



Regional ITS Architecture and Deployment Plan

Jonesboro Region



ITS Deployment Plan

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In cooperation with:
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1. INTRODUCTION

1.1 Project Overview

The Jonesboro region has developed a Regional Intelligent Transportation System (ITS) Architecture under the direction of the Arkansas State Highway and Transportation Department (AHTD), with support from the Jonesboro Area Transportation Study (JATS) Metropolitan Planning Organization (MPO). 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 Regional ITS Architecture focuses on the functionality that ITS could provide in the region as well as how those functions would be operated by agencies in and around the Jonesboro region. The Regional ITS Architecture also satisfies an important requirement from the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) regarding transportation and funding. A FHWA Final Rule and a FTA Final Policy issued in 2001 requires that regions develop an ITS architecture and show how ITS projects conform to that regional ITS architecture in order to receive federal funding.

The ITS Deployment Plan, while not required by FHWA and FTA, is a useful tool for regions to identify specific projects that can be deployed in order to implement the architecture. The ITS Deployment Plan builds on the architecture by outlining specific ITS project recommendations and strategies for the region, and identifying deployment timeframes so that the recommended projects and strategies can be implemented over time.

The ITS Deployment Plan also ties each project back to the architecture by identifying the market packages that correspond to each project. The resulting ITS deployment projects from this effort should be clearly supported by the ITS architecture.

The Jonesboro Regional ITS Architecture and ITS Deployment Plan were developed with significant input from local, state, and federal officials. The Regional ITS Architecture and Deployment Plan reflect an accurate snapshot of existing ITS deployment and future ITS plans in the region. Needs and priorities of the region will change over time, and, in order to remain effective, this plan should be periodically reviewed and updated.

1.2 Document Overview

The Jonesboro Regional ITS Deployment Plan is organized into four key sections:

Section 1 – Introduction

This section provides an overview of the National ITS Architecture requirements, the Jonesboro Regional ITS Deployment Plan, and the key features and stakeholders in the Jonesboro region.



Section 2 – Application of Regional ITS Architecture Market Packages

A summary of the market packages selected and prioritized for the region is provided in this section. Each market package is described and a listing of projects that support implementation of the services contained in the market package is provided.

Section 3 – Project Recommendations

This section contains project recommendations to address stakeholder needs and goals for ITS implementation in the region. Each project includes a description of the project, responsible agency, an opinion of probable cost, whether or not funding has been identified, and a listing of market packages that are associated with the project.

Section 4 – Maintaining the Regional ITS Deployment Plan

A brief description of the maintenance procedure for the Regional ITS Deployment Plan is provided in this section.

1.3 The Jonesboro Region

1.3.1 Region Overview

Jonesboro, the neighboring towns, and Craighead County are in a time of change. The area's population has grown significantly in the past 20 years and will continue to grow in the years ahead. Economic growth is also expected over the long term as the area's economy diversifies. Growth offers positive opportunities, but also creates a range of challenges for the area, including the development of a transportation system that will meet community and regional needs.

The Jonesboro Area Transportation Study (JATS) Metropolitan Planning Organization (MPO) has developed the 2035 Metropolitan Transportation Plan to be responsive to the challenges of anticipated growth and economic changes. The plan outlines goals, objectives, and policies for all surface transportation modes – streets and highways, railroads and trucking, transit, bicycles and pedestrians – and prioritizes planned transportation investments.

US 63 provides regional connections to Missouri to the north and to Tennessee to the southeast through I-55. State roads connect US 49 to US 67, providing a route to Little Rock and, thereby, I-30 and I-40, thus connecting the Jonesboro MPA to the larger region and the nation. AR 18 is the key east-west highway, serving many small towns within the area.

Regionally and locally, US 63, US 49, AR 18 serve commuters, shoppers, truckers, vacationers, and others on trips throughout the planning area. Johnson Avenue



(US 49 and AR 91), Southwest Drive (US 49 and AR 18), Stadium Boulevard (US 49 and AR 1), Caraway Road, Matthews Avenue and Washington Avenue provide access to residential and commercial developments and Arkansas State University (ASU).

The region has two working railways that contribute to freight movement, the BNSF Railway (BNSF) and Union Pacific Railroad (UP).

1.3.2 Stakeholders

Because ITS often transcends the traditional transportation infrastructure, it is important to involve non-traditional stakeholders in the architecture development and visioning process. Input from these stakeholders, both public and private, is a critical part of defining the interfaces, integration needs, and overall vision for ITS in a region.

The following stakeholder agencies participated in ITS project workshops or provided input to the study team:

- AHTD Planning and Research Division;
- AHTD District 10;
- Arkansas State Police;
- Arkansas Highway Police;
- City of Jonesboro;
- City of Brookland;
- City of Bay;
- City of Bono;
- Federal Highway Administration Arkansas Division;
- Craighead County Office of Emergency Management;
- Craighead County Sheriff's Department;
- Jonesboro Economical Transportation System (JETS);
- Jonesboro Street Department;
- Jonesboro Regional Airport;
- Arkansas State University; and
- Jonesboro Area Transportation Study (JATS) Metropolitan Planning Organization (MPO).

A more detailed list of stakeholders, including the individuals representing each agency, is provided in the ITS Architecture report.



2. REGIONAL ITS ARCHITECTURE MARKET PACKAGE IMPLEMENTATION

Of the 91 market packages available in Version 6.1 of the National ITS Architecture, 48 were selected and customized for deployment in the Jonesboro region. The market packages outline the functions that stakeholders envision ITS to perform in coming years. The ITS Deployment Plan builds on those market packages through the development of project concepts to implement in the region.

2.1 Market Package Prioritization

Stakeholders were asked to prioritize the market packages into high, medium, and low priorities based on regional needs, feasibility, likelihood of deployment, and overall contribution of the market package to the goals and vision for ITS functionality in the region. A summary of these prioritized market packages is shown in Table 1. More detail on the ITS Market Packages is provided in the ITS Architecture report.

Table 1 –Market Package Prioritization by Functional Area

High Priority Market Packages	Medium Priority Market Packages	Low Priority Market Packages
Travel and Traffic Management		
ATMS01 Network Surveillance ATMS03 Surface Street Control ATMS06 Traffic Information Dissemination ATMS07 Regional Traffic Control ATMS08 Traffic Incident Management System ATMS19 Speed Monitoring ATMS21 Roadway Closure Management	ATMS 04 Freeway Control ATMS11 Emissions Monitoring and Management ATMS13 Standard Railroad Grade Crossing ATMS15 Railroad Operations Coordination	
Emergency Management		
EM01 Emergency Call-Taking and Dispatch EM02 Emergency Routing EM04 Roadway Service Patrols EM05 Transportation Infrastructure Protection EM06 Wide-Area Alert EM07 Early Warning System EM08 Disaster Response and Recovery EM09 Evacuation and Reentry Management EM10 Disaster Traveler Information	EM03 Mayday & Alarms Support	

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Table 1 – Market Package Prioritization by Functional Area (continued)

High Priority Market Packages	Medium Priority Market Packages	Low Priority Market Packages
Maintenance and Construction Management		
MC03 Road Weather Data Collection MC04 Weather Information Processing and Distribution MC08 Work Zone Management MC10 Maintenance and Construction Activity Coordination	MC07 Roadway Maintenance and Construction MC09 Work Zone Safety Monitoring	MC01 Maintenance and Construction MC02 Maintenance and Construction Vehicle Maintenance
Public Transportation Management		
APTS01 Transit Vehicle Tracking APTS02 Transit Fixed-Route Operations APTS03 Demand Response Transit Operations APTS04 Transit Passenger and Fare Management APTS05 Transit Security APTS06 Transit Maintenance APTS07 Multi-modal Coordination APTS08 Transit Traveler Information		
Commercial Vehicle Operations		
CVO10 HAZMAT Management CVO11 Roadside HAZMAT Security Detection and Mitigation CVO13 Freight Assignment Tracking	CVO06 Weigh-in-Motion	CVO04 Commercial Vehicle Administrative Processes CVO08 On-board CVO and Freight Safety and Security
Traveler Information		
ATIS01 Broadcast Traveler Information ATIS02 Interactive Traveler Information		
Archived Data Management		
	AD1 ITS Data Mart AD2 ITS Data Warehouse	AD3 ITS Virtual Data Warehouse

Market package prioritization was a primary factor in developing recommendations for ITS deployment and integration in the Jonesboro region. These priorities identified the key ITS services



that are desired by stakeholders in the Jonesboro region, as well as the interfaces that need to be established to provide integrated functionality and establish communication between elements.

