

Bi-State Regional ITS Architecture

Updated June 2022

Including comprehensive, cooperative, and continuing
transportation planning activities to be performed by:

Bi-State Regional Commission
Illinois Department of Transportation
Iowa Department of Transportation

and

Local Units of Government

with the assistance of:

U. S. DEPARTMENT OF TRANSPORTATION

(Federal Highway Administration and Federal Transit Administration)

STATE OF ILLINOIS
STATE OF IOWA

The preparation of this report was financed in part through federal funds provided by the U.S. Department of Transportation, Federal Transit Administration and Federal Highway Administration. The findings, opinions, and conclusions expressed in this report are not necessarily those of these agencies. In accordance with Federal Law and policy, Bi-State Regional Commission is prohibited from discriminating on the basis of race, color, national origin, age, disability, religion, sex, and familial status. (Not all prohibited bases apply to all programs.)

Abstract

TITLE: Bi-State Regional ITS Architecture

AUTHOR: Bi-State Regional Commission Staff

SUBJECT: A regional architecture reference that provides a common framework for planning, defining and integrating Intelligent Transportation Systems (ITS) of the Bi-State Regional Commission, and state and local agencies involved with the cooperative, comprehensive and continuing transportation planning process.

PLANNING AGENCY: Bi-State Regional Commission
Rock Island, Illinois

SOURCE OF COPIES: Bi-State Regional Commission
1504 Third Avenue Third Floor
Rock Island, Illinois 61201
(309)793-6300
www.bistateonline.org

ABSTRACT: The Bi-State Regional ITS Architecture describes the transportation planning activities related to planning and implementation of Intelligent Transportation Systems (ITS) of the Bi-State Region for a ten-year time horizon. The work related to this planning effort is carried out with full involvement and participation of local elected and appointed officials and other citizens.

Bi-State Regional Commission

Robert Gallagher, Chair

Dr. Brad Bark
Ken Beck
Kippy Breeden
Richard “Quijas” Brunk
Matthew Carter*
Duane Dawson
Jeff Deppe
Rick Dunn
Reggie Freeman
Ralph H. Heninger
Dave Holmes
Shawn Kendall
Brinson Kinzer
Jerry Lack
Nathaniel Lawrence
Michael Limberg
Nathan Mather
Mike Matson

John Maxwell
Marcy Mendenhall
Drue Mielke
Gary Moore
Randy Moore
Jazmin Newton
Robby Ortiz
Dylan Parker
Sangeetha Rayapati
Eileen Roethler
Scott Sauer
Rick Schloemer
Elizabeth Sherwin
William Stoermer
James Thompson
Mike Thoms
Mike Waldron
Tim Wise*

Colonel Todd Allison, Rock Island Arsenal Garrison – Ex-Officio Member

* *Alternates for Small Town Representatives*

Bi-State Regional Commission Staff

Denise Bulat, Executive Director

Gena McCullough, Assistant Executive Director/Planning Director

Jennifer Bizarri, Planner
Robert Burke, GIS Analyst
Christine Cary, MUNICES Project Manager
Carol Connors, Finance Manager
Sarah Grabowski, Desktop Publisher
Jill Henderson, Accounting Technician
Kassie Keeney-McGurk, GIS Technician/Analyst
Jolene Kruse, Accounting Technician

Brandon Melton, Principal Planner
Peggi Merchie, Accounting Technician
Ricky Newcomb, Planner
Jim Schmedding, Interactive Media Designer
Bryan Schmid, Principal Planner
Freddy Vasquez, Planner
Chong Qing Wu, Transportation Engineer

Transportation Policy Committee¹

Bob Gallagher, Mayor
City of Bettendorf, Iowa

Mike Matson, Mayor²
City of Davenport, Iowa

Robby Ortiz
Alderman
City of Davenport, Iowa

Rick Dunn
Alderman
City of Davenport, Iowa

Reggie Freeman, Mayor
City of East Moline, Illinois

Sangeetha Rayapati, Mayor
City of Moline, Illinois

Dennis Gerard, Mayor⁴
City of LeClaire, Iowa
(Alternate: Vacant)

Mike Thoms, Mayor³
City of Rock Island, Illinois

Michael Bartels, Mayor⁴
Village of Coal Valley, Illinois
(Alternate: Duane Dawson, Mayor
Village of Milan, Illinois)

Richard “Quijas” Brunk, Chair
Rock Island County Board

Ken Croken
Scott County Board of Supervisors

Masood Ahmad
Region 2, District 2 and 3 Engineer
Illinois Department of Transportation
(Alternate: Kris Tobin)

Berlinda Tyler-Jamison, Chair
Rock Island County Metropolitan
Mass Transit District

Mokhtee Ahmad (ex-officio, non-voting)
Administrator, Federal Transit
Administration – Region VII
(Alternate: Dan Nyugen)

Arlene Kocher (ex-officio, non-voting)
Division Administrator
Federal Highway Administration – Illinois
(Alternate: Betsy Tracy)

Timothy Marshall (ex-officio, non-voting)
Division Administrator
Federal Highway Administrator – Iowa
(Alternate: Darla Hugaboom)

Stuart Anderson, Director
Planning and Programming Division
Iowa Department of Transportation
(Alternate: Sam Shea,
District Transportation Planner)

¹ The Policy Committee voting is restricted to one vote for each voting member. Voting members may authorize an alternate, with the stipulation that alternates of elected officials also be an elected representative of the appropriate jurisdiction.

² Chair, Transportation Policy Committee

³ Vice-Chair, Transportation Policy Committee

⁴ The mayors of the cities of Buffalo, Eldridge, LeClaire, Princeton, and Riverdale in the Iowa portion and the cities and villages of Andalusia, Carbon Cliff, Coal Valley, Colona, Hampton, Milan, Oak Grove, Port Byron, Rapids City, and Silvis in the Illinois portion select a representative from their jurisdictions (Iowa and Illinois separately) to represent them on the Policy and Technical Committees.

Transportation Technical Committee¹

Brent Morlok, City Engineer²
City of Bettendorf, Iowa

Jeff Reiter, Economic Development Director
City of Bettendorf, Iowa

Brian Schadt, City Engineer
City of Davenport, Iowa

Gary Statz, Engineer
City of Davenport, Iowa

Bruce Berger, Community Planning & Economic
Development Director
City of Davenport, Iowa

Tim Kammler, City Engineer³
City of East Moline, Illinois

Doug Maxeiner, City Administrator
City of East Moline, Illinois

Tony Rupe, Interim City Administrator⁴
City of Eldridge, Iowa

Nevada Lemke, City Administrator⁴
City of Silvis, Illinois
(Alternate: Nick Gottwalt, Carbon Cliff, Illinois)

K.J. Whitley, Community Development Program
Manager
City of Moline, Illinois

Laura Klauer, City Engineer
City of Moline, Illinois

Miles Brainard, Director
Community Economic Development
City of Rock Island, Illinois

Mike Kane, City Engineer
City of Rock Island, Illinois

Scott Stephenson, County Engineer
Henry County, Illinois

John Massa, Public Works Engineer
Rock Island County, Illinois

Greg Thorpe, Director of Building & Zoning
Rock Island County, Illinois

Jeff Nelson, General Manager
Rock Island County Metropolitan
Mass Transit District

Chris Mathias, Planning & Development Director
Scott County, Iowa

Angie Kersten, County Engineer
Scott County, Iowa

Betsy Tracy
Federal Highway Administration
Illinois Division

Darla Hugaboom
Federal Highway Administration
Iowa Division

Dan Nyugen
Federal Transit Administration

Rob Bates
Illinois Department of Transportation

Sam Shea
Iowa Department of Transportation

¹ The Technical Committee system allows one vote per agency with delegated representative voting permitted in the absence of an agency's listed member. The City of Davenport has three votes. Transit managers for Bettendorf Transit and Davenport CitiBus are invited.

² Chair, Transportation Technical Committee.

³ Vice-Chair, Transportation Technical Committee.

⁴ The mayors of the cities of Buffalo, Eldridge, LeClaire, Princeton, and Riverdale in the Iowa portion and the cities and villages of Andalusia, Carbon Cliff, Coal Valley, Colona, Hampton, Milan, Oak Grove, Port Byron, Rapids City, and Silvis in the Illinois portion select a representative from their jurisdictions (Iowa and Illinois separately) to represent them on the Policy and Technical Committees.

NOTE: Additional membership may include advisory representatives from the Illinois and Iowa Departments of Transportation, planning and research engineers from the Illinois and Iowa Federal Highway Administration, and a community planning representative from the Federal Transit Administration Region VII.

Table of Contents

I	Introduction.....	I-1
	Defining ITS.....	I-1
	ITS Costs and Benefits.....	I-1
	Defining the Region.....	I-1
	Time Horizon.....	I-2
	Stakeholders.....	I-2
II	Purpose and Objectives.....	II-1
III	Stakeholder Identification.....	III-1
	Groups/Stakeholders.....	III-1
	Federal/State.....	III-1
	National/Regional.....	III-2
	County.....	III-2
	Local Quad Cities.....	III-2
	Local Other Cities (>3,000 population).....	III-2
	Other.....	III-3
	Planning Participation.....	III-3
IV	ITS Inventory.....	IV-1
	Needs and Services.....	IV-1
	Inventory of Elements and Entities.....	IV-2
	Operational Concepts.....	IV-6
	Functional Requirements.....	IV-13
V	Interfaces and Information Flows.....	V-1
VI	Implementation Strategy.....	VI-1
	Project Priorities and Sequencing.....	VI-1
	Agency Agreements.....	VI-1
	ITS Standards.....	VI-2
VII	Use and Maintenance.....	VII-1
	Integration into Planning Process.....	VII-1
	Plan Maintenance Process.....	VII-1

I INTRODUCTION

This document, the *Bi-State Region ITS Architecture Plan*, is the framework for ensuring institutional agreements and technical integration are in place prior to beginning a project or groups of projects that incorporate Intelligent Transportation Systems (ITS) technology in the implementation. Key planning issues in developing a regional architecture include determining the geography, the time horizon, and the stakeholders.

Defining ITS

An Intelligent Transportation System (ITS) is a term that applies to any transportation related project that uses computers, communication, and other advanced technologies to support transportation services. ITS may include telephone systems, such as 511, to disseminate traveler information; weigh-in-motion systems that measure truck weight without stopping; or dynamic message signs warning of an accident ahead along the roadway or alerting travelers of construction ahead.

The Federal Highway Administration (FHWA) promotes integration of planning and project definition by encouraging the use of the National ITS Architecture. This framework provides guidance and vocabulary for planning, defining, and integrating ITS projects. For funding purposes, the FHWA defines ITS as “any project that...fund the acquisition of technologies...that provides...one or more ITS User Service, as defined in the National ITS Architecture.” Originally under TEA-21 and continuing under MAP-21, all ITS projects funded through the Highway Trust Fund are required to be in conformance with the National ITS Architecture. FHWA issued a rule in

January 2001, and FTA issued a parallel policy to foster integration of Intelligent Transportation Systems and reiterates the conformance with the National ITS Architecture and standards.

ITS Costs and Benefits

Intelligent Transportation Systems have added cost when compared to traditional construction and maintenance projects. However, ITS draws on system engineering methodologies that provide advantages for integration and deployment of technology and systems. Basically, they make transportation operations better. Experience has shown the following results using this type of approach:

- Reduced design costs and development time
- Orderly and efficient expansion
- Improved communications between stakeholders
- Improved communications between systems
- Lower project risk
- Interoperability
- Interchangeability of equipment and devices

Defining the Region

The Bi-State Regional ITS Architecture will include the five-county region of Henry, Mercer, and Rock Island Counties, Illinois and Muscatine and Scott Counties, Iowa. The architecture for this geographic area will be tiered. The Quad Cities Metropolitan Planning Area, using the MPO planning boundary, will be the first tier and focus of the architecture. Corridors radiating from the metropolitan area to other municipalities in the region will be

examined in the second tier. A third tier will examine larger rural municipalities that may have the opportunity to initiate ITS technologies within corporate limits during the time horizon outlined in this architecture. Map 1 illustrates the Bi-State Region and the three tiers.

Time Horizon

Due to the rapidly changing field of technology, an ITS Architecture usually outlines projects and priorities in a shorter time frame than a twenty-year long range transportation plan. The Bi-State Regional ITS Architecture will use a ten-year time horizon to allow projects to develop and be carried forward to implementation.

Stakeholders

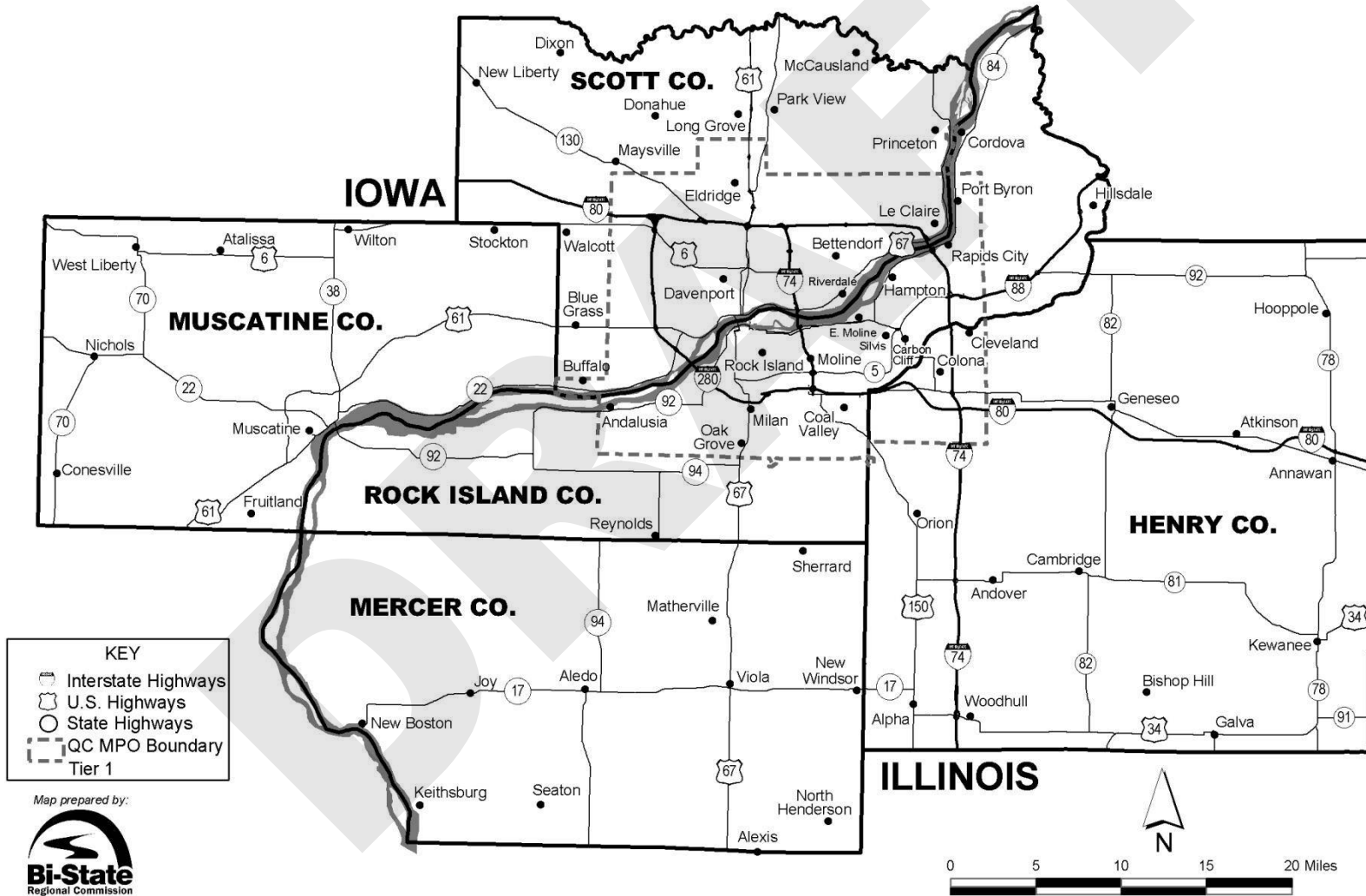
The purpose of developing a regional ITS architecture is to afford integration of technologies and coordination among entities and/or institutions. Deploying the latest transportation technologies in the region will require a variety of persons and groups to work cooperatively. Stakeholders include those persons or groups who are active in the development of ITS technologies or have an interest or need to complete a regional system. The region's

stakeholders include a wide variety of federal, state, and local partners; private organizations; media; and citizens. Details are to be discussed later in this document.

As technologies change and programs or projects are implemented, the list of stakeholders may increase or decrease based on ITS needs. The benefits of involving a variety of interests and multiple disciplines will afford improved communication, potential leveraging of investments or cost sharing, and a greater pool of information from which decisions and operations can be based.

Bi-State Regional Commission acts as the Metropolitan Planning Organization (MPO) for the Quad Cities Metropolitan Area. With its role in preparing both short and long range transportation plans, it was consistent to include ITS planning as part of the agencies' work activities. Bi-State Regional Commission staff serves as facilitator on behalf of the region's stakeholders to prepare a comprehensive, cooperative, and continuing ITS architecture for the Bi State Region.

MAP 1 BI-STATE REGION & QUAD CITY MPO



II PURPOSE AND OBJECTIVES

The purpose of the Bi-State Regional ITS Architecture is to illustrate and document the existence and integration of regional ITS systems to allow planning and deployment to occur in an organized and coordinated process. The architecture helps guide the planning, implementation, and integration of ITS devices deployed and managed by multiple types of agencies that provide transportation services within the region.

