

Chattanooga Use and Maintenance Plan

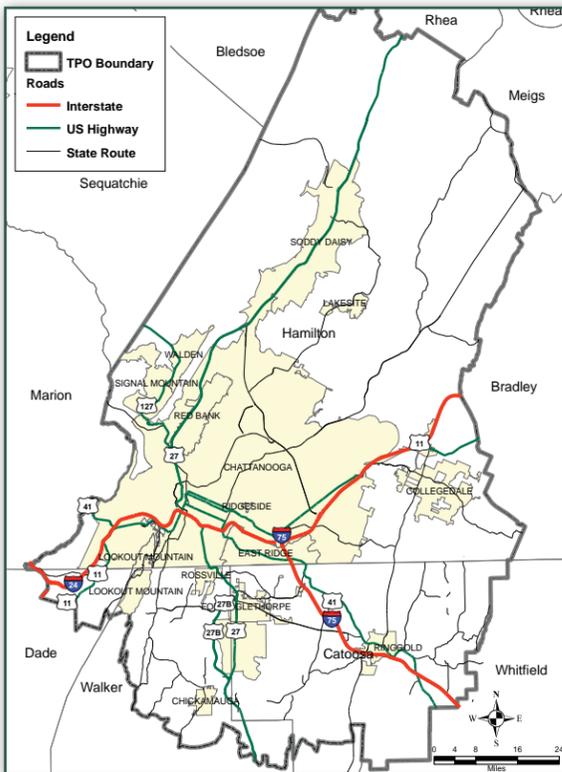
Use and maintenance of the Regional ITS Architecture and Deployment Plan will be important to preserve the plan's role as a guide for the implementation of ITS in the Chattanooga Region. Stakeholders in the Region developed the following guidelines to address use of the plan for project deployments and maintenance of the plan to reflect changing needs and priorities.

ITS Architecture Use

To ensure eligibility for the use of federal transportation funding of regional ITS projects, as projects are developed they will be compared to the applicable ITS market packages. Any discrepancies between a planned project and the ITS Architecture will be resolved either by modifying the project or the market packages. Changes to the market packages will be documented on an Architecture Maintenance Documentation Form. All change forms will be retained by the Chattanooga-Hamilton County Regional Planning Agency until the next plan update.

ITS Architecture Maintenance

The Chattanooga stakeholders will review the Regional ITS Deployment Plan annually. The recommended projects from the ITS Deployment Plan will be reviewed to determine changes in the project status, prioritization, or the addition of new projects. Any changes will be documented by the Chattanooga-Hamilton County Regional Planning Agency. Prior to the Long-Range Transportation Plan update the Regional ITS Architecture and Deployment Plan will undergo a complete update. During the complete update, Architecture Maintenance Documentation Forms and changes to the ITS Deployment Plan projects will be incorporated. In addition, any new stakeholders or elements in the Region will be included and any changes made to the National ITS Architecture will be evaluated for their impact on the Regional ITS Architecture.



Chattanooga Regional ITS Architecture Boundaries

Chattanooga Region Geographic Boundaries

The Chattanooga Region is comprised of Hamilton County in Tennessee and the northern portions of Dade, Walker, and Catoosa Counties in Georgia. The geographic boundaries of the Region correspond with the boundaries of the Chattanooga-Hamilton County/North Georgia TPO.

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REGIONAL ITS ARCHITECTURE AND DEPLOYMENT PLAN

Executive Summary

June 2010

Introduction

Development of a regional intelligent transportation system (ITS) architecture and deployment plan is an important step in the planning and implementation of ITS in a region. The ITS architecture and deployment plan allows stakeholders to plan for what they want their system to look like in the long term and then break the system into smaller pieces that can be implemented over time as funding permits. Development of an ITS architecture and deployment plan encourages interoperability and resource sharing among agencies and allows for cohesive long-range planning among regional stakeholders. In Chattanooga, the first regional ITS architecture was developed in 2003. Since that time a number of new ITS projects have been implemented and the National ITS Architecture, which

serves as the basis for the Chattanooga Regional ITS Architecture, has been updated. In order to reflect these changes the Chattanooga-Hamilton County/North Georgia Transportation Planning Organization (TPO), in coordination with the Tennessee Department of Transportation (TDOT), began an update of the Chattanooga Regional ITS Architecture in 2009.

