

Preparing for CAVs: MDOT SHA's CAV Strategic Action Plan

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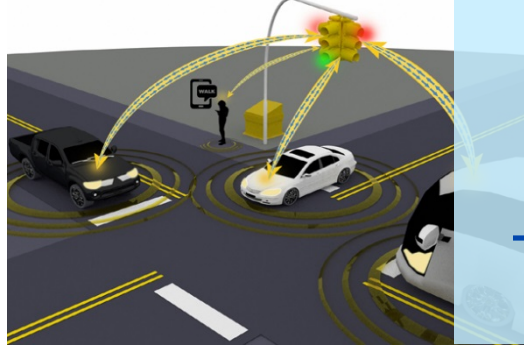
Connected & Automated Vehicle (CAV) Strategic Action Plan



→ It is important to outline goals and objectives, but also remain nimble so as to rapidly adjust to lessons learned and evolving strategies or technologies.

→ Strategic Action Plan = somewhere in-between a master plan and a deployment plan, which will provide MDOT SHA with a view of how to best manage this rapidly evolving topic.

→ This will be a living document...



Overview Of The Process

→ Collaborative

- Jointly managed by OPPE and CHART, with active participation from OPR, OOTS, OOM, and others.
- University of Maryland Center for Advanced Transportation Technology

→ Iterative

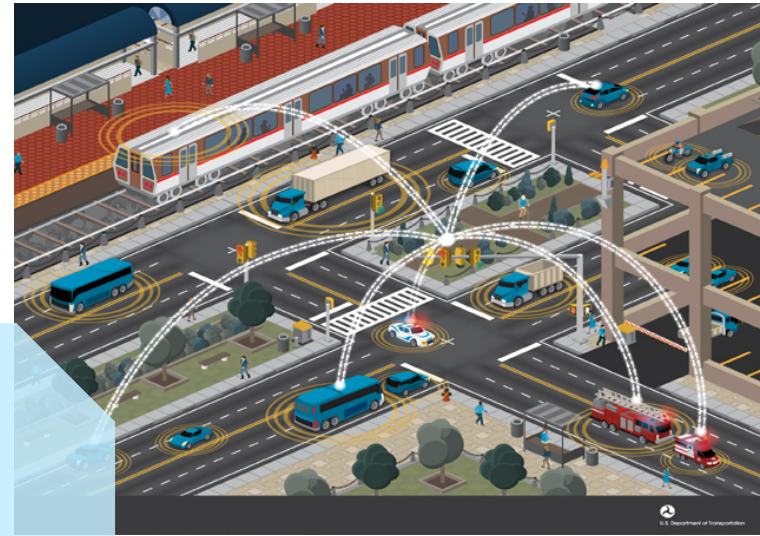
- Product of several internal working group meetings
- Influenced by actions of MDOT CAV Working Group and other TBUs

→ Action Oriented

- Lessons learned from states that have already entered this space

Document Organization

1. Baseline: What is CAV?
2. Planning Activities
3. Take Action: Pilot CAV Programs
4. Enabling Actions: Build a Support Program



MDOT SHA → Vision For CAV



“Embrace technology and next generation mobility trends to provide safe & reliable travel for people and goods within Maryland.”

MDOT SHA → Goals For CAV

- GOAL 1: Make Maryland an attractive **partner** for CAV development, testing, and production; Maryland is “open for business.”
- GOAL 2: Begin deploying CAV technology to **gain experience** through pilot projects, and work with partners to engage in national efforts.
- GOAL 3: Establish **foundational systems** to support future CAV deployment - data management, telecommunications, and a robust policy program to enable sustained deployment activity.
- GOAL 4: Enable CAV **benefits for customers** - identify ways to add value to our customers today and in the near future during the transitional timeframe of CAV on our roadways.
- GOAL 5: Look for opportunities to **leverage CAV** technologies to support existing business processes and objectives such as performance based planning and provide operational benefits to support and enhance other business processes.

