



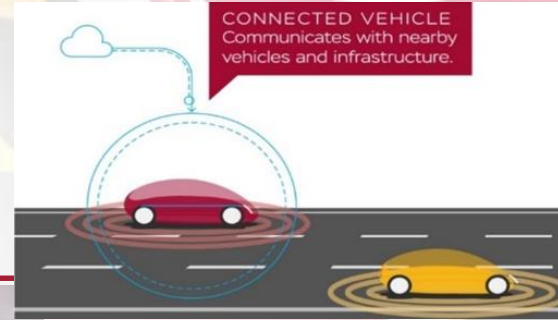
Maryland's Connected & Automated Vehicle Technology and Upcoming Strategic Framework

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IN THE NEWS: CAV TECH FOR FREIGHT & TRUCKING



TuSimple's new autonomous freight network is backed by companies including UPS, Penske, and Berkshire Hathaway's McLane

Locomotion & SmartBelt Coalition prime example of collaboration across states, agencies and institutions to set the stage for the deployment.

Robotic Research: leader-follower tech



Maryland CAV Vision:

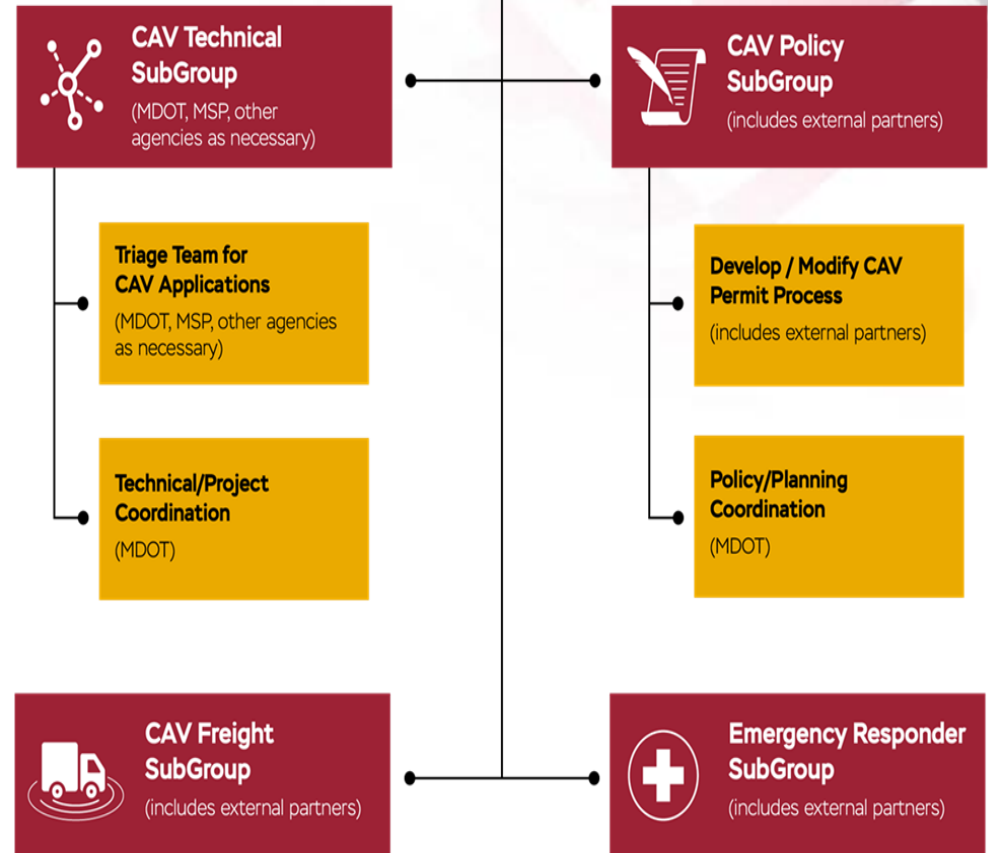
Uphold & enhance a **Safe, Efficient, and Equitable** transportation future by delivering collaborative and leading-edge CAV solutions. Maryland is open for business and eager to realize the life-saving and economic benefits of CAV technology, while ensuring safety for all. We are embracing CAV technology and innovation through **continuing collaboration** with partners interested in **researching testing, and implementing** CAVs in MD.

