WisDOT CAV Transportation Stakeholder Resource Guide

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2026 ITE TRAFFIC ENGINEERING WORKSHOP AND TRANSPORTATION PLANNING FORUM

April 16, 2026

Agenda

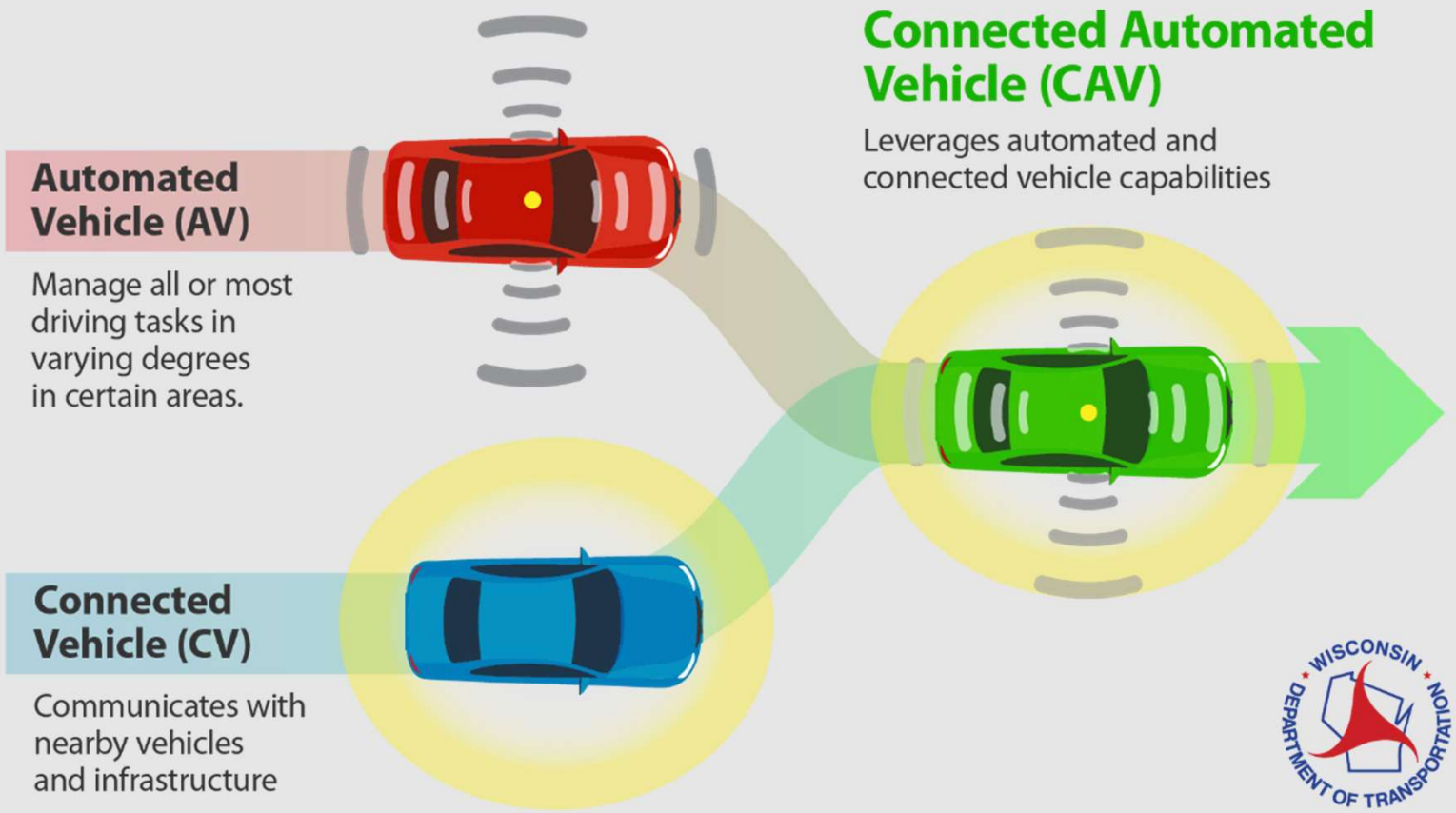
CAV at WisDOT

- CAV 101
- Organizing for CAV at WisDOT
- Where are we going? *WisDOT CAV Strategic Work Plan*
- Benefits