It is important to note that the high, medium, and low prioritization does not necessarily correspond to any specific time frame (such as five, ten, or twenty year deployment horizon). For example, a market package can be a high priority, but because of funding or prerequisite project requirements, it might not be feasible for deployment for several years. Maturity and availability of technology were also considered in prioritizing the market packages. Another consideration included whether or not the market package was better suited for private deployment and operations rather than public sector deployment.

2.2 Market Packages and Supporting Projects

In order to implement the ITS market package services in the Jonesboro region, each market package was reviewed to determine what projects should be deployed in order to provide the desired services of that market package. While the timeframe of the ITS Deployment Plan was as far out as twenty-years, stakeholders generally focused on shorter-term projects that were more likely to be funded when identifying projects.

It should be noted that not every market package has an associated ITS project. Several market packages were identified as being important to the region; however, at this time there are no projects that stakeholders felt were feasible enough to document in the ITS Deployment Plan. In the future, it is likely that additional projects will be added to the ITS Deployment Plan to implement these market packages.

The market packages in the following subsections are organized by service areas in the order they appear in the National ITS Architecture. Each market package includes:

- A brief definition of the market package (which has been modified from the National ITS Architecture definition);
- Stakeholder priority for the market package; and
- Recommended projects that will address some or all of the services that are contained in the market package.

2.2.1 Traffic Management Service Area

The following market packages and related projects implement the traffic management service area functions. These traffic management service areas represent some of the most commonly deployed projects, such as closed-circuit television (CCTV) cameras, dynamic message signs (DMS), transportation management centers (TMCs), traffic operations centers (TOCs), and traffic signal systems.



Table 2 – Traffic Management Market Packages and Projects

Network Surveillance (ATMS01)	High Priority
Includes traffic detectors, CCTV cameras, other surveillance equipment, supporting field equipment, and fixed point to fixed point communications to transmit the collected data back to a traffic management center.	
<p>Recommended Projects</p> <ul style="list-style-type: none"> • AHTD CCTV Cameras and DMS on State Routes • AHTD District10 Traffic Management Center • AHTD Infrastructure Security Monitoring • AHTD Speed Detection • AHTD Statewide Traffic Management Center • City of Jonesboro CCTV Cameras • City of Jonesboro Infrastructure Security Monitoring • City of Jonesboro Speed Detection • City of Jonesboro Traffic Operations Center • Future Municipal Traffic Operations Center and Traffic Signal System Deployment • Municipal and County CCTV Camera Deployment • Municipal and County Real-Time Transportation Information Website Enhancements • Municipal and County Traffic Operations Center Upgrades • Jonesboro Regional Airport CCTV Cameras and DMS Deployment 	
Surface Street Control (ATMS03)	High Priority
Provides the central control and monitoring equipment, communication links, and signal control equipment that support local street and/or arterial traffic management. This market package is consistent with typical urban traffic signal control systems.	
<p>Recommended Projects</p> <ul style="list-style-type: none"> • AHTD Signal System Coordination and Upgrades • Jonesboro Economical Transportation System (JETS) Preemption • Jonesboro Regional Joint Traffic Management Center • City of Jonesboro Fire/EMS Signal Preemption • City of Jonesboro Signal System Coordination and Upgrades • City of Jonesboro Traffic Operations Center • Craighead County Fire/EMS Signal Preemption • Future Municipal Traffic Operations Center and Traffic Signal System Deployment • Municipal and County Traffic Signal System Coordination and Field Devices • Standard Railroad Grade Crossing Coordination 	
Freeway Control (ATMS04)	Medium Priority
This market package provides central monitoring and control, communications, and field equipment that support freeway management. It supports a range of freeway management control strategies including ramp metering, interchange metering, mainline lane controls, mainline metering, and other strategies including variable speed controls.	
<p>Recommended Projects</p> <ul style="list-style-type: none"> • Jonesboro Regional Joint Traffic Management Center 	

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Table 2 – Traffic Management Market Packages and Projects (continued)

Traffic Information Dissemination (ATMS06)	High Priority
Provides information to drivers using roadway equipment such as dynamic message signs or highway advisory radio. Information can include traffic and road conditions, closure and detour information, incident information, emergency alerts and driver advisories.	
<p>Recommended Projects</p> <ul style="list-style-type: none"> • AHTD CCTV Cameras and DMS on State Routes • AHTD District 10 Traffic Management Center • AHTD Portable Dynamic Message Signs • AHTD Statewide Traffic Management Center • City of Jonesboro Traffic Operations Center • Future Municipal Traffic Operation Center and Traffic Signal System Deployment • Municipal and County DMS Deployment • Municipal and County Traffic Operation Center • JETS Information Kiosks • Jonesboro Regional Joint Traffic Management Center 	
Regional Traffic Control (ATMS07)	High Priority
Facilitates the sharing of traffic information and control among traffic management centers to support a regional control strategy. The nature of optimization and extent of information and control sharing is determined through working arrangements between jurisdictions.	
<p>Recommended Projects</p> <ul style="list-style-type: none"> • AHTD Statewide Traffic Management Center • City of Jonesboro Traffic Operation Center • Future Municipal Traffic Operation Center and Traffic Signal System Deployment • Municipal and County Traffic Operation Center • Jonesboro Regional Joint Traffic Management Center • Jonesboro Regional Operations Committee 	

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Table 2 – Traffic Management Market Packages and Projects (continued)

Traffic Incident Management System (ATMS08)	High Priority
<p>Manages both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. This market package includes incident detection capabilities and coordination with other agencies. It supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel.</p>	
<p>Recommended Projects</p> <ul style="list-style-type: none"> • AHTD CCTV Cameras and Dynamic Message Signs Expansion • AHTD CCTV Cameras and DMS on State Routes • AHTD District 10 Traffic Management Center • AHTD Portable DMS • AHTD Statewide Traffic Management Center • City of Jonesboro CCTV Cameras • City of Jonesboro Traffic Operations Center • Power System Service Interruption Notification System 	
Emissions Monitoring and Management (ATMS11)	Medium Priority
<p>Monitors vehicle emissions and provides general air quality monitoring using distributed sensors to collect the data.</p>	
<p>Recommended Projects</p> <ul style="list-style-type: none"> • No projects have been identified at this time. 	
Standard Railroad Grade Crossing (ATMS13)	Medium Priority
<p>Manages highway traffic at highway rail intersections (HRIs) where rail operations speeds are less than 80 mph.</p>	
<p>Recommended Projects</p> <ul style="list-style-type: none"> • Standard Railroad Grade Crossing Coordination 	
Railroad Operations Coordination (ATMS15)	Medium Priority
<p>Provides an additional level of strategic coordination between freight rail operations and traffic management centers. Could include train schedules, maintenance schedules or any other anticipated HRI closures.</p>	
<p>Recommended Projects</p> <ul style="list-style-type: none"> • No projects have been identified at this time. 	
Speed Monitoring (ATMS19)	Medium Priority
<p>Monitors the speed of vehicles traveling through a roadway system.</p>	
<p>Recommended Projects</p> <ul style="list-style-type: none"> • AHTD Speed Detection • City of Jonesboro Speed Detection 	

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Table 2 – Traffic Management Market Packages and Projects (continued)

Roadway Closure Management (ATMS21)	Medium Priority
Closes roadways to vehicular traffic when driving conditions are unsafe, maintenance must be performed, or other situations. Market package covers general road closures applications; specific closure systems that are used at railroad grade crossings, drawbridges, reversible lanes, etc., are covered by other market packages.	
Recommended Projects <ul style="list-style-type: none"> • AHTD Road Closure Management Systems • Low Water Crossing Flood Detection and Road Closure Systems 	

2.2.2 Emergency Management Service Area

The following market packages and related projects implement ITS functions that support emergency management activities. These market packages are important for incident response, coordination of the emergency management and transportation systems, traveler information during disasters, and protection of the transportation infrastructure.

