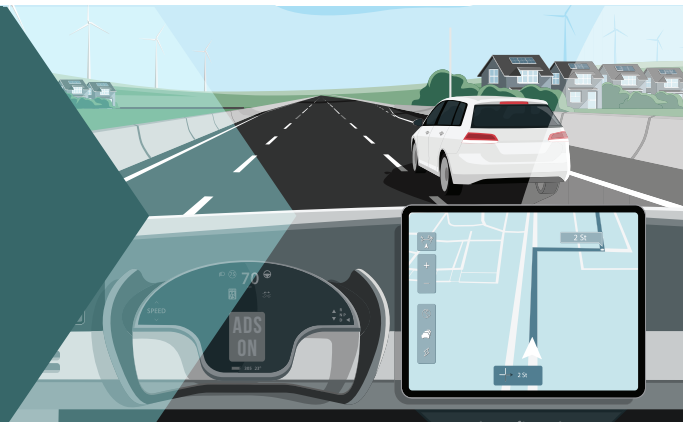


# IOWA AUTOMATED TRANSPORTATION (AT) READINESS

A summary of automated transportation readiness activities in Iowa that support the safe and cooperative deployment and integration of connected and automated vehicles and devices.



## VISIONING & PLANNING

### [Iowa AT Vision Completed March 2020](#)

- A broad, statewide initiative that establishes the automated transportation development road map for Iowa to safely advance connected and automated vehicle technology in the state
- Utilized a three-prong framework (strategic, programmatic, and tactical)
- Includes six strategic objective areas that align with four identified subcommittees and two working groups as part of the Iowa Advisory Council on Automated Transportation
- Identified and prioritized two dozen tactics for each of the six objective areas (subcommittees and working groups) to support the Council's vision and mission.

### [Iowa DOT Cooperative Automated Transportation \(CAT\) service layer plan \(Completed November 2019\)](#)

- The CAT service layer plan is one of eight tactical, TSMO service layer plans to support operation and management of the transportation system in the state by the Iowa DOT
- The plan includes an analysis of opportunities and challenges, existing conditions assessment, gap analysis, prioritized actions, and a generalized cost estimate for ten years segmented into three timeframes for initiation (<3, 3 to 5, and 6 to 10 years)
- The roughly two dozen detailed and prioritized actions are summarized by seven CAT tactics including: 1) Establish digital infrastructure, 2) AV-ready data improvement, 3) Improve physical infrastructure, 4) Align with related national and state efforts, 5) Inform residents and travelers, 6) Internal outreach and education, 7) Ensure CAT security

## POLICY & LEGISLATION

### **Automated Driving Systems Framework**

- In 2019, legislation was enacted that authorized the operation of automated driving systems (ADS) with [Senate File 302 \(Iowa Code sections 321.514 to 321.519\)](#). This legislation defines ADS among other new terms and establishes key elements of operation, insurance, accidents, and an on-demand driverless-capable vehicle network. The legislation also provides the Iowa DOT

broad rulemaking authority to develop administrative rules which includes identification of driverless capable vehicles in registration, potential operational restrictions as a condition of registration, as well as a permit and application requirement for testing. The rulemaking effort is anticipated to be completed in mid to late 2021.

### **Automated Truck Platooning**

- In 2017 ([HSB 111](#)) and 2019 ([SF 428](#)), there were proposed bills to enable and authorize connected platooning or cooperative truck automation but they did not advance.
- In 2019, legislation ([HF 387](#)) removed following distance requirements for both passenger and commercial motor vehicles (300 feet for motor trucks or a motor vehicle drawing another vehicle and 500 feet for motor vehicles following another in convoy or caravan). This legislation maintains the reasonable and prudent statute as it pertains to following distance. While this legislation doesn't directly address automated truck platooning, the removal of the following distance requirements removed a barrier to such operations in Iowa.

### **Personal Delivery Devices (PDD)**

- In 2021, legislation was enacted ([HF304](#)) that authorized PDDs. This bill includes definitions such as a PDD is not to exceed 550 lbs. excluding cargo. PDDs are not considered a vehicle nor subject to Iowa ADS legislation and must comply with Iowa law related to pedestrians. A PDD may operate on any of the following:
  - A pedestrian area (e.g. sidewalk) at a speed not to exceed 6 MPH
  - Can operate on roads with a posted speed less than 40 MPH while not to exceed 20 MPH or the posted speed limited, whichever is lower, during operation on the road
  - Operates as far to the right from the center of the road as is practicable

Unique identification must be included as well as lighting or other equipment to make the device easily recognizable from a distance of 500 ft. In the interest of public safety, a local authority may prohibit the operation of PDDs on certain roads and pedestrian areas within its jurisdiction if operation constitutes a safety hazard. Requires general liability insurance coverage of no less than \$500,000.