In addition to the planning benefits of developing a regional ITS architecture, project conformance to the regional ITS architecture is also a requirement for any agency in the Region to be eligible for federal funding of an ITS project.

What is ITS?

Intelligent Transportation Systems (ITS) are the application of electronic technologies and communications to improve the operation of roadway and transit systems.

Chattanooga Regional Stakeholders

The development of the Chattanooga Regional ITS Architecture and Deployment Plan was led by the Chattanooga-Hamilton County/North Georgia TPO in coordination with TDOT. The success of the plan is due in large part to the collaboration and continuous participation of the stakeholders representing the Chattanooga Region. These stakeholders participated in a series of three workshops conducted in 2009 and 2010 to develop the Regional ITS Architecture and Deployment Plan.

Stakeholder agencies included:

- Chattanooga Area Regional Transportation Authority
- Chattanooga-Hamilton County Health Department
- Chattanooga-Hamilton County Regional Planning Agency
- City of Chattanooga
- City of East Ridge
- Federal Highway Administration – Georgia Division
- Federal Highway Administration – Tennessee Division
- Georgia Department of Public Safety
- Georgia Department of Transportation
- Northwest Georgia Regional Commission
- TDOT – Long Range Planning Division
- TDOT – Region 2
- Tennessee Highway Patrol

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Chattanooga Project Approach

The Chattanooga Regional ITS Architecture was developed using a consensus approach with input from stakeholder agencies throughout the Region. Three key steps were used to develop the plan:

Step 1 — Identify needs and ITS Inventory

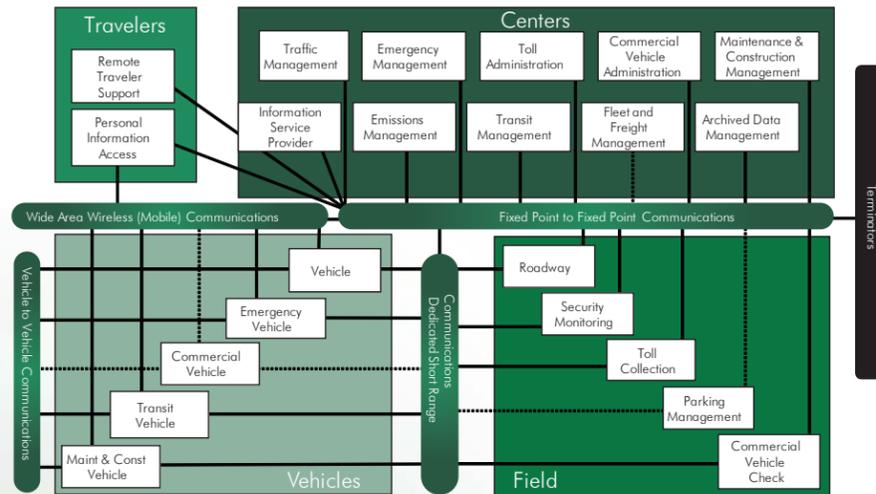
Stakeholder needs as well as existing and planned ITS elements were identified. Elements were categorized as centers, vehicles, travelers, or field devices as shown in the diagram below.

Step 2 — Develop ITS Market Packages (Services)

ITS market packages represent the services that ITS can provide to address one or more needs in the Region. In the Chattanooga Region, a total of 38 market packages were identified and prioritized as high, medium, or low. Market packages not only identify services, but also show how those services will be operated and the data flows that will occur between agencies.

Step 3 — Identify Sequence of ITS Projects to Deploy in the Region

The ITS Deployment Plan identifies the projects that stakeholders recommend for deployment in order to implement the ITS services identified in the market packages.



What is an ITS Architecture?

An ITS Architecture is a framework for the deployment and operation of ITS in a region.

