Intelligent Transportation Systems OVERVIEW

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WHAT IS ITS?

Intelligent Transportation Systems (ITS) are the application of electronics, updated communications, and data processing to improve the efficiency and safety of the surface transportation system. A regional ITS architecture plan, which is required by the US Department of Transportation in order to receive federal funding for ITS projects, provides a long-range plan for the deployment, integration, and operation of ITS.

Elements of a Regional ITS Architecture

ITS Inventory and Needs
- Existing and planned ITS components
- General transportation or ITS needs

ITS Service Packages
- Services that ITS can provide the region

ITS Deployment Plan
- Prioritizes short-term, mid-term, and long-term projects
- Identifies funding needed for project deployment

Examples of ITS

Traffic Management Centers

State and municipal traffic management centers (TMCs), such as the TDOT Region 2 SmartWay TMC in Chattanooga, provide agencies the ability to operate their ITS equipment including closed circuit television cameras, dynamic message signs, and traffic signal systems. During incidents, traffic information and video feeds can be shared with public safety agencies to improve incident management capabilities.

Closed Circuit Television Cameras

Transportation system operators use video monitoring to detect and verify incidents, monitor congestion, and check road conditions in inclement weather. Video images from incidents can be shared with public safety dispatchers as well as emergency management centers.

Dynamic Message Signs

Posted traveler information messages provide motorists with details about incidents, construction, special events, and evacuations.

Emergency Management

Traffic signal preemption improves emergency vehicle response times and safety. Sharing of traffic camera images provides public safety dispatchers the ability to verify incidents and determine the appropriate types of response units to dispatch.

Traffic Signal Systems

Traffic signal systems provide transportation system operators the ability to monitor and change signal timing plans from a traffic management center and facilitate corridor signal synchronization.

Transit Management

Automated vehicle location systems integrated with computer aided dispatch systems facilitate transit management. Transit security technologies, trip routing, real-time bus location, and reservation systems provide added safety and convenience for transit patrons.

Benefits of ITS

ITS technologies and strategies have proven to be a cost effective means to improve transportation operations, increase safety, and save money. Some benefits of ITS deployments include:

- Improved efficiency for roadway and transit users, who can make decisions informed by real-time conditions

- Increased safety by communicating incidents, road and lane closures, congestion, and severe weather conditions

- Enhanced incident and special event management by providing accurate traffic and event updates to travelers

- Increased cost savings as agencies share information and increase operational efficiency