Anticipated Safety Impacts:
Findings from US Department of Transportation (cont.)

• Deploying just two apps - *Intersection Movement Assist* and *Left Turn Assist* will prevent 400,000 to 600,000 crashes, 190,000 to 270,000 injuries and save 780 to 1,080 lives each year when implemented across the entire fleet.

• The addition of other V2V and V2I safety applications would save even more lives.

• Altogether, these applications could eventually prevent or reduce the severity of up to **80 percent** of non-alcohol-related crashes.

Sources: FHWA-JPO-16-272 and NHTSA-11078-101414-v2a
GHSA offers the following **five pieces of advice** for states as they grapple with the issue of AVs:

1. Be informed.
2. Be a player in your state.
3. Understand the role of states.
4. Don’t rush into passing laws or establishing regulations.
5. Be flexible – this is a new game.
Questions?

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