CAV Stakeholder guide

- What is it?
- *Purpose - How to use*
- *Contents for stakeholders*

General CAV info



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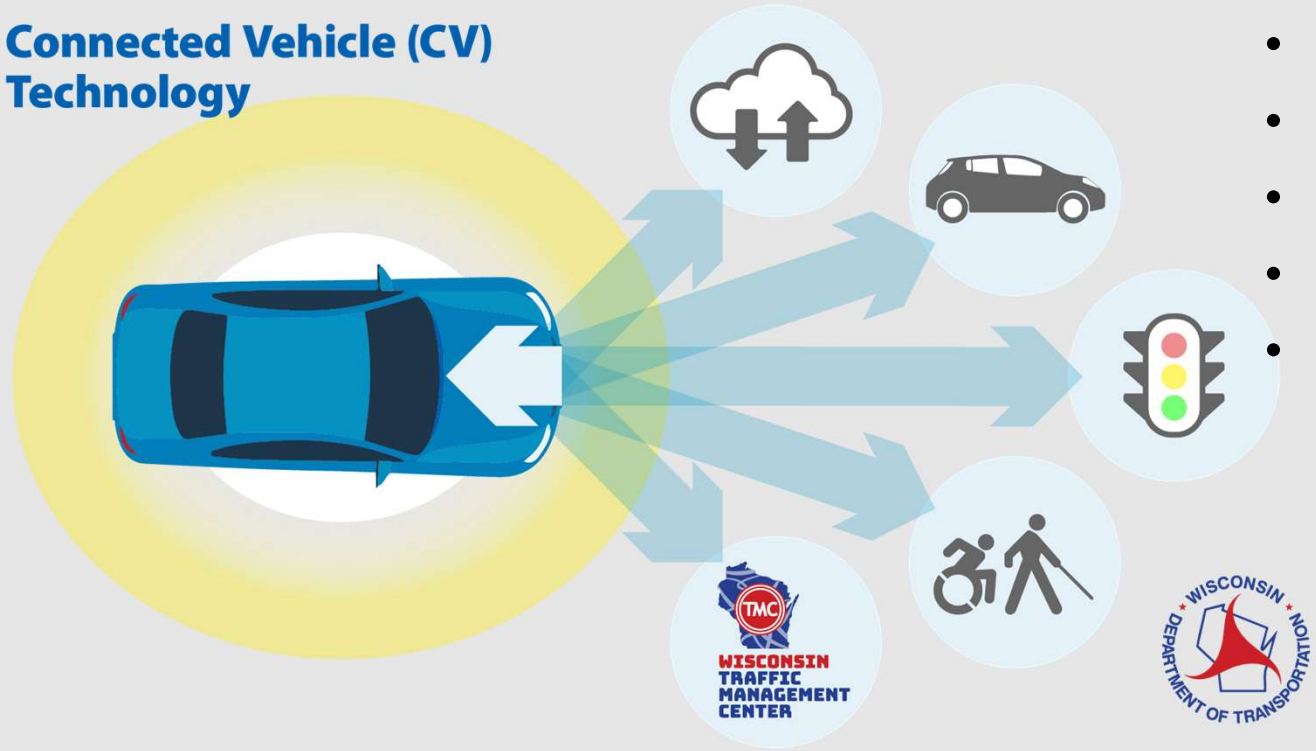
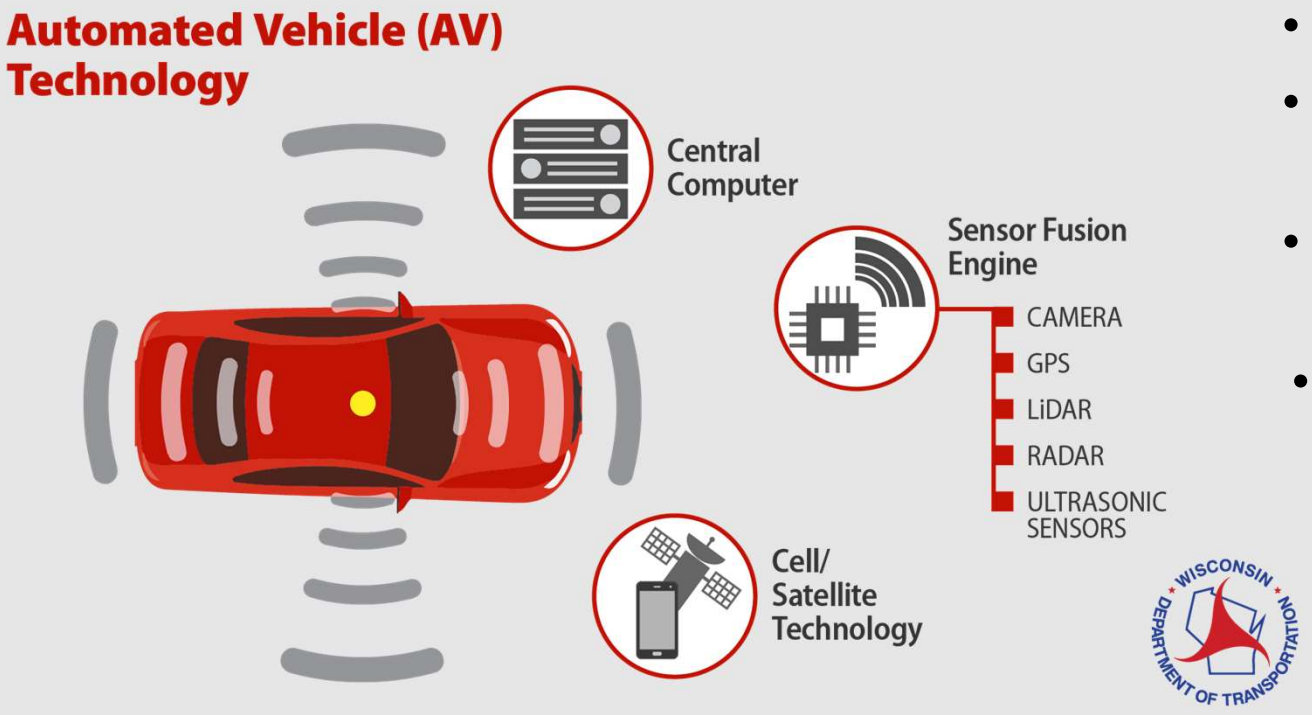