Table 3 – Emergency Management Market Packages and Projects

Emergency Call-Taking and Dispatch (EM01)	High Priority
Provides basic public safety call-taking and dispatch services. Includes emergency vehicle equipment, equipment used to receive and route emergency calls, wireless communications, and coordination between emergency management agencies.	
Recommended Projects <ul style="list-style-type: none"> • Arkansas State Police Automated Vehicle Location (AVL) • City of Jonesboro Fire Vehicle AVL • City of Jonesboro Police Vehicle AVL and Mobile Data Terminals (MDTs) • Craighead County Coordinated Dispatch • Craighead County Fire and EMS Vehicle AVL • Jonesboro Economical Transportation System (JETS) AVL • Jonesboro Regional Mutual Aid Agreements 	

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Table 3 – Emergency Management Market Packages and Projects (continued)

Emergency Routing (EM02)	High Priority
Supports automated vehicle location and dynamic routing of emergency vehicles. Traffic information, road conditions and suggested routing information are provided to enhance emergency vehicle routing. Includes signal preemption and priority applications.	
<p>Recommended Projects</p> <ul style="list-style-type: none"> • Arkansas State Police AVL • City of Jonesboro Fire Vehicle AVL • City of Jonesboro Fire/EMS Signal Preemption • City of Jonesboro Police Vehicle AVL and MDTs • Craighead County Fire and EMS Vehicle AVL • Craighead County Fire/EMS Signal Preemption • Jonesboro Economical Transportation System (JETS) AVL • Municipal and County Emergency Vehicle Traffic Signal Preemption • Craighead County Coordinated Dispatch • Craighead County Regional Mutual Aid Agreements 	
Roadway Service Patrols (EM04)	High Priority
Supports the roadway service patrol vehicles that aid motorists, offering rapid response to minor incidents (flat tire, accidents, out of gas) to minimize disruption to the traffic stream. This market package monitors service patrol vehicle locations and supports vehicle dispatch.	
<p>Recommended Projects</p> <ul style="list-style-type: none"> • AHTD Motorist Assist Patrol Dispatch and Vehicles • Jonesboro Regional Joint Traffic Management Center 	
Transportation Infrastructure Protection (EM05)	High Priority
Includes the monitoring of transportation infrastructure (e.g., bridges, tunnels and management centers) for potential threats using sensors, surveillance equipment, and barriers and safeguard systems to preclude an incident, control access during and after an incident, or to mitigate the impact of an incident. Threats can be acts of nature, terrorist attacks, or other incidents causing damage to the infrastructure.	
<p>Recommended Projects</p> <ul style="list-style-type: none"> • AHTD Network Surveillance and Infrastructure Security Monitoring • City of Jonesboro Network Surveillance and Infrastructure Security Monitoring 	

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Table 3 – Emergency Management Market Packages and Projects (continued)

Wide-Area Alert (EM06)	High Priority
Uses ITS driver and traveler information systems to alert the public in emergency situations such as child abductions, severe weather, civil emergencies, or other situations that pose a threat to life and property.	
<p>Recommended Projects</p> <ul style="list-style-type: none"> • AHTD CCTV Cameras and Dynamic Message Signs Expansion • AHTD DMS and HAR Deployment • Jonesboro Regional Mutual Aid Agreements • Jonesboro Regional Disaster Response and Recovery Plan • DMS AMBER Alert Message Dissemination System 	
Early Warning System (EM07)	High Priority
Monitors and detects potential, looming, and actual disasters including natural disasters (hurricanes, earthquakes, floods, winter storms, tsunamis, etc.) and technological and man-made disasters (hazardous materials incidents, nuclear power plant accidents, and acts of terrorism including nuclear, chemical, biological, and radiological weapons attacks).	
<p>Recommended Projects</p> <ul style="list-style-type: none"> • Jonesboro Regional Disaster Response and Recovery Plan 	
Disaster Response and Recovery (EM08)	High Priority
Enhances the ability of the surface transportation system to respond to and recover from disasters. It addresses the most severe incidents that require an extraordinary response from outside the local community.	
<p>Recommended Projects</p> <ul style="list-style-type: none"> • AHTD DMS and HAR Deployment • Jonesboro Regional Disaster and Recovery Plan • Jonesboro Regional Incident Management Coordination and Training • Jonesboro Regional Mutual Aid Agreements 	
Evacuation and Reentry Management (EM09)	High Priority
Supports evacuation of the general public from a disaster area and manages subsequent reentry to the disaster area. This market package supports both anticipated, well-planned, and orderly evacuations such as for a hurricane, as well as sudden evacuations with little or no time for preparation or public warning such as a terrorist act. Employs a number of strategies to maximize capacity along an evacuation route including coordination with transit.	
<p>Recommended Projects</p> <ul style="list-style-type: none"> • AHTD DMS and HAR Deployment • Jonesboro Regional Disaster Response and Recovery Plan • Jonesboro Regional Incident Management Coordination and Training • Jonesboro Regional Joint Traffic Management Center • Jonesboro Regional Mutual Aid Agreements 	

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Table 3 – Emergency Management Market Packages and Projects (continued)

Disaster Traveler Information (EM10)	High Priority
Uses ITS to provide disaster-related traveler information to the general public, including evacuation and reentry information and other information concerning the operation of the transportation system during a disaster.	
Recommended Projects <ul style="list-style-type: none"> • AHTD DMS and HAR Deployment • Jonesboro Regional Disaster Response and Recovery Plan • Jonesboro Regional Joint Traffic Management Center 	

2.2.3 Maintenance and Construction Management Service Area

The following market packages and related projects implement maintenance and construction management ITS functions. Maintenance and construction activity coordination, portable Dynamic Message Signs (DMS) for road closures and detour information, and road weather data collection primarily for detection of ice were identified as priorities for the Region.

Table 4 – Maintenance and Construction Management Market Packages and Projects

Maintenance and Construction Vehicle and Equipment Tracking (MC01)	Low Priority
Tracks the location of maintenance and construction vehicles and other equipment to ascertain the progress of their activities.	
Recommended Projects <ul style="list-style-type: none"> • AHTD Maintenance and Construction Vehicle AVL • City of Jonesboro Maintenance and Construction Vehicle AVL • Craighead County Maintenance and Construction Vehicle AVL 	

Maintenance and Construction Vehicle Maintenance (MC02)	Low Priority
Performs vehicle maintenance scheduling and manages both routine and corrective maintenance activities. Includes on-board sensors capable of automatically performing diagnostics.	
Recommended Projects <ul style="list-style-type: none"> • No projects have been identified at this time 	

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Table 4 – Maintenance and Construction Management Market Packages and Projects (continued)

