

Johnson City MTPO

Regional ITS Architecture Update

Stakeholder Workshop

November 10, 2021

Johnson City *MTPO*
Metropolitan Transportation Planning Organization

TN **TDOT**
Department of
Transportation



Workshop Overview

- Welcome and Introductions
- Overview of the Regional ITS Architecture Project
- Review of Existing and Planned ITS Projects in the Region
- Review of Regional ITS Needs
- Review Action Items and Upcoming Stakeholder Outreach Activities
- Wrap Up

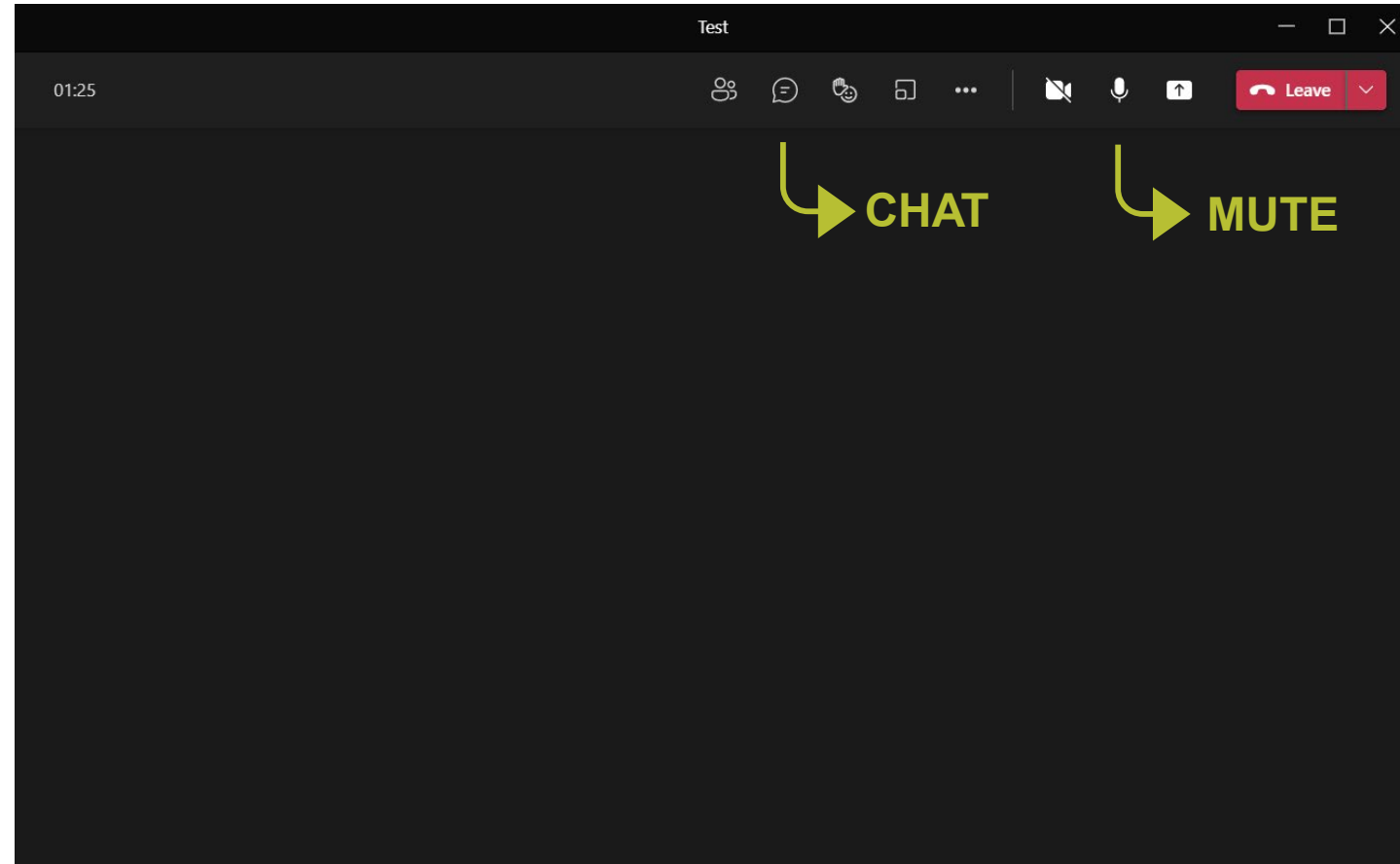
Housekeeping

Please add your name and agency in the CHAT box

Please stay on MUTE unless asking a question...but please come off MUTE during the discussion

Please come off MUTE or use the CHAT box to add information during the discussion

If you were not invited to the workshop but would like to be added to our contact list, please add your email to the CHAT box



Introductions



Overview of the Regional ITS Architecture Project

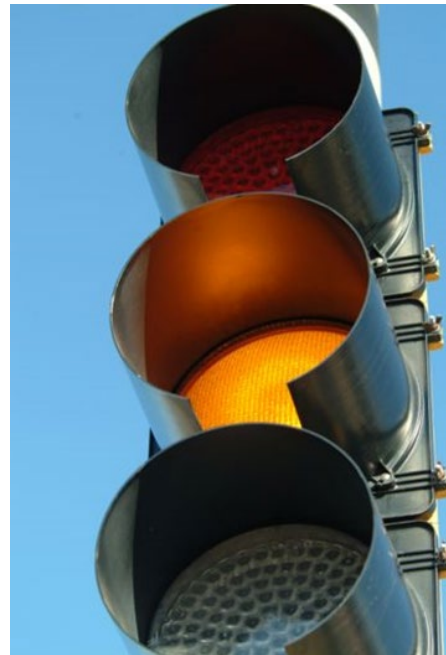
What is ITS?

ITS
Intelligent Transportation Systems

One Definition of ITS
The application of data processing and data communications to the surface transportation system to increase safety and efficiency



What is ITS?