Connected Vehicle

- Over-the-air updates
- Vehicle to Vehicle (V2V)
- Vehicle to Infrastructure (V2I)
- Vehicle to Pedestrian (V2P)
- Vehicle to Everything (V2X)

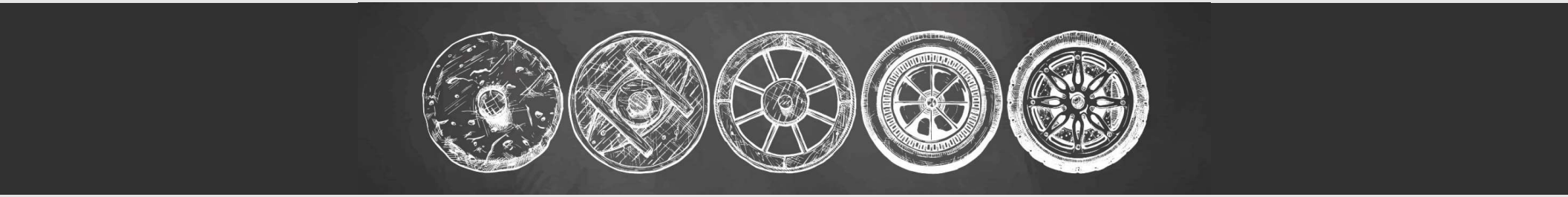
General CAV info



Automated technology

- "Sees" with its sensors
- Is in many cars on the road today.
- Can perform some or all of the driving tasks.
- Includes driverless cars and cars with drivers

Automated Vehicles



Current Legal Status of Automated, Autonomous, or Self-Driving Vehicles

Wisconsin state law currently requires an operator to be behind the wheel and in physical control of a vehicle at all times while driving on Wisconsin roadways.

