Austin Regional ITS Architecture
and Deployment Plan Update

Stakeholder Kick-Off Meeting

March 25, 2014



Kimley-Horn
and Associates, Inc.




Presentation Overview

- Introductions
- Presentation on the Regional ITS Architecture Update Project
  - Overview of ITS
  - ITS Architecture Update Process
  - Review of the Existing Regional ITS Architecture (Completed in 2007)
  - Regional Stakeholders and Boundaries
  - Memorandum of Understanding
- Discussion on Existing and Planned ITS Projects in the Region
- Discussion on the ITS Needs in the Region
- Concluding Comments




What is ITS?

ITS is an acronym that stands for
Intelligent Transportation Systems

One definition of ITS:
The application of data processing and data communications to surface transportation to increase safety and efficiency.




ITS Program Areas

- Traffic Management
- Traveler Information
- Emergency Management
- Maintenance and Construction Management
- Public Transportation
- Archived Data Management
- Commercial Vehicle Operations
- Vehicle Safety




ITS Applications

Traffic Management (Data Gathering)

Flood Detection and RWIS

CCTV Cameras

Video, Microwave, and Loop Detection Systems

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ITS Applications

Traffic Management (Control)

Traffic Management Center

Arterial Signal Systems

Lane Control Systems

Ramp Meters




ITS Applications

Traffic Management (Roadside Traveler Information)

Dynamic Message Signs

Highway Advisory Radio




ITS Applications

Traffic Management (Service Patrols)

Service Patrol Vehicles




ITS Applications

Traffic Management (Electronic Payment)

Electronic Toll Collection

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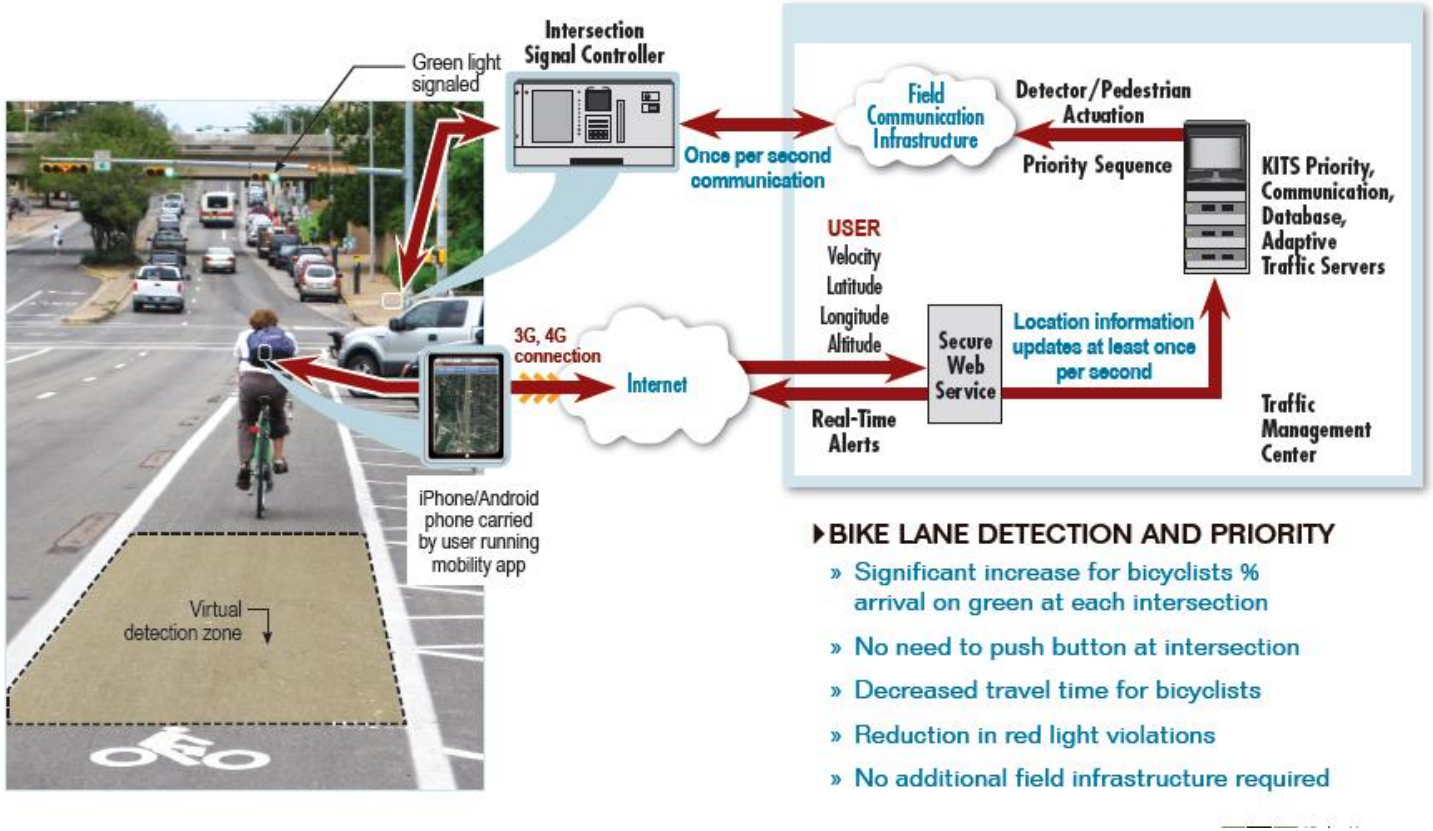
ITS Applications

