Intelligent Transportation Systems Overview

Intelligent Transportation Systems (ITS) are the application of electronic technologies and communications to improve the safety and efficiency of the transportation system. Some examples of ITS are provided below. In order to be eligible for federal funding of ITS projects, regions must develop a plan that outlines how stakeholders will deploy, integrate, and operate ITS within the region. This plan is known as a regional ITS architecture.

Traffic and Transit Management Centers

State and local traffic and transit management centers provide agencies the ability to operate their ITS equipment including traffic signal systems, closed circuit television cameras, dynamic message signs, and vehicle dispatching systems. During incidents, traffic information and video images can be shared with public safety agencies to provide them with real-time information about road conditions.

Traffic Signal Systems

Traffic signal systems provide system operators the ability to monitor and change signal timing plans from a traffic management center and facilitate corridor signal synchronization. Traffic signal systems can include signal preemption for emergency vehicles and signal priority for transit vehicles.

Traffic Monitoring Systems

Traffic monitoring technologies include closed circuit television cameras and vehicle detectors that can determine traffic volumes and speeds. Transportation system operators use traffic monitoring technologies to detect and verify incidents, monitor congestion, and observe road conditions in inclement weather.

Traveler Information Systems

Traveler information technologies include dynamic message signs, websites, and use of social media to provide travelers with real-time information about travel conditions. Traveler information can include messages about travel times, incidents, construction, special events, and evacuations.

Incident and Special Event Management

Service patrol vehicles, permanent and portable dynamic message signs, and closed circuit television cameras can facilitate traffic management during incidents and special events to implement detours, provide advanced notice of closures, and improve safety. Sharing of traffic camera images provides public safety dispatchers the ability to verify incidents and determine the appropriate types of units to dispatch.

Emergency Management

Close coordination between traffic and public safety agencies can improve emergency response. Traffic agencies can provide real-time information on road conditions to public safety dispatchers to improve response times, and traffic signal preemption can improve both response times and safety.

Transit Management

Transit management includes the use of automated vehicle location systems integrated with computer aided dispatching to improve the efficiency of transit operations and provide transit users with real-time information about bus and train arrival times. Technologies such as transit security systems, electronic payment systems, and trip planning services can improve the overall experience of transit users and promote increased use of transit services.