As with any other vehicle that is operated on the roadway, the operator or owner is responsible for the appropriate and safe operation of the vehicle while driving it. This includes the use of any technology the vehicle is equipped with, any malfunctions of the vehicle, and adherence with current state law and the Rules-of-the-Road.

Wisconsin Automated Vehicle External (WAVE) Advisory Committee

A forum of 40 stakeholders:

- State Legislature representatives
- State agencies
- Federal agencies
- Local government
- Academia
- Interest groups / stakeholders
- Industry

Actions

- Provides input and advice to WisDOT on CAV planning priorities, implementation policies, and impacts to a safe and efficient transportation system
- Meets twice a year

WAVE Meeting Topics

- Local and Tribal Governments
- CAVs and Transportation Equity
- CAV Safety and Vulnerable Road Users (VRU)
- CAV Safety and Law Enforcement and First Responders
- Cybersecurity of vehicles and infrastructure
- CAV Research in Wisconsin: Academia, Industry, Government
- *Community transportation issues and CAV tech*
- *Vehicle telematics*

Complete roster on webpage wisconsindot.gov/cav

WisDOT CAV Strategic Work Plan 2024-2026

Objective areas of focus

1. Statute, Policy and Regulation
2. Communications and Outreach
4. Organizational Alignment, Coordination, and Readiness
5. Develop Transportation System Infrastructure and Operations Readiness
6. Research, Testing, and Pilot Projects
7. Data Governance and Security
8. Law Enforcement and First Responder Services

Safety benefits

Why Connected & Automated Vehicles Matter

- Reduce crashes caused by human error
- Improve safety through real-time communication
- Enhance mobility and traffic flow
- Support emergency response and incident prevention
- Enable more accessible transportation systems

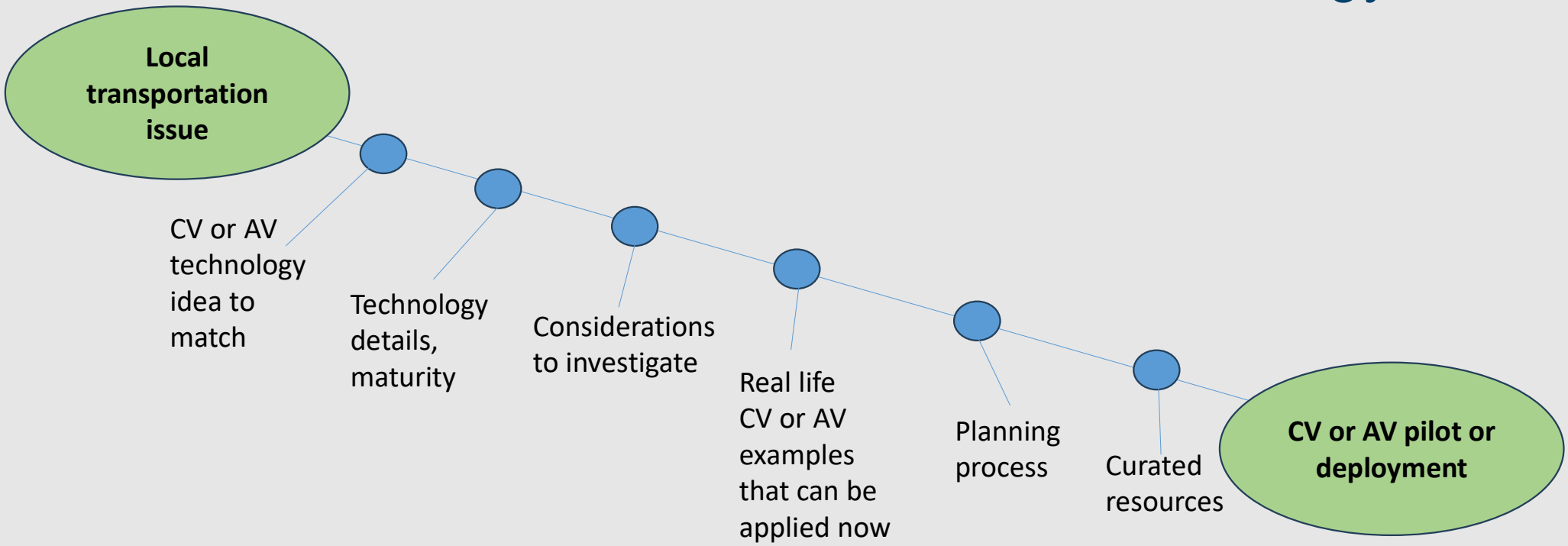
Simple resource explaining new car technology and benefits -