Traffic Management (Cycling)



Bicycle Detection Apps





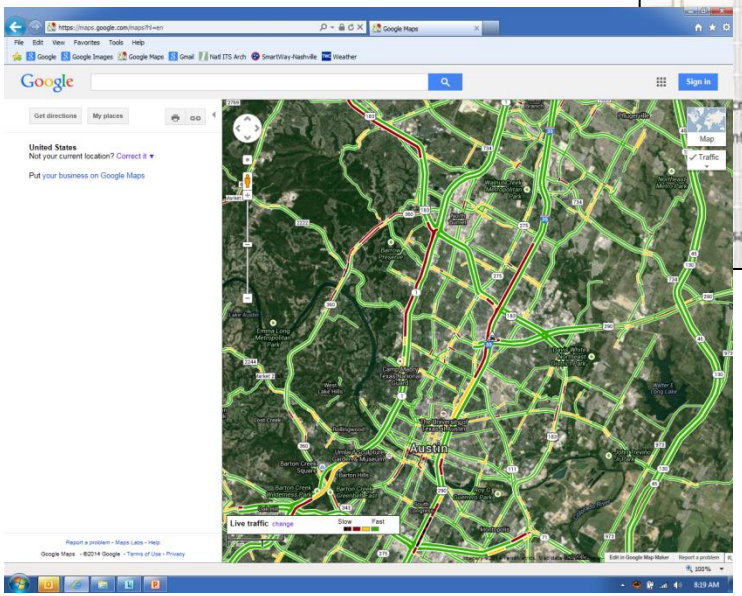
ITS Applications

Traveler Information

511 DFW

BEGIN YOUR TRIP HERE.