The architecture helps to accomplish the following objectives for ITS deployment in the Bi-State Region:

- Facilitate stakeholder coordination in ITS planning, deployment, and operations
- Reflect the current state of ITS planning and deployment within a region

- Provide high-level planning for enhancing regional transportation systems using current and future ITS technologies
- Conform with the Architecture Reference for Cooperative and Intelligent Transportation (ARC-IT) and Federal Highway Administration (FHWA) Final Rule 940 and Federal Transit Administration (FTA) Final Policy on ITS Architecture and Standards

Ultimately, the vision for Intelligent Transportation Systems in the Bi-State Region reflects those of the two-state area. ***The use of technology is envisioned to provide a safe, secure transportation network with seamless choices and services to the users, the traveling public, or commerce.***

III STAKEHOLDER IDENTIFICATION

The purpose of developing a regional ITS architecture is to integrate technologies and coordinate among entities and/or institutions. Deploying the latest transportation technologies in the region will require a variety of persons and groups to work cooperatively. Stakeholders include those persons or groups who are active in the development of ITS technologies or have an interest or need to complete a regional system. The region's stakeholders include a wide variety of federal, state, and local partners; private organizations; media; and citizens.

As technologies change or programs or projects are implemented, the list of stakeholders may increase or decrease based on ITS needs. The benefits of involving a variety of interests and multiple disciplines will improve communication, potential leveraging of investments or cost sharing, and allow a greater pool of information from which decisions and operations can be based.

The following groups and stakeholders were identified as key participants in the development of the Bi-State Regional ITS Architecture. As mentioned in the Introduction, this architecture takes a tiered approach. Through the ITS inventory, stakeholders will be stratified to identify those who have primary responsibility for development and/or implementation of the architecture and those who may become involved at a later date as ITS technologies are deployed in the region.

Groups/Stakeholders

Federal/State

- Federal Highway Administration (FHWA)

- Federal Transit Administration (FTA)
- U.S. Army Corps of Engineers
- U.S. Coast Guard
- Illinois Department of Transportation {Central (Springfield) Office}
- Illinois Department of Transportation {District 2 (Dixon) Office}
- Illinois Department of Transportation {Area Maintenance Office}
- Illinois Department of Transportation {Construction Project Office}
- Iowa Department of Transportation {Central (Ames) Office}
- Iowa Department of Transportation {District (Cedar Rapids) Office}
- Iowa Department of Transportation {District (Fairfield) Office}
- Iowa Department of Transportation {Area Construction Office}
- Iowa Department of Transportation {Area Maintenance Office}
- Iowa DPS- Governor's Traffic Safety Bureau
- Iowa State Patrol District 12
- Illinois State Police District 7

National/Regional

- Bi-State Regional Commission (MPO)
- Burlington Northern Santa Fe Railroad
- Illinois Trucking Association
- Iowa Trucking Association

- Iowa, Chicago & Eastern Railroad
- Iowa Interstate Railroad
- Medic Emergency Medical Service
- MetroLINK Transit
- Quad City International Airport
- River Bend Transit
- Rock Island and Mercer County Transit (RIM)
- Union Pacific Railroad

County

- Henry County (IL) Sheriff's Office
- Henry County (IL) Engineering Office
- Henry County (IL) Public Transit (Abilities Plus)
- Mercer County (IL) Sheriff's Office
- Mercer County (IL) Engineering Office -
- Muscatine County (IA) Sheriff's Office
- Muscatine County (IA) Engineering Office
- Rock Island County (IL) Sheriff's Office
- Rock Island County (IL) Engineering Office
- Scott County (IA) Sheriff's Office
- Scott County (IA) Engineering Office
- Scott County Emergency Communication Center

Local Quad Cities

- Bettendorf (IA) Community Development Department
- Bettendorf (IA) Police and Fire Departments
- Bettendorf (IA) Public Works Department
- Bettendorf (IA) Transit
- Carbon Cliff (IL) Municipality
- Coal Valley (IL) Municipality

- Coal Valley (IL) Police and Fire Departments
- Colona (IL) Municipality
- Colona (IL) Police and Fire Departments
- Davenport (IA) CitiBus Transit
- Davenport (IA) Municipal Airport
- Davenport (IA) Police and Fire Departments
- Davenport (IA) Public Works Department
- East Moline (IL) Police and Fire Departments
- East Moline (IL) Public Works Department
- Eldridge (IA) Municipality
- Eldridge (IA) Police and Fire Departments
- Milan (IL) Municipality
- Milan (IL) Police and Fire Departments
- Moline (IL) Police and Fire Departments
- Moline (IL) Public Works Department
- Rock Island (IL) Police and Fire Departments
- Rock Island (IL) Public Works Department
- Silvis (IL) Municipality
- Silvis (IL) Police and Fire Departments

Local Other Cities (>3,000 population)

- Aledo Municipality
- Aledo Police Department
- Geneseo Municipality
- Geneseo Police Department
- Kewanee Police Department
- Kewanee Public Works Department
- Muscatine (IA) Police Department

- Muscatine (IA) Public Works Department
- Muscatine (IA) Municipal Airport
- Muscatine (IA) Transit
- West Liberty (IA) Municipality
- West Liberty (IA) Police Department

Other

- Media
- Motorists/Public
- Tow Operators

Planning Participation

Because ITS often goes beyond the traditional transportation stakeholders, it is important to involve multiple disciplines (engineers, planners, law enforcement officers, emergency response officials, transit managers, telecommunications specialists, etc.) in the architecture development process. Input from these stakeholders, both public and private, add value to defining interfaces, integration needs, and the

overall vision of the Bi-State Region ITS Architecture. Within the first tier of the Quad Cities MPO, there have been a number of stakeholder ITS planning initiatives, including those related to the I-74 Iowa-Illinois Mississippi River Corridor Study, I-74 Incident Management Deployment Feasibility Study, and the I-74 Corridor ITS Architecture Final Report. Input from these planning processes included workshops and stakeholder interviews. Additionally, both the States of Iowa and Illinois have completed statewide ITS architectures where Bi-State Region input has been included. All of these efforts have laid a foundation for the basis of the Bi-State Region ITS Architecture. In developing the regional ITS architecture, the Bi-State Regional Commission staff have utilized the urban and Region 9 Transportation Technical Committees and invited the other ITS interests to the table to fulfill the broadest stakeholder representation.

IV ITS INVENTORY

An Intelligent Transportation System (ITS) is a term that applies to any transportation related project that uses computers, communication, and other advanced technologies to support transportation services. ITS may include telephone systems, such as 511 disseminating traveler information. Weigh-in-motion systems that measure truck weight without stopping are another example. Dynamic message signs warning of an accident ahead along the roadway or alerting travelers of construction ahead is ITS.

For integration and coordination of transportation systems and operations to occur, a regional ITS architecture must embody the ability to be flexible, adaptable, and based on accepted standards.

Needs and Services

To begin to develop a regional ITS architecture for implementing and integrating transportation technologies, identification of services and needs is necessary. Transportation services in the Bi-State Region are provided by a variety of entities. Different modes of transportation (motor vehicle, public transit, air service, river navigation, rail, etc.) are served by different providers. Each community and county in the region, for example, is responsible for arterial, collector, and local roads including the operational systems, such as traffic signals associated with them. The State Departments of Transportation (DOTs) are responsible for major highways and interstates, including their associated operational systems. DOTs are also responsible for motor vehicle registration, monitoring shipments of special materials, among a variety of other aspects of their roles and responsibilities. There are three public

transit systems within the Quad Cities MPO and regional transit providers in the Bi-State Region. Air service is provided by the Cities of Davenport and Muscatine for general commercial aviation and by the Metropolitan Airport Authority for the Quad Cities International Airport. The U.S. Coast Guard regulates the movement of river traffic, both freight and pleasure craft, on the Mississippi and Rock Rivers. There are several rail and freight companies owning and operating rail and distribution facilities within the Bi-State Region. Identifying these entities and their services is one component of the regional ITS inventory.

The following have been identified through the planning participation process as needs related to improving the Bi-State Region's transportation systems and operation:

- Incident Management – River Crossings
- Freeway/Arterial Management and Coordination – Integrated Corridors
- Transit Management and Coordination
- Surveillance and Video Sharing
- Integrated Systems via Institutional Relationships
- Work Zone Safety and Information Availability
- Operation and Maintenance Technology
- Advanced Traveler Information
- Emergency Responsiveness via Interagency Coordination
- Security and Disaster Response at Critical Facilities
- Intelligent Corridors

These needs will formulate the basis of the existing, planned, and future ITS systems in the Bi-State Region.

Inventory of Elements and Entities

The Intelligent Transportation System (ITS) inventory is a valuable tool for several reasons. It provides a baseline of existing and planned ITS projects and systems in the region. It identifies which agencies are currently deploying and operating ITS technologies and those who are planning to implement ITS projects or programs. The inventory also provides a framework for identifying needed elements or entity participation in the ITS implementation.

The National ITS Architecture was designed with a standardized language for inventorying components of an intelligent transportation system. It is important to understand this language to be able to talk uniformly about the planning components.

- **Element.** An element is the name used by stakeholders to describe a system or piece of a system.
- **System.** A system is defined as a collection of hardware, software, data, processes, and people that work together to achieve a common goal. Note the scope of a "system" depends on one's viewpoint. To a sign manufacturer, a dynamic message sign is a "system." To a state DOT, the same sign is only a component of a larger Freeway Management "System." In a regional ITS architecture, a Freeway Management System is a part of the overall surface transportation "system" for the region.
- **Entities or Subsystems.** Subsystems are individual pieces of the ITS defined by the National ITS Architecture. Subsystems are grouped into four classes: Centers, Field, Vehicles, and Travelers. Example subsystems are the Traffic Management Subsystem, the Vehicle Subsystem, and the Roadway Subsystem. These correspond to the physical world, respectively: traffic operations centers, automobiles, and roadside signal controllers. Due to this close correlation between the physical world and the subsystems, the subsystem interfaces are prime candidates for standardization.
- **Service Packages.** Service Packages represent slices of the physical architecture that address specific services like surface street control. A service package collects together several different subsystems, equipment packages, terminators, and architecture flows that provide the desired service. There are 97 total standardized services packages; 18 are to be deployed in the Bi-State Region. The following are a few examples of the service packages used in the development of the Bi-State Regional ITS Architecture.
 - ▶ **Traveler Information** Traveler information consists of data or facts to provide travelers regarding the current traffic condition. The condition could be a transit bus location or the incident information on the bridge. The Transit Travel package provides information to transit users at transit stops and on-board transit vehicles with ready access to transit information. The information services include transit stop annunciation, imminent arrival signs, and real-time transit schedule displays that are of general interest to transit users.
 - ▶ **Road Closure Management** This service package closes roadways to vehicular traffic when driving conditions are unsafe, maintenance must be performed, and other scenarios where access to the roadway must be prohibited. The service package includes automatic or remotely controlled gates or barriers that

control access to roadway segments including ramps and traffic lanes. Remote control systems allow the gates to be controlled from a central location or from a vehicle at the gate/barrier location, improving system efficiency and reducing personnel exposure to unsafe conditions during severe weather and other situations where roads must be closed. Surveillance systems allow operating personnel to visually verify the safe activation of the closure system and driver information systems (e.g., DMS) provide closure information to motorists in the vicinity of the closure. The equipment managed by this service package includes the control and monitoring systems, the field devices (e.g., gates, warning lights, DMS, CCTV cameras) at the closure location(s), and the information systems that notify other systems of a closure. This service package covers general road closure applications; specific closure systems that are used at railroad grade crossings, drawbridges, reversible lanes, etc. are covered by other ATMS service packages.

- ▶ Incident Management Incident Management is critical for any region because of the tremendous impacts of a crash or event incident on the free flow of the traffic. The goal to manage an incident is about providing the right information at the right time to motorists. The Incident Management service package manages both unexpected incidents and planned events, so that the impact to the transportation network and traveler safety is minimized. The service package includes incident

detection capabilities through roadside surveillance devices (e.g. CCTV) and through regional coordination with other traffic management, maintenance and construction management, and emergency management centers, as well as rail operations and event promoters.

- ▶ Maintenance and Construction Activity Coordination This service package supports the dissemination of maintenance and construction activity to centers that can utilize it as part of their operations, or to the Information Service Providers who can provide the information to travelers.
- ▶ Emergency Routing: Emergency routing of the responding vehicle is important in case of a major incident where the time is crucial. Emergency routing of all apparatus are key components to a major incident. This service package 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. Special priority or other specific emergency traffic control strategies can be coordinated to improve the safety and time-efficiency of a responding vehicle's travel on selected route(s). The Emergency Management Subsystem provides routing for the emergency fleet based on real-time conditions and has the option of requesting a route from the Traffic Management subsystem.
- ▶ Regional Traffic Management: This service package provides for the sharing of traffic information and control among traffic

management centers to support regional traffic management strategies. Regional traffic management strategies that are supported include inter-jurisdictional, real-time coordinated traffic signal control systems, and coordination between freeway operations and traffic signal control within a corridor. This service package advances the ATMS03-Traffic Signal Control and ATMS04-Traffic Metering service packages by adding the communications links and integrated control strategies that enable integrated, interjurisdictional traffic management. The nature of optimization and extent of information and control sharing is determined through working arrangements between jurisdictions. This package relies principally on roadside instrumentation supported by the Traffic Signal Control and Traffic Metering service packages and adds hardware, software, and fixed-point to fixed-point communications capabilities to implement traffic management strategies that are coordinated between allied traffic management centers. Several levels of coordination are supported from sharing of information through sharing of control between traffic management centers.

- ▶ **ITS Data Source:** ITS creates data that has a significant value to archive. The data could be used for the further analysis at another point in time. This data could also be shared with other entities from the architecture. This service package includes all the data collection and management capabilities provided by the ITS

Data Mart, and adds the functionality and interface definitions that allow collection of data from multiple agencies and data sources spanning across modal and jurisdictional boundaries. It performs the additional transformations and provides the additional meta data management features that are necessary, so that all this data can be managed in a single repository with consistent formats.

- ▶ **Arterial Management:** Arterial management system coordinates traffic along roadways, traffic signals, and various commuting information to travelers. Information dissemination to travelers is performed by different technologies such as DMS (Dynamic Message Signs) and HAR (Highway Advisory Radio). In order to manage arterial, the system needs to collect data from the roadway and analyze at a central location. Signal Coordination in various communities is a prime example of the arterial management.
- ▶ **Automatic Transit Vehicle Tracking:** Real time information by location of the transit vehicle is very important to maintain on-time schedule of transit routes. This service package monitors current transit vehicle location using an Automated Vehicle Location System. The location data may be used to determine real-time schedule adherence and update the transit system's schedule in real time. Vehicle position may be determined either by the vehicle (e.g., through GPS) and relayed to the infrastructure or may be determined directly by the communications infrastructure. A

two-way wireless communication link with the Transit Management Subsystem is used for relaying vehicle position and control measures. Fixed-route transit systems may also employ beacons along the route to enable position determination and facilitate communications with each vehicle at fixed intervals. The Transit Management Subsystem processes this information, updates the transit schedule, and makes real-time schedule information available to the Information Service Provider

The ITS inventory plays a key role in building an effective ITS architecture. ITS inventory primarily focuses on the existing devices such as CCTV, Cameras, Dynamic Message Signs, etc. Various communities are also planning to implement new ITS technologies. The purpose of the inventory is to identify existing and potential ITS components in the region to implement ITS technologies. Some of the communities were grouped in order to minimize details of the ITS Architecture, e.g. County Highway Departments for Scott and Rock Island County.

The Bi-State Regional ITS Architecture is primarily focused on the MPO area planning boundary at this time. There is a greater need for ITS technology in the metropolitan area where congestion is of concern. Bi-State Regional ITS Architecture consists of a tiered approach. Tier I would focus on the MPO planning area boundary. Tier II would focus on the Interstate outside the MPO planning area. Smaller communities, such as Muscatine and Geneseo, indicated no planned ITS technologies and will be considered Tier III in the future. Refer to the Appendices for the participating stakeholders (Stakeholder Report).

Table 1 represents the Bi-State Region ITS inventory using the associated National ITS Architecture subsystem and laminators. Refer to the Appendices for the Inventory Report with a detailed description of each of the stakeholders elements.

Operational Concepts

An operational concept is described in sufficient detail to understand the roles and responsibilities of the primary stakeholders and the systems they operate in the region. It is also referred to as the existing Concept of Operations for the Bi-State Region. An operational concept outlines how and who will communicate and work together. In other words, it outlines the roles and responsibilities of the stakeholders in the operation and implementation of the regional ITS architecture. The Concept of Operations matches the services and needs of the region. It also provides an understanding of how the services can be constructed into an operational system.

For example, the role relates to the transportation system function, which may be to respond to an incident. The responsibility relates to the delivery of a specific identified service, which may be to send an officer to the crash site. Further, there are currently pan/tilt/zoom (PTZ) cameras positioned on the I-74 Bridge spans over the Mississippi River. The images from these cameras are relayed to key agencies on both sides of the river in Illinois and Iowa. They are owned and maintained by the Iowa and Illinois Departments of Transportation. The camera images are provided to the City of Bettendorf Police Center and the City of Moline Police Center for incident response and verification. It is their role to monitor the imaging for traffic incidents, and their responsibility to respond to a crash.

