



Autonomous and Connected Vehicles

Jay Hietpas

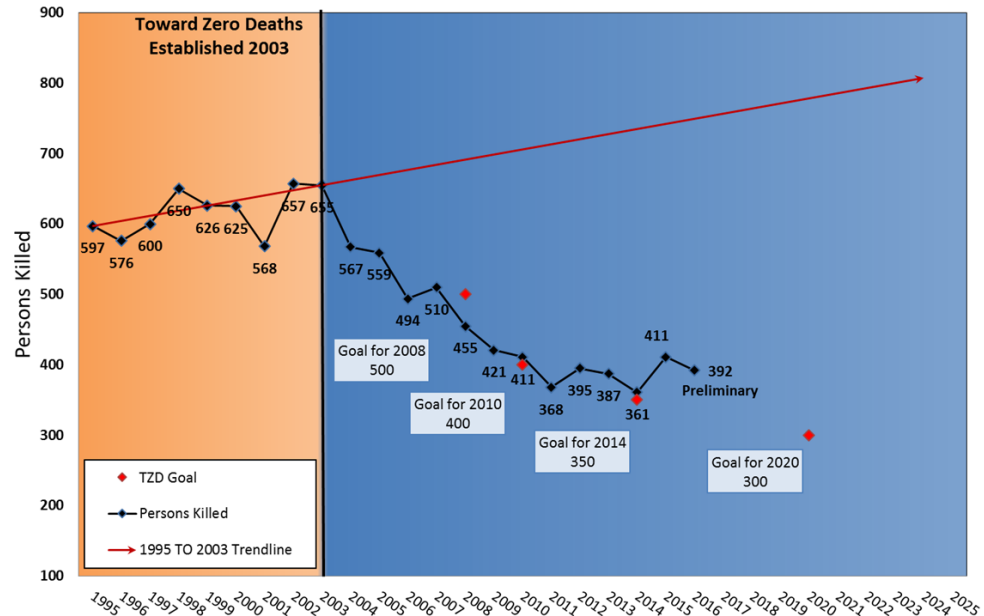
MnDOT State Traffic Engineer

Why is this important to Minnesota?

- Safety
- Changes in operations and traffic volumes
- Infrastructure Changes
 - Geometry
 - Signs / Pavement Markings
 - Connected Vehicle Infrastructure
- Regulation
 - Truck Platooning / Licensing / Insurance / Deliveries
- Public Acceptance

Minnesota Roadway Fatalities

Source: MnDOT 4/17/2017



Thinking beyond the car

Autonomous trucks &
truck platooning

Ground delivery vehicles



What are the Challenges?



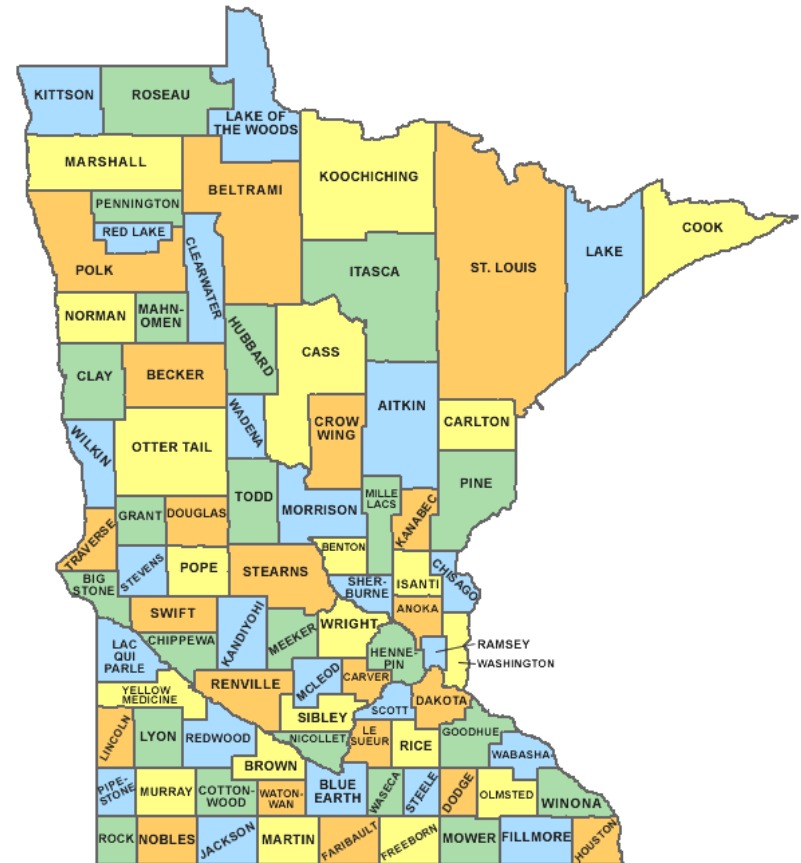
Snow / Ice

Salt



What is Happening in Minnesota

- Regulation / Testing
- Planning / Programming / Partnering
- CV Projects



Statewide - Jurisdictional Committee



Local / Industry Level



Current MnDOT Projects / Initiatives

Autonomous Bus Project



Project Goals

SNOW & ICE

Prepare autonomous vehicle industry for snow & ice conditions

OPERATIONS

Identify challenges and strategies for safe operation of third party autonomous vehicles on MnDOT's transportation system