Vision → Goals → Strategies

STRATEGIES:	Goal 1: Make Maryland an attractive partner for CAV development, testing, and production	Goal 2: Begin deploying CAV technology and engaging in national activities	Goal 3: Establish foundational systems to support future CAV deployment	Goal 4: Enable CAV benefits for users	Goal 5: Look for opportunities to leverage CAV technologies to support SHA business processes
US 1 Innovative Technology Deployment Corridor	X	X	X	X	
Future Innovative Technology Deployment Corridors	X	X	X	X	
Other Major Projects	X			X	X
Federal Grant Opportunities		X			
Aberdeen Proving Ground	X	X		X	X
U.S. DOT	X	X		X	X
University of Maryland			X		X
Telecommunications	X	X	X		
Road Markings and Signage	X		X	X	X
Policy & Legislation	X		X		X
Data Governance Plan	X	X	X		X
Staffing & Skill Development	X		X		
Internal Awareness of CAV		X	X		X
External Outreach & Education	X		X	X	
Involvement/Visibility in National Activities	X		X	X	
MDOT SHA Offices and Engagement in CAV	X	X	X		X
MDOT SHA CAV Working Group	X		X		X

Example Strategy Construct



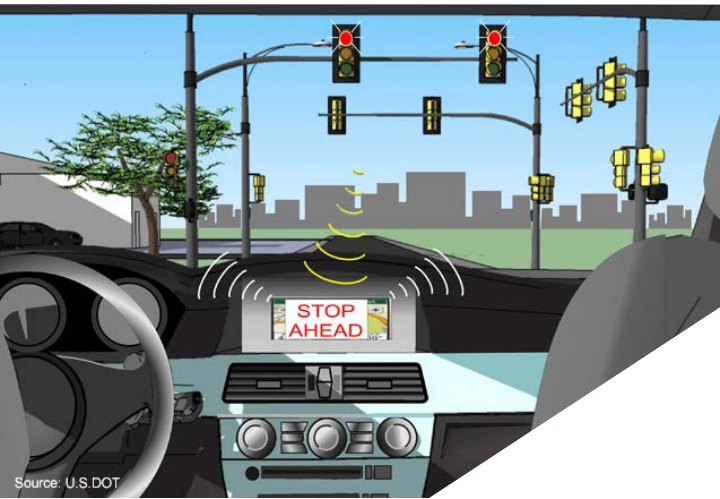
- General Description
- Details of the Strategy
 - Implications to existing programs
 - Variations based on changing conditions
- Recommendations
 - Specific recommendations for MDOT SHA

Example Of Recommendations From Strategies...

RECOMMENDED ACTION

- MDOT SHA should have a program in place that will have projects and ideas “on the shelf” with concepts fleshed out. Don’t wait for a grant opportunity to be published; most of the grant applications provide a 30- to 60-day window for submittal, but the project conceptualization process can often take 90 to 120 days or even longer if you are lining up partners. Use the internal MDOT SHA CAV Working Group to identify possible projects, and initiate an effort to develop the concepts further in anticipation of future federal grant NOFOs.
- Clarify with the MDOT SHA Office of Procurement and Contract Management the potential role of consultants in developing grant applications or project concepts for grant applications. Given the resource constraints that exist within MDOT SHA, it will be difficult to maintain this on-the-shelf capability without engaging consultants, but current conversations are unclear in terms of eligibility and potential conflict in terms of using consultants.