Table 1 – Inventory Report

Element Name	Element Description	Stakeholder	Associated Physical Objects	Element Status
Bridge Security Monitoring System		Scott County Emergency Communication Center	ITS Roadway Equipment	Planned
City of Bettendorf Police Dispatch Terminal	Police agency uses '800-System' radio system for voice and data communication; permits compatibility with Scott County (IA) and Moline (IL) police agencies. Includes Fax/Email terminal to receive/disseminate information from/to local agencies and the virtual traffic management center.	City of Bettendorf - Police Department	Traffic Management Center	Existing
City of Bettendorf Public Works Terminal	The Bettendorf Public Works E-mail/Fax Terminal will be used to receive Traveler Information from the I-74 Bridge/Incident Management Warning System. In addition, they may, on occasion, send specific Traveler Information related to incidents on transportation systems under their jurisdiction.	City of Bettendorf - Public Works	Traffic Management Center	Existing
City of Bettendorf Roadside Equipment	Traffic data collection sensors (loop or video detection) at 17 intersections exist today; planned program at all signalized intersections. Existing video detection at local intersections; can be used to provide limited view of intersections; Maintains other (4) CCTV cameras on local street system for surveillance purposes. I-74 Bridge; Provides viewing coverage of I-74 bridge area (limited view) and State Street Interchange; used for incident verification in bridge area and general incident management during an incident. Planned - Provide viewing coverage of intersection area; will use for traffic operations purposes; color camera (with pan, tilt, zoom) on pole in intersection area. 26th Street, Middle Road, Roundabout, Spruce Hills Road, State Street	City of Bettendorf - Public Works	ITS Roadway Equipment	Planned

Element Name	Element Description	Stakeholder	Associated Physical Objects	Element Status
City of Davenport Police Dispatch Terminal	Police agency uses '800-System' radio system for voice and data communication. Includes Fax/Email server to receive/disseminate Information from/to local agencies and the virtual traffic management center.	City of Davenport - Police Department	Emergency Management Center	Existing
City of Davenport Public Works Terminal	The Davenport Public Works E-mail/Fax Terminal will be used to receive Traveler Information from the I-74 Bridge/Incident Management Warning System. In addition, they may, on occasion, send specific Traveler Information related to incidents on transportation systems under their jurisdiction.	City of Davenport - Public Works	Traffic Management Center	Existing
City of Davenport Roadside Equipment	Existing CCTV - Video detection at local intersections; can be used to provide limited view of intersections. Flood level systems - Located at key spots Road-Weather Information Systems (RWIS) - Air temp, wind speed, humidity, etc. obtained at several locations in the field and communicated back to Streets Dept. for maintenance purposes. Flood monitors at various locations throughout the City; Require manual verification in field to monitor.	City of Davenport - Public Works	ITS Roadway Equipment	Planned
City of Moline Fire Department		Moline 911 Dispatch center	Traffic Management Center	Existing
City of Moline Police Dispatch Terminal	Police agency uses '800-System' radio system for voice and data communication; permits compatibility with Bettendorf and Scott County (IA) police agencies. Includes Fax/Email server to receive/disseminate Information from/to local agencies and the virtual traffic management center.	City of Moline - Police Department	Traffic Management Center	Existing

Element Name	Element Description	Stakeholder	Associated Physical Objects	Element Status
I-74 Motorists	I-74 motorists will receive traveler information en-route via dynamic message signs or highway advisory radio, or pre-trip via personal computer.	Public	Basic Vehicle	Existing
I-74 Motorists	I-74 motorists will receive traveler information en-route via dynamic message signs or highway advisory radio, or pre-trip via personal computer.	Public	Other Vehicle OBEs	Existing
Illinois DOT - Portable DMS		IL DOT - Area Maintenance Office	ITS Roadway Equipment	Existing
Illinois DOT - Roadside DMS			ITS Communications Equipment	Existing
Illinois DOT - Roadside DMS			Transportation Information Center	Existing
Illinois DOT District Maintenance Office Terminal	The IL DOT District Maintenance Office E-mail/Fax Terminal will be used to receive Traveler Information from the I-74 Bridge/Incident Management Warning System. In addition, they may, on occasion, send specific Traveler Information related to incidents on transportation systems under their jurisdiction.	IL DOT - Area Maintenance Office	Maint and Constr Management Center	Planned
Iowa DOT - Automated Gates		IA DOT - District Office	ITS Roadway Equipment	Existing
Iowa DOT - DMS	Dynamic Message Signs	IA DOT - District Office	ITS Roadway Equipment	Planned
Iowa DOT - Portable DMS	Portable Dynamic Message Signs	IA DOT - Area Maintenance Office	ITS Roadway Equipment	Existing
Iowa DOT - QCDS	Quad Cities Detection System	IA DOT - District Office	ITS Roadway Equipment	Planned
Iowa DOT - QCLU	Quad Cities Lane Utilization	IA DOT - District Office	ITS Roadway Equipment	Planned
Iowa DOT - QCTV	Quad Cities Closed Circuit Television	IA DOT - District Office	ITS Roadway Equipment	Planned
Iowa DOT - RWIS	Road Weather Information System	IA DOT - District Office	ITS Roadway Equipment	Planned
Iowa DOT - VDS	Video Detection System	IA DOT - District Office	ITS Roadway Equipment	Planned

Element Name	Element Description	Stakeholder	Associated Physical Objects	Element Status
Iowa DOT District Maintenance Office Terminal	The IA DOT Area Maintenance Office E-mail/Fax Terminal will be used to receive Traveler Information from the I-74 Bridge/Incident Management Warning System. In addition, they may, on occasion, send specific Traveler Information related to incidents on transportation systems under their jurisdiction.	IL DOT - Area Maintenance Office	Maint and Constr Management Center	Existing
Iowa DOT District Office Terminal	The IA DOT District Office E-mail/Fax Terminal will be used to receive Traveler Information from the I-74 Bridge/Incident Management Warning System. In addition, they may, on occasion, send specific Traveler Information related to incidents on transportation systems under their jurisdiction.	IA DOT - District Office	Traffic Management Center	Existing
Iowa DOT State Traffic Management Center		Iowa DOT Headquarters	Traffic Management Center	Existing
Iowa State Patrol Dispatch Terminal	The IL State Patrol E-mail/Fax Terminal will be used to receive Traveler Information from the I-74 Bridge/Incident Management Warning System. In addition, they may, on occasion, send specific Traveler Information related to incidents on transportation systems under their jurisdiction.	Iowa State Patrol	Traffic Management Center	Existing
Media Terminal	The Media provides traffic reports, travel conditions, and other transportation-related news services to the traveling public through radio, TV, and other media.	Media	Media	Existing
Rock Island County Emergency Response Center		Rock Island 911 Dispatch Center	Emergency Management Center	Existing
Scott County Communications Center		Scott County 911 Dispatch Centers	Emergency Management Center	Existing

Element Name	Element Description	Stakeholder	Associated Physical Objects	Element Status
Surface Transportation Weather Service	Providers of value-added sector specific meteorological services. These providers utilize National Weather Service data and predictions, road condition information and local environmental data to provide weather observations and forecasts.	Private	Surface Transportation Weather Service	Existing
Weather Services	Weather Services include the National Weather Service as well as private disseminators of weather data.	Public	Weather Service System	Existing

DRAFT

Functional Requirements

Another aspect of ITS architecture development is to define functional requirements of the system. High-level functional requirements are identified for each regionally significant system that is included in the inventory of the architecture. “Regionally significant systems” are defined as those with interfaces that cross agency boundaries. (For example, functional requirements for a transit management center would be expected, but not for the systems on board the transit vehicle that primarily interface with the transit management center.) Functional requirements are a high-level description of how each piece of the ITS system will function or work. Based on the needs identified above, target transportation services or service packages will be examined for their functional requirements. Service packages may include several stakeholders and elements that work together to provide a service in the region. Examples of service packages from the National ITS Architecture include Incident Management System (ATMS8), Transit Vehicle Tracking (APTS1), Dynamic Route Guidance (ATIS4), and Weigh-In-Motion (CVO06).

In the Bi-State Region, the National ITS Architecture service packages or transportation services were reviewed by the stakeholders and selected based on the relevance of the service provided. Again, these services refer back to the needs identified in the region by the stakeholders. The service packages selected for implementation in the Bi-State Region are shown in Table 2. The

table identifies the National ITS Architecture service package codes, service package names, elements associated with the service packages, primary stakeholders responsible for implementation, and status of items (existing, planned, or future).

The MetroLINK Transit and River Bend Transit have AVL systems installed on all buses. MetroLINK Terminals can track the location of the buses and inform drivers if the buses are running late. The Service Package for Transit Vehicle Tracking was used to define ITS activities in the Regional ITS Architecture.

This service package monitors current transit vehicle locations using an Automated Vehicle Location System. The location data may be used to determine real-time schedule adherence and update the transit system’s schedule in real time. Vehicle position may be determined either by the vehicle (e.g., through GPS) and relayed to the infrastructure or may be determined directly by the communications infrastructure. A two-way wireless communication link with the Transit Management Subsystem is used for relaying vehicle position and control measures. Fixed-route transit systems may also employ beacons along the route to enable position determination and facilitate communications with each vehicle at fixed intervals. The Transit Management Subsystem processes this information, updates the transit schedule, and makes real-time schedule information available to the Information Service Provider.

Table 2 – Service Packages (Transportation Services Planned)

Service Package (MC05): Roadway Maintenance and Construction

This service package supports numerous services for scheduled and unscheduled maintenance and construction on a roadway system or right-of-way. Maintenance services include landscape maintenance, hazard removal (roadway debris, dead animals), routine maintenance activities (roadway cleaning, grass cutting), and repair and maintenance of both ITS and non-ITS equipment on the roadway (e.g., signs, traffic controllers, traffic detectors, dynamic message signs, traffic signals, CCTV, etc.). Environmental conditions information is also received from various weather sources to aid in scheduling maintenance and construction activities.

Included Elements
Bridge Security Monitoring System
City of Bettendorf Police Dispatch Terminal
City of Bettendorf Roadside Equipment
Illinois DOT District Maintenance Office Terminal
Iowa DOT - QCTV
Iowa DOT District Maintenance Office Terminal
Iowa DOT State Traffic Management Center

Service Package (MC08): Maintenance and Construction Activity Coordination

This service package supports the dissemination of maintenance and construction activity to centers that can utilize it as part of their operations, or to Transportation Information Centers who can provide the information to travelers. Center to center coordination of work plans supports adjustments to reduce disruption to regional transportation operations.

Included Elements
City of Bettendorf Police Dispatch Terminal
City of Bettendorf Public Works Terminal
City of Davenport Public Works Terminal
Illinois DOT District Maintenance Office Terminal
Iowa DOT District Maintenance Office Terminal
Iowa DOT District Office Terminal
Iowa DOT State Traffic Management Center
Iowa State Patrol Dispatch Terminal
Media Terminal

Service Package (PS02): Emergency Response

This service package supports emergency/incident response by personnel in the field. It includes emergency vehicle equipment used to provide response status as well as video or images from either the vehicle or from emergency personnel in the field. Wide area wireless communications between the Emergency Management Center, Emergency Personnel, and Emergency Vehicles supports a sharing of emergency response

information. The service package also includes tactical decision support, resource coordination, and communications integration for Incident Commands that are established by first responders at or near the incident scene to support local management of an incident, including the functions and interfaces commonly supported by a mobile command center.

Included Elements
City of Davenport Police Dispatch Terminal
City of Moline Police Dispatch Terminal

Service Package (PS10): Wide-Area Alert

This service package uses ITS driver and traveler information systems to alert the public in emergency situations such as child abductions, severe weather events, civil emergencies, and other situations that pose a threat to life and property. The alert includes information and instructions for transportation system operators and the traveling public, improving public safety, and enlisting the public's help in some scenarios. The ITS technologies will supplement and support other emergency and homeland security alert systems such as the Emergency Alert System (EAS). When an emergency situation is reported and verified and the terms and conditions for system activation are satisfied, a designated agency broadcasts emergency information to traffic agencies, transit agencies, information service providers, toll operators, and others that operate ITS systems. The ITS systems, in turn, provide the alert information to transportation system operators and the traveling public using ITS technologies such as dynamic message signs, highway advisory radios, in-vehicle displays, transit displays, 511 traveler information systems, and traveler information websites.

Included Elements
Illinois DOT - Portable DMS
Iowa DOT - DMS
Iowa DOT - Portable DMS
Iowa DOT State Traffic Management Center
Iowa State Patrol Dispatch Terminal

Service Package (TI01): Broadcast Traveler Information

This service package provides a digital broadcast service that disseminates traveler information to all equipped travelers within range. It collects traffic conditions, advisories, general public transportation, toll and parking information, incident information, roadway maintenance and construction information, air quality and weather information, and broadcasts the information to travelers using technologies such as FM subcarrier, satellite radio, cellular data broadcasts, and Internet streaming technologies. This service package also provides location-specific or situation-relevant information to travelers in vehicles using Dedicated Short Range Communications (DSRC) infrastructure supporting mobility service packages for connected vehicles. DSRC is used to deliver real-time traveler information including travel times, incident information, road conditions, and emergency traveler information to vehicles as they pass connected vehicle roadside

equipment along their route. This service package provides public information that is available to all equipped vehicles in the vicinity of the roadside equipment.

Included Elements
City of Bettendorf Police Dispatch Terminal
City of Bettendorf Public Works Terminal
City of Davenport Police Dispatch Terminal
City of Davenport Public Works Terminal
City of Moline Fire Department
City of Moline Police Dispatch Terminal
Illinois DOT District Maintenance Office Terminal
Iowa DOT District Maintenance Office Terminal
Iowa DOT District Office Terminal
Iowa DOT State Traffic Management Center
Iowa State Patrol Dispatch Terminal
Media Terminal
Rock Island County Emergency Response Center
Scott County Communications Center

Service Package (TM01): Infrastructure-Based Traffic Surveillance

This service package includes traffic detectors, other surveillance equipment, the supporting field equipment, and Center to Field communications to transmit the collected data back to the Traffic Management Center. The derived data can be used locally such as when traffic detectors are connected directly to a signal control system or remotely (e.g., when a CCTV system sends data back to the Traffic Management Center). The data generated by this service package enables traffic managers to monitor traffic and road conditions, identify and verify incidents, detect faults in indicator operations, and collect census data for traffic strategy development and long range planning. The collected data can also be analyzed and made available to users and the Traveler Information Center physical object.

Included Elements
Bridge Security Monitoring System
City of Bettendorf Police Dispatch Terminal
City of Bettendorf Roadside Equipment
City of Davenport Police Dispatch Terminal
City of Moline Police Dispatch Terminal
Iowa DOT - QCDS
Iowa DOT - QCTV
Iowa DOT - VDS
Iowa DOT District Office Terminal
Iowa DOT State Traffic Management Center

Service Package (TM03): Traffic Signal Control

This service package provides the central control and monitoring equipment, communication links, and the signal control equipment that support traffic control at signalized intersections. A range of traffic signal control systems is represented by this service package ranging from fixed-schedule control systems to fully traffic responsive systems that dynamically adjust control plans and strategies based on current traffic conditions and priority requests. This service package is generally an intra-jurisdictional package. Systems that achieve coordination across jurisdictions by using a common time base or other strategies that do not require real time coordination would also be represented by this package. Coordination of traffic signal systems using real-time communications is covered in the TM07-Regional Traffic Management service package. This service package is consistent with typical traffic signal control systems.

Included Elements
City of Bettendorf Police Dispatch Terminal
Iowa DOT District Office Terminal
Iowa DOT State Traffic Management Center

Service Package (TM05): Traffic Metering

This service package provides central monitoring and control, communications, and field equipment that support metering of traffic. It supports the complete range of metering strategies including ramp, interchange, and mainline metering. This package incorporates the instrumentation included in the TM01 service package (traffic sensors are used to measure traffic flow and queues) to support traffic monitoring, so responsive and adaptive metering strategies can be implemented. Also included is configurable field equipment to provide information to drivers approaching a meter, such as advance warning of the meter, its operational status (whether it is currently on or not, how many cars per green are allowed, etc.), lane usage at the meter (including a bypass lane for HOVs), and existing queue at the meter.

Included Elements
City of Bettendorf Police Dispatch Terminal
Illinois DOT - Portable DMS
Iowa DOT - Automated Gates
Iowa DOT - DMS
Iowa DOT - Portable DMS
Iowa DOT - QCLU
Iowa DOT District Office Terminal
Iowa DOT State Traffic Management Center

Service Package (TM06): Traffic Information Dissemination

This service package provides driver information using roadway equipment such as dynamic message signs or highway advisory radio. A wide range of information can be disseminated including traffic and road conditions, closure and detour information, travel restrictions, incident information, and emergency alerts and driver advisories. This package provides information to drivers at specific equipped locations on the road network. Careful placement of the roadway equipment provides the information at points in the network where the drivers have recourse and can tailor their routes to account for the new information. This package also covers the equipment and interfaces that provide traffic information from a traffic management center to the media (for instance via a direct tie-in between a traffic management center and radio or television station computer systems), Transit Management, Emergency Management, and Transportation Information Centers. A link to the Maintenance and Construction Management Center allows real-time information on road/bridge closures and restrictions due to maintenance and construction activities to be disseminated.

