

Greater Yellowstone Rural ITS Priority Corridor Project

Task 5. ITS Vision Working Paper

Prepared for the:

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Introduction

A vision conceptually defines “how” Intelligent Transportation Improvements (ITS) are expected to function in a statewide or regional transportation system. The vision plays a critical role in setting the direction of the planning effort, leading to tangible products to use in initiating discussion, and soliciting comments, and can be used as a long-term milestone by which projects should be developed. The following document provides the goals and objectives to support the vision (written and visual representation) for the Greater Yellowstone Rural ITS Project

Goals and Objectives

Finalized goals for the Project provide “what” will be achieved with the technologies being deployed. These goals have been determined through Steering Committee meetings and reinforced at stakeholder meetings.

The following goals and objectives support the vision and mission for the Greater Yellowstone Rural ITS Priority Corridor project. As per Webster’s Dictionary a goal is defined as “the objective toward which an endeavor is directed” or what you are trying to achieve. An objective as per Webster’s Dictionary is “something worked toward or aspired to” or the specific actions that would be taken.

Note that the pursuit of the individual goals and objectives is dependant on the specific Corridor challenges and the project selection process (i.e., transit improvements may not be perceived as a priority, hence, no “early winner” projects may relate to transit. The pursuit of Goal #2 and its related objectives may be abandoned). Also, it should be noted that goals or related objectives are not prioritized by there listing order.

Goal - Improve the safety and security of the Greater Yellowstone Region rural transportation system users.

Objectives:

- Provide sustainable traveler information improvements that disseminate credible and accurate “real-time” information.
- Provide improvements that advise transportation system users of slow-moving vehicles, obstructions and weather conditions.
- Provide improvements that advise unfamiliar motorists of alignment and speed conditions, tourist attractions, services, construction, weather and provide for the ability to request assistance.
- Coordinate public fleet responses to unsafe conditions (weather, incidents, detour routes) to provide for improved regional movement.
- Reduce severity and fatality rates through improved emergency response times.

- Reduce exposure to unsafe situations through motorist aid devices.
- Provide improved methods for commercial vehicle monitoring, and hazardous material identification.

Goal - Enhance personal mobility and accessibility to services and enhance convenience and comfort of travelers destined for Yellowstone National Park, Grand Teton National Park, and other regional attractions.

Objectives:

- Increase public awareness of public transportation alternatives to and within the Parks.
- Encourage and provide incentives for increased transit utilization.
- Improve access to services and tourist areas through expanded information availability.
- Coordinate transit services and availability to Parks.
- Provide parking information to reduce internal Park congestion.

Goal - Increase operational efficiency and productivity of the transportation system focusing on system providers.

Objectives:

- Collect, process and share data between local, state, and federal agencies to increase efficiency and resources utilization.
- Provide automated notification of conditions that may impact operations and maintenance of regional roadways to improve resource management and allocation.
- Improve communication network capabilities to provide for increased coordination of services (i.e. radio, wire-line/wireless).

Goal - Enhance economic productivity of individuals, businesses and organizations.

Objectives:

- Develop projects that meet local needs but provide for national “showcase”.
- Improve identification of goods, services, and opportunities in regional communities (i.e. en-route information, transportation service information, etc.)

- Provide mechanism by which tourism industry, transportation and transit services can work more closely together.
- Provide opportunity for commercial vehicles and goods to be moved more efficiently (i.e. pre-clearance improvements).

Goal - Reduce energy consumption, environmental costs and negative impacts.

Objectives:

- Improve hazardous material incident response.
- Promote and encourage the use of alternative fuels and the use of transit in the Parks.

Goal - Develop and foster long-term partnerships that will result in the deployment of ITS initiatives and traditional solutions that address rural needs of the region.

Objectives:

- Establish formal and informal opportunities to inform public and private sector decision-makers on initiatives for the Greater Yellowstone Rural ITS Priority Corridor project.
- Gain support for ITS efforts from key stakeholders.
- Facilitate a technical and financial group for the promotion of partnership projects.
- Develop opportunities for public-public and public-private partnerships for operations and maintenance.

