Use and Maintenance Plan

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

ITS Architecture Use
To ensure eligibility for the use of federal transportation funding on regional ITS projects, as projects are developed they will be compared to the applicable market packages. Any discrepancies between the planned project and the architecture will be resolved either by modifying the project or the architecture market package(s). Changes to the market packages will be documented on an Architecture Change Form. All change forms will be retained by the Jackson Area MPO until the next plan update.

ITS Architecture Maintenance
The stakeholder group will review the project tables in the Regional ITS Deployment Plan annually. The tables will be updated to reflect changes in the project status, prioritization, or the addition of new projects. Every four years, in coordination with the Transportation Improvement Program update, the ITS Architecture and Deployment Plan will undergo a complete update. During the complete update Architecture Change Forms and project table modifications will be incorporated. In addition, any changes made to the National ITS Architecture during the four year period will be evaluated for any impact to the Regional Architecture.
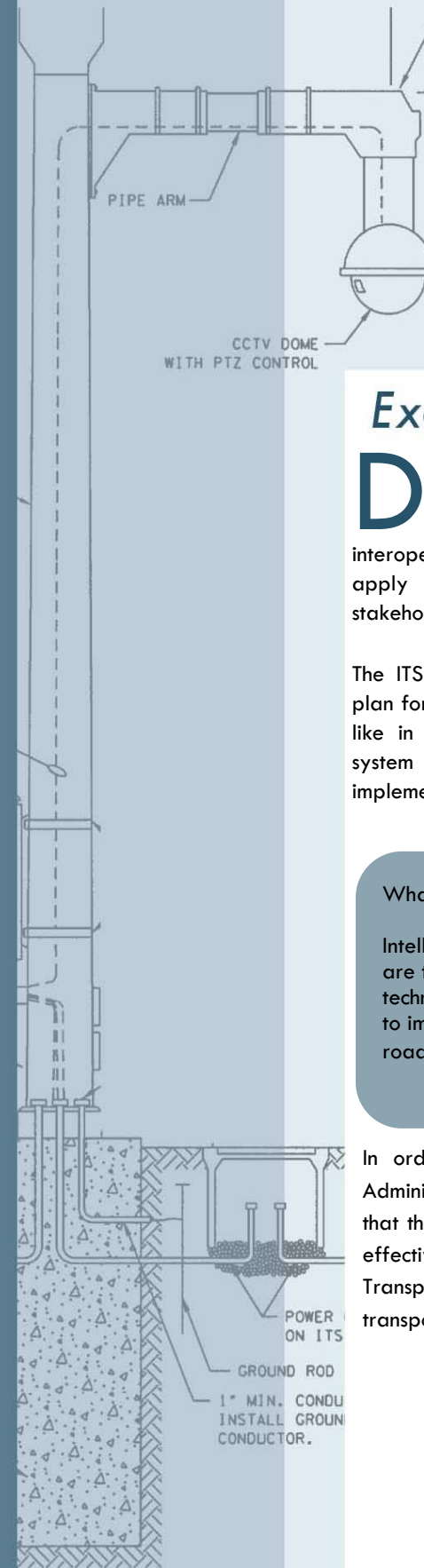
Regional Stakeholders

Working together, the development of the Jackson Regional ITS Architecture and Deployment Plan was led by the Tennessee Department of Transportation in coordination with the Jackson Area Metropolitan Planning Organization. The success is due in large part to the collaboration and continuous participation of the stakeholders representing the communities of the Jackson Region. These stakeholders participated in a series of four workshops conducted in 2006.

- City of Jackson
- Federal Highway Administration – Tennessee Division
- Jackson Area Metropolitan Planning Organization
- Jackson/Madison County Emergency Management Agency
- Jackson Transit Authority
- Madison County
- Southwest Tennessee Human Resources Agency Transportation
- Tennessee Department of Transportation – Region 4
- Tennessee Department of Transportation – Design Division, Signals and Signing
- Tennessee Department of Transportation – Long Range Planning Division

PROJECT CONTACTS

TDOT *Go.*

Joe Roach
Joseph.Roach@state.tn.us

Kimley-Horn and Associates, Inc.

Amy Lewis
amy.lewis@kimley-horn.com

Thomas Fowler
thomas.fowler@kimley-horn.com

JACKSON

REGIONAL ITS ARCHITECTURE AND DEPLOYMENT PLAN

January 2007

Executive Summary

Development of a regional intelligent transportation system (ITS) architecture is one of the most important steps in planning for and implementing ITS in a region. ITS architectures provide a framework for implementing ITS projects, encourage interoperability and resource sharing among agencies, identify applicable standards to apply to projects, and allow for cohesive long-range planning among regional stakeholders.

The ITS architecture 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.

What is ITS?

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

In order to be eligible for funding of ITS projects from the Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA), regions must show that their projects conform to their regional ITS architecture. This requirement became effective in April 2005 and was continued by the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFTEA-LU), the 5-year federal transportation authorization bill.

Kimley-Horn and Associates, Inc.