Emerging ITS Technologies

Connected Vehicles

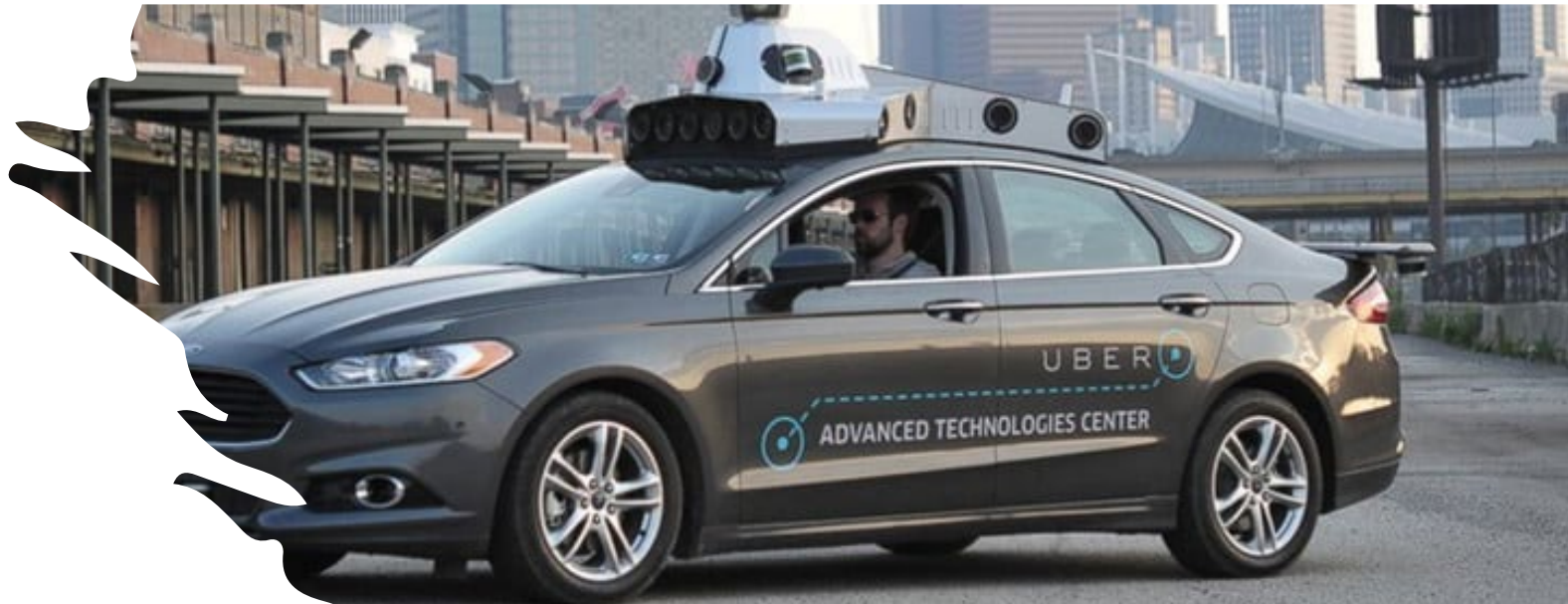
Automated Vehicles

Active Traffic Management

Integrated Corridor Management

Decision Support Systems

Privatized Traffic Data



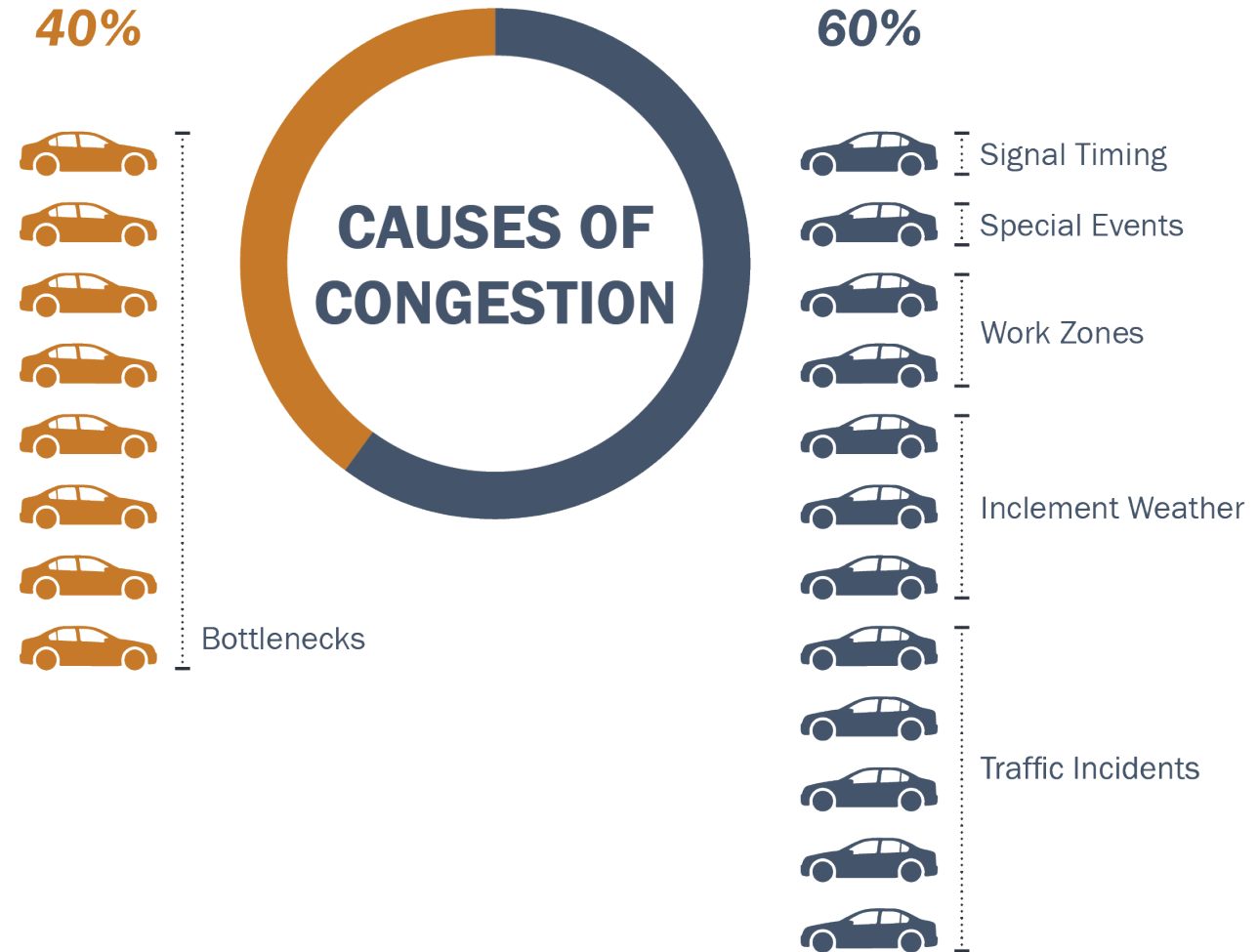
Why Deploy ITS?

