



Wyoming DOT Connected Vehicle Pilot

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Outline

- Overview of WYDOT I-80 Operations
- Connected Vehicle Project Background
- Overview of Connected Vehicles
- WYDOT's Connected Vehicle Applications
- Safety benefits
- Status, twists and turns in the project

WYDOT Team



Equipment

Traffic

Emergency
Comms

Patrol

GIS/ITS

District
Personnel

Rigging Shop

IT

Public Affairs

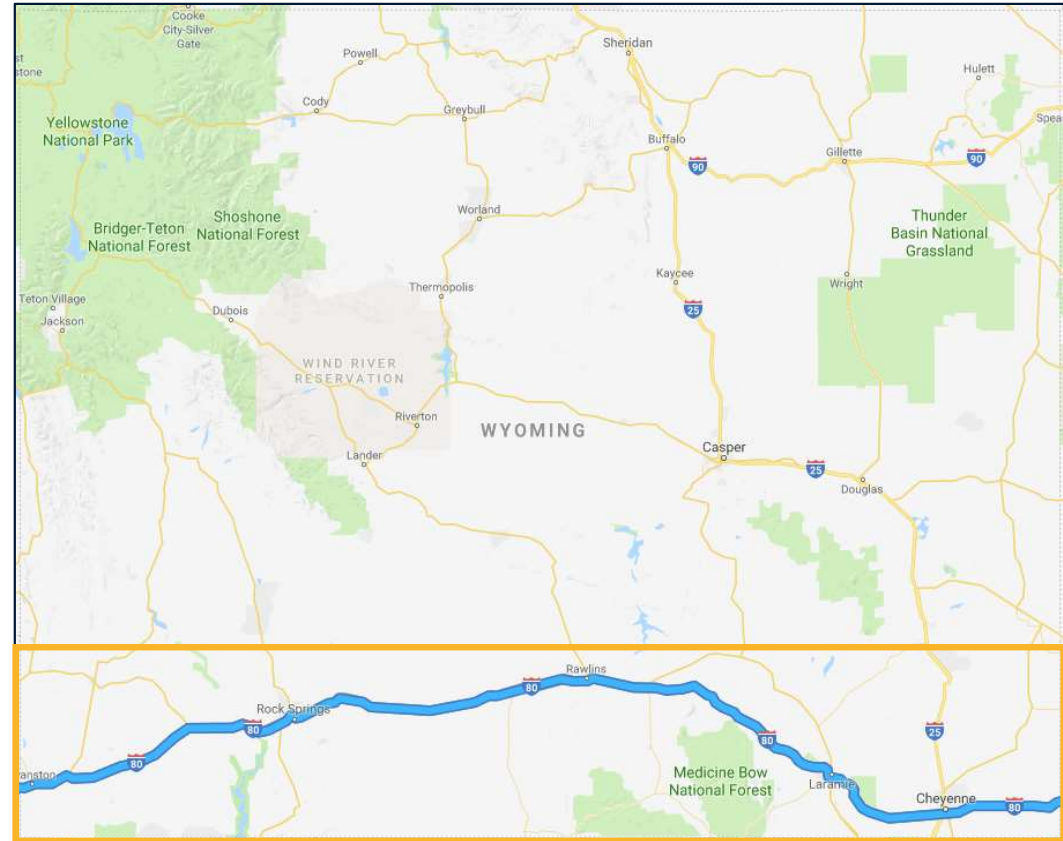
Wyoming Connection



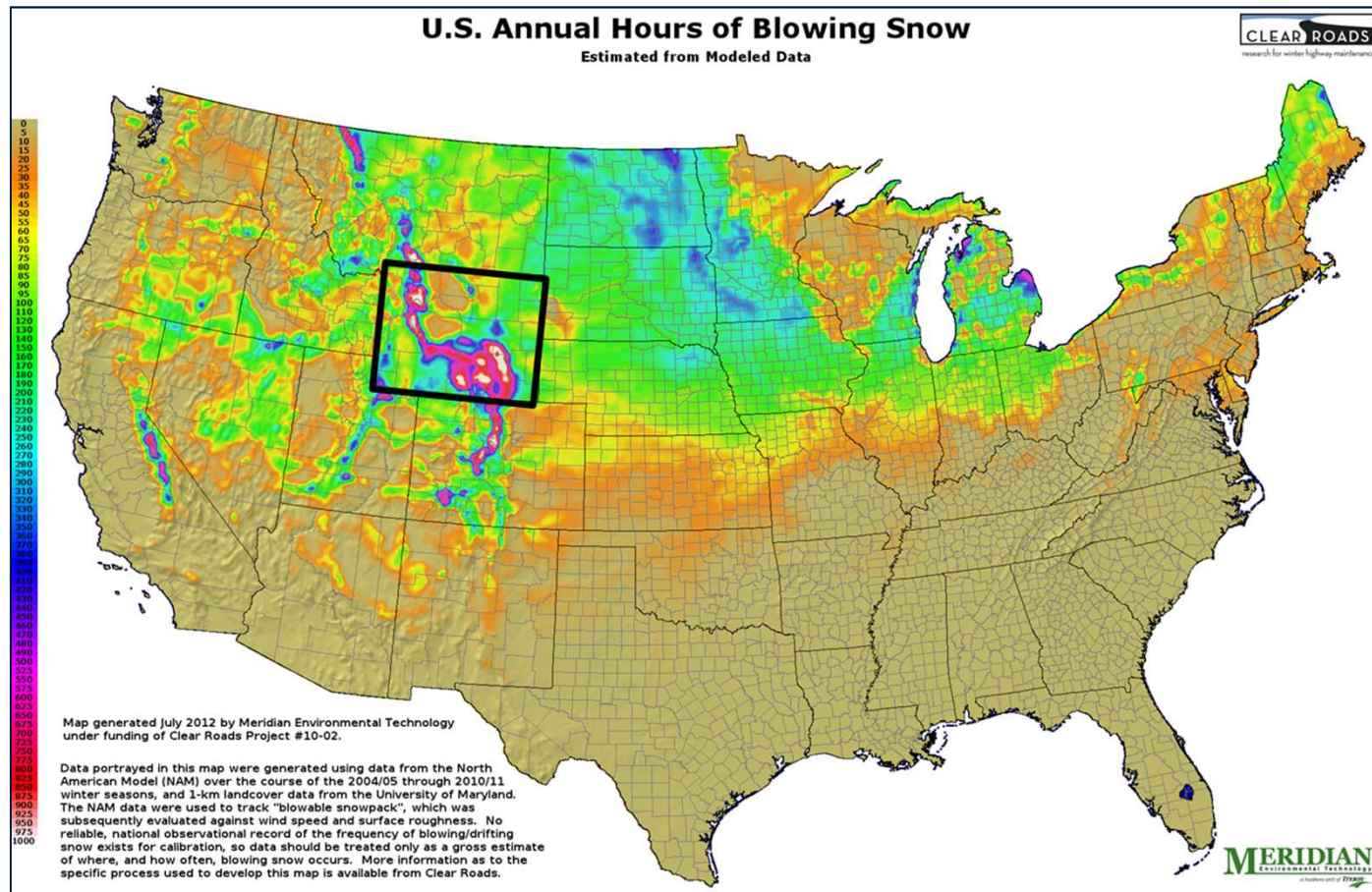
Interstate 80 Corridor



- More than 32 million tons of freight per year (at 16 tons per truck).
- Truck volume is 30 to 55% of the total traffic stream on an annual basis
 - As much as 70% of the traffic stream on a seasonal basis



Winter Weather – Blowing Snow



Interstate 80 Corridor



April 20, 2015



Interstate 80 Corridor



I-80 Corridor

One of the most heavily instrumented rural corridors in the United States

160 Variable Speed Limit Signs

supported by 95 traffic sensors

42 Electronic Message Signs

44 Weather Stations

54 Webcams



WYDOT's Approach

Roadway Design

- Good roadway design
- Select best geometry using powerful modeling tools

Mitigation

- Slope modifications
- Snowfence

Technology

- Intelligent transportation systems
- Connected vehicle technology

Connected Vehicle Pilot – Shane Zumpf



Connected Vehicle Pilot

WHAT DOES CONNECTIVITY MEAN?