MOBILITY

Prepare for improved mobility services through autonomous vehicles

INFRASTRUCTURE

Identify the infrastructure that is needed to ensure safe operation of autonomous vehicles

INFLUENCE

Increase Minnesota's visibility and influence on advancing autonomous & connected vehicles

PARTNERSHIPS

Enhance partnerships between government and the autonomous vehicle industry

Autonomous Bus Vendor

- **EZ10 Shuttle**

- 91 Deployments
- 14 Countries, 4 Continents
- 160,000 People
- 60,000 Miles

- **Previous Pilots**

- Finland
- Norway
- Netherlands
- Spain
- Dubai
- Singapore
- California
- U.S. Road Tour



Phase I - MnROAD

Minnesota DOT MnROAD Facility



Phase II – Super bowl Showcase

Super Bowl LII

- Nicolette Ave.
- Open to Public

Date of Operation	Time
Friday, January 26, 2018	4:00 – 10:00 pm
Saturday, January 27, 2018	Noon – 8:00 pm
Sunday, January 28, 2018	Noon – 8:00 pm
Thursday, February 1, 2018	4:00 – 10:00 pm
Friday, February 2, 2018	Noon – 8:00 pm
Saturday, February 3, 2018	Noon – 8:00 pm



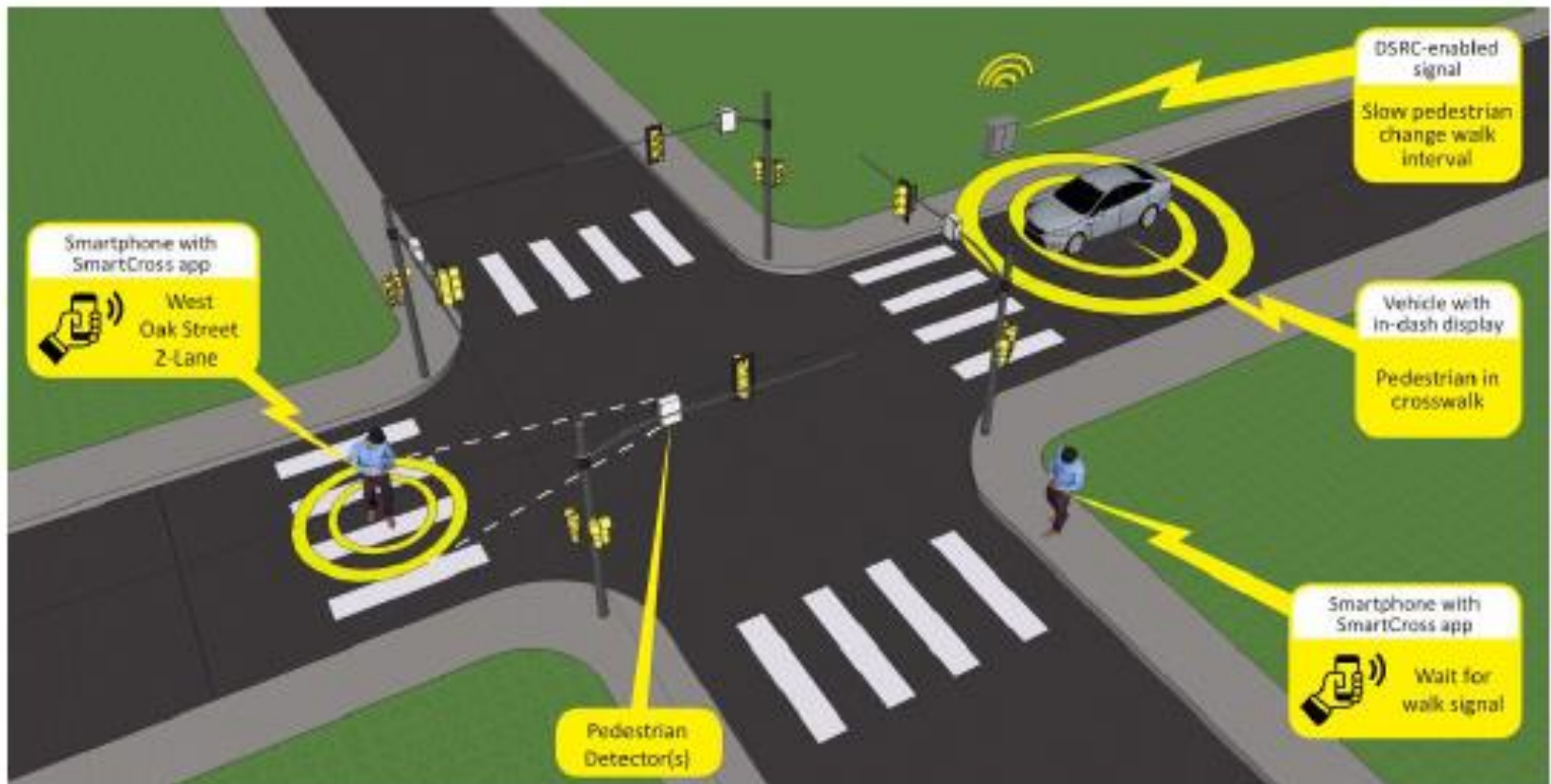
Phase III – Other Sites

Possible Local Sites

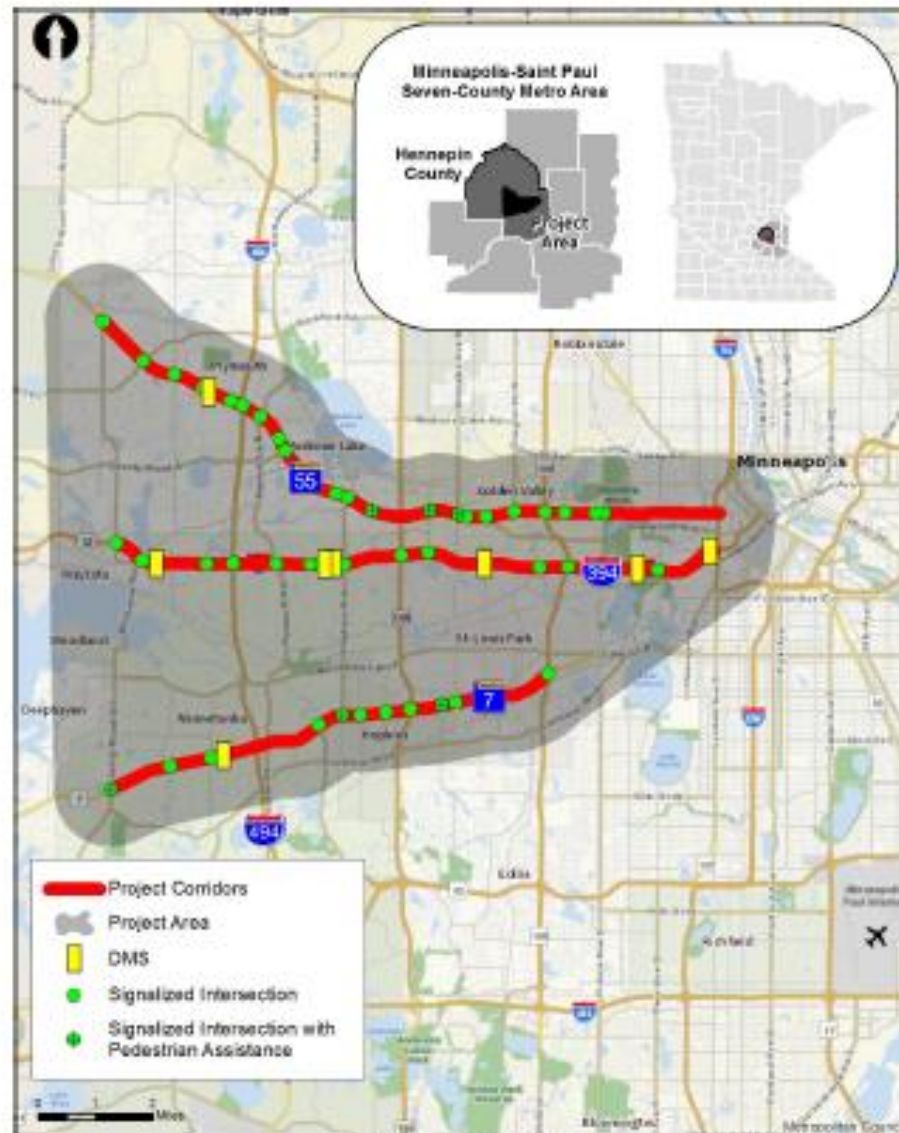
- 3M Campus
- Hennepin County
- U of M Transitway
- Duluth Canal Park
- Mayo Clinic
- MVTA Route



SPaT Challenge



Connected Corridor - SPaT Corridor

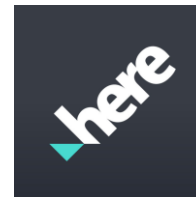
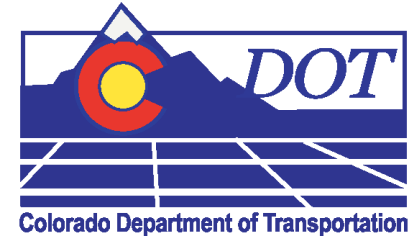
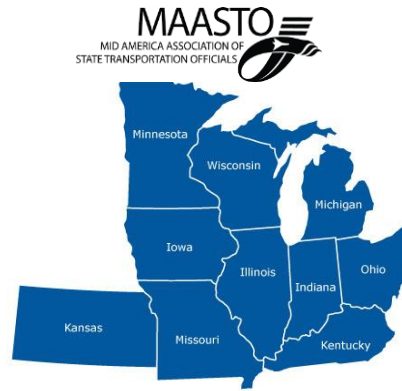


Connected Corridor Application



Planning / Partnering

- CV / AV Strategic Planning



Thank you again!

Jay Hietpas, PE

Jay.hietpas@state.mn.us

651-234-7004