Road Weather Data Collection (MC03)	High Priority
Collects current road weather conditions using data collected from environmental sensors deployed on and about the roadway.	
Recommended Projects <ul style="list-style-type: none"> • AHTD Road Weather Data Collection Systems • City of Jonesboro Road Weather Data Collection Systems • Craighead County Road Weather Data Collection Systems • Low Water Crossing Flood Detection and Road Closure Systems 	
Weather Information Processing and Distribution (MC04)	High Priority
Processes and distributes the environmental information collected from the Road Weather Data Collection market package. This market package uses the environmental data to detect environmental hazards such as icy road conditions, high winds, dense fog, etc., so system operators can make decisions on corrective actions to take.	
Recommended Projects <ul style="list-style-type: none"> • AHTD Road Closure Management Systems • AHTD Road Weather Data Collection Systems • City of Jonesboro Road Weather Data Collection Systems • Craighead County Road Weather Data Collection Systems • Low Water Crossing Flood Detection and Road Closure Systems 	
Roadway Maintenance and Construction (MC07)	Medium Priority
Supports numerous services for scheduled and unscheduled maintenance and construction on a roadway system or right-of-way. Environmental conditions information is also received from various weather sources to aid in scheduling maintenance and construction activities.	
Recommended Projects <ul style="list-style-type: none"> • AHTD Road Closure Management Systems • Low Water Crossing Flood Detection and Road Closure Systems 	
Work Zone Management (MC08)	High Priority
Directs activity in work zones, controlling traffic through portable dynamic message signs and informing other groups of activity for better coordination management. Also provides speed and delay information to motorists prior to the work zone.	
Recommended Projects <ul style="list-style-type: none"> • AHTD Portable DMS 	

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Table 4 – Maintenance and Construction Management Market Packages and Projects (continued)

Work Zone Safety Monitoring (MC09)	Medium Priority
Includes systems that improve work crew safety and reduce collisions between the motoring public and maintenance and construction vehicles. Detects vehicle intrusions in work zones and warns workers and drivers of safety hazards when encroachment occurs.	
Recommended Projects	
<ul style="list-style-type: none"> No projects have been identified at this time 	
Maintenance and Construction Activity Coordination (MC10)	High Priority
Supports the dissemination of maintenance and construction activity information to centers that can utilize it as part of their operations. (i.e., traffic management, transit, emergency management).	
Recommended Projects	
<ul style="list-style-type: none"> Maintenance and Construction Activity Coordination 	

2.2.4 Public Transportation Management Service Area

The following market packages and related projects implement public transportation management ITS functions. Public transportation projects for Jonesboro Economical Transportation System (JETS) were identified for a number of market packages. Many of these market packages were considered high priority and will likely be implemented in the near future.

Table 5 – Public Transportation Management Market Packages and Projects

Transit Vehicle Tracking (APTS01)	High Priority
Monitors current transit vehicle location using an automated vehicle location system. Location data may be used to determine real time schedule adherence and update the transit system's schedule in real time.	
Recommended Projects	
<ul style="list-style-type: none"> JETS AVL JETS Kiosks School Bus AVL 	
Transit Fixed-Route Operations (APTS02)	High Priority
Performs vehicle routing and scheduling, as well as operator assignment and system monitoring for fixed-route and flexible-route transit services.	
Recommended Projects	
<ul style="list-style-type: none"> Local Transit Coordination System (JETS) 	

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Table 5 – Public Transportation Management Market Packages and Projects (continued)

Demand Response Transit Operations (APTS03)	High Priority
Performs vehicle routing and scheduling, as well as operator assignment and system monitoring for demand responsive transit services.	
Recommended Projects	
<ul style="list-style-type: none"> • JETS Traveler Information Website • Local Transit Coordination System (JETS) 	
Transit Passenger and Fare Management (APTS04)	High Priority
Manages passenger loading and fare payments on transit vehicles using electronic means.	
Recommended Projects	
<ul style="list-style-type: none"> • JETS Electronic Fare Collection • JETS Traveler Information Website 	
Transit Security (APTS05)	High Priority
Provides for the physical security of transit passengers and transit vehicle operators. Includes on-board security cameras and panic buttons.	
Recommended Projects	
<ul style="list-style-type: none"> • Jonesboro Transit Transfer Station Security Cameras • Jonesboro Transit Vehicle Security Cameras • School Districts Bus Security 	
Transit Maintenance Management (APTS06)	High Priority
Supports automatic transit maintenance scheduling and monitoring for both routine and corrective maintenance.	
Recommended Projects	
<ul style="list-style-type: none"> • No projects have been identified at this time 	
Multi-Modal Coordination (APTS07)	High Priority
Establishes two way communications between multiple transit and traffic agencies to improve service coordination.	
Recommended Projects	
<ul style="list-style-type: none"> • Local Transit Coordination System 	

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Table 5 – Public Transportation Management Market Packages and Projects (continued)

Transit Traveler Information (APTS08)	High Priority
Provides transit users at transit stops and on board transit vehicles with ready access to transit information. Services include stop annunciation, imminent arrival signs, and real-time transit schedule displays. Systems that provide custom transit trip itineraries and other tailored transit information services are also represented by this market package.	
Recommended Projects <ul style="list-style-type: none"> • JETS Traveler Information Kiosks and Website • Jonesboro Regional Traveler Information Website • Local Transit Coordination System 	

2.2.5 Commercial Vehicle Operations Service Area

The Commercial Vehicle Information Systems and Networks (CVISN) program is a key component of the Federal Motor Carrier Safety Administration’s (FMCSA) drive to improve commercial motor safety. The CVISN Program supports FMCSA’s goals by focusing safety enforcement on high-risk operators, integrating systems to improve the accuracy, integrity, and verifiability of credentials, improving efficiency through electronic screening of commercial vehicles and enabling online application and issuance of credentials. The overall CVISN goals are to improve safety, security, efficiency and freight mobility and achieve nationwide deployment, with all jurisdictions participating.

There were six market packages that were identified that related to commercial vehicle operations in the Region. Planning for commercial vehicle operations is also being done on a statewide level as part of the Commercial Vehicle Information Systems and Networks (CVISN) program. As part of this program projects are being developed on a statewide basis rather than a regional basis. Although several market packages were identified by stakeholders for local deployment, no projects were currently identified for implementation of these market packages.

Table 6 – Commercial Vehicle Operations Market Packages and Projects

CV Administrative Processes (CVO04)	Low Priority
Provides for electronic application, processing, fee collection, issuance, and distribution of CVO credentials and tax filing.	
Recommended Projects <ul style="list-style-type: none"> • CVISN Implementation 	

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Table 6 – Commercial Vehicle Operations Market Packages and Projects (continued)

Weigh-in-Motion (CVO06)	Medium Priority
Provides for high speed weigh-in-motion with or without automated vehicle identification capabilities.	
Recommended Projects	
<ul style="list-style-type: none"> • CVISN Implementation 	
On-board CVO and Freight Safety and Security (CVO08)	Low Priority
Provides for on-board commercial vehicle safety monitoring and reporting as well as roadside support for reading on-board safety data via tags.	
Recommended Projects	
<ul style="list-style-type: none"> • CVISN Implementation 	
HAZMAT Management (CVO10)	High Priority
Integrates incident management capabilities with commercial vehicle tracking to assure effective treatment of HAZMAT material and incidents.	
Recommended Projects	
<ul style="list-style-type: none"> • CVISN Implementation • HAZMAT Roadside Security Detection and Mitigation Equipment 	
Roadside HAZMAT Security Detection and Mitigation (CVO11)	High Priority
Provides the capability to detect and classify security sensitive HAZMAT on commercial vehicles using roadside sensing and imaging technology. Credentials information can be accessed to verify if the commercial driver, vehicle, and carrier are permitted to transport the identified HAZMAT.	
Recommended Projects	
<ul style="list-style-type: none"> • CVISN Implementation • HAZMAT Roadside Security Detection and Mitigation Equipment 	
Freight Assignment Tracking (CVO13)	High Priority
Provides for the planning and tracking of the commercial vehicle, freight equipment and the commercial vehicle driver.	
Recommended Projects	
<ul style="list-style-type: none"> • CVISN Implementation 	

2.2.6 Traveler Information Service Area

The following market packages and related projects implement traveler information ITS functions. Traveler information service area projects address market packages that broadcast traveler information over a wide area. A possible future 511 traveler information phone number as well as improved media liaison and coordination were identified as projects to facilitate broadcast traveler information. Traveler



information provided at a specific location on the roadway, such as DMS, is addressed in the ATMS06 – Traffic Information Dissemination market package in Section 2.2.1.