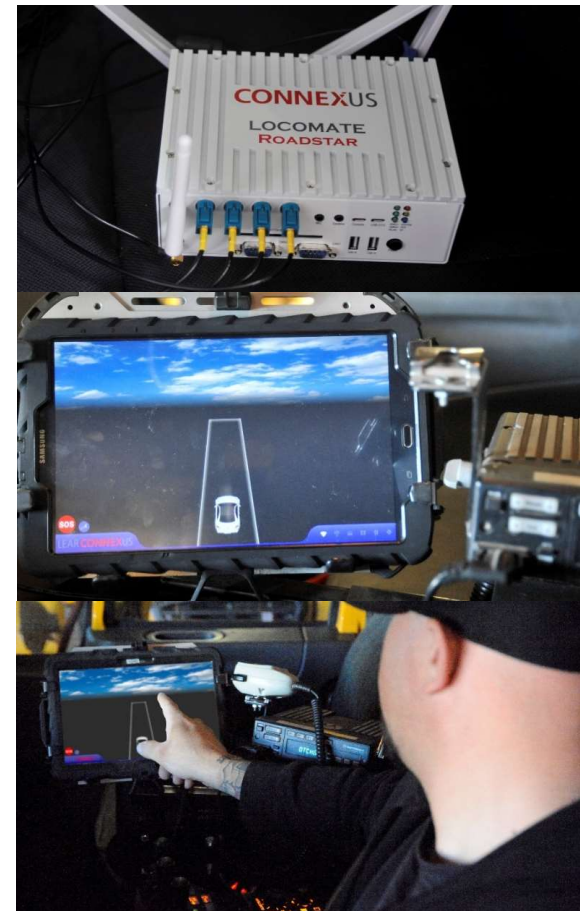
EN-ROUTE HAZARD AWARENESS

Using Dedicated Short Range Communication (DSRC) capability between vehicles and roadside infrastructure to provide new applications to support driver awareness.



