Tom DeHoff, WYDOT District 1 Engineer
Suzie Roseberry, WYDOT ITS Developer
Vince Garica, WYDOT GIS/ITS Program Manager
Runs 402 miles along Wyoming’s southern border

More than 32 million tons of freight per year

Truck volume is 30-55% of the total traffic stream on an annual basis

• Seasonal peaks as high as 70%
Why Interstate 80

On I-80 in Wyoming

- **IN 1 YEAR PERIOD ALONE**
  - 700 COMMERCIAL VEHICLE ACCIDENTS
  - 906 NON-COMMERCIAL VEHICLE ACCIDENTS
  - 1,552 HOURS ROAD CLOSURES

- **1600+ CRASHES IN 1 YEAR**
  - 18 FATALITIES
  - 271 INJURIES
  - 1,317 PROPERTY DAMAGE

**GOAL**
Reduce crashes and crash severity on I-80.
CV Pilot Deployment

**75 ROADSIDE UNITS**

Receive and broadcast messages using DSRC technology along sections of I-80. The units will be installed at locations along the corridor based on identified hotspots.

**400 INSTRUMENTED FLEET VEHICLES**

Equipped with DSRC-connected onboard units that broadcast basic safety messages, share alerts and advisories, and collect environmental data through mobile weather sensors.

**WYDOT TRAVELER INFORMATION**

The data collected by fleets and roadside units gives drivers in Wyoming improved travel information through services like the Wyoming 511 app and the commercial vehicle operator portal (CVOP).
CV Pilot On-the-Road Applications

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.

VEHICLE TO VEHICLE
- Forward collision warning
- Distress notification

VEHICLE TO INFRASTRUCTURE
- Alerts and advisories
- Road weather warnings
- Work zone warnings
All Drivers

More Accurate En Route Alerts
Better Pre-Trip & Forecasted Information
Timely Notifications
Faster Roadside Updates
Improved Information Sharing
CV Pilot Operational Integration

- Field Operations
- Technology
- TMC Operations
Impact on TMC Operations
Incorporating CV Applications into the TMC
CV Operations: TMC Integration

- Statewide TMC
  - Operates 24/7
  - Operators:
    - Monitor ITS field devices
    - Update public information systems
    - Dispatch maintenance employees

- Responsibilities continue to grow, staffing levels don’t
  - Every new project is viewed through the lens of minimizing the impact to operators
Pikalert enables CV data to be processed into actionable information.

- Alerts are sent to operators who update information system.
- TIMs send the information back to CVs.
- Other, traditional ITS systems are updated.
- Data is made available to third-parties, including Sirius XM.
Focus on extending existing systems rather than building new ones

Built TRAC to manage information sent to the TMC as part of a project to outfit snowplows with tablets to improve road condition reporting

• Now a central hub for activity management
• Patrol CAD incidents, Pikalert suggestions, Text/email/voice transcriptions, Mobile Reports, Call before you dig management, etc.
Incorporating CV Applications into the TMC

It’s a new language, so we made a translation guide

<table>
<thead>
<tr>
<th>Location</th>
<th>Direction</th>
<th>Pikalert Nowcast</th>
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Incorporating CV Applications into the TMC

TMC will collect Performance Measures from Pikalert

We have all routes in the State configured to use Pikalert

If Pikalert suggestions prove reliable, this could revolutionize our road reports
Incorporating CV Applications into the TMC

Used existing systems to improve the CV Pilot

- Truck parking information crowdsourced from WY 511 mobile app
- This information is displayed to other users of the app and incorporated into truck parking TIMs
Incorporating CV Applications into the TMC

- The TMC will use the CV Monitor to identify system problems and dispatch technicians.
Impact on Field Operations
CV Applications and Field Personnel

- Tom DeHoff, District Engineer, District 1 in southeast Wyoming

- Responsibilities
  - Traffic
  - Construction
  - Equipment
  - Maintenance

- Relationship with the Highway Patrol

- Relationship with TMC
CV Applications and Field Personnel

- Top Priority – Safety of personnel
  - Stripping and other traffic operations – Traffic
  - Workzone safety – Construction crews
  - Maintenance – Summer and winter activities

Every year snow plows are hit in spite of flashing lights around the plow to make them visible.
Roadway Safety

- Few crashes and less severe crashes result in fewer deaths and fewer road closures
- Fewer crashes mean WYDOT Employees remain out of harm’s way.
CV Applications and Field Personnel

- Snow plows are complex
- Cabs are filled with technology
  - Spreaders Controllers
  - Wing plow operations
  - Road Condition Reporting Tablet

Android-based tablet allows for a single device to perform many functions
CV Applications and Field Personnel

Field buy-in
- Must be based on success
- If technology works, personnel are happy to adapt and adopt
- Field personnel are patient but failure will kill concept
CV Applications and Field Personnel

- Long-term vision
  - Every employee and every vehicle have technology - much like the spread of cell phones
  - All devices, again like cell phones, can interoperate at a fundamental level
  - Significant reduction in crashes, closures and fatalities
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.wyoroad.info

Email
dot-cvpilot@wyo.gov