Table 7 – Traveler Information Market Packages and Projects

Broadcast Traveler Information (ATIS01)	High Priority
Collects traffic conditions, advisories, general public transportation, toll and parking information, incident information, roadway maintenance and construction information, air quality and weather information, and broadly disseminates this information through existing infrastructures (radio, cell phones, etc.).	
<p>Recommended Projects</p> <ul style="list-style-type: none"> • Media Liaison and Coordination • Municipal and County Real-Time Transportation Information Website Enhancements • Jonesboro Regional Traveler Information Website • AHTD 511 Traveler Information • JETS Traveler Information 	
Interactive Traveler Information (ATIS02)	High Priority
Provides tailored information in response to a traveler request. Both real-time interactive request/response systems and information systems that "push" a tailored stream of information to the traveler based on a submitted profile are supported. The traveler can obtain current information regarding traffic conditions, roadway maintenance and construction, transit services, ride share/ride match, parking management, detours and pricing information.	
<p>Recommended Projects</p> <ul style="list-style-type: none"> • Arkansas 511 Implementation • Municipal and County Real Time Transportation Information Website Enhancements • Jonesboro Regional Airport Traveler Information Kiosk • Jonesboro Regional Traveler Information Website 	

2.2.7 Archived Data Management Service Area

The following market packages and related projects implement archived data management ITS functions. Data collected through ITS deployments can be housed in several different formats. The market packages selected by stakeholders will allow data for a specific agency to be housed by that agency, or data from throughout the region can be sent to a site to be housed together. Data housed by an agency as part of an ITS data mart would likely be part of another project deployment and are not called out separately in this section. For example, DMS implementation might include software to archive all of the messages placed on the DMS over a period of time.



Table 8 – Archived Data Management Market Packages and Projects

ITS Data Mart (AD1)	Medium Priority
Provides a focused archive that houses data collected and owned by a single agency or other organization. Focused archive typically covers a single transportation mode and one jurisdiction.	
Recommended Projects	
<ul style="list-style-type: none"> Local Data Marts 	
ITS Data Warehouse (AD2)	Medium Priority
Includes all the data collection and management capabilities of the ITS Data Mart. Adds the functionality to allow collection of data from multiple agencies and data sources across modal and jurisdictional boundaries.	
Recommended Projects	
<ul style="list-style-type: none"> Jonesboro Area Transportation Study Metropolitan Planning Organization Data Warehouse 	
ITS Virtual Data Warehouse (AD3)	Low Priority
Provides the same broad access to multimodal multidimensional data from varied sources as in the ITS Data Warehouse Market Package, but provides this access using enhanced interoperability between physically distributed ITS archives that are each locally managed.	
Recommended Projects	
<ul style="list-style-type: none"> Jonesboro Area Transportation Study Metropolitan Planning Organization Data Warehouse 	



3. PROJECT RECOMMENDATIONS

In order to achieve the vision of the Regional ITS Architecture, a region must deploy carefully developed projects that provide the functionality and interoperability identified in the architecture. A key step toward that vision is the development of an ITS Deployment Plan that identifies specific projects, timeframes, and responsible agencies.

Input from all stakeholders is required in order for the stakeholders to have ownership of the ITS Deployment Plan and also to be sure that the plan has realistically identified projects and timeframes for the region. Cost is another important factor ó cost can vary a great deal for many ITS elements, depending on the level of deployment, maturity of the technology, type of communications, etc. For example, freeway network surveillance could be adequately achieved for one region by the deployment of still frame CCTV cameras only at freeway interchanges. In another region, there may be a desire for full motion cameras deployed at one mile intervals to provide complete coverage of the freeway. The infrastructure and telecommunications costs for these two projects would vary a great deal, yet either one could be suitable for a particular region.

In the following sections, projects are categorized into functional areas: Travel and Traffic Management, Emergency Management, Maintenance and Construction Management, Public Transportation Management, Archived Data Management and Projects of Statewide Significance. For each functional area, stakeholders grouped projects into timeframes for deployment based on priority, dependence on other projects, technology, and feasibility. The timeframes have been categorized as short-term (5-year deployment timeframe), mid-term (10-year deployment timeframe), and long-term (20-year deployment timeframe). Actual deployment timeframes for the projects will be dependent on inclusion in the TIP and identification of funding sources.

For each project, the tables include a project description, responsible agency, opinion of probable cost, an indication as to whether funding has been identified, and the applicable market packages in the Jonesboro Regional ITS Architecture.

3.1 Regional Projects

Regional projects are identified in Table 9 through Table 13. The tables are broken out as follows:

- Table 9 – Travel and Traffic Management Project Recommendations;
- Table 10 – Emergency Management Project Recommendations;
- Table 11 – Maintenance and Construction Management Project Recommendations;
- Table 12 – Public Transportation Project Recommendations; and
- Table 13 – Archived Data Management Project Recommendations.

Table 9 – Travel and Traffic Management Project Recommendations

Program Area/Project	Description	Responsible Agency ¹	Opinion of Probable Cost ²	Funding Identified	Applicable Market Packages
Short-Term Travel and Traffic Management Projects: 5-Year Deployment Timeframe					
AHTD District 10 Traffic Management Center	Establish a Transportation Management Center (TMC) for AHTD District 10 in Jonesboro. Project to include closed circuit television (CCTV) camera monitoring and control and dynamic message sign (DMS) control. Cost represents equipment costs and those costs associated with modifying space in an existing facility for use as a TMC.	AHTD	\$150,000	No	ATMS01 ATMS06 ATMS08
AHTD CCTV Cameras and DMS on State Routes	Expand CCTV camera and DMS coverage to include state routes in urban and rural areas. Cost represents an average cost per device that includes the camera pole or sign structure as well as communications.	AHTD	\$120,000/sign \$30,000/camera	No	ATMS01 ATMS06 ATMS08 EM06 EM10
AHTD Speed Detection	Implement speed detection for use in traffic monitoring and for input into the traveler information website and 511.	AHTD	\$20,000/detector site	No	ATMS01 ATMS19
AHTD Signal System Coordination and Upgrades	Implement improvements to allow for signal coordination on state routes. Cost for this project represents an average cost per intersection for upgrading and coordinating an existing signalized intersection.	AHTD	\$20,000/intersection	No	ATMS03

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Table 9 – Travel and Traffic Management Project Recommendations (continued)

Program Area/Project	Description	Responsible Agency ¹	Opinion of Probable Cost ²	Funding Identified	Applicable Market Packages
Short-Term Travel and Traffic Management Projects: 5-Year Deployment Timeframe (continued)					
City of Jonesboro Traffic Operations Center	Establish a Traffic Operations Center (TOC) for the City of Jonesboro. Project to include signal control, CCTV camera monitoring and control, and DMS control. Cost represents equipment costs and those costs associated with modifying available space in an existing facility for use as a TOC.	City of Jonesboro	\$400,000	No	ATMS01 ATMS03 ATMS06 ATMS07 ATMS08
City of Jonesboro Network Surveillance	Implement CCTV cameras with video data transmission equipment at all unmonitored traffic signal locations.	City of Jonesboro	\$300,000	No	ATMS01
City of Jonesboro Traffic Information Dissemination	Implement DMS on major traffic corridors entering the City. Wireless data transmission equipment will be installed to connect the DMS with the fiber optic backbone.	City of Jonesboro	\$150,000	No	ATMS06
City of Jonesboro Signal System Coordination and Upgrades	Implement improvements to allow for signal coordination on arterials. Cost for this project represents an average cost per intersection for upgrading and coordinating an existing signalized intersection.	City of Jonesboro	\$20,000/ intersection	No	ATMS03

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Table 9 – Travel and Traffic Management Project Recommendations (continued)

