

Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) are the application of electronic technologies and communications to improve the operation of roadway, transit, and emergency management systems. In order to ensure these systems are integrated and work together, a regional ITS architecture plan is often developed. The regional ITS architecture provides a long range plan for how ITS can be deployed, integrated, and operated by state and local government agencies. Some examples of ITS applications have been provided below.

Traffic Management Centers

The TDOT Region I Traffic Management Center (TMC) operates the SmartWay system in the Knoxville area. The TMC provides TDOT with the ability to monitor freeways, provide traveler information, and coordinate with public safety dispatchers during incidents. Many municipalities also operate traffic operations centers to monitor and control traffic signal operations.



Closed Circuit Television Cameras

Video surveillance is used by transportation operators to detect and verify incidents, monitor congestion, and check road conditions in inclement weather. During disasters and incidents, video images can be shared with emergency management operations and public safety dispatchers.



Dynamic Message Signs

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



Traffic Signal Systems

Closed loop traffic signal systems allow municipalities to monitor and control signal timing plans from a traffic operations center and facilitate corridor signal synchronization.



Transit Management

Automated vehicle location systems integrated with computer aided dispatch systems allow transit agencies to track and dispatch buses more effectively. Transit security technologies, trip routing, and reservation systems provide added safety and convenience for transit patrons.



Emergency Management

Traffic signal preemption improves emergency vehicle response times and safety. Sharing of video feeds and camera control from traffic management agencies also improves incident response and can assist with disaster relief.



Work Zone Management

Portable dynamic message signs and closed circuit television cameras facilitate detour and lane closure implementation and traffic management in work zones.



Flood Detection

Flood detection equipment detects and notifies emergency and transportation officials of flooded roadways. In areas prone to flooding, closure equipment prevents cars from driving into flooded roadways.