MyCarDoesWhat.org
https://mycardoeswhat.org/

*NHTSA https://crashstats.nhtsa.dot.gov/Api/Public/Publication/812115

CAV Technologies and Applications Wisconsin Transportation Stakeholders Resource Guide

Purpose - Connecting the dots for communities to this new technology

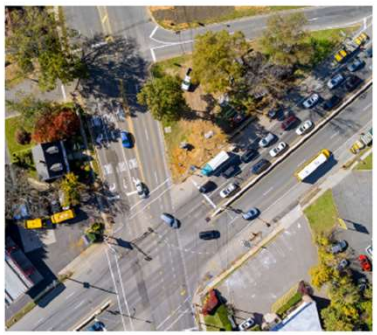


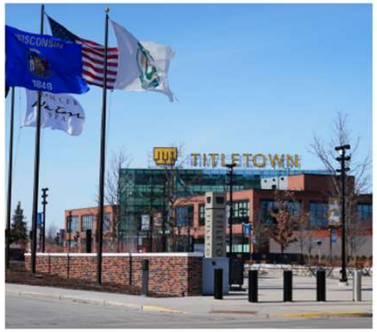
Summary

- **Practical roadmap** connecting community transportation problems to CV and AV solutions.
- **Community profiles -** urban, suburban, rural, healthcare, industrial, and entertainment districts.
- **Provides CAV basics** - needs assessment, project readiness, pilot planning, stakeholder engagement, and funding coordination.
- **Most importantly** - communities should start with clearly defined local needs before selecting any technology.

Chapter 2: Geographic Focus Areas

Guide is arranged around 6 geographic focus areas:





Urban city

Suburban neighborhood

Rural county / small town

Healthcare complex

Industrial / Commercial

Entertainment districts

Chapter 3: Vulnerable Road Users

- **VRUs include** pedestrians, bicyclists, motorcyclists, wheelchair users, road workers, and all non-drivers.
- **Technologies**: pedestrian detection with AEB, V2P alerts, accessible traffic signals, work-zone queue warnings.
- **Most important point:** VRU safety and accessibility must be designed in at the beginning, it cannot be retrofitted.

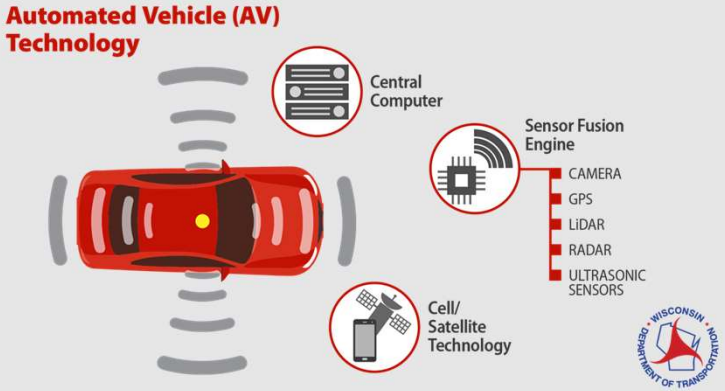
Chapter 4: Matching Issues to Technologies

