Metropolitan Area Planning Agency

Omaha-Council Bluffs Regional ITS Architecture



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1 Introduction

This Microsoft Word template is used by Turbo Architecture to create an architecture document. You can edit the template content and format so that it meets your needs and then use Turbo Architecture to create a formatted document that includes the technical content for your architecture. Through automation, an updated document can be created in a few minutes that is 100% consistent with the data that is maintained in Turbo Architecture.

Before you create the document, you should edit the introductory text in each chapter of the template and update the document styles as desired. For example, these first few paragraphs should be deleted and replaced with introductory content about your architecture. As you edit this template, you should maintain some minimal conventions and be particularly careful not to delete or modify the bookmarks and tags that Turbo uses so that the template can still be used by Turbo Architecture.

Here are the conventions to follow and items to watch for as you edit the template:

- Each chapter starts on a new page and is also included in its own section.
- Every chapter includes a bookmark immediately before the first character of the Chapter Title that allows Turbo to recognize and navigate through the document sections.
- Tags like Omaha-Council Bluffs Regional ITS Architecture and <Insert Stakeholder Table Here> show Turbo where content should be inserted. In many cases, these tags are also bookmarked. If these tags are edited or deleted, then Turbo will not be able to insert the associated content.
- It is good practice to change styles, rather than individual text elements, when you want to change the document appearance. For example, the "Heading 1" style is used for all chapter paragraphs. Change the Heading 1 style if you want to change the appearance of the chapter titles, rather than changing the font/color/size of each chapter title individually.

Consult the Turbo Architecture user manual or on-line help for more information.

This section should include background on the architecture and the effort used to develop and maintain it. It is also a good idea to include a table that identifies how the content in the document complies with the FHWA Rule/FTA Policy. This is the only section in the document that does not include any automated content.

2 Architecture Scope

The Omaha-Council Bluffs Regional ITS Architecture is a roadmap for transportation systems integration. The architecture was developed through a cooperative effort by the region's transportation agencies, covering all modes and all roads in the region. It represents a shared vision of how each agency's systems will work together in the future, sharing information and resources to provide a safer, more efficient, and more effective transportation system for travelers in the region.

The architecture provides an overarching framework that spans all of the region's transportation organizations and individual transportation projects. Using the architecture, each transportation project can be viewed as an element of the overall transportation system, providing visibility into the relationship between individual transportation projects and ways to cost-effectively build an integrated transportation system over time. This chapter establishes the scope of the architecture in terms of its geographic breadth, the scope of services that are covered, and the time horizon that is addressed.

Description

This regional ITS architecture was created for the Omaha-Council Buffs MPO Transportation Study Area. It was developed by the Metropolitan Area Planning Agency (MAPA), in conjunction with regional stakeholders and FHWA.

Vision:

To enhance transportation productivity, mobility, access, safety, efficiency, air quality, and security for all users of the regional transportation system through the use of integrated, cost-effective ITS technologies and systems and strong inter-agency cooperation.

Regional ITS Architecture Goals:

- Provide interagency/organization/jurisdiction connectivity, interoperability and functionality to the transportation system serving the MAPA ITS architecture area

- Promote system efficiency and effectiveness

- Provide a basis for planning the evolution of ITS technologies over the next decade that leads to an integrated, efficient multi-modal transportation system

- Provide a framework within which regional stakeholders and regional users of the transportation system can address transportation issues collectively

- Support transportation planning process and provide input to the MAPA Long Range Transportation Plan and Transportation Improvement Program - Identify opportunities for making ITS investments in a more cost-effective and consistent manner through inter-agency cooperation and coordination

- Ensure Federal funding eligibility for ITS projects in the MAPA region
- Support systems engineering analysis for ITS projects in the MAPA region

Timeframe

10 years (2014-2023)

Geographic Scope

The MAPA Transportation Study Area encompasses the following areas:

- Douglas County, Nebraska
- Sarpy County, Nebraska
- Pottawattamie County, Iowa

Included in this region are the following municipalities:

IOWA

- Carson
- Carter Lake
- Crescent
- Council Bluffs
- Hancock
- Macedonia
- McClelland
- Minden
- Neola
- Oakland
- Treynor
- Underwood
- Walnut

NEBRASKA

- Bennington
- Bellevue
- Gretna
- LaVista
- Omaha
- Papillion
- Ralston
- Springfield
- Valley
- Waterloo

Service Scope

This regional ITS architecture will provide a framework for institutional coordination and technical integration of ITS systems currently deployed and to be deployed by public and private agencies and jurisdictions identified as ITS Stakeholders. This framework will enhance multi-modal transportation operations, lead to traveler safety and mobility improvements and reduce traffic delays and operational costs.

ITS activities will be centered on the development and deployment of ITS elements on and along the Interstate and select Principal Arterial systems in the area defined in the geographic scope.

The development and maintenance of the Omaha-Council Bluffs Regional ITS Architecture will require:

- The development and use of common communication protocols;

- The use of established standards for ITS Field and ITS Operations Center equipment by local jurisdictions;

- Coordinated purchase, installation and management of ITS elements and components;

- Provide the sharing of information and data between jurisdictions;
- Facilitate the sharing of information and data to stakeholders;
- Comply with Nationally-established ITS standards and architecture;

- The deployment and use of ITS elements identified in the ITS inventory associated with this architecture.

Developer

Metropolitan Area Planning Agency (MAPA)

Version

2.0

Revision Date

12/31/2013

3 Relationship to Planning

The Omaha-Council Bluffs Regional ITS Architecture is an integral part of planning for the operations and maintenance strategies that are addressed by the regional transportation planning process. The architecture provides a framework that connects operations and maintenance objectives and strategies with the integrated transportation system improvements that are implemented as a progressive series of ITS projects. The architecture also is used to define the data needs associated with performance monitoring that supports an informed planning process. This chapter identifies the planning objectives, strategies, and associated performance measures from the regional plan. These planning elements are connected with ITS services in the Turbo Architecture database.

Table 1: Relationship to Planning

Number	Туре	Name	Description	Source	Supports	PM Number	PM Category	Performance Measure
1.1	Objective	Minimize delay and congestion	So the MAPA region's low travel times and convenient travel continue to be an asset in attracting new business and industry.	LRTP 2035				
			Link to Goal #1: Maximize Accessibility and Mobility					
1.1.1	Strategy	Identify needed upgrades in traffic signal technology and communications		LRTP 2035	Minimize delay and congestion	1.1	Accessibility and Mobility	Level of Service(LOS) D or better on entire system
1.1.1	Strategy	Identify needed upgrades in traffic signal technology and communications		LRTP 2035	Minimize delay and congestion	1.2	Accessibility and Mobility	Reduce average commute time to below 20 minutes
1.1.1	Strategy	Identify needed upgrades in traffic signal technology and communications		LRTP 2035	Minimize delay and congestion	1.3	Accessibility and Mobility	Travel time
1.1.1	Strategy	Identify needed upgrades in traffic signal technology and communications		LRTP 2035	Minimize delay and congestion	1.4	Accessibility and Mobility	Travel time reliability
1.1.1	Strategy	Identify needed upgrades in traffic signal technology and communications		LRTP 2035	Minimize delay and congestion	1.5	Accessibility and Mobility	Roadway throughput or VMT
1.1.1	Strategy	Identify needed upgrades in traffic signal technology and communications		LRTP 2035	Minimize delay and congestion	1.6	Accessibility and Mobility	Delay
1.1.1	Strategy	Identify needed upgrades in traffic signal technology and communications		LRTP 2035	Minimize delay and congestion	1.7	Accessibility and Mobility	Hours of congestions
1.1.1	Strategy	Identify needed upgrades in traffic signal technology and communications		LRTP 2035	Minimize delay and congestion	1.8	Accessibility and Mobility	Miles congested
1.1.1	Strategy	Identify needed upgrades in traffic signal technology and communications		LRTP 2035	Minimize delay and congestion	3.2	Environment and Urban Form	Maintain or reduce per capita vehicle miles traveled (VMT)
1.1.2	Strategy	Upgrade traffic signal technology and communications to improve traffic flow and adaptability		LRTP 2035	Minimize delay and congestion	1.1	Accessibility and Mobility	Level of Service(LOS) D or better on entire system

Number	Туре	Name	Description	Source	Supports	PM Number	PM Category	Performance Measure
1.1.2	Strategy	Upgrade traffic signal technology and communications to improve traffic flow and adaptability		LRTP 2035	Minimize delay and congestion	1.2	Accessibility and Mobility	Reduce average commute time to below 20 minutes
1.1.2	Strategy	Upgrade traffic signal technology and communications to improve traffic flow and adaptability		LRTP 2035	Minimize delay and congestion	1.3	Accessibility and Mobility	Travel time
1.1.2	Strategy	Upgrade traffic signal technology and communications to improve traffic flow and adaptability		LRTP 2035	Minimize delay and congestion	1.4	Accessibility and Mobility	Travel time reliability
1.1.2	Strategy	Upgrade traffic signal technology and communications to improve traffic flow and adaptability		LRTP 2035	Minimize delay and congestion	1.5	Accessibility and Mobility	Roadway throughput or VMT
1.1.2	Strategy	Upgrade traffic signal technology and communications to improve traffic flow and adaptability		LRTP 2035	Minimize delay and congestion	1.6	Accessibility and Mobility	Delay
1.1.2	Strategy	Upgrade traffic signal technology and communications to improve traffic flow and adaptability		LRTP 2035	Minimize delay and congestion	1.7	Accessibility and Mobility	Hours of congestions
1.1.2	Strategy	Upgrade traffic signal technology and communications to improve traffic flow and adaptability		LRTP 2035	Minimize delay and congestion	1.8	Accessibility and Mobility	Miles congested
1.1.2	Strategy	Upgrade traffic signal technology and communications to improve traffic flow and adaptability		LRTP 2035	Minimize delay and congestion	3.2	Environment and Urban Form	Maintain or reduce per capita vehicle miles traveled (VMT)
1.1.3	Strategy	Provide capacity improvements to streets and highways where warranted		LRTP 2035	Minimize delay and congestion	1.1	Accessibility and Mobility	Level of Service(LOS) D or better on entire system
1.1.3	Strategy	Provide capacity improvements to streets and highways where warranted		LRTP 2035	Minimize delay and congestion	1.2	Accessibility and Mobility	Reduce average commute time to below 20 minutes
1.1.3	Strategy	Provide capacity improvements to streets and highways where warranted		LRTP 2035	Minimize delay and congestion	1.3	Accessibility and Mobility	Travel time

Number	Туре	Name	Description	Source	Supports	PM Number	PM Category	Performance Measure
1.1.3	Strategy	Provide capacity improvements to streets and highways where warranted		LRTP 2035	Minimize delay and congestion	1.4	Accessibility and Mobility	Travel time reliability
1.1.3	Strategy	Provide capacity improvements to streets and highways where warranted		LRTP 2035	Minimize delay and congestion	1.5	Accessibility and Mobility	Roadway throughput or VMT
1.1.3	Strategy	Provide capacity improvements to streets and highways where warranted		LRTP 2035	Minimize delay and congestion	1.6	Accessibility and Mobility	Delay
1.1.3	Strategy	Provide capacity improvements to streets and highways where warranted		LRTP 2035	Minimize delay and congestion	1.7	Accessibility and Mobility	Hours of congestions
1.1.3	Strategy	Provide capacity improvements to streets and highways where warranted		LRTP 2035	Minimize delay and congestion	1.8	Accessibility and Mobility	Miles congested
1.1.3	Strategy	Provide capacity improvements to streets and highways where warranted		LRTP 2035	Minimize delay and congestion	3.2	Environment and Urban Form	Maintain or reduce per capita vehicle miles traveled (VMT)
1.2	Objective	Create viable transportation alternatives	Create viable transportation alternatives (transit, bicycle, pedestrian) that will attract people from communities with strong alternative forms of transportation. Link to Goal #1: Maximize	LRTP 2035				
1.2.1	Strategy	Identify new opportunities for transit service and funding options	Accessibility and Mobility	LRTP 2035	Create viable transportation alternatives	1.9	Accessibility and Mobility	Annual transit ridership
1.3	Objective	Increase use of ridesharing, carpooling and other programs to improve vehicle occupancy rates	Increase use of ridesharing, carpooling and other programs to improve vehicle occupancy rates. Link to Goal #1: Maximize Accessibility and Mobility	LRTP 2035				
1.3.1	Strategy	Grow MAPA on-line MetrO! Rideshare carpool program		LRTP 2035	Increase use of ridesharing, carpooling and other programs to improve vehicle occupancy rates	3.2	Environment and Urban Form	Maintain or reduce per capita vehicle miles traveled (VMT)

Number	Туре	Name	Description	Source	Supports	PM Number	PM Category	Performance Measure
1.4	Objective	Promote inter-modalism and connections between different modes of transportation	Link to Goal #1: Maximize Accessibility and Mobility	LRTP 2035				
1.4.1	Strategy	Study potential new passenger rail options, including a new connection to Chicago via Des Moines		LRTP 2035	Promote inter-modalism and connections between different modes of transportation	3.2	Environment and Urban Form	Maintain or reduce per capita vehicle miles traveled (VMT)
1.5	Objective	Provide transportation opportunities for elderly, disabled, and low-income individuals	Link to Goal #1: Maximize Accessibility and Mobility	LRTP 2035				
1.5.1	Strategy	Develop a regional mobility coordination center to provide more transportation options for the elderly, disabled and low income individuals		LRTP 2035	Provide transportation opportunities for elderly, disabled, and low- income individuals			
2.1	Objective	Develop a transportation system that provides a safe environment for all citizens and travelers	Link to Goal #2: Increase Safety and Security	LRTP 2035				
2.1.1	Strategy	Utilize NDOR District Operations Center (DOC) and other traffic operations centers in the metro area to assist with incident management		LRTP 2035	Develop a transportation system that provides a safe environment for all citizens and travelers	2.2	Safety and Security	Continue and grow working groups that coordinate incident management and emergency response efforts between agencies
2.1.1	Strategy	Utilize NDOR District Operations Center (DOC) and other traffic operations centers in the metro area to assist with incident management		LRTP 2035	Develop a transportation system that provides a safe environment for all citizens and travelers	2.5	Safety and Security	Incident notification time
2.1.1	Strategy	Utilize NDOR District Operations Center (DOC) and other traffic operations centers in the metro area to assist with incident management		LRTP 2035	Develop a transportation system that provides a safe environment for all citizens and travelers	2.6	Safety and Security	Incident response time

Number	Туре	Name	Description	Source	Supports	PM Number	PM Category	Performance Measure
2.1.1	Strategy	Utilize NDOR District Operations Center (DOC) and other traffic operations centers in the metro area to assist with incident management		LRTP 2035	Develop a transportation system that provides a safe environment for all citizens and travelers	2.7	Safety and Security	Incident clearance time
2.1.1	Strategy	Utilize NDOR District Operations Center (DOC) and other traffic operations centers in the metro area to assist with incident management		LRTP 2035	Develop a transportation system that provides a safe environment for all citizens and travelers	2.8	Safety and Security	Incident duration
2.1.1	Strategy	Utilize NDOR District Operations Center (DOC) and other traffic operations centers in the metro area to assist with incident management		LRTP 2035	Develop a transportation system that provides a safe environment for all citizens and travelers	2.9	Safety and Security	Number of secondary crashes
2.1.2	Strategy	Provide access management to freeway, highway and interstate highways		LRTP 2035	Develop a transportation system that provides a safe environment for all citizens and travelers	1.1	Accessibility and Mobility	Level of Service(LOS) D or better on entire system
2.1.2	Strategy	Provide access management to freeway, highway and interstate highways		LRTP 2035	Develop a transportation system that provides a safe environment for all citizens and travelers	1.2	Accessibility and Mobility	Reduce average commute time to below 20 minutes
2.1.2	Strategy	Provide access management to freeway, highway and interstate highways		LRTP 2035	Develop a transportation system that provides a safe environment for all citizens and travelers	1.3	Accessibility and Mobility	Travel time
2.1.2	Strategy	Provide access management to freeway, highway and interstate highways		LRTP 2035	Develop a transportation system that provides a safe environment for all citizens and travelers	1.4	Accessibility and Mobility	Travel time reliability
2.1.2	Strategy	Provide access management to freeway, highway and interstate highways		LRTP 2035	Develop a transportation system that provides a safe environment for all citizens and travelers	1.6	Accessibility and Mobility	Delay
2.1.2	Strategy	Provide access management to freeway, highway and interstate highways		LRTP 2035	Develop a transportation system that provides a safe environment for all citizens and travelers	1.7	Accessibility and Mobility	Hours of congestions

Number	Туре	Name	Description	Source	Supports	PM Number	PM Category	Performance Measure
2.1.2	Strategy	Provide access management to freeway, highway and interstate highways		LRTP 2035	Develop a transportation system that provides a safe environment for all citizens and travelers	1.8	Accessibility and Mobility	Miles congested
2.10	Objective	Reduce impaired driving	Link to Goal #2: Increase Safety and Security	LRTP 2035				
2.11	Objective	Improve the design and operation of intersections	Link to Goal #2: Increase Safety and Security	LRTP 2035				
2.11.1	Strategy	Increase driver awareness when approaching an intersection		LRTP 2035	Improve the design and operation of intersections	2.1	Safety and Security	Decrease the annual number of crashes, especially fatalities
2.11.1	Strategy	Increase driver awareness when approaching an intersection		LRTP 2035	Improve the design and operation of intersections	2.3	Safety and Security	Annual number of injuries
2.11.2	Strategy	Assist in identification of intersections with a high number of fatal and disabling crashes		LRTP 2035	Improve the design and operation of intersections	2.1	Safety and Security	Decrease the annual number of crashes, especially fatalities
2.11.2	Strategy	Assist in identification of intersections with a high number of fatal and disabling crashes		LRTP 2035	Improve the design and operation of intersections	2.3	Safety and Security	Annual number of injuries
2.12	Objective	Address the over involvement of young drivers in fatal crashes	Link to Goal #2: Increase Safety and Security	LRTP 2035				
2.12.1	Strategy	Support public information campaigns focused on young drivers		LRTP 2035	Address the over involvement of young drivers in fatal crashes	2.1	Safety and Security	Decrease the annual number of crashes, especially fatalities
2.12.1	Strategy	Support public information campaigns focused on young drivers		LRTP 2035	Address the over involvement of young drivers in fatal crashes	2.2	Safety and Security	Continue and grow working groups that coordinate incident management and emergency response efforts between agencies
2.12.1	Strategy	Support public information campaigns focused on young drivers		LRTP 2035	Address the over involvement of young drivers in fatal crashes	2.3	Safety and Security	Annual number of injuries
2.12.1	Strategy	Support public information campaigns focused on young drivers		LRTP 2035	Address the over involvement of young drivers in fatal crashes	2.4	Safety and Security	Annual number of work zone crashes

Number	Туре	Name	Description	Source	Supports	PM Number	PM Category	Performance Measure
2.12.1	Strategy	Support public information campaigns focused on young drivers		LRTP 2035	Address the over involvement of young drivers in fatal crashes	2.9	Safety and Security	Number of secondary crashes
2.12.2	Strategy	Support the enforcement of zero tolerance laws for underage drivers		LRTP 2035	Address the over involvement of young drivers in fatal crashes	2.1	Safety and Security	Decrease the annual number of crashes, especially fatalities
2.12.2	Strategy	Support the enforcement of zero tolerance laws for underage drivers		LRTP 2035	Address the over involvement of young drivers in fatal crashes	2.2	Safety and Security	Continue and grow working groups that coordinate incident management and emergency response efforts between agencies
2.12.2	Strategy	Support the enforcement of zero tolerance laws for underage drivers		LRTP 2035	Address the over involvement of young drivers in fatal crashes	2.3	Safety and Security	Annual number of injuries
2.12.2	Strategy	Support the enforcement of zero tolerance laws for underage drivers		LRTP 2035	Address the over involvement of young drivers in fatal crashes	2.4	Safety and Security	Annual number of work zone crashes
2.12.2	Strategy	Support the enforcement of zero tolerance laws for underage drivers		LRTP 2035	Address the over involvement of young drivers in fatal crashes	2.9	Safety and Security	Number of secondary crashes
2.12.3	Strategy	Support and publicize enforcement campaigns focused on young drivers		LRTP 2035	Address the over involvement of young drivers in fatal crashes	2.1	Safety and Security	Decrease the annual number of crashes, especially fatalities
2.12.3	Strategy	Support and publicize enforcement campaigns focused on young drivers		LRTP 2035	Address the over involvement of young drivers in fatal crashes	2.2	Safety and Security	Continue and grow working groups that coordinate incident management and emergency response efforts between agencies
2.12.3	Strategy	Support and publicize enforcement campaigns focused on young drivers		LRTP 2035	Address the over involvement of young drivers in fatal crashes	2.3	Safety and Security	Annual number of injuries
2.12.3	Strategy	Support and publicize enforcement campaigns focused on young drivers		LRTP 2035	Address the over involvement of young drivers in fatal crashes	2.4	Safety and Security	Annual number of work zone crashes
2.12.3	Strategy	Support and publicize enforcement campaigns focused on young drivers		LRTP 2035	Address the over involvement of young drivers in fatal crashes	2.9	Safety and Security	Number of secondary crashes

Number	Туре	Name	Description	Source	Supports	PM Number	PM Category	Performance Measure
2.13	Objective	Improve data resources	Link to Goal #2: Increase Safety and Security	LRTP 2035				
2.13.1	Strategy	Support enhanced data availability and use by all stakeholders		LRTP 2035	Improve data resources	2.2	Safety and Security	Continue and grow working groups that coordinate incident management and emergency response efforts between agencies
2.2	Objective	Properly maintain transportation infrastructure	Link to Goal #2: Increase Safety and Security	LRTP 2035				
2.2.1	Strategy	Preserve and improve aging infrastructure		LRTP 2035	Properly maintain transportation infrastructure	2.10	Safety and Security	Pavement condition (good, satisfactory, fair or poor)
2.2.1	Strategy	Preserve and improve aging infrastructure		LRTP 2035	Properly maintain transportation infrastructure	2.11	Safety and Security	Ride quality (good, satisfactory, fair or poor)
2.2.1	Strategy	Preserve and improve aging infrastructure		LRTP 2035	Properly maintain transportation infrastructure	2.12	Safety and Security	Bridge condition (good, satisfactory, fair or poor)
2.2.1	Strategy	Preserve and improve aging infrastructure		LRTP 2035	Properly maintain transportation infrastructure	4.1	Costs	Using asset management principles to reduce long- term roadway maintenance costs, increase the percentage of mileage with "good" or better pavement condition
2.2.1	Strategy	Preserve and improve aging infrastructure		LRTP 2035	Properly maintain transportation infrastructure	4.2	Costs	Using asset management principles to reduce long- term infrastructure costs, reduce the percentage of bridges rated "structurally deficient" or "functionally obsolete"
2.3	Objective	Minimize exposure to collisions through growing alternative modes of transportation	Link to Goal #2: Increase Safety and Security	LRTP 2035				
2.3.1	Strategy	Enforce existing laws concerning travel and travel safety		LRTP 2035	Minimize exposure to collisions through growing alternative modes of transportation	2.1	Safety and Security	Decrease the annual number of crashes, especially fatalities

Number	Туре	Name	Description	Source	Supports	PM Number	PM Category	Performance Measure
2.3.1	Strategy	Enforce existing laws concerning travel and travel safety		LRTP 2035	Minimize exposure to collisions through growing alternative modes of transportation	2.3	Safety and Security	Annual number of injuries
2.3.1	Strategy	Enforce existing laws concerning travel and travel safety		LRTP 2035	Minimize exposure to collisions through growing alternative modes of transportation	2.4	Safety and Security	Annual number of work zone crashes
2.3.1	Strategy	Enforce existing laws concerning travel and travel safety		LRTP 2035	Minimize exposure to collisions through growing alternative modes of transportation	2.9	Safety and Security	Number of secondary crashes
2.3.2	Strategy	Study locations with highest crash rates and implement safety improvements		LRTP 2035	Minimize exposure to collisions through growing alternative modes of transportation			
2.4	Objective	Minimize the consequences for collisions that do occur	Link to Goal #2: Increase Safety and Security	LRTP 2035				
2.4.1	Strategy	Continue and grow the Metro Area Motorist Assist (MAMA) program		LRTP 2035	Minimize the consequences for collisions that do occur	2.5	Safety and Security	Incident notification time
2.4.1	Strategy	Continue and grow the Metro Area Motorist Assist (MAMA) program		LRTP 2035	Minimize the consequences for collisions that do occur	2.6	Safety and Security	Incident response time
2.4.1	Strategy	Continue and grow the Metro Area Motorist Assist (MAMA) program		LRTP 2035	Minimize the consequences for collisions that do occur	2.7	Safety and Security	Incident clearance time
2.4.1	Strategy	Continue and grow the Metro Area Motorist Assist (MAMA) program		LRTP 2035	Minimize the consequences for collisions that do occur	2.8	Safety and Security	Incident duration
2.4.1	Strategy	Continue and grow the Metro Area Motorist Assist (MAMA) program		LRTP 2035	Minimize the consequences for collisions that do occur	2.9	Safety and Security	Number of secondary crashes
2.4.2	Strategy	Respond to weather incidents in a timely and effective manner		LRTP 2035	Minimize the consequences for collisions that do occur	1.3	Accessibility and Mobility	Travel time
2.4.2	Strategy	Respond to weather incidents in a timely and effective manner		LRTP 2035	Minimize the consequences for collisions that do occur	1.4	Accessibility and Mobility	Travel time reliability

Number	Туре	Name	Description	Source	Supports	PM Number	PM Category	Performance Measure
2.4.2	Strategy	Respond to weather incidents in a timely and effective manner		LRTP 2035	Minimize the consequences for collisions that do occur	1.6	Accessibility and Mobility	Delay
2.4.2	Strategy	Respond to weather incidents in a timely and effective manner		LRTP 2035	Minimize the consequences for collisions that do occur	1.7	Accessibility and Mobility	Hours of congestions
2.4.2	Strategy	Respond to weather incidents in a timely and effective manner		LRTP 2035	Minimize the consequences for collisions that do occur	1.8	Accessibility and Mobility	Miles congested
2.4.3	Strategy	Implement state-of-the-art technology and design to reduce collision impacts		LRTP 2035	Minimize the consequences for collisions that do occur	2.1	Safety and Security	Decrease the annual number of crashes, especially fatalities
2.4.3	Strategy	Implement state-of-the-art technology and design to reduce collision impacts		LRTP 2035	Minimize the consequences for collisions that do occur	2.3	Safety and Security	Annual number of injuries
2.4.3	Strategy	Implement state-of-the-art technology and design to reduce collision impacts		LRTP 2035	Minimize the consequences for collisions that do occur	2.4	Safety and Security	Annual number of work zone crashes
2.5	Objective	Develop and track safety- related performance measures	Link to Goal #2: Increase Safety and Security	LRTP 2035				
2.5.1	Strategy	Continue committees such as the Southwest Iowa Freeway Team (SWIFT) for more efficient use of freeways through incident management, technology, etc		LRTP 2035	Develop and track safety-related performance measures	2.2	Safety and Security	Continue and grow working groups that coordinate incident management and emergency response efforts between agencies
2.5.2	Strategy	Utilize partnerships to address the myriad of conditions that are factors in crashes			Develop and track safety-related performance measures	2.2	Safety and Security	Continue and grow working groups that coordinate incident management and emergency response efforts between agencies
2.6	Objective	Maintain a secure environment to protect transportation assets	Link to Goal #2: Increase Safety and Security	LRTP 2035				

Number	Туре	Name	Description	Source	Supports	PM Number	PM Category	Performance Measure
2.7	Objective	Coordinate with state and federal agencies to use local transportation assets during times of natural disasters, extreme accidents, or terrorist attacks	Link to Goal #2: Increase Safety and Security	LRTP 2035				
2.7.1	Strategy	Create disaster response plans in coordination with area municipalities and emergency response agencies		LRTP 2035	Coordinate with state and federal agencies to use local transportation assets during times of natural disasters, extreme accidents, or terrorist attacks	2.2	Safety and Security	Continue and grow working groups that coordinate incident management and emergency response efforts between agencies
2.7.2	Strategy	Coordinate with and implement state safety plans		LRTP 2035	Coordinate with state and federal agencies to use local transportation assets during times of natural disasters, extreme accidents, or terrorist attacks	2.2	Safety and Security	Continue and grow working groups that coordinate incident management and emergency response efforts between agencies
2.8	Objective	Increase safety belt usage	Link to Goal #2: Increase Safety and Security	LRTP 2035				
2.8.1	Strategy	Enhance public education to groups with lower than average restraint usage rates		LRTP 2035	Increase safety belt usage	2.1	Safety and Security	Decrease the annual number of crashes, especially fatalities
2.8.1	Strategy	Enhance public education to groups with lower than average restraint usage rates		LRTP 2035	Increase safety belt usage	2.3	Safety and Security	Annual number of injuries
2.8.2	Strategy	Support and publicize seatbelt enforcement campaigns	Support and publicize seatbelt enforcement campaigns (e.g., click-it or ticket campaigns)	LRTP 2035	Increase safety belt usage	2.1	Safety and Security	Decrease the annual number of crashes, especially fatalities
2.8.2	Strategy	Support and publicize seatbelt enforcement campaigns	Support and publicize seatbelt enforcement campaigns (e.g., click-it or ticket campaigns)	LRTP 2035	Increase safety belt usage	2.3	Safety and Security	Annual number of injuries

Number	Туре	Name	Description	Source	Supports	PM Number	PM Category	Performance Measure
2.9	Objective	Keeping vehicles on the roadway, minimizing consequences of leaving the roadway, reducing head-on and across median crashes	Link to Goal #2: Increase Safety and Security	LRTP 2035				
2.9.1	Strategy	Support engineering based solutions	Support engineering based solutions (e.g., pave shoulders, eliminate shoulder drop offs, install median barriers on roads with narrow medians, improve attenuation systems and guardrails, etc.)	LRTP 2035	Keeping vehicles on the roadway, minimizing consequences of leaving the roadway, reducing head-on and across median crashes	2.1	Safety and Security	Decrease the annual number of crashes, especially fatalities
2.9.1	Strategy	Support engineering based solutions	Support engineering based solutions (e.g., pave shoulders, eliminate shoulder drop offs, install median barriers on roads with narrow medians, improve attenuation systems and guardrails, etc.)	LRTP 2035	Keeping vehicles on the roadway, minimizing consequences of leaving the roadway, reducing head-on and across median crashes	2.3	Safety and Security	Annual number of injuries
2.9.1	Strategy	Support engineering based solutions	Support engineering based solutions (e.g., pave shoulders, eliminate shoulder drop offs, install median barriers on roads with narrow medians, improve attenuation systems and guardrails, etc.)	LRTP 2035	Keeping vehicles on the roadway, minimizing consequences of leaving the roadway, reducing head-on and across median crashes	2.4	Safety and Security	Annual number of work zone crashes
3.1	Objective	Avoid, minimize, and mitigate the negative environmental impacts of the transportation system	Link to Goal #3: Consider the Environment and Urban Form.	LRTP 2035				
3.1.1	Strategy	Coordinate with public and private groups to prevent violations of air quality standards		LRTP 2035	Avoid, minimize, and mitigate the negative environmental impacts of the transportation system	3.1	Environment and Urban Form	Remain in "attainment" air-quality status
3.1.1	Strategy	Coordinate with public and private groups to prevent violations of air quality standards		LRTP 2035	Avoid, minimize, and mitigate the negative environmental impacts of the transportation system	3.4	Environment and Urban Form	Annual greenhouse gas amount generated due to transportation systems

Number	Туре	Name	Description	Source	Supports	PM Number	PM Category	Performance Measure
3.1.1	Strategy	Coordinate with public and private groups to prevent violations of air quality standards		LRTP 2035	Avoid, minimize, and mitigate the negative environmental impacts of the transportation system	3.5	Environment and Urban Form	Annual carbon dioxide amount generated due to transportation systems
3.2	Objective	Retain attainment air quality status as designated by the Environmental Protection Agency (EPA)	Link to Goal #3: Consider the Environment and Urban Form.	LRTP 2035				
3.3	Objective	Foster energy conservation through the transportation system	Link to Goal #3: Consider the Environment and Urban Form.	LRTP 2035				
3.3.1	Strategy	Promote alternative-fueled vehicles that reduce emissions		LRTP 2035	Foster energy conservation through the transportation system	3.1	Environment and Urban Form	Remain in "attainment" air-quality status
3.3.1	Strategy	Promote alternative-fueled vehicles that reduce emissions		LRTP 2035	Foster energy conservation through the transportation system	3.4	Environment and Urban Form	Annual greenhouse gas amount generated due to transportation systems
3.3.1	Strategy	Promote alternative-fueled vehicles that reduce emissions		LRTP 2035	Foster energy conservation through the transportation system	3.5	Environment and Urban Form	Annual carbon dioxide amount generated due to transportation systems
3.3.1	Strategy	Promote alternative-fueled vehicles that reduce emissions		LRTP 2035	Foster energy conservation through the transportation system	3.6	Environment and Urban Form	Annual vehicle fuel consumption
3.4	Objective	Increase the mode share of alternative modes of transportation	Increase the mode share of alternative modes of transportation (transit, bicycle, pedestrian) to ten percent of all trips by 2035.	LRTP 2035				
			Link to Goal #3: Consider the Environment and Urban Form.					
3.4.1	Strategy	Identify and implement funding mechanisms for alternative modes of transportation (transit, bicycle, pedestrian)		LRTP 2035	Increase the mode share of alternative modes of transportation	4.3	Costs	Utilize and evaluate benefit-cost analysis in major projects
4.1	Objective	Maximize the useful life of the streets, highways, bridges, and related transportation devices of the transportation system	Link to Goal #4: Keep Costs Reasonable and Sustainable.	LRTP 2035				

Number	Туре	Name	Description	Source	Supports	PM Number	PM Category	Performance Measure
4.2	Objective	Utilize management strategies and technologies to maximize street and highway efficiency	Link to Goal #4: Keep Costs Reasonable and Sustainable.	LRTP 2035				
4.2.1	Strategy	Utilize transportation asset management (TAM) strategies to maximize system performance and minimize life-cycle costs			Utilize management strategies and technologies to maximize street and highway efficiency	4.1	Costs	Using asset management principles to reduce long- term roadway maintenance costs, increase the percentage of mileage with "good" or better pavement condition
4.2.1	Strategy	Utilize transportation asset management (TAM) strategies to maximize system performance and minimize life-cycle costs			Utilize management strategies and technologies to maximize street and highway efficiency	4.2	Costs	Using asset management principles to reduce long- term infrastructure costs, reduce the percentage of bridges rated "structurally deficient" or "functionally obsolete"
4.2.2	Strategy	Prioritize traffic flow improvements to strategically reduce congestion and delay		LRTP 2035	Utilize management strategies and technologies to maximize street and highway efficiency	4.3	Costs	Utilize and evaluate benefit-cost analysis in major projects
4.2.3	Strategy	Implement Intelligent Transportation Systems (ITS) and upgrade traffic signal equipment and communications and other technology to improve traffic flow with existing capacity		LRTP 2035	Utilize management strategies and technologies to maximize street and highway efficiency	1.1	Accessibility and Mobility	Level of Service(LOS) D or better on entire system
4.2.3	Strategy	Implement Intelligent Transportation Systems (ITS) and upgrade traffic signal equipment and communications and other technology to improve traffic flow with existing capacity		LRTP 2035	Utilize management strategies and technologies to maximize street and highway efficiency	1.2	Accessibility and Mobility	Reduce average commute time to below 20 minutes

Number	Туре	Name	Description	Source	Supports	PM Number	PM Category	Performance Measure
4.2.3	Strategy	Implement Intelligent Transportation Systems (ITS) and upgrade traffic signal equipment and communications and other technology to improve traffic flow with existing capacity		LRTP 2035	Utilize management strategies and technologies to maximize street and highway efficiency	1.3	Accessibility and Mobility	Travel time
4.2.3	Strategy	Implement Intelligent Transportation Systems (ITS) and upgrade traffic signal equipment and communications and other technology to improve traffic flow with existing capacity		LRTP 2035	Utilize management strategies and technologies to maximize street and highway efficiency	1.4	Accessibility and Mobility	Travel time reliability
4.2.3	Strategy	Implement Intelligent Transportation Systems (ITS) and upgrade traffic signal equipment and communications and other technology to improve traffic flow with existing capacity		LRTP 2035	Utilize management strategies and technologies to maximize street and highway efficiency	1.5	Accessibility and Mobility	Roadway throughput or VMT
4.2.3	Strategy	Implement Intelligent Transportation Systems (ITS) and upgrade traffic signal equipment and communications and other technology to improve traffic flow with existing capacity		LRTP 2035	Utilize management strategies and technologies to maximize street and highway efficiency	1.6	Accessibility and Mobility	Delay
4.2.3	Strategy	Implement Intelligent Transportation Systems (ITS) and upgrade traffic signal equipment and communications and other technology to improve traffic flow with existing capacity		LRTP 2035	Utilize management strategies and technologies to maximize street and highway efficiency	1.7	Accessibility and Mobility	Hours of congestions
4.2.3	Strategy	Implement Intelligent Transportation Systems (ITS) and upgrade traffic signal equipment and communications and other technology to improve traffic flow with existing capacity		LRTP 2035	Utilize management strategies and technologies to maximize street and highway efficiency	1.8	Accessibility and Mobility	Miles congested

Number	Туре	Name	Description	Source	Supports	PM Number	PM Category	Performance Measure
4.3	Objective	Coordinate transportation activities across jurisdictional boundaries where appropriate	Link to Goal #4: Keep Costs Reasonable and Sustainable.	LRTP 2035				
4.3.1	Strategy	Continue Transportation Systems Management (TSM) committee to coordinate infrastructure construction and planning in the MAPA TMA		LRTP 2035	Coordinate transportation activities across jurisdictional boundaries where appropriate			
4.3.2	Strategy	Conduct transportation- related studies and projects such as traffic signal coordination or safety studies on a multi- jurisdictional or regional basis to more efficiently use resources		LRTP 2035	Coordinate transportation activities across jurisdictional boundaries where appropriate	4.3	Costs	Utilize and evaluate benefit-cost analysis in major projects
4.3.3	Strategy	Actively improve project development process between local, regional, state and federal agencies to reduce costs and increase the speed of project delivery		LRTP 2035	Coordinate transportation activities across jurisdictional boundaries where appropriate	3.3	Environment and Urban Form	Average environmental compliance score
4.3.3	Strategy	Actively improve project development process between local, regional, state and federal agencies to reduce costs and increase the speed of project delivery		LRTP 2035	Coordinate transportation activities across jurisdictional boundaries where appropriate	4.4	Costs	Project delivery on-time performance
4.3.3	Strategy	Actively improve project development process between local, regional, state and federal agencies to reduce costs and increase the speed of project delivery		LRTP 2035	Coordinate transportation activities across jurisdictional boundaries where appropriate	4.5	Costs	Project delivery on-budget performance

4 ITS Stakeholders

Identifying stakeholders is an important task in ITS architecture development since effective ITS involves the integration of multiple stakeholders and their transportation systems. This section describes the stakeholders who either participated in the creation of the Omaha-Council Bluffs Regional ITS Architecture or whom the participating stakeholders felt were needed to be included in the architecture. Some stakeholders have been grouped in order to better reflect mutual participation or involvement in transportation services and elements. Every stakeholder in this section is related to one or more of the transportation inventory elements described in the next chapter, either as an individual stakeholder or as a member of a stakeholder group.