511 Traveler Information



Internet Sites

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ITS Applications

Emergency Management

Computer-Aided Dispatch Systems

Traffic Signal Preemption

AMBER Alerts

Video/Information Sharing

ITS Applications

Maintenance and Construction Management

Flood Detection and Closure Systems

Smart Work Zones

Anti-icing Systems and Automated Snowplows

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ITS Applications

Public Transportation

Automated Vehicle Location

Smart Fare Payment Systems

Video Security Systems

Real-Time Bus Arrival Information

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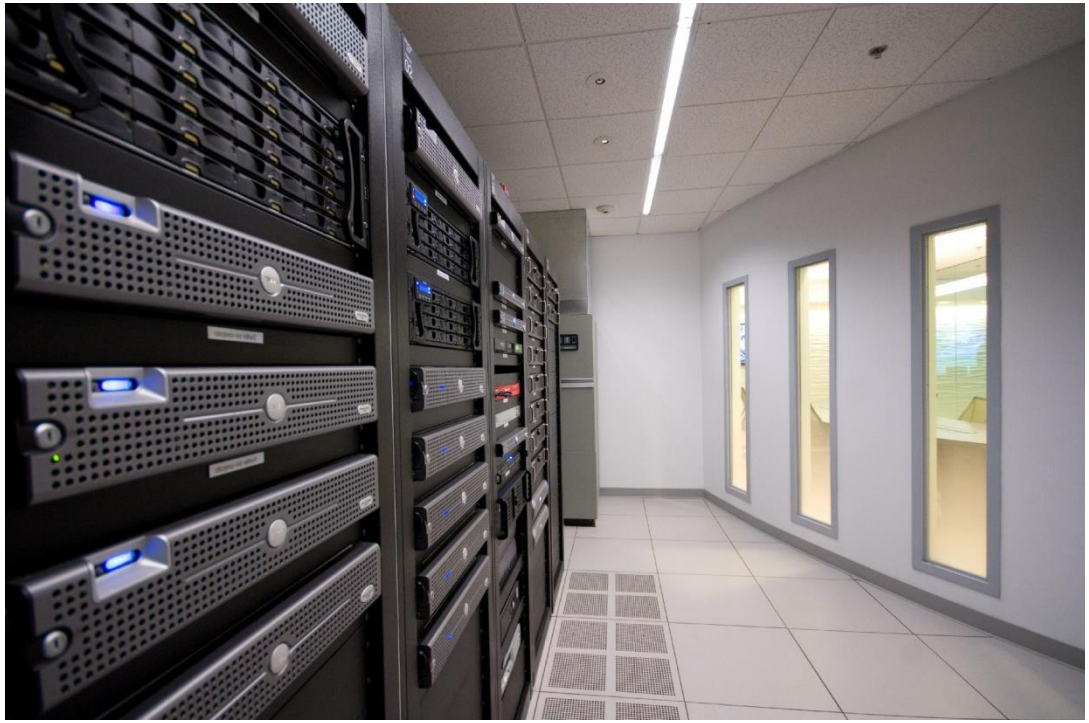
ITS Applications

Archived Data Management



Archived Data User Service

ITS Applications

Commercial Vehicle Operations

Weigh-In-Motion




ITS Applications

Vehicle Safety

Navigation Devices

*

Intelligent Cruise Control

*

Lateral and Longitudinal Collision Avoidance

*

On-Star



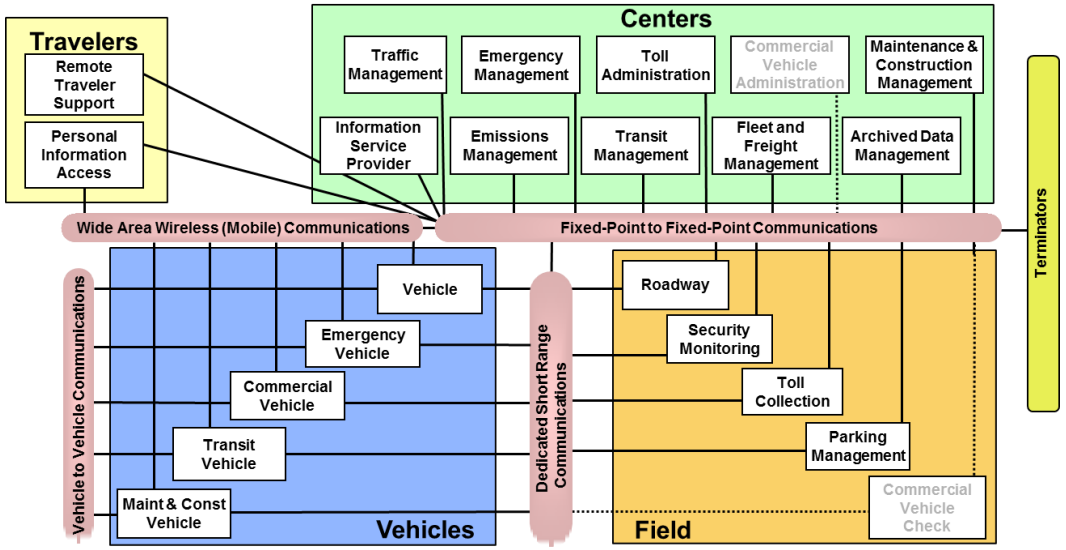

ITS Benefits

- Increased efficiency for roadway and transit users
- Enhanced incident management and special event management capabilities
- Improved safety for travelers, public safety, and maintenance personnel
- Accurate and timely traveler information for all roadway users




What is a Regional ITS Architecture?

- A plan for implementing and operating ITS
- An ITS architecture defines:
  - Transportation needs
  - ITS solutions
  - Agencies to be connected
  - Projects to be deployed



ITS Architecture Requirements

- Description of the Region
- Identification of stakeholders
- ITS needs
- ITS services to implement
- Information flows between elements
- ITS standards
- Sequence of projects
- Maintenance plan

ITS Architecture Deadlines

- Federal Highway Administration Final Rule and Federal Transit Administration Final Policy from 2001
  - Regions deploying ITS must have a regional ITS architecture in place by April 2005
  - Regions with no ITS deployed must have a regional ITS architecture developed within 4 years after their first ITS project reaches final design
  - ITS projects receiving federal transportation funding must conform to a regional ITS architecture