Early Actions

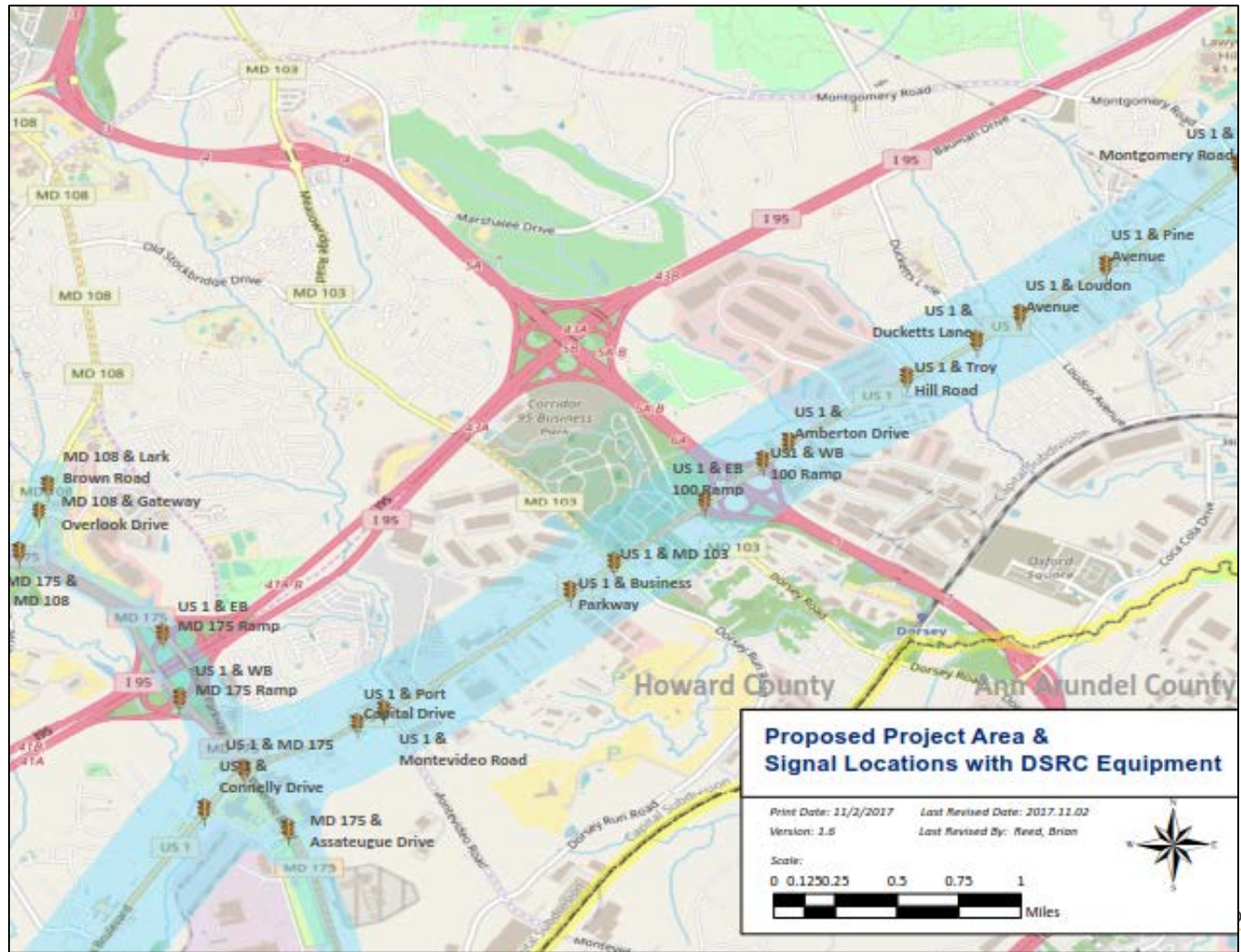


Source: U.S.DOT

- Lessons Learned through Pilot Testing
- US 1 Pilot Corridor
- Future Corridors
- Telecommunications