Stakeholder Name	Stakeholder Description	Group	Group Members
Adjacent Region TOC Operators	This element represents traffic operation centers and other transportation centers outside of the MAPA Regional ITS Study Area. These include, but not limited to Iowa DOT and NDOR Headquarters and NDOR District TOCs, as well as other Regional ITS architectures supported by Lincon-Landcaster MPO, Siouxland Metropolitan Planning commission and other adjacent regional architectures that will be developed for adjacent areas.	No	
City of Bellevue PWD	City of Bellevue Public Works Department	No	
City of Council Bluffs FD	City of Council Bluffs Fire Department	No	
City of Council Bluffs PD	City of Council Bluffs Police Department	No	
City of Council Bluffs PWD	City of Council Bluffs Public Works Department (PWD) is responsible for city traffic control and management and streets and bridge maintenance within the jurisdiction.	No	
City of Omaha FD	City of Omaha Fire Department	No	
City of Omaha PD	City of Omaha Police Department	No	
City of Omaha PWD	City of Omaha Public Works Department	No	
County Emergency Management Agencies	This represents Pottawattamie, Douglas, and Sarpy County Emergency Management Agencies.	Yes	County of Douglas EMA
County Emergency Management Agencies	This represents Pottawattamie, Douglas, and Sarpy County Emergency Management Agencies.	Yes	County of Pottawattamie Emergency Management Agency
County Emergency Management Agencies	This represents Pottawattamie, Douglas, and Sarpy County Emergency Management Agencies.	Yes	County of Sarpy EMA
County of Douglas EMA	Emergency Management Agency for Douglas County, Nebraska.	No	
County of Douglas SD	Douglas County Sheriffs Department	No	

Table 2: ITS Stakeholders

Stakeholder Name	Stakeholder Description	Group	Group Members
County of Pottawattamie Emergency Management Agency	The mission of the Pottawattamie County Emergency Management Agency (PCEMA) is to support, coordinate, and maintain county and local emergency management activities, under the direction of Pottawattamie County Emergency Management Commission, in order to establish sustainable communities and assure economic opportunities for the county and citizens. The PCEMA assesses risks that threaten the heath, safety, and welfare of the community, including natural and man-caused disasters, as well as civil unrest.	No	
County of Pottawattamie SD	Pottawattamie County Sheriffs Department	No	
County of Sarpy SD	Sarpy County Sheriffs Department	No	
County of Sarpy EMA	Emergency Management Agency for Sarpy County, Nebraska.	No	
Fire and Rescue	Fire and Rescue Vehicles for Bellevue, Bennington, Council Bluffs, Elkhorn, Gretna, LaVista, Omaha, Ralston, Omaha Airport Authority, United State Coast Guard, United States Air Force.	Yes	City of Bellevue FD
Fire and Rescue	Fire and Rescue Vehicles for Bellevue, Bennington, Council Bluffs, Elkhorn, Gretna, LaVista, Omaha, Ralston, Omaha Airport Authority, United State Coast Guard, United States Air Force.	Yes	City of Bennington FD
Fire and Rescue	Fire and Rescue Vehicles for Bellevue, Bennington, Council Bluffs, Elkhorn, Gretna, LaVista, Omaha, Ralston, Omaha Airport Authority, United State Coast Guard, United States Air Force.	Yes	City of Council Bluffs FD
Fire and Rescue	Fire and Rescue Vehicles for Bellevue, Bennington, Council Bluffs, Elkhorn, Gretna, LaVista, Omaha, Ralston, Omaha Airport Authority, United State Coast Guard, United States Air Force.	Yes	City of Gretna FD
Fire and Rescue	Fire and Rescue Vehicles for Bellevue, Bennington, Council Bluffs, Elkhorn, Gretna, LaVista, Omaha, Ralston, Omaha Airport Authority, United State Coast Guard, United States Air Force.	Yes	City of LaVista FD
Fire and Rescue	Fire and Rescue Vehicles for Bellevue, Bennington, Council Bluffs, Elkhorn, Gretna, LaVista, Omaha, Ralston, Omaha Airport Authority, United State Coast Guard, United States Air Force.	Yes	City of Omaha FD
Fire and Rescue	Fire and Rescue Vehicles for Bellevue, Bennington, Council Bluffs, Elkhorn, Gretna, LaVista, Omaha, Ralston, Omaha Airport Authority, United State Coast Guard, United States Air Force.	Yes	City of Papillion FD
Fire and Rescue	Fire and Rescue Vehicles for Bellevue, Bennington, Council Bluffs, Elkhorn, Gretna, LaVista, Omaha, Ralston, Omaha Airport Authority, United State Coast Guard, United States Air Force.	Yes	City of Ralston FD
IA State Patrol Central Headquarters	Des Moines Dispatch in Armory	No	
IA State Patrol District 3	District #3 of the Iowa State Patrol is comprised of thirteen counties within the southwest corner of Iowa. District 3 has the most interstate miles in Iowa with approximately 200 miles which includes I-80, I-29 and I-680. The District is bordered by Nebraska on the west and Missouri on the south.	No	
	The District #3 office is located at the junction of Highway 6 and Interstate 80. District #3 serves the following counties: Adair, Adams, Cass, Fremont, Mills, Montgomery, Page, Pottawattamie and Taylor.		
Iowa DOT Central Headquarters	Iowa Department of Transportation	No	
Iowa DOT District 4 Maintenance and Construction Office (Atlantic)		No	

Stakeholder Name	Stakeholder Description	Group	Group Members
Iowa DOT District 4 Offices		Yes	Iowa DOT District 4 Maintenance and Construction Office (Atlantic)
Iowa DOT District 4 Offices		Yes	lowa DOT District 4 Resident Construction Engineers Office
Iowa DOT District 4 Resident Construction Engineers Office		No	
Local Law Enforcement	Law Enforcement Equipment, dispatch centers and E991 Centers for Bellevue, Bennington, Council Bluffs, Elkhorn, LaVista, Omaha, Papillion, Ralston, Douglas County Sheriff, Pottawattamie County Sheriff, Sarpy County Sheriff Department and Law Enforcement elements of the USAF and US CG.	Yes	City of Bellevue PD
Local Law Enforcement	Law Enforcement Equipment, dispatch centers and E991 Centers for Bellevue, Bennington, Council Bluffs, Elkhorn, LaVista, Omaha, Papillion, Ralston, Douglas County Sheriff, Pottawattamie County Sheriff, Sarpy County Sheriff Department and Law Enforcement elements of the USAF and US CG.	Yes	City of Bennington PD
Local Law Enforcement	Law Enforcement Equipment, dispatch centers and E991 Centers for Bellevue, Bennington, Council Bluffs, Elkhorn, LaVista, Omaha, Papillion, Ralston, Douglas County Sheriff, Pottawattamie County Sheriff, Sarpy County Sheriff Department and Law Enforcement elements of the USAF and US CG.	Yes	City of Council Bluffs PD
Local Law Enforcement	Law Enforcement Equipment, dispatch centers and E991 Centers for Bellevue, Bennington, Council Bluffs, Elkhorn, LaVista, Omaha, Papillion, Ralston, Douglas County Sheriff, Pottawattamie County Sheriff, Sarpy County Sheriff Department and Law Enforcement elements of the USAF and US CG.	Yes	City of LaVista PD
Local Law Enforcement	Law Enforcement Equipment, dispatch centers and E991 Centers for Bellevue, Bennington, Council Bluffs, Elkhorn, LaVista, Omaha, Papillion, Ralston, Douglas County Sheriff, Pottawattamie County Sheriff, Sarpy County Sheriff Department and Law Enforcement elements of the USAF and US CG.	Yes	City of Omaha PD
Local Law Enforcement	Law Enforcement Equipment, dispatch centers and E991 Centers for Bellevue, Bennington, Council Bluffs, Elkhorn, LaVista, Omaha, Papillion, Ralston, Douglas County Sheriff, Pottawattamie County Sheriff, Sarpy County Sheriff Department and Law Enforcement elements of the USAF and US CG.	Yes	City of Papillion PD
Local Law Enforcement	Law Enforcement Equipment, dispatch centers and E991 Centers for Bellevue, Bennington, Council Bluffs, Elkhorn, LaVista, Omaha, Papillion, Ralston, Douglas County Sheriff, Pottawattamie County Sheriff, Sarpy County Sheriff Department and Law Enforcement elements of the USAF and US CG.	Yes	City of Ralston PD

Stakeholder Name	Stakeholder Description	Group	Group Members
Local Law Enforcement	Law Enforcement Equipment, dispatch centers and E991 Centers for Bellevue, Bennington, Council Bluffs, Elkhorn, LaVista, Omaha, Papillion, Ralston, Douglas County Sheriff, Pottawattamie County Sheriff, Sarpy County Sheriff Department and Law Enforcement elements of the USAF and US CG.	Yes	County of Douglas SD
Local Law Enforcement	Law Enforcement Equipment, dispatch centers and E991 Centers for Bellevue, Bennington, Council Bluffs, Elkhorn, LaVista, Omaha, Papillion, Ralston, Douglas County Sheriff, Pottawattamie County Sheriff, Sarpy County Sheriff Department and Law Enforcement elements of the USAF and US CG.	Yes	County of Pottawattamie SD
Local Law Enforcement	Law Enforcement Equipment, dispatch centers and E991 Centers for Bellevue, Bennington, Council Bluffs, Elkhorn, LaVista, Omaha, Papillion, Ralston, Douglas County Sheriff, Pottawattamie County Sheriff, Sarpy County Sheriff Department and Law Enforcement elements of the USAF and US CG.	Yes	County of Sarpy SD
Local Media Outlets	Local TV, radio and newspapers.	No	
Local Railroad Operators		Yes	BNSFRR
Local Railroad Operators		Yes	UPRR
MAPA	Metropolitan Area Planning Agency, the MPO and TMA for the greater Omaha/Council Bluffs metro area.	No	
Media TV, Radio and News Outlets	Local TV and radio stations, local newspapers and other media outlets within the region.	No	
Metro	Metro is the operational name for the Transit Authority-City of Omaha (formerly Metro Area Transit or MAT).	No	
NDOR Central HQ (Lincoln)	NDOR Central Offices in Lincoln Nebraska.	No	
NDOR District 2 Offices (Omaha)	Nebraska Department of Roads	No	
NE State Patrol Troop A	Nebraska State Patrol, Troop A Omaha.	No	
Other Local PWD	Public Works Departments of Bennington, Elkhorn, LaVista, Papillion, Ralston and the County Engineer Offices in Douglas, Pottawattamie and Sarpy Counties.	Yes	City of Bennington PWD
Other Local PWD	Public Works Departments of Bennington, Elkhorn, LaVista, Papillion, Ralston and the County Engineer Offices in Douglas, Pottawattamie and Sarpy Counties.	Yes	City of LaVista PWD
Other Local PWD	Public Works Departments of Bennington, Elkhorn, LaVista, Papillion, Ralston and the County Engineer Offices in Douglas, Pottawattamie and Sarpy Counties.	Yes	City of Papillion PWD
Other Local PWD	Public Works Departments of Bennington, Elkhorn, LaVista, Papillion, Ralston and the County Engineer Offices in Douglas, Pottawattamie and Sarpy Counties.	Yes	City of Ralston PWD
Other Local PWD	Public Works Departments of Bennington, Elkhorn, LaVista, Papillion, Ralston and the County Engineer Offices in Douglas, Pottawattamie and Sarpy Counties.	Yes	County of Douglas CE
Other Local PWD	Public Works Departments of Bennington, Elkhorn, LaVista, Papillion, Ralston and the County Engineer Offices in Douglas, Pottawattamie and Sarpy Counties.	Yes	County of Pottawattamie CE
Other Local PWD	Public Works Departments of Bennington, Elkhorn, LaVista, Papillion, Ralston and the County Engineer Offices in Douglas, Pottawattamie and Sarpy Counties.	Yes	County of Sarpy CE
Private Agencies		No	

Stakeholder Name	Stakeholder Description	Group	Group Members
The Public	This includes individuals that use the transportation system in the Omaha/Council Bluffs region.	No	
Tow Service Operators	General Tow Operations in Nebraska and Iowa.	No	

5 ITS Inventory

An inventory of existing and planned transportation systems is the basis for the Omaha-Council Bluffs Regional ITS Architecture. The transportation system inventory was developed based on input from stakeholders throughout the region. The inventory includes a list of ITS elements and the associated stakeholder responsible for system operation.

This section describes every surface transportation inventory element for the region. A transportation element can be either a center, vehicle, traveler or field equipment. Each transportation element listed below has one or more stakeholders associated with it. In order to reduce the complexity of the architecture, some transportation elements with like functionality have been grouped together. Each transportation inventory element is mapped to at least one National ITS Architecture entity.

Element Name	Element Description	Stakeholder	Element Status	Parent Element
Adjacent Region TOC Operators	Other NDOR and Iowa Transportation Operations Center that would be advised of incidents that may affect their respective region	Adjacent Region TOC Operators	Existing	
City of Bellevue PWD Field Equipment	This element represents the roadside ITS equipment (such as traffic signals, CCTV and DMS) that is controlled and monitored by the City of Bellevue Public Works Department.	City of Bellevue PWD	Existing	
City of Bellevue PWD Signal Equipment	No central control system, interconnections on major intersections, using 45 170 controllers. Includes Preemption (strobe for fire vehicles). No future connections planned to the NDOR TOC	City of Bellevue PWD	Existing	City of Bellevue PWD Field Equipment
City of Bellevue PWD Traffic Detection Stations	Inventory of 39 loop detectors, 5 video detectors and 3 intersections with both loop and video. There are 7 pedestrian crossing lights and 2 solar powered arrow boards.	City of Bellevue PWD	Existing	City of Bellevue PWD Field Equipment
City of Council Bluffs PWD CCTV	24 cameras have been installed in the City. Cameras are used to provide traffic information to Council Bluffs Public Works and Iowa DOT.	City of Council Bluffs PWD	Existing	City of Council Bluffs PWD Field Equipment
City of Council Bluffs PWD Field Equipment	This element represents the roadside ITS equipment (such as traffic signals, CCTV and DMS) that is controlled and monitored by the City of Council Bluffs Public Works Department.	City of Council Bluffs PWD	Existing	
City of Council Bluffs PWD Traffic Detection Devices	90 intersections operated by closed loop or central control system.	City of Council Bluffs PWD	Existing	City of Council Bluffs PWD Field Equipment
City of Council Bluffs PWD Traffic Signal Equipment	112 signalized intersections with 10 signal preemption stations, 4 signals within 200 feet of a rail crossing with 6 planned photo red light running enforcement stations.	City of Council Bluffs PWD	Existing	City of Council Bluffs PWD Field Equipment
City of Council Bluffs TOC	City of Council Bluffs Traffic Operations Center	City of Council Bluffs PWD	Existing	
City of Council Bluffs Website and Social Media	Web site to disseminate work zone, road closures and restrictions and detours information to the traveling public.	City of Council Bluffs PWD	Existing	

Table 3: ITS Inventory

Element Name	Element Description	Stakeholder	Element Status	Parent Element
City of Omaha PWD Detour Signal System	Traffic signal system on the "L" Street and West Center Road corridors to be invoked to provide better flow on these facilities when traffic is being diverted from I-80.	City of Omaha PWD	Existing	City of Omaha PWD Field Equipment
City of Omaha PWD Field Equipment	This element represents the roadside ITS equipment (such as traffic signals, CCTV and DMS) is controlled and monitored by the City of Omaha Public Works Department.	City of Omaha PWD	Existing	
City of Omaha PWD Reversible Lane Use Signs	Numerous existing lane arrow signs.	City of Omaha PWD	Existing	City of Omaha PWD Field Equipment
City of Omaha PWD Traffic Detection Stations	50 intersections with detection cameras. 3 to 4 units planned per year. Induction loops. 10 permanent traffic counting stations sites, 200-300 portable counting units.	City of Omaha PWD	Existing	City of Omaha PWD Field Equipment
City of Omaha PWD Traffic Signal Equipment	Maintain 1,000 signals w\170 Controllers, Wapiti software, Master control local signals, 60 dial up to master controllers. Can communicate with 660 of the 1,000 units. System can reach 375 to 400 intersections (about 80% of signals) 18 timing plans are available, typically run 3 (time of day, day of week, emergency). 225 OPTICOM vehicle preemption units installed throughout the city. System also includes numerous existing no-turn- on-red, lane restriction and turn lane electronic signs.	City of Omaha PWD	Existing	City of Omaha PWD Field Equipment
City of Omaha Smart Parking Meters	This represents the smart parking meters installed within the City of Omaha. Meters provide payment options for those parking their cars in the Old Market and Downtown with either credit cards or coins.	City of Omaha PWD	Existing	
City of Omaha TOC	City of Omaha Traffic Operations Center	City of Omaha PWD	Existing	
City of Omaha Website and Social Media	Contains all road closures, notify medial of scheduled closures, phone numbers available that media can get updates.	City of Omaha PWD	Existing	
County Emergency Operations Centers	County-level EOCs supports, coordinates, and maintains county and local emergency management activities.	County Emergency Management Agencies	Existing	
County of Pottawattamie 911 Center	The Pottawattamie County Communications Center is the public safety answering point (PSAP) for all of Pottawattamie County, including the City of Council Bluffs. The Center provides support to public safety agencies within Pottawattamie County, Iowa. The 911 Communications Center receives 911 calls and the communications center personnel use the radio communications system and send the proper public safety response.		Existing	
County of Pottawattamie EOC	The County of Pottawattamie Emergency Management Center (EOC). The EOC supports, coordinates, and maintains county and local emergency management activities, under the direction of Pottawattamie County Emergency Management Commission. The EOC is activated by incident commanders in the field during large scale emergencies.	County of Pottawattamie SD	Existing	County Emergency Operations Centers
Driver	This represents drivers of vehicles along roads and highways within the region.	The Public	Existing	

Element Name	Element Description	Stakeholder	Element Status	Parent Element
Enforcement Agencies	Regional enforcement agencies, including State and local agencies.	Local Law Enforcement	Existing	
Financial Institution	This represents organizations that handle all electronic fund transfer requests to enable the electronic payment at smart parking meters in the City of Omaha.	Private Agencies	Existing	
Fire and Rescue Emergency Vehicles	Basic inventory of firefighting apparatus, EMT units and fleet vehicles. HAZMAT units in Omaha, Bellevue, Council Bluffs and Offutt AFB. Includes Preemption (strobe for fire vehicles) for Omaha, Council Bluffs, Bellevue and Papillion.	Fire and Rescue	Existing	
IA State Patrol Communications Center (Atlantic)	Iowa State Patrol Communications and Dispatch Center utilize a Computer-Aided Dispatch (CAD) system, which enables Communications Specialist to enter call-taking information, record management, mapping, and correlation of certain transmissions for specific calls of service. New technology allows State Patrol Communications to receive calls from wireless phones with automated identifiers of the person calling. Future technology will show the location they are calling from, displayed on a mapping program. The Atlantic Center Dispatch work closely with the Communication Center in Des Moines to post Amber Alerts. Additionally, Dispatch personnel in Atlantic communicate with officers in the field to obtain road weather conditions, and input this information in the Iowa DOT CARS.	IA State Patrol District 3	Existing	
IA State Patrol Communications Center (Des Moines)	Iowa State Patrol Communications Center in Des Moines verifies receipt of the AMBER Alert Notification Plan received by local law enforcement agencies, via telephone or IOWA System. The AMBER Alert information is then sent to all broadcasting companies, the National Weather Service and the Department of Transportation, who then broadcast to the public.	IA State Patrol Central Headquarters	Existing	
IA State Patrol Emergency Vehicles	Fleet of police vehicles employed by the Iowa State Patrol.	IA State Patrol District 3	Existing	
IA State Patrol Emergency Vehicles - AVL	Emergency vehicle Automatic Vehicle Location (AVL) will be used in the future to track the location of individual patrol cars. The MDTs within patrol vehicles currently have GPS; however the statewide communication network prevents location information from being shared with the Patrol's Communication Center.	IA State Patrol District 3	Existing	IA State Patrol Emergency Vehicles

Element Name	Element Description	Stakeholder	Element Status	Parent Element
IA State Patrol Emergency Vehicles - MDTs	The State Patrol's entire vehicle fleet is equipped with Mobile Data Terminals (MDTs). MDTs are essentially ruggedized notebooks with GPS sensors. The patrol's TraCS software program, previously developed by IDOT, is loaded on the MDTs. TraCS provides an automated format for traffic tickets, crash reports, motor vehicle inspections, Operating While Intoxicated (OWI) reports, and Iowa's NIBRS (National Incident Based Reporting System) Criminal Information Reporting Form (CIRF). MDTs have pen-based tablets, which allow officers to obtain signatures electronically. A barcode scanner allows drivers' license and vehicle registration information to be captured. Officers can take the MDTs home, connect them to the department's Wide Area Network (WAN) via a watts line, and e-mail the data to supervisors, or they can perform this task from the nearest post, eliminating the need to return to state headquarters at the end of each shift. Supervisors may review the reports and request changes electronically.	IA State Patrol District 3	Existing	IA State Patrol Emergency Vehicles
IA State Patrol Emergency Vehicles - Video Cameras	The patrol started purchasing in-vehicle cameras in 1993, and finished the deployment on all its vehicles in 2003. Currently, video captured by the in-vehicle cameras are recorded locally to a server installed in the vehicle. In the future, video from patrol vehicles can be used by emergency dispatch operators to verify conditions in the field and provide a more timely response. Video from cameras is stored locally on patrol vehicles on VHS tape. Video is not shared in real-time.	IA State Patrol District 3	Existing	IA State Patrol Emergency Vehicles
lowa DOT 511 System	The 511 system began operation in November 2002 by providing travelers with winter road condition information. In April 2003 the system was expanded to include information on road closures, restrictions and travel delays caused by construction and maintenance activities. In November 2003 the system was expanded again to include incidents resulting in road closures or significant travel delays and towing restrictions during winter storms. 511 information can be accessed from almost anywhere in lowa by dialing 511, or from anywhere in the world by dialing 800- 288-1047 or accessing www.511.ia.org. 511 links are also included on the websites of many local television stations. Information provided by the 511 system is fed from the lowa DOT's CARS.	Iowa DOT Central Headquarters	Existing	
lowa DOT ATRs	Iowa DOT Automatic Traffic Data Recorders (ATRs) collect traffic flow and classification data along state highways. Data collected from ATRs are used internally as well as by other agencies (e.g., MAPA) for transportation planning purposes.	lowa DOT Central Headquarters	Existing	lowa DOT Central Headquarters Field Equipment
Iowa DOT Automated Notification System	Computer or server equipment to support the automatic notification of traffic incidents, events, construction and emergencies via cell phone, pagers or e-mail notification.	Iowa DOT District 4 Offices	Planned	
Iowa DOT Automated Work Zone	Smart Work Zones.	lowa DOT Central Headquarters	Existing	

Element Name	Element Description	Stakeholder	Element Status	Parent Element
Iowa DOT Automatic Gate Systems	Manual ramp and mainline gates that are used to close roadways when incidents or weather events prevent safe travel. These are not currently planned, but rather desired by stakeholders.	Iowa DOT District 4 Offices	Existing	Iowa DOT District 4 Field Equipment
Iowa DOT CARS	The Condition Acquisition and Reporting System (CARS) is situation reporting system software that allows state agencies and authorized users (e.g., Iowa State Patrol and Iowa DOT Maintenance and Construction) to input and report to the public regarding weather and roadway conditions and incidents. CARS is also the software that operates the 511 webpage and voice-activated phone line. Any situation that affects the transportation network or a region can be entered into the CARS system via a secure internet site.	Iowa DOT Central Headquarters	Existing	
lowa DOT CCTV	Pan-tilt-zoom camera monitoring system to be installed on the Interstate in and around the Council Bluffs area. Cameras will be used to monitor traffic and weather conditions, and to quickly verify incidents. Cameras will also be used to monitor the operational status of ITS field devices and to ensure these devices are working correctly.	Iowa DOT District 4 Offices	Existing	lowa DOT District 4 Field Equipment
Iowa DOT Central Headquarters Field Equipment	This element represents the roadside ITS equipment, such as Work Zone Equipment and Signal Systems, that are controlled and monitored by the Iowa DOT Central Headquarters.	Iowa DOT Central Headquarters	Existing	
Iowa DOT Central Headquarters Office	The Iowa DOT Headquarters office, located in Ames, represents various the communications and software platforms that are required to carry out ITS services from this location. This office controls DMS software and is responsible for e-mail, fax, pager, and voice communications. The Iowa DOT Central Headquarters Office is the primary DMS operator for Amber Alerts and adverse weather conditions. The Iowa State Patrol Communications Center (Des Moines) also can control DMS for Amber Alerts, however, most of the times the Iowa State Patrol sends a request for posting Amber Alerts to the Iowa DOT Central Headquarters Office.	Iowa DOT Central Headquarters	Existing	
Iowa DOT Detection Stations	Existing and planned detection stations and roadway sensors. The system will be used to measure speeds, volume and occupancy by lane.	Iowa DOT Central Headquarters	Existing	lowa DOT Central Headquarters Field Equipment
Iowa DOT District 4 Field Equipment	This element represents the roadside ITS equipment, such as CCTV and DMS, that are controlled and monitored by the Iowa DOT District 4 Offices	Iowa DOT District 4 Offices	Existing	
Iowa DOT District 4 Offices	Iowa DOT District 4 offices include both resident construction engineer and maintenance and construction garages in Atlantic, Iowa. Offices manage and control CCTV, DMS, HAR/LPFM, detection sensors, and other roadside equipment. Offices are also responsible for communicating traffic-related information to other agencies.	Iowa DOT District 4 Offices	Existing	
Iowa DOT Freeway Sensors	Freeway sensors collect traffic speed data for use in real-time traffic monitoring applications. Data from speed sensors may be used to populate a regional traffic flow map that can be used to plan trips, and detect incidents.	Iowa DOT Central Headquarters	Existing	Iowa DOT Central Headquarters Field Equipment

Element Name	Element Description	Stakeholder	Element Status	Parent Element
Iowa DOT HAR	The Highway Advisory Radio (HAR) system is used to transmit traveler information to en-route travelers via the radio within their vehicle. 1-2 HAR units are planned for the Council Bluffs region.	Iowa DOT District 4 Offices	Existing	Iowa DOT District 4 Field Equipment
Iowa DOT Maintenance and Construction Vehicles	The sensory, processing, storage and communications functions installed upon the maintenance vehicle that are necessary to support highway maintenance and construction. The maintenance vehicle element provides the two-way communications between drivers/operators and dispatchers and maintains and communicates current location and status information.	Iowa DOT District 4 Offices	Existing	
Iowa DOT Maintenance and Construction Vehicles - AVL	The GPS unit installed on maintenance and construction vehicle that provides real-time vehicle location information to the vehicle and dispatch.	Iowa DOT District 4 Offices	Existing	Iowa DOT Maintenance and Construction Vehicles
Iowa DOT Maintenance and Construction Vehicles - MDTs	Laptops installed within Maintenance or Construction vehicles provide information to/from operators in the field, and dispatch personnel. MDTs allow operators in the field report road conditions and status of maintenance activities. Through MDTs operators obtain dispatch requests and general information needed to maintain roadways.	Iowa DOT District 4 Offices	Existing	Iowa DOT Maintenance and Construction Vehicles
Iowa DOT Maintenance and Construction Vehicles - Onboard Arrow Boards	Arrows boards installed on a maintenance or construction vehicle that provides information and instructions to motorists.	Iowa DOT District 4 Offices	Existing	Iowa DOT Maintenance and Construction Vehicles
Iowa DOT Maintenance and Construction Vehicles - On-Board Environmental Sensors		lowa DOT District 4 Offices	Existing	Iowa DOT Maintenance and Construction Vehicles
Iowa DOT Permanent DMS - Freeway	17 existing DMS deployed in Council Bluffs/Pottawattamie County with more units planned. DMS are used to disseminate traffic accident, AMBER Alerts, special event, and weather conditions. Permanent DMS includes both over-the-roadway and side mount DMS.	lowa DOT District 4 Offices	Existing	lowa DOT District 4 Field Equipment
Iowa DOT Permanent DMS - Rest Areas	Iowa DOT operate DMS at rest areas and welcome centers across Iowa to disseminate information including AMBER alerts, time/temperature and road construction activities and road conditions.	Iowa DOT Central Headquarters	Existing	lowa DOT Central Headquarters Field Equipment
lowa DOT Portable DMS	Portable DMS units will be used to direct traffic for special events, maintenance and construction activities, and for general incident management. Portable DMS will be the responsibility of Iowa DOT's contractor. Iowa DOT will notify its contractor of messages to be displayed and general locations where portable DMS should be deployed.	lowa DOT District 4 Offices	Existing	lowa DOT District 4 Field Equipment

Element Name	Element Description	Stakeholder	Element Status	Parent Element
Iowa DOT Rest Area Kiosks	Internet kiosks have now been installed at Iowa's 40 statewide rest areas, including those in and around the Council Bluffs region. Kiosks provide information about weather, road conditions, travel accommodations, restaurants, and tourist attractions. The Iowa DOT also has computer monitors at most rest areas with rotating screens displaying weather and road data. The new kiosks have interactive touch-screens, allowing travelers to view road conditions for a specific stretch of roadway, find a motel or locate tourist attractions along their journey.	lowa DOT Central Headquarters	Existing	
Iowa DOT RWIS Sensors	RWIS sensors are located in and along lowa's Interstate and primary roads. The RWIS network of sensors is designed to provide lowa Department of Transportation Maintenance employees the specific weather information they need about the roadway. With specific roadway-based weather information, better decisions and treatment strategies for snow and ice control are possible. The information is also a valuable aid in summer activities where weather can affect the timing and completion of projects such as pavement patching, mowing, herbicide spraying, etc.	lowa DOT Central Headquarters	Existing	lowa DOT Central Headquarters Field Equipment
Iowa DOT Statewide TOC	The Iowa Statewide TOC serves as a central coordination point for multi-regional events (e.g., weather-related events). It also supports districts as needed, such as in off-hours operation or supplemental assistance during large events or when operators are overloaded with multiple simultaneous events.	lowa DOT Central Headquarters	Existing	
Iowa DOT Website and Social Media	The Iowa DOT website is a placeholder element representing the various websites owned and operated by the Iowa DOT that provide the traveling public with a variety of information including: statewide road and weather conditions, incident information, oversize vehicle permitting, construction schedules, work zone information, etc. Websites include the existing Iowa DOT 511 and WeatherView websites.	lowa DOT Central Headquarters	Existing	
Local Law Enforcement Dispatch and E911 Center	Police, fire and emergency services dispatch equipment and personnel for Sarpy, Douglas and Pottawattamie Counties.	Local Law Enforcement	Existing	
Local Law Enforcement Emergency Vehicles		Local Law Enforcement	Existing	
Local Law Enforcement Emergency Vehicles - AVL	Inventory of radio-equipped police cruisers and fleet vehicles. Various portable speed detection trailers and traffic control devices at various jurisdictions.	Local Law Enforcement	Existing	Local Law Enforcement Emergency Vehicles
Local Law Enforcement Emergency Vehicles - MDTs		Local Law Enforcement	Existing	Local Law Enforcement Emergency Vehicles
MAPA Data Collection	Systems used to retrieve and store data at MAPA offices.	МАРА	Existing	
MAPA Rideshare	MAPA Rideshare web-based data system to match potential carpooling interests.	MAPA	Existing	
Element Name	Element Description	Stakeholder	Element Status	Parent Element
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Media CCTV	WOWT, KETV cameras with PTZ installed on NDOR ROW by permit. 4 existing units.		Existing	
Media TV, Radio and News Outlets	Local TV and radio stations, local newspapers and other media outlets that are or can be contacted to apprise the public of transportation issues and emergencies in the metro area.	Media TV, Radio and News Outlets	Existing	
Metro Bus Departure Signs	This element represents lane signs updated with real-time arrival time changes and route information for buses arriving at designated lanes at transit center.	Metro	Planned	
Metro Dispatch Center	Metro Dispatch center equipment used to tack and monitor fixed line and MOBY service in the Omaha metro area and to dispatch MCO.	Metro	Existing	
Metro E Card	This represents cards that are used to make electronic payments made via a "Tap-and-go" feature at fareboxes on buses. Cards could be purchased and reloaded for bus passes.	Metro	Planned	
Metro Fixed-line Transit Vehicles	Fleet of 146 busses equipped with AVL and two- way radio connections to the Metro dispatch center. Metro will install new GFI Odyssey fare boxes in third quarter of 2013. AVL system is planned to be upgraded in 2014.	Metro	Existing	
Metro MOBY Vehicles	Elderly and handicapped vehicles use for on- demand transit service.	Metro	Existing	
Metro Ticket Vending Machines	Ticket vending machines at all transit centers and Metro facility in third quarter of 2013.	Metro	Planned	
Metro Website	Website offers route and schedule information to the public. Metro updated their website in 2010 to allow for better user interface.	Metro	Existing	
NDOR 511 System	NDOR and the Nebraska State Patrol (NSP) deployed a statewide 511 Traveler Information system to replace the toll-free weather and road condition system formerly operated by the Nebraska State Patrol. The 511 system operates 24 hours-a-day and is available by dialing 511 from any cellular telephone or land-line in the state. The same 511 information is also available via the Internet from the NDOR or NSP websites. Meridian maintains the Nebraska 511 system. The 511 system provides the following types of information; Incidents/accidents, closures, lane restrictions, traffic congestion, obstructional hazards, construction, events/info and road conditions. Form the 511 website users can obtain traffic images.	NDOR Central HQ (Lincoln)	Existing	
NDOR Anti-Icing Stations	Anti-Icing Stations are a potential element throughout NDOR District 2. A specific location that has been identified as a potential near-term installation is US-6 (West Dodge Road) between I- 680 and 180th Street in Omaha. The system includes sensors, spray units, pump stations, control hardware and software and communication hardware and software.	NDOR District 2 Offices (Omaha)	Planned	NDOR Field Equipment

Element Name	Element Description	Stakeholder	Element Status	Parent Element
NDOR ATR	Automatic traffic recorder stations within the MAPA Transportation Study Area include 7 permanent ATR stations which provide traffic count and classification data and 5 WIM data collection stations (not Scalehouses) that allow annual data collection with portable recorders. Data is also collected at approximately 120 other locations on either a rotating two-year cycle or four times a year, based on the data required.	NDOR District 2 Offices (Omaha)	Existing	NDOR Field Equipment
NDOR Automated Gate Closure	NDOR has a series of manual ramp and mainline gates that used when the freeway system needs to be closed due to incidents or weather events. The automated gate closure system would provide gate status information to the TMC and to the public	NDOR District 2 Offices (Omaha)	Planned	NDOR Field Equipment
NDOR Automated Work Zone	Smart Work Zones to be used in conjunction with construction sites along the I-80 and NDOR Freeway system corridors and other NDOR facilities. Smart Work Zones gather data and provide road condition information to the traveling public via portable DMS and websites. Where applicable, alternate route information will also be provided.	NDOR District 2 Offices (Omaha)	Existing	
NDOR CCTV	Pan-tilt-zoom camera monitoring system to be installed on the Interstate and Expressway System in Omaha and along the I-80 corridor between Omaha and Lincoln. Camera system can also be used for security monitoring.	NDOR District 2 Offices (Omaha)	Existing	NDOR Field Equipment
NDOR Detection Stations	Existing and planned detection stations and roadway sensors. The system will be used to measure speeds, volume and occupancy by lane.	NDOR District 2 Offices (Omaha)	Existing	NDOR Field Equipment
NDOR DMS	10 permanent Mark IV full matrix signs with walk-in cabinets currently exist with 3 more units planned. 2 smaller Mark IV two-line continuous matrix signs are also planned. 16 existing portable message signs by multiple vendors are in use. Signs in use included ADDCO, American Signal and Vermac.	NDOR District 2 Offices (Omaha)	Existing	NDOR Field Equipment
NDOR DOC	District Operations Center (DOC) to coordinate traffic management activities in the Omaha metro area. The physical location is in Omaha but Iowa DOT may elect to have staff located within the center for freeway management of I-80/I-29.	NDOR District 2 Offices (Omaha)	Existing	
NDOR Field Equipment	This element represents the roadside ITS equipment, such as CCTV and DMS, that are controlled and monitored by NDOR District 2 Offices in Omaha.	NDOR District 2 Offices (Omaha)	Existing	
NDOR HCRS	NDOR's system for collecting and disseminating road condition information is called the Highway Condition Reporting System (HCRS). NDOR employees input information into HCRS, which then feeds the information to the 511 phone and web systems. The HCRS is similar to Iowa's CARS system, which is also an event reporting system. In the future, a link between NDOR's HCRS and Iowa's CARS may be established to give operators in the region and more robust picture of regional incidents and events. Merged data could then be posted to a single website to provide a one-stop shop for traveler information.	NDOR District 2 Offices (Omaha)	Existing	

Element Name	Element Description	Stakeholder	Element Status	Parent Element
NDOR Maintenance and Construction Vehicles	The sensory, processing, storage and communications functions installed upon the maintenance vehicle that are necessary to support highway maintenance and construction. The maintenance vehicle element provides the two-way communications between drivers/operators and dispatchers and maintains and communicates current location and status information.	NDOR District 2 Offices (Omaha)	Existing	
NDOR RWIS	NDOR has four existing and two planned RWIS devices. These devices are used to provide highway and bridge deck surface and subsurface temperature measurements. Other weather condition information is also being gathered.	NDOR District 2 Offices (Omaha)	Existing	NDOR Field Equipment
NDOR Signal System	Traffic signals are controlled locally from the field controllers.	NDOR District 2 Offices (Omaha)	Existing	NDOR Field Equipment
NDOR Website and Social Media	NDOR website provides the traveling public with a variety of information including: statewide road and weather conditions, incident information, oversize vehicle permitting, construction schedules, work zone information, etc.	NDOR Central HQ (Lincoln)	Existing	
NE State Patrol Communications Center (Omaha)	The Nebraska State Patrol Communications and Dispatch Center. This element represents the counterpart to the IA State Patrol Com Center. The NE State Patrol utilize a Computer-Aided Dispatch (CAD) system, which enables Communications Specialist to enter call-taking information, record management, mapping, and correlation of certain transmissions for specific calls of service. The NE State Patrol will be involved for incidents occurring near the IA/NE state border, as well as general coordination.	NE State Patrol Troop A	Existing	
NE State Patrol Emergency Vehicles	NE State Patrol Emergency Vehicles represents the various systems installed on-board emergency response vehicles that provide the sensory, processing, storage, and communications functions necessary to support emergency response. This Element includes the existing and future in-vehicle systems that communicate with emergency management centers and or hospitals for routine and emergency activities.	NE State Patrol Troop A	Existing	
NE State Patrol Motorist Assist Vehicles	The Metro Area Motorist Assist Program. The program consists of three vans equipped with tools to assist stranded or distressed motorists along the I-80, I-680, I-480 and I-29 facilities in the Omaha/Council Bluffs area as well as the West Dodge Road, West Center Road and Kennedy Freeway (US-75) arterials. The vans are manned by a group of 30 volunteers trained by the Nebraska State Patrol. The volunteers change flat tires, supply gas, and generally assist area motorists when they experience the misfortune of breaking down. The MAMAP van crews also mark abandoned cars for towing, pick up debris in active driving lanes and help local officials during incidents. An AVL system is planned to be installed on the motorist assist vehicles to provide real-time vehicle location information to the vehicle and dispatch.	NE State Patrol Troop A	Existing	

Element Name	Element Description	Stakeholder	Element Status	Parent Element
Other Local PWD Field Equipment	Several traffic signals operated and maintained by Bennington, LaVista, Papillion, Ralston and the County Engineer Offices in Douglas, Pottawattamie and Sarpy Counties. Includes signal detection equipment.	Other Local PWD	Existing	
Personal Communications and Computing Devices	Communications and computing devices owned and operated by users of the transportation network that are used to obtain traveler information while en-route or pre-trip. This includes but is not limited to computers, PDAs, pagers, and cell phones.	The Public	Existing	
Private Agency Websites	Websites that are owned and operated by private agencies that provide traveler information (travel times), or services (gas, food, lodging, vehicle services) that travelers may desire while traveling.	Private Agencies	Existing	
Public Vehicles	Technologies such as a radio that are installed within general vehicles including personal automobiles, commercial vehicles, or other vehicle types that interface with ITS electronics. Public vehicles also include automated crash notification systems that automatically send an alert to a private telematics provider (e.g., OnStar) of an incident so as to initiate a quick timely response	The Public	Existing	
Tow Service Operators	Tow Operators in the Metro area. State patrol and other law enforcement dispatch call tow operators to clear incidents. Tow operators are typically called based on proximity to the incident however, a rotating system is also used for vehicles that are not a disruption to traffic (e.g., vehicles parked on the shoulder).	Tow Service Operators	Existing	
Traffic	This represents vehicular traffic moving along the transportation system in the Omaha/Council Bluffs region.	The Public	Existing	
Traveler Card	This represents credit cards used by the general public for payment at smart parking meters in the City of Omaha.	The Public	Existing	
Travelers	Individual users of the transportation network. Travelers can be any human entity traveling from origin to destination; however, they do not necessarily have to be within a vehicle. Travelers may represent drivers, or individuals at a rest-area or other trip generation site.	The Public	Existing	

6 ITS Services

ITS services describe what can be done to improve the efficiency, safety, and convenience of the regional transportation system through better information, advanced systems and new technologies. Some services are specific to one primary stakeholder while others require broad stakeholder participation. This section describes the ITS services that meet the transportation needs in the region.