INCREASE SAFETY: In 2020, Tennessee had 1,217 traffic fatalities

REDUCE CONGESTION: Congestion costs Americans almost \$200 billion in additional travel time and wasted fuel cost*

IMPROVE RELIABILITY: Travelers report variability in travel times to be one of their greatest sources of frustration

From the Urban Mobility Scorecard



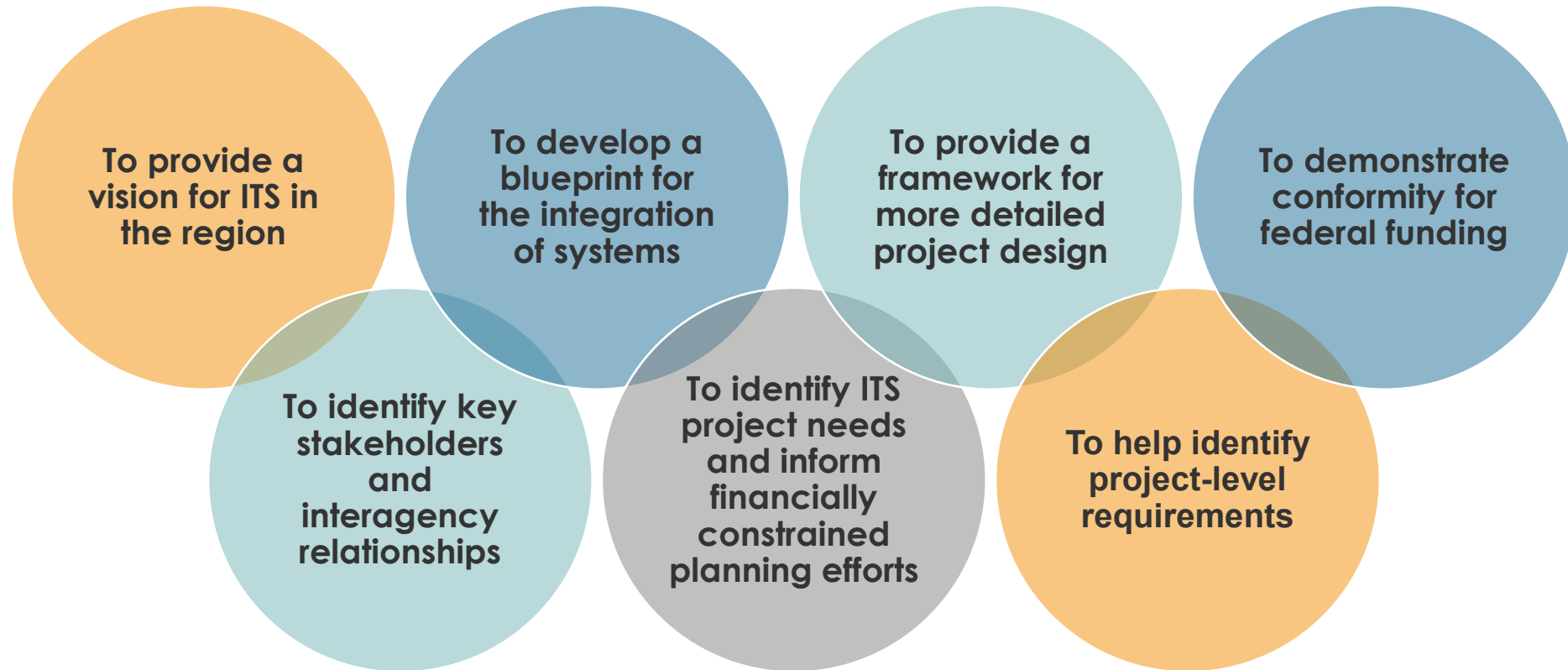
What is a Regional ITS Architecture

A plan for the deployment, integration, and operation of Intelligent Transportation Systems in a Region

Often referred to as a RITSA, the plan includes traffic, transit, and emergency services



Purpose of the Architecture



Why Should You Care?