Key Steps to Develop an ITS Architecture

Step One Identify ITS Inventory and Needs

Step Two Develop ITS Service Packages

Step Three Identify Projects for Deployment in the Region

Step One

Identify ITS Inventory and Needs

- Inventory
  - Identify all existing and planned ITS components
  - Identify all existing and planned connections between components
- Needs
  - Identify transportation needs in the Region
  - Needs can be general or specific to ITS
  - Continually update needs list throughout the project

Step Two

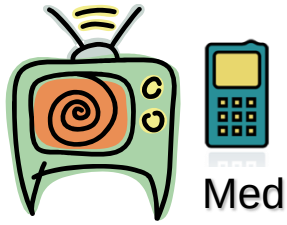
Develop ITS Service Packages

- ITS service packages describe how ITS is operated in the Region
- Common ITS service packages:
  - Network Surveillance
  - Traffic Signal Control
  - Traffic Information Dissemination
  - Traffic Incident Management
  - Emergency Routing
  - Transit Vehicle Tracking
- A total of 97 ITS service packages exist in the current version of the National ITS Architecture
- Austin selected 51 ITS service packages in 2007
  (Based on a total of 85 ITS service packages that existing at the time)

Step Two

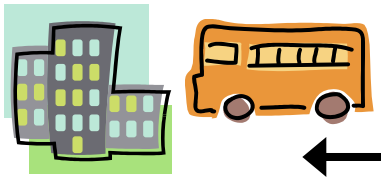
ITS Service Package Concept

ATMS06 – Traffic Information Dissemination

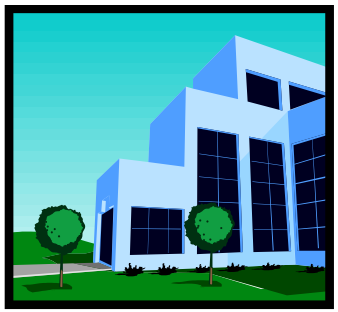


Media and Information Service Provider

Maintenance and Construction Management



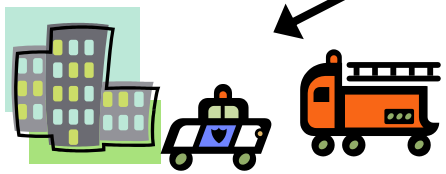
Transit Management



Traffic Management

DMS

Roadway



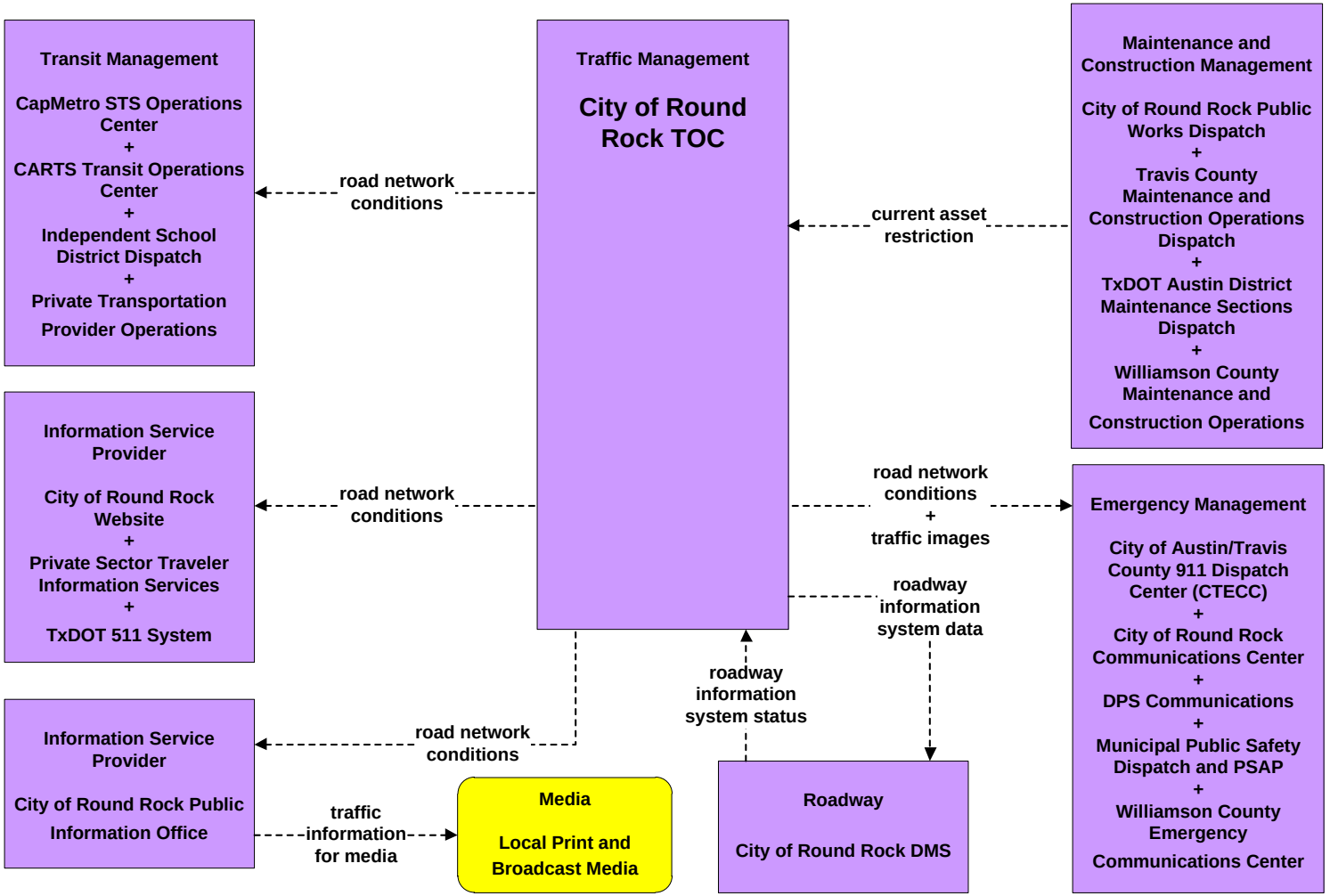
Emergency Management

Network surveillance covered in other service packages.

Step Two

ITS Service Package Concept

ATMS06 – Traffic Information Dissemination



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Step Three

Identify Projects for Deployment in the Region

- Development of an ITS Deployment Plan for the Region
- Prioritizes projects into:
  - Short-term (next 5 years)
  - Mid-term (5 to 10 years)
  - Long-term (beyond 10 years)
- For each project the following information is included:
  - Project description
  - Responsible agency
  - Estimate of probable cost
  - Applicable service packages
