RURAL INTELLIDRIVE(sm) OVERVIEW

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Background on IntelliDrive(sm)—the Urban Model

- Initial development focused on urban congestion and safety
- Underlying assumption was that broadband communications available (DSRC) within a few minutes drive
- Dense network of roadside equipment (RSE)
- Congestion mitigation
- Probe vehicle data
- Electronic payment is an important application
- Intersection collision avoidance is a priority
The Rural Environment

- Higher rates of crashes and fatalities than urban highways
- Services are widely scattered
- Road weather issues
- Animal-vehicle conflicts
- Mountain passes
- Hazardous curves on mountain roads
- Limited availability of power and broadband communications
- Low traffic volumes
- Extended EMS detection and response time
- Long distances between medical facilities
How do we address Rural Safety?

- Safety warnings
  - Lane departure/run-off-the-road
  - Curve speed
  - Animal avoidance
  - Stop sign violation
  - Rail crossing

- Traveler information
  - Incidents, closures, detours
  - Road weather data and images
  - Locations of services (medical, repair, fuel, food, lodging)
RWIS Images

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Animal-Vehicle Conflicts
How do we Deliver Information to the Vehicle?

- DSRC, vehicle-to-vehicle
  - Exchange priority messages
  - Tail gate warning
- Vehicle to Roadside
  - Retrofit ITS sites with DSRC, backhaul communications
  - Poll and Push data to sites periodically
  - GPS corrections, incidents, closures, detours, hazardous conditions, services updates
- Between ITS sites
  - Satellite communications (one way)
  - Priority messages and GPS corrections
INTELLIDRIVE(sm)
Network Message Manager
(Message destination, expiration, urgency)

- Probe Vehicle Data, pavement data
- GPS Corrections
- 511 Events
- Commercial Vehicle Data
- RWIS Data and Images
- Animal Warnings
- Weather Forecasts
- Travel and Convenience Information
- Roadside ITS Sites, Weigh Stations, POI, using DSRC and backhaul
- Other Networks: 511, MDSS, TMC, media, etc.
- Satellite Data Delivery
- HIGH PRIORITY MESSAGES
- Selected Data
- ALL DATA, Filtered by location

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THE RURAL INTELLIDRIVE(SM) TEAM

- Idaho Transportation Department
- North/West Passage Pooled Fund
- WTI
- UMTRI
- NIATT
- Vaisala
- Kapsch
- XM Sirius
- Castle Rock Consultants
- Meridian Environmental
- ACMS
- IBM
- Telcordia
- Kimley-Horn and Associates
Team Plans

- Develop the Rural IntelliDrive(sm) Model
  - Use Cases
  - Concept of Operations
  - Cost Estimates
  - Schedules
- Seek sponsorship for a model deployment in north Idaho and the North/West Passage states
- Include an evaluation of effectiveness and lessons learned
- Rural IntelliDrive(sm) Model will be able to be replicated nationwide
Questions or Comments??

Thanks You.