Instrumented Vehicles

- WYDOT snow plows
- Wyoming Highway Patrol Vehicles
- Private fleet vehicles



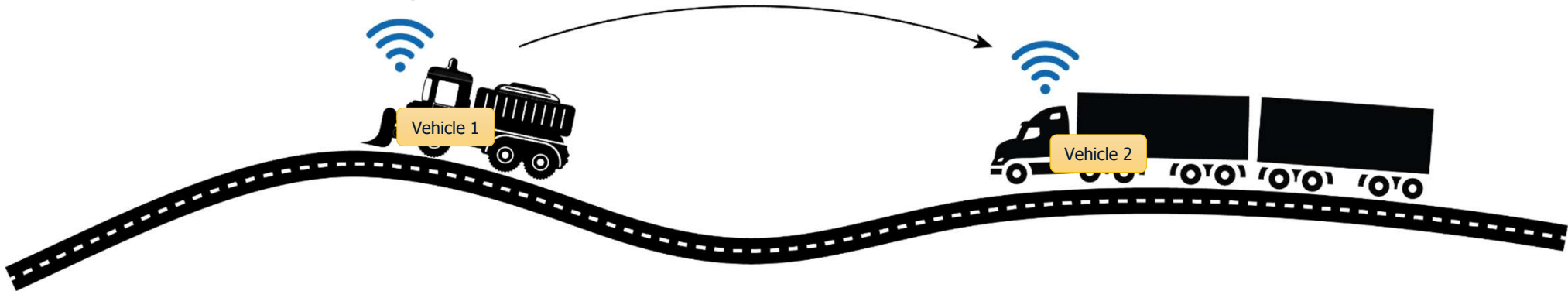
On-Board Applications

Forward Collision Warning

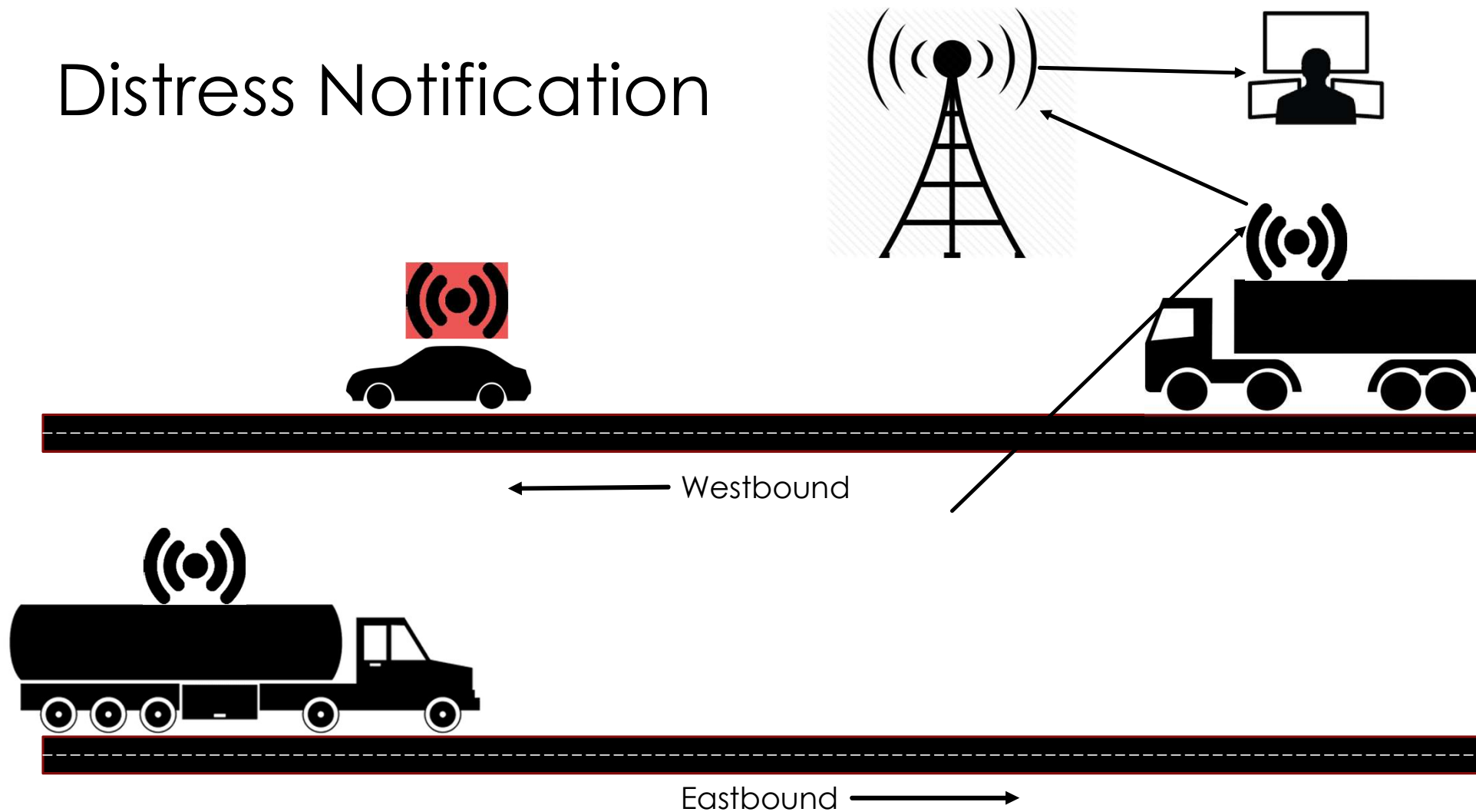


Slow moving vehicles like Snow Plows or Heavy equipped trucks, or in low visibility conditions

