BIG SKY ROAD ASSOCIATION

MONTANA HIGHWAY INFRASTRUCTURE COALITION

Montana Highway ITS Modernization

Project Fact Sheet · Corridor Dossier & Technical Summary · MT-200 / MT-201

PROJECT DOSSIER & INITIATIVE SUMMARY

A smart transportation initiative designed to improve safety, traffic visibility, and roadway efficiency through advanced Intelligent Transportation Systems (ITS). The project integrates real-time monitoring, traveler information, and connected roadway technologies to support safer mobility across key Montana highway corridors.

PROJECT DOSSIER SPECIFICATIONS

Client Agency	Montana Department of Transportation (Partner Agency)
Target Corridors	MT-200 · MT-201 (Rural Freight & Commuter Routes)
Execution Period	2024 – 2027 (Phase I Operational, Phase II Engineering)
Association Role	Stakeholder Convener, Technical Working Group, Public Outreach
Technology Partner	Gallatin Signal Works (Telemetry & Roadside Sensing Partner)
Primary Division	Intelligent Transportation Systems & Road Weather Information

CORRIDOR PERFORMANCE BENCHMARKS (PILOT VALIDATION)

118 mi
Camera Coverage
Pilot corridor coverage

14
RWIS Stations
Solar sensor stations

< 5 min
Alert Latency
Sensor to driver warning

FIELD CONSTRAINTS

01. Operating Challenge & Field Realities

Rural highway corridors MT-200 and MT-201 experience severe weather variations, high freight traffic, and sparse cellular coverage. Winter storms bring sudden black ice and blinding ground blizzards that quickly isolate rural travelers.

Prior to the initiative, roadway weather data was updated only through periodic maintenance vehicle passes. First responders and freight dispatchers frequently lacked real-time visibility into pass closures and hazardous conditions.

ENGINEERING INTERVENTIONS

02. Engineered Countermeasures & Delivery

The association convened an inter-agency working group connecting MDT engineers with roadside sensing specialists to deploy automated Road Weather Information Systems (RWIS). Solar-powered camera poles and atmospheric sensors were installed at high-risk mileposts.

Data feeds were linked directly into state traveler information portals and roadside dynamic message signs, giving drivers advance notice of changing pavement friction and reduced speed limits.

> *“Deploying connected roadside sensors on MT-200 gave our maintenance units instant eyes on the pass during freeze-thaw cycles, cutting emergency dispatch verification times dramatically.”*
>
> **— Karl Jensen, ITS Committee Lead, Big Sky Road Association**

TECHNICAL ARCHITECTURE & SPECIFICATIONS

- **Sensor Package:** Subsurface temperature probes, infrared surface temperature, humidity & barometric sensors
- **Power Systems:** Dual 150W solar arrays with sealed AGM deep-cycle battery reserves (7-day autonomy)
- **Communications:** Cellular LTE with dual-SIM fallback and satellite backup for critical mountain pass gaps
- **Data Ingestion:** Direct API pipeline to MDT 511 traveler portal, dispatch centers, and dynamic signage
- **Calibration Lifecycle:** Semi-annual field recalibration protocol conducted by certified ITS field technicians