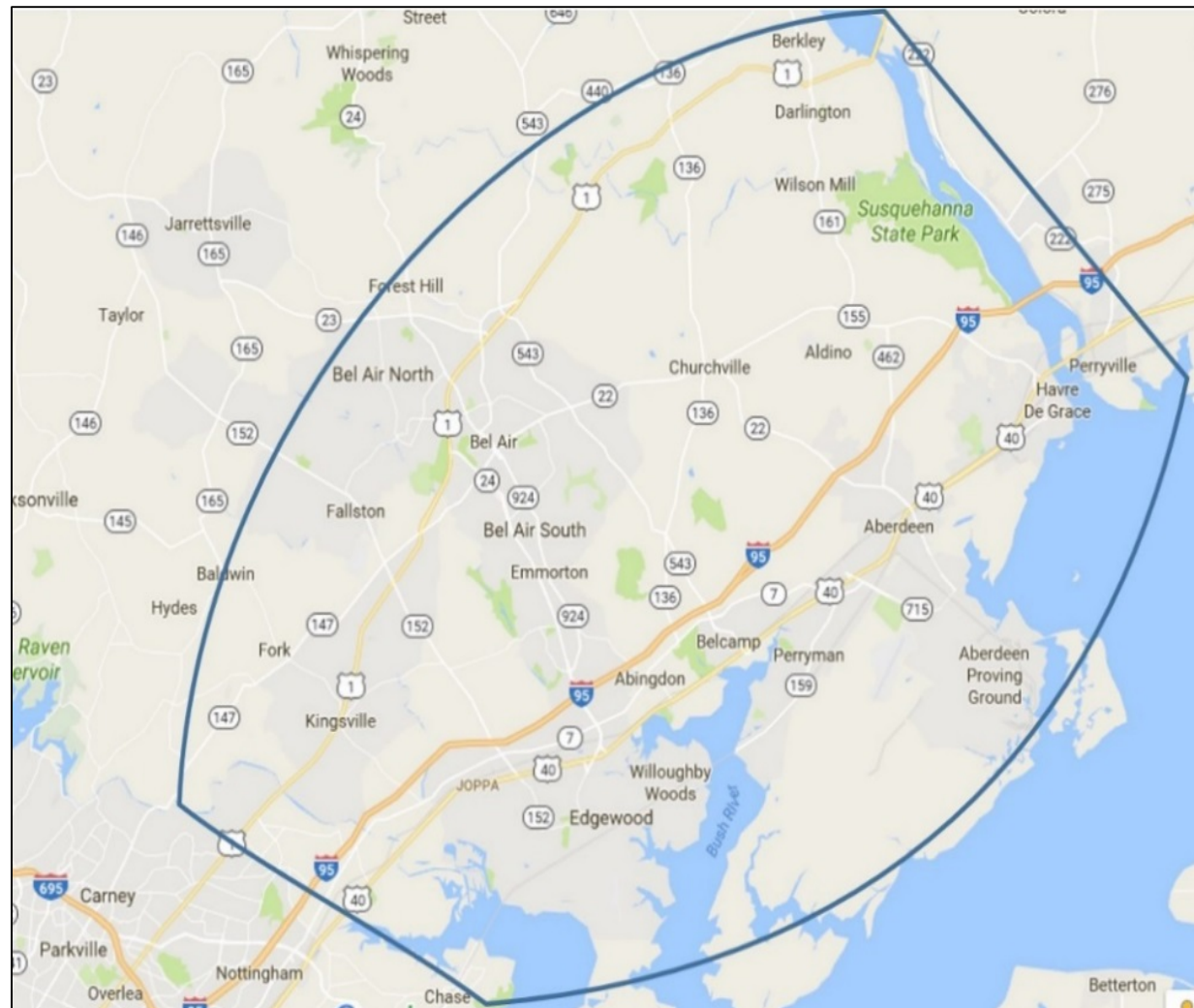
US 1 Pilot Project

- ✓ Adaptive Signal Control for congestion management
- ✓ ITS Devices for incident management
- ✓ CV Pilot Deployment for CV testing