All transportation projects that incorporate ITS elements and are funded through the Highway Trust Fund must conform with a Regional ITS Architecture



... plus, Regional ITS Architectures can:

- Help scope projects appropriately
- Ensure regional interoperability
- Offer a focused perspective for long-range planning
- Ensure preparedness for future deployment of technology

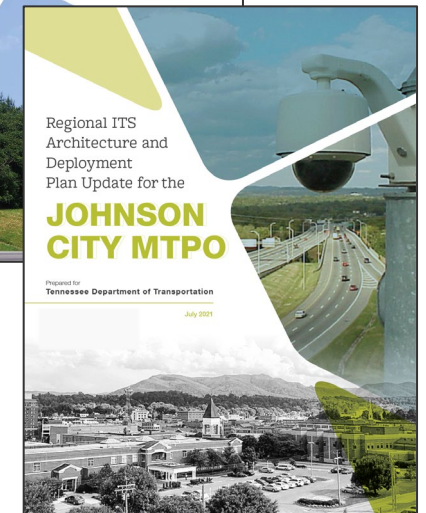
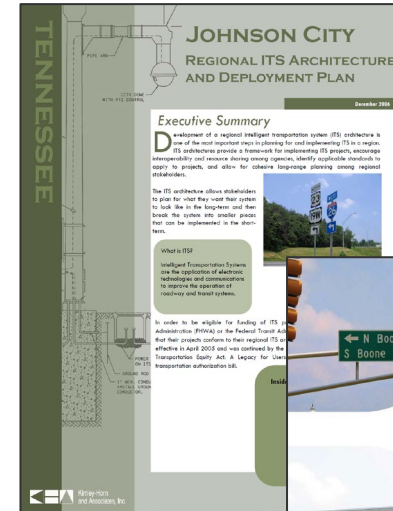
History in the Johnson City Region

First Developed in 2006

Most Recent Update in 2015

Current Update for 2022

A living document often updated in coordination with the Regional Transportation Plan



Requirements of a Regional ITS Architecture

- Stakeholder Agencies
- Regional ITS Needs
- Inventory of ITS Elements (Existing or Planned)
- Identification of ITS Services (ITS Service Packages)
- Interfaces/Information Flows
- Standards
- Project Sequencing (ITS Deployment Plan)
- Agreements
- Maintenance Plan



Requirements of a Regional ITS Architecture

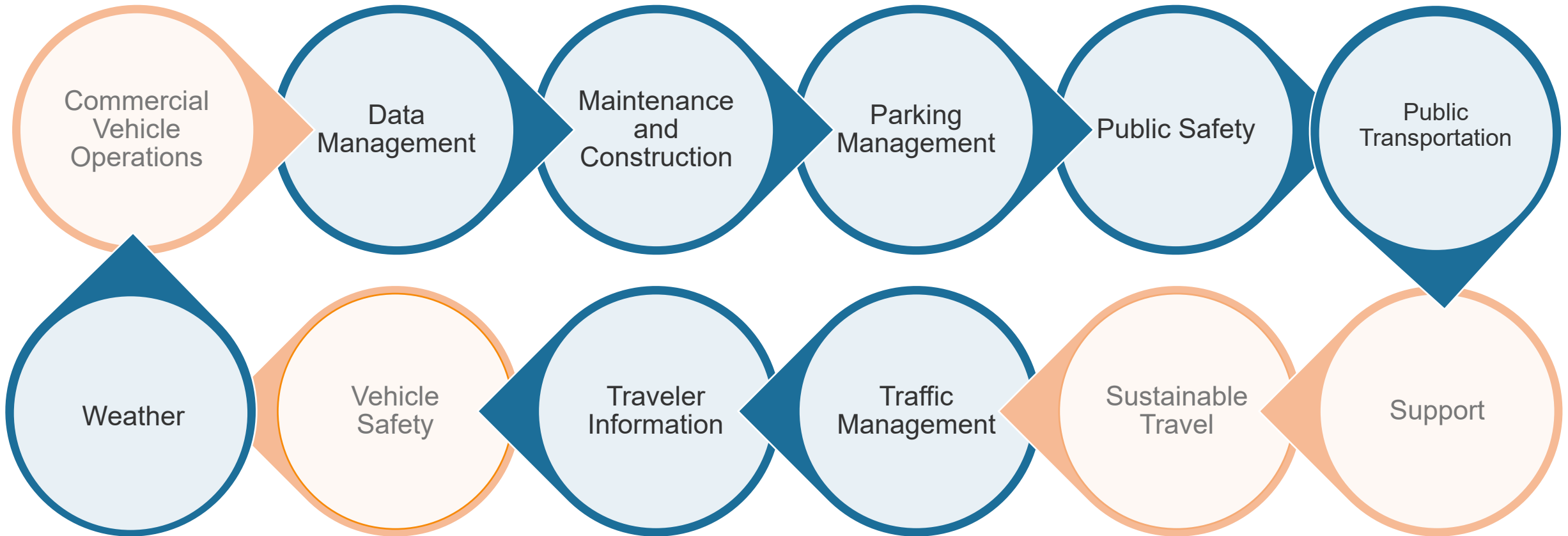
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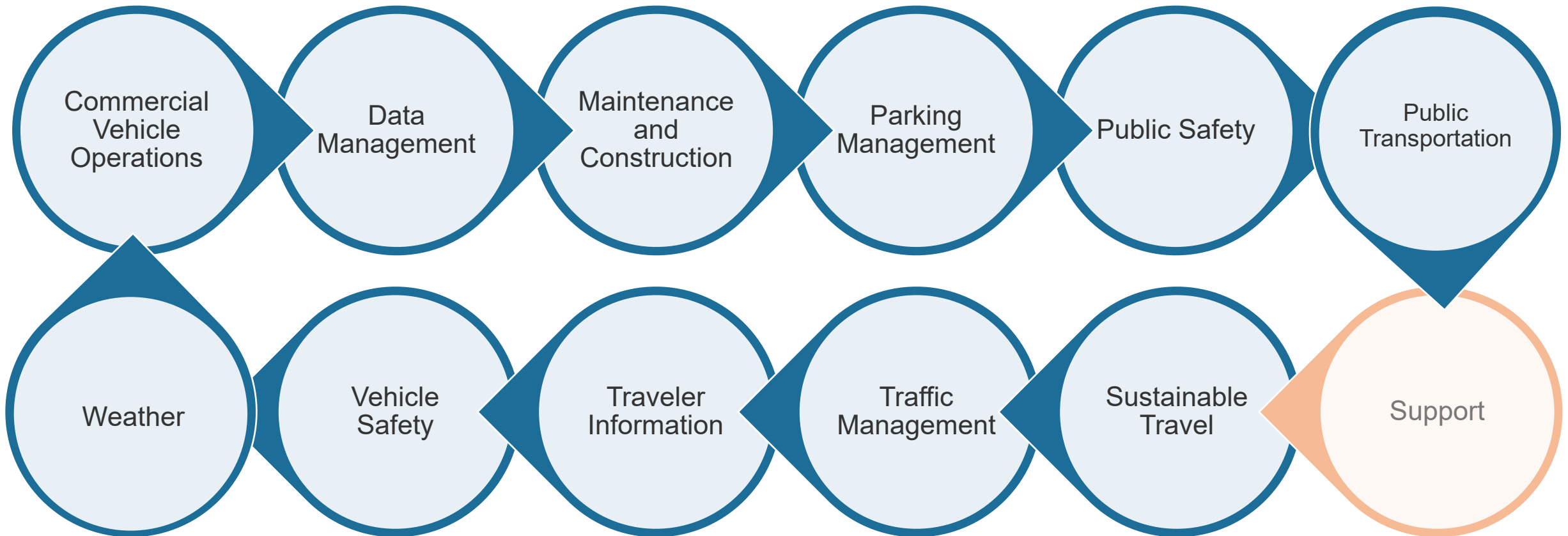
ITS Service Package Areas