Table 4:	Table 4: ITS Services						
Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance			
AD1	ITS Data Mart	This service package provides a focused archive that houses data collected and owned by a single agency, district, private sector provider, research institution, or other organization. This focused archive typically includes data covering a single transportation mode and one jurisdiction that is collected from an operational data store and archived for future use. It provides the basic data quality, data privacy, and meta data management common to all ITS archives and provides general query and report access to archive data users.	Existing	No			
AD2	ITS Data Warehouse (Instance 1)	This market 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. The potential for large volumes of varied data suggests additional on-line analysis and data mining features that are also included in this market package in addition to the basic query and reporting user access features offered by the ITS Data Mart.	Planned	Yes			
APTS01	Transit Vehicle Tracking	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.	Existing	No			

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance
APTS02	Transit Fixed-Route Operations	This service package performs automated dispatch and system monitoring for fixed-route and flexible-route transit services. This service performs scheduling activities including the creation of schedules, blocks and runs, as well as operator assignment. This service determines the transit vehicle trip performance against the schedule using AVL data and provides information displays at the Transit Management Subsystem. Static and real time transit data is exchanged with Information Service Providers where it is integrated with that from other transportation modes (e.g. rail, ferry, air) to provide the public with integrated and personalized dynamic schedules.	Existing	No
APTS03	Demand Response Transit Operations	This service package performs automated dispatch and system monitoring for demand responsive transit services. This service performs scheduling activities as well as operator assignment. In addition, this service package performs similar functions to support dynamic features of flexible-route transit services. This package monitors the current status of the transit fleet and supports allocation of these fleet resources to service incoming requests for transit service while also considering traffic conditions. The Transit Management Subsystem provides the necessary data processing and information display to assist the transit operator in making optimal use of the transit fleet. This service includes the capability for a traveler request for personalized transit services to be made through the Information Service Provider (ISP) Subsystem. The ISP may either be operated by a transit management center or be independently owned and operated by a separate service provider. In the first scenario, the traveler makes a direct request to a specific paratransit service. In the second scenario, a third party service provider determines that the paratransit service is a viable means of satisfying a traveler request and makes a reservation for the traveler.	Existing	Νο
APTS04	Transit Fare Collection Management	This service package manages transit fare collection on-board transit vehicles and at transit stops using electronic means. It allows transit users to use a traveler card or other electronic payment device. Readers located either in the infrastructure or on-board the transit vehicles enable electronic fare payment. Data is processed, stored, and displayed on the transit vehicle and communicated as needed to the Transit Management Subsystem. Two other service packages, ATMS10: Electronic Toll Collection and ATMS16: Parking Facility Management, also provide electronic payment services. These three service packages in combination provide an integrated electronic payment system for transportation services.	Planned	No

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance
APTS05	Transit Security	This service package provides for the physical security of transit passengers and transit vehicle operators. On-board equipment is deployed to perform surveillance and sensor monitoring in order to warn of potentially hazardous situations. The surveillance equipment includes video (e.g., CCTV cameras), audio systems and/or event recorder systems. The sensor equipment includes threat sensors (e.g., chemical agent, toxic industrial chemical, biological, explosives, and radiological sensors) and object detection sensors (e.g., metal detectors). Transit user or transit vehicle operator activated alarms are provided on-board. Public areas (e.g., transit stops, park and ride lots, stations) are also monitored with similar surveillance and sensor equipment and provided with transit user activated alarms. In addition this service package provides surveillance and sensor monitoring of non-public areas of transit facilities (e.g., transit yards) and transit infrastructure such as bridges, tunnels, and transit railways or bus rapid transit (BRT) guideways. The sensor equipment includes threat sensors and object detection sensors as described above as well as, intrusion or motion detection sensors as described above as well as, intrusion or motion detection sensors and infrastructure integrity monitoring (e.g., rail track continuity checking or bridge structural integrity monitoring). The surveillance and sensor information is transmitted to the Emergency Management Subsystem, as are transit user activated alarms in public secure areas. On-board alarms, activated by transit users or transit vehicle operators are transmitted to the Emergency Management Subsystem indicating two	Planned	No
		possible approaches to implementing this service package. In addition the service package supports remote transit vehicle disabling by the Transit Management Subsystem and transit vehicle operator authentication.		
APTS07	Multi-modal Coordination	This service package establishes two way communications between multiple transit and traffic agencies to improve service coordination. Multimodal coordination between transit agencies can increase traveler convenience at transit transfer points and clusters (a collection of stops, stations, or terminals where transfers can be made conveniently) and also improve operating efficiency. Transit transfer information is shared between Multimodal Transportation Service Providers and Transit Agencies.	Planned	No
APTS08	Transit Traveler Information	This service package provides 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. Systems that provide custom transit trip itineraries and other tailored transit information services are also represented by this service package.	Planned	No
APTS09	Transit Signal Priority	This service package determines the need for transit priority on routes and at certain intersections and requests transit vehicle priority at these locations. The signal priority may result from limited local coordination between the transit vehicle and the individual intersection for signal priority or may result from coordination between transit management and traffic management centers. Coordination between traffic and transit management is intended to improve on-time performance of the transit system to the extent that this can be accommodated without degrading overall performance of the traffic network.	Planned	No

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance
APTS10	Transit Passenger Counting	This service package counts the number of passengers entering and exiting a transit vehicle using sensors mounted on the vehicle and communicates the collected passenger data back to the management center. The collected data can be used to calculate reliable ridership figures and measure passenger load information at particular stops.	Planned	No
ATIS01	Broadcast Traveler Information	This service package 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 web casts. The information may be provided directly to travelers or provided to merchants and other traveler service providers so that they can better inform their customers of travel conditions. Different from the service package ATMS06 - Traffic Information Dissemination, which provides localized HAR and DMS information capabilities, ATIS01 provides a wide area digital broadcast service. Successful deployment of this service package relies on availability of real-time traveler information from roadway instrumentation, probe vehicles or other sources.	Existing	No
ATIS02	Interactive Traveler Information	This service package provides tailored information in response to a traveler request. Both real-time interactive request/response systems and information systems that "push" a tailored stream of information to the traveler based on a submitted profile are supported. The traveler can obtain current information regarding traffic conditions, roadway maintenance and construction, transit services, ride share/ride match, parking management, detours and pricing information. Although the Internet is the predominate network used for traveler information dissemination, a range of two-way wide- area wireless and fixed-point to fixed-point communications systems may be used to support the required data communications between the traveler and Information Service Provider. A variety of interactive devices may be used by the traveler to access information prior to a trip or en route including phone via a 511-like portal and web pages via kiosk, personal digital assistant, personal computer, and a variety of in-vehicle devices. This service package also allows value- added resellers to collect transportation information that can be aggregated and be available to their personal devices or remote traveler systems to better inform their customers of transportation conditions. Successful deployment of this service package relies on availability of real-time transportation data from roadway instrumentation, transit, probe vehicles or other means. A traveler may also input personal preferences and identification information via a "traveler card" that can convey information to the system about the traveler as well as receive updates from the system so the card can be updated over time.	Existing	No

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance
ATIS06	Transportation Operations Data Sharing	This service package makes real-time transportation operations data available to transportation system operators. The Information Service Provider collects, processes, and stores current information on traffic and travel conditions and other information about the current state of the transportation network and makes this information available to transportation system operators, facilitating the exchange of qualified, real-time information between agencies. Using the provided information, transportation system operators can manage their individual systems based on an overall view of the regional transportation system. The regional transportation Service Provider may be implemented as a web application that provides a web-based access to system operators, an enterprise database that provides a network interface to remote center applications, or any implementation that supports regional sharing of real-time transportation operations data.	Existing	Νο
ATIS07	Travel Services Information and Reservation	This service package provides travel information and reservation services to the user. These additional traveler services may be provided using the same basic user equipment used for Interactive Traveler Information. This service package provides multiple ways for accessing information either while en route in a vehicle using wide-area wireless communications or pre-trip via fixed-point to fixed-point connections.	Planned	No
ATIS08	Dynamic Ridesharing	This service package provides dynamic ridesharing/ride matching services to travelers. This service could allow near real time ridesharing reservations to be made through the same basic user equipment used for Interactive Traveler Information. This ridesharing/ride matching capability also includes arranging connections to transit or other multimodal services.	Existing	No
ATMS01	Network Surveillance	This service package includes traffic detectors, other surveillance equipment, the supporting field equipment, and fixed-point to fixed-point communications to transmit the collected data back to the Traffic Management Subsystem. 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 Subsystem). 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 Information Service Provider Subsystem.	Existing	No
ATMS03	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 are 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 ATMS07-Regional Traffic Management service package. This service package is consistent with typical traffic signal control systems.	Existing	No

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance
ATMS06	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 Information Service Providers. A link to the Maintenance and Construction Management subsystem allows real time information on road/bridge closures and restrictions due to maintenance and construction activities to be disseminated. The sharing of transportation operations data described in this service package also supports other services like ATMS09- Traffic Decision Support and Demand Management.	Existing	No
ATMS07	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.	Planned	No

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance
ATMS08	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 center subsystems. Incident response also includes presentation of information to affected travelers using the Traffic Information Dissemination service package and dissemination 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 field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Existing	No
ATMS16	Parking Facility Management	This service package provides enhanced monitoring and management of parking facilities. It assists in the management of parking operations, coordinates with transportation authorities, and supports electronic collection of parking fees. This service package collects current parking status, shares this data with Information Service Providers and Traffic Management, and collects parking fees using the same in- vehicle equipment utilized for electronic toll collection or contact or proximity traveler cards used for electronic payment. Two other service packages, APTS04: Transit Fare Collection Management and ATMS10: Electronic Toll Collection also provide electronic payment services. These three service packages in combination provide an integrated electronic payment system for transportation services.	Existing	No
ATMS18	Reversible Lane Management	This service package provides for the management of reversible lane facilities. In addition to standard surveillance capabilities, this service package includes sensory functions that detect wrong-way vehicles and other special surveillance capabilities that mitigate safety hazards associated with reversible lanes. The package includes the field equipment, physical lane access controls, and associated control electronics that manage and control these special lanes. This service package also includes the equipment used to electronically reconfigure intersections and manage right-of- way to address dynamic demand changes and special events.	Existing	No

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance
ATMS19	Speed Warning and Enforcement	This service package monitors vehicle speeds and supports warning drivers when their speed is excessive. Also the service includes notifications to an enforcement agency to enforce the speed limit of the roadway. Speed monitoring can be made via spot speed or average speed measurements. Roadside equipment can display the speed of passing vehicles and/or suggest a safe driving speed. Environmental conditions and vehicle characteristics may be monitored and factored into the safe speed advisories that are provided to the motorist. For example, warnings can be generated recognizing the limitations of a given vehicle for the geometry of the roadway such as rollover risk for tall vehicles. This service focuses on monitoring of vehicle speeds and enforcement of the speed limit while the variable speed limits service (covered in ATMS22-Variable Speed Limits service	Planned	No
		package) focuses on varying the posted speed limits to create more uniform speeds along a roadway, to promote safer driving during adverse conditions (such as fog) and/or to reduce air pollution.		
ATMS21	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 ATMS service packages.	Planned	No
EM01	Emergency Call- Taking and Dispatch	This service package provides basic public safety call-taking and dispatch services. It includes emergency vehicle equipment, equipment used to receive and route emergency calls, and wireless communications that enable safe and rapid deployment of appropriate resources to an emergency. Coordination between Emergency Management Subsystems supports emergency notification between agencies. Wide area wireless communications between the Emergency Management Subsystem and an Emergency Vehicle supports dispatch and provision of information to responding personnel.	Existing	No

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance
EM02	Emergency Routing	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 responding vehicle travel on the selected route(s). The Emergency Management Subsystem provides the routing for the emergency fleet based on real-time conditions and has the option of requesting a route from the Traffic Management subsystem. The Emergency Vehicle may also be equipped with dedicated short range communications for local signal preemption and the transmission of alerts to surrounding vehicles. The service provides for information exchange between care facilities and both the Emergency Management Subsystem and emergency vehicles.	Existing	No
EM03	Mayday and Alarms Support	This service package allows the user (driver or non-driver) to initiate a request for emergency assistance and enables the Emergency Management Subsystem to locate the user, gather information about the incident, and determine the appropriate response. The request for assistance may be manually initiated or automated and linked to vehicle sensors. This service package also includes general surveillance capabilities that enable the Emergency Management Subsystem to remotely monitor public areas (e.g., rest stops, parking lots) to improve security in these areas. The Emergency Management Subsystem may be operated by the public sector or by a private sector telematics service provider.	Existing	No
EM04	Roadway Service Patrols	This service package supports roadway service patrol vehicles that monitor roads that aid motorists, offering rapid response to minor incidents (flat tire, accidents, out of gas) to minimize disruption to the traffic stream. If problems are detected, the roadway service patrol vehicles will provide assistance to the motorist (e.g., push a vehicle to the shoulder or median). The service package monitors service patrol vehicle locations and supports vehicle dispatch to identified incident locations. Incident information collected by the service patrol is shared with traffic, maintenance and construction, and traveler information systems.	Existing	No
EM06	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 web sites.	Existing	Νο

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance
EM08	Disaster Response and Recovery	This service package enhances the ability of the surface transportation system to respond to and recover from disasters. It addresses the most severe incidents that require an extraordinary response from outside the local community. All types of disasters are addressed including natural disasters (hurricanes, earthquakes, floods, winter storms, tsunamis, etc.) and technological and man-made disasters (hazardous materials incidents, nuclear power plant accidents, and national security emergencies such as nuclear, chemical, biological, and radiological weapons attacks). The service package supports coordination of emergency response plans, including general plans developed before a	Existing	No
		disaster as well as specific tactical plans with short time horizon that are developed as part of a disaster response. The service package provides enhanced access to the scene for response personnel and resources, provides better information about the transportation system in the vicinity of the disaster, and maintains situation awareness regarding the disaster itself. In addition, this service package tracks and coordinates the transportation resources - the transportation professionals, equipment, and materials - that constitute a portion of the disaster response.		
		The service package identifies the key points of integration between transportation systems and the public safety, emergency management, public health, and other allied organizations that form the overall disaster response. In this service package, the Emergency Management subsystem represents the federal, regional, state, and local Emergency Operations Centers and the Incident Commands that are established to respond to the disaster. The interface between the Emergency Management Subsystem and the other center subsystems provides situation awareness and resource coordination among transportation and other allied response agencies. In its role, traffic management implements special traffic control strategies and detours and restrictions to effectively manage traffic in and around the disaster. Maintenance and construction provides damage assessment of road network facilities and manages service restoration. Transit management provides a similar assessment of status for transit facilities and modifies transit operations to meet the special demands of the disaster. As immediate public safety concerns are addressed and disaster response transitions into recovery, this service package supports transition back to normal transportation system operation, recovering resources, managing on-going transportation facility repair, supporting data collection and revised plan coordination, and other recovery activities.		
		I his service package builds on the basic traffic incident response service that is provided by ATMS08, the Traffic Incident Management service package. This service package addresses the additional complexities and coordination requirements that are associated with the most severe incidents that warrant an extraordinary response from outside the local jurisdictions and require special measures such as the activation of one or more emergency operations centers. Many users of the National ITS Architecture will want to consider both ATMS08 and this service package since every region is concerned with both day-to-day management of traffic-related incidents and occasional management of disasters that require extraordinary response.		
		the "Disaster Traveler Information" service package that keeps the public informed during a disaster response. See that service package for more information.		

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance
MC01	Maintenance and Construction Vehicle and Equipment Tracking	This service package will track the location of maintenance and construction vehicles and other equipment to ascertain the progress of their activities. These activities can include ensuring the correct roads are being plowed and work activity is being performed at the correct locations.	Existing	No
MC03	Road Weather Data Collection	This service package collects current road and weather conditions using data collected from environmental sensors deployed on and about the roadway (or guideway in the case of transit related rail systems). In addition to fixed sensor stations at the roadside, sensing of the roadway environment can also occur from sensor systems located on Maintenance and Construction Vehicles. 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.	Existing	No
MC04	Weather Information Processing and Distribution	This service package processes and distributes the environmental information collected from the Road Weather Data Collection service package. This service package uses the environmental data to detect environmental hazards such as icy road conditions, high winds, dense fog, etc. so system operators and decision support systems can make decision on corrective actions to take. The continuing updates of road condition information and current temperatures can be used by system operators to more effectively deploy road maintenance resources, issue general traveler advisories, issue location specific warnings to drivers using the Traffic Information Dissemination service package, and aid operators in scheduling work activity.	Existing	No
MC05	Roadway Automated Treatment	This service package automatically treats a roadway section based on environmental or atmospheric conditions. Treatments include fog dispersion, anti-icing chemicals, etc. The service package includes the environmental sensors that detect adverse conditions, the automated treatment system itself, and driver information systems (e.g., dynamic message signs) that warn drivers when the treatment system is activated.	Planned	No
MC06	Winter Maintenance	This service package supports winter road maintenance including snow plow operations, roadway treatments (e.g., salt spraying and other anti-icing material applications), and other snow and ice control activities. This package monitors environmental conditions and weather forecasts and uses the information to schedule winter maintenance activities, determine the appropriate snow and ice control response, and track and manage response operations.	Existing	No
MC07	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 would 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.	Existing	No

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance
MC08	Work Zone Management	This service package manages work zones, controlling traffic in areas of the roadway where maintenance, construction, and utility work activities are underway. Traffic conditions are monitored using CCTV cameras and controlled using dynamic message signs (DMS), Highway Advisory Radio (HAR), gates and barriers. Work zone information is coordinated with other groups (e.g., ISP, traffic management, other maintenance and construction centers). Work zone speeds and delays are provided to the motorist prior to the work zones. This service package provides control of field equipment in all maintenance and construction areas, including fixed, portable, and truck- mounted devices supporting both stationary and mobile work zones.	Existing	No
MC09	Work Zone Safety Monitoring	This service package includes systems that improve work crew safety and reduce collisions between the motoring public and maintenance and construction vehicles. This service package detects vehicle intrusions in work zones and warns crew workers and drivers of imminent encroachment or other potential safety hazards. Crew movements are also monitored so that the crew can be warned of movement beyond the designated safe zone. The service package supports both stationary and mobile work zones. The intrusion detection and alarm systems may be collocated or distributed, allowing systems that detect safety issues far upstream from a work zone (e.g., detection of over dimension vehicles before they enter the work zone).	Planned	No
MC10	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.	Planned	No
MC11	Environmental Probe Surveillance	This service package 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. It includes the on-board vehicle systems that collect and report environmental probe data, the infrastructure equipment that collects the probe data and the centers that aggregate and share the collected probe data.	Existing	No

7 Operational Concept

The Operational Concept lists the roles and responsibilities that each participating agency must take on to provide the ITS services included in the ITS Architecture. Changing needs may arise that will require an agreement to be formed between all affected parties that defines new or additional roles. Defining the roles and responsibilities of the participating stakeholders in the region and the willingness of agencies to accept their roles and responsibilities is an important step in realizing the common goal of an interoperable ITS system throughout the region.

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Archived Data Systems	Involves the collection, short-term storage and the archiving of regional transportation data. Data gathered by ITS deployments and other monitoring equipment will be made available to be used in transportation administration, operations and research applications.	Iowa DOT District 4 Offices	Collect and archive traffic related data from Field Equipment	Existing
Archived Data Systems	Involves the collection, short-term storage and the archiving of regional transportation data. Data gathered by ITS deployments and other monitoring equipment will be made available to be used in transportation administration, operations and research applications.	ΜΑΡΑ	Collect and archive traffic related data from Field Equipment	Existing
Archived Data Systems	Involves the collection, short-term storage and the archiving of regional transportation data. Data gathered by ITS deployments and other monitoring equipment will be made available to be used in transportation administration, operations and research applications.	NDOR District 2 Offices (Omaha)	Collect and archive traffic related data from Field Equipment	Existing
Emergency Management	Involves responding to emergencies along roadways in order to ensure the safety of the motoring public and the transportation of freight.	Fire and Rescue	Provide emergency response services within respective jurisdictions	Existing
Emergency Management	Involves responding to emergencies along roadways in order to ensure the safety of the motoring public and the transportation of freight.	IA State Patrol District 3	Provide law enforcement services on Interstate and state highway system within jurisdiction	Existing
Emergency Management	Involves responding to emergencies along roadways in order to ensure the safety of the motoring public and the transportation of freight.	Iowa DOT District 4 Offices	Provide traffic management related services within respective jurisdictions	Existing
Emergency Management	Involves responding to emergencies along roadways in order to ensure the safety of the motoring public and the transportation of freight.	Local Law Enforcement	Provide law enforcement services within respective jurisdictions	Existing
Emergency Management	Involves responding to emergencies along roadways in order to ensure the safety of the motoring public and the transportation of freight.	NDOR District 2 Offices (Omaha)	Provide traffic management related services within respective jurisdictions	Existing

Table 5: Operational Concept

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Emergency Management	Involves responding to emergencies along roadways in order to ensure the safety of the motoring public and the transportation of freight.	NE State Patrol Troop A	Provide law enforcement services on Interstate and state highway system within jurisdiction	Existing
Freeway Management	Involves monitoring freeway operations and levels of traffic congestion in the region, as well as coordination between agencies on incidents impacting freeway traffic across the region	Iowa DOT District 4 Offices	Monitor and control ITS Field Equipment from TOC	Existing
Freeway Management	Involves monitoring freeway operations and levels of traffic congestion in the region, as well as coordination between agencies on incidents impacting freeway traffic across the region	Iowa DOT District 4 Offices	Communicate traffic-related information to other agencies in region.	Existing
Freeway Management	Involves monitoring freeway operations and levels of traffic congestion in the region, as well as coordination between agencies on incidents impacting freeway traffic across the region	NDOR District 2 Offices (Omaha)	Monitor and control ITS Field Equipment from TOC	Existing
Freeway Management	Involves monitoring freeway operations and levels of traffic congestion in the region, as well as coordination between agencies on incidents impacting freeway traffic across the region	NDOR District 2 Offices (Omaha)	Communicate traffic-related information to other agencies in region.	Existing
Freeway Management	Involves monitoring freeway operations and levels of traffic congestion in the region, as well as coordination between agencies on incidents impacting freeway traffic across the region	NDOR District 2 Offices (Omaha)	Coordinate with State Patrol on traffic and incident management	Planned
Freeway Management	Involves monitoring freeway operations and levels of traffic congestion in the region, as well as coordination between agencies on incidents impacting freeway traffic across the region	NE State Patrol Troop A	Coordinate with NDOR District 2 Offices on traffic and incident management	Planned
Incident Management	Involves managing incidents along freeways and surface streets within the region.	Adjacent Region TOC Operators	Coordinate with state and city-level TOC offices as appropriate during regional incidents	Existing
Incident Management	Involves managing incidents along freeways and surface streets within the region.	City of Council Bluffs PWD	Monitor and control ITS Field Equipment from TOC during regional incidents	Existing
Incident Management	Involves managing incidents along freeways and surface streets within the region.	City of Council Bluffs PWD	Communicate information with emergency management agencies during regional incidents as needed	Existing
Incident Management	Involves managing incidents along freeways and surface streets within the region.	City of Omaha PWD	Monitor and control ITS Field Equipment from TOC during regional incidents	Existing
Incident Management	Involves managing incidents along freeways and surface streets within the region.	City of Omaha PWD	Communicate information with emergency management agencies during regional incidents as needed	Existing
Incident Management	Involves managing incidents along freeways and surface streets within the region.	IA State Patrol District 3	Coordinate with emergency management and traffic management agencies during incidents that have a regional impact across jurisdictions	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Incident Management	Involves managing incidents along freeways and surface streets within the region.	Iowa DOT District 4 Offices	Monitor and control ITS Field Equipment from TOC during regional incidents	Existing
Incident Management	Involves managing incidents along freeways and surface streets within the region.	Iowa DOT District 4 Offices	Communicate information with emergency management agencies during regional incidents as needed	Existing
Incident Management	Involves managing incidents along freeways and surface streets within the region.	NDOR District 2 Offices (Omaha)	Monitor and control ITS Field Equipment from TOC during regional incidents	Existing
Incident Management	Involves managing incidents along freeways and surface streets within the region.	NDOR District 2 Offices (Omaha)	Communicate information with emergency management agencies during regional incidents as needed	Existing
Incident Management	Involves managing incidents along freeways and surface streets within the region.	NE State Patrol Troop A	Coordinate with emergency management and traffic management agencies during incidents that have a regional impact across jurisdictions	Existing
Maintenance and Construction	Involves management of maintenance vehicles during inclement weather and routine maintenance, as well as management of construction areas and work zone ITS equipment deployed for traffic management and work zone safety purposes.	Iowa DOT District 4 Offices	Monitor and control vehicle operations during inclement weather and routine maintenance	Existing
Maintenance and Construction	Involves management of maintenance vehicles during inclement weather and routine maintenance, as well as management of construction areas and work zone ITS equipment deployed for traffic management and work zone safety purposes.	Iowa DOT District 4 Offices	Collect and disseminate road weather information	Existing
Maintenance and Construction	Involves management of maintenance vehicles during inclement weather and routine maintenance, as well as management of construction areas and work zone ITS equipment deployed for traffic management and work zone safety purposes.	Iowa DOT District 4 Offices	Deploy automated work zone equipment where needed	Existing
Maintenance and Construction	Involves management of maintenance vehicles during inclement weather and routine maintenance, as well as management of construction areas and work zone ITS equipment deployed for traffic management and work zone safety purposes.	NDOR District 2 Offices (Omaha)	Monitor and control vehicle operations during inclement weather and routine maintenance	Existing
Maintenance and Construction	Involves management of maintenance vehicles during inclement weather and routine maintenance, as well as management of construction areas and work zone ITS equipment deployed for traffic management and work zone safety purposes.	NDOR District 2 Offices (Omaha)	Collect and disseminate road weather information	Existing
Maintenance and Construction	Involves management of maintenance vehicles during inclement weather and routine maintenance, as well as management of construction areas and work zone ITS equipment deployed for traffic management and work zone safety purposes.	NDOR District 2 Offices (Omaha)	Monitor roadway automated treatment devices in field	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Maintenance and Construction	Involves management of maintenance vehicles during inclement weather and routine maintenance, as well as management of construction areas and work zone ITS equipment deployed for traffic management and work zone safety purposes.	NDOR District 2 Offices (Omaha)	Deploy automated work zone equipment where needed	Existing
Surface Street Management	Involves the management of signal systems and another roadway ITS equipment on arterial roadways throughout the region.	City of Bellevue PWD	Maintain signal systems and detection equipment operating within jurisdiction	Existing
Surface Street Management	Involves the management of signal systems and another roadway ITS equipment on arterial roadways throughout the region.	City of Council Bluffs PWD	Maintain signal systems and detection equipment operating within jurisdiction	Existing
Surface Street Management	Involves the management of signal systems and another roadway ITS equipment on arterial roadways throughout the region.	City of Omaha PWD	Maintain signal systems and detection equipment operating within jurisdiction	Existing
Surface Street Management	Involves the management of signal systems and another roadway ITS equipment on arterial roadways throughout the region.	City of Omaha PWD	Maintain reversible lane use signals on arterial roadways within jurisdiction	Existing
Surface Street Management	Involves the management of signal systems and another roadway ITS equipment on arterial roadways throughout the region.	NDOR District 2 Offices (Omaha)	Maintain signal systems and detection equipment operating within jurisdiction	Existing
Surface Street Management	Involves the management of signal systems and another roadway ITS equipment on arterial roadways throughout the region.	Other Local PWD	Maintain signal systems and detection equipment operating within jurisdiction	Existing
Transit Services	Involves monitoring and controlling fixed- route and paratransit operations within the region.	Metro	Provide fare collection management for fixed-route and paratransit fleet	Existing
Transit Services	Involves monitoring and controlling fixed- route and paratransit operations within the region.	Metro	Monitor and control fixed- route and paratransit fleet operations	Planned
Transit Services	Involves monitoring and controlling fixed- route and paratransit operations within the region.	Metro	Disseminate real-time transit information via Internet and at transfer locations	Planned
Transit Services	Involves monitoring and controlling fixed- route and paratransit operations within the region.	Metro	Monitor and collect data from automated passenger counts	Planned
Transit Services	Involves monitoring and controlling fixed- route and paratransit operations within the region.	Metro	Deploy and maintain transit signal priority equipment on fixed routes	Planned
Traveler Information	Involves the dissemination of travel information on roadways to the general public	City of Council Bluffs PWD	Disseminate real-time traveler information collected from Field Equipment and other roadway alerts to public via website	Existing
Traveler Information	Involves the dissemination of travel information on roadways to the general public	City of Omaha PWD	Disseminate real-time traveler information collected from Field Equipment and other roadway alerts to public via website	Existing
Traveler Information	Involves the dissemination of travel information on roadways to the general public	Iowa DOT District 4 Offices	Disseminate real-time traveler information collected from Field Equipment and other roadway alerts to public via 511 internet and phone systems	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Traveler Information	Involves the dissemination of travel information on roadways to the general public	МАРА	Disseminate rideshare information to the general public based on traveler profiles previously submitted	Existing
Traveler Information	Involves the dissemination of travel information on roadways to the general public	NDOR District 2 Offices (Omaha)	Disseminate real-time traveler information collected from Field Equipment and other roadway alerts to public via 511 internet and phone systems	Existing

8 Functional Requirements

Each ITS system operated by the stakeholders must perform certain functions to effectively deliver the ITS services desired by the region. The primary functions that each system needs to perform are broadly defined in the Omaha-Council Bluffs Regional ITS Architecture architecture. The high-level requirements are grouped into functional areas that identify requirements associated with each selected ITS service.

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
Adjacent Region TOC Operators	Other Traffic Management			No
Adjacent Region TOC Operators	Traffic Management			No
City of Bellevue PWD Field Equipment	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
City of Bellevue PWD Field Equipment	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
City of Bellevue PWD Field Equipment	Roadway	Roadway Signal Priority	Field elements that provide the capability to receive transit vehicle signal priority requests and control traffic signals accordingly.	No
City of Bellevue PWD Signal Equipment	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
City of Bellevue PWD Signal Equipment	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
City of Bellevue PWD Signal Equipment	Roadway	Roadway Signal Controls	Field elements including traffic signal controllers for use at signalized intersections; also supports pedestrian crossings.	No
City of Bellevue PWD Traffic Detection Stations	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No