Program Area/Project	Description	Responsible Agency ¹	Opinion of Probable Cost ²	Funding Identified	Applicable Market Packages
Short-Term Travel and Traffic Management Projects: 5-Year Deployment Timeframe (continued)					
Regional Communications Master Plan	Develop a Communications Master Plan for the Jonesboro Region. The project will examine current and future regional communications needs to support traffic management, incident management, emergency management, transit management, and maintenance and construction coordination implementation. Examples of communications could include real time video sharing, traffic condition information sharing, and virtual control of CCTV cameras and DMS by multiple agencies in the Region.	AHTD, City of Jonesboro, Craighead County, Jonesboro Area Transportation Study MPO	\$100,000 – \$200,000	No	All market packages ³
Regional Communications Implementation Phase 1	Phase 1 communications infrastructure implementation to support ITS deployment. Cost will be determined by the Regional Communications Master Plan recommendations.	AHTD, City of Jonesboro, Craighead County, Jonesboro Area Transportation Study MPO	To Be Determined	No	All market packages ³
Municipal and County TOC	Implement TOCs including traffic signal control systems, CCTV cameras control and monitoring where implemented, and DMS management where implemented. TOCs will be connected to local public safety agencies. Costs for these projects will vary considerable based upon the hardware, software, and upgrades chosen.	Each stakeholder is responsible for its respective TOC	To Be Determined	No	ATMS01 ATMS03 ATMS06 ATMS07 ATMS08

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³Project supports all market packages, but is not specifically represented in any market package.





Table 9 – Travel and Traffic Management Project Recommendations (continued)

Program Area/Project	Description	Responsible Agency ¹	Opinion of Probable Cost ²	Funding Identified	Applicable Market Packages
Short-Term Travel and Traffic Management Projects: 5-Year Deployment Timeframe (continued)					
Municipal and County Traffic Signal System Coordination and Field Devices	Implement signal improvements to allow for signal coordination and re-timing on arterials to optimize flow of traffic. Add or upgrade detection systems as needed at intersections.	Each stakeholder is responsible for the signal system in its respective area.	\$20,000-\$120,000/intersection	No	ATMS03
Municipal and County CCTV Camera Deployment	Implement CCTV cameras for incident management, and traffic monitoring. Cost represents average cost per CCTV camera including camera, pole, and communications.	Each stakeholder is responsible for the CCTV camera deployment in its respective area	\$30,000/camera	No	ATMS01 ATMS08
Municipal and County Dynamic Messaging Sign (DMS) Deployment	Implement arterial DMS for providing traveler information including detour routing, road closure information, and information about I-40 conditions on arterials near I-40. Costs represent average cost per DMS including sign, structure, and communications.	Each stakeholder is responsible for the DMS deployment in its respective area	\$75,000/DMS	No	ATMS06 ATMS08
Jonesboro Regional Operations Committee	Continue regional stakeholder meetings to discuss regional operations, incident management and traveler information issues. The Committee may have subcommittee on incident and emergency management coordination, signal systems, freeway management, transit and other issues.	Jonesboro Area Transportation Study MPO	N/A	No	ATMS07 ATMS08 ASPTS07

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Table 9 – Travel and Traffic Management Project Recommendations (continued)

Program Area/Project	Description	Responsible Agency ¹	Opinion of Probable Cost ²	Funding Identified	Applicable Market Packages
Short-Term Travel and Traffic Management Projects: 5-Year Deployment Timeframe (continued)					
AHTD Road Network Surveillance and Infrastructure Security Monitoring	Implement cameras and detectors for incident management, traffic monitoring, and infrastructure security monitoring.	AHTD District 10	\$30,000/camera \$20,000/detector	No	ATMS01 EM05
AHTD DMS Deployment	Implement dynamic message signs for traveler information, evacuation, and AMBER Alerts.	AHTD District 10	\$150,000/sign	No	ATMS06 EM06 EM08 EM09 EM10
Mid-Term Travel and Traffic Management Projects: 10-Year Deployment Timeframe					
AHTD CCTV Cameras and DMS Expansion	Implement additional CCTV cameras and DMS on interstates and state routes as needed throughout the Region. Cost represents an average cost per device that includes the camera pole or sign structure as well as communications.	AHTD	\$150,000/sign \$30,000/camera	No	ATMS01 ATMS06 ATMS08 EM06 EM10

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Table 9 – Travel and Traffic Management Project Recommendations (continued)

Program Area/Project	Description	Responsible Agency ¹	Opinion of Probable Cost ²	Funding Identified	Applicable Market Packages
Mid-Term Travel and Traffic Management Projects: 10-Year Deployment Timeframe					
City of Jonesboro CCTV Cameras	Implement additional CCTV cameras for incident management, traveler information, and traffic monitoring. Cost represents average cost per CCTV camera including camera, pole or structure, and communications.	City of Jonesboro	\$30,000/camera	No	ATMS01 ATMS08
City of Jonesboro Speed Detection	Implement speed detection on arterial routes for use in traffic monitoring and to determine need for enforcement.	City of Jonesboro	\$20,000/ detector site	No	ATMS01 ATMS19
Jonesboro Area Transportation Study Metropolitan Planning Organization Traveler Information Website	Establish a traveler information website to provide travelers with up to date roadway condition information as well as information on local transit options. Website will include information from AHTD, cities, and transit agencies.	Jonesboro Area Transportation Study MPO	To Be Determined	No	ATIS01
Regional Communications Implementation Phase 2	Phase 2 communications infrastructure implementation to support ITS deployment. Cost will be determined by the Regional Communications Master Plan and Phase 1 Implementation project.	AHTD, City of Jonesboro, Craighead County, Jonesboro Area Transportation Study MPO	To Be Determined	No	All market packages ³

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³Project supports all market packages, but is not specifically represented in any market package.

Table 9 – Travel and Traffic Management Project Recommendations (continued)

Program Area/Project	Description	Responsible Agency ¹	Opinion of Probable Cost ²	Funding Identified	Applicable Market Packages
Mid-Term Travel and Traffic Management Projects: 10-Year Deployment Timeframe (continued)					
Jonesboro Regional Joint Traffic Management Center	Establish a Traffic Management Center (TMC) for joint operations in the Jonesboro Region. The TMC could be used to coordinate large scale events and incidents. ITS elements that the project may include are CCTV camera monitoring and control, DMS control, and signal operations. Initial deployment could focus on freeway operations and possible AHTD Motorist Assist Patrol vehicle dispatch. The facility could also house regional operations for the Arkansas State Police and the AHTD Highway Police. Cost will vary greatly based on the number of agencies being incorporated.	AHTD, Cities, Counties, JETS, Human Service Agencies, JATS- MPO	Estimated to be in the magnitude of \$2,000,000	No	ATMS01 ATMS03 ATMS04 ATMS06 ATMS07 ATMS08 EM04 EM06 EM09 EM10
Jonesboro Regional Communications Implementation Phase 2	Implement Phase 2 communications infrastructure to support ITS deployment.	Lead Agency: To Be Determined	To Be Determined	No	All market packages ³
Standard Railroad Grade Crossing Coordination	Implement communications to railroad wayside equipment to monitor intersection status for train blockages. Agreements with railroad operations must be established and coordination with local traffic signal systems will be needed.	AHTD, Railroad Operators, City of Jonesboro	To Be Determined	No	ATMS03 ATMS13

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Table 9 – Travel and Traffic Management Project Recommendations (continued)

Program Area/Project	Description	Responsible Agency ¹	Opinion of Probable Cost ²	Funding Identified	Applicable Market Packages
Mid-Term Travel and Traffic Management Projects: 10-Year Deployment Timeframe (continued)					
Media Liaison and Coordination	Develop agreements/enhanced coordination with local media to improve information sharing and dissemination. Any costs associated with sharing information will be the responsibility of the agency requesting the information.	AHTD, City of Jonesboro, Local Radio/TV stations	N/A	N/A	ATIS01
Long-Term Travel and Traffic Management Projects: 20-Year Deployment Timeframe					
AHTD CCTV Cameras and DMS Continued Expansion	Implement additional CCTV cameras and DMS on interstates and state routes as needed throughout the Region. Cost represents an average cost per device that includes the camera pole or sign structure as well as communications.	AHTD District 10	\$150,000/sign \$30,000/camera	No	ATMS01 ATMS06 ATMS08 EM06 EM10

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²Design has not been undertaken; opinion of probable cost is for planning purposes.