Urban neighborhood / large urban city downtown

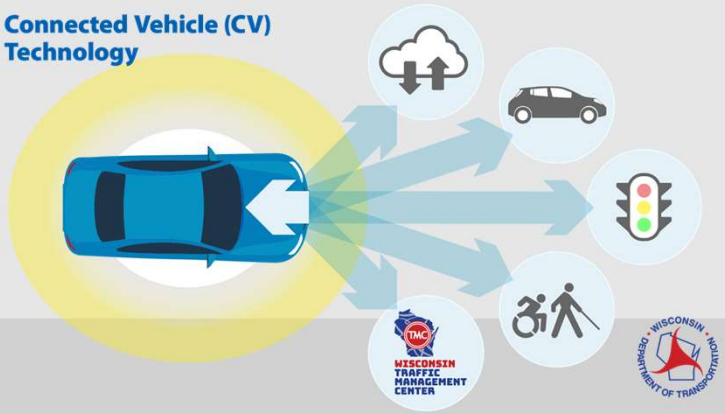
Issue	CAV technology option	Anticipated outcomes
3. New technology deployment and implementation challenges	Use basic connected traffic signals and V2X technology to get started Buy a trial of telematic data • CV signal priority and traffic management • CV telematic data	Improved traffic management Data can be cheaper than infrastructure and can provide traffic snapshots without requiring subscriptions or maintenance
4. AV technology that improves mobility and safety may not be accessible to all VRU populations in the community	Including ADAS on fleet vehicles leveraging safety systems in public transit, micro-transit and construction vehicles • ADS/AV shuttles • ADAS active safety features	Can improve non-driver safety

Chapter 5: Technology Descriptions and Applications

- **AV technologies:** ADAS warnings/active features, ADS self-driving systems, AV shuttles, delivery robots, semi-truck platooning, farm tractors.



- **CV technologies:** V2I, V2V, V2P, SPaT, MAP messages, work-zone warnings, wrong-way detection, road condition monitoring, EMS preemption.



Chapter 6: Community-Specific Deployment Considerations

- **Primary considerations**: safety, technology maturity, infrastructure/operations/cost, community engagement, partnerships.
- **Infrastructure** readiness varies widely
- **Priority**: deploy where infrastructure, staff, and maintenance funds are available to sustain the project long-term.

Urban neighborhood / large urban city downtown *(continued)*

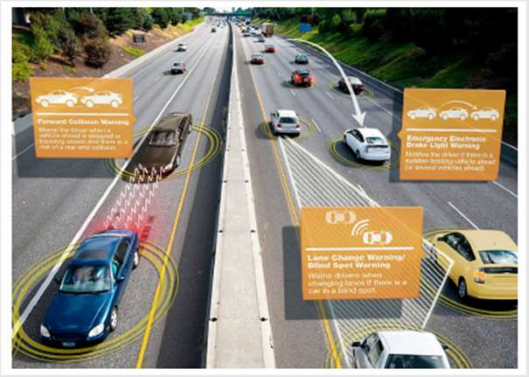
Issue 3. New technology implementation difficulties

Technology solution	Technology considerations
CV data for signal timing adjustments Near-miss CV data analysis to enhance safety including leveraging cell phone data to detect and warn pedestrians	• Develop pilot programs with multi-jurisdictional participation • Create demonstration sites for peer-to-peer learning opportunities • Build collaborative deployment models with cities and counties • Use standardized formats for work zone and traffic alert messaging • Align technology to accommodate state-specific regulations (e.g., variable speed limits) • Address rapid technology obsolescence and ongoing update costs • Monitor federal 5.9 GHz spectrum allocation uncertainty • Leverage private sector partnerships where municipal capacity is limited • Implement transit signal priority pilots or simulations to capture performance metrics