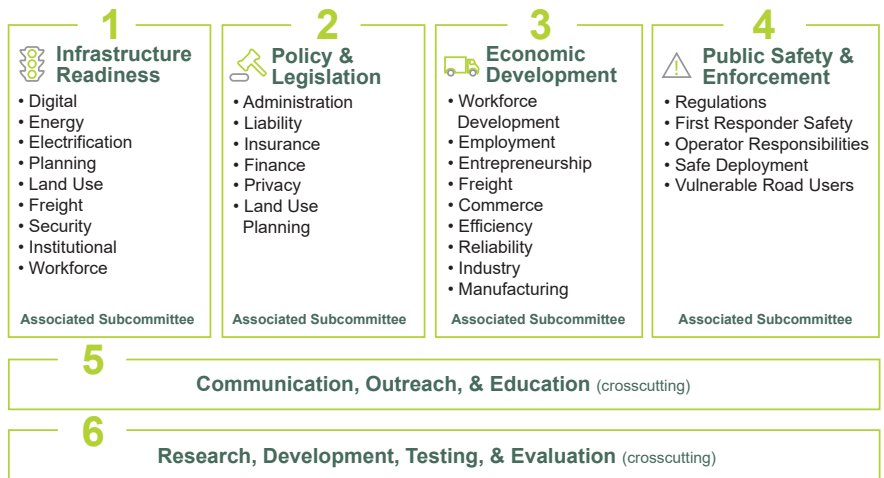
# STAKEHOLDER ENGAGEMENT

Iowa Advisory Council on Automated Transportation - <https://iowadrivingav.org/>



- Purpose: To increase roadway safety, personal mobility, and freight movement within the state of Iowa by advancing highly automated vehicle technologies.
- The Council provides guidance, recommendations, and strategic oversight of automated transportation activities in the state.
- Six strategic objective areas that include four associated subcommittees and two cross-cutting working groups

## IOWA ADVISORY COUNCIL ON AUTOMATED TRANSPORTATION STRUCTURE



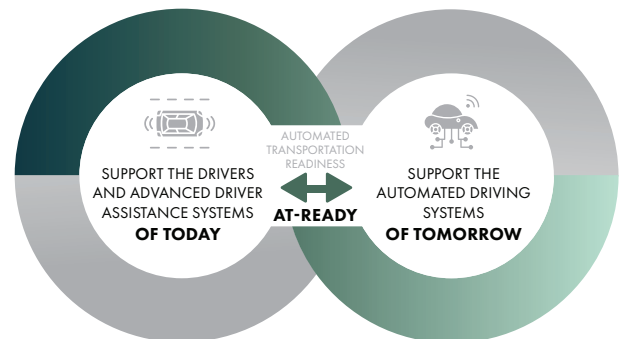
# RESEARCH ACTIVITIES

## Infrastructure & Operational Readiness

<https://sites.google.com/view/ctre-oto-research/home>

- **Connected Infrastructure**
  - Met the AASHTO National Connected Vehicle Challenge by deploying DSRC infrastructure [in four Iowa communities](#) to determine the impacts of SPaT broadcasts at 20 signalized intersections
- **Pavement Markings**
  - Deploying wider and brighter pavement markings (4" to 6") on new Interstate construction including longer life material and grooved in wet weather white skip lines with shadow stripe for high contrast
- **Work Zones**
  - Leader in the development of a national work zone data standard ([WZDx](#)) to make travel on public roads safer and more efficient through ubiquitous access to data on work zone activity, for use by human drivers (via travel information systems) and eventually aid automated driving systems
  - Improving work zone data by establishing a data feed that provides timely information and is accessible both internally and externally to the Iowa DOT. A system that leverages the Iowa DOT linear referencing system (LRS) to spatially and temporally locate work zones while integrating other data (via the LRS) and field devices such as connected traffic control devices and smart arrow boards. Efforts are being done to incorporate this information into the state traffic management center to improve roadway safety and operations.
- **Enhanced Weather Reporting**
  - Providing road weather information for all state primary roads, 72 hours in advance to support operational readiness of road weather impacts that can impact mobility and safety by deploying the [Pikalert System](#) (which ingests vehicle observation data and combines it with traditional weather data – e.g. radar, satellite)
- **Audible Attenuator Automation**
  - Improving worker safety and preventing crashes by automating the audible warning system deployed for road maintenance activities
- **ADS for Rural America** - [adsforruralamerica.uiowa.edu](https://adsforruralamerica.uiowa.edu)
  - This research aims to improve safety, address rural disparities in AV research, and enhance mobility
  - Test the use of a custom transit vehicle with advanced automated technologies on rural roadways

**IOWA'S TWO-PRONG APPROACH**  
Deploy strategies that support drivers and driver assistance today and automated driving systems of tomorrow



# RESEARCH PARTNERS

- [Institute for Transportation – Iowa State University](#)
- [National Advanced Driving Simulator – University of Iowa](#)