Wyoming Connected Vehicle Pilot Deployment Program

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The Team

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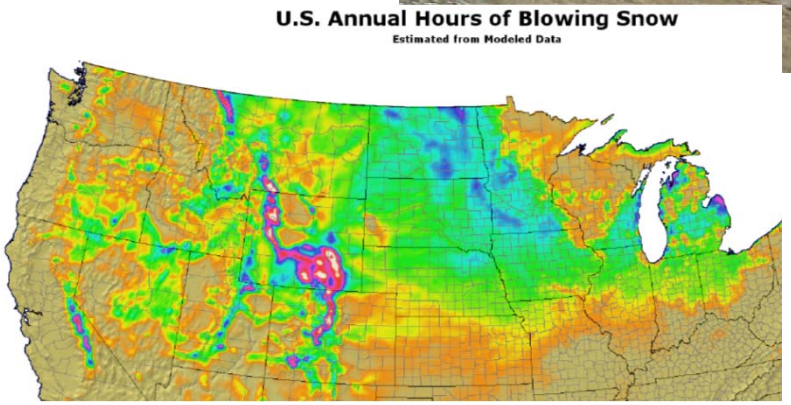
Current Situation

- Severe winter weather conditions
- Two high-profile crashes last year
- Economic impact of road closure
- Lack of service & parking locations
- Lack of alternate routes

- From 2010 to 2012 there were 172 closures
- Average closure duration over 8 hours
- Economic impact of $11.7 million per closure

Objectives

- **Reduce crash & road closure**
- **Improve emergency management**
- **Improve truck parking**
- **Improve construction activity information**



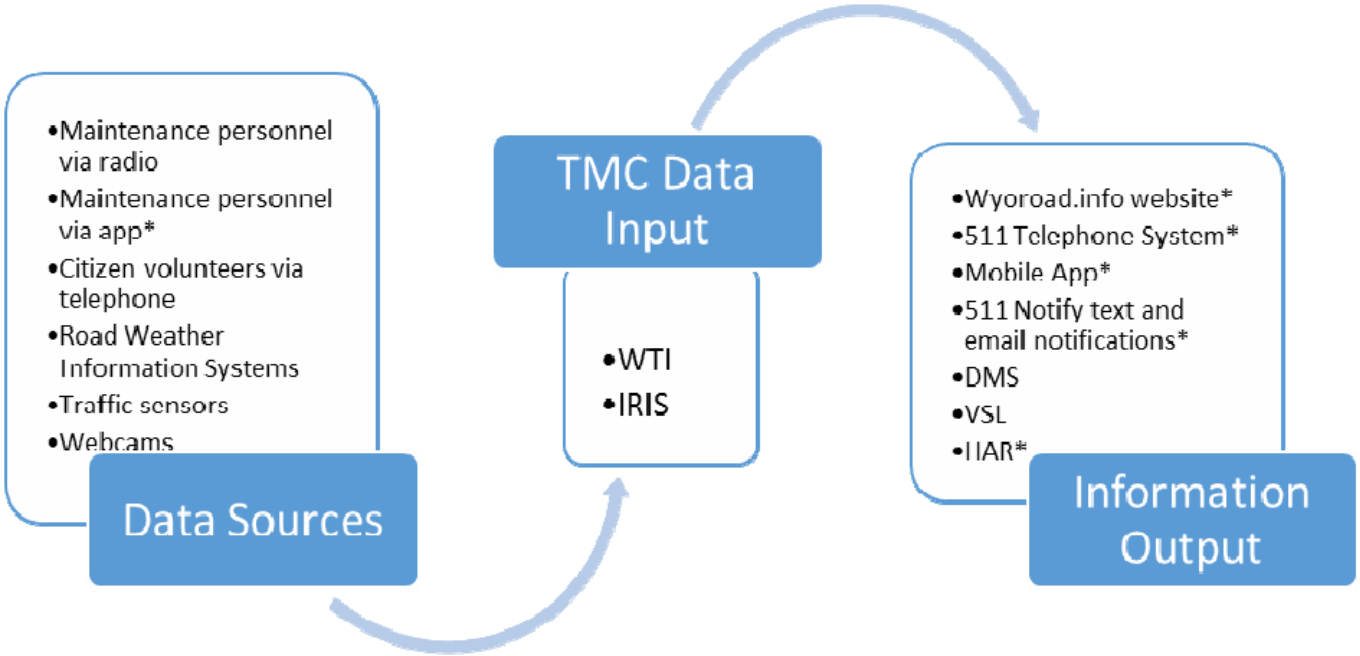
System Functionality

- **Manage following speed/distance**
  - Alerting trucks to slowing traffic
  - Prevent multiple-vehicle crashes
- **Provide alerts & advisories**
  - Weather
  - Road conditions
  - High-winds
  - Work zones
  - Bridges clearance
- **Provide location-based parking information**
  - Directing drivers to parking in event of road closure