ITS Service Package Areas

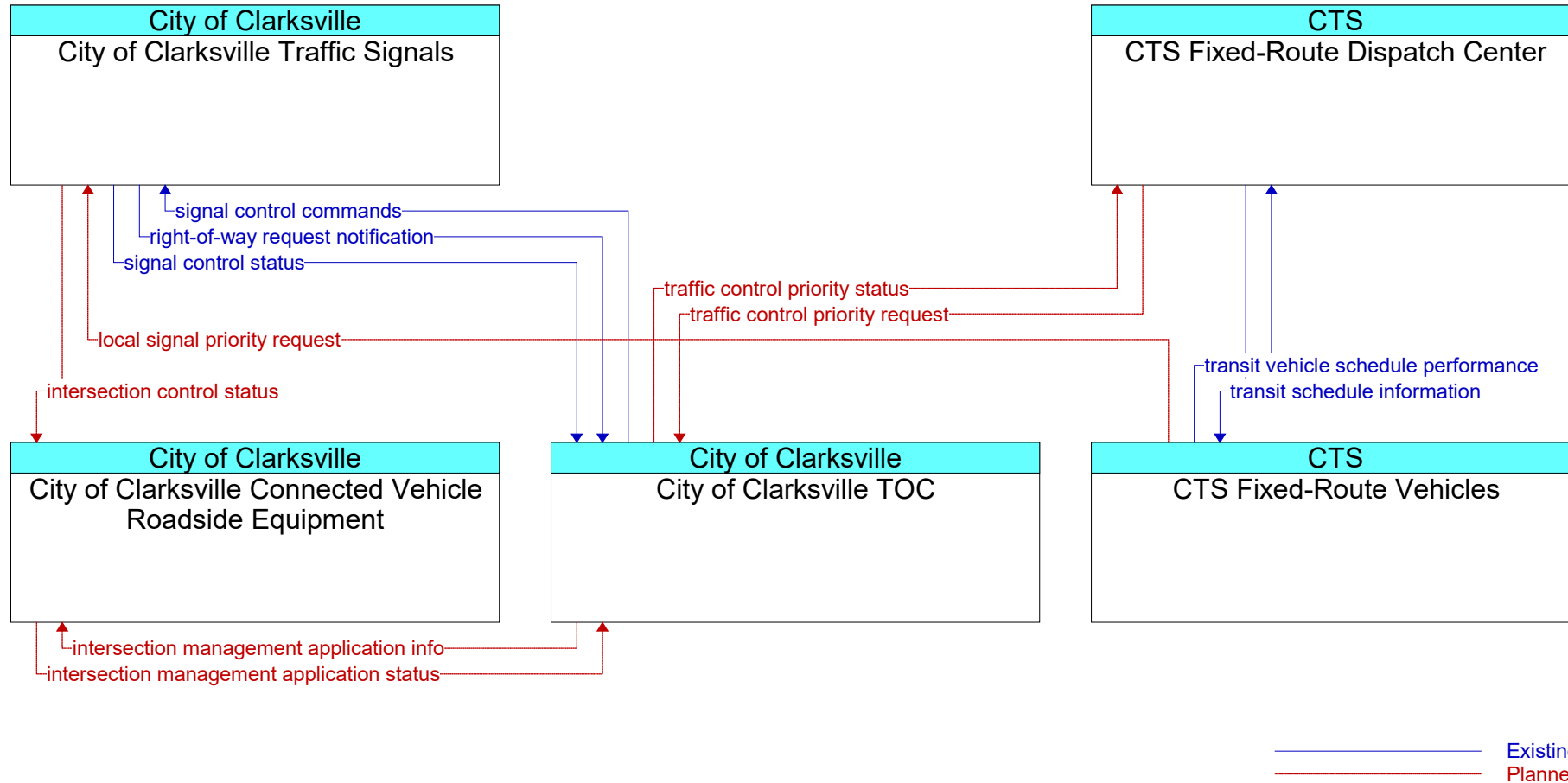


ITS Service Package Areas



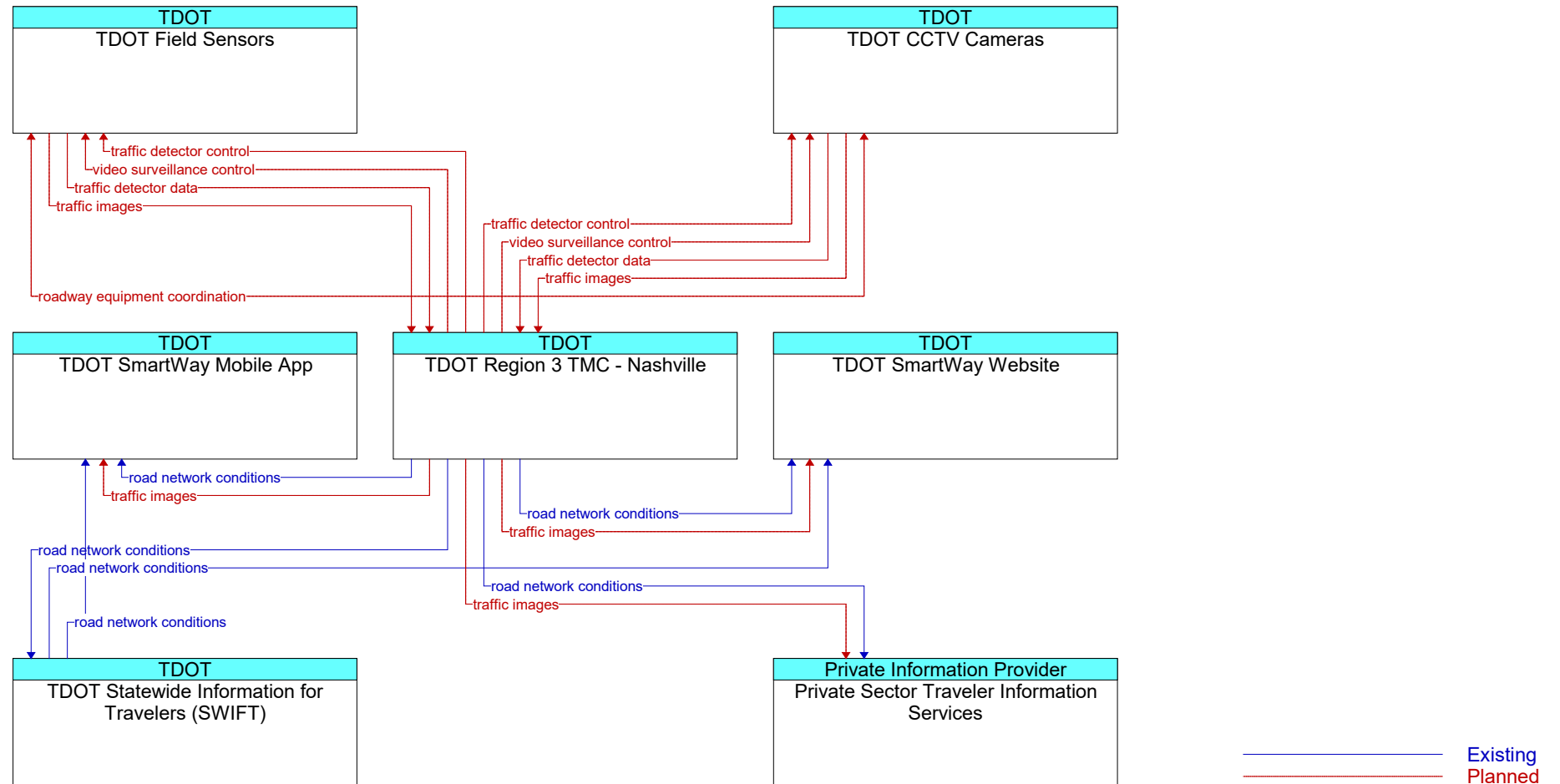
ITS Service Package Example

ITS Service Package – PT09 Transit Signal Priority (Clarksville)



ITS Service Package Example

Example ITS Service Package – TM01 – Infrastructure Based Traffic Surveillance (TDOT Region 3)