Included Elements
City of Bettendorf Police Dispatch Terminal
Illinois DOT - Portable DMS
Illinois DOT District Maintenance Office Terminal
Iowa DOT - DMS
Iowa DOT - Portable DMS
Iowa DOT District Maintenance Office Terminal
Iowa DOT District Office Terminal
Iowa DOT State Traffic Management Center
Media Terminal

Service Package (TM07): Regional Traffic Management

This service package provides for the sharing of information and control among traffic management centers to support regional traffic management strategies. Regional traffic management strategies that are supported include inter-jurisdictional, real-time coordinated traffic signal control systems, and coordination between freeway operations and traffic signal control within a corridor. This service package advances the TM03-Traffic Signal Control and TM05-Traffic Metering service packages by adding the communications links and integrated control strategies that enable integrated, interjurisdictional traffic management. The nature of optimization and extent of information and control sharing is determined through working arrangements between jurisdictions. This package relies principally on roadside instrumentation supported by the Traffic Signal Control and Traffic Metering service packages and adds hardware, software, and fixed-point communications capabilities to implement traffic management strategies that are coordinated between allied traffic management centers. Several levels of coordination are supported from sharing information through sharing device control between traffic management centers.

Included Elements
City of Bettendorf Police Dispatch Terminal
City of Bettendorf Public Works Terminal
City of Davenport Police Dispatch Terminal
City of Davenport Public Works Terminal
City of Moline Fire Department
City of Moline Police Dispatch Terminal
Iowa DOT District Office Terminal
Iowa DOT State Traffic Management Center

Service Package (TM08): Traffic Incident Management System

This service package manages both unexpected incidents and planned events, so that the impact to the transportation network and traveler safety is minimized. The service package includes incident detection capabilities through roadside surveillance devices (e.g. CCTV) and through regional coordination with other traffic management, maintenance and construction management, and emergency management centers, as well as rail operations and event promoters. Information from these diverse sources is collected and correlated by this service package to detect and verify incidents and implement an appropriate response. This service package supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel to confirmed incidents. The response may include traffic control strategy modifications or resource coordination between centers. Incident response also includes presentation of information to affected travelers using the Traffic Information Dissemination service package and dissemination of incident information to travelers through the Broadcast Traveler Information or Interactive Traveler Information service packages. The roadside equipment used to detect and verify incidents also allows the operator to monitor incident status as the response unfolds. The coordination with emergency management might be through a CAD system or through other communication with emergency personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel. This service package is closely related with the Public Safety service packages, which focus on services that support first responders. In particular, local management of the incident using an incident command system is covered by PS02.

Included Elements
Bridge Security Monitoring System
City of Bettendorf Police Dispatch Terminal
City of Bettendorf Roadside Equipment
City of Davenport Police Dispatch Terminal
City of Moline Fire Department
City of Moline Police Dispatch Terminal
Illinois DOT District Maintenance Office Terminal
Iowa DOT - Automated Gates
Iowa DOT - QCDS
Iowa DOT - QCLU
Iowa DOT - QCTV

Included Elements
Iowa DOT - VDS
Iowa DOT District Maintenance Office Terminal
Iowa DOT District Office Terminal
Iowa DOT State Traffic Management Center
Iowa State Patrol Dispatch Terminal

Service Package (TM19): Roadway Closure Management

This service package closes roadways to vehicular traffic when driving conditions are unsafe, maintenance must be performed, and other scenarios where access to the roadway must be prohibited. The service package includes automatic or remotely controlled gates or barriers that control access to roadway segments including ramps and traffic lanes. Remote control systems allow the gates to be controlled from a central location or from a vehicle at the gate/barrier location, improving system efficiency and reducing personnel exposure to unsafe conditions during severe weather and other situations where roads must be closed. Surveillance systems allow operating personnel to visually verify the safe activation of the closure system, and driver information systems (e.g., DMS) provide closure information to motorists in the vicinity of the closure. The equipment managed by this service package includes the control and monitoring systems, the field devices (e.g., gates, warning lights, DMS, CCTV cameras) at the closure location(s), and the information systems that notify other systems of a closure. This service package covers general road closure applications; specific closure systems that are used at railroad grade crossings, drawbridges, reversible lanes, etc. are covered by other Traffic Management service packages.

Included Elements
City of Bettendorf Police Dispatch Terminal
City of Davenport Police Dispatch Terminal
City of Moline Police Dispatch Terminal
Illinois DOT - Portable DMS
Iowa DOT - Automated Gates
Iowa DOT - DMS
Iowa DOT - Portable DMS
Iowa DOT District Maintenance Office Terminal
Iowa DOT State Traffic Management Center

Service Package (WX01): Weather Data Collection

This service package collects current road and weather conditions using data collected from environmental sensors deployed on and about the roadway. It also collects data from vehicles in the road network that can be used to directly measure or infer current environmental conditions. It leverages vehicle on-board systems that measure temperature, sense current weather conditions (rain and sun sensors), and also can monitor aspects of the vehicle operational status (e.g., use of headlights, wipers, and traction control system) to gather information about local environmental conditions. In addition, environmental sensor systems located on Maintenance and Construction

Vehicles are also potential data sources. The collected environmental data is used by the Weather Information Processing and Distribution service package to process the information and make decisions on operations. The collected environmental data may be aggregated, combined with data attributes, and sent to meteorological systems for data qualification and further data consolidation. The service package may also request and receive qualified data sets from meteorological systems.

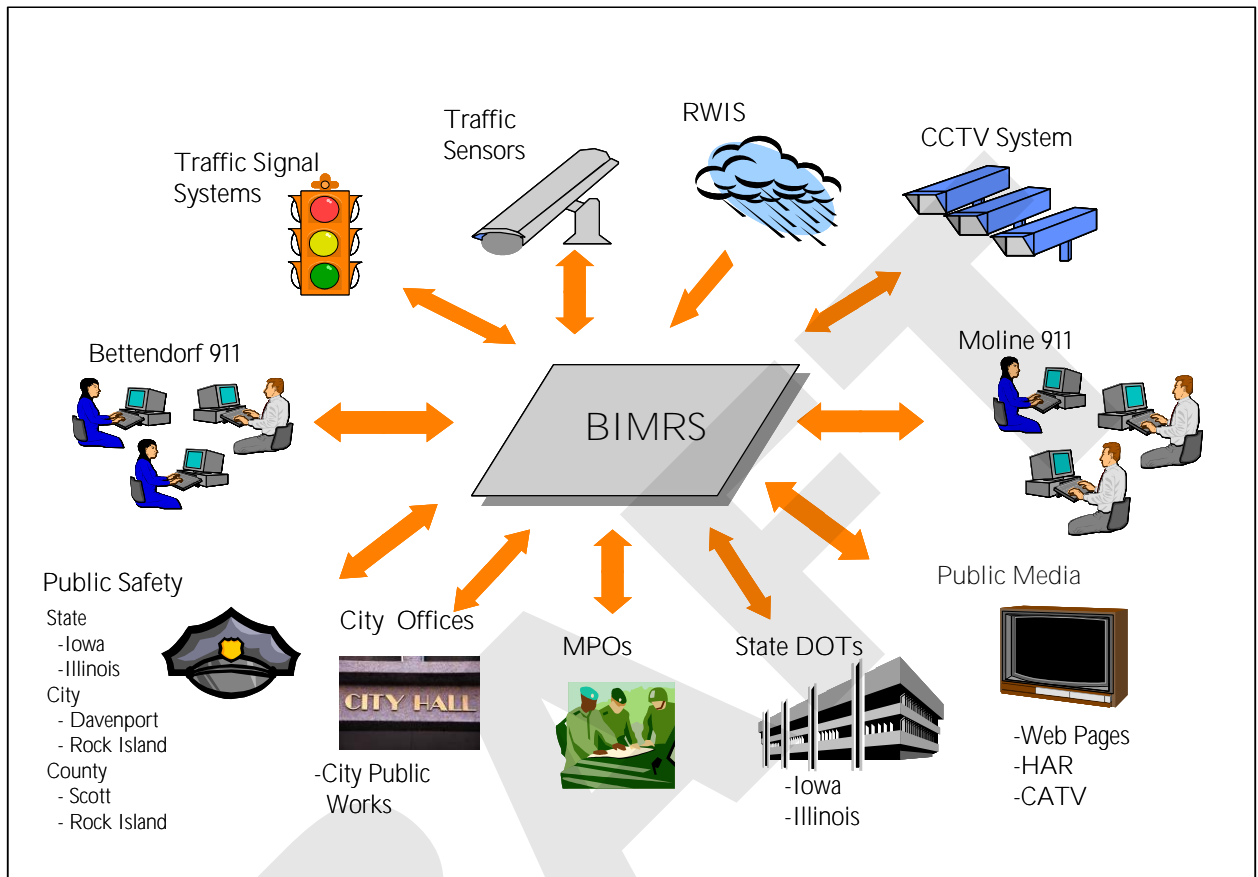
Included Elements
City of Davenport Roadside Equipment
Iowa DOT - RWIS
Iowa DOT District Maintenance Office Terminal
Iowa DOT State Traffic Management Center
Surface Transportation Weather Service
Weather Services

One example of the functional requirements from the region is the Bridge Incident Management Response System (BIMRS). The functional requirements of the BIMRS vary in different levels of detail. Diagram 1 shows the future concept on how the BIMRS should work.

The primary notification on the I-74 Bridge is via cell phone calls to the 911 dispatch center. If it has been determined that the emergency forces are needed, then the appropriate agencies are contacted. The local police on the scene determine the needs of additional equipment, then the Department of Transportation is contacted. The police may request a possible closure of the ramp or section of the roadway. To further minimize the delay, several DMS are activated by IA/IL DOT or Scott County Sheriff's Office or Illinois State Police.

The BIMRS interacts between many entities. The information from the BIMRS could be disseminated to other agencies.

Diagram 1
Bridge Incident Management Response System



Source: I-74 BIMRS Study, 2004

V INTERFACES AND INFORMATION FLOWS

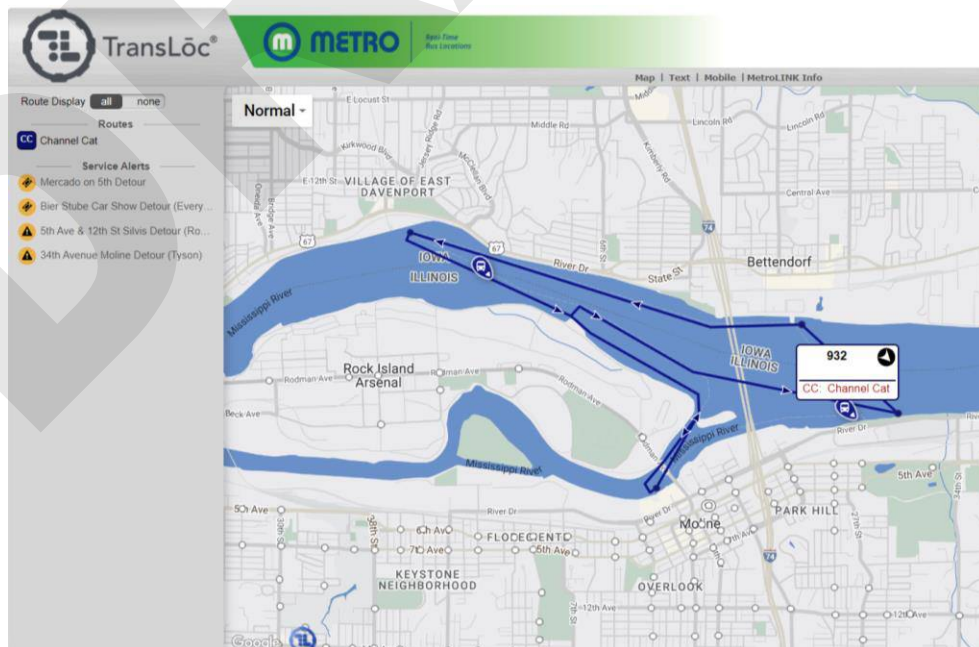
To carry out the roles and responsibilities outlined in the ITS inventory, the next component of the Bi-State Region ITS Architecture is to determine interconnections and information flows. Interconnections are identified and information flows are defined for each interface in this section of the architecture. If applicable, user defined flows are established in sufficient detail to understand the information exchanged. To manage the details of the Bi-State Region ITS Architecture, a database system known as RAD-IT was used. Version 9.0.14 was used to catalog the stakeholders, elements, and entities. The software also aids in visualizing the interconnections and information flows.

The Transit Travel Information Package provides transit users at transit stops and

on-board transit vehicles with ready access to transit information. The information services include transit stop announcement, imminent arrival signs, and real-time transit schedule displays that are of general interest to transit users. Systems that provide custom transit trip itineraries and other tailored transit information services are also represented by this service package.

The Transit Service Providers in the Quad Cities have deployed TransLoc bus information app to riders in the region to find nearest bus stops and track a specific bus, or the seasonal water taxi, aka the Channel Cat in real time. A website with a real-time transit system map is also available to the public. Diagram 2 is a snapshot of the online map.

Diagram 2
Real Time Travel Information Web Map



The interfaces and the information flow shows how each of the elements are connected to share information. (Refer to Diagrams 3 and 4.) The Transit Traveler information at the Centre station in Moline provides real-time transit schedule. This information could also be shared with the public by mobile devices in the future. The BIMRS (Bridge Incident Management System) would also be part of sharing traveler information. If there is an incident on the bridge, the BIMRS would share information to transit agencies.

The following are the elements in the architecture plan that would share traveler information in the regions.

- Metrolink Transit System
- Davenport CitiBus
- Bettendorf Transit System
- Quad Cities International Airport
- Personal Communication Devices
- Dispatch Terminals
- Kiosks

The interfaces and the information flows for various service packages within the Bi-State Region are outlined in the Appendices.

Diagram 3
Transit Travel Information Interfaces

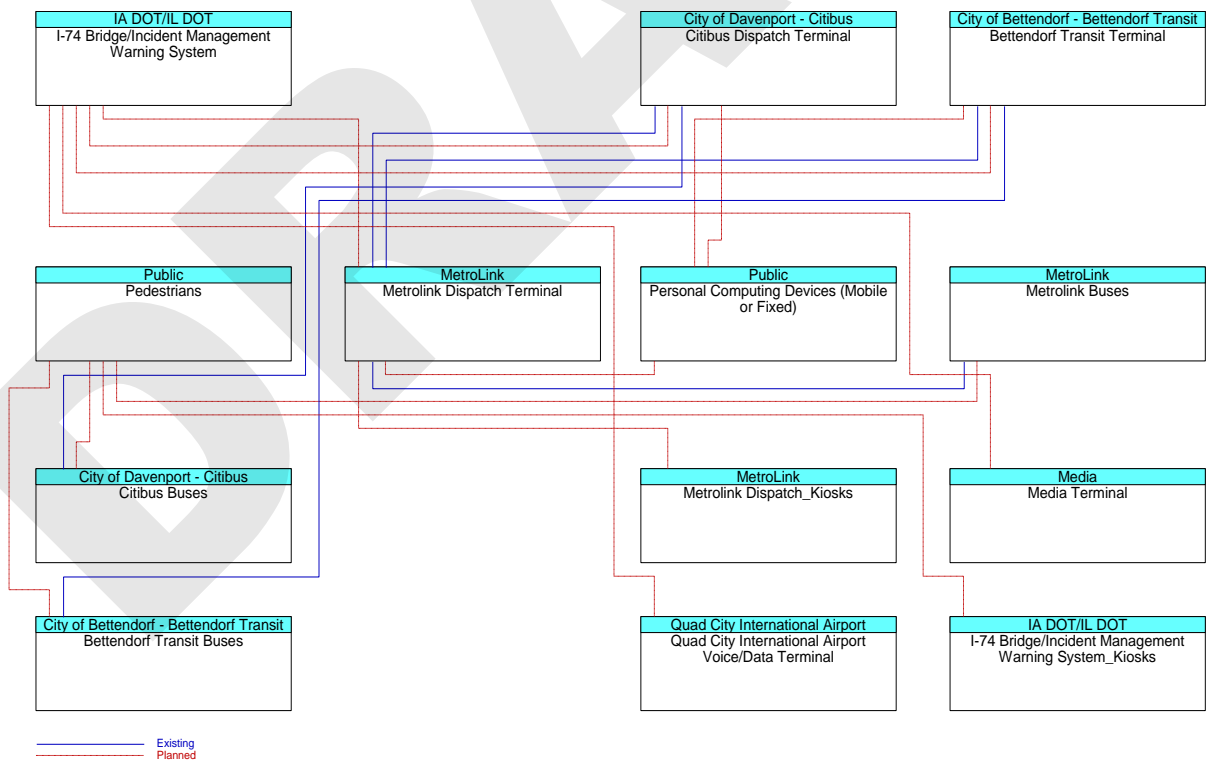
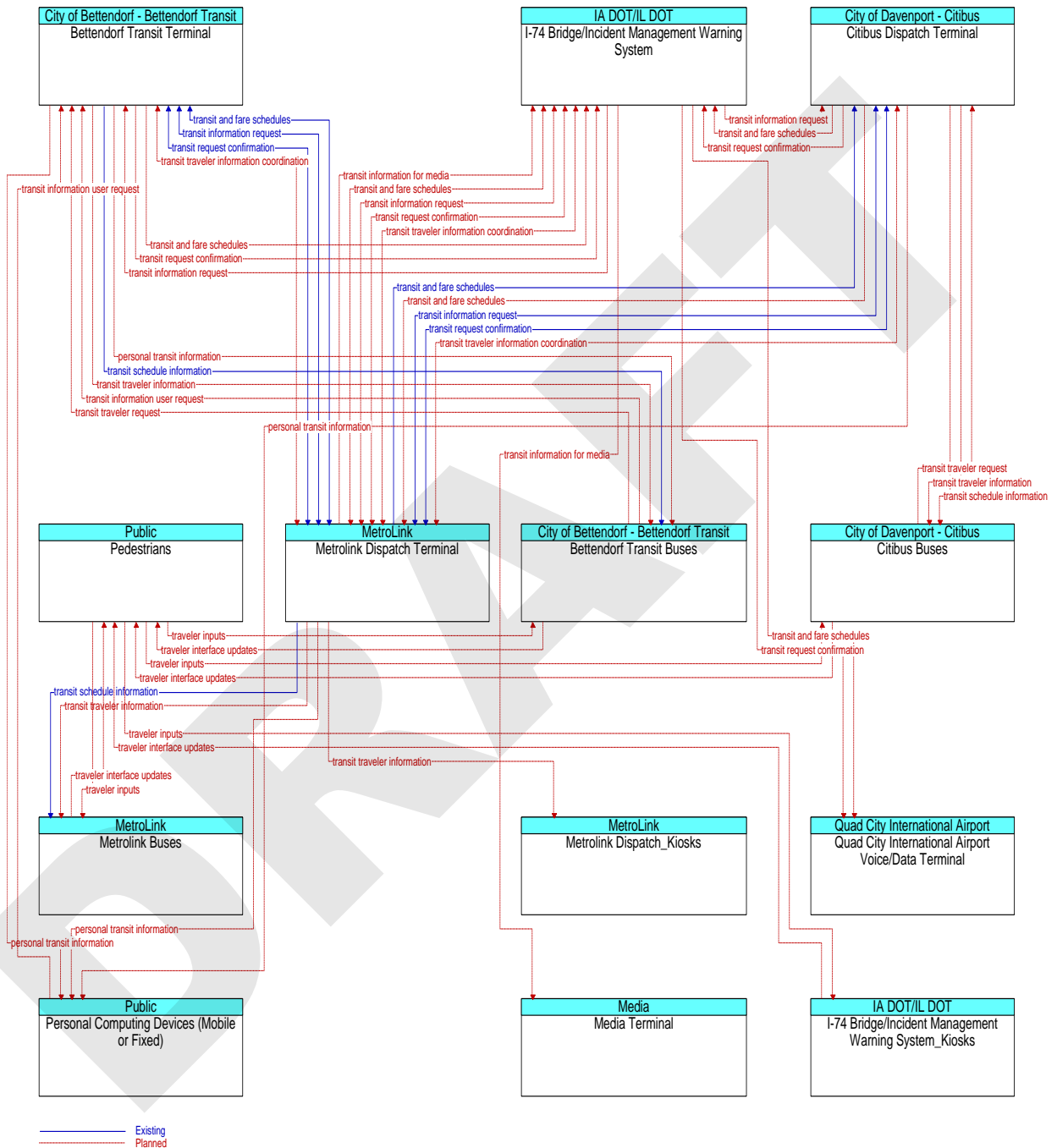