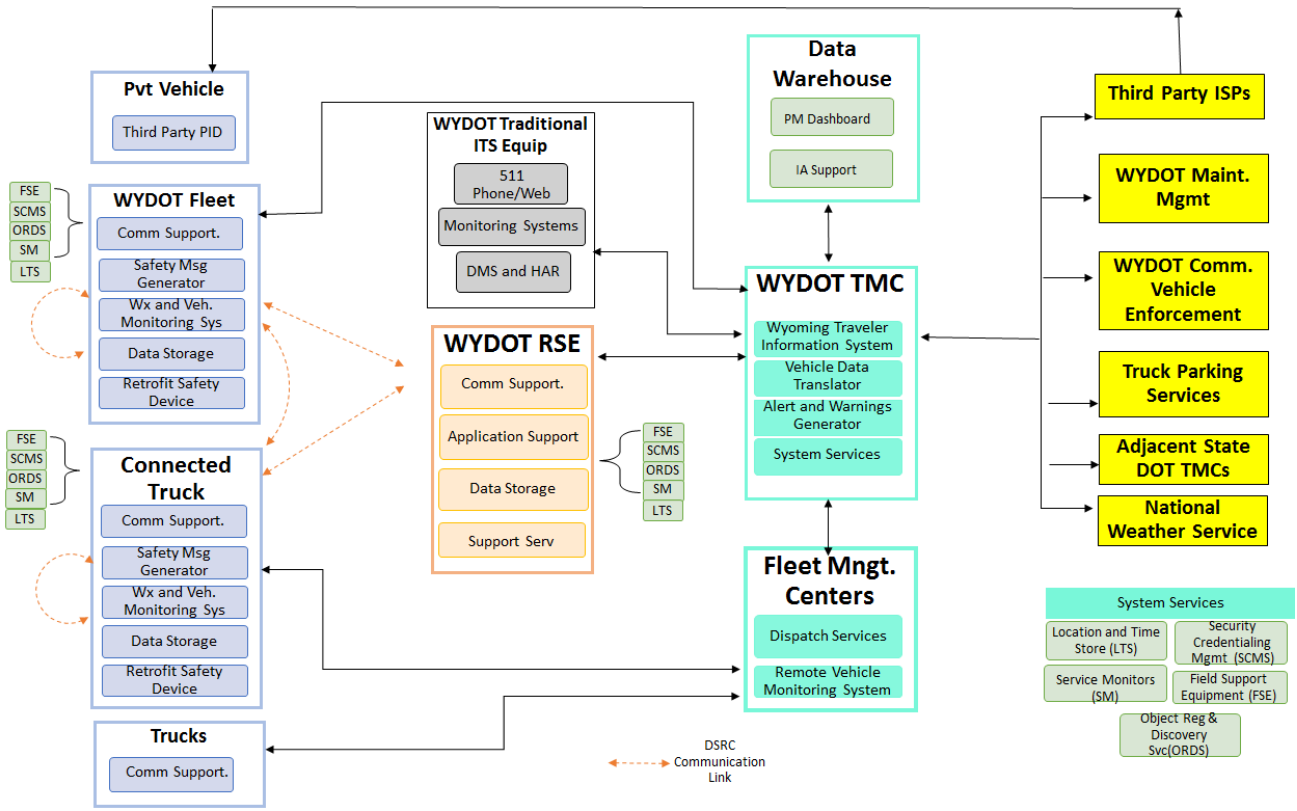
System Functionality

- **Automatically notify first responders of a crash**
- **Data from vehicle's sensors combine with other data to develop road segment level advisories/warnings**
- **Information shared with on-road vehicles, fleet management centers & traveler information systems**

Current Assets & Capabilities



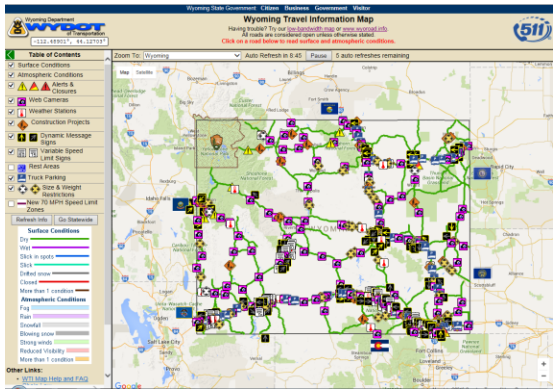
Context Diagram for Proposed System



Users

- **TMC**
  - Operators
  - Traveler Information
  - Weather Providers
  - Performance Management
- **Wyoming Communications & IT**
- **Highway Patrol**
  - Dispatch
  - Field
- **Maintenance**
  - Dispatch
  - Snow Plow Operators
  - Maintenance Supervisors
  - ITS Maintenance Staff

- **Adjacent State DOT Centers**
- **Fleet Management Centers**
- **Commercial Truck Drivers**
- **Truck Parking Facility Operators**
- **Personal Auto Travelers**
- **NWS Forecast Offices**
- **511 Phone, App/Website & Media**
- **Special Event Venues**