Table 10 – Emergency Management Project Recommendations

Program Area/Project	Description	Responsible Agency ¹	Opinion of Probable Cost ²	Funding Identified	Applicable Market Packages
Short-Term Emergency Management Projects: 5-Year Deployment Timeframe					
AHTD Infrastructure Security Monitoring	Add cameras to bridges and other infrastructure where security is a concern. Cost represents an average cost for the camera, camera pole or other installation structure, and communications.	AHTD	\$30,000/camera	No	ATMS01 EM05
AHTD Motorist Assist Patrol Dispatch and Vehicles	Implement AHTD Motorist Assist Patrol dispatch in a future Jonesboro Regional TMC Dispatch	AHTD	Estimated to be in the magnitude of \$100,000-\$200,000	No	EM04
Arkansas State Police Automated Vehicle Location	Implement automated vehicle location for the Arkansas State Police. Cost represents in-vehicle equipment as well as supporting software.	Arkansas State Police	\$5,000/vehicle	No	EM01 EM02
City of Jonesboro Fire Vehicle Automated Vehicle Location	Implement automated vehicle location for the City of Jonesboro fire vehicles. Cost represents in-vehicle equipment as well as supporting software.	City of Jonesboro Fire Department	\$5,000/vehicle	No	EM01 EM02
City of Jonesboro Police Automated Vehicle Location and Mobile Data Terminals	Implement automated vehicle location and mobile data terminals on the City of Jonesboro police vehicles. Cost represents in-vehicle equipment as well as supporting software.	City of Jonesboro Police Department	\$5,000/vehicle	No	EM01 EM02
Craighead County Fire and EMS Vehicle Automated Vehicle Location	Implement automated vehicle location for the Craighead County fire and emergency medical services vehicles. Cost represents in-vehicle equipment as well as supporting software.	Craighead County Fire and EMS	\$5,000/vehicle	No	EM01 EM02

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Table 10 – Emergency Management Project Recommendations (continued)

Program Area/Project	Description	Responsible Agency ¹	Opinion of Probable Cost ²	Funding Identified	Applicable Market Packages
Short-Term Emergency Management Projects: 5-Year Deployment Timeframe (continued)					
City of Jonesboro Fire/EMS Signal Preemption	Implement emergency vehicle signal preemption on traffic signals in the City of Jonesboro for preemption by fire and EMS vehicles.	City of Jonesboro, AHTD and JETS	\$6,000/ intersection \$1,500/vehicle	No	ATMS03 EM02
Craighead County Fire/EMS Signal Preemption	Implement emergency vehicle signal preemption on traffic signals in Craighead County for preemption by fire and EMS vehicles.	Craighead County	\$6,000/ intersection \$1,500/ vehicle	No	ATMS03 EM02
Municipal Emergency Vehicle Traffic Signal Preemption	Implement emergency vehicle signal preemption equipment on traffic signals and emergency vehicles.	Each stakeholder is responsible for its respective preemption and routing coordination	\$6,000/ intersection \$1,500/ vehicle	No	EM02
Municipal and County Traffic/Public Safety Video Sharing	Implement connections to share video from AHTD TMCs and Municipal or County TOCs with public safety dispatchers in the Region. Decisions regarding video access only versus video and control will need to be decided by each agency.	Each stakeholder is responsible for its respective implementing video sharing with appropriate dispatch centers	To Be Determined	No	ATMS08 EM01

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Table 10 – Emergency Management Project Recommendations (continued)

Program Area/Project	Description	Responsible Agency ¹	Opinion of Probable Cost ²	Funding Identified	Applicable Market Packages
Short-Term Emergency Management Projects: 5-Year Deployment Timeframe (continued)					
Jonesboro Regional Disaster Response and Recovery Plan	Develop a plan to include procedures for a wide-area alert system, disaster traveler information dissemination, and evacuation and re-entry management. In the areas where a local emergency plan exists that covers disaster response and recovery, the plan should be reviewed to determine how ITS can be used to facilitate disaster response and recovery.	JATS-MPO AHTD Arkansas State Police Cities and Counties JETS	To Be Determined	No	EM06 EM07 EM08 EM09 EM10
Jonesboro Regional Incident Management Coordination and Training	Develop Incident management coordination procedures and conduct training for police, fire, emergency services personnel on these procedures.	JATS-MPO AHTD Arkansas State Police Cities and Counties	Estimated to be in the magnitude of \$100,000	No	ATMS08 EM08 EM09
Jonesboro Regional Mutual Aid Agreements	Develop agreements and enhanced coordination for emergency management agencies to improve information sharing and dissemination. Common radio frequencies among agencies should be a goal.	JATS-MPO AHTD Cities and Counties Transit Operators School Districts Private Tow/Wrecker Private Ambulance	N/A	N/A	EM01 EM02 EM06 EM08 EM09

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Table 10 – Emergency Management Project Recommendations (continued)

Program Area/Project	Description	Responsible Agency ¹	Opinion of Probable Cost ²	Funding Identified	Applicable Market Packages
Mid-Term Emergency Management Projects: 10-Year Deployment Timeframe					
City of Jonesboro Infrastructure Security Monitoring	Add cameras to bridges and other infrastructure where security is a concern. Cost represents an average cost for the camera, camera pole or other installation structure, and communications.	City of Jonesboro	\$30,000/camera	No	ATMS01 EM05
Craighead County Infrastructure Security Monitoring	Add cameras to bridges and other infrastructure where security is a concern. Cost represents an average cost for the camera, camera pole or other installation structure, and communications.	Craighead County	\$30,000/camera	No	ATMS01 EM05

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²Design has not been undertaken; opinion of probable cost is for planning purposes.

Table 11 – Maintenance and Construction Management Project Recommendations

Program Area/Project	Description	Responsible Agency ¹	Opinion of Probable Cost ²	Funding Identified	Applicable Market Packages
Short-Term Maintenance and Construction Management Projects: 5-Year Deployment Timeframe					
AHTD Portable DMS	Procure additional portable dynamic message signs (DMS) for use during maintenance activities or for incident management.	AHTD	\$30,000/sign	No	ATMS06 ATMS08 MC08
AHTD Road Weather Data Collection	Add permanent road weather data collection stations for collecting weather and road condition information on state routes in areas prone to flooding, icing, or other severe conditions.	AHTD	\$20,000/site	No	MC03 MC04

Program Area/Project	Description	Responsible Agency ¹	Opinion of Probable Cost ²	Funding Identified	Applicable Market Packages
Mid-Term Maintenance and Construction Management Projects: 10-Year Deployment Timeframe					
AHTD Maintenance and Construction Vehicle Automated Vehicle Location	Implement automated vehicle location for AHTD maintenance and construction vehicles to enable maintenance dispatchers to track vehicle locations. Cost represents in-vehicle equipment as well as supporting software.	AHTD	\$5,000/vehicle	No	MC01
City of Jonesboro Road Weather Data Collection	Add permanent road weather data collection stations for collecting weather and road condition information on local routes in areas prone to flooding, icing, or other severe conditions.	City of Jonesboro	\$20,000/site	No	MC03 MC04

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Table 11 – Maintenance and Construction Management Project Recommendations (continued)

Program Area/Project	Description	Responsible Agency ¹	Opinion of Probable Cost ²	Funding Identified	Applicable Market Packages
Mid-Term Maintenance and Construction Management Projects: 10-Year Deployment Timeframe (continued)					
Craighead County Road Weather Data Collection	Add permanent road weather data collection stations for collecting weather and road condition information on local routes in areas prone to flooding, icing, or other severe conditions.	Craighead County	\$20,000/site	No	MC03 MC04
Long-Term Maintenance and Construction Management Projects: 20-Year Deployment Timeframe					
City of Jonesboro Maintenance and Construction Vehicle Automated Vehicle Location	Implement automated vehicle location for the City of Jonesboro Street Department vehicles to enable maintenance dispatchers to track vehicle locations. Cost represents in-vehicle equipment as well as supporting software.	City of Jonesboro	\$5,000/vehicle	No	MC01
Craighead County Maintenance and Construction Vehicle Automated Vehicle Location	Implement automated vehicle location for Craighead County maintenance and construction vehicles to enable maintenance dispatchers to track vehicle locations. Cost represents in-vehicle equipment as well as supporting software.	Craighead County	\$5,000/vehicle	No	MC01

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²Design has not been undertaken; opinion of probable cost is for planning purposes.

