RURAL BROADBAND'S IMPACT ON TRANSPORTATION OPERATIONS

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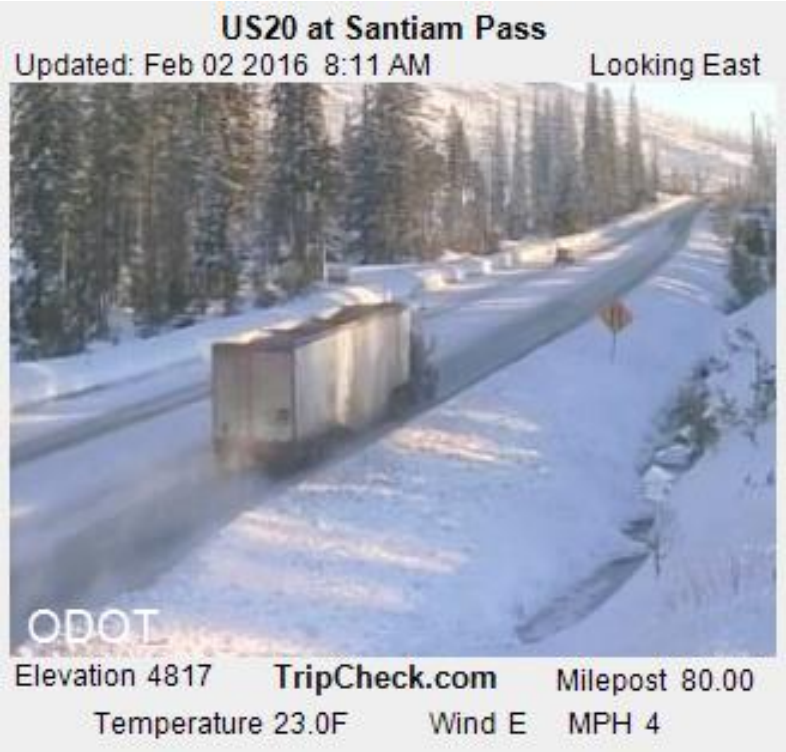


Why does a DOT need rural broadband?

- Highway Operations
  - Applications such as centrally managing signal systems, variable speed limits and Pan-Tilt-Zoom Cameras for Incident Response
- Maintenance Facilities
  - Bandwidth for Road Weather Information Sensors
- Support for rural transit providers
  - Regional fare systems, real time transit information, performance measures

Other Benefits

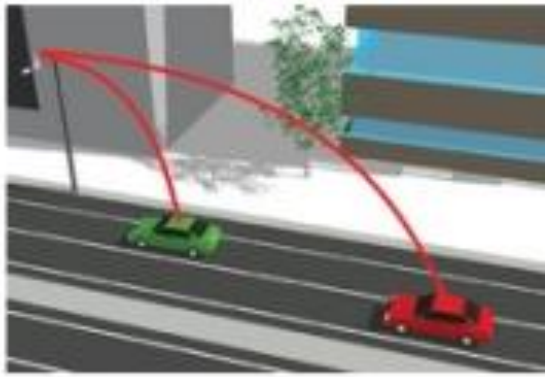
- Provide backhaul for improved cellular network
  - Improved incident response in rural areas, especially mountain passes
- Provides more opportunities for people to telecommute.
  - Potential for reduced trips and improved economic development in rural areas.
- Support other rural economic development initiatives
  - Bike tourism – scenic bikeways

Future Applications

- Demand for speed and travel time data to trip planning applications
- Fleet Applications
  - Transit, ODOT Operations
- Connected and Autonomous Vehicles
  - Dedicated Short Range Communications requires nearly instantaneous communication

Vehicle to Infrastructure

Vehicle-to-Infrastructure broadband connectivity supporting safety and mobility applications.



- Curve Speed Warning
- Security Certificate Updates
- Real Time Kinematics
- Traveller Information Messages
- Red Light Violation Warnings

What are the challenges?

- Oregon Statewide ITS Architecture and Operational Concept
  - *"Rural areas feature their own challenges: The fixed costs of equipment combined with lower vehicle densities to provide lower returns on investment relative to urban applications; lower ITS penetration at present means greater backhaul and infrastructure upgrades will be required; and the low penetration of cellular service to remote areas could compound connectivity difficulties."*

Other Challenges

- Determining the benefits relative to the costs
- Legal environment for public/private partnerships is challenging
- Devil is always in the details. How do you determine alignment, access points etc. across multiple partners?

Questions?