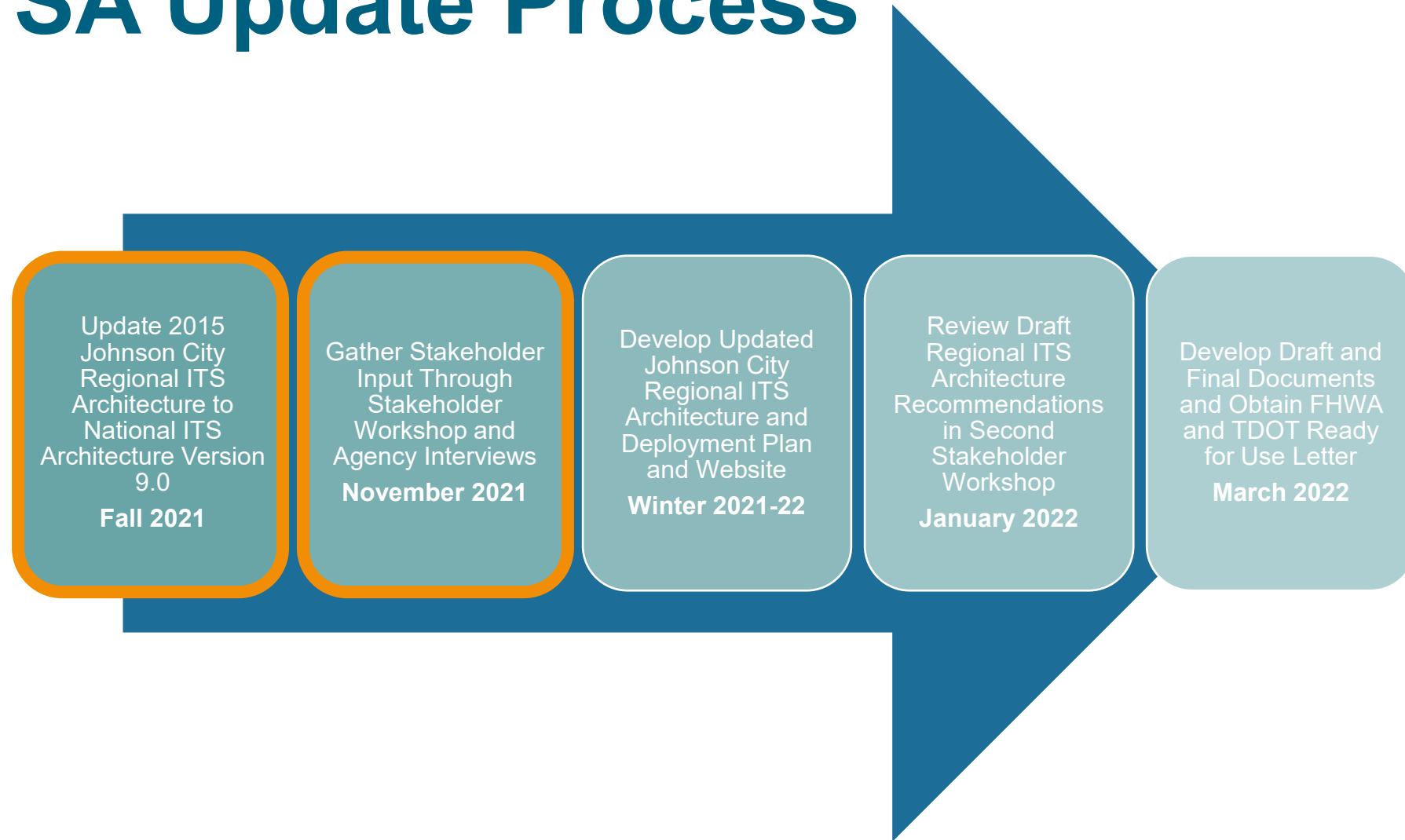


Johnson City ITS Service Packages

There are now a total of **150** ITS service packages in the National ITS Architecture.

In Johnson City we had identified **40** ITS service packages for the region in 2015 out of a total of **97** available.

RITSA Update Process



Stakeholder Input

Stakeholder Input

**Review
Regional Boundaries**