- Does not guarantee funding of the projects




Benefits of an ITS Architecture and Deployment Plan

- Provides vision for ITS deployment and operations in the Region
- Supports resource sharing and interoperability of systems
- Supports long range planning through a phased plan for ITS deployment and integration
- Assists agencies in looking of federal funding opportunities
- Meets USDOT requirement that ITS projects funded with federal transportation funds conform to its regional ITS architecture

ITS Architecture Work Plan

Kick-Off Workshop
March 24

Stakeholder Interviews
April - May

ITS Architecture Workshop
May

Draft Documents
June

Stakeholder Interviews
July/August

Deployment Plan Workshop
August

Revised Draft and Final Documents
September - December

Training on Use and Maintenance
November

Group Workshop or Training

Agency Interview

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Deliverables

- Regional ITS Architecture Update and Deployment Plan Report
- Executive Summary
- Turbo Architecture Database
  (Version 7.0 of Turbo Architecture)
- Project Website




Austin Regional ITS Architecture History

- First Regional ITS Architecture completed March 2003
- Most recent update completed January 2007
  - Used National ITS Architecture Version 5.1 (Currently on Version 7.0)
  - Used Turbo Architecture Version 3.0 (Currently on Version 7.0)
  - Stakeholders selected from 85 ITS service packages (Currently there are 97 ITS service packages)
- TxDOT is leading current effort to update with the assistance of a project steering committee that includes:
  - CAMPO, CTRMA, Capital Metro, City of Austin, City of Round Rock

Austin Regional ITS Architecture Update

- Current effort will complete the Regional ITS Architecture update in December 2014
- Reason for update
  - Changes and additions to the National ITS Architecture
  - New stakeholder agency representatives in the Region
  - New ITS deployments in the Region
  - Updated Regional ITS Architecture important to meet ITS architecture conformity rule
  - Stakeholder set a goal to update the plan every 4 years