Table 12 – Public Transportation Management Project Recommendations

Program Area/Project	Description	Responsible Agency ¹	Opinion of Probable Cost ²	Funding Identified	Applicable Market Packages
Short-Term Public Transportation Management Projects: 5-Year Deployment Timeframe					
Jonesboro Economical Transportation System (JETS) Transit Electronic Fare Collection	Furnish JETS vehicles with electronic fare collection capabilities. This can be accomplished through modifications to the existing fare collection boxes.	JETS	\$5,000/vehicle	No	APTS04
JETS Vehicle Security Cameras	Implement video surveillance on JETS vehicles to improve patron and driver safety. Cameras would be for local recording only.	JETS	\$5,000/vehicle	No	APTS05
JETS Vehicle Automated Vehicle Location	Implement automated vehicle location on transit vehicles. Automated vehicle location can be added to the electronic fare collection system and would enable transit dispatch to track bus locations. Cost represents in-vehicle equipment as well as supporting software.	JETS	\$500/vehicle	No	APTS01
JETS Transfer Station Security Cameras	Install video surveillance equipment at the transit transfer stations for security monitoring. Cost represents an average cost per camera including communication at the camera site.	JETS	\$10,000/site	No	APTS05
Human Service Transit Automated Vehicle Location	Core technologies such as Geographic Information Systems (GIS), Text/Data Communications such as AVL and MDT, Computer Aided Dispatch and Scheduling (CADS), Maintenance Systems/Asset Management, Voice Communications and Traveler Information Website.	JETS, AHTD	\$500/vehicle	No	APTS01

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Table 12 – Public Transportation Management Project Recommendations (continued)

Program Area/Project	Description	Responsible Agency ¹	Opinion of Probable Cost ²	Funding Identified	Applicable Market Packages
Short-Term Public Transportation Management Projects: 5-Year Deployment Timeframe (continued)					
School Bus Automated Vehicle Location	Implement automated vehicle location on school buses. Automated vehicle location would enable the school bus dispatch to track bus locations. Such a system would be useful for day to day operations as well as during an emergency evacuation where school buses were used. Cost represents in-vehicle equipment as well as supporting software.	School Districts	\$500/vehicle	No	APTS01
Mid-Term Public Transportation Management Projects: 10-Year Deployment Timeframe					
JETS Traveler Information Website	Enhance the JETS Transit website to include up to date transit traveler information and the ability to pay for transit fares in advance.	JETS	To Be Determined	No	APTS03 APTS04 APTS08

¹Agency listed is responsible for implementation, operations, and maintenance unless otherwise noted.

²Design has not been undertaken; opinion of probable cost is for planning purposes.

Table 13 – Archived Data Management Project Recommendations

Program Area/Project	Description	Responsible Agency ¹	Opinion of Probable Cost ²	Funding Identified	Applicable Market Packages
Mid-Term Archived Data Management Projects: 10-Year Deployment Timeframe					
Jonesboro Area Transportation Study Metropolitan Planning Organization Data Warehouse	Establish a data warehouse to archive data from AHTD, cities, and transit agencies in the Region and store it in one location. Cost for this project represents an average cost for developing a data warehouse system. Cost could vary widely depending on the level of detail and functionality of the system.	JATS-MPO	\$50,000	No	AD2

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²Design has not been undertaken; opinion of probable cost is for planning purposes.





3.2 Projects of Statewide Significance

Projects of statewide significance are projects that the Jonesboro stakeholders felt were important to the region, but that would most likely be implemented on a statewide level rather than a regional level. The stakeholders recommended that these projects be considered for deployment statewide and expressed a willingness to support the projects as needed. Because the implementation schedule for these projects will be driven at the state level and not the regional level, a timeframe for implementation has not been included. Costs have also not been included as further study will be needed to determine the costs on a statewide level and the costs should not have an impact on funding for the Region.

Table 14 on the following page identifies the projects of statewide significance.

Table 14 – Projects of Statewide Significance

Program Area/Project	Description	Responsible Agency ¹	Funding Identified	Applicable Market Packages
AHTD Statewide Traffic Management Center (TMC)	Establish an AHTD Statewide TMC and communications with the AHTD District 10 TMC and the Jonesboro Traffic Operations Center.	AHTD Central Office Headquarters	No	ATMS01 ATMS06 ATMS07 ATMS08
Arkansas 511 Implementation	Implement 511 traveler information system website in the State of Arkansas.	AHTD Central Office Headquarters	No	ATIS02
DMS AMBER Alert Message Dissemination System	Develop a system to facilitate the dissemination of America's Missing: Broadcast Emergency Response (AMBER) Alert messages on DMS throughout the State of Arkansas. This system could be controlled from a Statewide TMC and would allow for AMBER Alert messages to be placed on DMS throughout the State quickly and consistently.	AHTD Central Office Headquarters AHTD District 10 Arkansas State Police	No	EM06
Statewide Transit Coordination System	Establish a transit information and reservation coordination system for the State of Arkansas. A statewide system will facilitate the transfer of patrons from one system to another.	To Be Determined	No	APTS02 APTS03 APTS07 APTS08
Statewide Automated Vehicle Location Transit Vehicle Program	On-board GPS; Vehicle tracking integrated with Operations Control Center dispatching and security systems, includes AVL-GPS and MDTs.	AHTD Central Office Headquarters	Yes	APTS01
CVISN Implementation	Implement the Commercial Vehicle Information Systems and Networks (CVISN) projects according to the statewide CVISN plan. Operational improvements implemented as part of CVISN will benefit the region.	AHTD Central Office Headquarters	Yes	CVO04 CVO06 CVO10 CVO11

¹Agency listed is responsible for implementation, operations, and maintenance unless otherwise noted.



4. MAINTAINING THE REGIONAL ITS DEPLOYMENT PLAN

Just as the ITS Architecture developed for the Jonesboro region addresses the region's vision for ITS implementation at the time the plan was developed, the ITS Deployment Plan addresses the projects that stakeholders agreed were necessary to implement in order to reach their ITS vision. As the region grows needs will change, and as technology progresses new ITS opportunities will arise. Shifts in regional focus, as well as changes in the National ITS Architecture, will necessitate that the Jonesboro Regional ITS Architecture be updated to remain a useful resource for the region. These same changes will create new project opportunities or perhaps make projects listed in this ITS Deployment Plan obsolete.

Stakeholders discussed the procedure for updating the Regional ITS Architecture and Deployment Plan That procedure is documented in the Jonesboro Regional ITS Architecture. It outlines a procedure for documenting architecture changes and a schedule to hold a formal review every four years in coordination with the TIP update cycle and a major revision every five years corresponding with the Long Range Plan Update. The project listings in the ITS Deployment Plan should be examined during these scheduled reviews and updated as appropriate to maintain consistency with the regional ITS vision. The Jonesboro Area Transportation Study (JATS) Metropolitan Planning Organization (MPO) will take the lead in maintaining the Regional ITS Architecture and Deployment Plan.