Diagram 4
Transit Travel Information Flows



VI IMPLEMENTATION STRATEGY

Project Priorities and Sequencing

The regional ITS architecture is implemented through many individual ITS projects that occur over time. The project priorities and sequencing defines the order in which projects will occur and/or how a project will progress. Table 2 provides projects by stakeholder, element, status, and estimated timeframe.

Table 2
Project Priorities

Stakeholder	Element	Status	Timeframe
Cities, Law Enforcement Agencies, DOTs – IA and ILL, Scott County Emergency Dispatch Center	I-74 ITS Project: Provides real time information for Incidents on I-74 bridge to alleviate traffic congestion on Interstates	<i>Existing</i>	
Cities of Davenport City of Bettendorf City of Muscatine	Network surveillance using red light running camera: Enforcement of red light running violations	<i>Existing:</i> City of Davenport City of Muscatine <i>Planning:</i> City of Bettendorf	10 years
DOTs – IA & IL	Traveler information to motorists via DMS and Portable Signs	<i>Existing</i>	
MetroLINK and Bettendorf Transit	Transit Bus schedule and travel time information to users. E.g. Kiosks, Display Boards, PDAs, Cellular Phones	<i>Existing</i>	
MetroLINK City of Moline	Signal Preemptions – priority to buses to preempt signal on various routes	<i>Planned</i>	10 years
MetroLINK Other Transit Agencies from State of Illinois	Universal Smart Card -	<i>Planned</i>	5 years
City of Bettendorf, Iowa DOT	Changeable Message Signs on US 67	<i>Planned</i>	10 years
Bettendorf Transit	AVL system: Track vehicle location to monitor schedule	<i>Planned</i>	10 Years

Agency Agreements

Agreements among different stakeholders are needed to achieve integration of the regional ITS architecture. Because the regional ITS architecture realizes there are technical and institutional connections, it is important to document the roles and responsibilities of these aspects. Interagency agreements may detail very specific items, such as how images from closed-circuit television cameras will be used, to broader concerns of shared staffing at a transportation management center. The following

outlines a listing of both existing and planned agreements that are required for operation of an intelligent transportation system.

Currently, there are formal agreements in place in the Bi-State Region with regard to ITS. As the new ITS technologies are implemented, various agreements are required to outline responsibilities on each agency.

Table 3 provides the list of existing and planned agreements. It is also important that agencies should review the roles and responsibility of each agency in the form of agreements as the new ITS technologies are implemented in the region.

Table 3
Existing and Planned Agreements

Agencies	Agreement descriptions	Status
MetroLINK Financial Institute	Agreement for smart cards in Transit Systems: This agreement would define roles and responsibilities of the transit agencies and financial institution to share information e.g. revenue from smart cards etc.	Future
Scott County, Illinois State Police and IA/IL DOT	Access Dynamic Message Signs to activate: This agreement defines limited access to all five dynamic message signs.	Existing
Iowa DOT and Illinois DOT	Ownership and Maintenance agreement for Dynamic Message Signs.	Existing
Cities and Transit System	Signal Preemption: Allow MetroLINK to activate signal preemption.	Future
City of Davenport and Vendor	Agreement for Red Light Running Cameras.	Existing
DOTs, Cities, Law Enforcement Agencies, Media	Shared Video Monitoring: This agreement would enable agencies to share video for an incident on freeways. There may be a separate agreement for media to access video only for incidents.	Future
Cities and Law Enforcement Agencies, Fire Departments	Mutual Aid Agreement: Mutual Aid agreement currently exists to share resources. Formal mutual aid agreement would become more important as agencies integrate new ITS technologies.	Existing

ITS Standards

ITS standards facilitate the integration and interoperability of the proposed system by providing a set of technical specifications that are to be used consistently as rules, guidelines, or definitions of characteristics for the exchange of information. The respective ITS standards for the regional architecture are identified in the Appendices for each information flow.

VII USE AND MAINTENANCE

The Bi-State Regional ITS Architecture has been developed to ensure comprehensive, cooperative, and continuing transportation planning activities related to the implementation of intelligent transportation systems or ITS. It is one component of the transportation planning process. As technologies develop and evolve, so does this plan. This section outlines how the regional ITS Architecture is used and maintained.

Integration into Planning Process

The purpose of the Bi-State Regional ITS Architecture is to outline both technical and institutional linkages for the integration of transportation technologies into the multi-modal transportation system. Ultimately, use of ITS will reinforce the region's vision of providing a safe, secure transportation network with seamless choices and services to the users, the traveling public, or meeting the needs of commerce.

The Quad Cities MPO Long Range Transportation Plan discusses ITS at the highest level. Subsequently, the Bi-State Region ITS Architecture provides a more complete definition of project requirements and enables the integration of transportation technologies into network improvements. The regional ITS document is viewed as a conceptual plan offering a framework for greater detail as the project moves toward implementation. This is similar to identification of roadway projects in the Long Range Transportation Plan, which require detailed engineering analysis prior to construction. This ITS Architecture operates similarly where

project level architectures will be developed to refine details and specifications conceived in this document. The project architecture will provide a concise project description and identify dependence and relationships to other projects and activities. Based on this analysis, the project scope will be refined to avoid duplication and show project sequencing.

As projects develop from the regional ITS Architecture, potential funding sources are identified and programmed for projects. ITS may be a component in the evaluation and prioritization of projects vying for funds. If federal funding is used, the project moves into the Transportation Improvement Program, then proceeds toward implementation. The project will be identified in the Transportation Improvement Program under plan justification as a documented part of the Bi-State Region ITS Architecture.

Plan Maintenance Process

ITS stakeholders in the Bi-State region will be responsible for periodic updates of the regional ITS architecture. The initial Bi-State Region ITS Architecture divided the Bi-State Region into tiers. The current ITS inventory determined no existing or planned ITS beyond the MPO planning boundary. Under this determination, the urban Transportation Policy Committee approved this plan. As ITS evolves in the Bi-State Region, plan approval may need to be taken to the Bi-State Regional Commission board for approval as technologies begin to be planned and deployed beyond the metropolitan area.

Bi-State Regional Commission as the MPO will be responsible for maintaining the Bi-State Regional ITS Architecture document. The plan is expected to be updated prior to the Long Range Transportation Plan update every five years. Between formal updates, new ITS project descriptions and proposed updates to the regional ITS architecture will be inserted into an appendix of this document. These incremental updates will be made available to ITS stakeholders in the Bi-State Region to keep them informed about what ITS projects are being planned and deployed. If all stakeholders are aware of projects that are underway, integration opportunities can be identified.

The administrative procedures for initiating interim changes to the Bi-State Regional ITS Architecture will be classified as either an amendment or an administrative revision. An amendment is the addition, deletion, or significant modification of an ITS stakeholder, ITS project, or ITS project sequencing. An amendment relates to a new ITS project that is expected to use federal transportation dollars. An administrative revision is a minor modification of an existing ITS stakeholder, ITS project, or ITS project sequencing or simple correction. In either case, the requested change will be submitted in writing to Bi-State Regional Commission (MPO). An amendment will be published and advertised consistent with the public involvement plan for the MPO.

DRAFT

DRAFT

Appendices

APPENDIX 1: INVENTORY TO SERVICE PACKAGE COMPARISON

Service Package	Physical Object Kind	Physical Object Name	Element Name	Issue
(MC05) Roadway Maintenance and Construction	Subsystem	Field Maintenance Equipment		No element is defined for the ProjectProject(s)
(MC05) Roadway Maintenance and Construction	Subsystem	ITS Roadway Equipment	City of Davenport Roadside Equipment	The element is not selected in the Service Package
(MC05) Roadway Maintenance and Construction	Subsystem	ITS Roadway Equipment	Illinois DOT - Portable DMS	The element is not selected in the Service Package
(MC05) Roadway Maintenance and Construction	Subsystem	ITS Roadway Equipment	Iowa DOT - Automated Gates	The element is not selected in the Service Package
(MC05) Roadway Maintenance and Construction	Subsystem	ITS Roadway Equipment	Iowa DOT - DMS	The element is not selected in the Service Package
(MC05) Roadway Maintenance and Construction	Subsystem	ITS Roadway Equipment	Iowa DOT - Portable DMS	The element is not selected in the Service Package
(MC05) Roadway Maintenance and Construction	Subsystem	ITS Roadway Equipment	Iowa DOT - QCDS	The element is not selected in the Service Package
(MC05) Roadway Maintenance and Construction	Subsystem	ITS Roadway Equipment	Iowa DOT - QCLU	The element is not selected in the Service Package
(MC05) Roadway Maintenance and Construction	Subsystem	ITS Roadway Equipment	Iowa DOT - RWIS	The element is not selected in the Service Package
(MC05) Roadway Maintenance and Construction	Subsystem	ITS Roadway Equipment	Iowa DOT - VDS	The element is not selected in the Service Package
(MC05) Roadway Maintenance and Construction	Subsystem	Maint and Constr Vehicle OBE		No element is defined for the ProjectProject(s)
(MC05) Roadway Maintenance and Construction	Subsystem	Traffic Management Center	City of Bettendorf Public Works Terminal	The element is not selected in the Service Package
(MC05) Roadway Maintenance and Construction	Subsystem	Traffic Management Center	City of Davenport Police Dispatch Terminal	The element is not selected in the Service Package
(MC05) Roadway Maintenance and Construction	Subsystem	Traffic Management Center	City of Davenport Public Works Terminal	The element is not selected in the Service Package
(MC05) Roadway Maintenance and Construction	Subsystem	Traffic Management Center	City of Moline Fire Department	The element is not selected in the Service Package
(MC05) Roadway Maintenance and Construction	Subsystem	Traffic Management Center	City of Moline Police Dispatch Terminal	The element is not selected in the Service Package
(MC05) Roadway Maintenance and Construction	Subsystem	Traffic Management Center	Iowa DOT District Office Terminal	The element is not selected in the Service Package
(MC05) Roadway Maintenance and Construction	Subsystem	Traffic Management Center	Iowa State Patrol Dispatch Terminal	The element is not selected in the Service Package
(MC05) Roadway Maintenance and Construction	Terminator	Asset Management System		No element is defined for the Project(s)

Service Package	Physical Object Kind	Physical Object Name	Element Name	Issue
(MC05) Roadway Maintenance and Construction	Terminator	Basic Maint and Constr Vehicle		No element is defined for the Project(s)
(MC05) Roadway Maintenance and Construction	Terminator	Maint and Constr Administrative Systems		No element is defined for the Project(s)
(MC05) Roadway Maintenance and Construction	Terminator	Maint and Constr Center Personnel		No element is defined for the Project(s)
(MC05) Roadway Maintenance and Construction	Terminator	Maint and Constr Field Personnel		No element is defined for the Project(s)
(MC05) Roadway Maintenance and Construction	Terminator	Maint and Constr Vehicle Operator		No element is defined for the Project(s)
(MC05) Roadway Maintenance and Construction	Terminator	Storage Facility Data Acquisition System		No element is defined for the Project(s)
(MC05) Roadway Maintenance and Construction	Terminator	Surface Transportation Weather Service	Surface Transportation Weather Service	The element is not selected in the Service Package
(MC05) Roadway Maintenance and Construction	Terminator	Weather Service System	Weather Services	The element is not selected in the Service Package
(MC08) Maintenance and Construction Activity Coordination	Subsystem	Commercial Vehicle Administration Center		No element is defined for the Project(s)
(MC08) Maintenance and Construction Activity Coordination	Subsystem	Emergency Management Center	City of Davenport Police Dispatch Terminal	The element is not selected in the Service Package
(MC08) Maintenance and Construction Activity Coordination	Subsystem	Emergency Management Center	City of Moline Police Dispatch Terminal	The element is not selected in the Service Package
(MC08) Maintenance and Construction Activity Coordination	Subsystem	Emergency Management Center	Rock Island County Emergency Response Center	The element is not selected in the Service Package
(MC08) Maintenance and Construction Activity Coordination	Subsystem	Emergency Management Center	Scott County Communications Center	The element is not selected in the Service Package
(MC08) Maintenance and Construction Activity Coordination	Subsystem	Traffic Management Center	City of Davenport Police Dispatch Terminal	The element is not selected in the Service Package
(MC08) Maintenance and Construction Activity Coordination	Subsystem	Traffic Management Center	City of Moline Fire Department	The element is not selected in the Service Package
(MC08) Maintenance and Construction Activity Coordination	Subsystem	Traffic Management Center	City of Moline Police Dispatch Terminal	The element is not selected in the Service Package
(MC08) Maintenance and Construction Activity Coordination	Subsystem	Transit Management Center		No element is defined for the Project(s)
(MC08) Maintenance and Construction Activity Coordination	Subsystem	Transportation Information Center	Illinois DOT - Roadside DMS	The element is not selected in the Service Package
(MC08) Maintenance and Construction Activity Coordination	Terminator	Alternate Mode Transportation Center		No element is defined for the Project(s)
(MC08) Maintenance and Construction Activity Coordination	Terminator	Asset Management System		No element is defined for the Project(s)

Service Package	Physical Object Kind	Physical Object Name	Element Name	Issue
(MC08) Maintenance and Construction Activity Coordination	Terminator	Maint and Constr Administrative Systems		No element is defined for the Project(s)
(MC08) Maintenance and Construction Activity Coordination	Terminator	Maint and Constr Center Personnel		No element is defined for the Project(s)
(MC08) Maintenance and Construction Activity Coordination	Terminator	Other Maint and Constr Mgmt Centers		No element is defined for the Project(s)
(MC08) Maintenance and Construction Activity Coordination	Terminator	Rail Operations Center		No element is defined for the Project(s)
(PS02) Emergency Response	Subsystem	Emergency Management Center	Rock Island County Emergency Response Center	The element is not selected in the Service Package
(PS02) Emergency Response	Subsystem	Emergency Management Center	Scott County Communications Center	The element is not selected in the Service Package
(PS02) Emergency Response	Subsystem	Emergency Vehicle OBE		No element is defined for the Project(s)
(PS02) Emergency Response	Subsystem	Personnel Device		No element is defined for the Project(s)
(PS02) Emergency Response	Terminator	Emergency Personnel		No element is defined for the Project(s)
(PS02) Emergency Response	Terminator	Emergency System Operator		No element is defined for the Project(s)
(PS02) Emergency Response	Terminator	Other Emergency Management Centers		No element is defined for the Project(s)
(PS02) Emergency Response	Terminator	Other EV OBES		No element is defined for the Project(s)
(PS10) Wide-Area Alert	Subsystem	Emergency Management Center	City of Davenport Police Dispatch Terminal	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	Emergency Management Center	City of Moline Police Dispatch Terminal	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	Emergency Management Center	Rock Island County Emergency Response Center	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	Emergency Management Center	Scott County Communications Center	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	ITS Roadway Equipment	Bridge Security Monitoring System	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	ITS Roadway Equipment	City of Bettendorf Roadside Equipment	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	ITS Roadway Equipment	City of Davenport Roadside Equipment	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	ITS Roadway Equipment	Iowa DOT - Automated Gates	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	ITS Roadway Equipment	Iowa DOT - QCDS	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	ITS Roadway Equipment	Iowa DOT - QCLU	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	ITS Roadway Equipment	Iowa DOT - QCTV	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	ITS Roadway Equipment	Iowa DOT - RWIS	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	ITS Roadway Equipment	Iowa DOT - VDS	The element is not selected in the Service Package