Issue 4. Accessibility, mobility and affordability of technology for all users

Technology solution	Technology considerations
Leverage safety systems in public transit and micro-transit, ADAS in fleet vehicles	• Project planning can ensure CV benefits reach non-connected vehicle users • ADAS investments in fleet vehicles, transit, or emergency vehicles can transfer safety benefits to the general public • Smartphone apps can provide CV functionality without expensive embedded vehicle hardware • Leveraging existing consumer devices (phones) can democratize access to CV benefits • Factory-installed CV systems in vehicles can be cost-prohibitive for many consumers • Current proprietary systems may standardize over time, improving affordability

Chapter 7: AV and CV Deployment Considerations



- CV considerations: RSU placement strategy, joint data procurement, system interoperability, multi-agency coordination (police, fire, EMS, snowplows).

- AV considerations: infrastructure markings, LiDAR/radar calibration in snow and rain, law enforcement training, ODD limitations.

- Both: plan for rapid tech obsolescence, vendor consolidation risks, cybersecurity, C-V2X reception.

Chapter 8: Viable Technologies You Can Deploy Now

Five connected vehicle technologies ready for deployment

1. C-V2X work zone queue warning

Implementation factor	Assessment
Infrastructure readiness	High-portable units
Technology maturity	Proven in multiple states
Cost per work zone	$50,000–$75,000
Deployment timeline	3–6 months
Primary benefit	40–60% crash reduction

[28] How AI and V2x are changing temporary traffic management in 2025, https://jtitraffic.com/connected-work-zones-ai-v2x-illinois-2025/

2. Transit signal priority (TSP) using V2X communications

Implementation factor	Assessment[29]
Infrastructure readiness	V2X compatible controllers, low-latency network, back-office data management needed
Technology maturity	Proven and available to purchase
Capital costs	$30,000 to $92,000 per intersection
Vehicle OBU installation	$2,650 per vehicle
Deployment timeline	3–6 months
Primary benefit	Transit and traffic efficiency, manages emergency vehicle conflicts

[29] ITS Deployment Evaluation, The Total Cost for Equipping 112 Intersections and 1,000 Vehicles with Direct V2X Technology in Oakland County, Michigan is Expected to Be $9.27 Million

Chapter 9: Planning the Path Forward

Define clear transportation goals tied to community safety, mobility, or equity priorities.

Assess current infrastructure (fiber, signal cabinets, pavement quality, broadband) and institutional capacity.

Engage stakeholders early — especially VRUs, non-drivers, underserved populations, first responders, and transit users.

Prioritize use cases, select partners, secure funding, run pilots, measure outcomes, and iterate.

****Successful deployment is a community planning process — not a technology procurement exercise. ****

Chapter 10: Resources and References

Curated resources to support deeper information needs

Federal government - FHWA, USDOT, NHTSA

Public engagement and community

Registration and legal

Infrastructure and planning

State and regional resources

Research and professional: TRB, AASHTO, UW-Madison, UW-Milwaukee

Vehicle safety and standards

Case studies, research and reference reports

Vulnerable road user safety

Funding and grants

Highlights

- Lead with proven applications that are deployable now and deliver measurable safety returns.
- Design for VRUs, accessibility, equity, and privacy from day one — these are not optional add-ons.
- Match technology choice to community profile, infrastructure readiness, and institutional capacity.
- Integrate CAV strategy into corridor studies, signal system upgrades, curb management plans, and multimodal design processes.
- Treat CAV as a community planning option, not just a vehicle technology
- Build multidisciplinary, multi-agency teams.

Questions and Discussion

The CAV guide is a practical community investigation tool, not just an emerging vehicle technology.

The strongest near-term applications improve safety, information sharing, and targeted mobility in real operating environments.

Question: Which community profile and transportation challenge in your region is the best match for a deployable CV or AV solution today?

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wisconsindot.gov/cav

Other video links hidden