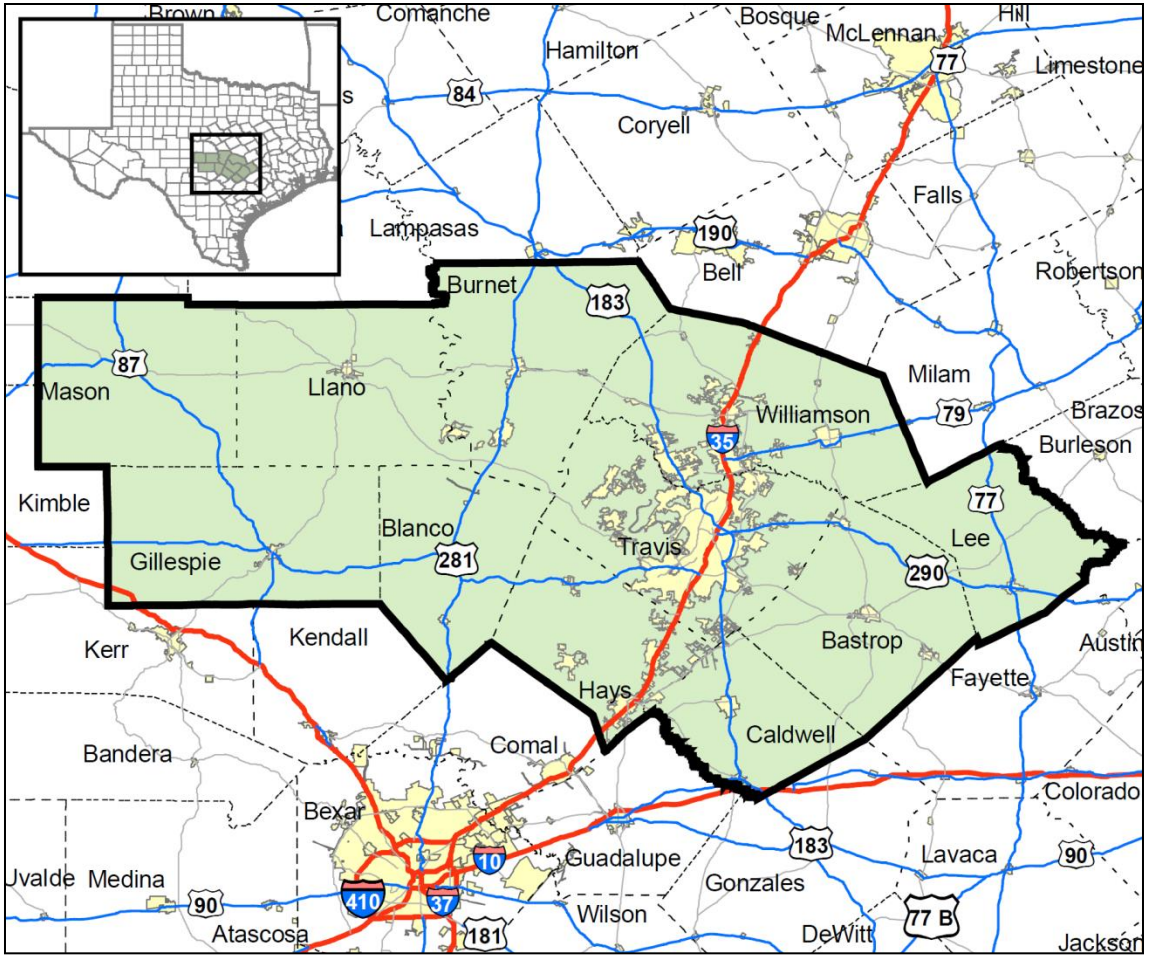

Austin Regional Boundaries

The regional boundaries have been defined as the boundaries of the TxDOT Austin District

Bastrop, Blanco, Burnet,
Caldwell, Gillespie, Hays,
Lee, Llano, Mason,
Travis and Williamson

Connections will be added to all agencies outside the regional boundaries as appropriate

Austin Regional Boundaries






Austin Stakeholders

Identify additional stakeholders
to be
invited to participate in the
Austin Regional ITS Architecture Update

Memorandum of Understanding

Discussion on MOU

Stakeholders asked to consider signing to demonstrate regional coordination and cooperation for the Austin Regional ITS Architecture




Existing and Planned Projects

- Traffic Management
- Traveler Information
- Emergency Management
- Maintenance and Construction Management
- Public Transportation
- Archived Data Management
- Commercial Vehicle Operations
- Vehicle Safety




Regional ITS Needs

- Traffic and congestion
- Incident management
- Traveler information
- Weather related issues
- Special events
- Evacuation
- Major construction projects
- Regional coordination challenges
- Other needs




Thank You!

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