Service Package	Physical Object Kind	Physical Object Name	Element Name	Issue
(PS10) Wide-Area Alert	Subsystem	Maint and Constr Management Center	Illinois DOT District Maintenance Office Terminal	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	Maint and Constr Management Center	Iowa DOT District Maintenance Office Terminal	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	Personal Information Device		No element is defined for the Project(s)
(PS10) Wide-Area Alert	Subsystem	Traffic Management Center	City of Bettendorf Police Dispatch Terminal	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	Traffic Management Center	City of Bettendorf Public Works Terminal	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	Traffic Management Center	City of Davenport Police Dispatch Terminal	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	Traffic Management Center	City of Davenport Public Works Terminal	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	Traffic Management Center	City of Moline Fire Department	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	Traffic Management Center	City of Moline Police Dispatch Terminal	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	Traffic Management Center	Iowa DOT District Office Terminal	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	Transit Management Center		No element is defined for the Project(s)
(PS10) Wide-Area Alert	Subsystem	Transit Vehicle OBE		No element is defined for the Project(s)
(PS10) Wide-Area Alert	Subsystem	Transportation Information Center	Illinois DOT - Roadside DMS	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Subsystem	Traveler Support Equipment		No element is defined for the Project(s)
(PS10) Wide-Area Alert	Subsystem	Vehicle OBE		No element is defined for the Project(s)
(PS10) Wide-Area Alert	Terminator	Alerting and Advisory System		No element is defined for the Project(s)
(PS10) Wide-Area Alert	Terminator	Basic Vehicle	I-74 Motorists	The element is not selected in the Service Package
(PS10) Wide-Area Alert	Terminator	Driver		No element is defined for the Project(s)
(PS10) Wide-Area Alert	Terminator	Emergency System Operator		No element is defined for the Project(s)
(PS10) Wide-Area Alert	Terminator	Emergency Telecommunications System		No element is defined for the Project(s)
(PS10) Wide-Area Alert	Terminator	Other Emergency Management Centers		No element is defined for the Project(s)
(PS10) Wide-Area Alert	Terminator	Other Transportation Information Centers		No element is defined for the Project(s)
(PS10) Wide-Area Alert	Terminator	Social Media		No element is defined for the Project(s)
(PS10) Wide-Area Alert	Terminator	TIC Operator		No element is defined for the Project(s)
(PS10) Wide-Area Alert	Terminator	Traffic Operations Personnel		No element is defined for the Project(s)
(PS10) Wide-Area Alert	Terminator	Transit Operations Personnel		No element is defined for the Project(s)
(PS10) Wide-Area Alert	Terminator	Traveler		No element is defined for the Project(s)
(PS10) Wide-Area Alert	Terminator	Traveler Information Voice System		No element is defined for the Project(s)

Service Package	Physical Object Kind	Physical Object Name	Element Name	Issue
(TI01) Broadcast Traveler Information	Subsystem	Border Inspection System		No element is defined for the Project(s)
(TI01) Broadcast Traveler Information	Subsystem	Connected Vehicle Roadside Equipment		No element is defined for the Project(s)
(TI01) Broadcast Traveler Information	Subsystem	Emissions Management Center		No element is defined for the Project(s)
(TI01) Broadcast Traveler Information	Subsystem	Parking Management Center		No element is defined for the Project(s)
(TI01) Broadcast Traveler Information	Subsystem	Payment Administration Center		No element is defined for the Project(s)
(TI01) Broadcast Traveler Information	Subsystem	Personal Information Device		No element is defined for the Project(s)
(TI01) Broadcast Traveler Information	Subsystem	Transit Management Center		No element is defined for the Project(s)
(TI01) Broadcast Traveler Information	Subsystem	Transportation Information Center	Illinois DOT - Roadside DMS	The element is not selected in the Service Package
(TI01) Broadcast Traveler Information	Subsystem	Traveler Support Equipment		No element is defined for the Project(s)
(TI01) Broadcast Traveler Information	Subsystem	Vehicle OBE		No element is defined for the Project(s)
(TI01) Broadcast Traveler Information	Terminator	Driver		No element is defined for the Project(s)
(TI01) Broadcast Traveler Information	Terminator	Event Promoter System		No element is defined for the Project(s)
(TI01) Broadcast Traveler Information	Terminator	Other Transportation Information Centers		No element is defined for the Project(s)
(TI01) Broadcast Traveler Information	Terminator	Surface Transportation Weather Service	Surface Transportation Weather Service	The element is not selected in the Service Package
(TI01) Broadcast Traveler Information	Terminator	TIC Operator		No element is defined for the Project(s)
(TI01) Broadcast Traveler Information	Terminator	Traveler		No element is defined for the Project(s)
(TI01) Broadcast Traveler Information	Terminator	Weather Service System	Weather Services	The element is not selected in the Service Package
(TM01) Infrastructure-Based Traffic Surveillance	Subsystem	ITS Roadway Equipment	City of Davenport Roadside Equipment	The element is not selected in the Service Package
(TM01) Infrastructure-Based Traffic Surveillance	Subsystem	ITS Roadway Equipment	Illinois DOT - Portable DMS	The element is not selected in the Service Package
(TM01) Infrastructure-Based Traffic Surveillance	Subsystem	ITS Roadway Equipment	Iowa DOT - Automated Gates	The element is not selected in the Service Package
(TM01) Infrastructure-Based Traffic Surveillance	Subsystem	ITS Roadway Equipment	Iowa DOT - DMS	The element is not selected in the Service Package
(TM01) Infrastructure-Based Traffic Surveillance	Subsystem	ITS Roadway Equipment	Iowa DOT - Portable DMS	The element is not selected in the Service Package
(TM01) Infrastructure-Based Traffic Surveillance	Subsystem	ITS Roadway Equipment	Iowa DOT - QCLU	The element is not selected in the Service Package
(TM01) Infrastructure-Based Traffic Surveillance	Subsystem	ITS Roadway Equipment	Iowa DOT - RWIS	The element is not selected in the Service Package
(TM01) Infrastructure-Based Traffic Surveillance	Subsystem	Traffic Management Center	City of Bettendorf Public Works Terminal	The element is not selected in the Service Package
(TM01) Infrastructure-Based Traffic Surveillance	Subsystem	Traffic Management Center	City of Davenport Public Works Terminal	The element is not selected in the Service Package

Service Package	Physical Object Kind	Physical Object Name	Element Name	Issue
(TM01) Infrastructure-Based Traffic Surveillance	Subsystem	Traffic Management Center	City of Moline Fire Department	The element is not selected in the Service Package
(TM01) Infrastructure-Based Traffic Surveillance	Subsystem	Traffic Management Center	Iowa State Patrol Dispatch Terminal	The element is not selected in the Service Package
(TM01) Infrastructure-Based Traffic Surveillance	Subsystem	Transportation Information Center	Illinois DOT - Roadside DMS	The element is not selected in the Service Package
(TM01) Infrastructure-Based Traffic Surveillance	Terminator	Basic Vehicle	I-74 Motorists	The element is not selected in the Service Package
(TM01) Infrastructure-Based Traffic Surveillance	Terminator	Other ITS Roadway Equipment		No element is defined for the Project(s)
(TM01) Infrastructure-Based Traffic Surveillance	Terminator	Traffic Operations Personnel		No element is defined for the Project(s)
(TM03) Traffic Signal Control	Subsystem	ITS Roadway Equipment	Bridge Security Monitoring System	The element is not selected in the Service Package
(TM03) Traffic Signal Control	Subsystem	ITS Roadway Equipment	City of Bettendorf Roadside Equipment	The element is not selected in the Service Package
(TM03) Traffic Signal Control	Subsystem	ITS Roadway Equipment	City of Davenport Roadside Equipment	The element is not selected in the Service Package
(TM03) Traffic Signal Control	Subsystem	ITS Roadway Equipment	Illinois DOT - Portable DMS	The element is not selected in the Service Package
(TM03) Traffic Signal Control	Subsystem	ITS Roadway Equipment	Iowa DOT - Automated Gates	The element is not selected in the Service Package
(TM03) Traffic Signal Control	Subsystem	ITS Roadway Equipment	Iowa DOT - DMS	The element is not selected in the Service Package
(TM03) Traffic Signal Control	Subsystem	ITS Roadway Equipment	Iowa DOT - Portable DMS	The element is not selected in the Service Package
(TM03) Traffic Signal Control	Subsystem	ITS Roadway Equipment	Iowa DOT - QCDS	The element is not selected in the Service Package
(TM03) Traffic Signal Control	Subsystem	ITS Roadway Equipment	Iowa DOT - QCLU	The element is not selected in the Service Package
(TM03) Traffic Signal Control	Subsystem	ITS Roadway Equipment	Iowa DOT - QCTV	The element is not selected in the Service Package
(TM03) Traffic Signal Control	Subsystem	ITS Roadway Equipment	Iowa DOT - RWIS	The element is not selected in the Service Package
(TM03) Traffic Signal Control	Subsystem	ITS Roadway Equipment	Iowa DOT - VDS	The element is not selected in the Service Package
(TM03) Traffic Signal Control	Subsystem	Traffic Management Center	City of Bettendorf Public Works Terminal	The element is not selected in the Service Package
(TM03) Traffic Signal Control	Subsystem	Traffic Management Center	City of Davenport Police Dispatch Terminal	The element is not selected in the Service Package
(TM03) Traffic Signal Control	Subsystem	Traffic Management Center	City of Davenport Public Works Terminal	The element is not selected in the Service Package
(TM03) Traffic Signal Control	Subsystem	Traffic Management Center	City of Moline Fire Department	The element is not selected in the Service Package
(TM03) Traffic Signal Control	Subsystem	Traffic Management Center	City of Moline Police Dispatch Terminal	The element is not selected in the Service Package
(TM03) Traffic Signal Control	Subsystem	Traffic Management Center	Iowa State Patrol Dispatch Terminal	The element is not selected in the Service Package
(TM03) Traffic Signal Control	Terminator	Cyclist		No element is defined for the Project(s)
(TM03) Traffic Signal Control	Terminator	Driver		No element is defined for the Project(s)
(TM03) Traffic Signal Control	Terminator	Other ITS Roadway Equipment		No element is defined for the Project(s)

Service Package	Physical Object Kind	Physical Object Name	Element Name	Issue
(TM03) Traffic Signal Control	Terminator	Pedestrian		No element is defined for the Project(s)
(TM03) Traffic Signal Control	Terminator	Traffic Operations Personnel		No element is defined for the Project(s)
(TM05) Traffic Metering	Subsystem	ITS Roadway Equipment	Bridge Security Monitoring System	The element is not selected in the Service Package
(TM05) Traffic Metering	Subsystem	ITS Roadway Equipment	City of Bettendorf Roadside Equipment	The element is not selected in the Service Package
(TM05) Traffic Metering	Subsystem	ITS Roadway Equipment	City of Davenport Roadside Equipment	The element is not selected in the Service Package
(TM05) Traffic Metering	Subsystem	ITS Roadway Equipment	Iowa DOT - QCDS	The element is not selected in the Service Package
(TM05) Traffic Metering	Subsystem	ITS Roadway Equipment	Iowa DOT - QCTV	The element is not selected in the Service Package
(TM05) Traffic Metering	Subsystem	ITS Roadway Equipment	Iowa DOT - RWIS	The element is not selected in the Service Package
(TM05) Traffic Metering	Subsystem	ITS Roadway Equipment	Iowa DOT - VDS	The element is not selected in the Service Package
(TM05) Traffic Metering	Subsystem	Traffic Management Center	City of Bettendorf Public Works Terminal	The element is not selected in the Service Package
(TM05) Traffic Metering	Subsystem	Traffic Management Center	City of Davenport Police Dispatch Terminal	The element is not selected in the Service Package
(TM05) Traffic Metering	Subsystem	Traffic Management Center	City of Davenport Public Works Terminal	The element is not selected in the Service Package
(TM05) Traffic Metering	Subsystem	Traffic Management Center	City of Moline Fire Department	The element is not selected in the Service Package
(TM05) Traffic Metering	Subsystem	Traffic Management Center	City of Moline Police Dispatch Terminal	The element is not selected in the Service Package
(TM05) Traffic Metering	Subsystem	Traffic Management Center	Iowa State Patrol Dispatch Terminal	The element is not selected in the Service Package
(TM05) Traffic Metering	Terminator	Driver		No element is defined for the Project(s)
(TM05) Traffic Metering	Terminator	Other ITS Roadway Equipment		No element is defined for the Project(s)
(TM05) Traffic Metering	Terminator	Traffic Operations Personnel		No element is defined for the Project(s)
(TM06) Traffic Information Dissemination	Subsystem	Emergency Management Center	City of Davenport Police Dispatch Terminal	The element is not selected in the Service Package
(TM06) Traffic Information Dissemination	Subsystem	Emergency Management Center	City of Moline Police Dispatch Terminal	The element is not selected in the Service Package
(TM06) Traffic Information Dissemination	Subsystem	Emergency Management Center	Rock Island County Emergency Response Center	The element is not selected in the Service Package
(TM06) Traffic Information Dissemination	Subsystem	Emergency Management Center	Scott County Communications Center	The element is not selected in the Service Package
(TM06) Traffic Information Dissemination	Subsystem	ITS Roadway Equipment	Bridge Security Monitoring System	The element is not selected in the Service Package
(TM06) Traffic Information Dissemination	Subsystem	ITS Roadway Equipment	City of Bettendorf Roadside Equipment	The element is not selected in the Service Package
(TM06) Traffic Information Dissemination	Subsystem	ITS Roadway Equipment	City of Davenport Roadside Equipment	The element is not selected in the Service Package
(TM06) Traffic Information Dissemination	Subsystem	ITS Roadway Equipment	Iowa DOT - Automated Gates	The element is not selected in the Service Package

Service Package	Physical Object Kind	Physical Object Name	Element Name	Issue
(TM06) Traffic Information Dissemination	Subsystem	ITS Roadway Equipment	Iowa DOT - QCDS	The element is not selected in the Service Package
(TM06) Traffic Information Dissemination	Subsystem	ITS Roadway Equipment	Iowa DOT - QCLU	The element is not selected in the Service Package
(TM06) Traffic Information Dissemination	Subsystem	ITS Roadway Equipment	Iowa DOT - QCTV	The element is not selected in the Service Package
(TM06) Traffic Information Dissemination	Subsystem	ITS Roadway Equipment	Iowa DOT - RWIS	The element is not selected in the Service Package
(TM06) Traffic Information Dissemination	Subsystem	ITS Roadway Equipment	Iowa DOT - VDS	The element is not selected in the Service Package
(TM06) Traffic Information Dissemination	Subsystem	Traffic Management Center	City of Bettendorf Public Works Terminal	The element is not selected in the Service Package
(TM06) Traffic Information Dissemination	Subsystem	Traffic Management Center	City of Davenport Police Dispatch Terminal	The element is not selected in the Service Package
(TM06) Traffic Information Dissemination	Subsystem	Traffic Management Center	City of Davenport Public Works Terminal	The element is not selected in the Service Package
(TM06) Traffic Information Dissemination	Subsystem	Traffic Management Center	City of Moline Fire Department	The element is not selected in the Service Package
(TM06) Traffic Information Dissemination	Subsystem	Traffic Management Center	City of Moline Police Dispatch Terminal	The element is not selected in the Service Package
(TM06) Traffic Information Dissemination	Subsystem	Traffic Management Center	Iowa State Patrol Dispatch Terminal	The element is not selected in the Service Package
(TM06) Traffic Information Dissemination	Subsystem	Transit Management Center		No element is defined for the Project(s)
(TM06) Traffic Information Dissemination	Subsystem	Transportation Information Center	Illinois DOT - Roadside DMS	The element is not selected in the Service Package
(TM06) Traffic Information Dissemination	Terminator	Basic Vehicle	I-74 Motorists	The element is not selected in the Service Package
(TM06) Traffic Information Dissemination	Terminator	Driver		No element is defined for the Project(s)
(TM06) Traffic Information Dissemination	Terminator	Other ITS Roadway Equipment		No element is defined for the Project(s)
(TM06) Traffic Information Dissemination	Terminator	Traffic Operations Personnel		No element is defined for the Project(s)
(TM07) Regional Traffic Management	Subsystem	Traffic Management Center	Iowa State Patrol Dispatch Terminal	The element is not selected in the Service Package
(TM07) Regional Traffic Management	Terminator	Other Traffic Management Centers		No element is defined for the Project(s)
(TM07) Regional Traffic Management	Terminator	Traffic Operations Personnel		No element is defined for the Project(s)
(TM08) Traffic Incident Management System	Subsystem	Border Inspection System		No element is defined for the Project(s)
(TM08) Traffic Incident Management System	Subsystem	Emergency Management Center	Rock Island County Emergency Response Center	The element is not selected in the Service Package