ITS Architecture

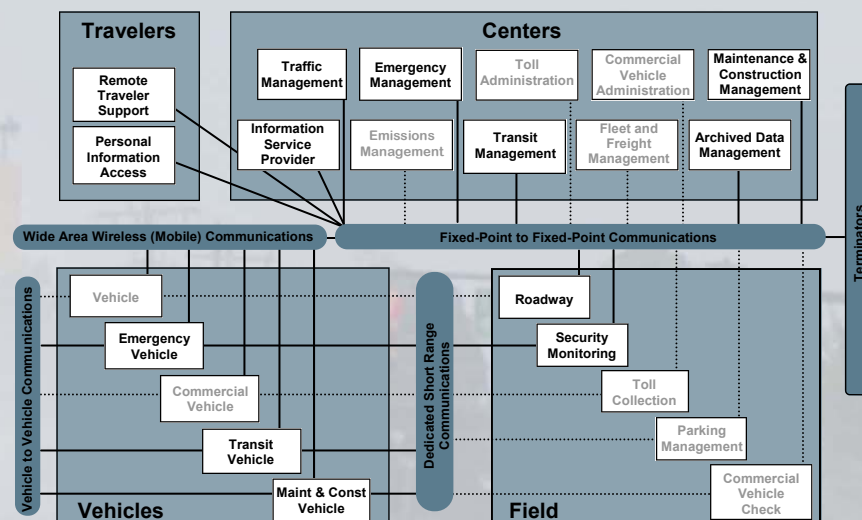# ITS Deployment Plan

Market Packages

Market packages outline the functions that stakeholders envision ITS to perform in coming years. Market packages are groups of ITS services that address one or more needs for a region. Stakeholders selected and prioritized market packages into high, medium, and low priorities based on regional needs, feasibility, likelihood of deployment, and overall contribution of the market package in meeting the goals and vision for ITS functionality in the Region. The high priority market packages identified by stakeholders in the Jackson Region are listed below.

High Priority Market Packages

- Network Surveillance
- Surface Street Control
- Traffic Information Dissemination
- Traffic Incident Management System
- Emergency Call-Taking and Dispatch
- Emergency Routing
- Wide-Area Alert
- Disaster Traveler Information
- Road Weather Data Collection
- Weather Information Processing and Distribution
- Work Zone Management
- Maintenance and Construction Activity Coordination
- Transit Vehicle Tracking
- Transit Fixed-Route Operations
- Demand Response Transit Operations
- Transit Security
- Broadcast Traveler Information
- Interactive Traveler Information

Jackson Architecture Diagram

The architecture diagram, otherwise known as the subsystem diagram, shows the communication relationship between existing, planned and future systems in the Jackson Region. The arrows represent information being exchanged between systems. Examples of information being communicated are: alerts and messages about incidents, broadcast advisories about travel conditions, and video images shared between traffic and emergency management agencies. A number of national standards have been established for the communication of ITS information and the Regional ITS Architecture identifies the standards that apply to the Jackson Region.

Travelers
- Remote Traveler Support
- Personal Information Access

Centers
- Traffic Management
- Emergency Management
- Toll Administration
- Commercial Vehicle Administration
- Maintenance & Construction Management
- Information Service Provider
- Emissions Management
- Transit Management
- Fleet and Freight Management
- Archived Data Management

Wide Area Wireless (Mobile) Communications — Fixed-Point to Fixed-Point Communications — Terminators

Vehicles
- Vehicle
- Emergency Vehicle
- Commercial Vehicle
- Transit Vehicle
- Maint & Const Vehicle

Vehicle to Vehicle Communications — Dedicated Short Range Communications

Field
- Roadway
- Security Monitoring
- Toll Collection
- Parking Management
- Commercial Vehicle Check

Recommended Projects

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

Travel and Traffic Management Projects
- City of Jackson Phase 1
- City of Jackson Police Department Automated Enforcement
- City of Jackson Portable Speed Detection
- City of Jackson Signal System Fiber Interconnect
- City of Jackson Signal System Upgrades Phase 1
- City of Jackson TOC Coordination with TDOT SmartWay Center
- City of Jackson Vehicle Detection Phase 1
- TDOT Madison County HAR

Emergency Management Projects
- City of Jackson TOC Coordination with Jackson/Madison County EMA
- City of Jackson Emergency Vehicle Signal Preemption Expansion
- City of Jackson Police Department Helicopter Surveillance Real-Time Upgrades

Maintenance and Construction Management Projects
- City of Jackson Additional Portable DMS
- City of Jackson Portable DMS
- City of Jackson Street Department Maintenance Tracking System
- City of Jackson Street Department Vehicle AVL Expansion
- TDOT Portable DMS Upgrade to Support Remote Communications

Public Transportation Management Projects
- Jackson Transit Authority AVL
- Jackson Transit Authority Transit Vehicle Security Cameras
- Jackson Transit Authority Smart Bus
- Southwest HRA Transportation Transit Vehicle Security Cameras

ITS Technologies

Dynamic Message Signs

Emergency Vehicle Signal Preemption

Closed Circuit Television Cameras

Traffic Management Center

Flood Detection and Closure Systems

Traffic Signal System Coordination