Goal - Ensure compatibility with statewide and national ITS initiatives.

Objectives:

- Coordinate Greater Yellowstone project with statewide efforts.
- Provide for technology transfer between state agencies.

Goal - Incorporate ITS into the State Transportation Improvement Program planning efforts.

Objective:

- Provide for the incorporation of advanced technology applications to be considered in the Transportation Improvement Plan (TIP) process.

Written Theme

The following written vision is targeted for a wide-ranging audience, from elected officials to transportation professions. The vision provides a general idea of how advanced technologies can be used to address rural challenges. A draft vision statement is as follows:

“The Greater Yellowstone Rural ITS Priority Corridor Project is a cooperative public-public and public-private sector project that will develop a comprehensive ITS strategic plan. The plan and resulting deployment will address unique rural regional and local challenges to provide for safety, mobility, travel demand management, tourism information and services, commercial vehicle operations, electronic payment, economic viability and ensure the ability to fuse and exchange data regionally. The traveling public, operating agencies and gateway communities will ultimately benefit from the planning and deployment of the following advanced technology applications:

Traveler Safety and Security

- Real-time wide area information dissemination improvements (via radio, computer, TV) both pre-trip and en-route safety information such as weather, road conditions and construction.
- Site-specific safety advisories and warnings (e.g. hazard warnings, visibility sensors, variable speed limits, collision avoidance, shoulder detection) to alert motorists of imminent problems.
- Safety surveillance and monitoring (e.g. rest areas, hazardous roadway segments).
- In-vehicle monitoring and detection improvements such as driver monitoring (alertness, status), vision enhancement, perimeter detection.

Emergency Services

- Mayday systems to alert dispatchers of location and nature of a problem (e.g. crash, breakdown).
- Advanced dispatching and vehicle-based response applications (e.g. computer-aided dispatch and automatic vehicle location).

Tourism and Traveler Information Services

- Information services (electronic yellow pages, route guidance) provided at fixed locations (e.g. hotels, rest areas, park-and-ride lots, businesses) and while traveling en-route to destination.
- Portable and temporary event management improvements that include such capabilities as traffic management, variable message signs, hotel and service availability, campgrounds and directions on how to reach services when they are available.
- Parking management improvements to monitor utilization and pricing.
- Smart card payment/transaction systems for transit and tourist transactions.

Public Traveler Services and Public Mobility Services

- Advanced transit and para-transit applications that use technology for dispatching and vehicle location.
- Automatic vehicle identification for transit vehicles at congested locations such as park entrance gates, traffic signals.
- Parking management infrastructure to monitor utilization and pricing.
- Smart card payment/transaction systems for rider payment and tracking.

Infrastructure Operations and Maintenance

- Automated management applications (e.g. bridge, pavement, road-weather information systems).
- Regional computer servers to allow and provide for data and information exchange, data fusion, agency coordination, and public/private partnerships but still maintain agency autonomy of individual actions.

Fleet Operations and Maintenance

- Advanced dispatching and routing systems for vehicle location and routing.
- Advanced vehicle-tracking systems for lateral and longitudinal guidance.
- Fleet maintenance and management technology applications.

Commercial Vehicle Operations

- Systems to provide for increased efficiency, advisory and enforcement through pre-clearance, weigh-in-motion, permitting and inspection improvements, and to aid in hazardous material identification.

The Greater Yellowstone Rural ITS Priority Corridor project can serve as a catalyst for agency leadership in ITS through research, deployment, evaluation and training. The project will also increase the knowledge and understanding of issues facing the respective agencies, allowing them to incorporate a philosophy of “acting locally, but thinking regionally” into their transportation decisions and giving the traveling public state-of-the-art mobility and real-time information.”

Visual Vision Representation

A visual representation of the vision has been developed to provide similar benefits and address similar audiences as the written vision. However, the visual representation provides a general long-term perspective of the typical types of problems and the potential solutions on a representative roadway for all ranges of audiences that are being considered (Figure 1). The visual vision representation is not intended to be a figure that shows ITS architecture and data flow diagrams.

Making Our Roadways Safer, Efficient and Convenient

The ITS Vision