Table 6: Functional Requirements

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
City of Bellevue PWD Traffic Detection Stations	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
City of Council Bluffs PWD CCTV	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
City of Council Bluffs PWD Field Equipment	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
City of Council Bluffs PWD Field Equipment	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
City of Council Bluffs PWD Field Equipment	Roadway	Roadway Signal Controls	Field elements including traffic signal controllers for use at signalized intersections; also supports pedestrian crossings.	No
City of Council Bluffs PWD Field Equipment	Roadway	Roadway Signal Preemption	Field elements that receive signal preemption requests from approaching emergency vehicles and overrides the current operation of the traffic signals	No
City of Council Bluffs PWD Field Equipment	Roadway	Roadway Signal Priority	Field elements that provide the capability to receive transit vehicle signal priority requests and control traffic signals accordingly.	No
City of Council Bluffs PWD Traffic Detection Devices	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
City of Council Bluffs PWD Traffic Detection Devices	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
City of Council Bluffs PWD Traffic Signal Equipment	Roadway	Roadway Signal Controls	Field elements including traffic signal controllers for use at signalized intersections; also supports pedestrian crossings.	No
City of Council Bluffs PWD Traffic Signal Equipment	Roadway	Roadway Signal Preemption	Field elements that receive signal preemption requests from approaching emergency vehicles and overrides the current operation of the traffic signals	No
City of Council Bluffs PWD Traffic Signal Equipment	Roadway	Roadway Signal Priority	Field elements that provide the capability to receive transit vehicle signal priority requests and control traffic signals accordingly.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
City of Council Bluffs TOC	Traffic Management	Collect Traffic Surveillance	Management of traffic sensors and surveillance (CCTV) equipment, collection of current traffic conditions, and distribution of the collected information to other centers and operators.	No
City of Council Bluffs TOC	Traffic Management	TMC Signal Control	Remotely controls traffic signal controllers to implement traffic management strategies at signalized intersections based on traffic conditions, incidents, emergency vehicle preemptions, pedestrian crossings, etc.	No
City of Council Bluffs Website and Social Media	Information Service Provider	Basic Information Broadcast	Broadcast dissemination of traffic, transit, maintenance and construction, event, and weather information to traveler interface systems and vehicles.	No
City of Omaha PWD Detour Signal System	Roadway	Roadway Signal Controls	Field elements including traffic signal controllers for use at signalized intersections; also supports pedestrian crossings.	No
City of Omaha PWD Field Equipment	Roadway	Field Management Stations Operation	Supports direct communications between field management stations and the local field equipment under their control.	No
City of Omaha PWD Field Equipment	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
City of Omaha PWD Field Equipment	Roadway	Roadway Data Collection	Field elements to collect traffic, road, and environmental conditions information for use in transportation planning, research, and other off-line applications. Includes the sensors, supporting roadside infrastructure, and communications equipment.	No
City of Omaha PWD Field Equipment	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
City of Omaha PWD Field Equipment	Roadway	Roadway Reversible Lanes	Traffic sensors, surveillance, and automated reversible lane equipment and lane control signals to control traffic in reversible lanes.	No
City of Omaha PWD Field Equipment	Roadway	Roadway Signal Controls	Field elements including traffic signal controllers for use at signalized intersections; also supports pedestrian crossings.	No
City of Omaha PWD Field Equipment	Roadway	Roadway Signal Preemption	Field elements that receive signal preemption requests from approaching emergency vehicles and overrides the current operation of the traffic signals	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
City of Omaha PWD Field Equipment	Roadway	Roadway Signal Priority	Field elements that provide the capability to receive transit vehicle signal priority requests and control traffic signals accordingly.	No
City of Omaha PWD Field Equipment	Roadway	Roadway Speed Monitoring and Warning	Vehicle speed sensors that detect excessive vehicle speeds, optionally based on conditions and vehicle type, informing drivers, centers and/or enforcement agencies of speed violations.	No
City of Omaha PWD Reversible Lane Use Signs	Roadway	Roadway Reversible Lanes	Traffic sensors, surveillance, and automated reversible lane equipment and lane control signals to control traffic in reversible lanes.	No
City of Omaha PWD Traffic Detection Stations	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
City of Omaha PWD Traffic Detection Stations	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
City of Omaha PWD Traffic Detection Stations	Roadway	Roadway Signal Controls	Field elements including traffic signal controllers for use at signalized intersections; also supports pedestrian crossings.	No
City of Omaha PWD Traffic Detection Stations	Roadway	Roadway Signal Preemption	Field elements that receive signal preemption requests from approaching emergency vehicles and overrides the current operation of the traffic signals	No
City of Omaha PWD Traffic Detection Stations	Roadway	Roadway Signal Priority	Field elements that provide the capability to receive transit vehicle signal priority requests and control traffic signals accordingly.	No
City of Omaha PWD Traffic Signal Equipment	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
City of Omaha PWD Traffic Signal Equipment	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
City of Omaha PWD Traffic Signal Equipment	Roadway	Roadway Signal Controls	Field elements including traffic signal controllers for use at signalized intersections; also supports pedestrian crossings.	No
City of Omaha Smart Parking Meters	Parking Management	Parking Electronic Payment	Parking payment collection using in-vehicle equipment (tags) or contact or proximity traveler cards used for electronic payment. Includes field elements and back- office functionality.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
City of Omaha TOC	Archived Data Management			No
City of Omaha TOC	Traffic Management	Collect Traffic Surveillance	Management of traffic sensors and surveillance (CCTV) equipment, collection of current traffic conditions, and distribution of the collected information to other centers and operators.	No
City of Omaha TOC	Traffic Management	TMC Signal Control	Remotely controls traffic signal controllers to implement traffic management strategies at signalized intersections based on traffic conditions, incidents, emergency vehicle preemptions, pedestrian crossings, etc.	No
City of Omaha Website and Social Media	Information Service Provider			No
County Emergency Operations Centers	Emergency Management	Emergency Response Management	Strategic emergency planning and response capabilities and broad inter-agency interfaces to support large-scale incidents and disasters, commonly associated with Emergency Operations Centers.	No
County Emergency Operations Centers	Other Emergency Management			No
County of Pottawattamie 911 Center	Emergency Management	Emergency Call-Taking	Provides interface to the emergency call-taking systems such as the Emergency Telecommunications System (e.g., 911) that correlate call information with emergencies reported by transit agencies, commercial vehicle operators, or other public safety agencies. Allows the operator to verify the incident and forward the information to the responding agencies.	No
County of Pottawattamie 911 Center	Emergency Management	Emergency Commercial Vehicle Response	Responds to commercial vehicle and freight equipment related emergencies. Includes incidents involving hazardous materials as well as the detection of non- permitted transport of security sensitive hazmat.	No
County of Pottawattamie 911 Center	Emergency Management	Emergency Dispatch	Dispatch emergency vehicles to incidents, tracking their location and status. Pertinent incident information is gathered and relayed to the responding units.	No
County of Pottawattamie 911 Center	Emergency Telecommunications System			No
County of Pottawattamie EOC	Emergency Management	Emergency Evacuation Support	Evacuation planning and coordination to manage evacuation and reentry of a population in the vicinity of a disaster or other emergency that poses a risk to public safety.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
County of Pottawattamie EOC	Emergency Management	Emergency Response Management	Strategic emergency planning and response capabilities and broad inter-agency interfaces to support large-scale incidents and disasters, commonly associated with Emergency Operations Centers.	No
County of Pottawattamie EOC	Emergency Management	Incident Command	Tactical decision support, resource coordination, and communications integration among emergency management agencies for Incident Commands that are established by first responders to support local management of an incident.	No
Driver	Driver			No
Enforcement Agencies	Enforcement Agency			No
Financial Institution	Financial Institution			No
Fire and Rescue Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	On-board systems for gathering of dispatch and routing information for emergency vehicle personnel, vehicle tracking, communications with care facilities, and signal preemption via short range communication directly with traffic control equipment at the roadside.	No
Fire and Rescue Emergency Vehicles	Emergency Vehicle	On-board EV Incident Management Communication	On-board systems provide communications support to first responders. Incident information is provided to dispatched emergency personnel. Emergency personnel transmit information about the incident and response status.	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Call-Taking	Provides interface to the emergency call-taking systems such as the Emergency Telecommunications System (e.g., 911) that correlate call information with emergencies reported by transit agencies, commercial vehicle operators, or other public safety agencies. Allows the operator to verify the incident and forward the information to the responding agencies.	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Dispatch	Dispatch emergency vehicles to incidents, tracking their location and status. Pertinent incident information is gathered and relayed to the responding units.	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Early Warning System	Monitors alerting and advisory systems, information collected by ITS surveillance and sensors, and reports from other agencies in order to identify potential, imminent, or in-progress major incidents or disasters. Notification is provided to other ITS centers to notify the traveling public.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Response Management	Strategic emergency planning and response capabilities and broad inter-agency interfaces to support large-scale incidents and disasters, commonly associated with Emergency Operations Centers.	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Routing	Routing of emergency vehicles to facilitate the quickest/safest arrival. Routes may be determined based on real-time traffic information and road conditions or routes may be provided by Traffic Management on request.	No
IA State Patrol Communications Center (Atlantic)	Emergency Telecommunications System			No
IA State Patrol Communications Center (Des Moines)	Emergency Management	Emergency Early Warning System	Monitors alerting and advisory systems, information collected by ITS surveillance and sensors, and reports from other agencies in order to identify potential, imminent, or in-progress major incidents or disasters. Notification is provided to other ITS centers to notify the traveling public.	No
IA State Patrol Communications Center (Des Moines)	Emergency Telecommunications System			No
IA State Patrol Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	On-board systems for gathering of dispatch and routing information for emergency vehicle personnel, vehicle tracking, communications with care facilities, and signal preemption via short range communication directly with traffic control equipment at the roadside.	No
IA State Patrol Emergency Vehicles	Emergency Vehicle	On-board EV Incident Management Communication	On-board systems provide communications support to first responders. Incident information is provided to dispatched emergency personnel. Emergency personnel transmit information about the incident and response status.	No
IA State Patrol Emergency Vehicles - AVL	Emergency Vehicle	On-board EV En Route Support	On-board systems for gathering of dispatch and routing information for emergency vehicle personnel, vehicle tracking, communications with care facilities, and signal preemption via short range communication directly with traffic control equipment at the roadside.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
IA State Patrol Emergency Vehicles - MDTs	Emergency Vehicle	On-board EV En Route Support	On-board systems for gathering of dispatch and routing information for emergency vehicle personnel, vehicle tracking, communications with care facilities, and signal preemption via short range communication directly with traffic control equipment at the roadside.	No
IA State Patrol Emergency Vehicles - MDTs	Emergency Vehicle	On-board EV Incident Management Communication	On-board systems provide communications support to first responders. Incident information is provided to dispatched emergency personnel. Emergency personnel transmit information about the incident and response status.	No
IA State Patrol Emergency Vehicles - Video Cameras	Emergency Vehicle	On-board EV Incident Management Communication	On-board systems provide communications support to first responders. Incident information is provided to dispatched emergency personnel. Emergency personnel transmit information about the incident and response status.	No
lowa DOT 511 System	Information Service Provider	Basic Information Broadcast	Broadcast dissemination of traffic, transit, maintenance and construction, event, and weather information to traveler interface systems and vehicles.	No
Iowa DOT 511 System	Information Service Provider	Interactive Infrastructure Information	Personalized dissemination of traffic, transit, maintenance and construction, multimodal, event, and weather information to traveler interface systems and vehicles, upon request.	No
lowa DOT 511 System	Information Service Provider	ISP Emergency Traveler Information	Distribution of emergency information to the traveling public, including evacuation information and wide-area alerts.	No
lowa DOT 511 System	Information Service Provider	Traveler Telephone Information	Distribution of traveler information and wide-area alerts to traveler telephone information systems such as 511, based on voice- based traveler requests.	No
lowa DOT 511 System	Telecommunications System for Traveler Information			No
Iowa DOT ATRs	Roadway	Roadway Data Collection	Field elements to collect traffic, road, and environmental conditions information for use in transportation planning, research, and other off-line applications. Includes the sensors, supporting roadside infrastructure, and communications equipment.	No
lowa DOT Automated Notification System	Information Service Provider	Basic Information Broadcast	Broadcast dissemination of traffic, transit, maintenance and construction, event, and weather information to traveler interface systems and vehicles.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
lowa DOT Automated Notification System	Traffic Management			No
Iowa DOT Automated Work Zone	Roadway	Roadway Work Zone Traffic Control	Field elements in maintenance and construction areas including CCTV cameras, driver information systems (such as DMS), and gates/barriers that monitor and control traffic and provide information directly to drivers in affected areas.	No
Iowa DOT Automatic Gate Systems	Roadway	Field Barrier System Control	Field elements that control barrier systems such as gates and other systems that manage entry to roadways, transportation facilities and infrastructure.	No
Iowa DOT CARS	Archived Data Management	ITS Data Repository	Collect and maintain data and data catalogs from one or more data sources. May include quality checks, error notification, and archive coordination.	No
Iowa DOT CARS	Information Service Provider	Basic Information Broadcast	Broadcast dissemination of traffic, transit, maintenance and construction, event, and weather information to traveler interface systems and vehicles.	No
Iowa DOT CARS	Information Service Provider	ISP Operational Data Repository	Processes, stores, and distributes real-time information on the state of the regional transportation system to transportation system operators.	No
Iowa DOT CARS	Information Service Provider	ISP Traveler Data Collection	Collects traveler information from other centers, consolidates and refines the collected data, and makes this data available to traveler information applications.	No
Iowa DOT CARS	Information Service Provider	Traveler Telephone Information	Distribution of traveler information and wide-area alerts to traveler telephone information systems such as 511, based on voice- based traveler requests.	No
Iowa DOT CCTV	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
Iowa DOT CCTV	Roadway	Roadway Field Device Monitoring	Monitors field equipment operational status and detects and reports fault conditions. Device status, configuration, and fault information are provided to a remote center and a user interface provides information locally to field personnel.	No
Iowa DOT CCTV	Roadway	Roadway Incident Detection	Field elements that monitor traffic conditions to identify incidents. It includes traffic detectors that collect traffic flow information and identify unusual traffic conditions and advanced CCTV cameras with built-in incident detection algorithms.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
Iowa DOT CCTV	Roadway	Roadway Work Zone Traffic Control	Field elements in maintenance and construction areas including CCTV cameras, driver information systems (such as DMS), and gates/barriers that monitor and control traffic and provide information directly to drivers in affected areas.	No
Iowa DOT Central Headquarters Field Equipment	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
Iowa DOT Central Headquarters Field Equipment	Roadway	Roadway Data Collection	Field elements to collect traffic, road, and environmental conditions information for use in transportation planning, research, and other off-line applications. Includes the sensors, supporting roadside infrastructure, and communications equipment.	No
Iowa DOT Central Headquarters Field Equipment	Roadway	Roadway Environmental Monitoring	Environmental sensors, surface and sub-surface, that collect weather and road surface information. Weather conditions measured include temperature, wind, humidity, precipitation, and visibility. Sensors measure road surface temperature, moisture, icing, salinity, etc.	No
Iowa DOT Central Headquarters Field Equipment	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
lowa DOT Central Headquarters Field Equipment	Roadway	Roadway Traffic Information Dissemination	Driver information systems, such as dynamic message signs and Highway Advisory Radio (HAR).	No
lowa DOT Central Headquarters Office	Archived Data Management	Traffic and Roadside Data Archival	Collects and archives traffic and environmental information directly from the roadside for use in off-line planning, research, and analysis.	No
Iowa DOT Central Headquarters Office	Maintenance and Construction Management			No
Iowa DOT Central Headquarters Office	Traffic Management	TMC Traffic Information Dissemination	Controls dissemination of traffic- related data to other centers, the media, and travelers via the driver information systems (DMS, HAR) that it operates.	No
lowa DOT Detection Stations	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
Iowa DOT Detection Stations	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
Iowa DOT District 4 Field Equipment	Roadway	Field Barrier System Control	Field elements that control barrier systems such as gates and other systems that manage entry to roadways, transportation facilities and infrastructure.	No
Iowa DOT District 4 Field Equipment	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
Iowa DOT District 4 Field Equipment	Roadway	Roadway Data Collection	Field elements to collect traffic, road, and environmental conditions information for use in transportation planning, research, and other off-line applications. Includes the sensors, supporting roadside infrastructure, and communications equipment.	No
Iowa DOT District 4 Field Equipment	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
Iowa DOT District 4 Field Equipment	Roadway	Roadway Incident Detection	Field elements that monitor traffic conditions to identify incidents. It includes traffic detectors that collect traffic flow information and identify unusual traffic conditions and advanced CCTV cameras with built-in incident detection algorithms.	No
Iowa DOT District 4 Field Equipment	Roadway	Roadway Probe Data Communications	Field elements that collect probe data from vehicles using short range communications.	No
Iowa DOT District 4 Field Equipment	Roadway	Roadway Speed Monitoring and Warning	Vehicle speed sensors that detect excessive vehicle speeds, optionally based on conditions and vehicle type, informing drivers, centers and/or enforcement agencies of speed violations.	No
Iowa DOT District 4 Field Equipment	Roadway	Roadway Traffic Information Dissemination	Driver information systems, such as dynamic message signs and Highway Advisory Radio (HAR).	No
Iowa DOT District 4 Field Equipment	Roadway	Roadway Work Zone Traffic Control	Field elements in maintenance and construction areas including CCTV cameras, driver information systems (such as DMS), and gates/barriers that monitor and control traffic and provide information directly to drivers in affected areas.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
Iowa DOT District 4 Offices	Archived Data Management			No
lowa DOT District 4 Offices	Maintenance and Construction Management	MCM Incident Management	Supports coordinated response to incidents - share incident notifications, manage incident response resources, and coordinate overall incident situation and response among allied response organizations.	No
Iowa DOT District 4 Offices	Maintenance and Construction Management	MCM Speed Monitoring and Warning	Remotely monitors vehicle speeds, and informs an enforcement agency if excessive speeds are detected; primarily used in work zones.	No
Iowa DOT District 4 Offices	Maintenance and Construction Management	MCM Vehicle Tracking	Remotely tracks the location of maintenance and construction vehicles and other equipment; presented to the center personnel.	No
Iowa DOT District 4 Offices	Maintenance and Construction Management	MCM Winter Maintenance Management	Manages winter road maintenance, tracking and controlling snow plow operations, roadway treatment (e.g., salt spraying and other material applications) based on weather information.	No
Iowa DOT District 4 Offices	Maintenance and Construction Management	MCM Work Activity Coordination	Disseminates work activity schedules and current asset restrictions to other agencies. Work schedules are coordinated, factoring in the needs and activities of other agencies and adjacent jurisdictions.	No
lowa DOT District 4 Offices	Maintenance and Construction Management	MCM Work Zone Management	Remotely monitors and supports work zone activities, controlling traffic through dynamic message signs (DMS), highway advisory radio, gates and barriers, and informing other groups of activity (e.g., traveler information systems, traffic management centers, other maintenance and construction centers).	No
Iowa DOT District 4 Offices	Traffic Management	Barrier System Management	Remotely controls barrier systems such as gates and other systems that manage entry to roadways, transportation facilities and infrastructure.	No
Iowa DOT District 4 Offices	Traffic Management	Collect Traffic Surveillance	Management of traffic sensors and surveillance (CCTV) equipment, collection of current traffic conditions, and distribution of the collected information to other centers and operators.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
Iowa DOT District 4 Offices	Traffic Management	TMC Incident Detection	Remotely monitors traffic sensor and surveillance systems to detect and verify incidents. Also monitors external advisory and incident reporting systems, intermodal freight depots, and border crossings for additional incident information. Identified incidents are reported to operations personnel and other centers.	No
Iowa DOT District 4 Offices	Traffic Management	TMC Incident Dispatch Coordination/Communication	Formulates an incident response that takes into account the incident potential, incident impacts, and/or resources required for incident management. Facilitates the dispatch of emergency response and service vehicles and coordinates the response with cooperating agencies.	No
lowa DOT District 4 Offices	Traffic Management	TMC Multimodal Coordination	Provides traffic signal priority for transit vehicles based on center- to-center communications with the transit management center; also exchange traffic and transit information.	No
Iowa DOT District 4 Offices	Traffic Management	TMC Regional Traffic Management	Coordination between traffic management centers in order to share traffic information between centers as well as control of traffic management field equipment. This may be used during incidents and special events and during day- to-day operations.	No
lowa DOT District 4 Offices	Traffic Management	TMC Traffic Information Dissemination	Controls dissemination of traffic- related data to other centers, the media, and travelers via the driver information systems (DMS, HAR) that it operates.	No
Iowa DOT District 4 Offices	Traffic Management	TMC Transportation Operations Data Collection	Collects real-time information on the state of the regional transportation system for operational use by the center. It establishes communications with a regional repository, requests or subscribes to information relevant to the center, and distributes the received information for use.	No
Iowa DOT District 4 Offices	Traffic Management	TMC Work Zone Traffic Management	Coordination with maintenance systems using work zone images and traveler information systems (such as DMS), and distribution of work plans so that work zones are established that have minimum traffic impact.	No
Iowa DOT District 4 Offices	Traffic Management	Traffic Data Collection	Collection and storage of traffic management data. For use by operations personnel or data archives in the region.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
Iowa DOT District 4 Offices	Traffic Management	Traffic Equipment Maintenance	Monitoring and remote diagnostics of field equipment - detect failures, issue problem reports, and track the repair or replacement of the failed equipment.	No
Iowa DOT Freeway Sensors	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
Iowa DOT Freeway Sensors	Roadway	Roadway Data Collection	Field elements to collect traffic, road, and environmental conditions information for use in transportation planning, research, and other off-line applications. Includes the sensors, supporting roadside infrastructure, and communications equipment.	No
Iowa DOT Freeway Sensors	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
Iowa DOT Freeway Sensors	Roadway	Roadway Field Device Monitoring	Monitors field equipment operational status and detects and reports fault conditions. Device status, configuration, and fault information are provided to a remote center and a user interface provides information locally to field personnel.	No
Iowa DOT Freeway Sensors	Roadway	Roadway Incident Detection	Field elements that monitor traffic conditions to identify incidents. It includes traffic detectors that collect traffic flow information and identify unusual traffic conditions and advanced CCTV cameras with built-in incident detection algorithms.	No
Iowa DOT Freeway Sensors	Roadway	Roadway Speed Monitoring and Warning	Vehicle speed sensors that detect excessive vehicle speeds, optionally based on conditions and vehicle type, informing drivers, centers and/or enforcement agencies of speed violations.	No
Iowa DOT HAR	Roadway	Roadway Field Device Monitoring	Monitors field equipment operational status and detects and reports fault conditions. Device status, configuration, and fault information are provided to a remote center and a user interface provides information locally to field personnel.	No
lowa DOT HAR	Roadway	Roadway Traffic Information Dissemination	Driver information systems, such as dynamic message signs and Highway Advisory Radio (HAR).	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
lowa DOT Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Environmental Monitoring	On-board systems that collect environmental and road condition data (including road surface or air temperature, wind speed, and road traction information - spatially located and time stamped) from sensors on-board the maintenance vehicle or located at the roadway.	No
Iowa DOT Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Vehicle Location Tracking	On-board systems to track vehicle location and reports the position and timestamp information to the dispatch center.	No
Iowa DOT Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Work Zone Support	On-board systems that provide communications and support for local management of a work zone.	No
Iowa DOT Maintenance and Construction Vehicles	Vehicle			No
Iowa DOT Maintenance and Construction Vehicles - AVL	Maintenance and Construction Vehicle	MCV Vehicle Location Tracking	On-board systems to track vehicle location and reports the position and timestamp information to the dispatch center.	No
Iowa DOT Maintenance and Construction Vehicles - MDTs	Maintenance and Construction Vehicle	MCV Barrier System Control	Control automatic or remotely controlled gates and other barrier systems from a maintenance and construction vehicle.	No
Iowa DOT Maintenance and Construction Vehicles - MDTs	Maintenance and Construction Vehicle	MCV Roadway Maintenance and Construction	On-board systems that support routine non-winter maintenance on the roadway or right-of-way. Includes landscape maintenance, hazard removal (roadway debris, dead animals), routine maintenance activities (roadway cleaning, grass cutting), and repair and maintenance of equipment on the roadway.	No
lowa DOT Maintenance and Construction Vehicles - MDTs	Maintenance and Construction Vehicle	MCV Winter Maintenance	On-board systems that support snow plow operations and other roadway treatments (e.g., salt spraying and other material applications). Supports information sharing between snow plows.	No
lowa DOT Maintenance and Construction Vehicles - MDTs	Maintenance and Construction Vehicle	MCV Work Zone Support	On-board systems that provide communications and support for local management of a work zone.	No
Iowa DOT Maintenance and Construction Vehicles - Onboard Arrow Boards	Maintenance and Construction Vehicle	MCV Work Zone Support	On-board systems that provide communications and support for local management of a work zone.	No
Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
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Iowa DOT Maintenance and Construction Vehicles - On- Board Environmental Sensors	Maintenance and Construction Vehicle			No
Iowa DOT Maintenance and Construction Vehicles - On- Board Environmental Sensors	Vehicle			No
lowa DOT Permanent DMS - Freeway	Roadway	Field Barrier System Control	Field elements that control barrier systems such as gates and other systems that manage entry to roadways, transportation facilities and infrastructure.	No
lowa DOT Permanent DMS - Freeway	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
lowa DOT Permanent DMS - Freeway	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
lowa DOT Permanent DMS - Freeway	Roadway	Roadway Field Device Monitoring	Monitors field equipment operational status and detects and reports fault conditions. Device status, configuration, and fault information are provided to a remote center and a user interface provides information locally to field personnel.	No
lowa DOT Permanent DMS - Freeway	Roadway	Roadway Traffic Information Dissemination	Driver information systems, such as dynamic message signs and Highway Advisory Radio (HAR).	No
lowa DOT Permanent DMS - Freeway	Roadway	Roadway Work Zone Traffic Control	Field elements in maintenance and construction areas including CCTV cameras, driver information systems (such as DMS), and gates/barriers that monitor and control traffic and provide information directly to drivers in affected areas.	No
lowa DOT Permanent DMS - Rest Areas	Roadway	Roadway Field Device Monitoring	Monitors field equipment operational status and detects and reports fault conditions. Device status, configuration, and fault information are provided to a remote center and a user interface provides information locally to field personnel.	No
Iowa DOT Permanent DMS - Rest Areas	Roadway	Roadway Traffic Information Dissemination	Driver information systems, such as dynamic message signs and Highway Advisory Radio (HAR).	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
lowa DOT Portable DMS	Roadway	Roadway Traffic Information Dissemination	Driver information systems, such as dynamic message signs and Highway Advisory Radio (HAR).	No
Iowa DOT Portable DMS	Roadway	Roadway Work Zone Traffic Control	Field elements in maintenance and construction areas including CCTV cameras, driver information systems (such as DMS), and gates/barriers that monitor and control traffic and provide information directly to drivers in affected areas.	No
Iowa DOT Rest Area Kiosks	Remote Traveler Support	Remote Basic Information Reception	Public traveler interface, such as a kiosk, that provides formatted traffic advisories, transit, event, and other traveler information, as well as broadcast alerts.	No
Iowa DOT Rest Area Kiosks	Remote Traveler Support	Remote Interactive Information Reception	Public traveler interface, such as a kiosk, that provides traffic, transit, yellow pages, special event, and other personalized traveler information services upon request.	No
Iowa DOT RWIS Sensors	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
Iowa DOT RWIS Sensors	Roadway	Roadway Environmental Monitoring	Environmental sensors, surface and sub-surface, that collect weather and road surface information. Weather conditions measured include temperature, wind, humidity, precipitation, and visibility. Sensors measure road surface temperature, moisture, icing, salinity, etc.	No
Iowa DOT RWIS Sensors	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
Iowa DOT RWIS Sensors	Roadway	Roadway Probe Data Communications	Field elements that collect probe data from vehicles using short range communications.	No
Iowa DOT RWIS Sensors	Roadway	Roadway Speed Monitoring and Warning	Vehicle speed sensors that detect excessive vehicle speeds, optionally based on conditions and vehicle type, informing drivers, centers and/or enforcement agencies of speed violations.	No
lowa DOT Statewide TOC	Maintenance and Construction Management			No
Iowa DOT Statewide TOC	Traffic Management			No
lowa DOT Website and Social Media	Information Service Provider	Basic Information Broadcast	Broadcast dissemination of traffic, transit, maintenance and construction, event, and weather information to traveler interface systems and vehicles.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
lowa DOT Website and Social Media	Information Service Provider	ISP Emergency Traveler Information	Distribution of emergency information to the traveling public, including evacuation information and wide-area alerts.	No
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Emergency Call-Taking	Provides interface to the emergency call-taking systems such as the Emergency Telecommunications System (e.g., 911) that correlate call information with emergencies reported by transit agencies, commercial vehicle operators, or other public safety agencies. Allows the operator to verify the incident and forward the information to the responding agencies.	No
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Emergency Dispatch	Dispatch emergency vehicles to incidents, tracking their location and status. Pertinent incident information is gathered and relayed to the responding units.	No
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Emergency Early Warning System	Monitors alerting and advisory systems, information collected by ITS surveillance and sensors, and reports from other agencies in order to identify potential, imminent, or in-progress major incidents or disasters. Notification is provided to other ITS centers to notify the traveling public.	No
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Emergency Response Management	Strategic emergency planning and response capabilities and broad inter-agency interfaces to support large-scale incidents and disasters, commonly associated with Emergency Operations Centers.	No
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Incident Command	Tactical decision support, resource coordination, and communications integration among emergency management agencies for Incident Commands that are established by first responders to support local management of an incident.	No
Local Law Enforcement Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	On-board systems for gathering of dispatch and routing information for emergency vehicle personnel, vehicle tracking, communications with care facilities, and signal preemption via short range communication directly with traffic control equipment at the roadside.	No
Local Law Enforcement Emergency Vehicles	Emergency Vehicle	On-board EV Incident Management Communication	On-board systems provide communications support to first responders. Incident information is provided to dispatched emergency personnel. Emergency personnel transmit information about the incident and response status.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
Local Law Enforcement Emergency Vehicles - AVL	Emergency Vehicle	On-board EV En Route Support	On-board systems for gathering of dispatch and routing information for emergency vehicle personnel, vehicle tracking, communications with care facilities, and signal preemption via short range communication directly with traffic control equipment at the roadside.	No
Local Law Enforcement Emergency Vehicles - AVL	Emergency Vehicle	On-board EV Incident Management Communication	On-board systems provide communications support to first responders. Incident information is provided to dispatched emergency personnel. Emergency personnel transmit information about the incident and response status.	No
Local Law Enforcement Emergency Vehicles - MDTs	Emergency Vehicle	On-board EV En Route Support	On-board systems for gathering of dispatch and routing information for emergency vehicle personnel, vehicle tracking, communications with care facilities, and signal preemption via short range communication directly with traffic control equipment at the roadside.	No
Local Law Enforcement Emergency Vehicles - MDTs	Emergency Vehicle	On-board EV Incident Management Communication	On-board systems provide communications support to first responders. Incident information is provided to dispatched emergency personnel. Emergency personnel transmit information about the incident and response status.	No
MAPA Data Collection	Archived Data Management	Virtual Data Warehouse Services	Provides access to data from geographically dispersed archives and coordinates information exchange with a local data warehouse. Also provides the specialized publishing, directory services, and transaction management functions associated with coordinating remote archives.	No
MAPA Data Collection	Archived Data User Systems			No
MAPA Rideshare	Information Service Provider	Infrastructure Provided Dynamic Ridesharing	Dynamic rideshare matching, including traveler eligibility, preference information, connections to transit or other multimodal services, confirmation, and payment of rideshare matching services.	No
Media CCTV	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
Media CCTV	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
Media CCTV	Roadway	Roadway Incident Detection	Field elements that monitor traffic conditions to identify incidents. It includes traffic detectors that collect traffic flow information and identify unusual traffic conditions and advanced CCTV cameras with built-in incident detection algorithms.	No
Media TV, Radio and News Outlets	Information Service Provider	Basic Information Broadcast	Broadcast dissemination of traffic, transit, maintenance and construction, event, and weather information to traveler interface systems and vehicles.	No
Media TV, Radio and News Outlets	Media			No
Media TV, Radio and News Outlets	Traffic Management			No
Metro Bus Departure Signs	Remote Traveler Support	Remote Transit Information Services	Public traveler interface that provides real-time travel-related information at transit stops and multi-modal transfer points, including general annunciation, display of imminent arrival information, the latest available information on transit routes, schedules, transfer options, available services, fares, and real- time schedule adherence.	No
Metro Dispatch Center	Traffic Management			No
Metro Dispatch Center	Transit Management	Transit Center Fixed-Route Operations	Management of fixed route transit operations. Planning, scheduling, and dispatch associated with fixed and flexible route transit services. Updates customer service operator systems, and provides current vehicle schedule adherence and optimum scenarios for schedule adjustment.	No
Metro Dispatch Center	Transit Management	Transit Center Information Services	Provide interactive traveler information to travelers (on-board transit vehicles, at stops/stations, using personal devices), traveler information service providers, media, and other transit organizations. Includes routes, schedules, transfer options, fares, real-time schedule adherence, current incidents, weather conditions, yellow pages, and special events.	No
Metro Dispatch Center	Transit Management	Transit Center Multi-Modal Coordination	Coordinate schedules with other agencies and modes, including transit transfer cluster and transfer point information.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
Metro Dispatch Center	Transit Management	Transit Center Paratransit Operations	Management of demand response transit services, including paratransit. Planning and scheduling of these services. Supports automated vehicle dispatch and automatically updates customer service operator systems.	No
Metro Dispatch Center	Transit Management	Transit Center Security	Monitor transit vehicle operator or traveler activated alarms; authenticate transit vehicle operators; remotely disable a transit vehicle; alert operators, travelers, and police to potential incidents identified by these security features.	No
Metro Dispatch Center	Transit Management	Transit Center Vehicle Tracking	Monitoring transit vehicle locations via interactions with on-board systems. Furnish users with real- time transit schedule information and maintain interface with digital map providers.	No
Metro Dispatch Center	Transit Management	Transit Transportation Operations Data Collection	Collects real-time information on the state of the regional transportation system for operational use by the center. It establishes communications with a regional repository, requests or subscribes to information relevant to the center, and distributes the received information for use.	No
Metro E Card	Traveler Card			No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Schedule Management	Collecting of data for schedule generation and adjustment on- board a transit vehicle. Supports communication between the vehicle, operator, and center.	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Fare Management	On-board systems provide fare collection using a travelers non- monetary fare medium. Collected fare data are made available to the center.	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Information Services	On-board systems to furnish next- stop annunciation as well as interactive travel-related information, including routes, schedules, transfer options, fares, real-time schedule adherence, current incidents, weather conditions, non-motorized transportation services, and special events.	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Security	On-board video/audio surveillance systems, threat sensors, and object detection sensors to enhance security and safety on- board a transit vehicles. Also includes silent alarms activated by transit user or vehicle operator, operator authentication, and remote vehicle disabling.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Signal Priority	On-board systems request signal priority through short range communication directly with traffic control equipment at the roadside (intersections, ramps, interchanges, etc.).	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Trip Monitoring	Support fleet management with automatic vehicle location (AVL) and automated mileage and fuel reporting and auditing.	No
Metro MOBY Vehicles	Transit Vehicle	On-board Paratransit Operations	On-board systems to manage paratransit and flexible-route dispatch requests, including multi- stop runs. Passenger data is collected and provided to the center.	No
Metro MOBY Vehicles	Transit Vehicle	On-board Transit Trip Monitoring	Support fleet management with automatic vehicle location (AVL) and automated mileage and fuel reporting and auditing.	No
Metro Ticket Vending Machines	Remote Traveler Support	Remote Transit Fare Management	Public traveler interface, such as a kiosk, that provides the capability for the traveler to use a common fare medium for transit fares, tolls, and/or parking lot charges, to calculate the amount due and identify payment problems.	No
Metro Website	Information Service Provider			No
NDOR 511 System	Information Service Provider	Basic Information Broadcast	Broadcast dissemination of traffic, transit, maintenance and construction, event, and weather information to traveler interface systems and vehicles.	No
NDOR 511 System	Information Service Provider	Interactive Infrastructure Information	Personalized dissemination of traffic, transit, maintenance and construction, multimodal, event, and weather information to traveler interface systems and vehicles, upon request.	No
NDOR 511 System	Information Service Provider	ISP Emergency Traveler Information	Distribution of emergency information to the traveling public, including evacuation information and wide-area alerts.	No
NDOR 511 System	Information Service Provider	Traveler Telephone Information	Distribution of traveler information and wide-area alerts to traveler telephone information systems such as 511, based on voice- based traveler requests.	No
NDOR 511 System	Telecommunications System for Traveler Information			No
NDOR Anti-Icing Stations	Roadway	Roadway Automated Treatment	Field elements that activate automated roadway treatment systems (to disperse anti-icing chemicals, etc.) based on environmental or atmospheric conditions, or under center control.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
NDOR Anti-Icing Stations	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
NDOR Anti-Icing Stations	Roadway	Roadway Environmental Monitoring	Environmental sensors, surface and sub-surface, that collect weather and road surface information. Weather conditions measured include temperature, wind, humidity, precipitation, and visibility. Sensors measure road surface temperature, moisture, icing, salinity, etc.	No
NDOR Anti-Icing Stations	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
NDOR Anti-Icing Stations	Roadway	Roadway Probe Data Communications	Field elements that collect probe data from vehicles using short range communications.	No
NDOR Anti-Icing Stations	Roadway	Roadway Traffic Information Dissemination	Driver information systems, such as dynamic message signs and Highway Advisory Radio (HAR).	No
NDOR ATR	Roadway			No
NDOR Automated Gate Closure	Roadway	Field Barrier System Control	Field elements that control barrier systems such as gates and other systems that manage entry to roadways, transportation facilities and infrastructure.	No
NDOR Automated Gate Closure	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
NDOR Automated Gate Closure	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
NDOR Automated Gate Closure	Roadway	Roadway Traffic Information Dissemination	Driver information systems, such as dynamic message signs and Highway Advisory Radio (HAR).	No
NDOR Automated Gate Closure	Roadway	Roadway Traffic Metering	Control equipment including ramp, interchange, and mainline meters and the dynamic message signs that provide information about the meters and any special bypass lanes.	No
NDOR Automated Work Zone	Roadway	Field Barrier System Control	Field elements that control barrier systems such as gates and other systems that manage entry to roadways, transportation facilities and infrastructure.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
NDOR Automated Work Zone	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
NDOR Automated Work Zone	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
NDOR Automated Work Zone	Roadway	Roadway Traffic Information Dissemination	Driver information systems, such as dynamic message signs and Highway Advisory Radio (HAR).	No
NDOR Automated Work Zone	Roadway	Roadway Traffic Metering	Control equipment including ramp, interchange, and mainline meters and the dynamic message signs that provide information about the meters and any special bypass lanes.	No
NDOR Automated Work Zone	Roadway	Roadway Work Zone Traffic Control	Field elements in maintenance and construction areas including CCTV cameras, driver information systems (such as DMS), and gates/barriers that monitor and control traffic and provide information directly to drivers in affected areas.	No
NDOR CCTV	Roadway	Field Barrier System Control	Field elements that control barrier systems such as gates and other systems that manage entry to roadways, transportation facilities and infrastructure.	No
NDOR CCTV	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
NDOR CCTV	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
NDOR CCTV	Roadway	Roadway Incident Detection	Field elements that monitor traffic conditions to identify incidents. It includes traffic detectors that collect traffic flow information and identify unusual traffic conditions and advanced CCTV cameras with built-in incident detection algorithms.	No
NDOR CCTV	Roadway	Roadway Traffic Information Dissemination	Driver information systems, such as dynamic message signs and Highway Advisory Radio (HAR).	No
NDOR Detection Stations	Roadway	Field Barrier System Control	Field elements that control barrier systems such as gates and other systems that manage entry to roadways, transportation facilities and infrastructure.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
NDOR Detection Stations	Roadway	Field Safeguard System Control	Field elements that control safeguard systems such as blast shields and tunnel exhaust systems that are used to mitigate the impact of incidents on transportation infrastructure.	No
NDOR Detection Stations	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
NDOR Detection Stations	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
NDOR Detection Stations	Roadway	Roadway Speed Monitoring and Warning	Vehicle speed sensors that detect excessive vehicle speeds, optionally based on conditions and vehicle type, informing drivers, centers and/or enforcement agencies of speed violations.	No
NDOR Detection Stations	Roadway	Roadway Traffic Metering	Control equipment including ramp, interchange, and mainline meters and the dynamic message signs that provide information about the meters and any special bypass lanes.	No
NDOR DMS	Roadway	Field Barrier System Control	Field elements that control barrier systems such as gates and other systems that manage entry to roadways, transportation facilities and infrastructure.	No
NDOR DMS	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
NDOR DMS	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
NDOR DMS	Roadway	Roadway Field Device Monitoring	Monitors field equipment operational status and detects and reports fault conditions. Device status, configuration, and fault information are provided to a remote center and a user interface provides information locally to field personnel.	No
NDOR DMS	Roadway	Roadway Traffic Information Dissemination	Driver information systems, such as dynamic message signs and Highway Advisory Radio (HAR).	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
NDOR DMS	Roadway	Roadway Work Zone Traffic Control	Field elements in maintenance and construction areas including CCTV cameras, driver information systems (such as DMS), and gates/barriers that monitor and control traffic and provide information directly to drivers in affected areas.	No
NDOR DOC	Archived Data Management			No
NDOR DOC	Maintenance and Construction Management			No
NDOR DOC	Traffic Management	Barrier System Management	Remotely controls barrier systems such as gates and other systems that manage entry to roadways, transportation facilities and infrastructure.	No
NDOR DOC	Traffic Management	Collect Traffic Surveillance	Management of traffic sensors and surveillance (CCTV) equipment, collection of current traffic conditions, and distribution of the collected information to other centers and operators.	No
NDOR DOC	Traffic Management	TMC Incident Detection	Remotely monitors traffic sensor and surveillance systems to detect and verify incidents. Also monitors external advisory and incident reporting systems, intermodal freight depots, and border crossings for additional incident information. Identified incidents are reported to operations personnel and other centers.	No
NDOR DOC	Traffic Management	TMC Incident Dispatch Coordination/Communication	Formulates an incident response that takes into account the incident potential, incident impacts, and/or resources required for incident management. Facilitates the dispatch of emergency response and service vehicles and coordinates the response with cooperating agencies.	No
NDOR DOC	Traffic Management	TMC Multimodal Coordination	Provides traffic signal priority for transit vehicles based on center- to-center communications with the transit management center; also exchange traffic and transit information.	No
NDOR DOC	Traffic Management	TMC Signal Control	Remotely controls traffic signal controllers to implement traffic management strategies at signalized intersections based on traffic conditions, incidents, emergency vehicle preemptions, pedestrian crossings, etc.	No
NDOR DOC	Traffic Management	TMC Traffic Information Dissemination	Controls dissemination of traffic- related data to other centers, the media, and travelers via the driver information systems (DMS, HAR) that it operates.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
NDOR DOC	Traffic Management	TMC Transportation Operations Data Collection	Collects real-time information on the state of the regional transportation system for operational use by the center. It establishes communications with a regional repository, requests or subscribes to information relevant to the center, and distributes the received information for use.	No
NDOR DOC	Traffic Management	Traffic Data Collection	Collection and storage of traffic management data. For use by operations personnel or data archives in the region.	No
NDOR Field Equipment	Roadway	Field Barrier System Control	Field elements that control barrier systems such as gates and other systems that manage entry to roadways, transportation facilities and infrastructure.	No
NDOR Field Equipment	Roadway	Roadway Automated Treatment	Field elements that activate automated roadway treatment systems (to disperse anti-icing chemicals, etc.) based on environmental or atmospheric conditions, or under center control.	No
NDOR Field Equipment	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
NDOR Field Equipment	Roadway	Roadway Data Collection	Field elements to collect traffic, road, and environmental conditions information for use in transportation planning, research, and other off-line applications. Includes the sensors, supporting roadside infrastructure, and communications equipment.	No
NDOR Field Equipment	Roadway	Roadway Environmental Monitoring	Environmental sensors, surface and sub-surface, that collect weather and road surface information. Weather conditions measured include temperature, wind, humidity, precipitation, and visibility. Sensors measure road surface temperature, moisture, icing, salinity, etc.	No
NDOR Field Equipment	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
NDOR Field Equipment	Roadway	Roadway Incident Detection	Field elements that monitor traffic conditions to identify incidents. It includes traffic detectors that collect traffic flow information and identify unusual traffic conditions and advanced CCTV cameras with built-in incident detection algorithms.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
NDOR Field Equipment	Roadway	Roadway Speed Monitoring and Warning	Vehicle speed sensors that detect excessive vehicle speeds, optionally based on conditions and vehicle type, informing drivers, centers and/or enforcement agencies of speed violations.	No
NDOR Field Equipment	Roadway	Roadway Traffic Information Dissemination	Driver information systems, such as dynamic message signs and Highway Advisory Radio (HAR).	No
NDOR Field Equipment	Roadway	Roadway Work Zone Traffic Control	Field elements in maintenance and construction areas including CCTV cameras, driver information systems (such as DMS), and gates/barriers that monitor and control traffic and provide information directly to drivers in affected areas.	No
NDOR HCRS	Information Service Provider	Basic Information Broadcast	Broadcast dissemination of traffic, transit, maintenance and construction, event, and weather information to traveler interface systems and vehicles.	No
NDOR HCRS	Information Service Provider	ISP Traveler Data Collection	Collects traveler information from other centers, consolidates and refines the collected data, and makes this data available to traveler information applications.	No
NDOR Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Roadway Maintenance and Construction	On-board systems that support routine non-winter maintenance on the roadway or right-of-way. Includes landscape maintenance, hazard removal (roadway debris, dead animals), routine maintenance activities (roadway cleaning, grass cutting), and repair and maintenance of equipment on the roadway.	No
NDOR Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Vehicle Location Tracking	On-board systems to track vehicle location and reports the position and timestamp information to the dispatch center.	No
NDOR Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Winter Maintenance	On-board systems that support snow plow operations and other roadway treatments (e.g., salt spraying and other material applications). Supports information sharing between snow plows.	No
NDOR RWIS	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
NDOR RWIS	Roadway	Roadway Environmental Monitoring	Environmental sensors, surface and sub-surface, that collect weather and road surface information. Weather conditions measured include temperature, wind, humidity, precipitation, and visibility. Sensors measure road surface temperature, moisture, icing, salinity, etc.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
NDOR RWIS	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
NDOR RWIS	Roadway	Roadway Probe Data Communications	Field elements that collect probe data from vehicles using short range communications.	No
NDOR RWIS	Roadway	Roadway Speed Monitoring and Warning	Vehicle speed sensors that detect excessive vehicle speeds, optionally based on conditions and vehicle type, informing drivers, centers and/or enforcement agencies of speed violations.	No
NDOR Signal System	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
NDOR Signal System	Roadway	Roadway Signal Controls	Field elements including traffic signal controllers for use at signalized intersections; also supports pedestrian crossings.	No
NDOR Website and Social Media	Information Service Provider	Basic Information Broadcast	Broadcast dissemination of traffic, transit, maintenance and construction, event, and weather information to traveler interface systems and vehicles.	No
NDOR Website and Social Media	Information Service Provider	ISP Emergency Traveler Information	Distribution of emergency information to the traveling public, including evacuation information and wide-area alerts.	No
NE State Patrol Communications Center (Omaha)	Emergency Management	Emergency Call-Taking	Provides interface to the emergency call-taking systems such as the Emergency Telecommunications System (e.g., 911) that correlate call information with emergencies reported by transit agencies, commercial vehicle operators, or other public safety agencies. Allows the operator to verify the incident and forward the information to the responding agencies.	No
NE State Patrol Communications Center (Omaha)	Emergency Management	Emergency Dispatch	Dispatch emergency vehicles to incidents, tracking their location and status. Pertinent incident information is gathered and relayed to the responding units.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
NE State Patrol Communications Center (Omaha)	Emergency Management	Emergency Response Management	Strategic emergency planning and response capabilities and broad inter-agency interfaces to support large-scale incidents and disasters, commonly associated with Emergency Operations Centers.	No
NE State Patrol Communications Center (Omaha)	Emergency Management	Incident Command	Tactical decision support, resource coordination, and communications integration among emergency management agencies for Incident Commands that are established by first responders to support local management of an incident.	No
NE State Patrol Communications Center (Omaha)	Emergency Management	Service Patrol Management	Dispatch and communication with roadway service patrol vehicles that monitor roads to aid motorists, offering rapid response to minor incidents.	No
NE State Patrol Communications Center (Omaha)	Emergency Telecommunications System			No
NE State Patrol Emergency Vehicles	Emergency Vehicle	On-board EV Incident Management Communication	On-board systems provide communications support to first responders. Incident information is provided to dispatched emergency personnel. Emergency personnel transmit information about the incident and response status.	No
NE State Patrol Motorist Assist Vehicles	Emergency Vehicle	On-board EV En Route Support	On-board systems for gathering of dispatch and routing information for emergency vehicle personnel, vehicle tracking, communications with care facilities, and signal preemption via short range communication directly with traffic control equipment at the roadside.	No
NE State Patrol Motorist Assist Vehicles	Emergency Vehicle	On-board EV Incident Management Communication	On-board systems provide communications support to first responders. Incident information is provided to dispatched emergency personnel. Emergency personnel transmit information about the incident and response status.	No
Other Local PWD Field Equipment	Roadway	Roadway Basic Surveillance	Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	No
Other Local PWD Field Equipment	Roadway	Roadway Equipment Coordination	Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	No
Other Local PWD Field Equipment	Roadway	Roadway Signal Controls	Field elements including traffic signal controllers for use at signalized intersections; also supports pedestrian crossings.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
Personal Communications and Computing Devices	Personal Information Access	Personal Autonomous Route Guidance	Personal traveler interface that provides route guidance using a digital map stored locally. Devices include personal computers and personal portable devices such as PDAs and pagers.	No
Personal Communications and Computing Devices	Personal Information Access	Personal Basic Information Reception	Personal traveler interface that provides formatted traffic advisories, transit, event, and other traveler information, as well as broadcast alerts. Devices include personal computers and personal portable devices such as PDAs and pagers.	No
Personal Communications and Computing Devices	Personal Information Access	Personal Interactive Information Reception	Personal traveler interface that provides traffic, transit, yellow pages, event, and trip planning information, and other personalized traveler information services upon request. Devices include personal computers and personal portable devices such as PDAs.	No
Personal Communications and Computing Devices	Personal Information Access	Personal Location Determination	Provides current location of a personal device from GPS or similar technology and uses this information for navigation, guidance, and emergency notification systems.	No
Personal Communications and Computing Devices	Personal Information Access	Personal Mayday I/F	Personal traveler interface, such as a PDA, that provides the capability for travelers to report an emergency or activate a panic button to summon assistance.	No
Private Agency Websites	Travel Services Provider			No
Public Vehicles	Basic Vehicle			No
Public Vehicles	Vehicle	Basic Vehicle Reception	Provides drivers basic transportation information including formatted traffic advisories, event, and other traveler information as well as broadcast alerts.	No
Public Vehicles	Vehicle	Vehicle Mayday I/F	In-vehicle capability for drivers or collision detection sensors onboard a vehicle to report an emergency and summon assistance.	No
Tow Service Operators	Emergency Vehicle	On-board EV En Route Support	On-board systems for gathering of dispatch and routing information for emergency vehicle personnel, vehicle tracking, communications with care facilities, and signal preemption via short range communication directly with traffic control equipment at the roadside.	No

Element Name	Entity Name	Functional Area	Functional Area Description	FA User Defined
Tow Service Operators	Emergency Vehicle	On-board EV Incident Management Communication	On-board systems provide communications support to first responders. Incident information is provided to dispatched emergency personnel. Emergency personnel transmit information about the incident and response status.	No
Traffic	Traffic			No
Traveler Card	Traveler Card			No
Travelers	Traveler			No

9 Interfaces Between Systems

The interfaces of the transportation systems in Omaha-Council Bluffs Regional ITS Architecture are based on the National ITS Architecture and tailored to reflect the plan for the region. Architecture diagrams display the transportation systems in the Omaha-Council Bluffs Regional ITS Architecture, and more importantly, how these systems are and will be connected with one another so information can be exchanged and transportation services can be coordinated. Stakeholders may use these diagrams to identify integration opportunities. Each system in the region is represented with two types of diagrams, a context diagram and an architecture flow diagram.