Service Package	Physical Object Kind	Physical Object Name	Element Name	Issue
(TM08) Traffic Incident Management System	Subsystem	Emergency Management Center	Scott County Communications Center	The element is not selected in the Service Package
(TM08) Traffic Incident Management System	Subsystem	ITS Roadway Equipment	City of Davenport Roadside Equipment	The element is not selected in the Service Package
(TM08) Traffic Incident Management System	Subsystem	ITS Roadway Equipment	Illinois DOT - Portable DMS	The element is not selected in the Service Package
(TM08) Traffic Incident Management System	Subsystem	ITS Roadway Equipment	Iowa DOT - DMS	The element is not selected in the Service Package
(TM08) Traffic Incident Management System	Subsystem	ITS Roadway Equipment	Iowa DOT - Portable DMS	The element is not selected in the Service Package
(TM08) Traffic Incident Management System	Subsystem	ITS Roadway Equipment	Iowa DOT - RWIS	The element is not selected in the Service Package
(TM08) Traffic Incident Management System	Subsystem	Traffic Management Center	City of Bettendorf Public Works Terminal	The element is not selected in the Service Package
(TM08) Traffic Incident Management System	Subsystem	Traffic Management Center	City of Davenport Public Works Terminal	The element is not selected in the Service Package
(TM08) Traffic Incident Management System	Subsystem	Transit Management Center		No element is defined for the Project(s)
(TM08) Traffic Incident Management System	Subsystem	Transportation Information Center	Illinois DOT - Roadside DMS	The element is not selected in the Service Package
(TM08) Traffic Incident Management System	Terminator	Emergency System Operator		No element is defined for the Project(s)
(TM08) Traffic Incident Management System	Terminator	Event Promoter System		No element is defined for the Project(s)
(TM08) Traffic Incident Management System	Terminator	Maint and Constr Center Personnel		No element is defined for the Project(s)
(TM08) Traffic Incident Management System	Terminator	Media	Media Terminal	The element is not selected in the Service Package
(TM08) Traffic Incident Management System	Terminator	Other Emergency Management Centers		No element is defined for the Project(s)
(TM08) Traffic Incident Management System	Terminator	Other ITS Roadway Equipment		No element is defined for the Project(s)
(TM08) Traffic Incident Management System	Terminator	Other Maint and Constr Mgmt Centers		No element is defined for the Project(s)
(TM08) Traffic Incident Management System	Terminator	Other Traffic Management Centers		No element is defined for the Project(s)
(TM08) Traffic Incident Management System	Terminator	Rail Operations Center		No element is defined for the Project(s)
(TM08) Traffic Incident Management System	Terminator	Traffic Operations Personnel		No element is defined for the Project(s)
(TM19) Roadway Closure Management	Subsystem	Connected Vehicle Roadside Equipment		No element is defined for the Project(s)
(TM19) Roadway Closure Management	Subsystem	Emergency Management Center	Rock Island County Emergency Response Center	The element is not selected in the Service Package
(TM19) Roadway Closure Management	Subsystem	Emergency Management Center	Scott County Communications Center	The element is not selected in the Service Package
(TM19) Roadway Closure Management	Subsystem	Emergency Vehicle OBE		No element is defined for the Project(s)
(TM19) Roadway Closure Management	Subsystem	ITS Roadway Equipment	Bridge Security Monitoring System	The element is not selected in the Service Package
(TM19) Roadway Closure Management	Subsystem	ITS Roadway Equipment	City of Bettendorf Roadside Equipment	The element is not selected in the Service Package
(TM19) Roadway Closure Management	Subsystem	ITS Roadway Equipment	City of Davenport Roadside Equipment	The element is not selected in the Service Package
(TM19) Roadway Closure Management	Subsystem	ITS Roadway Equipment	Iowa DOT - QCDS	The element is not selected in the Service Package
(TM19) Roadway Closure Management	Subsystem	ITS Roadway Equipment	Iowa DOT - QCLU	The element is not selected in the Service Package

Service Package	Physical Object Kind	Physical Object Name	Element Name	Issue
(TM19) Roadway Closure Management	Subsystem	ITS Roadway Equipment	Iowa DOT - QCTV	The element is not selected in the Service Package
(TM19) Roadway Closure Management	Subsystem	ITS Roadway Equipment	Iowa DOT - RWIS	The element is not selected in the Service Package
(TM19) Roadway Closure Management	Subsystem	ITS Roadway Equipment	Iowa DOT - VDS	The element is not selected in the Service Package
(TM19) Roadway Closure Management	Subsystem	Maint and Constr Management Center	Illinois DOT District Maintenance Office Terminal	The element is not selected in the Service Package
(TM19) Roadway Closure Management	Subsystem	Maint and Constr Vehicle OBE		No element is defined for the Project(s)
(TM19) Roadway Closure Management	Subsystem	Traffic Management Center	City of Bettendorf Public Works Terminal	The element is not selected in the Service Package
(TM19) Roadway Closure Management	Subsystem	Traffic Management Center	City of Davenport Public Works Terminal	The element is not selected in the Service Package
(TM19) Roadway Closure Management	Subsystem	Traffic Management Center	City of Moline Fire Department	The element is not selected in the Service Package
(TM19) Roadway Closure Management	Subsystem	Traffic Management Center	Iowa DOT District Office Terminal	The element is not selected in the Service Package
(TM19) Roadway Closure Management	Subsystem	Traffic Management Center	Iowa State Patrol Dispatch Terminal	The element is not selected in the Service Package
(TM19) Roadway Closure Management	Subsystem	Transit Management Center		No element is defined for the Project(s)
(TM19) Roadway Closure Management	Subsystem	Transportation Information Center	Illinois DOT - Roadside DMS	The element is not selected in the Service Package
(TM19) Roadway Closure Management	Terminator	Basic Vehicle	I-74 Motorists	The element is not selected in the Service Package
(TM19) Roadway Closure Management	Terminator	Driver		No element is defined for the Project(s)
(TM19) Roadway Closure Management	Terminator	Emergency Personnel		No element is defined for the Project(s)
(TM19) Roadway Closure Management	Terminator	Emergency System Operator		No element is defined for the Project(s)
(TM19) Roadway Closure Management	Terminator	Maint and Constr Center Personnel		No element is defined for the Project(s)
(TM19) Roadway Closure Management	Terminator	Maint and Constr Vehicle Operator		No element is defined for the Project(s)
(TM19) Roadway Closure Management	Terminator	Other ITS Roadway Equipment		No element is defined for the Project(s)
(TM19) Roadway Closure Management	Terminator	Traffic Operations Personnel		No element is defined for the Project(s)
(WX01) Weather Data Collection	Subsystem	Connected Vehicle Roadside Equipment		No element is defined for the Project(s)
(WX01) Weather Data Collection	Subsystem	ITS Roadway Equipment	Bridge Security Monitoring System	The element is not selected in the Service Package
(WX01) Weather Data Collection	Subsystem	ITS Roadway Equipment	City of Bettendorf Roadside Equipment	The element is not selected in the Service Package
(WX01) Weather Data Collection	Subsystem	ITS Roadway Equipment	Illinois DOT - Portable DMS	The element is not selected in the Service Package
(WX01) Weather Data Collection	Subsystem	ITS Roadway Equipment	Iowa DOT - Automated Gates	The element is not selected in the Service Package
(WX01) Weather Data Collection	Subsystem	ITS Roadway Equipment	Iowa DOT - DMS	The element is not selected in the Service Package
(WX01) Weather Data Collection	Subsystem	ITS Roadway Equipment	Iowa DOT - Portable DMS	The element is not selected in the Service Package
(WX01) Weather Data Collection	Subsystem	ITS Roadway Equipment	Iowa DOT - QCDS	The element is not selected in the Service Package
(WX01) Weather Data Collection	Subsystem	ITS Roadway Equipment	Iowa DOT - QCLU	The element is not selected in the Service Package
(WX01) Weather Data Collection	Subsystem	ITS Roadway Equipment	Iowa DOT - QCTV	The element is not selected in the Service Package

Service Package	Physical Object Kind	Physical Object Name	Element Name	Issue
(WX01) Weather Data Collection	Subsystem	ITS Roadway Equipment	Iowa DOT - VDS	The element is not selected in the Service Package
(WX01) Weather Data Collection	Subsystem	Maint and Constr Management Center	Illinois DOT District Maintenance Office Terminal	The element is not selected in the Service Package
(WX01) Weather Data Collection	Subsystem	Maint and Constr Vehicle OBE		No element is defined for the Project(s)
(WX01) Weather Data Collection	Subsystem	Traffic Management Center	City of Bettendorf Police Dispatch Terminal	The element is not selected in the Service Package
(WX01) Weather Data Collection	Subsystem	Traffic Management Center	City of Bettendorf Public Works Terminal	The element is not selected in the Service Package
(WX01) Weather Data Collection	Subsystem	Traffic Management Center	City of Davenport Police Dispatch Terminal	The element is not selected in the Service Package
(WX01) Weather Data Collection	Subsystem	Traffic Management Center	City of Davenport Public Works Terminal	The element is not selected in the Service Package
(WX01) Weather Data Collection	Subsystem	Traffic Management Center	City of Moline Fire Department	The element is not selected in the Service Package
(WX01) Weather Data Collection	Subsystem	Traffic Management Center	City of Moline Police Dispatch Terminal	The element is not selected in the Service Package
(WX01) Weather Data Collection	Subsystem	Traffic Management Center	Iowa DOT District Office Terminal	The element is not selected in the Service Package
(WX01) Weather Data Collection	Subsystem	Traffic Management Center	Iowa State Patrol Dispatch Terminal	The element is not selected in the Service Package
(WX01) Weather Data Collection	Subsystem	Transportation Information Center	Illinois DOT - Roadside DMS	The element is not selected in the Service Package
(WX01) Weather Data Collection	Subsystem	Vehicle OBE		No element is defined for the Project(s)
(WX01) Weather Data Collection	Terminator	Maint and Constr Center Personnel		No element is defined for the Project(s)
(WX01) Weather Data Collection	Terminator	Traffic Operations Personnel		No element is defined for the Project(s)

APPENDIX 2: PHYSICAL STANDARDS

SDO	Standard Number	Standard Title	Element Name	Include	Override
Advanced Traffic Controller Joint Committee	ITE ATC 5201	Advanced Transportation Controller	Bridge Security Monitoring System	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5201	Advanced Transportation Controller	City of Bettendorf Roadside Equipment	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5201	Advanced Transportation Controller	City of Davenport Roadside Equipment	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5201	Advanced Transportation Controller	Illinois DOT - Portable DMS	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5201	Advanced Transportation Controller	Iowa DOT - Automated Gates	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5201	Advanced Transportation Controller	Iowa DOT - DMS	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5201	Advanced Transportation Controller	Iowa DOT - Portable DMS	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5201	Advanced Transportation Controller	Iowa DOT - QCDS	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5201	Advanced Transportation Controller	Iowa DOT - QCLU	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5201	Advanced Transportation Controller	Iowa DOT - QCTV	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5201	Advanced Transportation Controller	Iowa DOT - RWIS	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5201	Advanced Transportation Controller	Iowa DOT - VDS	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5202	Model 2070 Controller Standard	Bridge Security Monitoring System	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5202	Model 2070 Controller Standard	City of Bettendorf Roadside Equipment	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5202	Model 2070 Controller Standard	City of Davenport Roadside Equipment	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5202	Model 2070 Controller Standard	Illinois DOT - Portable DMS	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5202	Model 2070 Controller Standard	Iowa DOT - Automated Gates	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5202	Model 2070 Controller Standard	Iowa DOT - DMS	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5202	Model 2070 Controller Standard	Iowa DOT - Portable DMS	Yes	No

SDO	Standard Number	Standard Title	Element Name	Include	Override
Advanced Traffic Controller Joint Committee	ITE ATC 5202	Model 2070 Controller Standard	Iowa DOT - QCDS	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5202	Model 2070 Controller Standard	Iowa DOT - QCLU	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5202	Model 2070 Controller Standard	Iowa DOT - QCTV	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5202	Model 2070 Controller Standard	Iowa DOT - RWIS	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5202	Model 2070 Controller Standard	Iowa DOT - VDS	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5301	Intelligent Transportation System Standard Specification for Roadside Cabinets	Bridge Security Monitoring System	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5301	Intelligent Transportation System Standard Specification for Roadside Cabinets	City of Bettendorf Roadside Equipment	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5301	Intelligent Transportation System Standard Specification for Roadside Cabinets	City of Davenport Roadside Equipment	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5301	Intelligent Transportation System Standard Specification for Roadside Cabinets	Illinois DOT - Portable DMS	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5301	Intelligent Transportation System Standard Specification for Roadside Cabinets	Iowa DOT - Automated Gates	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5301	Intelligent Transportation System Standard Specification for Roadside Cabinets	Iowa DOT - DMS	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5301	Intelligent Transportation System Standard Specification for Roadside Cabinets	Iowa DOT - Portable DMS	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5301	Intelligent Transportation System Standard Specification for Roadside Cabinets	Iowa DOT - QCDS	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5301	Intelligent Transportation System Standard Specification for Roadside Cabinets	Iowa DOT - QCLU	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5301	Intelligent Transportation System Standard Specification for Roadside Cabinets	Iowa DOT - QCTV	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5301	Intelligent Transportation System Standard Specification for Roadside Cabinets	Iowa DOT - RWIS	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5301	Intelligent Transportation System Standard Specification for Roadside Cabinets	Iowa DOT - VDS	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5401	Application Programming Interface Standard for the Advanced Transportation Controller	Bridge Security Monitoring System	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5401	Application Programming Interface Standard for the Advanced Transportation Controller	City of Bettendorf Roadside Equipment	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5401	Application Programming Interface Standard for the Advanced Transportation Controller	City of Davenport Roadside Equipment	No	No

SDO	Standard Number	Standard Title	Element Name	Include	Override
Advanced Traffic Controller Joint Committee	ITE ATC 5401	Application Programming Interface Standard for the Advanced Transportation Controller	Illinois DOT - Portable DMS	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5401	Application Programming Interface Standard for the Advanced Transportation Controller	Iowa DOT - Automated Gates	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5401	Application Programming Interface Standard for the Advanced Transportation Controller	Iowa DOT - DMS	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5401	Application Programming Interface Standard for the Advanced Transportation Controller	Iowa DOT - Portable DMS	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5401	Application Programming Interface Standard for the Advanced Transportation Controller	Iowa DOT - QCDS	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5401	Application Programming Interface Standard for the Advanced Transportation Controller	Iowa DOT - QCLU	Yes	No
Advanced Traffic Controller Joint Committee	ITE ATC 5401	Application Programming Interface Standard for the Advanced Transportation Controller	Iowa DOT - QCTV	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5401	Application Programming Interface Standard for the Advanced Transportation Controller	Iowa DOT - RWIS	No	No
Advanced Traffic Controller Joint Committee	ITE ATC 5401	Application Programming Interface Standard for the Advanced Transportation Controller	Iowa DOT - VDS	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Bridge Security Monitoring System	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	City of Bettendorf Police Dispatch Terminal	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	City of Bettendorf Public Works Terminal	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	City of Bettendorf Roadside Equipment	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	City of Davenport Police Dispatch Terminal	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	City of Davenport Public Works Terminal	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	City of Davenport Roadside Equipment	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	City of Moline Fire Department	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	City of Moline Police Dispatch Terminal	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	I-74 Motorists	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Illinois DOT - Portable DMS	No	No

SDO	Standard Number	Standard Title	Element Name	Include	Override
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Illinois DOT - Roadside DMS	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Illinois DOT District Maintenance Office Terminal	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Iowa DOT - Automated Gates	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Iowa DOT - DMS	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Iowa DOT - Portable DMS	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Iowa DOT - QCDS	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Iowa DOT - QCLU	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Iowa DOT - QCTV	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Iowa DOT - RWIS	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Iowa DOT - VDS	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Iowa DOT District Maintenance Office Terminal	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Iowa DOT District Office Terminal	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Iowa DOT State Traffic Management Center	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Iowa State Patrol Dispatch Terminal	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Media Terminal	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Rock Island County Emergency Response Center	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Scott County Communications Center	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Surface Transportation Weather Service	No	No
International Organization for Standardization	ISO 21217	Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture	Weather Services	No	No
National Electrical Manufacturers Association	NEMA TS 5	Portable Traffic Signal Systems (PTSS) Standard	Bridge Security Monitoring System	No	No