**Discuss
Existing and Planned
ITS Deployments
in the Region**

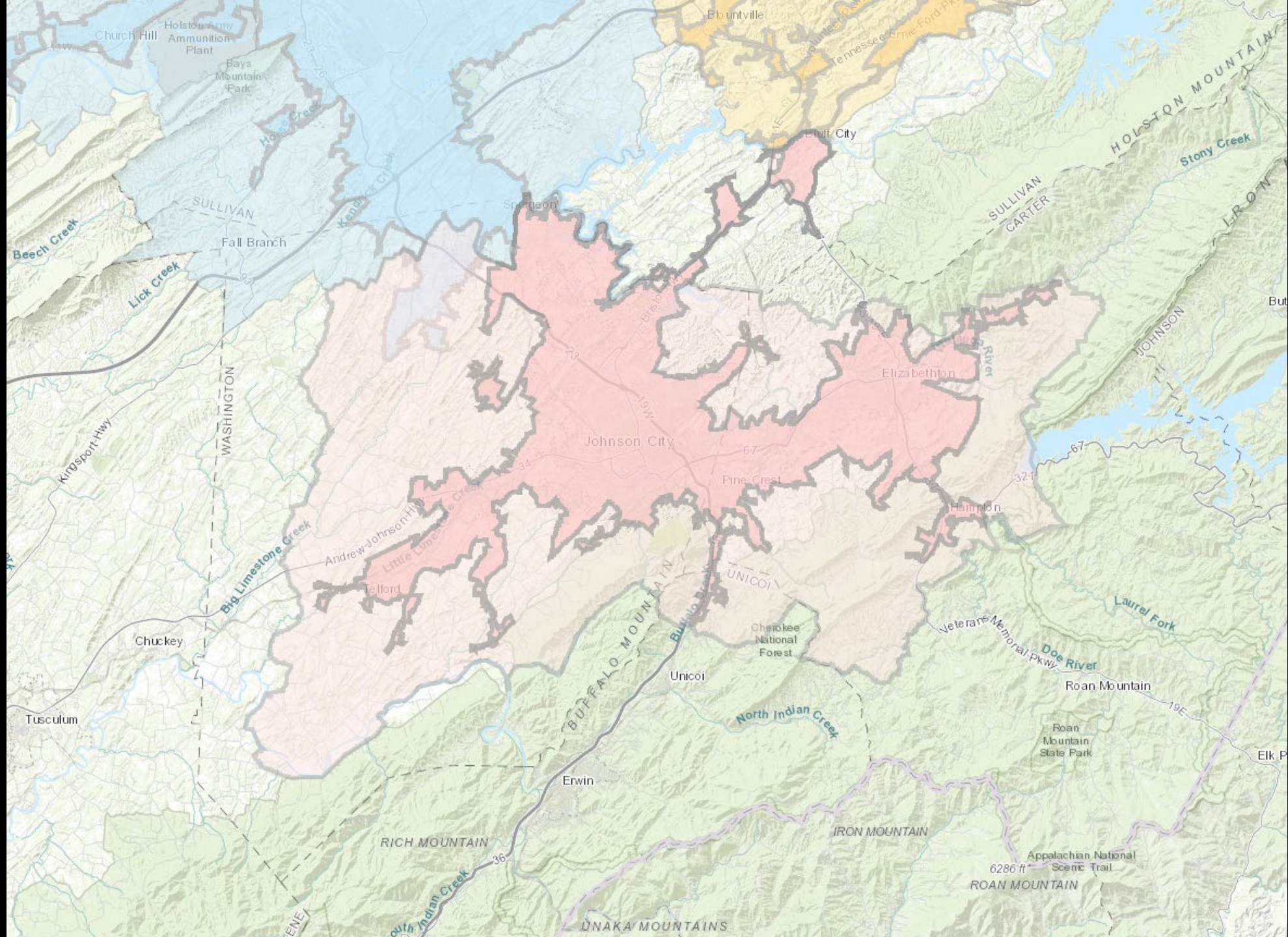
**Discuss
Regional ITS Needs**

Stakeholder Input

**Review
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**Discuss
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**Discuss
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Stakeholder Input



