Planning & Policy for CV/AV
in Maryland

ITS Maryland Annual Meeting
Tom Jacobs, Director
Center for Advanced Transportation Technology
September 22, 2016
Background

• White Paper: “Implementation Opportunities for Connected Automated Vehicles in Maryland”
  – ITS Maryland Sponsored CV 102 course and CV/AV Planning Session in May 2016
  – Multiple MDOT CV/AV Working Group Meetings
  – UMD Sponsored AV Policy and Regulation Workshop in May 2016
  – I-95 CC Sponsored CV/AV Conference in June 2016
3 Premises for Maryland

- Transition to World Full of CAV’s Will be Marked by Many Periods of Transition
- Connected and Autonomous Vehicle Technologies Will Converge
- Organization, Collaboration, and Coordination Will be Key Going Forward
Periods of Transition

...I AM APPROACHING FROM YOUR LEFT AND AM MAKING PRECAUTIONARY ADJUSTMENTS...

ACKNOWLEDGED. NOT A PROBLEM UNLESS THE SLAB OF MEAT IN HERE INTERFERES...

Intermediate stage en route to driverless cars.

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IS SLAB-WATCHING DISTRACTED DRIVING?
Periods of Transition

Year available features reach 95% of registered vehicles with and without hypothetical mandate

Source: Insurance Institute for Highway Safety Highway Data Loss Institute
CAV Convergence

Connected Automation for Greatest Benefits

Autonomous Vehicle
Operates in isolation from other vehicles using internal sensors

Connected Vehicle
Communicates with nearby vehicles and infrastructure

Connected Automated Vehicle
Leverages autonomous and connected vehicle capabilities

U.S. Department of Transportation
ITS Joint Program Office

CATT
CENTER FOR ADVANCED TRANSPORTATION TECHNOLOGY
Maryland Department of Transportation

“The Maryland Department of Transportation is a customer-driven leader that delivers safe, sustainable, intelligent, and exceptional transportation solutions in order to connect our customers to life’s opportunities.”
Opportunities & Issues

• CAV Implementation Has Strong Potential to Serve MDOT/SHA Goals

• Organizing for CAV
  – State Level and State & Local Coordination
  – Other partners & stakeholders

• Status of Current Systems & Technology
CAV Serving MDOT/SHA Goals

Connected Vehicles
Vehicle Automation
Internet of Things
Machine Learning
Big Data
Sharing Economy

Connected-Automated Vehicles

Benefits
- Order of magnitude safety improvements
- Reduced congestion
- Reduced emissions and use of fossil fuels
- Improved access to jobs and services
- Reduced transportation costs for gov’t and users
- Improved accessibility and mobility

Smart Cities

U.S. Department of Transportation
Organizing for CAV
Current Systems & Technology
Opportunities for Action

• Develop CAV Strategic Plan
• Develop a Test-Bed Approach
• Lead by Example
Develop CAV Strategic Plan

CONNECTED AND AUTOMATED VEHICLE TECHNOLOGY STRATEGIC PLAN

MDOT
Michigan Department of Transportation

CAR
CENTER FOR AUTOMOTIVE RESEARCH

CATT
CENTER FOR ADVANCED TRANSPORTATION TECHNOLOGY
Develop Test Bed Approach

MOU with DHS
Federal Law Enforcement Training Center

Existing
A. Wire Mounted Traffic Signals
B. Closed-Loop Test Track
C. Ramps
D. Pole-Mounted Traffic Signal
E. Flat Space Open Testing
F. Skid Pad

Future:
DSRC / Wi-Fi
V2I Communications

Source: USDOT, Federal Highway Administration
Develop Test Bed Approach

The Ideal Location

- Congressional Visibility
- USDOT Visibility
- Military Visibility
- 2nd worst traffic in the nation
- 2 Ports
- 2 Major Airports (BWI and DCA)
- National Security Centers and Assets
- Major Retail Distribution Centers (Amazon, UPS, FedEx, etc.)
- Hundreds of accessible signalized interchanges
- High-tech Business Resources
- State and Local DOT Partnerships
- Multiple bus, rail, metro, and other integrated mobility infrastructure
- 5 major North/South Routes
- 8 Significant East/West Connecting Routes

UMD develops solutions in the 4th largest marketplace in the US; epicenter to a $4.7T economy of the I-95 Corridor (40% of the US GDP)

Transportation@Maryland Initiative || www.tep.umd.edu || www.ntc.umd.edu || www.catt.umd.edu
Questions?