Current CAV Initiatives/Efforts in Wisconsin

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WisDOT DTSD Bureau of Traffic Operations
Foundational Assets in Wisconsin for CV

- ITS Infrastructure
- Owned and Leased ITSNET Fiber Network
- Improvements to ITSNET Network Reliability
- Updated traffic signal controller spec in 2017 capable of supporting SPaT and MAP for CV integration
- Statewide Traffic Management Center with 24/7/365 Operation
Bureau of Traffic Ops (BTO) National Engagement

- CV Pooled Fund Study Member State Since 2013
- ENTERPRISE Pooled Fund Study Member State 2019
- National Committee on Uniform Traffic Control Devices (NCUTCD) Connected and Automated Vehicle (CAV) Task Force
- National Cooperative Highway Research Program (NCHRP) Project Panels
- AASHTO Committee on Transportation System Operations Working Group on Connected and Automated Vehicles
- V2I Deployment Coalition/ CAT Coalition Meetings
BTO DSRC Pilot

Phase 1
• Demonstrate hardware and software functionality in a laboratory setting within WisDOT’s existing operational environment.
  • Hardware
    • Siemens Roadside Unit (RSU)
    • Sirius Onboard Unit (OBU)
    • TrafficCast RSU
    • Denso OBU
  • Software
    • V2I Hub software for SPaT and MAP
    • TransSmart BSM Data Collector
    • Traffic Cast TIM Software

Phase 2
• Demonstrate hardware functionality and integration in a field setting within WisDOT’s operational environment.
  • SPaT Challenge
  • Connected Fleet Challenge
MMITSS Deployment in City of Madison

- Multi Modal Intelligent Traffic Signal System
- WisDOT BTO is collaborating with the City of Madison for the Connected Vehicle Pooled Fund Study (CV PFS) MMITSS project
- The City to receive technical assistance from U of AZ to deploy MMITSS applications on the Park Street Corridor.

Work Zone Connected Technology Test

- WisDOT BTO purchased two iPins™ and two adaption kits for Connectedtech™ arrow boards from iCone® Products LLC.
- iPins™ can be inserted into a traffic control device to send GPS location information.
- WisDOT will be testing and investigating potential uses of this real time information for the ATMS and 511 systems.
Roadmap goals and objectives aligned with the dimensions of the SHRP2 L01 & L06 TSM&O Capability Maturity Model

BTO
Developed CV
Roadmap
Traffic Operations Connected Vehicle Goals

Systems and Technology
• Gain better understanding of CV technologies and how they can improve safety and mobility on Wisconsin highways.
• Evaluate and reinvest in ITS infrastructure foundation to prepare for supporting CV.

Business Process
• Assess, advocate, and implement department policy and processes due to CV impacts.
Traffic Operations Connected Vehicle Goals

Collaboration

- Establish internal and external (local, regional, statewide and national level) relationships to further the understanding of lessons learned, challenges and opportunities associated with CV.
- Partner with research entities, the private sector and key Wisconsin based business to demonstrate and expand CV readiness in Wisconsin.
- Continue active engagement in national activities.

Culture

- Support WisDOT in fostering and gaining CV support with internal and external stakeholders.
BTO Initiatives to Support and Enhance Connected Vehicles

- **Pilots**: Identify other V2I piloting opportunities including demonstrating software and application integration.
- **Planning**: Update the ITS planning process to be nimble and support implementing CV technologies.
- **Architecture**: Update ITS architecture to include Connected Vehicle Reference Implementation Architecture (CVRIA) applications.
- **Data Mgmt**: Identify data management and governance challenges pertaining to CV technology.
- **Partnerships**: Identify strategic partnerships and explore additional opportunities to partner with City of Madison SPaT Challenge project.
BTO Initiatives to Support and Enhance Connected Vehicles

**Work Zones**
- Implement processes to capture, analyze, and share work zone activity data that will support CV.

**Policy**
- Establish connected and automated vehicle policies and plans including DSRC deployment guidance.

**Arterial Ops**
- Update traffic signal standards and policies.

**Collaborate**
- Work with WisDOT staff to assess CV technology impacts on business areas.

**Educate**
- Educate internal and external stakeholders on CV technology and ITS integration.
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Wisconsin CAV efforts

Aileen Switzer – Administrator
Division of Budget and Strategic Initiatives

Connected and Automated Vehicle Summit – MAASTO  Madison, WI
October 16-18, 2019
WisDOT organizational structure
Wisconsin Steering Committee and Report

• In 2017, under Executive Order #245, the Governor’s Steering Committee on Autonomous and Connected Vehicle Testing and Deployment was formed.

• The Committee was made up of 27 members from industry, the legislature, government and academia.

• WisDOT chaired and staffed the Committee.

• In June, 2018, the committee delivered the Governor’s Steering Committee on Autonomous and Connected Vehicle Testing and Deployment report summarizing the status of CAV and recommendations for the state.
**Wisconsin Steering committee and report**

Recommendations were based on the best information available at the time, and should be updated with the advent of new advancements. The report contains background information on each recommendation.

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Description</th>
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<tbody>
<tr>
<td>A</td>
<td>Identify WisDOT as state coordinator on CAV issues and engagement.</td>
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<td>B1</td>
<td>Create a working group to address current and upcoming issues.</td>
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<td>B2</td>
<td>Work with the legislature to authorize a CAV testing framework.</td>
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<td>C</td>
<td>Clarify state statute and administrative CAV operation and liability.</td>
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<td>D</td>
<td>Promote Wisconsin as “Open for CAV deployment”. Highlight current connected corridor projects.</td>
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<td>E</td>
<td>Support strategic, social, economic, and environmental partnerships through the CAV working group.</td>
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CAV Responsive Implementation

- **Truck Platooning - Legislative Change**
  - 2017 Wisconsin Act 294 (effective in 2018) created an exception in State Statute (ss. 346.14) to allow electronically connected vehicles (except for the lead vehicle) to maintain a following distance of less than 500 feet.
  - If not electronically connected, operators are required to maintain a minimum distance of 500 feet.
  - Statute defines a “platoon” as a group of individual motor vehicles traveling in a unified manner at electronically coordinated speeds.
  - All vehicle operators must adhere to the statute’s requirement of not following more closely than what is ‘reasonable and prudent’.

- **Operational Changes at WisDOT**
  - Dedicated resources to evaluate and integrate emerging issues and technology into WisDOT.
CAV Responsive Implementation

• **Project Level Integration - I94 North South corridor**
  - Integration of technology elements to meet immediate operational needs and leverage future CAV deployment opportunities
  - Project completion summer 2020

• **Partnering, Collaboration and Monitoring**
  - Engagement at national and regional level
  - Review of 2018 Committee report recommendations and governance structure (internal/external)
  - Academia – UW TOPS Lab
  - Academic/Public/Private sector dialogue (e.g., AV Forum)
  - Municipal initiatives (e.g. Racine – Smart City)
Thank you!