A context diagram shows a particular system and all other systems with which it shares information. Interconnects are represented as single lines and indicate information sharing without specifying the type of information being shared or the direction of the information movement.

Following each interconnect context diagram are a series of architecture flow diagrams showing the information (i.e. architecture flows) movement between the various systems. Descriptions of the architecture flows are included at the end of the chapter.

Information about the interfaces of the systems in the region is contained in the Turbo Architecture[™] database. Turbo Architecture[™] can be used to create tailored interconnect and architecture flow diagrams for any system in the database.

Element 1	Element 2	Communications	Status
Adjacent Region TOC Operators	Iowa DOT District 4 Offices	Not identified	Planned
Adjacent Region TOC Operators	NDOR DOC	Not identified	Planned
City of Bellevue PWD Field Equipment	City of Council Bluffs TOC	Not identified	Existing
City of Bellevue PWD Field Equipment	Driver	Not identified	Existing
City of Bellevue PWD Field Equipment	Fire and Rescue Emergency Vehicles	Not identified	Existing
City of Bellevue PWD Field Equipment	Local Law Enforcement Emergency Vehicles	Not identified	Existing
City of Bellevue PWD Field Equipment	NE State Patrol Emergency Vehicles	Not identified	Existing
City of Council Bluffs PWD Field Equipment	City of Council Bluffs TOC	Not identified	Existing
City of Council Bluffs PWD Field Equipment	City of Omaha TOC	Not identified	Existing

Table 7: Interconnects

Element 1	Element 2	Communications	Status
City of Council Bluffs PWD Field Equipment	Driver	Not identified	Existing
City of Council Bluffs PWD Field Equipment	Enforcement Agencies	Not identified	Planned
City of Council Bluffs PWD Field Equipment	Fire and Rescue Emergency Vehicles	Not identified	Existing
City of Council Bluffs PWD Field Equipment	IA State Patrol Emergency Vehicles	Not identified	Existing
City of Council Bluffs PWD Field Equipment	Iowa DOT District 4 Offices	Not identified	Existing
City of Council Bluffs PWD Field Equipment	Local Law Enforcement Emergency Vehicles	Not identified	Existing
City of Council Bluffs PWD Field Equipment	Metro Fixed-line Transit Vehicles	Not identified	Planned
City of Council Bluffs PWD Field Equipment	Traffic	Not identified	Existing
City of Council Bluffs TOC	Enforcement Agencies	Not identified	Planned
City of Council Bluffs TOC	Iowa DOT District 4 Offices	Not identified	Planned
City of Council Bluffs TOC	Media TV, Radio and News Outlets	Not identified	Existing
City of Council Bluffs TOC	Metro Dispatch Center	Not identified	Planned
City of Council Bluffs TOC	NDOR DOC	Not identified	Planned
City of Council Bluffs Website and Social Media	Personal Communications and Computing Devices	Not identified	Existing
City of Omaha PWD Field Equipment	City of Omaha TOC	Not identified	Existing
City of Omaha PWD Field Equipment	Driver	Not identified	Existing
City of Omaha PWD Field Equipment	Enforcement Agencies	Not identified	Planned
City of Omaha PWD Field Equipment	Fire and Rescue Emergency Vehicles	Not identified	Existing
City of Omaha PWD Field Equipment	Local Law Enforcement Emergency Vehicles	Not identified	Existing
City of Omaha PWD Field Equipment	Metro Fixed-line Transit Vehicles	Not identified	Planned
City of Omaha PWD Field Equipment	NE State Patrol Emergency Vehicles	Not identified	Existing
City of Omaha PWD Field Equipment	Traffic	Not identified	Existing
City of Omaha Smart Parking Meters	Financial Institution	Not identified	Existing
City of Omaha Smart Parking Meters	Traveler Card	Not identified	Existing

Element 1	Element 2	Communications	Status
City of Omaha TOC	Enforcement Agencies	Not identified	Planned
City of Omaha TOC	Iowa DOT District 4 Offices	Not identified	Planned
City of Omaha TOC	MAPA Data Collection	Not identified	Planned
City of Omaha TOC	Media TV, Radio and News Outlets	Not identified	Existing
City of Omaha TOC	Metro Dispatch Center	Not identified	Planned
City of Omaha TOC	NDOR DOC	Not identified	Planned
City of Omaha Website and Social Media	Personal Communications and Computing Devices	Not identified	Existing
County Emergency Operations Centers	County of Pottawattamie 911 Center	Not identified	Existing
County Emergency Operations Centers	IA State Patrol Communications Center (Atlantic)	Not identified	Existing
County Emergency Operations Centers	Local Law Enforcement Dispatch and E911 Center	Not identified	Existing
County Emergency Operations Centers	NDOR DOC	Not identified	Existing
County Emergency Operations Centers	NE State Patrol Communications Center (Omaha)	Not identified	Existing
County of Pottawattamie 911 Center	County of Pottawattamie EOC	Not identified	Existing
County of Pottawattamie 911 Center	Fire and Rescue Emergency Vehicles	Not identified	Existing
County of Pottawattamie 911 Center	IA State Patrol Communications Center (Atlantic)	Not identified	Existing
County of Pottawattamie 911 Center	Iowa DOT Automated Notification System	Not identified	Planned
County of Pottawattamie 911 Center	Local Law Enforcement Dispatch and E911 Center	Not identified	Existing
County of Pottawattamie 911 Center	Local Law Enforcement Emergency Vehicles	Not identified	Existing
County of Pottawattamie 911 Center	Personal Communications and Computing Devices	Not identified	Existing
County of Pottawattamie EOC	IA State Patrol Communications Center (Atlantic)	Not identified	Existing
County of Pottawattamie EOC	lowa DOT 511 System	Not identified	Existing
County of Pottawattamie EOC	Iowa DOT Automated Notification System	Not identified	Planned
County of Pottawattamie EOC	Iowa DOT District 4 Offices	Not identified	Existing
County of Pottawattamie EOC	Iowa DOT Statewide TOC	Not identified	Planned
County of Pottawattamie EOC	Local Law Enforcement Dispatch and E911 Center	Not identified	Existing
County of Pottawattamie EOC	NDOR 511 System	Not identified	Existing
County of Pottawattamie EOC	NDOR DOC	Not identified	Planned

Element 1	Element 2	Communications	Status
County of Pottawattamie EOC	NE State Patrol Communications Center (Omaha)	Not identified	Existing
Driver	Iowa DOT Automated Work Zone	Not identified	Existing
Driver	Iowa DOT Central Headquarters Field Equipment	Not identified	Existing
Driver	Iowa DOT District 4 Field Equipment	Not identified	Existing
Driver	NDOR Automated Work Zone	Not identified	Existing
Driver	NDOR Field Equipment	Not identified	Existing
Enforcement Agencies	Iowa DOT District 4 Field Equipment	Not identified	Planned
Enforcement Agencies	Iowa DOT District 4 Offices	Not identified	Planned
Enforcement Agencies	NDOR DOC	Not identified	Planned
Enforcement Agencies	NDOR Field Equipment	Not identified	Planned
Fire and Rescue Emergency Vehicles	Local Law Enforcement Dispatch and E911 Center	Not identified	Existing
Fire and Rescue Emergency Vehicles	Other Local PWD Field Equipment	Not identified	Existing
IA State Patrol Communications Center (Atlantic)	IA State Patrol Communications Center (Des Moines)	Not identified	Existing
IA State Patrol Communications Center (Atlantic)	IA State Patrol Emergency Vehicles	Not identified	Existing
IA State Patrol Communications Center (Atlantic)	Iowa DOT Automated Notification System	Not identified	Planned
IA State Patrol Communications Center (Atlantic)	Iowa DOT CARS	Not identified	Planned
IA State Patrol Communications Center (Atlantic)	Iowa DOT District 4 Offices	Not identified	Existing
IA State Patrol Communications Center (Atlantic)	Iowa DOT Statewide TOC	Not identified	Planned
IA State Patrol Communications Center (Atlantic)	Local Law Enforcement Dispatch and E911 Center	Not identified	Existing
IA State Patrol Communications Center (Atlantic)	NE State Patrol Communications Center (Omaha)	Not identified	Existing
IA State Patrol Communications Center (Atlantic)	Personal Communications and Computing Devices	Not identified	Existing
IA State Patrol Communications Center (Atlantic)	Tow Service Operators	Not identified	Existing
IA State Patrol Emergency Vehicles	Other Local PWD Field Equipment	Not identified	Existing
lowa DOT 511 System	lowa DOT CARS	Not identified	Existing
lowa DOT 511 System	Iowa DOT Rest Area Kiosks	Not identified	Existing
Iowa DOT 511 System	Media TV, Radio and News Outlets	Not identified	Existing

Element 1	Element 2	Communications	Status
Iowa DOT 511 System	Personal Communications and Computing Devices	Not identified	Existing
lowa DOT 511 System	Private Agency Websites	Not identified	Planned
Iowa DOT Automated Notification System	Iowa DOT Statewide TOC	Not identified	Planned
Iowa DOT Automated Notification System	Metro Dispatch Center	Not identified	Planned
Iowa DOT Automated Notification System	NDOR DOC	Not identified	Planned
Iowa DOT Automated Notification System	NE State Patrol Communications Center (Omaha)	Not identified	Planned
Iowa DOT Automated Work Zone	Iowa DOT District 4 Field Equipment	Not identified	Planned
Iowa DOT Automated Work Zone	Iowa DOT District 4 Offices	Not identified	Existing
Iowa DOT Automated Work Zone	Iowa DOT Maintenance and Construction Vehicles	Not identified	Planned
Iowa DOT Automated Work Zone	Traffic	Not identified	Existing
lowa DOT CARS	Iowa DOT District 4 Offices	Not identified	Existing
Iowa DOT CARS	Iowa DOT Maintenance and Construction Vehicles	Not identified	Existing
lowa DOT CARS	Iowa DOT Statewide TOC	Not identified	Planned
lowa DOT CARS	NDOR HCRS	Not identified	Planned
Iowa DOT Central Headquarters Field Equipment	Iowa DOT Central Headquarters Office	Not identified	Existing
Iowa DOT Central Headquarters Field Equipment	Iowa DOT Statewide TOC	Not identified	Existing
Iowa DOT Central Headquarters Field Equipment	Traffic	Not identified	Existing
Iowa DOT Central Headquarters Office	Iowa DOT District 4 Offices	Not identified	Existing
Iowa DOT District 4 Field Equipment	Iowa DOT District 4 Offices	Not identified	Existing
Iowa DOT District 4 Field Equipment	Iowa DOT Maintenance and Construction Vehicles	Not identified	Planned
Iowa DOT District 4 Field Equipment	Iowa DOT Statewide TOC	Not identified	Existing
Iowa DOT District 4 Field Equipment	Public Vehicles	Not identified	Existing
Iowa DOT District 4 Field Equipment	Traffic	Not identified	Existing
Iowa DOT District 4 Offices	Iowa DOT Maintenance and Construction Vehicles	Not identified	Existing
Iowa DOT District 4 Offices	Iowa DOT Statewide TOC	Not identified	Planned

Element 1	Element 2	Communications	Status
Iowa DOT District 4 Offices	Local Law Enforcement Dispatch and E911 Center	Not identified	Planned
Iowa DOT District 4 Offices	MAPA Data Collection	Not identified	Existing
Iowa DOT District 4 Offices	Media TV, Radio and News Outlets	Not identified	Existing
Iowa DOT District 4 Offices	Metro Dispatch Center	Not identified	Existing
Iowa DOT District 4 Offices	NDOR DOC	Not identified	Existing
Iowa DOT Maintenance and Construction Vehicles	Travelers	Not identified	Existing
Iowa DOT Permanent DMS - Rest Areas	Iowa DOT Statewide TOC	Not identified	Existing
Iowa DOT Rest Area Kiosks	Media TV, Radio and News Outlets	Not identified	Existing
Iowa DOT Rest Area Kiosks	Private Agency Websites	Not identified	Planned
lowa DOT Rest Area Kiosks	Travelers	Not identified	Existing
Iowa DOT Statewide TOC	Local Law Enforcement Dispatch and E911 Center	Not identified	Planned
Iowa DOT Statewide TOC	Media TV, Radio and News Outlets	Not identified	Existing
Iowa DOT Statewide TOC	NDOR 511 System	Not identified	Planned
Iowa DOT Statewide TOC	NDOR DOC	Not identified	Planned
Iowa DOT Website and Social Media	Personal Communications and Computing Devices	Not identified	Existing
Local Law Enforcement Dispatch and E911 Center	Local Law Enforcement Emergency Vehicles	Not identified	Existing
Local Law Enforcement Dispatch and E911 Center	Metro Dispatch Center	Not identified	Existing
Local Law Enforcement Dispatch and E911 Center	NDOR DOC	Not identified	Existing
Local Law Enforcement Dispatch and E911 Center	NE State Patrol Communications Center (Omaha)	Not identified	Existing
Local Law Enforcement Dispatch and E911 Center	Personal Communications and Computing Devices	Not identified	Existing
Local Law Enforcement Dispatch and E911 Center	Tow Service Operators	Not identified	Existing
Local Law Enforcement Emergency Vehicles	NDOR Field Equipment	Not identified	Existing
Local Law Enforcement Emergency Vehicles	Other Local PWD Field Equipment	Not identified	Existing
MAPA Data Collection	NDOR DOC	Not identified	Existing
MAPA Data Collection	NDOR Field Equipment	Not identified	Existing
MAPA Rideshare	Personal Communications and Computing Devices	Not identified	Existing

Element 1	Element 2	Communications	Status
Media CCTV	Media TV, Radio and News Outlets	Not identified	Existing
Media TV, Radio and News Outlets	NDOR 511 System	Not identified	Existing
Media TV, Radio and News Outlets	NDOR DOC	Not identified	Existing
Media TV, Radio and News Outlets	NE State Patrol Communications Center (Omaha)	Not identified	Existing
Metro Bus Departure Signs	Metro Dispatch Center	Not identified	Planned
Metro Bus Departure Signs	Travelers	Not identified	Planned
Metro Dispatch Center	Metro Fixed-line Transit Vehicles	Not identified	Existing
Metro Dispatch Center	Metro MOBY Vehicles	Not identified	Existing
Metro Dispatch Center	Metro Website	Not identified	Existing
Metro Dispatch Center	NDOR DOC	Not identified	Existing
Metro Dispatch Center	NE State Patrol Communications Center (Omaha)	Not identified	Existing
Metro Dispatch Center	Personal Communications and Computing Devices	Not identified	Existing
Metro E Card	Metro Fixed-line Transit Vehicles	Not identified	Planned
Metro E Card	Metro Ticket Vending Machines	Not identified	Planned
Metro Fixed-line Transit Vehicles	Other Local PWD Field Equipment	Not identified	Planned
Metro Fixed-line Transit Vehicles	Travelers	Not identified	Planned
Metro Ticket Vending Machines	Travelers	Not identified	Planned
NDOR 511 System	NDOR HCRS	Not identified	Planned
NDOR 511 System	Personal Communications and Computing Devices	Not identified	Existing
NDOR 511 System	Private Agency Websites	Not identified	Planned
NDOR Automated Work Zone	NDOR DOC	Not identified	Existing
NDOR Automated Work Zone	NDOR Field Equipment	Not identified	Planned
NDOR Automated Work Zone	Traffic	Not identified	Existing
NDOR DOC	NDOR Field Equipment	Not identified	Existing
NDOR DOC	NDOR HCRS	Not identified	Existing
NDOR DOC	NDOR Maintenance and Construction Vehicles	Not identified	Existing
NDOR DOC	NE State Patrol Communications Center (Omaha)	Not identified	Existing
NDOR Field Equipment	Traffic	Not identified	Existing
NDOR Website and Social Media	Personal Communications and Computing Devices	Not identified	Existing
NE State Patrol Communications Center (Omaha)	NE State Patrol Emergency Vehicles	Not identified	Existing

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Element 1	Element 2	Communications	Status
NE State Patrol Communications Center (Omaha)	NE State Patrol Motorist Assist Vehicles	Not identified	Existing
NE State Patrol Communications Center (Omaha)	Tow Service Operators	Not identified	Existing
NE State Patrol Emergency Vehicles	Other Local PWD Field Equipment	Not identified	Existing
Personal Communications and Computing Devices	Travelers	Not identified	Existing

10 ITS Standards

Standardizing the flow of information between the systems is essential to costeffectively integrating ITS throughout the region. ITS standards are fundamental to the establishment of an open ITS environment that achieves the goal of interoperability for ITS. Standards facilitate deployment of interoperable systems at local, regional, and national levels without impeding innovation as technology advances and new approaches evolve.

Establishing standards for exchanging information among ITS systems is important not only from an interoperability point of view; it also provides interchangeability and expandability thereby reducing risk and cost. Since an agency using standardized interfaces can select among multiple vendors for products and applications, competition is maintained and prices are lower in the long term.

Standards Development Organizations (SDO) are developing ITS standards that support interoperability and interchangeability. Several of the communication standards overlap in applicability. This provides flexibility in the design of ITS systems allowing agencies to choose the most applicable standard for their needs. Before systems are designed, all stakeholders involved in the applicable ITS service(s) should decide upon the standards and their specifics that will be used. Once a decision is made, all future systems should use the agreed upon standards.

SDO	Document ID	Standard Title	Standard Type	Standard Version	User Defined
AASHTO/ITE	ITE TMDD	Traffic Management Data Dictionary (TMDD) and Message Sets for External Traffic Management Center Communications (MS/ETMCC)	Message/Data		No
AASHTO/ITE/NEMA	NTCIP 1201	Global Object Definitions	Message/Data		No
AASHTO/ITE/NEMA	NTCIP 1202	Object Definitions for Actuated Traffic Signal Controller (ASC) Units	Message/Data		No
AASHTO/ITE/NEMA	NTCIP 1203	Object Definitions for Dynamic Message Signs (DMS)	Message/Data		No
AASHTO/ITE/NEMA	NTCIP 1204	Object Definitions for Environmental Sensor Stations (ESS)	Message/Data		No
AASHTO/ITE/NEMA	NTCIP 1205	Object Definitions for Closed Circuit Television (CCTV) Camera Control	Message/Data		No
AASHTO/ITE/NEMA	NTCIP 1206	Object Definitions for Data Collection and Monitoring (DCM) Devices	Message/Data		No
AASHTO/ITE/NEMA	NTCIP 1208	Object Definitions for Closed Circuit Television (CCTV) Switching	Message/Data		No
AASHTO/ITE/NEMA	NTCIP 1209	Data Element Definitions for Transportation Sensor Systems (TSS)	Message/Data		No
AASHTO/ITE/NEMA	NTCIP 1210	Field Management Stations (FMS) - Part 1: Object Definitions for Signal System Masters	Message/Data		No

Table 8: ITS Standards

SDO	Document ID	Standard Title	Standard Type	Standard Version	User Defined
AASHTO/ITE/NEMA	NTCIP 1211	Object Definitions for Signal Control and Prioritization (SCP)	Message/Data		No
AASHTO/ITE/NEMA	NTCIP 1214	Object Definitions for Conflict Monitor Units (CMU)	Message/Data		No
AASHTO/ITE/NEMA	NTCIP C2C	NTCIP Center-to-Center Standards Group	Group		No
AASHTO/ITE/NEMA	NTCIP C2F	NTCIP Center-to-Field Standards Group	Group		No
ΑΡΤΑ	APTA TCIP- S-001 3.0.4	Standard for Transit Communications Interface Profiles	Message/Data		No
ASTM	ASTM E2468-05	Standard Practice for Metadata to Support Archived Data Management Systems	Other		No
ASTM	ASTM E2665-08	Standard Specifications for Archiving ITS- Generated Traffic Monitoring Data	Message/Data		No
ASTM	DSRC 915MHz	Dedicated Short Range Communication at 915 MHz Standards Group	Group		No
ASTM/IEEE/SAE	DSRC 5GHz	Dedicated Short Range Communication at 5.9 GHz Standards Group	Group		No
IEEE	IEEE IM	Incident Management Standards Group	Group		No
SAE	ATIS General Use	Advanced Traveler Information Systems (ATIS) General Use Standards Group	Group		No
SAE	ATIS Low Bandwidth	Advanced Traveler Information Systems (ATIS) Bandwidth Limited Standards Group	Group		No
SAE	Mayday	On-board Vehicle Mayday Standards Group	Group		No

11 Agreements

This section identifies the list of existing and future agreements between each of the stakeholder organizations whose ITS systems will be exchanging information was generated prior to implementing relevant projects. This list identifies the agreements that should be established but does not define the agreements themselves.

Table 9: Agreements

Agreement Number	Agreement Title	Agreement Type	Agreement Status	Description	Lead Stakeholder	Associated Stakeholders
01	Interagency Project Agreements	Operational	Existing	Detour routing signal phasing project interlocal agreement.		City of Omaha PWD
01	Interagency Project Agreements	Operational	Existing	Detour routing signal phasing project interlocal agreement.		NDOR District 2 Offices (Omaha)
02	Traffic Incident Management Interagency Operational Agreements	Operational	Existing	Agreements with expansion or replication of SWIFT for Omaha Traffic Incident Management		Local Law Enforcement
02	Traffic Incident Management Interagency Operational Agreements	Operational	Existing	Agreements with expansion or replication of SWIFT for Omaha Traffic Incident Management		NDOR Central HQ (Lincoln)
02	Traffic Incident Management Interagency Operational Agreements	Operational	Existing	Agreements with expansion or replication of SWIFT for Omaha Traffic Incident Management		NE State Patrol Troop A
03	Local Amber Plan(s)	Operational	Existing	Refinement of Nebraska State Amber Plan to address Amber Plan operational issues specific to the Omaha / Council Bluffs Region.		IA State Patrol Central Headquarters
03	Local Amber Plan(s)	Operational	Existing	Refinement of Nebraska State Amber Plan to address Amber Plan operational issues specific to the Omaha / Council Bluffs Region.		Iowa DOT Central Headquarters
03	Local Amber Plan(s)	Operational	Existing	Refinement of Nebraska State Amber Plan to address Amber Plan operational issues specific to the Omaha / Council Bluffs Region.		Local Law Enforcement
03	Local Amber Plan(s)	Operational	Existing	Refinement of Nebraska State Amber Plan to address Amber Plan operational issues specific to the Omaha / Council Bluffs Region.		NDOR Central HQ (Lincoln)
04	Metro Area Motorist Assist Program Agreement	Funding	Existing	Metro Area Motorist Assist program funding agreement		County of Sarpy SD
04	Metro Area Motorist Assist Program Agreement	Funding	Existing	Metro Area Motorist Assist program funding agreement		Iowa DOT District 4 Offices
04	Metro Area Motorist Assist Program Agreement	Funding	Existing	Metro Area Motorist Assist program funding agreement		NDOR District 2 Offices (Omaha)
04	Metro Area Motorist Assist Program Agreement	Funding	Existing	Metro Area Motorist Assist program funding agreement		NE State Patrol Troop A
05	NDOR D1 / IADOT D4 Operations Agreement	Operational	Existing	Operations Issues involving Nebraska City & Highway 2.		Iowa DOT District 4 Offices
05	NDOR D1 / IADOT D4 Operations Agreement	Operational	Existing	Operations Issues involving Nebraska City & Highway 2.		NDOR Central HQ (Lincoln)

Agreement Number	Agreement Title	Agreement Type	Agreement Status	Description	Lead Stakeholder	Associated Stakeholders
06	NDOR DOC Support Operations Agreement	Operational	Existing	Staffing and financial support of District Operations Center in Omaha		Iowa DOT Central Headquarters
06	NDOR DOC Support Operations Agreement	Operational	Existing	Staffing and financial support of District Operations Center in Omaha		NDOR Central HQ (Lincoln)
07	NDOR / IADOT Equipment Operations Agreement	Operational	Existing	Agreement for equipment sharing & system integration across state lines.		Iowa DOT Central Headquarters
07	NDOR / IADOT Equipment Operations Agreement	Operational	Existing	Agreement for equipment sharing & system integration across state lines.		NDOR Central HQ (Lincoln)
08	NDOR DOC Funding Agreement	Funding	Existing	Financial support, staffing and usage of DOC		NDOR Central HQ (Lincoln)
08	NDOR DOC Funding Agreement	Funding	Existing	Financial support, staffing and usage of DOC		NE State Patrol Troop A
09	ATIS / 511 System Interagency Data Sharing Agreements	Data Sharing	Existing	Data sharing agreement for ATIS systems & 511 phone system.		Iowa DOT Central Headquarters
09	ATIS / 511 System Interagency Data Sharing Agreements	Data Sharing	Existing	Data sharing agreement for ATIS systems & 511 phone system.		NDOR Central HQ (Lincoln)
10	NDOR FMS Speed Map Interagency Data Sharing Agreements	Data Sharing	Existing	Data sharing agreement for sensor systems & display of Iowa routes on NDOR FMS Speed Map.		Iowa DOT Central Headquarters
10	NDOR FMS Speed Map Interagency Data Sharing Agreements	Data Sharing	Existing	Data sharing agreement for sensor systems & display of Iowa routes on NDOR FMS Speed Map.		NDOR Central HQ (Lincoln)
11	NDOR CCTV Video Interagency Data Sharing Agreements	Data Sharing	Existing	Agreement regarding video stream usage		Media TV, Radio and News Outlets
11	NDOR CCTV Video Interagency Data Sharing Agreements	Data Sharing	Existing	Agreement regarding video stream usage		NDOR Central HQ (Lincoln)

12 ITS Projects

The Omaha-Council Bluffs Regional ITS Architecture is ultimately implemented one ITS project at a time. This chapter lists the projects that have been identified as part of the regional ITS architecture definition. Additional detail for each of these ITS projects is included in the Turbo Architecture database.

Name	Description	Status	Timeframe	Geographic Scope	Service Scope
City of Omaha Traffic Management Center	City of Omaha plans to co-locate a Traffic Management Center with the NDOR DOC at 108th & J Street in Omaha and also to create their own center that is owned and operated by the City of Omaha.	Planned	2014-2022		
Metro Automated Passenger Counters	Install APC System into bus fleet in fourth quarter of 2013.	Planned	2014	The project area includes the portion of the MPO region served by Metro Transit Fixed Route and Demand Response Service.	Transit management related services.
Metro AVL System	Install AVL system for real-time tracking of bus service by route / vehicle. Install on-board annunciators to provide stop announcements and expected arrival times.	Planned	2014	The project area includes the portion of the MPO region served by Metro Transit Fixed Route and Demand Response Service.	Transit management related services
Metro Real- Time Transit Information	Develop mobile applications to allow public to receive real-time arrival information per route on multiple mobile systems like iOS and Android. Install "Next Bus" information signs at transit centers and bus stops.	Planned	2014	The project area includes the portion of the MPO region served by Metro Transit Fixed Route and Demand Response Service.	Transit management related services
Metro Ticket Vending Machines	Bus ticket vending machines Purchase / install new bus ticket vending machines at all transit centers and Metro facility in third quarter of 2013.	Planned	2014	The project area includes the portion of the MPO region served by Metro Transit Fixed Route and Demand Response Service.	Transit management related services
Metro Transit Signal Priority	Prepare fleet to be capable for future signal priority system / Bus Rapid Transit (BRT)	Planned	2014-2022	The project area includes the portion of the MPO region served by Metro Transit Fixed Route and Demand Response Service.	Transit management related services

Table 10: ITS Projects

Name	Description	Status	Timeframe	Geographic Scope	Service Scope
Western Iowa ITS Deployment for Council Bluffs	The purpose of the Council Bluffs ITS Deployment is to investigate and deploy advanced technologies to effectively mitigate existing traffic concerns resulting from daily peak traffic occurrence in the Council Bluffs metro area. Additionally, the planned reconstruction of the freeway system over the next 10-15 years will further impact travel. Intelligent Transportation Systems will play a large role in these mitigation efforts in the form of active traffic management through work zones and lane restrictions.	Existing	2014-2023	The project area includes portions of the interstate and surrounding primary road system in the Council Bluffs metropolitan area. Routes covered include: I-29,I-80,I- 480,I-680,US 6, IA 92,US 275	

Appendix A. ITS Services Details

ITS services describe what can be done to improve the efficiency, safety, and convenience of the regional transportation system through better information, advanced systems and new technologies. Some services are specific to one primary stakeholder while others require broad stakeholder participation. This appendix provides additional detail for the ITS services selected for the region.

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
AD1	ITS Data Mart	This service package provides a focused archive that houses data collected and owned by a single agency, district, private sector provider, research institution, or other organization. This focused archive typically includes data covering a single transportation mode and one jurisdiction that is collected from an operational data store and archived for future use. It provides the basic data quality, data privacy, and meta data management common to all ITS archives and provides general query and report access to archive data users.	Existing	Νο	City of Omaha PWD Field Equipment
AD1	ITS Data Mart	This service package provides a focused archive that houses data collected and owned by a single agency, district, private sector provider, research institution, or other organization. This focused archive typically includes data covering a single transportation mode and one jurisdiction that is collected from an operational data store and archived for future use. It provides the basic data quality, data privacy, and meta data management common to all ITS archives and provides general query and report access to archive data users.	Existing	No	City of Omaha TOC
AD1	ITS Data Mart	This service package provides a focused archive that houses data collected and owned by a single agency, district, private sector provider, research institution, or other organization. This focused archive typically includes data covering a single transportation mode and one jurisdiction that is collected from an operational data store and archived for future use. It provides the basic data quality, data privacy, and meta data management common to all ITS archives and provides general query and report access to archive data users.	Existing	No	lowa DOT Central Headquarters Field Equipment

Table 11: ITS Services Details

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
AD1	ITS Data Mart	This service package provides a focused archive that houses data collected and owned by a single agency, district, private sector provider, research institution, or other organization. This focused archive typically includes data covering a single transportation mode and one jurisdiction that is collected from an operational data store and archived for future use. It provides the basic data quality, data privacy, and meta data management common to all ITS archives and provides general query and report access to archive data users.	Existing	Νο	Iowa DOT Central Headquarters Office
AD1	ITS Data Mart	This service package provides a focused archive that houses data collected and owned by a single agency, district, private sector provider, research institution, or other organization. This focused archive typically includes data covering a single transportation mode and one jurisdiction that is collected from an operational data store and archived for future use. It provides the basic data quality, data privacy, and meta data management common to all ITS archives and provides general query and report access to archive data users.	Existing	No	Iowa DOT District 4 Field Equipment
AD1	ITS Data Mart	This service package provides a focused archive that houses data collected and owned by a single agency, district, private sector provider, research institution, or other organization. This focused archive typically includes data covering a single transportation mode and one jurisdiction that is collected from an operational data store and archived for future use. It provides the basic data quality, data privacy, and meta data management common to all ITS archives and provides general query and report access to archive data users.	Existing	Νο	Iowa DOT District 4 Offices
AD1	ITS Data Mart	This service package provides a focused archive that houses data collected and owned by a single agency, district, private sector provider, research institution, or other organization. This focused archive typically includes data covering a single transportation mode and one jurisdiction that is collected from an operational data store and archived for future use. It provides the basic data quality, data privacy, and meta data management common to all ITS archives and provides general query and report access to archive data users.	Existing	No	MAPA Data Collection

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
AD1	ITS Data Mart	This service package provides a focused archive that houses data collected and owned by a single agency, district, private sector provider, research institution, or other organization. This focused archive typically includes data covering a single transportation mode and one jurisdiction that is collected from an operational data store and archived for future use. It provides the basic data quality, data privacy, and meta data management common to all ITS archives and provides general query and report access to archive data users.	Existing	No	NDOR DOC
AD1	ITS Data Mart	This service package provides a focused archive that houses data collected and owned by a single agency, district, private sector provider, research institution, or other organization. This focused archive typically includes data covering a single transportation mode and one jurisdiction that is collected from an operational data store and archived for future use. It provides the basic data quality, data privacy, and meta data management common to all ITS archives and provides general query and report access to archive data users.	Existing	No	NDOR Field Equipment
AD2	ITS Data Warehouse (Instance 1)	This market 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. The potential for large volumes of varied data suggests additional on-line analysis and data mining features that are also included in this market package in addition to the basic query and reporting user access features offered by the ITS Data Mart.	Planned	Yes	IA State Patrol Communications Center (Atlantic)
AD2	ITS Data Warehouse (Instance 1)	This market 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. The potential for large volumes of varied data suggests additional on-line analysis and data mining features that are also included in this market package in addition to the basic query and reporting user access features offered by the ITS Data Mart.	Planned	Yes	Iowa DOT ATRs

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
AD2	ITS Data Warehouse (Instance 1)	This market 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. The potential for large volumes of varied data suggests additional on-line analysis and data mining features that are also included in this market package in addition to the basic query and reporting user access features offered by the ITS Data Mart.	Planned	Yes	Iowa DOT CARS
AD2	ITS Data Warehouse (Instance 1)	This market 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. The potential for large volumes of varied data suggests additional on-line analysis and data mining features that are also included in this market package in addition to the basic query and reporting user access features offered by the ITS Data Mart.	Planned	Yes	Iowa DOT District 4 Offices
AD2	ITS Data Warehouse (Instance 1)	This market 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. The potential for large volumes of varied data suggests additional on-line analysis and data mining features that are also included in this market package in addition to the basic query and reporting user access features offered by the ITS Data Mart.	Planned	Yes	lowa DOT Freeway Sensors
Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
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AD2	ITS Data Warehouse (Instance 1)	This market 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. The potential for large volumes of varied data suggests additional on-line analysis and data mining features that are also included in this market package in addition to the basic query and reporting user access features offered by the ITS Data Mart.	Planned	Yes	MAPA Data Collection
APTS01	Transit Vehicle Tracking	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	Existing	No	Metro Dispatch Center
APTS01	Transit Vehicle Tracking	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.	Existing	No	Metro Fixed-line Transit Vehicles

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
APTS01	Transit Vehicle Tracking	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.	Existing	Νο	Metro MOBY Vehicles
APTS02	Transit Fixed- Route Operations	This service package performs automated dispatch and system monitoring for fixed- route and flexible-route transit services. This service performs scheduling activities including the creation of schedules, blocks and runs, as well as operator assignment. This service determines the transit vehicle trip performance against the schedule using AVL data and provides information displays at the Transit Management Subsystem. Static and real time transit data is exchanged with Information Service Providers where it is integrated with that from other transportation modes (e.g. rail, ferry, air) to provide the public with integrated and personalized dynamic schedules.	Existing	Νο	Metro Dispatch Center
APTS02	Transit Fixed- Route Operations	This service package performs automated dispatch and system monitoring for fixed- route and flexible-route transit services. This service performs scheduling activities including the creation of schedules, blocks and runs, as well as operator assignment. This service determines the transit vehicle trip performance against the schedule using AVL data and provides information displays at the Transit Management Subsystem. Static and real time transit data is exchanged with Information Service Providers where it is integrated with that from other transportation modes (e.g. rail, ferry, air) to provide the public with integrated and personalized dynamic schedules.	Existing	No	Metro Fixed-line Transit Vehicles