Stakeholder Input

Existing and Planned ITS Deployments in the Region – Projects from 2015

TDOT Region 1

- TDOT-Johnson City Coordination
- TDOT SmartWay Installation
- TDOT CCTV Camera Access for Local Agencies

City of Elizabethton

- Traffic Operations Center

Johnson City

- Adaptive Traffic Signals
- CCTV Camera Expansion
- CCTV Camera Video Dissemination
- Fiber Optic Expansion
- Speed Monitoring
- Flood Detection and Warning System
- Automatic Vehicle Location
- Dynamic Message Signs
- Road Weather Information Systems

Stakeholder Input

Existing and Planned ITS Deployments in the Region – Projects from 2015

Johnson City Transit

- JCT Paratransit Schedule Software
- JCT Mobile Phone Application
- JCT Northern Transfer Center
(May include cameras and bus arrival dynamic message signs)

Johnson City Metropolitan Transportation Planning Organization

- Data Warehouse

Stakeholder Input

**Review
Regional Boundaries**

**Discuss
Existing and Planned
ITS Deployments
in the Region**

**Discuss
Regional ITS Needs**

Stakeholder Input

Regional ITS Needs

Focus Areas

- Traffic Management
- Traveler Information
- Public Transportation
- Public Safety
- Maintenance and Construction
- Weather
- Parking Management
- Vehicle Safety
(Connected and Automated Vehicles)
- Commercial Vehicle Operations
- Data Management
- Sustainable Travel



Next Steps

Deliverables

- Stakeholder Review Workshop
- Revised Draft and Final Regional ITS Architecture Update and Deployment Plan Report
- RAD-IT Architecture Database (Version 9.0)
- Project Website
<https://extsites.kimley-horn.com/projects/TennesseeITSArchitecture/index.html>
Google: Tennessee ITS Architectures Kimley-Horn





- OVERVIEW
- STATEWIDE
- BRISTOL
- CHATTANOOGA
- CLARKSVILLE
- CLEVELAND
- JACKSON
- JOHNSON CITY
- KINGSPORT
- KNOXVILLE
- LAKEWAY
- MEMPHIS
- NASHVILLE

Program Overview – Tennessee Statewide and Regional ITS Architectures

An intelligent transportation system (ITS) architecture is a high level plan for how ITS can be used to address transportation needs in a State or Region. An ITS architecture is required by the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) in order to use federal transportation funding on ITS projects. There are three key steps to developing a regional ITS architecture:

- **Step 1 – Identify Needs and ITS Inventory**
Stakeholder needs as well as existing and planned ITS elements are identified and documented.
- **Step 2 – Develop ITS Service Packages**
ITS service packages represent the services that ITS can provide to address one or more needs in a Region. Service packages also show how that service 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 developed for each Region identifies the projects that stakeholders recommended for deployment in order to implement the ITS services identified in the service packages.

ITS Architecture Status

The status of each of the ITS architectures found on this website is shown below. Use the links in the navigation bar to the left to move between regions and view the associated reports, workshop minutes, and other documentation.

Statewide ITS Architecture – Completed October 2006

Regional ITS Architectures

- Bristol – Completed June 2008
- Chattanooga – Completed April 2014
- Clarksville – Completed February 2015
- Cleveland – Completed June 2008
- Jackson – Completed March 2015
- Johnson City – Completed March 2015
- Kingsport – Completed June 2008
- Knoxville – Completed December 2012
- Lakeway – Completed February 2009
- Memphis Urban Area – Completed October 2014
- Nashville Area – Completed June 2010



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Kimley-Horn and Associates, Inc.
Kimley»Horn TENNESSEE REGIONAL ITS ARCHITECTURES AND DEPLOYMENT PLANS

- OVERVIEW
- STATEWIDE
- BRISTOL
- CHATTANOOGA
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Johnson City Regional ITS Architecture

The Johnson City Regional ITS Architecture and Deployment Plan provides a long-range plan for the deployment, integration, and operation of ITS in the Johnson City Region. The plan was led by the Tennessee Department of Transportation (TDOT) in coordination with the Johnson City Metropolitan Transportation Planning Organization (MTPO). Stakeholders included representatives from traffic, transit, emergency management, and public safety agencies at the local, state, and federal level.

The Johnson City Regional ITS Architecture regional boundaries are comprised of the majority of Washington County, the northern and western portions of Carter County, the northern portion of Unicoi County, and the southern portion of Sullivan County. Two stakeholder workshops and several interviews with stakeholder agencies were conducted to gather input for the plan. The stakeholder workshops and interviews were conducted in 2014 and 2015, and the plan was finalized in 2015.

Project Documents (2015 Version)

Regional ITS Architecture and Deployment Plan

- [Johnson City Regional ITS Architecture Executive Summary](#)
- [Johnson City Regional ITS Architecture and Deployment Plan](#)
- [Johnson City Turbo Architecture Database \(download\)](#)
- [Johnson City Interactive ITS Architecture](#)

Workshop Minutes

- [Kickoff Workshop Minutes – 10/21/14](#)
- [Review Workshop Minutes – 03/12/15](#)

Other Documents and Presentations

- [ITS Overview Sheet](#)
- [Kickoff Workshop Presentation – 10/21/14](#)
- [Review Workshop Presentation – 03/12/15](#)

Project Documents (2006 Version)

Executive Summary

- [Johnson City Executive Summary](#)

Regional ITS Architecture

- [Johnson City Regional ITS Architecture](#)
- [Johnson City Regional ITS Architecture Appendices](#)
- [Johnson City Turbo Architecture Database \(download\)](#)



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Johnson City Regional ITS Architecture Update

Stakeholder Kickoff Meeting

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