Missouri Department of Transportation
Springfield Regional ITS Architecture Update

Prepared for:
Project ID:
D8ITS-01

Missouri Department of Transportation
Traffic Division

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Executive Summary

Version 1.0
July 20, 2010

DISTRICT - 8

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Introduction

The primary purpose of the Springfield Region Intelligent Transportation System (ITS) Architecture project is to establish a strategic blueprint for ITS implementation in Southwestern Missouri. The architecture serves as a tool for the orderly and consistent deployment of ITS projects and programs throughout the Missouri Department of Transportation - District 8 region. The planning process aligns activities in local areas with those in other regions and at the State and National levels.

The architecture continued to be updated but currently highlight activities over the next five years. It will define roles and responsibilities of the various ITS Stakeholders throughout the Springfield Region, establish technical goals to avoid duplication of investments in infrastructure, provide the ability to share data among agencies, and bring District 8 into compliance with nationally established ITS Architecture standards.

Area Background Description

The Springfield Region encompasses a large section of Southwest Missouri, which includes twelve counties and 3,670 miles of highway. Springfield is the third largest city in the State of Missouri and is the county seat for Greene County, the fifth most populated county in the State. The current population for the Springfield Region is estimated at 586,000.

Figure 1: District 8 Springfield Region

According to the USDC Bureau of Census, the 2020 outlook for population expansion is one of large growth in the suburban counties around Springfield, including Christian, Stone, Taney, and Webster. From 2000-2007, the national annual population growth was 1%, but Springfield and the District 8 counties had a 2% annual growth rate. The City of Springfield's overall growth from 2000-2009 was 17.0%.

The Springfield metro workforce has grown more than 18% in the past 10 years and in 2004 accounted for more than one-third of Missouri's total job growth. Prior to the current economic downturn, the area's unemployment rate has been below 4.5% for over ten years. Forbes magazine has ranked Springfield, MO in the top *50 Best Places for Business and Careers* for the past four years.

As this area of Missouri is undergoing growth and population expansion, there is a greater need to develop strategies and programs that can address the stress placed on emergency, traffic, maintenance, and transit infrastructures and organizations. Developing a regional vision and integrating future ITS projects and programs for the region is a key reason for developing an architecture.

Defining a Regional ITS Architecture

Intelligent Transportation Systems involve the use of technology to promote the movement of traffic in an increasingly safe and efficient manner. The Springfield Region ITS Architecture is a framework for developing and integrating ITS technologies within the region. This framework, which is currently maintained electronically using Turbo software, defines the ITS services that must be provided. The regional architecture is responsive to the unique characteristics of the defined area. It not only defines the services that must be provided, but also defines stakeholders and their roles and responsibilities in providing these services within the region. These defined roles and responsibilities guide stakeholders as ITS technologies are implemented. As the role of ITS evolves within the region, so must the ITS Architecture. The ITS Architecture should be on a scale commensurate with ITS investment in the region.

Creating a Regional ITS Architecture

The Springfield Region ITS Architecture framework was developed with the assistance of Missouri Department of Transportation – District 8 and the City of Springfield. It involved researching local ITS deployments and contacting regional stakeholders to obtain information pertaining to future ITS deployment plans. An architecture committee was formed which met at least frequently to discuss and track the project's progress. The committee consisted of representatives from the Missouri Department of Transportation, and Springfield. The committee identified regional stakeholders that were surveyed in order to collect the information necessary to develop the Regional ITS Architecture.

ITS Architecture Goals

The primary goal for this work was to develop a ITS Architecture for the Springfield Region in accordance with Federal Highway Administration (FHWA) policies that serves as a resource for planning, programming, designing, and deploying ITS projects.

The ITS Architecture should be relatable to other planning documents, particularly the long-range or regional transportation plan. Concurrence between proposed ITS projects and the ITS Architecture ensures that additional integration opportunities are considered.

The ITS Architecture should serve as a tool to improve regional thinking on operations.

Stakeholders

The following summarizes the regional stakeholders that are considered partners in designing, developing, deploying, and operating ITS projects and programs in the Springfield region.

Branson City DPW	Missouri Department of Transportation - D8
Branson City Police Department	National Weather Service
Burlington Northern / Santa Fe Railroad	Nixa City DPW
Christian County 911	Ozark City DPW
Christian County Sheriff Department	Ozark Transportation Organization
City Utilities of Springfield - Transit	OzarksTraffic.info
CityView	Republic City DPW
County of Greene	Southwest Missouri Council of Governments
Greene County Highway Department	Springfield City DPW
Greene County Sherrif Department	Springfield City Fire Department
Lebanon City DPW	Springfield City Parking Management
Marshfield City DPW	Springfield City Police Department
Media - KRZK/KOMC Radio	Springfield Traffic Management Center
Media - KSPR TV	Springfield-Green County 911
Media - KTTS Radio	Springfield-Green County Emergency
Media - KY3 TV	Management
Media - Springfield Business Journal	St. Johns Regional EMS
Media - Springfield News-Leader Press	Stone County 911
Missouri State Highway Patrol	Taney County 911
Missouri State University	Western Taney County Fire District
Missouri Department of Transportation -	Willard City DPW
Central Office	

Time Horizon

ITS Architecture usually outlines a framework that is bound by a specific time horizon. Typically this horizon is shorter than the 20 years associated with a long-range transportation plan. The District 8 – Springfield Region ITS Architecture will use a five (5) year time horizon since ITS-related technologies change and improve rapidly.

Architecture Maintenance

The District 8- Springfield Region ITS Architecture and the associated Turbo Architecture files should be maintained on a regular basis. The completion of this planning effort is not the end of the architecture development; the architecture is flexible and meant to continue to adapt to reflect the ITS deployments and plans in the Springfield Region. Establishing a maintenance plan allows for critical updates to be made as planned projects progress and new projects and/or stakeholders are added in the process.

Turbo Architecture

Turbo Architecture Version 4.1 was the software was used to document all the information obtained for the project. This software, developed by FHWA to assist regions in developing Regional ITS Architectures, will allow District 8 to easily maintain the project in the future and update progress as projects are built.

Near the completion of the project, Turbo version 5.0 was released. As a result the consultant team has provided the files in both the 4.1 and 5.0 formats for the Department's use.