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
APTS03	Demand Response Transit Operations	This service package performs automated dispatch and system monitoring for demand responsive transit services. This service performs scheduling activities as well as operator assignment. In addition, this service package performs similar functions to support dynamic features of flexible-route transit services. This package monitors the current status of the transit fleet and supports allocation of these fleet resources to service incoming requests for transit service while also considering traffic conditions. The Transit Management Subsystem provides the necessary data processing and information display to assist the transit fleet. This service includes the capability for a traveler request for personalized transit services to be made through the Information Service Provider (ISP) Subsystem. The ISP may either be operated by a transit management center or be independently owned and operated by a separate service provider. In the first scenario, the traveler makes a direct request to a specific paratransit service. In the second scenario, a third party service provider determines that the paratransit service is a viable means of satisfying a traveler request and makes a reservation for the traveler.	Existing	No	Metro Dispatch Center
APTS03	Demand Response Transit Operations	This service package performs automated dispatch and system monitoring for demand responsive transit services. This service performs scheduling activities as well as operator assignment. In addition, this service package performs similar functions to support dynamic features of flexible-route transit services. This package monitors the current status of the transit fleet and supports allocation of these fleet resources to service incoming requests for transit service while also considering traffic conditions. The Transit Management Subsystem provides the necessary data processing and information display to assist the transit fleet. This service includes the capability for a traveler request for personalized transit services to be made through the Information Service Provider (ISP) Subsystem. The ISP may either be operated by a transit management center or be independently owned and operated by a separate service provider. In the first scenario, the traveler makes a direct request to a specific paratransit service. In the second scenario, a third party service provider determines that the paratransit service is a viable means of satisfying a traveler request and makes a reservation for the traveler.	Existing	No	Metro MOBY Vehicles

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
APTS04	Transit Fare Collection Management	This service package manages transit fare collection on-board transit vehicles and at transit stops using electronic means. It allows transit users to use a traveler card or other electronic payment device. Readers located either in the infrastructure or on- board the transit vehicles enable electronic fare payment. Data is processed, stored, and displayed on the transit vehicle and communicated as needed to the Transit Management Subsystem. Two other service packages, ATMS10: Electronic Toll Collection and ATMS16: Parking Facility Management, also provide electronic payment services. These three service packages in combination provide an integrated electronic payment system for transportation services.	Planned	No	Metro E Card
APTS04	Transit Fare Collection Management	This service package manages transit fare collection on-board transit vehicles and at transit stops using electronic means. It allows transit users to use a traveler card or other electronic payment device. Readers located either in the infrastructure or on- board the transit vehicles enable electronic fare payment. Data is processed, stored, and displayed on the transit vehicle and communicated as needed to the Transit Management Subsystem. Two other service packages, ATMS10: Electronic Toll Collection and ATMS16: Parking Facility Management, also provide electronic payment services. These three service packages in combination provide an integrated electronic payment system for transportation services.	Planned	No	Metro Fixed-line Transit Vehicles
APTS04	Transit Fare Collection Management	This service package manages transit fare collection on-board transit vehicles and at transit stops using electronic means. It allows transit users to use a traveler card or other electronic payment device. Readers located either in the infrastructure or on- board the transit vehicles enable electronic fare payment. Data is processed, stored, and displayed on the transit vehicle and communicated as needed to the Transit Management Subsystem. Two other service packages, ATMS10: Electronic Toll Collection and ATMS16: Parking Facility Management, also provide electronic payment services. These three service packages in combination provide an integrated electronic payment system for transportation services.	Planned	No	Metro Ticket Vending Machines

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
APTS04	Transit Fare Collection Management	This service package manages transit fare collection on-board transit vehicles and at transit stops using electronic means. It allows transit users to use a traveler card or other electronic payment device. Readers located either in the infrastructure or on- board the transit vehicles enable electronic fare payment. Data is processed, stored, and displayed on the transit vehicle and communicated as needed to the Transit Management Subsystem. Two other service packages, ATMS10: Electronic Toll Collection and ATMS16: Parking Facility Management, also provide electronic payment services. These three service packages in combination provide an integrated electronic payment system for transportation services.	Planned	No	Travelers

Service Se Package Pa	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
APTS05 Tr	ransit Security	This service package provides for the physical security of transit passengers and transit vehicle operators. On-board equipment is deployed to perform surveillance and sensor monitoring in order to warn of potentially hazardous situations. The surveillance equipment includes video (e.g., CCTV cameras), audio systems and/or event recorder systems. The sensor equipment includes threat sensors (e.g., chemical agent, toxic industrial chemical, biological, explosives, and radiological sensors) and object detection sensors (e.g., metal detectors). Transit user or transit vehicle operator activated alarms are provided on-board. Public areas (e.g., transit stops, park and ride lots, stations) are also monitored with similar surveillance and sensor equipment and provided with transit user activated alarms. In addition this service package provides surveillance and sensor monitoring of non-public areas of transit facilities (e.g., transit yards) and transit infrastructure such as bridges, tunnels, and transit railways or bus rapid transit (BRT) guideways. The surveillance equipment includes video and/or audio systems. The sensor equipment includes threat sensors and object detection sensors as described above as well as, intrusion or motion detection sensors and infrastructure integrity monitoring (e.g., rail track continuity checking or bridge structural integrity monitoring). The surveillance and sensor information is transmitted to the Emergency Management Subsystem, as are transit user activated alarms in public secure areas. On-board alarms, activated by transit users or transit vehicle operators are transmitted to both the Emergency Management Subsystem, indicating two possible approaches to implementing this service package. In addition the service package supports remote transit vehicle disabling by the Transit Management Subsystem and transit vehicle	Planned	No	Metro Dispatch Center

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
APTS05	Transit Security	This service package provides for the physical security of transit passengers and transit vehicle operators. On-board equipment is deployed to perform surveillance and sensor monitoring in order to warn of potentially hazardous situations. The surveillance equipment includes video (e.g., CCTV cameras), audio systems and/or event recorder systems. The sensor equipment includes threat sensors (e.g., chemical agent, toxic industrial chemical, biological, explosives, and radiological sensors) and object detection sensors (e.g., metal detectors). Transit user or transit vehicle operator activated alarms are provided on-board. Public areas (e.g., transit stops, park and ride lots, stations) are also monitored with similar surveillance and sensor equipment and provided with transit user activated alarms. In addition this service package provides surveillance and sensor monitoring of non-public areas of transit facilities (e.g., transit yards) and transit infrastructure such as bridges, tunnels, and transit railways or bus rapid transit (BRT) guideways. The surveillance equipment includes video and/or audio systems. The sensor equipment includes threat sensors and object detection sensors as described above as well as, intrusion or motion detection sensors and infrastructure integrity monitoring (e.g., rail track continuity checking or bridge structural integrity monitoring). The surveillance and sensor information is transmitted to the Emergency Management Subsystem, as are transit user activated alarms in public secure areas. On-board alarms, activated by transit users or transit vehicle operators are transmitted to both the Emergency Management Subsystem and the Transit Management Subsystem, indicating two possible approaches to implementing	Planned	No	Metro Fixed-line Transit Vehicles
		In addition the service package supports remote transit vehicle disabling by the Transit Management Subsystem and transit vehicle operator authentication.			
APTS07	Multi-modal Coordination	This service package establishes two way communications between multiple transit and traffic agencies to improve service coordination. Multimodal coordination between transit agencies can increase traveler convenience at transit transfer points and clusters (a collection of stops, stations, or terminals where transfers can be made conveniently) and also improve operating efficiency. Transit transfer information is shared between Multimodal Transportation Service Providers and Transit Agencies.	Planned	No	City of Council Bluffs TOC

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
APTS07	Multi-modal Coordination	This service package establishes two way communications between multiple transit and traffic agencies to improve service coordination. Multimodal coordination between transit agencies can increase traveler convenience at transit transfer points and clusters (a collection of stops, stations, or terminals where transfers can be made conveniently) and also improve operating efficiency. Transit transfer information is shared between Multimodal Transportation Service Providers and Transit Agencies.	Planned	No	City of Omaha TOC
APTS07	Multi-modal Coordination	This service package establishes two way communications between multiple transit and traffic agencies to improve service coordination. Multimodal coordination between transit agencies can increase traveler convenience at transit transfer points and clusters (a collection of stops, stations, or terminals where transfers can be made conveniently) and also improve operating efficiency. Transit transfer information is shared between Multimodal Transportation Service Providers and Transit Agencies.	Planned	No	Iowa DOT District 4 Offices
APTS07	Multi-modal Coordination	This service package establishes two way communications between multiple transit and traffic agencies to improve service coordination. Multimodal coordination between transit agencies can increase traveler convenience at transit transfer points and clusters (a collection of stops, stations, or terminals where transfers can be made conveniently) and also improve operating efficiency. Transit transfer information is shared between Multimodal Transportation Service Providers and Transit Agencies.	Planned	No	Metro Dispatch Center
APTS07	Multi-modal Coordination	This service package establishes two way communications between multiple transit and traffic agencies to improve service coordination. Multimodal coordination between transit agencies can increase traveler convenience at transit transfer points and clusters (a collection of stops, stations, or terminals where transfers can be made conveniently) and also improve operating efficiency. Transit transfer information is shared between Multimodal Transportation Service Providers and Transit Agencies.	Planned	No	Metro Fixed-line Transit Vehicles
APTS07	Multi-modal Coordination	This service package establishes two way communications between multiple transit and traffic agencies to improve service coordination. Multimodal coordination between transit agencies can increase traveler convenience at transit transfer points and clusters (a collection of stops, stations, or terminals where transfers can be made conveniently) and also improve operating efficiency. Transit transfer information is shared between Multimodal Transportation Service Providers and Transit Agencies.	Planned	No	NDOR DOC

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
APTS08	Transit Traveler Information	This service package provides 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. Systems that provide custom transit trip itineraries and other tailored transit information services are also represented by this service package.	Planned	No	Metro Bus Departure Signs
APTS08	Transit Traveler Information	This service package provides 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. Systems that provide custom transit trip itineraries and other tailored transit information services are also represented by this service package.	Planned	No	Metro Dispatch Center
APTS08	Transit Traveler Information	This service package provides 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. Systems that provide custom transit trip itineraries and other tailored transit information services are also represented by this service package.	Planned	No	Metro Fixed-line Transit Vehicles
APTS08	Transit Traveler Information	This service package provides 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. Systems that provide custom transit trip itineraries and other tailored transit information services are also represented by this service package.	Planned	No	Metro Website
APTS08	Transit Traveler Information	This service package provides 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. Systems that provide custom transit trip itineraries and other tailored transit information services are also represented by this service package	Planned	Νο	Personal Communications and Computing Devices

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
APTS09	Transit Signal Priority	This service package determines the need for transit priority on routes and at certain intersections and requests transit vehicle priority at these locations. The signal priority may result from limited local coordination between the transit vehicle and the individual intersection for signal priority or may result from coordination between transit management and traffic management centers. Coordination between traffic and transit management is intended to improve on-time performance of the transit system to the extent that this can be accommodated without degrading overall performance of the traffic network.	Planned	No	City of Bellevue PWD Field Equipment
APTS09	Transit Signal Priority	This service package determines the need for transit priority on routes and at certain intersections and requests transit vehicle priority at these locations. The signal priority may result from limited local coordination between the transit vehicle and the individual intersection for signal priority or may result from coordination between transit management and traffic management centers. Coordination between traffic and transit management is intended to improve on-time performance of the transit system to the extent that this can be accommodated without degrading overall performance of the traffic network.	Planned	No	City of Council Bluffs PWD Field Equipment
APTS09	Transit Signal Priority	This service package determines the need for transit priority on routes and at certain intersections and requests transit vehicle priority at these locations. The signal priority may result from limited local coordination between the transit vehicle and the individual intersection for signal priority or may result from coordination between transit management and traffic management centers. Coordination between traffic and transit management is intended to improve on-time performance of the transit system to the extent that this can be accommodated without degrading overall performance of the traffic network.	Planned	No	City of Omaha PWD Field Equipment
APTS09	Transit Signal Priority	This service package determines the need for transit priority on routes and at certain intersections and requests transit vehicle priority at these locations. The signal priority may result from limited local coordination between the transit vehicle and the individual intersection for signal priority or may result from coordination between transit management and traffic management centers. Coordination between traffic and transit management is intended to improve on-time performance of the transit system to the extent that this can be accommodated without degrading overall performance of the traffic network.	Planned	No	Metro Fixed-line Transit Vehicles

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
APTS09	Transit Signal Priority	This service package determines the need for transit priority on routes and at certain intersections and requests transit vehicle priority at these locations. The signal priority may result from limited local coordination between the transit vehicle and the individual intersection for signal priority or may result from coordination between transit management and traffic management centers. Coordination between traffic and transit management is intended to improve on-time performance of the transit system to the extent that this can be accommodated without degrading overall performance of the traffic network.	Planned	No	Other Local PWD Field Equipment
APTS10	Transit Passenger Counting	This service package counts the number of passengers entering and exiting a transit vehicle using sensors mounted on the vehicle and communicates the collected passenger data back to the management center. The collected data can be used to calculate reliable ridership figures and measure passenger load information at particular stops.	Planned	No	Metro Dispatch Center
APTS10	Transit Passenger Counting	This service package counts the number of passengers entering and exiting a transit vehicle using sensors mounted on the vehicle and communicates the collected passenger data back to the management center. The collected data can be used to calculate reliable ridership figures and measure passenger load information at particular stops.	Planned	No	Metro Fixed-line Transit Vehicles
APTS10	Transit Passenger Counting	This service package counts the number of passengers entering and exiting a transit vehicle using sensors mounted on the vehicle and communicates the collected passenger data back to the management center. The collected data can be used to calculate reliable ridership figures and measure passenger load information at particular stops.	Planned	No	Travelers

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATIS01	Broadcast Traveler Information	This service package 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 web casts. The information may be provided directly to travelers or provided to merchants and other traveler service providers so that they can better inform their customers of travel conditions. Different from the service package ATMS06 - Traffic Information Dissemination, which provides localized HAR and DMS information capabilities, ATIS01 provides a wide area digital broadcast service. Successful deployment of this service package relies on availability of real- time traveler information from roadway instrumentation, probe vehicles or other sources.	Existing	No	City of Council Bluffs Website and Social Media
ATIS01	Broadcast Traveler Information	This service package 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 web casts. The information may be provided directly to travelers or provided to merchants and other traveler service providers so that they can better inform their customers of travel conditions. Different from the service package ATMS06 - Traffic Information Dissemination, which provides localized HAR and DMS information capabilities, ATIS01 provides a wide area digital broadcast service. Successful deployment of this service package relies on availability of real- time traveler information from roadway instrumentation, probe vehicles or other sources.	Existing	No	City of Omaha Website and Social Media

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATIS01	Broadcast Traveler Information	This service package 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 web casts. The information may be provided directly to travelers or provided to merchants and other travelers or provided to merchants and other traveler service providers so that they can better inform their customers of travel conditions. Different from the service package ATMS06 - Traffic Information Dissemination, which provides localized HAR and DMS information capabilities, ATIS01 provides a wide area digital broadcast service. Successful deployment of this service package relies on availability of real- time traveler information from roadway instrumentation, probe vehicles or other sources.	Existing	No	Iowa DOT 511 System
ATIS01	Broadcast Traveler Information	This service package 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 web casts. The information may be provided directly to travelers or provided to merchants and other traveler service providers so that they can better inform their customers of travel conditions. Different from the service package ATMS06 - Traffic Information Dissemination, which provides localized HAR and DMS information capabilities, ATIS01 provides a wide area digital broadcast service. Successful deployment of this service package relies on availability of real- time traveler information from roadway instrumentation, probe vehicles or other sources.	Existing	No	Iowa DOT CARS

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATIS01	Broadcast Traveler Information	This service package 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 web casts. The information may be provided directly to travelers or provided to merchants and other travelers or provided to merchants and other traveler service providers so that they can better inform their customers of travel conditions. Different from the service package ATMS06 - Traffic Information Dissemination, which provides localized HAR and DMS information capabilities, ATIS01 provides a wide area digital broadcast service. Successful deployment of this service package relies on availability of real- time traveler information from roadway instrumentation, probe vehicles or other sources.	Existing	No	Iowa DOT Website and Social Media
ATIS01	Broadcast Traveler Information	This service package 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 web casts. The information may be provided directly to travelers or provided to merchants and other traveler service providers so that they can better inform their customers of travel conditions. Different from the service package ATMS06 - Traffic Information Dissemination, which provides localized HAR and DMS information capabilities, ATIS01 provides a wide area digital broadcast service. Successful deployment of this service package relies on availability of real- time traveler information from roadway instrumentation, probe vehicles or other sources.	Existing	No	NDOR 511 System

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATIS01	Broadcast Traveler Information	This service package 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 web casts. The information may be provided directly to travelers or provided to merchants and other traveler service providers so that they can better inform their customers of travel conditions. Different from the service package ATMS06 - Traffic Information Dissemination, which provides localized HAR and DMS information capabilities, ATIS01 provides a wide area digital broadcast service. Successful deployment of this service package relies on availability of real- time traveler information from roadway instrumentation, probe vehicles or other sources.	Existing	No	NDOR HCRS
ATIS01	Broadcast Traveler Information	This service package 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 web casts. The information may be provided directly to travelers or provided to merchants and other traveler service providers so that they can better inform their customers of travel conditions. Different from the service package ATMS06 - Traffic Information Dissemination, which provides localized HAR and DMS information capabilities, ATIS01 provides a wide area digital broadcast service. Successful deployment of this service package relies on availability of real- time traveler information from roadway instrumentation, probe vehicles or other sources.	Existing	No	NDOR Website and Social Media

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATIS01	Broadcast Traveler Information	This service package 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 web casts. The information may be provided directly to travelers or provided to merchants and other traveler service providers so that they can better inform their customers of travel conditions. Different from the service package ATMS06 - Traffic Information Dissemination, which provides localized HAR and DMS information capabilities, ATIS01 provides a wide area digital broadcast service. Successful deployment of this service package relies on availability of real- time traveler information, probe vehicles or other sources.	Existing	No	Personal Communications and Computing Devices

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATIS02	Interactive Traveler Information	This service package provides tailored information in response to a traveler request. Both real-time interactive request/response systems and information systems that "push" a tailored stream of information to the traveler based on a submitted profile are supported. The traveler can obtain current information regarding traffic conditions, roadway maintenance and construction, transit services, ride share/ride match, parking management, detours and pricing information. Although the Internet is the predominate network used for traveler information dissemination, a range of two- way wide-area wireless and fixed-point to fixed-point communications systems may be used to support the required data communications between the traveler and Information Service Provider. A variety of interactive devices may be used by the traveler to access information prior to a trip or en route including phone via a 511-like portal and web pages via kiosk, personal digital assistant, personal computer, and a variety of in-vehicle devices. This service package also allows value-added resellers to collect transportation information that can be aggregated and be available to their personal devices or remote traveler systems to better inform their customers of transportation conditions. Successful deployment of this service package relies on availability of real- time transportation data from roadway instrumentation, transit, probe vehicles or other means. A traveler may also input personal preferences and identification information via a "traveler card" that can convey information to the system about the traveler as well as receive updates from the system so the card can be updated over time.	Existing	Νο	IA State Patrol Communications Center (Atlantic)

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATIS02	Interactive Traveler Information	This service package provides tailored information in response to a traveler request. Both real-time interactive request/response systems and information systems that "push" a tailored stream of information to the traveler based on a submitted profile are supported. The traveler can obtain current information regarding traffic conditions, roadway maintenance and construction, transit services, ride share/ride match, parking management, detours and pricing information. Although the Internet is the predominate network used for traveler information dissemination, a range of two- way wide-area wireless and fixed-point to fixed-point communications systems may be used to support the required data communications between the traveler and Information Service Provider. A variety of interactive devices may be used by the traveler to access information prior to a trip or en route including phone via a 511-like portal and web pages via kiosk, personal digital assistant, personal computer, and a variety of in-vehicle devices. This service package also allows value-added resellers to collect transportation information that can be aggregated and be available to their personal devices or remote traveler systems to better inform their customers of transportation conditions. Successful deployment of this service package relies on availability of real- time transportation data from roadway instrumentation, transit, probe vehicles or other means. A traveler may also input personal preferences and identification information via a "traveler card" that can convey information to the system about the traveler as well as receive updates from the system so the card can be updated over time.	Existing	No	lowa DOT 511 System

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATIS02	Interactive Traveler Information	This service package provides tailored information in response to a traveler request. Both real-time interactive request/response systems and information systems that "push" a tailored stream of information to the traveler based on a submitted profile are supported. The traveler can obtain current information regarding traffic conditions, roadway maintenance and construction, transit services, ride share/ride match, parking management, detours and pricing information. Although the Internet is the predominate network used for traveler information dissemination, a range of two- way wide-area wireless and fixed-point to fixed-point communications systems may be used to support the required data communications between the traveler and Information Service Provider. A variety of interactive devices may be used by the traveler to access information prior to a trip or en route including phone via a 511-like portal and web pages via kiosk, personal digital assistant, personal computer, and a variety of in-vehicle devices. This service package also allows value-added resellers to collect transportation information that can be aggregated and be available to their personal devices or remote traveler systems to better inform their customers of transportation conditions. Successful deployment of this service package relies on availability of real- time transportation data from roadway instrumentation, transit, probe vehicles or other means. A traveler may also input personal preferences and identification information via a "traveler card" that can convey information to the system about the traveler as well as receive updates from the system so the card can be updated over time.	Existing	No	Iowa DOT CARS

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATIS02	Interactive Traveler Information	This service package provides tailored information in response to a traveler request. Both real-time interactive request/response systems and information systems that "push" a tailored stream of information to the traveler based on a submitted profile are supported. The traveler can obtain current information regarding traffic conditions, roadway maintenance and construction, transit services, ride share/ride match, parking management, detours and pricing information. Although the Internet is the predominate network used for traveler information dissemination, a range of two- way wide-area wireless and fixed-point to fixed-point communications systems may be used to support the required data communications between the traveler and Information Service Provider. A variety of interactive devices may be used by the traveler to access information prior to a trip or en route including phone via a 511-like portal and web pages via kiosk, personal digital assistant, personal computer, and a variety of in-vehicle devices. This service package also allows value-added resellers to collect transportation information that can be aggregated and be available to their personal devices or remote traveler systems to better inform their customers of transportation conditions. Successful deployment of this service package relies on availability of real- time transportation data from roadway instrumentation, transit, probe vehicles or other means. A traveler may also input personal preferences and identification information via a "traveler card" that can convey information to the system about the traveler as well as receive updates from the system so the card can be updated over time.	Existing	No	Iowa DOT District 4 Offices

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATIS02	Interactive Traveler Information	This service package provides tailored information in response to a traveler request. Both real-time interactive request/response systems and information systems that "push" a tailored stream of information to the traveler based on a submitted profile are supported. The traveler can obtain current information regarding traffic conditions, roadway maintenance and construction, transit services, ride share/ride match, parking management, detours and pricing information. Although the Internet is the predominate network used for traveler information dissemination, a range of two- way wide-area wireless and fixed-point to fixed-point communications systems may be used to support the required data communications between the traveler and Information Service Provider. A variety of interactive devices may be used by the traveler to access information prior to a trip or en route including phone via a 511-like portal and web pages via kiosk, personal digital assistant, personal computer, and a variety of in-vehicle devices. This service package also allows value-added resellers to collect transportation information that can be aggregated and be available to their personal devices or remote traveler systems to better inform their customers of transportation conditions. Successful deployment of this service package relies on availability of real- time transportation data from roadway instrumentation, transit, probe vehicles or other means. A traveler may also input personal preferences and identification information via a "traveler card" that can convey information to the system about the traveler as well as receive updates from the system so the card can be updated over time.	Existing	No	Iowa DOT Website and Social Media

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATIS02	Interactive Traveler Information	This service package provides tailored information in response to a traveler request. Both real-time interactive request/response systems and information systems that "push" a tailored stream of information to the traveler based on a submitted profile are supported. The traveler can obtain current information regarding traffic conditions, roadway maintenance and construction, transit services, ride share/ride match, parking management, detours and pricing information. Although the Internet is the predominate network used for traveler information dissemination, a range of two- way wide-area wireless and fixed-point to fixed-point communications systems may be used to support the required data communications between the traveler and Information Service Provider. A variety of interactive devices may be used by the traveler to access information prior to a trip or en route including phone via a 511-like portal and web pages via kiosk, personal digital assistant, personal computer, and a variety of in-vehicle devices. This service package also allows value-added resellers to collect transportation information that can be aggregated and be available to their personal devices or remote traveler systems to better inform their customers of transportation conditions. Successful deployment of this service package relies on availability of real- time transportation data from roadway instrumentation, transit, probe vehicles or other means. A traveler may also input personal preferences and identification information via a "traveler card" that can convey information to the system about the traveler as well as receive updates from the system so the card can be updated over time.	Existing	Νο	Media TV, Radio and News Outlets

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATIS02	Interactive Traveler Information	This service package provides tailored information in response to a traveler request. Both real-time interactive request/response systems and information systems that "push" a tailored stream of information to the traveler based on a submitted profile are supported. The traveler can obtain current information regarding traffic conditions, roadway maintenance and construction, transit services, ride share/ride match, parking management, detours and pricing information. Although the Internet is the predominate network used for traveler information dissemination, a range of two- way wide-area wireless and fixed-point to fixed-point communications systems may be used to support the required data communications between the traveler and Information Service Provider. A variety of interactive devices may be used by the traveler to access information prior to a trip or en route including phone via a 511-like portal and web pages via kiosk, personal digital assistant, personal computer, and a variety of in-vehicle devices. This service package also allows value-added resellers to collect transportation information that can be aggregated and be available to their personal devices or remote traveler systems to better inform their customers of transportation conditions. Successful deployment of this service package relies on availability of real- time transportation data from roadway instrumentation, transit, probe vehicles or other means. A traveler may also input personal preferences and identification information via a "traveler card" that can convey information to the system about the traveler as well as receive updates from the system so the card can be updated over time.	Existing	Νο	NDOR 511 System

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATIS02	Interactive Traveler Information	This service package provides tailored information in response to a traveler request. Both real-time interactive request/response systems and information systems that "push" a tailored stream of information to the traveler based on a submitted profile are supported. The traveler can obtain current information regarding traffic conditions, roadway maintenance and construction, transit services, ride share/ride match, parking management, detours and pricing information. Although the Internet is the predominate network used for traveler information dissemination, a range of two- way wide-area wireless and fixed-point to fixed-point communications systems may be used to support the required data communications between the traveler and Information Service Provider. A variety of interactive devices may be used by the traveler to access information prior to a trip or en route including phone via a 511-like portal and web pages via kiosk, personal digital assistant, personal computer, and a variety of in-vehicle devices. This service package also allows value-added resellers to collect transportation information that can be aggregated and be available to their personal devices or remote traveler systems to better inform their customers of transportation conditions. Successful deployment of this service package relies on availability of real- time transportation data from roadway instrumentation, transit, probe vehicles or other means. A traveler may also input personal preferences and identification information via a "traveler card" that can convey information to the system about the traveler as well as receive updates from the system so the card can be updated over time.	Existing	No	NDOR Website and Social Media

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATIS02	Interactive Traveler Information	This service package provides tailored information in response to a traveler request. Both real-time interactive request/response systems and information systems that "push" a tailored stream of information to the traveler based on a submitted profile are supported. The traveler can obtain current information regarding traffic conditions, roadway maintenance and construction, transit services, ride share/ride match, parking management, detours and pricing information. Although the Internet is the predominate network used for traveler information dissemination, a range of two- way wide-area wireless and fixed-point to fixed-point communications systems may be used to support the required data communications between the traveler and Information Service Provider. A variety of interactive devices may be used by the traveler to access information prior to a trip or en route including phone via a 511-like portal and web pages via kiosk, personal digital assistant, personal computer, and a variety of in-vehicle devices. This service package also allows value-added resellers to collect transportation information that can be aggregated and be available to their personal devices or remote traveler systems to better inform their customers of transportation conditions. Successful deployment of this service package relies on availability of real- time transportation data from roadway instrumentation, transit, probe vehicles or other means. A traveler may also input personal preferences and identification information via a "traveler card" that can convey information to the system about the traveler as well as receive updates from the system so the card can be updated over time.	Existing	No	Personal Communications and Computing Devices

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATIS06	Transportation Operations Data Sharing	This service package makes real-time transportation operations data available to transportation system operators. The Information Service Provider collects, processes, and stores current information on traffic and travel conditions and other information about the current state of the transportation network and makes this information available to transportation system operators, facilitating the exchange of qualified, real-time information between agencies. Using the provided information, transportation system operators can manage their individual systems based on an overall view of the regional transportation system. The regional transportation operations data resource represented by the Information Service Provider may be implemented as a web application that provides a web-based access to system operators, an enterprise database that provides a network interface to remote center applications, or any implementation that supports regional sharing of real-time transportation operations data.	Existing	No	County of Pottawattamie 911 Center
ATIS06	Transportation Operations Data Sharing	This service package makes real-time transportation operations data available to transportation system operators. The Information Service Provider collects, processes, and stores current information on traffic and travel conditions and other information about the current state of the transportation network and makes this information available to transportation system operators, facilitating the exchange of qualified, real-time information between agencies. Using the provided information, transportation system operators can manage their individual systems based on an overall view of the regional transportation system. The regional transportation operations data resource represented by the Information Service Provider may be implemented as a web application that provides a web-based access to system operators, an enterprise database that provides a network interface to remote center applications, or any implementation that supports regional sharing of real-time transportation operations data.	Existing	No	IA State Patrol Communications Center (Atlantic)

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATIS06	Transportation Operations Data Sharing	This service package makes real-time transportation operations data available to transportation system operators. The Information Service Provider collects, processes, and stores current information on traffic and travel conditions and other information about the current state of the transportation network and makes this information available to transportation system operators, facilitating the exchange of qualified, real-time information between agencies. Using the provided information, transportation system operators can manage their individual systems based on an overall view of the regional transportation system. The regional transportation operations data resource represented by the Information Service Provider may be implemented as a web application that provides a web-based access to system operators, an enterprise database that provides a network interface to remote center applications, or any implementation that supports regional sharing of real-time transportation operations data.	Existing	Νο	lowa DOT Automated Notification System
ATIS06	Transportation Operations Data Sharing	This service package makes real-time transportation operations data available to transportation system operators. The Information Service Provider collects, processes, and stores current information on traffic and travel conditions and other information about the current state of the transportation network and makes this information available to transportation system operators, facilitating the exchange of qualified, real-time information between agencies. Using the provided information, transportation system operators can manage their individual systems based on an overall view of the regional transportation system. The regional transportation operations data resource represented by the Information Service Provider may be implemented as a web application that provides a web-based access to system operators, an enterprise database that provides a network interface to remote center applications, or any implementation that supports regional sharing of real-time transportation operations data.	Existing	No	Iowa DOT CARS

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATIS06	Transportation Operations Data Sharing	This service package makes real-time transportation operations data available to transportation system operators. The Information Service Provider collects, processes, and stores current information on traffic and travel conditions and other information about the current state of the transportation network and makes this information available to transportation system operators, facilitating the exchange of qualified, real-time information between agencies. Using the provided information, transportation system operators can manage their individual systems based on an overall view of the regional transportation system. The regional transportation operations data resource represented by the Information Service Provider may be implemented as a web application that provides a web-based access to system operators, an enterprise database that provides a network interface to remote center applications, or any implementation that supports regional sharing of real-time transportation operations data.	Existing	Νο	Iowa DOT District 4 Offices
ATIS06	Transportation Operations Data Sharing	This service package makes real-time transportation operations data available to transportation system operators. The Information Service Provider collects, processes, and stores current information on traffic and travel conditions and other information about the current state of the transportation network and makes this information available to transportation system operators, facilitating the exchange of qualified, real-time information between agencies. Using the provided information, transportation system operators can manage their individual systems based on an overall view of the regional transportation system. The regional transportation operations data resource represented by the Information Service Provider may be implemented as a web application that provides a web-based access to system operators, an enterprise database that provides a network interface to remote center applications, or any implementation that supports regional sharing of real-time transportation operations data.	Existing	No	Local Law Enforcement Dispatch and E911 Center

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATIS06	Transportation Operations Data Sharing	This service package makes real-time transportation operations data available to transportation system operators. The Information Service Provider collects, processes, and stores current information on traffic and travel conditions and other information about the current state of the transportation network and makes this information available to transportation system operators, facilitating the exchange of qualified, real-time information between agencies. Using the provided information, transportation system operators can manage their individual systems based on an overall view of the regional transportation system. The regional transportation operations data resource represented by the Information Service Provider may be implemented as a web application that provides a web-based access to system operators, an enterprise database that provides a network interface to remote center applications, or any implementation that supports regional sharing of real-time transportation operations data.	Existing	No	Metro Dispatch Center
ATIS06	Transportation Operations Data Sharing	This service package makes real-time transportation operations data available to transportation system operators. The Information Service Provider collects, processes, and stores current information on traffic and travel conditions and other information about the current state of the transportation network and makes this information available to transportation system operators, facilitating the exchange of qualified, real-time information between agencies. Using the provided information, transportation system operators can manage their individual systems based on an overall view of the regional transportation system. The regional transportation operations data resource represented by the Information Service Provider may be implemented as a web application that provides a web-based access to system operators, an enterprise database that provides a network interface to remote center applications, or any implementation that supports regional sharing of real-time transportation operations data.	Existing	Νο	NDOR DOC
ATIS07	Travel Services Information and Reservation	This service package provides travel information and reservation services to the user. These additional traveler services may be provided using the same basic user equipment used for Interactive Traveler Information. This service package provides multiple ways for accessing information either while en route in a vehicle using wide- area wireless communications or pre-trip via fixed-point to fixed-point connections.	Planned	No	Iowa DOT 511 System

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATIS07	Travel Services Information and Reservation	This service package provides travel information and reservation services to the user. These additional traveler services may be provided using the same basic user equipment used for Interactive Traveler Information. This service package provides multiple ways for accessing information either while en route in a vehicle using wide- area wireless communications or pre-trip via fixed-point to fixed-point connections.	Planned	No	Iowa DOT Rest Area Kiosks
ATIS07	Travel Services Information and Reservation	This service package provides travel information and reservation services to the user. These additional traveler services may be provided using the same basic user equipment used for Interactive Traveler Information. This service package provides multiple ways for accessing information either while en route in a vehicle using wide- area wireless communications or pre-trip via fixed-point to fixed-point connections.	Planned	No	NDOR 511 System
ATIS07	Travel Services Information and Reservation	This service package provides travel information and reservation services to the user. These additional traveler services may be provided using the same basic user equipment used for Interactive Traveler Information. This service package provides multiple ways for accessing information either while en route in a vehicle using wide- area wireless communications or pre-trip via fixed-point to fixed-point connections.	Planned	No	Personal Communications and Computing Devices
ATIS07	Travel Services Information and Reservation	This service package provides travel information and reservation services to the user. These additional traveler services may be provided using the same basic user equipment used for Interactive Traveler Information. This service package provides multiple ways for accessing information either while en route in a vehicle using wide- area wireless communications or pre-trip via fixed-point to fixed-point connections.	Planned	No	Private Agency Websites
ATIS07	Travel Services Information and Reservation	This service package provides travel information and reservation services to the user. These additional traveler services may be provided using the same basic user equipment used for Interactive Traveler Information. This service package provides multiple ways for accessing information either while en route in a vehicle using wide- area wireless communications or pre-trip via fixed-point to fixed-point connections.	Planned	No	Travelers
ATIS08	Dynamic Ridesharing	This service package provides dynamic ridesharing/ride matching services to travelers. This service could allow near real time ridesharing reservations to be made through the same basic user equipment used for Interactive Traveler Information. This ridesharing/ride matching capability also includes arranging connections to transit or other multimodal services.	Existing	No	MAPA Rideshare

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATIS08	Dynamic Ridesharing	This service package provides dynamic ridesharing/ride matching services to travelers. This service could allow near real time ridesharing reservations to be made through the same basic user equipment used for Interactive Traveler Information. This ridesharing/ride matching capability also includes arranging connections to transit or other multimodal services.	Existing	No	Personal Communications and Computing Devices
ATMS01	Network Surveillance	This service package includes traffic detectors, other surveillance equipment, the supporting field equipment, and fixed-point to fixed-point communications to transmit the collected data back to the Traffic Management Subsystem. 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 Subsystem). 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 Information Service Provider Subsystem.	Existing	No	City of Council Bluffs PWD Field Equipment
ATMS01	Network Surveillance	This service package includes traffic detectors, other surveillance equipment, the supporting field equipment, and fixed-point to fixed-point communications to transmit the collected data back to the Traffic Management Subsystem. 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 Subsystem). 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 Information Service Provider Subsystem.	Existing	No	City of Council Bluffs TOC

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS01	Network Surveillance	This service package includes traffic detectors, other surveillance equipment, the supporting field equipment, and fixed-point to fixed-point communications to transmit the collected data back to the Traffic Management Subsystem. 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 Subsystem). 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 Information Service Provider Subsystem.	Existing	No	City of Omaha PWD Field Equipment
ATMS01	Network Surveillance	This service package includes traffic detectors, other surveillance equipment, the supporting field equipment, and fixed-point to fixed-point communications to transmit the collected data back to the Traffic Management Subsystem. 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 Subsystem). 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 Information Service Provider Subsystem.	Existing	No	City of Omaha TOC
ATMS01	Network Surveillance	This service package includes traffic detectors, other surveillance equipment, the supporting field equipment, and fixed-point to fixed-point communications to transmit the collected data back to the Traffic Management Subsystem. 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 Subsystem). 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 Information Service Provider Subsystem.	Existing	No	lowa DOT Central Headquarters Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS01	Network Surveillance	This service package includes traffic detectors, other surveillance equipment, the supporting field equipment, and fixed-point to fixed-point communications to transmit the collected data back to the Traffic Management Subsystem. 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 Subsystem). 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 Information Service Provider Subsystem.	Existing	No	lowa DOT District 4 Field Equipment
ATMS01	Network Surveillance	This service package includes traffic detectors, other surveillance equipment, the supporting field equipment, and fixed-point to fixed-point communications to transmit the collected data back to the Traffic Management Subsystem. 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 Subsystem). 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 Information Service Provider Subsystem.	Existing	No	Iowa DOT District 4 Offices
ATMS01	Network Surveillance	This service package includes traffic detectors, other surveillance equipment, the supporting field equipment, and fixed-point to fixed-point communications to transmit the collected data back to the Traffic Management Subsystem. 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 Subsystem). 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 Information Service Provider Subsystem.	Existing	Νο	lowa DOT Statewide TOC

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS01	Network Surveillance	This service package includes traffic detectors, other surveillance equipment, the supporting field equipment, and fixed-point to fixed-point communications to transmit the collected data back to the Traffic Management Subsystem. 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 Subsystem). 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 Information Service Provider Subsystem.	Existing	No	NDOR DOC
ATMS01	Network Surveillance	This service package includes traffic detectors, other surveillance equipment, the supporting field equipment, and fixed-point to fixed-point communications to transmit the collected data back to the Traffic Management Subsystem. 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 Subsystem). 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 Information Service Provider Subsystem.	Existing	Νο	NDOR Field Equipment
ATMS03	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 are 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 ATMS07-Regional Traffic Management service package. This service package is consistent with typical traffic signal control systems.	Existing	No	City of Bellevue PWD Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS03	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 are 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 ATMS07-Regional Traffic Management service package. This service package is consistent with typical traffic signal control systems.	Existing	No	City of Council Bluffs PWD Field Equipment
ATMS03	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 are 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 ATMS07-Regional Traffic Management service package. This service package is consistent with typical traffic signal control systems.	Existing	No	City of Council Bluffs TOC

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS03	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 are 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 ATMS07-Regional Traffic Management service package. This service package is consistent with typical traffic signal control systems.	Existing	No	City of Omaha PWD Field Equipment
ATMS03	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 are 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 ATMS07-Regional Traffic Management service package. This service package is consistent with typical traffic signal control systems.	Existing	No	City of Omaha TOC
Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
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ATMS03	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 are 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 ATMS07-Regional Traffic Management service package. This service package is consistent with typical traffic signal control systems.	Existing	Νο	Other Local PWD Field Equipment
ATMS06	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 Information Service Providers. A link to the Maintenance and Construction Management subsystem allows real time information on road/bridge closures and restrictions due to maintenance and construction activities to be disseminated. The sharing of transportation operations data described in this service package also supports other services like ATMS09- Traffic Decision Support and Demand Management.	Existing	No	Driver