mdot.maryland.gov/MarylandCAV



Connected and Automated Vehicles (CAV) Working Group

Created by Maryland Department of Transportation Secretary Pete Rahn in December 2015



MARYLAND CAV ACTIVITIES

2015

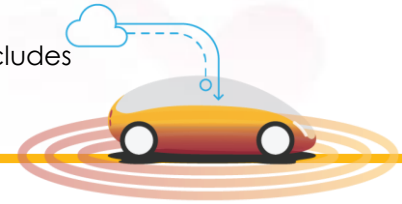
Foundations: Statewide CAV Working Group – central point of coordination

2017

- + **First Roll-outs:** MDOT MVA implements expression-of-interest & high-level vehicle tech testing permit processes ([Link](#))
- + STEER begins testing on Maryland roadways
- + MDOT SHA releases a CAV Strategic Action Plan ([Link](#))

2019

- + **Stronger:** MDOT MTA wins first ever TRB transit IDEA grant and begins testing autonomous vehicle parking at a MARC commuter rail park and ride lot
- + Robotic Research begins testing on Maryland roadways
- + MDOT helps establish new Mid-Atlantic CAV Group within the I-95 Corridor that includes MD, DC, VA, DE, PA, NJ, and NY
- + MDOT SHA wins STIC grant to deploy connected vehicle technology for pedestrian safety
- + MDOT MAA releases an RFP that includes autonomous parking technology as a requirement



2016

- + **Early Efforts:** Evaluation of status and needs; begin to engage w/stakeholders and federal partners
- + MDOT SHA includes CAV in its TSMO Strategic Action Plan ([Link](#))

2018

- + **Expansion:** MDOT releases a statewide CAV Vision Statement
- + Local Motors begins testing
- + MDOT MAA begins AV testing at BWI Marshall one of first airports to test AVs
- + MDTA DSRC Pilot; and MDTA releases a CAV Strategic Action Plan ([Link](#))
- + MDOT "Locations to Enable Testing Sites" (LETS) application is released to the public ([Link](#))

2020

- + **Full Speed Ahead:** SHSP integrating CAV tech
- + Maryland 1st state in NHTSA AV Tracker pilot
- + MDOT MVA on NHTSA project for low-level vehicle tech driver training
- + MDOT MTA in dialogue with business park on possible autonomous shuttle pilot
- + MDOT SHA hosts educational STEM workshops as part of the AASHTO TRAC program
- + MDOT TSO & MDOT SHA survey local jurisdictions on needs relating to emerging technologies ([Link](#))
- + MDOT to release CAV Strategic Framework

PRIVATE ENTITY PILOTS IN MD



Local Motor's automated shuttle *Olli* @ National Harbor; also testing in Montgomery Co.

STEER autonomous parking, multi-county deployments and at BWI Thurgood Marshall

MARYLAND

Exp: 9/13/2017

SAMPLE

HAV-0001

EOIs & HAV Permits

Expression of Interest

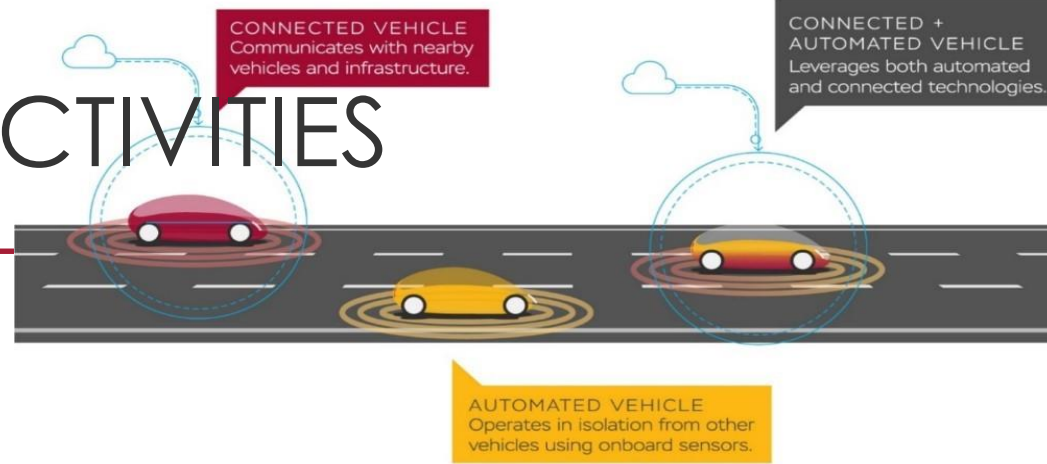
- Starting point to engage appropriate agencies
- Facilitates dialogue with potential partners
- Twenty-eight EOIs have been received

