Michigan Connected Vehicle Initiatives

ADVANCING SAFETY AND OPERATIONS THROUGH TECHNOLOGY

Matt Smith, ITS Program Administrator

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Michigan Traffic Fatalities

![Michigan Traffic Fatalities Graph](image-url)

- **Fatalities**
- **Year**

The graph shows the number of traffic fatalities in Michigan from 2004 to 2014. The number of fatalities decreased over the years, indicating a positive trend in traffic safety.
MICHIGAN FOCUS AREAS

1. Infrastructure
2. V2I Applications
3. Data Management
4. Partnerships
5. Talent Development
V2I Applications

Red Light Violation Warning

Vehicle approaching intersection too fast, signal is turning red

Approaching vehicle receives SPaT message, identifies threat

Driver Vehicle Interface (DVI) alerts driver to brake

Smart signal broadcasting Signal Phase and Timing (SPaT)
**Road Weather Management**

- Road weather station detects icing conditions, reports conditions to weather office.
- Portable Road Side Unit (RSU) sends weather warning to vehicle.
- Driver Vehicle Interface (DVI) example.
- Approaching vehicle receives message of road ice in area from RSU and/or cellular network.
- Vehicle is approaching hazardous weather conditions area.
- Driver reduces speed in response to warning.
V2I Applications

Work Zone Warning/Management

Approaching vehicle receives message from RSU with work zone information.

Driver Vehicle Interface (DVI) provides warning to slow down.

Driver Vehicle Interface (DVI) provides warning of lane closure.

Portable RSU sends work zone info to vehicle.
Pavement Condition Monitoring

Vehicle drives over pothole in pavement

Sensors in vehicle detect sharp acceleration at that location from the pothole strike, stores data

Vehicle broadcasts data via cellular network, and sends message to nearby roadside radio as it drives past

roadside unit sends pothole data to operations center

MDOT receives data from that vehicle (and lots of others), dispatches maintenance crew

Heat map of pavement conditions
CV infrastructure investment is key to creating an environment supportive of V2I testing, and to understand the complexities of managing a large CV infrastructure deployment.
Southeast Michigan Connected Vehicle Assets

- Connected Vehicle Test Beds
- Connected Vehicle Environment
- Tier 1 Automotive Suppliers
- Major OEM Facilities
- MDOT Roadway ITS Coverage
Critical Connected Vehicle Environment Element:
Equipped vehicles to engage in the system. MDOT is accomplishing this through a combination of partnerships and state vehicle fleets.
V2I Applications

Truck Parking Information and Management System (TPIMS)
V2I Applications

Truck Parking Information and Management System (TPIMS)

Federal TIGER Grant Awarded

$25 Million

$3 Million

MAASTO
MDOT's Data Use Analysis and Processing (DUAP) program is pioneering the collection and fusion of CV data with a wide range of data sources.
Partnerships

Mobility Transformation Center

All photos courtesy of the University of Michigan
Get Engaged
Michigan is Open for Business for CV Partnership Opportunities