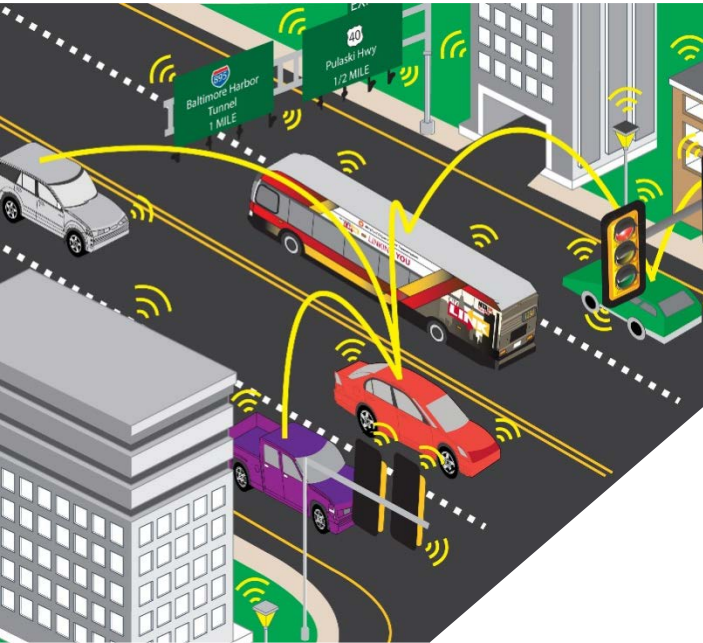


Future Pilot Corridors

- ✓ Capitalize on Adaptive Signal installations
- ✓ Look for Partnership Opportunities including MDTA and Aberdeen
- ✓ Consider telecom availability and future needs



Other Low Hanging Fruit



- Process for reviewing one-off testing and partnership opportunities
- Relationships with Aberdeen, US DOT, and Maryland Universities
- Cache of projects on-the-shelf for future grant opportunities
- Strategic Telecommunications Plan – one for SHA, but also one for MDOT statewide
- Be prepared for possible changes in road markings and signage

Enabling Actions: Build A Support Program

- **Policy and Legislation**
- Data Governance Plan
- Staffing and Skill Development
- **Internal Awareness of CAV**
- External Outreach and Education
- Visibility in National Activities
- **SHA Offices & Engagement in CAV**
- MDOT CAV Working Group



Policy And Legislation



- Develop a bicameral policy briefing for interested Maryland State Legislators outside of the session
- Secure one or more champions in each house of the assembly (in progress)
- Monitor state and federal legislative actions and provide periodic briefs to interested parties.
- As federal legislation begins to take shape, explore the potential impacts to Maryland and provide updates to give to our federal representatives.

Outreach & Awareness

- Develop an internal communications plan, coordinated with the TSMO plan.
- Develop and maintain a library of internal materials to support technical and executive staff in preparing for speaking engagements.
- Get this topic onto the agenda of key internal meetings and gatherings among various departments.
- Assess the economic impacts of CAV in Maryland, and develop an economic development outreach strategy.
- Update the website within MDOT to profile Maryland's emphasis on technology and transportation. The website can be a portal for companies thinking of doing business in Maryland (to learn more), or can reinforce our posture as a leading-edge high-tech state willing to help all companies and their employees get to where they want to be.

Organizational Management Within SHA



- Internal SHA CAV Working Group should continue to function, keeping periodic review over the many action items in this plan
- Leadership of the Working Group can rotate or be fixed in specific SHA offices
- Close alignment with TSMO implementation is a prerequisite for success
- Periodic engagement by senior management will further boost collaboration

Closing Thoughts

- Ready-Fire-Aim
- Partnership with MDTA
- Now that the plan is created, time to “operationalize” actions
- Regular updates will be initiated
- Future issues will arise (e.g., procurement)
- Stay on top of national activities

Don't be intimidated by the pace of change or number of unknowns!