Major System Components

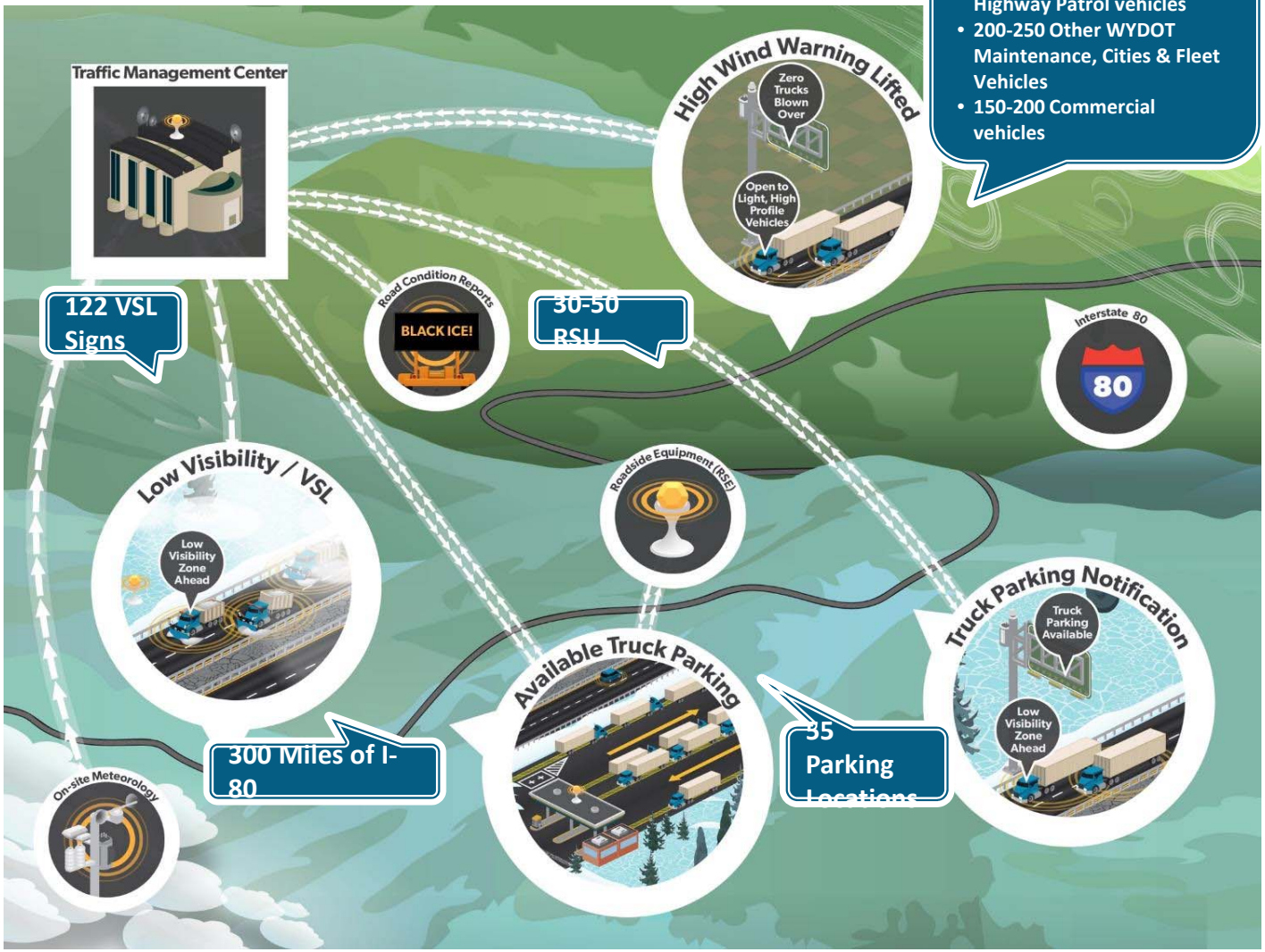
- **Vehicles**
  - Fleet vehicles
  - Private trucks
- **Roadside Infrastructure**
- **Centers**
- **Personnel**
- **External Systems**
- **Communications Infrastructure**

Capabilities & Functions

	WYDOT Snow Plows	WYDOT Maintenance Vehicles	Emergency Vehicles	Commercial Vehicles
Road Weather Advisories for Trucks & Vehicles	✓	✓	✓	✓
Automatic Alerts for Emergency Responders			✓	
CV-enabled Weather-Responsive Variable Speed Limits	✓	✓	✓	✓
Spot Weather Impact Warning	✓	✓	✓	✓
Work Zone Warnings	✓	✓	✓	✓
Situational Awareness	✓	✓	✓	✓
Truck Parking Availability for Freight Carriers				✓
Freight-Specific Dynamic Travel Planning				✓

ICF/WYDOT Pilot Deployment Vision

450 - 500 Equipped Trucks:
- 100 WYDOT Snow Plows/ Highway Patrol vehicles
- 200-250 Other WYDOT Maintenance, Cities & Fleet Vehicles
- 150-200 Commercial vehicles



For more information on the
Connected Vehicle Pilot Deployment Program:
http://www.its.dot.gov/pilots/index.htm
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