Chattanooga ITS Market Packages

ITS market packages outline the functions and services that stakeholders envision ITS to perform now and in the future. Stakeholders selected and prioritized market packages as high, medium, or low priority based on regional needs, feasibility, likelihood of deployment, and overall contribution of the market package to meeting the goals and vision for ITS functionality in the Region. The high-priority ITS market packages identified by stakeholders in the Chattanooga Region are listed below.

Traffic Management

- Network Surveillance
- Surface Street Control
- Traffic Information Dissemination
- Regional Traffic Management
- Traffic Incident Management System

Emergency Management

- Emergency Call-Taking and Dispatch
- Emergency Routing
- Roadway Service Patrols

Maintenance and Construction Management

- Work Zone Management
- Maintenance and Construction Activity Coordination

Public Transportation Management

- Transit Vehicle Tracking
- Transit Fixed-Route Operations
- Demand Response Transit Operations
- Transit Traveler Information

Traveler Information

- Broadcast Traveler Information
- Interactive Traveler Information

ITS Deployment Plan

Recommended ITS Projects

A list of recommended ITS projects for the Chattanooga Region was developed through input from stakeholders during the ITS architecture development process. Stakeholders grouped projects into timeframes for deployment based on priority, dependence on other projects, technology, and feasibility. Below is a summary of some of the key projects recommended for deployment by stakeholder agencies in the Region. A complete listing of all the projects identified is found in the Regional ITS Deployment Plan.

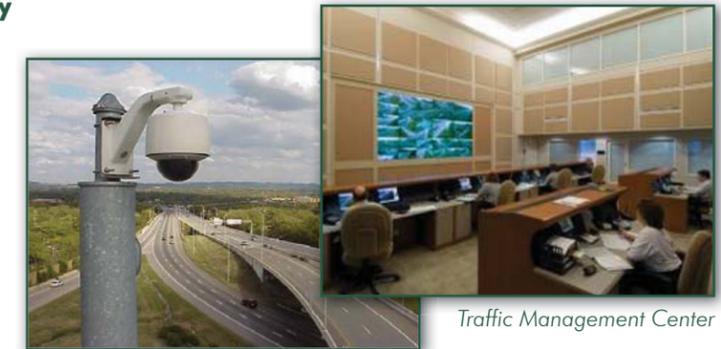
What is an ITS Deployment Plan?

An ITS Deployment Plan identifies the projects that need to be implemented in order to deliver the services identified in the ITS Architecture.

Chattanooga Area Regional Transportation Authority

- SmartBus Project:
 - Automatic Vehicle Location
 - Computer Aided Dispatch
 - Alarm System
 - Automated Passenger Counter
 - Next Stop Automated Announcement
 - Smart Card Fare Payment System
- On-Board Security Cameras
- Fixed-Route Transit Traffic Signal Priority
- Next-bus Arrival Dynamic Message Sign (DMS)

ITS Deployment Examples:



Closed Circuit Television Cameras

Traffic Management Center

Chattanooga-Hamilton County / North Georgia TPO

- Chattanooga-Hamilton County/North Georgia TPO Archive Data Warehouse

Hamilton County

- Hamilton County 911 Dispatch Coordination with Municipal TOCs
- Hamilton County Emergency Operations Center Backup for Municipal TOCs

Municipalities

- Traffic Operations Centers (TOCs)
- Regional Advanced Traffic Management Signal Systems
- Closed Circuit Television (CCTV) Cameras
- Arterial DMS
- Road Weather Information Systems
- Railroad Grade Crossing Advance Notification Systems
- Real-Time Traveler Information Websites
- TOC Coordination with TDOT Region 2 Traffic Management Center
- Emergency Vehicle Traffic Signal Preemption

Tennessee Department of Transportation

- SmartWay Traffic Management Center (under construction)
- SmartWay Freeway Management System Deployment (under construction)
- SmartWay Freeway Management System Central Operating Platform
- SmartWay Weather Detection



Transit Vehicle Tracking



Traffic Signal Coordination



Dynamic Message Signs



Emergency Vehicle Traffic Signal Preemption