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS06	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 Information Service Providers. A link to the Maintenance and Construction Management subsystem allows real time information on road/bridge closures and restrictions due to maintenance and construction activities to be disseminated. The sharing of transportation operations data described in this service package also supports other services like ATMS09- Traffic Decision Support and Demand Management.	Existing	No	lowa DOT Central Headquarters Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS06	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 Information Service Providers. A link to the Maintenance and Construction Management subsystem allows real time information on road/bridge closures and restrictions due to maintenance and construction activities to be disseminated. The sharing of transportation operations data described in this service package also supports other services like ATMS09- Traffic Decision Support and Demand Management.	Existing	No	lowa DOT Central Headquarters Office

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS06	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 Information Service Providers. A link to the Maintenance and Construction Management subsystem allows real time information on road/bridge closures and restrictions due to maintenance and construction activities to be disseminated. The sharing of transportation operations data described in this service package also supports other services like ATMS09- Traffic Decision Support and Demand Management.	Existing	No	Iowa DOT District 4 Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS06	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 Information Service Providers. A link to the Maintenance and Construction Management subsystem allows real time information on road/bridge closures and restrictions due to maintenance and construction activities to be disseminated. The sharing of transportation operations data described in this service package also supports other services like ATMS09- Traffic Decision Support and Demand Management.	Existing	No	Iowa DOT District 4 Offices

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS06	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 Information Service Providers. A link to the Maintenance and Construction Management subsystem allows real time information on road/bridge closures and restrictions due to maintenance and construction activities to be disseminated. The sharing of transportation operations data described in this service package also supports other services like ATMS09- Traffic Decision Support and Demand Management.	Existing	No	Iowa DOT Statewide TOC

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS06	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 Information Service Providers. A link to the Maintenance and Construction Management subsystem allows real time information on road/bridge closures and restrictions due to maintenance and construction activities to be disseminated. The sharing of transportation operations data described in this service package also supports other services like ATMS09- Traffic Decision Support and Demand Management.	Existing	No	NDOR DOC

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS06	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 Information Service Providers. A link to the Maintenance and Construction Management subsystem allows real time information on road/bridge closures and restrictions due to maintenance and construction activities to be disseminated. The sharing of transportation operations data described in this service package also supports other services like ATMS09- Traffic Decision Support and Demand Management.	Existing	No	NDOR Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS06	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 Information Service Providers. A link to the Maintenance and Construction Management subsystem allows real time information on road/bridge closures and restrictions due to maintenance and construction activities to be disseminated. The sharing of transportation operations data described in this service package also supports other services like ATMS09- Traffic Decision Support and Demand Management.	Existing	No	Public Vehicles
ATMS07	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.	Planned	No	City of Council Bluffs PWD Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS07	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.	Planned	No	City of Council Bluffs PWD Traffic Signal Equipment
ATMS07	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.	Planned	No	City of Omaha PWD Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS07	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.	Planned	No	City of Omaha TOC
ATMS07	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 centers. Several levels of coordination are supported from sharing of information through sharing of control between traffic management centers.	Planned	No	Iowa DOT District 4 Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS07	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.	Planned	No	Iowa DOT District 4 Offices
ATMS07	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.	Planned	No	NDOR DOC

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS07	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.	Planned	No	NDOR Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS08	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 incidents. The response may include traffic control strategy modifications or resource coordination between center subsystems. Incident response also includes presentation of information to affected travelers using the Traffic Information Dissemination service package and dissemination 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 field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Existing	No	Adjacent Region TOC Operators

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS08	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 incidents. The response may include traffic control strategy modifications or resource coordination between center subsystems. 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 field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Existing	No	City of Council Bluffs PWD Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS08	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 center subsystems. 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 field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Existing	No	City of Council Bluffs TOC

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS08	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 incidents. The response may include traffic control strategy modifications or resource coordination between center subsystems. 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 field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Existing	No	City of Omaha PWD Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS08	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 incidents. The response may include traffic control strategy modifications or resource coordination between center subsystems. 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 field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Existing	No	City of Omaha TOC

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS08	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 center subsystems. 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 field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Existing	No	IA State Patrol Communications Center (Atlantic)

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS08	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 center subsystems. 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 field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Existing	No	Iowa DOT District 4 Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS08	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 incidents. The response may include traffic control strategy modifications or resource coordination between center subsystems. 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 field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Existing	No	Iowa DOT District 4 Offices

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS08	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 incidents. The response may include traffic control strategy modifications or resource coordination between center subsystems. 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 field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Existing	No	Local Law Enforcement Dispatch and E911 Center

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS08	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 center subsystems. 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 indent status as the response unfolds. The coordination with emergency field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Existing	No	NDOR DOC

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS08	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 incidents. The response may include traffic control strategy modifications or resource coordination between center subsystems. 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 field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Existing	No	NDOR Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS08	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, and other incidents. The response may include traffic control strategy modifications or resource coordination between center subsystems. Incident response also includes presentation of information to affected travelers using the Traffic Information Dissemination service package and dissemination or Interactive Traveler Information service packages. The roadside equipment used to detect and verify incidents also allows the operator to monitor information with emergency field personnel. The coordination with emergency field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Existing	No	NE State Patrol Communications Center (Omaha)
ATMS16	Parking Facility Management	This service package provides enhanced monitoring and management of parking facilities. It assists in the management of parking operations, coordinates with transportation authorities, and supports electronic collection of parking fees. This service package collects current parking status, shares this data with Information Service Providers and Traffic Management, and collects parking fees using the same in- vehicle equipment utilized for electronic toll collection or contact or proximity traveler cards used for electronic payment. Two other service packages, APTS04: Transit Fare Collection Management and ATMS10: Electronic Toll Collection also provide electronic payment services. These three service packages in combination provide an integrated electronic payment system for transportation services.	Existing	Νο	City of Omaha Smart Parking Meters

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS16	Parking Facility Management	This service package provides enhanced monitoring and management of parking facilities. It assists in the management of parking operations, coordinates with transportation authorities, and supports electronic collection of parking fees. This service package collects current parking status, shares this data with Information Service Providers and Traffic Management, and collects parking fees using the same in- vehicle equipment utilized for electronic toll collection or contact or proximity traveler cards used for electronic payment. Two other service packages, APTS04: Transit Fare Collection Management and ATMS10: Electronic Toll Collection also provide electronic payment services. These three service packages in combination provide an integrated electronic payment system for transportation services.	Existing	No	Financial Institution
ATMS16	Parking Facility Management	This service package provides enhanced monitoring and management of parking facilities. It assists in the management of parking operations, coordinates with transportation authorities, and supports electronic collection of parking fees. This service package collects current parking status, shares this data with Information Service Providers and Traffic Management, and collects parking fees using the same in- vehicle equipment utilized for electronic toll collection or contact or proximity traveler cards used for electronic payment. Two other service packages, APTS04: Transit Fare Collection Management and ATMS10: Electronic Toll Collection also provide electronic payment services. These three service packages in combination provide an integrated electronic payment system for transportation services.	Existing	No	Traveler Card
ATMS18	Reversible Lane Management	This service package provides for the management of reversible lane facilities. In addition to standard surveillance capabilities, this service package includes sensory functions that detect wrong-way vehicles and other special surveillance capabilities that mitigate safety hazards associated with reversible lanes. The package includes the field equipment, physical lane access controls, and associated control electronics that manage and control these special lanes. This service package also includes the equipment used to electronically reconfigure intersections and manage right-of-way to address dynamic demand changes and special events.	Existing	No	City of Omaha PWD Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS18	Reversible Lane Management	This service package provides for the management of reversible lane facilities. In addition to standard surveillance capabilities, this service package includes sensory functions that detect wrong-way vehicles and other special surveillance capabilities that mitigate safety hazards associated with reversible lanes. The package includes the field equipment, physical lane access controls, and associated control electronics that manage and control these special lanes. This service package also includes the equipment used to electronically reconfigure intersections and manage right-of-way to address dynamic demand changes and special events.	Existing	No	City of Omaha PWD Reversible Lane Use Signs
ATMS18	Reversible Lane Management	This service package provides for the management of reversible lane facilities. In addition to standard surveillance capabilities, this service package includes sensory functions that detect wrong-way vehicles and other special surveillance capabilities that mitigate safety hazards associated with reversible lanes. The package includes the field equipment, physical lane access controls, and associated control electronics that manage and control these special lanes. This service package also includes the equipment used to electronically reconfigure intersections and manage right-of-way to address dynamic demand changes and special events.	Existing	No	City of Omaha TOC
ATMS19	Speed Warning and Enforcement	This service package monitors vehicle speeds and supports warning drivers when their speed is excessive. Also the service includes notifications to an enforcement agency to enforce the speed limit of the roadway. Speed monitoring can be made via spot speed or average speed measurements. Roadside equipment can display the speed of passing vehicles and/or suggest a safe driving speed. Environmental conditions and vehicle characteristics may be monitored and factored into the safe speed advisories that are provided to the motorist. For example, warnings can be generated recognizing the limitations of a given vehicle for the geometry of the roadway such as rollover risk for tall vehicles. This service focuses on monitoring of vehicle speeds and enforcement of the speed limit while the variable speed limits service (covered in ATMS22-Variable Speed Limits service package) focuses on varying the posted speed limits to create more uniform speeds along a roadway, to promote safer driving during adverse conditions (such as fog) and/or to reduce air pollution.	Planned	No	City of Council Bluffs PWD Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS19	Speed Warning and Enforcement	This service package monitors vehicle speeds and supports warning drivers when their speed is excessive. Also the service includes notifications to an enforcement agency to enforce the speed limit of the roadway. Speed monitoring can be made via spot speed or average speed measurements. Roadside equipment can display the speed of passing vehicles and/or suggest a safe driving speed. Environmental conditions and vehicle characteristics may be monitored and factored into the safe speed advisories that are provided to the motorist. For example, warnings can be generated recognizing the limitations of a given vehicle for the geometry of the roadway such as rollover risk for tall vehicles. This service focuses on monitoring of vehicle speeds and enforcement of the speed limit while the variable speed limits service (covered in ATMS22-Variable Speed Limits service package) focuses on varying the posted speed limits to create more uniform speeds along a roadway, to promote safer driving during adverse conditions (such as for) and/or to reduce air pollution.	Planned	No	City of Council Bluffs TOC
ATMS19	Speed Warning and Enforcement	This service package monitors vehicle speeds and supports warning drivers when their speed is excessive. Also the service includes notifications to an enforcement agency to enforce the speed limit of the roadway. Speed monitoring can be made via spot speed or average speed measurements. Roadside equipment can display the speed of passing vehicles and/or suggest a safe driving speed. Environmental conditions and vehicle characteristics may be monitored and factored into the safe speed advisories that are provided to the motorist. For example, warnings can be generated recognizing the limitations of a given vehicle for the geometry of the roadway such as rollover risk for tall vehicles. This service focuses on monitoring of vehicle speeds and enforcement of the speed limit while the variable speed limits service (covered in ATMS22-Variable Speed Limits service package) focuses on varying the posted speed limits to create more uniform speeds along a roadway, to promote safer driving during adverse conditions (such as fog) and/or to reduce air pollution.	Planned	No	City of Omaha PWD Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS19	Speed Warning and Enforcement	This service package monitors vehicle speeds and supports warning drivers when their speed is excessive. Also the service includes notifications to an enforcement agency to enforce the speed limit of the roadway. Speed monitoring can be made via spot speed or average speed measurements. Roadside equipment can display the speed of passing vehicles and/or suggest a safe driving speed. Environmental conditions and vehicle characteristics may be monitored and factored into the safe speed advisories that are provided to the motorist. For example, warnings can be generated recognizing the limitations of a given vehicle for the geometry of the roadway such as rollover risk for tall vehicles. This service focuses on monitoring of vehicle speeds and enforcement of the speed limit while the variable speed limits service (covered in ATMS22-Variable Speed Limits service package) focuses on varying the posted speed limits to create more uniform speeds along a roadway, to promote safer driving during adverse conditions (such as	Planned	Νο	City of Omaha TOC
ATMS19	Speed Warning and Enforcement	This service package monitors vehicle speeds and supports warning drivers when their speed is excessive. Also the service includes notifications to an enforcement agency to enforce the speed limit of the roadway. Speed monitoring can be made via spot speed or average speed measurements. Roadside equipment can display the speed of passing vehicles and/or suggest a safe driving speed. Environmental conditions and vehicle characteristics may be monitored and factored into the safe speed advisories that are provided to the motorist. For example, warnings can be generated recognizing the limitations of a given vehicle for the geometry of the roadway such as rollover risk for tall vehicles. This service focuses on monitoring of vehicle speeds and enforcement of the speed limit while the variable speed limits service (covered in ATMS22-Variable Speed Limits service package) focuses on varying the posted speed limits to create more uniform speeds along a roadway, to promote safer driving during adverse conditions (such as foo) and/or to reduce air pollution.	Planned	No	Enforcement Agencies

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS19	Speed Warning and Enforcement	This service package monitors vehicle speeds and supports warning drivers when their speed is excessive. Also the service includes notifications to an enforcement agency to enforce the speed limit of the roadway. Speed monitoring can be made via spot speed or average speed measurements. Roadside equipment can display the speed of passing vehicles and/or suggest a safe driving speed. Environmental conditions and vehicle characteristics may be monitored and factored into the safe speed advisories that are provided to the motorist. For example, warnings can be generated recognizing the limitations of a given vehicle for the geometry of the roadway such as rollover risk for tall vehicles. This service focuses on monitoring of vehicle speeds and enforcement of the speed limit while the variable speed limits service (covered in ATMS22-Variable Speed Limits service package) focuses on varying the posted speed limits to create more uniform speeds along a roadway, to promote safer driving during adverse conditions (such as	Planned	No	Iowa DOT District 4 Field Equipment
		fog) and/or to reduce air pollution.			
ATMS19	Speed Warning and Enforcement	This service package monitors vehicle speeds and supports warning drivers when their speed is excessive. Also the service includes notifications to an enforcement agency to enforce the speed limit of the roadway. Speed monitoring can be made via spot speed or average speed measurements. Roadside equipment can display the speed of passing vehicles and/or suggest a safe driving speed. Environmental conditions and vehicle characteristics may be monitored and factored into the safe speed advisories that are provided to the motorist. For example, warnings can be generated recognizing the limitations of a given vehicle for the geometry of the roadway such as rollover risk for tall vehicles. This service focuses on monitoring of vehicle speeds and enforcement of the speed limit while the variable speed limits service (covered in ATMS22-Variable Speed Limits service package) focuses on varying the posted speed limits to create more uniform speeds along a roadway, to promote safer driving during adverse conditions (such as fog) and/or to reduce air pollution.	Planned	No	Iowa DOT District 4 Offices

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS19	Speed Warning and Enforcement	This service package monitors vehicle speeds and supports warning drivers when their speed is excessive. Also the service includes notifications to an enforcement agency to enforce the speed limit of the roadway. Speed monitoring can be made via spot speed or average speed measurements. Roadside equipment can display the speed of passing vehicles and/or suggest a safe driving speed. Environmental conditions and vehicle characteristics may be monitored and factored into the safe speed advisories that are provided to the motorist. For example, warnings can be generated recognizing the limitations of a given vehicle for the geometry of the roadway such as rollover risk for tall vehicles. This service focuses on monitoring of vehicle speeds and enforcement of the speed limit while the variable speed limits service (covered in ATMS22-Variable Speed Limits service package) focuses on varying the posted speed limits to create more uniform speeds along a roadway to promote safer	Planned	No	NDOR DOC
		driving during adverse conditions (such as fog) and/or to reduce air pollution.			
ATMS19	Speed Warning and Enforcement	This service package monitors vehicle speeds and supports warning drivers when their speed is excessive. Also the service includes notifications to an enforcement agency to enforce the speed limit of the roadway. Speed monitoring can be made via spot speed or average speed measurements. Roadside equipment can display the speed of passing vehicles and/or suggest a safe driving speed. Environmental conditions and vehicle characteristics may be monitored and factored into the safe speed advisories that are provided to the motorist. For example, warnings can be generated recognizing the limitations of a given vehicle for the geometry of the roadway such as rollover risk for tall vehicles. This service focuses on monitoring of vehicle speeds and enforcement of the speed limit while the variable speed limits service (covered in ATMS22-Variable Speed Limits service package) focuses on varying the posted speed limits to create more uniform speeds along a roadway, to promote safer driving during adverse conditions (such as fog) and/or to reduce air pollution.	Planned	No	NDOR Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS19	Speed Warning and Enforcement	This service package monitors vehicle speeds and supports warning drivers when their speed is excessive. Also the service includes notifications to an enforcement agency to enforce the speed limit of the roadway. Speed monitoring can be made via spot speed or average speed measurements. Roadside equipment can display the speed of passing vehicles and/or suggest a safe driving speed. Environmental conditions and vehicle characteristics may be monitored and factored into the safe speed advisories that are provided to the motorist. For example, warnings can be generated recognizing the limitations of a given vehicle for the geometry of the roadway such as rollover risk for tall vehicles. This service focuses on monitoring of vehicle speeds and enforcement of the speed limit while the variable speed limits service (covered in ATMS22-Variable Speed Limits service package) focuses on varying the posted speed limits to create more uniform speeds along a roadway, to promote safer driving during adverse conditions (such as for) and/or to reduce air pollution	Planned	No	Traffic
ATMS21	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 ATMS service packages.	Planned	No	lowa DOT District 4 Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS21	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 ATMS service packages.	Planned	No	Iowa DOT District 4 Offices

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS21	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 controlled 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.	Planned	No	NDOR Automated Gate Closure

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS21	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 ATMS service packages.	Planned	No	NDOR DOC

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ATMS21	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 ATMS service packages.	Planned	Νο	NDOR Field Equipment
EM01	Emergency Call- Taking and Dispatch	This service package provides basic public safety call-taking and dispatch services. It includes emergency vehicle equipment, equipment used to receive and route emergency calls, and wireless communications that enable safe and rapid deployment of appropriate resources to an emergency. Coordination between Emergency Management Subsystems supports emergency notification between agencies. Wide area wireless communications between the Emergency Management Subsystem and an Emergency Vehicle supports dispatch and provision of information to responding personnel.	Existing	No	Fire and Rescue Emergency Vehicles
EM01	Emergency Call- Taking and Dispatch	This service package provides basic public safety call-taking and dispatch services. It includes emergency vehicle equipment, equipment used to receive and route emergency calls, and wireless communications that enable safe and rapid deployment of appropriate resources to an emergency. Coordination between Emergency Management Subsystems supports emergency notification between agencies. Wide area wireless communications between the Emergency Management Subsystem and an Emergency Vehicle supports dispatch and provision of information to responding personnel.	Existing	No	IA State Patrol Communications Center (Atlantic)
Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
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EM01	Emergency Call- Taking and Dispatch	This service package provides basic public safety call-taking and dispatch services. It includes emergency vehicle equipment, equipment used to receive and route emergency calls, and wireless communications that enable safe and rapid deployment of appropriate resources to an emergency. Coordination between Emergency Management Subsystems supports emergency notification between agencies. Wide area wireless communications between the Emergency Management Subsystem and an Emergency Vehicle supports dispatch and provision of information to responding personnel.	Existing	No	IA State Patrol Emergency Vehicles
EM01	Emergency Call- Taking and Dispatch	This service package provides basic public safety call-taking and dispatch services. It includes emergency vehicle equipment, equipment used to receive and route emergency calls, and wireless communications that enable safe and rapid deployment of appropriate resources to an emergency. Coordination between Emergency Management Subsystems supports emergency notification between agencies. Wide area wireless communications between the Emergency Management Subsystem and an Emergency Vehicle supports dispatch and provision of information to responding personnel.	Existing	No	Local Law Enforcement Dispatch and E911 Center
EM01	Emergency Call- Taking and Dispatch	This service package provides basic public safety call-taking and dispatch services. It includes emergency vehicle equipment, equipment used to receive and route emergency calls, and wireless communications that enable safe and rapid deployment of appropriate resources to an emergency. Coordination between Emergency Management Subsystems supports emergency notification between agencies. Wide area wireless communications between the Emergency Management Subsystem and an Emergency Vehicle supports dispatch and provision of information to responding personnel.	Existing	No	Local Law Enforcement Emergency Vehicles
EM01	Emergency Call- Taking and Dispatch	This service package provides basic public safety call-taking and dispatch services. It includes emergency vehicle equipment, equipment used to receive and route emergency calls, and wireless communications that enable safe and rapid deployment of appropriate resources to an emergency. Coordination between Emergency Management Subsystems supports emergency notification between agencies. Wide area wireless communications between the Emergency Management Subsystem and an Emergency Vehicle supports dispatch and provision of information to responding personnel.	Existing	No	NE State Patrol Communications Center (Omaha)

Servio Packa	ce Service age Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
EM01	Emergency Call- Taking and Dispatch	This service package provides basic public safety call-taking and dispatch services. It includes emergency vehicle equipment, equipment used to receive and route emergency calls, and wireless communications that enable safe and rapid deployment of appropriate resources to an emergency. Coordination between Emergency Management Subsystems supports emergency notification between agencies. Wide area wireless communications between the Emergency Management Subsystem and an Emergency Vehicle supports dispatch and provision of information to responding personnel.	Existing	No	NE State Patrol Emergency Vehicles
EM01	Emergency Call- Taking and Dispatch	This service package provides basic public safety call-taking and dispatch services. It includes emergency vehicle equipment, equipment used to receive and route emergency calls, and wireless communications that enable safe and rapid deployment of appropriate resources to an emergency. Coordination between Emergency Management Subsystems supports emergency notification between agencies. Wide area wireless communications between the Emergency Management Subsystem and an Emergency Vehicle supports dispatch and provision of information to responding personnel.	Existing	Νο	Tow Service Operators
EM02	Emergency Routing	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 responding vehicle travel on the selected route(s). The Emergency Management Subsystem provides the routing for the emergency fleet based on real-time conditions and has the option of requesting a route from the Traffic Management subsystem. The Emergency Vehicle may also be equipped with dedicated short range communications for local signal preemption and the transmission of alerts to surrounding vehicles. The service provides for information exchange between care facilities and both the Emergency Management Subsystem and emergency vehicles.	Existing	Νο	City of Bellevue PWD Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
EM02	Emergency Routing	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 responding vehicle travel on the selected route(s). The Emergency Management Subsystem provides the routing for the emergency fleet based on real-time conditions and has the option of requesting a route from the Traffic Management subsystem. The Emergency Vehicle may also be equipped with dedicated short range communications for local signal preemption and the transmission of alerts to surrounding vehicles. The service provides for information exchange between care facilities and both the Emergency Management Subsystem and emergency vehicles.	Existing	No	City of Council Bluffs PWD Field Equipment
EM02	Emergency Routing	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 responding vehicle travel on the selected route(s). The Emergency Management Subsystem provides the routing for the emergency fleet based on real-time conditions and has the option of requesting a route from the Traffic Management subsystem. The Emergency Vehicle may also be equipped with dedicated short range communications for local signal preemption and the transmission of alerts to surrounding vehicles. The service provides for information exchange between care facilities and both the Emergency Management Subsystem and emergency vehicles.	Existing	No	City of Council Bluffs TOC

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
EM02	Emergency Routing	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 responding vehicle travel on the selected route(s). The Emergency Management Subsystem provides the routing for the emergency fleet based on real-time conditions and has the option of requesting a route from the Traffic Management subsystem. The Emergency Vehicle may also be equipped with dedicated short range communications for local signal preemption and the transmission of alerts to surrounding vehicles. The service provides for information exchange between care facilities and both the Emergency Management Subsystem and emergency vehicles.	Existing	No	City of Omaha PWD Field Equipment
EM02	Emergency Routing	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 responding vehicle travel on the selected route(s). The Emergency Management Subsystem provides the routing for the emergency fleet based on real-time conditions and has the option of requesting a route from the Traffic Management subsystem. The Emergency Vehicle may also be equipped with dedicated short range communications for local signal preemption and the transmission of alerts to surrounding vehicles. The service provides for information exchange between care facilities and both the Emergency Management Subsystem and emergency vehicles.	Existing	No	City of Omaha TOC

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
EM02	Emergency Routing	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 responding vehicle travel on the selected route(s). The Emergency Management Subsystem provides the routing for the emergency fleet based on real-time conditions and has the option of requesting a route from the Traffic Management subsystem. The Emergency Vehicle may also be equipped with dedicated short range communications for local signal preemption and the transmission of alerts to surrounding vehicles. The service provides for information exchange between care facilities and both the Emergency Management Subsystem and emergency vehicles.	Existing	No	County of Pottawattamie 911 Center
EM02	Emergency Routing	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 responding vehicle travel on the selected route(s). The Emergency Management Subsystem provides the routing for the emergency fleet based on real-time conditions and has the option of requesting a route from the Traffic Management subsystem. The Emergency Vehicle may also be equipped with dedicated short range communications for local signal preemption and the transmission of alerts to surrounding vehicles. The service provides for information exchange between care facilities and both the Emergency Management Subsystem and emergency vehicles.	Existing	No	Fire and Rescue Emergency Vehicles

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
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EM02	Emergency Routing	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 responding vehicle travel on the selected route(s). The Emergency Management Subsystem provides the routing for the emergency fleet based on real-time conditions and has the option of requesting a route from the Traffic Management subsystem. The Emergency Vehicle may also be equipped with dedicated short range communications for local signal preemption and the transmission of alerts to surrounding vehicles. The service provides for information exchange between care facilities and both the Emergency Management Subsystem and emergency vehicles.	Existing	No	IA State Patrol Emergency Vehicles

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
EM02	Emergency Routing	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 responding vehicle travel on the selected route(s). The Emergency Management Subsystem provides the routing for the emergency fleet based on real-time conditions and has the option of requesting a route from the Traffic Management subsystem. The Emergency Vehicle may also be equipped with dedicated short range communications for local signal preemption and the transmission of alerts to surrounding vehicles. The service provides for information exchange between care facilities and both the Emergency Management Subsystem and emergency vehicles.	Existing	No	Iowa DOT District 4 Offices
EM02	Emergency Routing	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 responding vehicle travel on the selected route(s). The Emergency Management Subsystem provides the routing for the emergency fleet based on real-time conditions and has the option of requesting a route from the Traffic Management subsystem. The Emergency Vehicle may also be equipped with dedicated short range communications for local signal preemption and the transmission of alerts to surrounding vehicles. The service provides for information exchange between care facilities and both the Emergency Management Subsystem and emergency vehicles.	Existing	No	Local Law Enforcement Dispatch and E911 Center

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
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EM02	Emergency Routing	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 responding vehicle travel on the selected route(s). The Emergency Management Subsystem provides the routing for the emergency fleet based on real-time conditions and has the option of requesting a route from the Traffic Management subsystem. The Emergency Vehicle may also be equipped with dedicated short range communications for local signal preemption and the transmission of alerts to surrounding vehicles. The service provides for information exchange between care facilities and both the Emergency Management Subsystem and emergency vehicles.	Existing	No	NDOR DOC

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
EM02	Emergency Routing	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 responding vehicle travel on the selected route(s). The Emergency Management Subsystem provides the routing for the emergency fleet based on real-time conditions and has the option of requesting a route from the Traffic Management subsystem. The Emergency Vehicle may also be equipped with dedicated short range communications for local signal preemption and the transmission of alerts to surrounding vehicles. The service provides for information exchange between care facilities and both the Emergency Management Subsystem and emergency vehicles.	Existing	Νο	NE State Patrol Communications Center (Omaha)
EM02	Emergency Routing	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 responding vehicle travel on the selected route(s). The Emergency Management Subsystem provides the routing for the emergency fleet based on real-time conditions and has the option of requesting a route from the Traffic Management subsystem. The Emergency Vehicle may also be equipped with dedicated short range communications for local signal preemption and the transmission of alerts to surrounding vehicles. The service provides for information exchange between care facilities and both the Emergency Management Subsystem and emergency vehicles.	Existing	No	NE State Patrol Emergency Vehicles

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
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EM02	Emergency Routing	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 responding vehicle travel on the selected route(s). The Emergency Management Subsystem provides the routing for the emergency fleet based on real-time conditions and has the option of requesting a route from the Traffic Management subsystem. The Emergency Vehicle may also be equipped with dedicated short range communications for local signal preemption and the transmission of alerts to surrounding vehicles. The service provides for information exchange between care facilities and both the Emergency Management Subsystem and emergency vehicles.	Existing	No	Other Local PWD Field Equipment
EM03	Mayday and Alarms Support	This service package allows the user (driver or non-driver) to initiate a request for emergency assistance and enables the Emergency Management Subsystem to locate the user, gather information about the incident, and determine the appropriate response. The request for assistance may be manually initiated or automated and linked to vehicle sensors. This service package also includes general surveillance capabilities that enable the Emergency Management Subsystem to remotely monitor public areas (e.g., rest stops, parking lots) to improve security in these areas. The Emergency Management Subsystem may be operated by the public sector or by a private sector telematics service provider.	Existing	No	County of Pottawattamie 911 Center

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
EM03	Mayday and Alarms Support	This service package allows the user (driver or non-driver) to initiate a request for emergency assistance and enables the Emergency Management Subsystem to locate the user, gather information about the incident, and determine the appropriate response. The request for assistance may be manually initiated or automated and linked to vehicle sensors. This service package also includes general surveillance capabilities that enable the Emergency Management Subsystem to remotely monitor public areas (e.g., rest stops, parking lots) to improve security in these areas. The Emergency Management Subsystem may be operated by the public sector or by a private sector telematics service provider.	Existing	No	IA State Patrol Communications Center (Atlantic)
EM03	Mayday and Alarms Support	This service package allows the user (driver or non-driver) to initiate a request for emergency assistance and enables the Emergency Management Subsystem to locate the user, gather information about the incident, and determine the appropriate response. The request for assistance may be manually initiated or automated and linked to vehicle sensors. This service package also includes general surveillance capabilities that enable the Emergency Management Subsystem to remotely monitor public areas (e.g., rest stops, parking lots) to improve security in these areas. The Emergency Management Subsystem may be operated by the public sector or by a private sector telematics service provider.	Existing	No	Local Law Enforcement Dispatch and E911 Center
EM03	Mayday and Alarms Support	This service package allows the user (driver or non-driver) to initiate a request for emergency assistance and enables the Emergency Management Subsystem to locate the user, gather information about the incident, and determine the appropriate response. The request for assistance may be manually initiated or automated and linked to vehicle sensors. This service package also includes general surveillance capabilities that enable the Emergency Management Subsystem to remotely monitor public areas (e.g., rest stops, parking lots) to improve security in these areas. The Emergency Management Subsystem may be operated by the public sector or by a private sector telematics service provider.	Existing	No	Personal Communications and Computing Devices

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
EM03	Mayday and Alarms Support	This service package allows the user (driver or non-driver) to initiate a request for emergency assistance and enables the Emergency Management Subsystem to locate the user, gather information about the incident, and determine the appropriate response. The request for assistance may be manually initiated or automated and linked to vehicle sensors. This service package also includes general surveillance capabilities that enable the Emergency Management Subsystem to remotely monitor public areas (e.g., rest stops, parking lots) to improve security in these areas. The Emergency Management Subsystem may be operated by the public sector or by a private sector telematics service provider.	Existing	No	Public Vehicles
EM04	Roadway Service Patrols	This service package supports roadway service patrol vehicles that monitor roads that aid motorists, offering rapid response to minor incidents (flat tire, accidents, out of gas) to minimize disruption to the traffic stream. If problems are detected, the roadway service patrol vehicles will provide assistance to the motorist (e.g., push a vehicle to the shoulder or median). The service package monitors service patrol vehicle locations and supports vehicle dispatch to identified incident locations. Incident information collected by the service patrol is shared with traffic, maintenance and construction, and traveler information systems.	Existing	No	NE State Patrol Communications Center (Omaha)
EM04	Roadway Service Patrols	This service package supports roadway service patrol vehicles that monitor roads that aid motorists, offering rapid response to minor incidents (flat tire, accidents, out of gas) to minimize disruption to the traffic stream. If problems are detected, the roadway service patrol vehicles will provide assistance to the motorist (e.g., push a vehicle to the shoulder or median). The service package monitors service patrol vehicle locations and supports vehicle dispatch to identified incident locations. Incident information collected by the service patrol is shared with traffic, maintenance and construction, and traveler information systems.	Existing	No	NE State Patrol Motorist Assist Vehicles

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
EM06	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 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 web sites.	Existing	No	County of Pottawattamie 911 Center
EM06	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 web sites.	Existing	No	County of Pottawattamie EOC

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
EM06	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 web sites.	Existing	Νο	IA State Patrol Communications Center (Atlantic)
EM06	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 web sites.	Existing	No	IA State Patrol Communications Center (Des Moines)

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
EM06	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 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 web sites.	Existing	No	Iowa DOT District 4 Field Equipment
EM06	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 web sites.	Existing	No	Iowa DOT District 4 Offices

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
EM06	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 web sites.	Existing	No	Local Law Enforcement Dispatch and E911 Center
EM06	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 web sites.	Existing	No	NDOR DOC

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EM06	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 web sites.	Existing	No	NE State Patrol Communications Center (Omaha)

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
EM08	Disaster Response and Recovery	This service package enhances the ability of the surface transportation system to respond to and recover from disasters. It addresses the most severe incidents that require an extraordinary response from outside the local community. All types of disasters are addressed including natural disasters (hurricanes, earthquakes, floods, winter storms, tsunamis, etc.) and technological and man-made disasters (hazardous materials incidents, nuclear power plant accidents, and national security emergencies such as nuclear, chemical, biological, and radiological weapons attacks). The service package supports coordination of emergency response plans, including general plans developed before a disaster as well as specific tactical plans with short time horizon that are developed as part of a disaster response. The service package provides enhanced access to the scene for response personnel and resources, provides better information about the transportation system in the vicinity of the disaster, and maintains situation awareness regarding the disaster itself. In addition, this service package tracks and coordinates the transportation resources - the transportation professionals, equipment, and materials - that constitute a portion of the disaster response. The service package identifies the key points of integration between transportation systems and the public safety, emergency management, public health, and other allied organizations that form the overall disaster	Existing	No	County Emergency Operations Centers
		response. In this service package, the Emergency Management subsystem represents the federal, regional, state, and local Emergency Operations Centers and the Incident Commands that are established to respond to the disaster. The interface between the Emergency Management Subsystem and the other center subsystems provides situation awareness and resource coordination among transportation and other allied response agencies. In its role, traffic			
		management implements special traffic control strategies and detours and restrictions to effectively manage traffic in and around the disaster. Maintenance and construction provides damage assessment of road network facilities and manages service restoration. Transit management provides a similar assessment of status for transit facilities and modifies transit operations to			
		meet the special demands of the disaster. As immediate public safety concerns are addressed and disaster response transitions into recovery, this service package supports transition back to normal transportation system operation, recovering resources, managing on-going transportation facility repair, supporting data collection and revised plan coordination, and other recovery activities.			
		This service package builds on the basic traffic incident response service that is provided by ATMS08, the Traffic Incident Management service package. This service package addresses the additional complexities and coordination requirements			

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
EM08	Disaster Response and Recovery	This service package enhances the ability of the surface transportation system to respond to and recover from disasters. It addresses the most severe incidents that require an extraordinary response from outside the local community. All types of disasters are addressed including natural disasters (hurricanes, earthquakes, floods, winter storms, tsunamis, etc.) and technological and man-made disasters (hazardous materials incidents, nuclear power plant accidents, and national security emergencies such as nuclear, chemical, biological, and radiological weapons attacks). The service package supports coordination of emergency response plans, including general plans developed before a disaster as well as specific tactical plans with short time horizon that are developed as part of a disaster response. The service package provides enhanced access to the scene for response personnel and resources, provides better information about the transportation system in the vicinity of the disaster, and maintains situation awareness regarding the disaster itself. In addition, this service package tracks and coordinates the transportation resources - the transportation professionals, equipment, and materials - that constitute a portion of the disaster response. The service package identifies the key points of integration between transportation	Status Existing	Instance No	County of Pottawattamie 91 Center
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		The service package identifies the key points of integration between transportation systems and the public safety, emergency management, public health, and other allied organizations that form the overall disaster response. In this service package, the Emergency Management subsystem represents the federal, regional, state, and local Emergency Operations Centers and the Incident Commands that are established to respond to the disaster. The interface between the Emergency Management Subsystem and the other center subsystems provides situation awareness and resource coordination among transportation and other allied response agencies. In its role, traffic management implements special traffic control strategies and detours and restrictions to effectively manage traffic in and around the disaster. Maintenance and construction provides damage assessment of road network facilities and manages service restoration. Transit management provides a similar assessment of status for transit facilities and modifies transit operations to meet the special demands of the disaster. As immediate public safety concerns are addressed and disaster response transitions into recovery, this service package supports transition back to normal transportation system operation, recovering resources, managing on-going transportation facility repair, supporting data collection and revised plan coordination, and other to action facility repair, supporting data collection and revised plan coordination, and other to action facility			
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		of integration between transportation systems and the public safety, emergency management, public health, and other allied organizations that form the overall disaster response. In this service package, the Emergency Management subsystem represents the federal, regional, state, and local Emergency Operations Centers and the Incident Commands that are established to respond to the disaster. The interface between the Emergency Management Subsystem and the other center subsystems provides situation awareness and resource coordination among transportation and other allied response agencies. In its role, traffic management implements special traffic control strategies and detours and restrictions to effectively manage traffic in and around the disaster. Maintenance and construction provides damage assessment of road network facilities and manages service restoration. Transit management provides a similar assessment of status for transit facilities and modifies transit operations to meet the special demands of the disaster. As immediate public safety concerns are			
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Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
:M08	Disaster Response and Recovery	This service package enhances the ability of the surface transportation system to respond to and recover from disasters. It addresses the most severe incidents that require an extraordinary response from outside the local community. All types of disasters are addressed including natural disasters (hurricanes, earthquakes, floods, winter storms, tsunamis, etc.) and technological and man-made disasters (hazardous materials incidents, nuclear power plant accidents, and national security emergencies such as nuclear, chemical, biological, and radiological weapons attacks). The service package supports coordination of emergency response plans, including general plans developed before a disaster as well as specific tactical plans with short time horizon that are developed as part of a disaster response. The service package provides enhanced access to the scene for response personnel and resources, provides better information about the transportation system in the vicinity of the disaster, and maintains situation awareness regarding the disaster itself. In addition, this service package tracks and coordinates the transportation resources - the transportation professionals, equipment, and materials - that constitute a portion of the disaster response. The service package identifies the key points	Status Existing	No	Metro Dispatch Center
		of integration between transportation systems and the public safety, emergency management, public health, and other allied organizations that form the overall disaster response. In this service package, the Emergency Management subsystem represents the federal, regional, state, and local Emergency Operations Centers and the Incident Commands that are established to respond to the disaster. The interface between the Emergency Management Subsystem and the other center subsystems provides situation awareness and resource coordination among transportation and other allied response agencies. In its role, traffic management implements special traffic control strategies and detours and restrictions to effectively manage traffic in and around the disaster. Maintenance and construction provides damage assessment of			
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Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ΞΜ08	Disaster Response and Recovery	This service package enhances the ability of the surface transportation system to respond to and recover from disasters. It addresses the most severe incidents that require an extraordinary response from outside the local community. All types of disasters are addressed including natural disasters (hurricanes, earthquakes, floods, winter storms, tsunamis, etc.) and technological and man-made disasters (hazardous materials incidents, nuclear power plant accidents, and national security emergencies such as nuclear, chemical, biological, and radiological weapons attacks). The service package supports coordination of emergency response plans, including general plans developed before a disaster as well as specific tactical plans with short time horizon that are developed as part of a disaster response. The service package provides enhanced access to the scene for response personnel and resources, provides better information about the transportation system in the vicinity of the disaster, and maintains situation awareness regarding the disaster itself. In addition, this service package tracks and coordinates the transportation resources - the transportation professionals, equipment, and materials - that constitute a portion of the disaster response.	Existing	No	NDOR DOC
		of integration between transportation systems and the public safety, emergency management, public health, and other allied organizations that form the overall disaster response. In this service package, the Emergency Management subsystem represents the federal, regional, state, and local Emergency Operations Centers and the Incident Commands that are established to respond to the disaster. The interface between the Emergency Management Subsystem and the other center subsystems provides situation awareness and resource coordination among transportation and other allied response agencies. In its role, traffic management implements special traffic control strategies and detours and restrictions to effectively manage traffic in and around the disaster. Maintenance and construction provides damage assessment of road network facilities and manages service restoration. Transit management provides a similar assessment of status for transit facilities and modifies transit operations to meet the special demands of the disaster. As immediate public safety concerns are addressed and disaster response transitions into recovery, this service package supports transition back to normal transportation system operation, recovering resources, managing on-going transportation facility			
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Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
EM08	Disaster Response and Recovery	This service package enhances the ability of the surface transportation system to respond to and recover from disasters. It addresses the most severe incidents that require an extraordinary response from outside the local community. All types of disasters are addressed including natural disasters (hurricanes, earthquakes, floods, winter storms, tsunamis, etc.) and technological and man-made disasters (hazardous materials incidents, nuclear power plant accidents, and national security emergencies such as nuclear, chemical, biological, and radiological weapons attacks). The service package supports coordination of emergency response plans, including general plans developed before a disaster as well as specific tactical plans with short time horizon that are developed as part of a disaster response. The service package provides enhanced access to the scene for response personnel and resources, provides better information about the transportation system in the vicinity of the disaster, and maintains situation awareness regarding the disaster itself. In addition, this service package tracks and coordinates the transportation resources - the transportation professionals, equipment and materials -	Existing	No	NE State Patrol Communications Center (Omaha)
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Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC01	Maintenance and Construction Vehicle and Equipment Tracking	This service package will track the location of maintenance and construction vehicles and other equipment to ascertain the progress of their activities. These activities can include ensuring the correct roads are being plowed and work activity is being performed at the correct locations.	Existing	No	Iowa DOT District 4 Offices
MC01	Maintenance and Construction Vehicle and Equipment Tracking	This service package will track the location of maintenance and construction vehicles and other equipment to ascertain the progress of their activities. These activities can include ensuring the correct roads are being plowed and work activity is being performed at the correct locations.	Existing	No	Iowa DOT Maintenance and Construction Vehicles
MC01	Maintenance and Construction Vehicle and Equipment Tracking	This service package will track the location of maintenance and construction vehicles and other equipment to ascertain the progress of their activities. These activities can include ensuring the correct roads are being plowed and work activity is being performed at the correct locations.	Existing	No	NDOR DOC
MC01	Maintenance and Construction Vehicle and Equipment Tracking	This service package will track the location of maintenance and construction vehicles and other equipment to ascertain the progress of their activities. These activities can include ensuring the correct roads are being plowed and work activity is being performed at the correct locations.	Existing	No	NDOR Maintenance and Construction Vehicles
MC03	Road Weather Data Collection	This service package collects current road and weather conditions using data collected from environmental sensors deployed on and about the roadway (or guideway in the case of transit related rail systems). In addition to fixed sensor stations at the roadside, sensing of the roadway environment can also occur from sensor systems located on Maintenance and Construction Vehicles. 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.	Existing	Νο	Iowa DOT Central Headquarters Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC03	Road Weather Data Collection	This service package collects current road and weather conditions using data collected from environmental sensors deployed on and about the roadway (or guideway in the case of transit related rail systems). In addition to fixed sensor stations at the roadside, sensing of the roadway environment can also occur from sensor systems located on Maintenance and Construction Vehicles. 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.	Existing	Νο	lowa DOT Central Headquarters Office
MC03	Road Weather Data Collection	This service package collects current road and weather conditions using data collected from environmental sensors deployed on and about the roadway (or guideway in the case of transit related rail systems). In addition to fixed sensor stations at the roadside, sensing of the roadway environment can also occur from sensor systems located on Maintenance and Construction Vehicles. 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.	Existing	Νο	Iowa DOT District 4 Offices
MC03	Road Weather Data Collection	This service package collects current road and weather conditions using data collected from environmental sensors deployed on and about the roadway (or guideway in the case of transit related rail systems). In addition to fixed sensor stations at the roadside, sensing of the roadway environment can also occur from sensor systems located on Maintenance and Construction Vehicles. 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.	Existing	No	lowa DOT Maintenance and Construction Vehicles