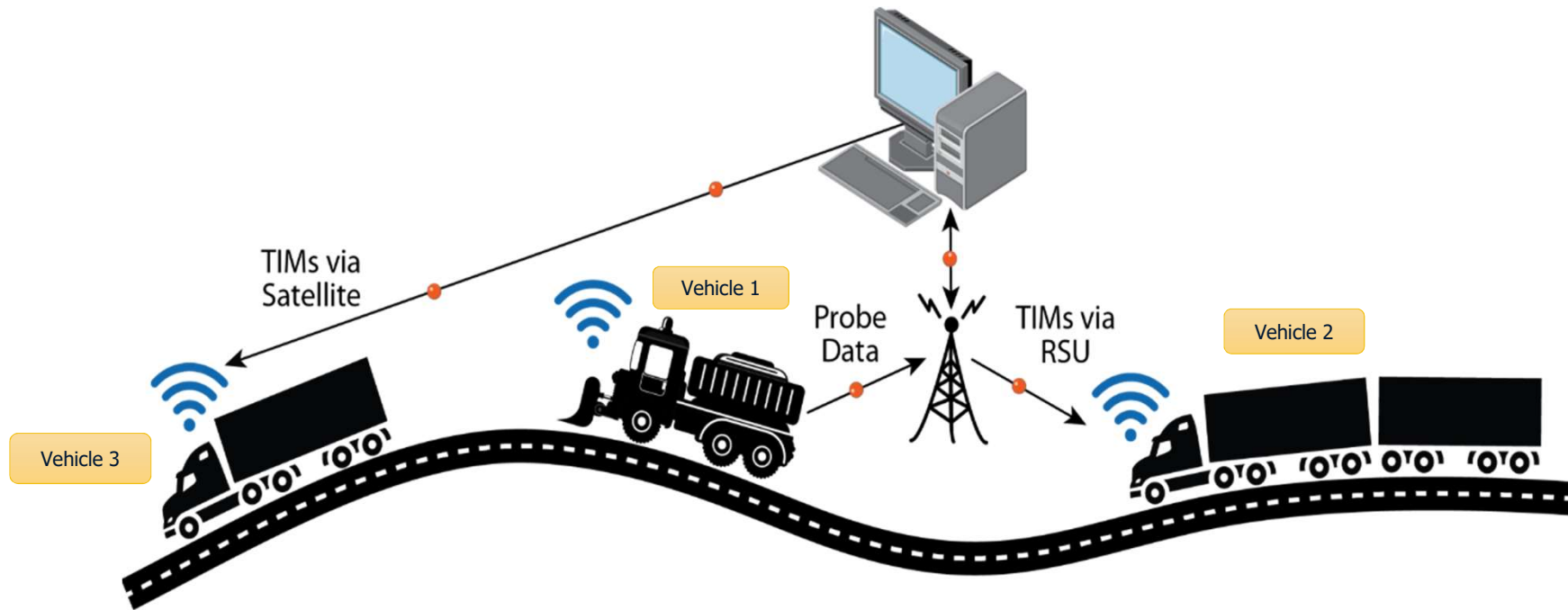
Host vehicle receives BSM information from remote vehicles.



Distress Notification



On-Board Applications I2V / V2I Situational Awareness (TIM)



Issue – FCC Reallocation

The FCC Just Upended Decades of Research on Connected Vehicles

Automakers and the government can't agree on how cars should talk to each other.

- DSRC replaced with CV2X
- Majority of spectrum moved to unlicensed WiFi
- Promise of connected and autonomous vehicles has lessened

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Many Benefits

- Back-end systems have been adapted to fully integrate TMC
- Leading the world in rural CV technology
- Amplified benefit for autonomous vehicles
- Safety benefits
- Mobility benefits

Bottom line: Safety and transportation system reliability lead to social and economic benefits.



Future of WYDOT CV Project

- WYDOT resilient design
- RSUs and OBUs purchased with dual capability
- All I2V information can be delivered by DSRC or Satellite
- Expanded tech capability to deliver TIMs statewide
- Continuing to deploy in WYDOT and fleet vehicles

Connected Vehicle Pilot

WYOMING DOT CONNECTED VEHICLE PILOT

IMPROVING SAFETY AND TRAVEL
RELIABILITY ON I-80 IN WYOMING



visit the Wyoming Connected Vehicle Pilot website
<https://wydotcvp.wyroad.info>

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