Highly Automated Vehicles (HAV) permit process for demonstration testing on Maryland roadways

- Voluntary, collaborative process – forum for dialogue about safety considerations
- \$5 million insurance req; self-certification for vehicle, operators and other safety plans
- Unique permit for each vehicle



MARYLAND CV ACTIVITIES

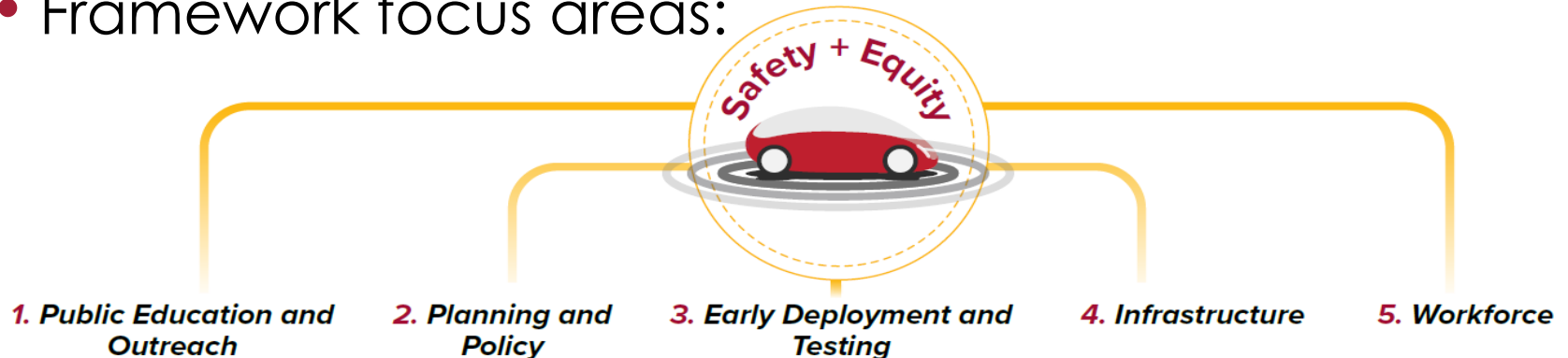


- Prince George's Co - CV pilot deployment in National Harbor: several intersections & vehicles equipped to communicate with each other
- Montgomery Co deploying CV solutions at several intersections for Signal Phasing and Timing (SPaT) testing
- MDOT SHA - infrastructure to vehicle deployment for detection/warning of pedestrians at MD 214 & Addison Rd at Seat Pleasant Metro
- UMD's CATT testing vulnerable user detection and notification algorithms; w/MDOT SHA and MSP on traffic incident mgt. scene data transfers for in-vehicle notifications
- Howard Co - awarded grant to STEER to retrofit government fleet vehicles with AV capabilities
- MDTA pilot deployments of dedicated short-range communications (DSRC) roadside units and on board units

MD CAV STRATEGIC FRAMEWORK

- Framework stakeholder input:
 - ❑ Survey (600+ responses) -- 90% reported that doing nothing was not an option!
 - ❑ Public comment review of draft (2 weeks)
 - 150+ comments
 - No critical changes in the Framework content
 - OEM perspectives focused on specifics for data policies and establishing requirements

- Framework focus areas:



FREIGHT SURVEY RATINGS

- Number **two** priority for deployment: *“more efficient movement of goods to improve economic vitality, reduce freight congestion, and help businesses succeed”*
- Number **one** in category of *Do Within 5 Years*:
“automated freight solutions”
- Number **one** in category of Important strategies:
“deploy automated freight solutions to improve movement of goods”
 - Number **three** is “permit the use of freight CAV solutions (including platooning) on existing State freight network”



Maryland **CAV** Web Page – mdot.maryland.gov/MarylandCAV

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