RAD-IT Table

SDO	Standard Number	Standard Title	Element Name	Include	Override
National Electrical Manufacturers Association	NEMA TS 5	Portable Traffic Signal Systems (PTSS) Standard	City of Bettendorf Roadside Equipment	No	No
National Electrical Manufacturers Association	NEMA TS 5	Portable Traffic Signal Systems (PTSS) Standard	City of Davenport Roadside Equipment	No	No
National Electrical Manufacturers Association	NEMA TS 5	Portable Traffic Signal Systems (PTSS) Standard	Illinois DOT - Portable DMS	Yes	No
National Electrical Manufacturers Association	NEMA TS 5	Portable Traffic Signal Systems (PTSS) Standard	Iowa DOT - Automated Gates	No	No
National Electrical Manufacturers Association	NEMA TS 5	Portable Traffic Signal Systems (PTSS) Standard	Iowa DOT - DMS	Yes	No
National Electrical Manufacturers Association	NEMA TS 5	Portable Traffic Signal Systems (PTSS) Standard	Iowa DOT - Portable DMS	Yes	No
National Electrical Manufacturers Association	NEMA TS 5	Portable Traffic Signal Systems (PTSS) Standard	Iowa DOT - QCDS	No	No
National Electrical Manufacturers Association	NEMA TS 5	Portable Traffic Signal Systems (PTSS) Standard	Iowa DOT - QCLU	No	No
National Electrical Manufacturers Association	NEMA TS 5	Portable Traffic Signal Systems (PTSS) Standard	Iowa DOT - QCTV	No	No
National Electrical Manufacturers Association	NEMA TS 5	Portable Traffic Signal Systems (PTSS) Standard	Iowa DOT - RWIS	No	No
National Electrical Manufacturers Association	NEMA TS 5	Portable Traffic Signal Systems (PTSS) Standard	Iowa DOT - VDS	No	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	Bridge Security Monitoring System	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	City of Bettendorf Police Dispatch Terminal	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	City of Bettendorf Public Works Terminal	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	City of Bettendorf Roadside Equipment	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	City of Davenport Police Dispatch Terminal	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	City of Davenport Public Works Terminal	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	City of Davenport Roadside Equipment	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	City of Moline Fire Department	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	City of Moline Police Dispatch Terminal	Yes	No

SDO	Standard Number	Standard Title	Element Name	Include	Override
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	Illinois DOT - Portable DMS	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	Illinois DOT District Maintenance Office Terminal	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	Iowa DOT - Automated Gates	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	Iowa DOT - DMS	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	Iowa DOT - Portable DMS	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	Iowa DOT - QCDS	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	Iowa DOT - QCLU	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	Iowa DOT - QCTV	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	Iowa DOT - RWIS	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	Iowa DOT - VDS	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	Iowa DOT District Maintenance Office Terminal	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	Iowa DOT District Office Terminal	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	Iowa DOT State Traffic Management Center	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	Iowa State Patrol Dispatch Terminal	Yes	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	Rock Island County Emergency Response Center	No	No
National Electrical Manufacturers Association	NEMA TS 8	Cyber and Physical Security for Intelligent Transportation Systems	Scott County Communications Center	No	No
National Electrical Manufacturers Association	NEMA TS2	Traffic Controller Assemblies with NTCIP Requirements	Bridge Security Monitoring System	No	No
National Electrical Manufacturers Association	NEMA TS2	Traffic Controller Assemblies with NTCIP Requirements	City of Bettendorf Roadside Equipment	No	No
National Electrical Manufacturers Association	NEMA TS2	Traffic Controller Assemblies with NTCIP Requirements	City of Davenport Roadside Equipment	No	No
National Electrical Manufacturers Association	NEMA TS2	Traffic Controller Assemblies with NTCIP Requirements	Illinois DOT - Portable DMS	Yes	No

SDO	Standard Number	Standard Title	Element Name	Include	Override
National Electrical Manufacturers Association	NEMA TS2	Traffic Controller Assemblies with NTCIP Requirements	Iowa DOT - Automated Gates	No	No
National Electrical Manufacturers Association	NEMA TS2	Traffic Controller Assemblies with NTCIP Requirements	Iowa DOT - DMS	Yes	No
National Electrical Manufacturers Association	NEMA TS2	Traffic Controller Assemblies with NTCIP Requirements	Iowa DOT - Portable DMS	Yes	No
National Electrical Manufacturers Association	NEMA TS2	Traffic Controller Assemblies with NTCIP Requirements	Iowa DOT - QCDS	No	No
National Electrical Manufacturers Association	NEMA TS2	Traffic Controller Assemblies with NTCIP Requirements	Iowa DOT - QCLU	Yes	No
National Electrical Manufacturers Association	NEMA TS2	Traffic Controller Assemblies with NTCIP Requirements	Iowa DOT - QCTV	No	No
National Electrical Manufacturers Association	NEMA TS2	Traffic Controller Assemblies with NTCIP Requirements	Iowa DOT - RWIS	No	No
National Electrical Manufacturers Association	NEMA TS2	Traffic Controller Assemblies with NTCIP Requirements	Iowa DOT - VDS	No	No
National Electrical Manufacturers Association	NEMA TS4	Hardware Standards for Dynamic Message Signs (DMS) With NTCIP Requirements	Bridge Security Monitoring System	No	No
National Electrical Manufacturers Association	NEMA TS4	Hardware Standards for Dynamic Message Signs (DMS) With NTCIP Requirements	City of Bettendorf Roadside Equipment	No	No
National Electrical Manufacturers Association	NEMA TS4	Hardware Standards for Dynamic Message Signs (DMS) With NTCIP Requirements	City of Davenport Roadside Equipment	No	No
National Electrical Manufacturers Association	NEMA TS4	Hardware Standards for Dynamic Message Signs (DMS) With NTCIP Requirements	Illinois DOT - Portable DMS	Yes	No
National Electrical Manufacturers Association	NEMA TS4	Hardware Standards for Dynamic Message Signs (DMS) With NTCIP Requirements	Iowa DOT - Automated Gates	No	No
National Electrical Manufacturers Association	NEMA TS4	Hardware Standards for Dynamic Message Signs (DMS) With NTCIP Requirements	Iowa DOT - DMS	Yes	No
National Electrical Manufacturers Association	NEMA TS4	Hardware Standards for Dynamic Message Signs (DMS) With NTCIP Requirements	Iowa DOT - Portable DMS	Yes	No
National Electrical Manufacturers Association	NEMA TS4	Hardware Standards for Dynamic Message Signs (DMS) With NTCIP Requirements	Iowa DOT - QCDS	No	No
National Electrical Manufacturers Association	NEMA TS4	Hardware Standards for Dynamic Message Signs (DMS) With NTCIP Requirements	Iowa DOT - QCLU	No	No
National Electrical Manufacturers Association	NEMA TS4	Hardware Standards for Dynamic Message Signs (DMS) With NTCIP Requirements	Iowa DOT - QCTV	No	No
National Electrical Manufacturers Association	NEMA TS4	Hardware Standards for Dynamic Message Signs (DMS) With NTCIP Requirements	Iowa DOT - RWIS	No	No
National Electrical Manufacturers Association	NEMA TS4	Hardware Standards for Dynamic Message Signs (DMS) With NTCIP Requirements	Iowa DOT - VDS	No	No

SDO	Standard Number	Standard Title	Element Name	Include	Override
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Bridge Security Monitoring System	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	City of Bettendorf Police Dispatch Terminal	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	City of Bettendorf Public Works Terminal	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	City of Bettendorf Roadside Equipment	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	City of Davenport Police Dispatch Terminal	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	City of Davenport Public Works Terminal	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	City of Davenport Roadside Equipment	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	City of Moline Fire Department	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	City of Moline Police Dispatch Terminal	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	I-74 Motorists	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Illinois DOT - Portable DMS	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Illinois DOT - Roadside DMS	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Illinois DOT District Maintenance Office Terminal	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Iowa DOT - Automated Gates	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Iowa DOT - DMS	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Iowa DOT - Portable DMS	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Iowa DOT - QCDS	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Iowa DOT - QCLU	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Iowa DOT - QCTV	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Iowa DOT - RWIS	No	No

RAD-IT Table

SDO	Standard Number	Standard Title	Element Name	Include	Override
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Iowa DOT - VDS	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Iowa DOT District Maintenance Office Terminal	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Iowa DOT District Office Terminal	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Iowa DOT State Traffic Management Center	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Iowa State Patrol Dispatch Terminal	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Media Terminal	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Rock Island County Emergency Response Center	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Scott County Communications Center	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Surface Transportation Weather Service	No	No
National Institute for Standards and Technology	NIST FIPS PUB 140-2	Security Requirements for Cryptographic Modules	Weather Services	No	No

APPENDIX 3: INFORMATION FLOWS

Source Element	Destination Element	Flow Name	Project Flow Status	Comment
Bridge Security Monitoring System	City of Bettendorf Police Dispatch Terminal	traffic images	Planned	
City of Bettendorf Police Dispatch Terminal	City of Davenport Police Dispatch Terminal	traffic images	Existing	
City of Bettendorf Police Dispatch Terminal	City of Moline Fire Department	emergency traffic coordination	Existing	
City of Bettendorf Police Dispatch Terminal	City of Moline Fire Department	incident information	Existing	
City of Bettendorf Police Dispatch Terminal	City of Moline Fire Department	road network conditions	Existing	
City of Bettendorf Police Dispatch Terminal	City of Moline Fire Department	traffic images	Existing	
City of Bettendorf Police Dispatch Terminal	Iowa DOT - Automated Gates	barrier system control	Existing	
City of Bettendorf Police Dispatch Terminal	Iowa DOT - QCTV	video surveillance control	Existing	
City of Bettendorf Police Dispatch Terminal	Iowa DOT State Traffic Management Center	emergency traffic coordination	Existing	
City of Bettendorf Police Dispatch Terminal	Iowa DOT State Traffic Management Center	incident information	Existing	
City of Bettendorf Police Dispatch Terminal	Iowa DOT State Traffic Management Center	resource request	Existing	
City of Bettendorf Police Dispatch Terminal	Iowa DOT State Traffic Management Center	road network conditions	Existing	
City of Bettendorf Police Dispatch Terminal	Iowa DOT State Traffic Management Center	traffic images	Existing	
City of Bettendorf Police Dispatch Terminal	Rock Island County Emergency Response Center	traffic images	Planned	
City of Bettendorf Police Dispatch Terminal	Scott County Communications Center	traffic images	Planned	
City of Bettendorf Public Works Terminal	City of Bettendorf Roadside Equipment	video surveillance control	Existing	
City of Bettendorf Public Works Terminal	Iowa DOT State Traffic Management Center	emergency traffic coordination	Existing	
City of Bettendorf Public Works Terminal	Iowa DOT State Traffic Management Center	incident information	Existing	
City of Bettendorf Public Works Terminal	Iowa DOT State Traffic Management Center	road network conditions	Existing	
City of Bettendorf Public Works Terminal	Iowa DOT State Traffic Management Center	traffic images	Existing	
City of Bettendorf Roadside Equipment	City of Bettendorf Public Works Terminal	traffic images	Existing	
City of Davenport Police Dispatch Terminal	Iowa DOT - QCTV	video surveillance control	Existing	
City of Davenport Police Dispatch Terminal	Iowa DOT State Traffic Management Center	resource request	Existing	
City of Davenport Public Works Terminal	Surface Transportation Weather Service	environmental conditions data	Existing	
City of Davenport Public Works Terminal	Weather Services	environmental conditions data	Existing	
City of Davenport Roadside Equipment	City of Davenport Public Works Terminal	environmental sensor data	Existing	
City of Moline Fire Department	City of Moline Police Dispatch Terminal	traffic images	Existing	
City of Moline Police Dispatch Terminal	Iowa DOT - Automated Gates	barrier system control	Existing	
City of Moline Police Dispatch Terminal	Iowa DOT - QCTV	video surveillance control	Existing	

Source Element	Destination Element	Flow Name	Project Flow Status	Comment
City of Moline Police Dispatch Terminal	Iowa DOT State Traffic Management Center	resource request	Existing	
Illinois DOT - Portable DMS	Illinois DOT District Maintenance Office Terminal	field equipment status	Existing	
Illinois DOT District Maintenance Office Terminal	Illinois DOT - Portable DMS	roadway dynamic signage data	Existing	
Iowa DOT - Automated Gates	City of Bettendorf Police Dispatch Terminal	barrier system status	Existing	
Iowa DOT - DMS	City of Bettendorf Police Dispatch Terminal	roadway dynamic signage status	Existing	
Iowa DOT - DMS	City of Bettendorf Police Dispatch Terminal	traffic metering status	Existing	
Iowa DOT - Portable DMS	Iowa DOT District Maintenance Office Terminal	roadway dynamic signage status	Existing	
Iowa DOT - QCDS	City of Bettendorf Police Dispatch Terminal	traffic detector data	Existing	
Iowa DOT - QCLU	City of Bettendorf Police Dispatch Terminal	traffic metering status	Planned	
Iowa DOT - QCTV	Bridge Security Monitoring System	barrier system coordination	Planned	
Iowa DOT - QCTV	Bridge Security Monitoring System	dynamic sign coordination	Planned	
Iowa DOT - QCTV	Bridge Security Monitoring System	environmental sensor coordination	Planned	
Iowa DOT - QCTV	Bridge Security Monitoring System	signal control coordination	Planned	
Iowa DOT - QCTV	Bridge Security Monitoring System	traffic detector coordination	Planned	
Iowa DOT - QCTV	Bridge Security Monitoring System	traffic metering coordination	Planned	
Iowa DOT - QCTV	Bridge Security Monitoring System	video surveillance coordination	Planned	
Iowa DOT - QCTV	City of Bettendorf Police Dispatch Terminal	roadway dynamic signage status	Existing	
Iowa DOT - QCTV	City of Bettendorf Police Dispatch Terminal	traffic images	Existing	
Iowa DOT - RWIS	City of Bettendorf Police Dispatch Terminal	environmental sensor data	Existing	
Iowa DOT - VDS	City of Bettendorf Police Dispatch Terminal	roadway dynamic signage status	Existing	
Iowa DOT - VDS	City of Bettendorf Police Dispatch Terminal	traffic images	Existing	
Iowa DOT District Maintenance Office Terminal	Iowa DOT - Portable DMS	roadway dynamic signage data	Planned	
Iowa DOT District Maintenance Office Terminal	Iowa DOT - RWIS	environmental sensors control	Existing	
Iowa DOT District Maintenance Office Terminal	Iowa DOT District Office Terminal	equipment maintenance status	Existing	
Iowa DOT District Maintenance Office Terminal	Iowa DOT State Traffic Management Center	equipment maintenance status	Existing	
Iowa DOT District Maintenance Office Terminal	Surface Transportation Weather Service	environmental conditions data	Existing	
Iowa DOT District Maintenance Office Terminal	Weather Services	environmental conditions data	Existing	
Iowa DOT District Office Terminal	Iowa DOT - Automated Gates	barrier system control	Existing	
Iowa DOT District Office Terminal	Iowa DOT - QCLU	traffic metering control	Planned	
Iowa DOT District Office Terminal	Iowa DOT - QCTV	video surveillance control	Existing	
Iowa DOT District Office Terminal	Iowa DOT - RWIS	environmental sensors control	Existing	

RAD-IT Table

Source Element	Destination Element	Flow Name	Project Flow Status	Comment
Iowa DOT District Office Terminal	Iowa DOT District Maintenance Office Terminal	equipment maintenance request	Existing	
Iowa DOT District Office Terminal	Iowa DOT State Traffic Management Center	emergency traffic coordination	Existing	
Iowa DOT District Office Terminal	Iowa DOT State Traffic Management Center	incident information	Existing	
Iowa DOT District Office Terminal	Iowa DOT State Traffic Management Center	road network conditions	Existing	
Iowa DOT District Office Terminal	Iowa DOT State Traffic Management Center	traffic images	Existing	
Iowa DOT District Office Terminal	Weather Services	environmental conditions data	Existing	
Iowa DOT State Traffic Management Center	Iowa DOT - Automated Gates	barrier system control	Existing	
Iowa DOT State Traffic Management Center	Iowa DOT - DMS	roadway dynamic signage data	Existing	
Iowa DOT State Traffic Management Center	Iowa DOT - QCDS	traffic detector control	Existing	
Iowa DOT State Traffic Management Center	Iowa DOT - QCLU	traffic metering control	Planned	
Iowa DOT State Traffic Management Center	Iowa DOT - QCTV	video surveillance control	Existing	
Iowa DOT State Traffic Management Center	Iowa DOT - RWIS	environmental sensors control	Existing	
Iowa DOT State Traffic Management Center	Iowa DOT District Maintenance Office Terminal	equipment maintenance request	Existing	
Iowa DOT State Traffic Management Center	Iowa DOT District Office Terminal	emergency traffic coordination	Existing	
Iowa DOT State Traffic Management Center	Iowa DOT District Office Terminal	incident information	Existing	
Iowa DOT State Traffic Management Center	Iowa DOT District Office Terminal	road network conditions	Existing	
Iowa DOT State Traffic Management Center	Iowa DOT District Office Terminal	traffic images	Existing	
Iowa DOT State Traffic Management Center	Surface Transportation Weather Service	environmental conditions data	Existing	
Iowa DOT State Traffic Management Center	Weather Services	environmental conditions data	Existing	
Iowa State Patrol Dispatch Terminal	Iowa DOT State Traffic Management Center	emergency traffic coordination	Existing	
Iowa State Patrol Dispatch Terminal	Iowa DOT State Traffic Management Center	incident information	Existing	
Iowa State Patrol Dispatch Terminal	Iowa DOT State Traffic Management Center	resource request	Existing	
Iowa State Patrol Dispatch Terminal	Iowa DOT State Traffic Management Center	road network conditions	Existing	
Iowa State Patrol Dispatch Terminal	Iowa DOT State Traffic Management Center	traffic images	Existing	
Rock Island County Emergency Response Center	Iowa DOT State Traffic Management Center	resource request	Existing	
Scott County Communications Center	Iowa DOT State Traffic Management Center	resource request	Existing	