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC03	Road Weather Data Collection	This service package collects current road and weather conditions using data collected from environmental sensors deployed on and about the roadway (or guideway in the case of transit related rail systems). In addition to fixed sensor stations at the roadside, sensing of the roadway environment can also occur from sensor systems located on Maintenance and Construction Vehicles. 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.	Existing	No	NDOR DOC
MC03	Road Weather Data Collection	This service package collects current road and weather conditions using data collected from environmental sensors deployed on and about the roadway (or guideway in the case of transit related rail systems). In addition to fixed sensor stations at the roadside, sensing of the roadway environment can also occur from sensor systems located on Maintenance and Construction Vehicles. 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.	Existing	No	NDOR Field Equipment
MC04	Weather Information Processing and Distribution	This service package processes and distributes the environmental information collected from the Road Weather Data Collection service package. This service package uses the environmental data to detect environmental hazards such as icy road conditions, high winds, dense fog, etc. so system operators and decision support systems can make decision on corrective actions to take. The continuing updates of road condition information and current temperatures can be used by system operators to more effectively deploy road maintenance resources, issue general traveler advisories, issue location specific warnings to drivers using the Traffic Information Dissemination service package, and aid operators in scheduling work activity.	Existing	No	lowa DOT CARS

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC04	Weather Information Processing and Distribution	This service package processes and distributes the environmental information collected from the Road Weather Data Collection service package. This service package uses the environmental data to detect environmental hazards such as icy road conditions, high winds, dense fog, etc. so system operators and decision support systems can make decision on corrective actions to take. The continuing updates of road condition information and current temperatures can be used by system operators to more effectively deploy road maintenance resources, issue general traveler advisories, issue location specific warnings to drivers using the Traffic Information Dissemination service package, and aid operators in scheduling work activity.	Existing	No	Iowa DOT District 4 Offices
MC04	Weather Information Processing and Distribution	This service package processes and distributes the environmental information collected from the Road Weather Data Collection service package. This service package uses the environmental data to detect environmental hazards such as icy road conditions, high winds, dense fog, etc. so system operators and decision support systems can make decision on corrective actions to take. The continuing updates of road condition information and current temperatures can be used by system operators to more effectively deploy road maintenance resources, issue general traveler advisories, issue location specific warnings to drivers using the Traffic Information Dissemination service package, and aid operators in scheduling work activity.	Existing	Νο	Media TV, Radio and News Outlets
MC04	Weather Information Processing and Distribution	This service package processes and distributes the environmental information collected from the Road Weather Data Collection service package. This service package uses the environmental data to detect environmental hazards such as icy road conditions, high winds, dense fog, etc. so system operators and decision support systems can make decision on corrective actions to take. The continuing updates of road condition information and current temperatures can be used by system operators to more effectively deploy road maintenance resources, issue general traveler advisories, issue location specific warnings to drivers using the Traffic Information Dissemination service package, and aid operators in scheduling work activity.	Existing	No	NDOR DOC

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC04	Weather Information Processing and Distribution	This service package processes and distributes the environmental information collected from the Road Weather Data Collection service package. This service package uses the environmental data to detect environmental hazards such as icy road conditions, high winds, dense fog, etc. so system operators and decision support systems can make decision on corrective actions to take. The continuing updates of road condition information and current temperatures can be used by system operators to more effectively deploy road maintenance resources, issue general traveler advisories, issue location specific warnings to drivers using the Traffic Information Dissemination service package, and aid operators in scheduling work activity.	Existing	No	NDOR HCRS
MC05	Roadway Automated Treatment	This service package automatically treats a roadway section based on environmental or atmospheric conditions. Treatments include fog dispersion, anti-icing chemicals, etc. The service package includes the environmental sensors that detect adverse conditions, the automated treatment system itself, and driver information systems (e.g., dynamic message signs) that warn drivers when the treatment system is activated.	Planned	No	Driver
MC05	Roadway Automated Treatment	This service package automatically treats a roadway section based on environmental or atmospheric conditions. Treatments include fog dispersion, anti-icing chemicals, etc. The service package includes the environmental sensors that detect adverse conditions, the automated treatment system itself, and driver information systems (e.g., dynamic message signs) that warn drivers when the treatment system is activated.	Planned	No	NDOR Anti-Icing Stations
MC05	Roadway Automated Treatment	This service package automatically treats a roadway section based on environmental or atmospheric conditions. Treatments include fog dispersion, anti-icing chemicals, etc. The service package includes the environmental sensors that detect adverse conditions, the automated treatment system itself, and driver information systems (e.g., dynamic message signs) that warn drivers when the treatment system is activated.	Planned	No	NDOR DOC
MC05	Roadway Automated Treatment	This service package automatically treats a roadway section based on environmental or atmospheric conditions. Treatments include fog dispersion, anti-icing chemicals, etc. The service package includes the environmental sensors that detect adverse conditions, the automated treatment system itself, and driver information systems (e.g., dynamic message signs) that warn drivers when the treatment system is activated.	Planned	No	NDOR Field Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC06	Winter Maintenance	This service package supports winter road maintenance including snow plow operations, roadway treatments (e.g., salt spraying and other anti-icing material applications), and other snow and ice control activities. This package monitors environmental conditions and weather forecasts and uses the information to schedule winter maintenance activities, determine the appropriate snow and ice control response, and track and manage response operations.	Existing	No	Iowa DOT District 4 Offices
MC06	Winter Maintenance	This service package supports winter road maintenance including snow plow operations, roadway treatments (e.g., salt spraying and other anti-icing material applications), and other snow and ice control activities. This package monitors environmental conditions and weather forecasts and uses the information to schedule winter maintenance activities, determine the appropriate snow and ice control response, and track and manage response operations.	Existing	No	lowa DOT Maintenance and Construction Vehicles
MC06	Winter Maintenance	This service package supports winter road maintenance including snow plow operations, roadway treatments (e.g., salt spraying and other anti-icing material applications), and other snow and ice control activities. This package monitors environmental conditions and weather forecasts and uses the information to schedule winter maintenance activities, determine the appropriate snow and ice control response, and track and manage response operations.	Existing	Νο	NDOR DOC
MC06	Winter Maintenance	This service package supports winter road maintenance including snow plow operations, roadway treatments (e.g., salt spraying and other anti-icing material applications), and other snow and ice control activities. This package monitors environmental conditions and weather forecasts and uses the information to schedule winter maintenance activities, determine the appropriate snow and ice control response, and track and manage response operations.	Existing	Νο	NDOR Maintenance and Construction Vehicles

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC07	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 would 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.	Existing	No	Iowa DOT District 4 Offices
MC07	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 would 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 isgnals, CCTV, etc.). Environmental conditions information is also received from various weather sources to aid in scheduling maintenance and construction activities.	Existing	No	Iowa DOT Maintenance and Construction Vehicles
MC07	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 would 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 idetectors, 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.	Existing	No	NDOR DOC

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC07	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 would 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 detectors, information is also received from various weather sources to aid in scheduling maintenance and construction activities.	Existing	No	NDOR Maintenance and Construction Vehicles
MC08	Work Zone Management	This service package manages work zones, controlling traffic in areas of the roadway where maintenance, construction, and utility work activities are underway. Traffic conditions are monitored using CCTV cameras and controlled using dynamic message signs (DMS), Highway Advisory Radio (HAR), gates and barriers. Work zone information is coordinated with other groups (e.g., ISP, traffic management, other maintenance and construction centers). Work zone speeds and delays are provided to the motorist prior to the work zones. This service package provides control of field equipment in all maintenance and construction areas, including fixed, portable, and truck-mounted devices supporting both stationary and mobile work zones.	Existing	No	Driver
MC08	Work Zone Management	This service package manages work zones, controlling traffic in areas of the roadway where maintenance, construction, and utility work activities are underway. Traffic conditions are monitored using CCTV cameras and controlled using dynamic message signs (DMS), Highway Advisory Radio (HAR), gates and barriers. Work zone information is coordinated with other groups (e.g., ISP, traffic management, other maintenance and construction centers). Work zone speeds and delays are provided to the motorist prior to the work zones. This service package provides control of field equipment in all maintenance and construction areas, including fixed, portable, and truck-mounted devices supporting both stationary and mobile work zones.	Existing	No	lowa DOT Automated Work Zone

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC08	Work Zone Management	This service package manages work zones, controlling traffic in areas of the roadway where maintenance, construction, and utility work activities are underway. Traffic conditions are monitored using CCTV cameras and controlled using dynamic message signs (DMS), Highway Advisory Radio (HAR), gates and barriers. Work zone information is coordinated with other groups (e.g., ISP, traffic management, other maintenance and construction centers). Work zone speeds and delays are provided to the motorist prior to the work zones. This service package provides control of field equipment in all maintenance and construction areas, including fixed, portable, and truck-mounted devices supporting both stationary and mobile work zones.	Existing	No	lowa DOT District 4 Field Equipment
MC08	Work Zone Management	This service package manages work zones, controlling traffic in areas of the roadway where maintenance, construction, and utility work activities are underway. Traffic conditions are monitored using CCTV cameras and controlled using dynamic message signs (DMS), Highway Advisory Radio (HAR), gates and barriers. Work zone information is coordinated with other groups (e.g., ISP, traffic management, other maintenance and construction centers). Work zone speeds and delays are provided to the motorist prior to the work zones. This service package provides control of field equipment in all maintenance and construction areas, including fixed, portable, and truck-mounted devices supporting both stationary and mobile work zones.	Existing	Νο	Iowa DOT District 4 Offices
MC08	Work Zone Management	This service package manages work zones, controlling traffic in areas of the roadway where maintenance, construction, and utility work activities are underway. Traffic conditions are monitored using CCTV cameras and controlled using dynamic message signs (DMS), Highway Advisory Radio (HAR), gates and barriers. Work zone information is coordinated with other groups (e.g., ISP, traffic management, other maintenance and construction centers). Work zone speeds and delays are provided to the motorist prior to the work zones. This service package provides control of field equipment in all maintenance and construction areas, including fixed, portable, and truck-mounted devices supporting both stationary and mobile work zones.	Existing	No	NDOR Automated Work Zone

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC08	Work Zone Management	This service package manages work zones, controlling traffic in areas of the roadway where maintenance, construction, and utility work activities are underway. Traffic conditions are monitored using CCTV cameras and controlled using dynamic message signs (DMS), Highway Advisory Radio (HAR), gates and barriers. Work zone information is coordinated with other groups (e.g., ISP, traffic management, other maintenance and construction centers). Work zone speeds and delays are provided to the motorist prior to the work zones. This service package provides control of field equipment in all maintenance and construction areas, including fixed, portable, and truck-mounted devices supporting both stationary and mobile work zones.	Existing	No	NDOR DOC
MC08	Work Zone Management	This service package manages work zones, controlling traffic in areas of the roadway where maintenance, construction, and utility work activities are underway. Traffic conditions are monitored using CCTV cameras and controlled using dynamic message signs (DMS), Highway Advisory Radio (HAR), gates and barriers. Work zone information is coordinated with other groups (e.g., ISP, traffic management, other maintenance and construction centers). Work zone speeds and delays are provided to the motorist prior to the work zones. This service package provides control of field equipment in all maintenance and construction areas, including fixed, portable, and truck-mounted devices supporting both stationary and mobile work zones.	Existing	No	NDOR Field Equipment
MC09	Work Zone Safety Monitoring	This service package includes systems that improve work crew safety and reduce collisions between the motoring public and maintenance and construction vehicles. This service package detects vehicle intrusions in work zones and warns crew workers and drivers of imminent encroachment or other potential safety hazards. Crew movements are also monitored so that the crew can be warned of movement beyond the designated safe zone. The service package supports both stationary and mobile work zones. The intrusion detection and alarm systems may be collocated or distributed, allowing systems that detect safety issues far upstream from a work zone (e.g., detection of over dimension vehicles before they enter the work zone)	Planned	Νο	Driver
Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
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MC09	Work Zone Safety Monitoring	This service package includes systems that improve work crew safety and reduce collisions between the motoring public and maintenance and construction vehicles. This service package detects vehicle intrusions in work zones and warns crew workers and drivers of imminent encroachment or other potential safety hazards. Crew movements are also monitored so that the crew can be warned of movement beyond the designated safe zone. The service package supports both stationary and mobile work zones. The intrusion detection and alarm systems may be collocated or distributed, allowing systems that detect safety issues far upstream from a work zone (e.g., detection of over dimension vehicles before they enter the work zone).	Planned	No	lowa DOT Automated Work Zone
MC09	Work Zone Safety Monitoring	This service package includes systems that improve work crew safety and reduce collisions between the motoring public and maintenance and construction vehicles. This service package detects vehicle intrusions in work zones and warns crew workers and drivers of imminent encroachment or other potential safety hazards. Crew movements are also monitored so that the crew can be warned of movement beyond the designated safe zone. The service package supports both stationary and mobile work zones. The intrusion detection and alarm systems may be collocated or distributed, allowing systems that detect safety issues far upstream from a work zone (e.g., detection of over dimension vehicles before they enter the work zone).	Planned	No	Iowa DOT District 4 Field Equipment
MC09	Work Zone Safety Monitoring	This service package includes systems that improve work crew safety and reduce collisions between the motoring public and maintenance and construction vehicles. This service package detects vehicle intrusions in work zones and warns crew workers and drivers of imminent encroachment or other potential safety hazards. Crew movements are also monitored so that the crew can be warned of movement beyond the designated safe zone. The service package supports both stationary and mobile work zones. The intrusion detection and alarm systems may be collocated or distributed, allowing systems that detect safety issues far upstream from a work zone (e.g., detection of over dimension vehicles before they enter the work zone).	Planned	No	Iowa DOT District 4 Offices

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC09	Work Zone Safety Monitoring	This service package includes systems that improve work crew safety and reduce collisions between the motoring public and maintenance and construction vehicles. This service package detects vehicle intrusions in work zones and warns crew workers and drivers of imminent encroachment or other potential safety hazards. Crew movements are also monitored so that the crew can be warned of movement beyond the designated safe zone. The service package supports both stationary and mobile work zones. The intrusion detection and alarm systems may be collocated or distributed, allowing systems that detect safety issues far upstream from a work zone (e.g., detection of over dimension vehicles before they enter the work zone).	Planned	No	lowa DOT Maintenance and Construction Vehicles
MC09	Work Zone Safety Monitoring	This service package includes systems that improve work crew safety and reduce collisions between the motoring public and maintenance and construction vehicles. This service package detects vehicle intrusions in work zones and warns crew workers and drivers of imminent encroachment or other potential safety hazards. Crew movements are also monitored so that the crew can be warned of movement beyond the designated safe zone. The service package supports both stationary and mobile work zones. The intrusion detection and alarm systems may be collocated or distributed, allowing systems that detect safety issues far upstream from a work zone (e.g., detection of over dimension vehicles before they enter the work zone).	Planned	No	NDOR Automated Work Zone
MC09	Work Zone Safety Monitoring	This service package includes systems that improve work crew safety and reduce collisions between the motoring public and maintenance and construction vehicles. This service package detects vehicle intrusions in work zones and warns crew workers and drivers of imminent encroachment or other potential safety hazards. Crew movements are also monitored so that the crew can be warned of movement beyond the designated safe zone. The service package supports both stationary and mobile work zones. The intrusion detection and alarm systems may be collocated or distributed, allowing systems that detect safety issues far upstream from a work zone (e.g., detection of over dimension vehicles before they enter the work zone).	Planned	No	NDOR DOC

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC09	Work Zone Safety Monitoring	This service package includes systems that improve work crew safety and reduce collisions between the motoring public and maintenance and construction vehicles. This service package detects vehicle intrusions in work zones and warns crew workers and drivers of imminent encroachment or other potential safety hazards. Crew movements are also monitored so that the crew can be warned of movement beyond the designated safe zone. The service package supports both stationary and mobile work zones. The intrusion detection and alarm systems may be collocated or distributed, allowing systems that detect safety issues far upstream from a work zone (e.g., detection of over dimension vehicles before they enter the work zone).	Planned	No	NDOR Field Equipment
MC09	Work Zone Safety Monitoring	This service package includes systems that improve work crew safety and reduce collisions between the motoring public and maintenance and construction vehicles. This service package detects vehicle intrusions in work zones and warns crew workers and drivers of imminent encroachment or other potential safety hazards. Crew movements are also monitored so that the crew can be warned of movement beyond the designated safe zone. The service package supports both stationary and mobile work zones. The intrusion detection and alarm systems may be collocated or distributed, allowing systems that detect safety issues far upstream from a work zone (e.g., detection of over dimension vehicles before they enter the work zone).	Planned	No	Traffic
MC10	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.	Planned	No	City of Council Bluffs TOC
MC10	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.	Planned	No	City of Omaha TOC
MC10	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.	Planned	No	lowa DOT CARS
MC10	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.	Planned	No	Iowa DOT District 4 Offices

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC10	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.	Planned	No	Local Law Enforcement Dispatch and E911 Center
MC10	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.	Planned	No	Media TV, Radio and News Outlets
MC10	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.	Planned	No	Metro Dispatch Center
MC10	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.	Planned	No	NDOR DOC
MC10	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.	Planned	No	NDOR HCRS
MC10	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.	Planned	No	NE State Patrol Communications Center (Omaha)
MC11	Environmental Probe Surveillance	This service package 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. It includes the on-board vehicle systems that collect and report environmental probe data, the infrastructure equipment that collects the probe data and the centers that aggregate and share the collected probe data.	Existing	No	Iowa DOT CARS

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC11	Environmental Probe Surveillance	This service package 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. It includes the on-board vehicle systems that collect and report environmental probe data, the infrastructure equipment that collects the probe data and the centers that aggregate and share the collected probe data.	Existing	Νο	Iowa DOT District 4 Offices
MC11	Environmental Probe Surveillance	This service package 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. It includes the on-board vehicle systems that collect and report environmental probe data, the infrastructure equipment that collects the probe data and the centers that aggregate and share the collected probe data.	Existing	Νο	lowa DOT Maintenance and Construction Vehicles

Appendix B. Functional Requirements Details

Each ITS system operated by the stakeholders must perform certain functions to effectively deliver the ITS services for the region. The primary functions that each system needs to perform are broadly defined in the Omaha-Council Bluffs Regional ITS Architecture architecture. The high-level requirements are grouped into functional areas that identify requirements associated with each selected ITS service.

Table 12: Functional Requirements Details

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Adjacent Region TOC Operators	Other Traffic Management		No				No
Adjacent Region TOC Operators	Traffic Management		No				No
City of Bellevue PWD Field Equipment	Roadway	Roadway Basic Surveillance	No				No
City of Bellevue PWD Field Equipment	Roadway	Roadway Equipment Coordination	No				No
City of Bellevue PWD Field Equipment	Roadway	Roadway Signal Priority	No				No
City of Bellevue PWD Signal Equipment	Roadway	Roadway Basic Surveillance	No				No
City of Bellevue PWD Signal Equipment	Roadway	Roadway Equipment Coordination	No				No
City of Bellevue PWD Signal Equipment	Roadway	Roadway Signal Controls	No				No
City of Bellevue PWD Traffic Detection Stations	Roadway	Roadway Basic Surveillance	No				No
City of Bellevue PWD Traffic Detection Stations	Roadway	Roadway Equipment Coordination	No				No
City of Council Bluffs PWD CCTV	Roadway	Roadway Basic Surveillance	No	4	The field element shall return sensor and CCTV system operational status to the controlling center.	Existing	No
City of Council Bluffs PWD CCTV	Roadway	Roadway Basic Surveillance	No	5	The field element shall return sensor and CCTV system fault data to the controlling center for repair.	Existing	No
City of Council Bluffs PWD Field Equipment	Roadway	Roadway Basic Surveillance	No				No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
City of Council Bluffs PWD Field Equipment	Roadway	Roadway Equipment Coordination	No				No
City of Council Bluffs PWD Field Equipment	Roadway	Roadway Signal Controls	No				No
City of Council Bluffs PWD Field Equipment	Roadway	Roadway Signal Preemption	No				No
City of Council Bluffs PWD Field Equipment	Roadway	Roadway Signal Priority	No				No
City of Council Bluffs PWD Traffic Detection Devices	Roadway	Roadway Basic Surveillance	No	1	The field element shall collect, process, digitize, and send traffic sensor data (speed, volume, and occupancy) to the center for further analysis and storage, under center control.	Planned	No
City of Council Bluffs PWD Traffic Detection Devices	Roadway	Roadway Basic Surveillance	No	2	The field element shall collect, process, and send traffic images to the center for further analysis and distribution.	Planned	No
City of Council Bluffs PWD Traffic Detection Devices	Roadway	Roadway Equipment Coordination	No				No
City of Council Bluffs PWD Traffic Signal Equipment	Roadway	Roadway Signal Controls	No	1	The field element shall control traffic signals under center control.	Existing	No
City of Council Bluffs PWD Traffic Signal Equipment	Roadway	Roadway Signal Controls	No	4	The field element shall report the current signal control information to the center.	Existing	No
City of Council Bluffs PWD Traffic Signal Equipment	Roadway	Roadway Signal Controls	No	5	The field element shall report current preemption status to the center.	Existing	No
City of Council Bluffs PWD Traffic Signal Equipment	Roadway	Roadway Signal Controls	No	6	The field element shall return traffic signal controller operational status to the center.	Existing	No
City of Council Bluffs PWD Traffic Signal Equipment	Roadway	Roadway Signal Controls	No	7	The field element shall return traffic signal controller fault data to the center.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
City of Council Bluffs PWD Traffic Signal Equipment	Roadway	Roadway Signal Preemption	No				No
City of Council Bluffs PWD Traffic Signal Equipment	Roadway	Roadway Signal Priority	No				No
City of Council Bluffs TOC	Traffic Management	Collect Traffic Surveillance	No				No
City of Council Bluffs TOC	Traffic Management	TMC Signal Control	No				No
City of Council Bluffs Website and Social Media	Information Service Provider	Basic Information Broadcast	No	1	The center shall disseminate traffic and highway condition information to travelers, including incident information, detours and road closures, event information, recommended routes, and current speeds on specific routes.	Existing	No
City of Council Bluffs Website and Social Media	Information Service Provider	Basic Information Broadcast	No	2	The center shall disseminate maintenance and construction information to travelers, including scheduled maintenance and construction work activities and work zone activities.	Existing	No
City of Council Bluffs Website and Social Media	Information Service Provider	Basic Information Broadcast	No	3	The center shall disseminate transit routes and schedules, transit transfer options, transit fares, and real-time schedule adherence information to travelers.	Existing	No
City of Omaha PWD Detour Signal System	Roadway	Roadway Signal Controls	No				No
City of Omaha PWD Field Equipment	Roadway	Field Management Stations Operation	No	1	The field management station shall accept configuration information from the center.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Field Management Stations Operation	No	2	The filed management station shall pass data provided by the center to local field devices and report data from the field devices back to the center.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Basic Surveillance	No	1	The field element shall collect, process, digitize, and send traffic sensor data (speed, volume, and occupancy) to the center for further analysis and storage, under center control.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
City of Omaha PWD Field Equipment	Roadway	Roadway Basic Surveillance	No	2	The field element shall collect, process, and send traffic images to the center for further analysis and distribution.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Basic Surveillance	No	4	The field element shall return sensor and CCTV system operational status to the controlling center.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Basic Surveillance	No	5	The field element shall return sensor and CCTV system fault data to the controlling center for repair.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Data Collection	No	1	The field element shall collect traffic, road, and environmental conditions information.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Data Collection	No	2	The field element shall include the sensors and supporting roadside devices that sense, collect, and send traffic, road, and environmental conditions information to a center for archival.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Data Collection	No	3	The field element shall collect sensor status and sensor faults from roadside equipment and send it along with the recorded data to a center for archival.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Equipment Coordination	No	1	The field element shall include sensors that provide data and status information to other field element devices, without center control.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Equipment Coordination	No	2	The field element shall include sensors that receive configuration data from other field element devices, without center control.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Equipment Coordination	No	3	The field element shall include devices that provide data and status information to other field element devices without center control.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Reversible Lanes	No	2	The field element shall include automated reversible lane equipment and driver information systems (such as lane control signals) that control traffic in reversible lanes on surface streets, under center control.	Planned	No
City of Omaha PWD Field Equipment	Roadway	Roadway Reversible Lanes	No	3	The field element shall include automated reversible lane equipment and driver information systems (such as lane control signals) that control traffic in reversible lanes on freeways, under center control.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
City of Omaha PWD Field Equipment	Roadway	Roadway Reversible Lanes	No	4	The field element shall provide operational status for the reversible lane field equipment to the center.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Reversible Lanes	No	5	The field element shall provide fault data for the reversible lane field equipment to the center.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Signal Controls	No	1	The field element shall control traffic signals under center control.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Signal Controls	No	2	The field element shall respond to pedestrian crossing requests by accommodating the pedestrian crossing.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Signal Controls	No	3	The field element shall provide the capability to notify the traffic management center of pedestrian calls and pedestrian accommodations.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Signal Controls	No	4	The field element shall report the current signal control information to the center.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Signal Controls	No	5	The field element shall report current preemption status to the center.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Signal Controls	No	6	The field element shall return traffic signal controller operational status to the center.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Signal Controls	No	7	The field element shall return traffic signal controller fault data to the center.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Signal Controls	No	8	The field element shall report current transit priority status to the center.	Planned	No
City of Omaha PWD Field Equipment	Roadway	Roadway Signal Preemption	No	1	The field element shall respond to signal preemption requests from emergency vehicles.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Signal Priority	No	1	The field element shall respond to signal priority requests from transit vehicles.	Planned	No
City of Omaha PWD Field Equipment	Roadway	Roadway Speed Monitoring and Warning	No	1	The field element shall include sensors to detect vehicle speeds, under traffic or maintenance center control.	Existing	No
City of Omaha PWD Field Equipment	Roadway	Roadway Speed Monitoring and Warning	No	2	The field element shall include sensors to detect vehicle speeds, under enforcement agency control.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
City of Omaha PWD Field Equipment	Roadway	Roadway Speed Monitoring and Warning	No	8	The field element shall return fault data for the vehicle speed sensors to the controlling center for repair.	Existing	No
City of Omaha PWD Reversible Lane Use Signs	Roadway	Roadway Reversible Lanes	No				No
City of Omaha PWD Traffic Detection Stations	Roadway	Roadway Basic Surveillance	No				No
City of Omaha PWD Traffic Detection Stations	Roadway	Roadway Equipment Coordination	No				No
City of Omaha PWD Traffic Detection Stations	Roadway	Roadway Signal Controls	No				No
City of Omaha PWD Traffic Detection Stations	Roadway	Roadway Signal Preemption	No				No
City of Omaha PWD Traffic Detection Stations	Roadway	Roadway Signal Priority	No				No
City of Omaha PWD Traffic Signal Equipment	Roadway	Roadway Basic Surveillance	No				No
City of Omaha PWD Traffic Signal Equipment	Roadway	Roadway Equipment Coordination	No				No
City of Omaha PWD Traffic Signal Equipment	Roadway	Roadway Signal Controls	No				No
City of Omaha Smart Parking Meters	Parking Management	Parking Electronic Payment	No				No
City of Omaha TOC	Archived Data Management		No				No
City of Omaha TOC	Traffic Management	Collect Traffic Surveillance	No				No
City of Omaha TOC	Traffic Management	TMC Signal Control	No				No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
City of Omaha Website and Social Media	Information Service Provider		No				No
County Emergency Operations Centers	Emergency Management	Emergency Response Management	No				No
County Emergency Operations Centers	Other Emergency Management		No				No
County of Pottawattamie 911 Center	Emergency Management	Emergency Call-Taking	No	1	The center shall support the interface to the Emergency Telecommunications System (e.g. 911 or 7-digit call routing) to receive emergency notification information and provide it to the emergency system operator.	Existing	No
County of Pottawattamie 911 Center	Emergency Management	Emergency Call-Taking	No	2	The center shall receive emergency call information from 911 services and present the possible incident information to the emergency system operator.	Existing	No
County of Pottawattamie 911 Center	Emergency Management	Emergency Call-Taking	No	4	The center shall receive emergency call information from mayday service providers and present the possible incident information to the emergency system operator.	Existing	No
County of Pottawattamie 911 Center	Emergency Management	Emergency Call-Taking	No	5	The center shall receive emergency notification information from other public safety agencies and present the possible incident information to the emergency system operator.	Existing	No
County of Pottawattamie 911 Center	Emergency Management	Emergency Call-Taking	No	6	The center shall receive emergency notification information from public transit systems and present the possible incident information to the emergency system operator.	Existing	No
County of Pottawattamie 911 Center	Emergency Management	Emergency Call-Taking	No	8	The center shall send a request for remote control of CCTV systems from a traffic management center in order to verify the reported incident.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
County of Pottawattamie 911 Center	Emergency Management	Emergency Commercial Vehicle Response	No	1	The center shall receive emergency notification information from commercial vehicles, commercial vehicle check stations, or commercial fleet operators and present the possible incident information to the emergency system operator. This may include detection of non-permitted transport of security sensitive hazmat, hazardous cargo spills, etc.	Existing	No
County of Pottawattamie 911 Center	Emergency Management	Emergency Dispatch	No	1	The center shall dispatch emergency vehicles to respond to verified emergencies under center personnel control.	Existing	No
County of Pottawattamie 911 Center	Emergency Management	Emergency Dispatch	No	2	The center shall store the current status of all emergency vehicles available for dispatch and those that have been dispatched.	Existing	No
County of Pottawattamie 911 Center	Emergency Management	Emergency Dispatch	No	3	The center shall relay location and incident details to the responding vehicles.	Existing	No
County of Pottawattamie 911 Center	Emergency Management	Emergency Dispatch	No	4	The center shall track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.	Existing	No
County of Pottawattamie 911 Center	Emergency Management	Emergency Dispatch	No	7	The center shall receive traffic images to support dispatch of emergency vehicles.	Planned	No
County of Pottawattamie 911 Center	Emergency Management	Emergency Dispatch	No	8	The center shall provide the capability to request remote control of traffic surveillance devices	Planned	No
County of Pottawattamie 911 Center	Emergency Management	Emergency Dispatch	No	9	The center shall coordinate response to incidents with other Emergency Management centers to ensure appropriate resources are dispatched and utilized.	Planned	No
County of Pottawattamie 911 Center	Emergency Telecommunications System		No				No
County of Pottawattamie EOC	Emergency Management	Emergency Evacuation Support	No	1	The center shall manage inter-agency coordination of evacuation operations, from initial planning through the evacuation process and reentry.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
County of Pottawattamie EOC	Emergency Management	Emergency Evacuation Support	No	7	The center shall request traffic management agencies to implement special traffic control strategies and to control evacuation traffic, including traffic on local streets and arterials as well as the major evacuation routes.	Planned	No
County of Pottawattamie EOC	Emergency Management	Emergency Evacuation Support	No	8	The center shall provide traveler information systems with evacuation guidance including basic information to assist potential evacuees in determining whether evacuation is necessary and when it is safe to return.	Planned	No
County of Pottawattamie EOC	Emergency Management	Emergency Response Management	No	1	The center shall provide strategic emergency response capabilities provided by an Emergency Operations Center for large-scale incidents and disasters.	Existing	No
County of Pottawattamie EOC	Emergency Management	Emergency Response Management	No	2	The center shall manage coordinated inter- agency responses to and recovery from large-scale emergencies. Such agencies include traffic management, transit, maintenance and construction management, rail operations, and other emergency management agencies.	Existing	No
County of Pottawattamie EOC	Emergency Management	Emergency Response Management	No	3	The center shall provide the capability to implement response plans and track progress through the incident by exchanging incident information and response status with allied agencies.	Existing	No
County of Pottawattamie EOC	Emergency Management	Emergency Response Management	No	4	The center shall develop, coordinate with other agencies, and store emergency response plans.	Existing	No
County of Pottawattamie EOC	Emergency Management	Emergency Response Management	No	5	The center shall track the availability of resources and coordinate resource sharing with allied agency centers including traffic, maintenance, or other emergency centers.	Planned	No
County of Pottawattamie EOC	Emergency Management	Emergency Response Management	No	8	The center shall support remote control of field equipment normally under control of the traffic management center including traffic signals, dynamic message signs, gates, and barriers.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
County of Pottawattamie EOC	Emergency Management	Emergency Response Management	No	9	The center shall provide the capability to remotely control and monitor CCTV systems normally operated by a traffic management center.	Planned	No
County of Pottawattamie EOC	Emergency Management	Emergency Response Management	No	12	The center shall provide information to the media concerning the status of an emergency response.	Planned	No
County of Pottawattamie EOC	Emergency Management	Incident Command	No	1	The center shall provide tactical decision support, resource coordination, and communications integration for Incident Commands that are established by first responders to support local management of an incident.	Existing	No
County of Pottawattamie EOC	Emergency Management	Incident Command	No	2	The center shall provide incident command communications with public safety, emergency management, transportation, and other allied response agency centers.	Existing	No
County of Pottawattamie EOC	Emergency Management	Incident Command	No	4	The center shall share incident command information with other public safety agencies including resource deployment status, hazardous material information, rail incident information, evacuation advice as well as traffic, road, and weather conditions.	Planned	No
Driver	Driver		No				No
Enforcement Agencies	Enforcement Agency		No				No
Financial Institution	Financial Institution		No				No
Fire and Rescue Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	No	1	The emergency vehicle, including roadway service patrols, shall track its current location.	Planned	No
Fire and Rescue Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	No	2	The emergency vehicle, including roadway service patrols, shall send the vehicle's location and operational data to the center for emergency management and dispatch.	Planned	No
Fire and Rescue Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	No	3	The emergency vehicle, including roadway service patrols, shall receive incident details and a suggested route when dispatched to a scene.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Fire and Rescue Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	No	4	The emergency vehicle shall send the current en route status (including estimated time of arrival) and requests for emergency dispatch updates.	Planned	No
Fire and Rescue Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	No	5	The emergency vehicle shall send requests to traffic signal control equipment at the roadside to preempt the signal.	Planned	No
Fire and Rescue Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	No	6	The emergency vehicle shall provide the personnel on-board with dispatch information, including incident type and location, and forward an acknowledgment from personnel to the center that the vehicle is on its way to the incident scene.	Planned	No
Fire and Rescue Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	No	7	The emergency vehicle shall send patient status information to the care facility along with a request for further information.	Planned	No
Fire and Rescue Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	No	8	The emergency vehicle shall forward care facility status information to emergency vehicle personnel, including the location, specialized services, quality of care, waiting time, number of rooms available, and emergency room status of hospitals or emergency care providers.	Planned	No
Fire and Rescue Emergency Vehicles	Emergency Vehicle	On-board EV Incident Management Communication	No	1	The emergency vehicle shall receive dispatch instructions sufficient to enable emergency personnel in the field to implement an effective incident response. It includes local traffic, road, and weather conditions, hazardous material information, and the current status of resources that have been allocated to an incident.	Planned	No
Fire and Rescue Emergency Vehicles	Emergency Vehicle	On-board EV Incident Management Communication	No	2	The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the incident site such as the extent of injuries, identification of vehicles and people involved, hazardous material, etc.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Fire and Rescue Emergency Vehicles	Emergency Vehicle	On-board EV Incident Management Communication	No	3	The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the current incident response status such as the identification of the resources on site, site management strategies in effect, and current clearance status.	Planned	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Call-Taking	No	1	The center shall support the interface to the Emergency Telecommunications System (e.g. 911 or 7-digit call routing) to receive emergency notification information and provide it to the emergency system operator.	Existing	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Call-Taking	No	2	The center shall receive emergency call information from 911 services and present the possible incident information to the emergency system operator.	Existing	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Call-Taking	No	4	The center shall receive emergency call information from mayday service providers and present the possible incident information to the emergency system operator.	Existing	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Call-Taking	No	5	The center shall receive emergency notification information from other public safety agencies and present the possible incident information to the emergency system operator.	Existing	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Call-Taking	No	8	The center shall send a request for remote control of CCTV systems from a traffic management center in order to verify the reported incident.	Planned	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Call-Taking	No	9	The center shall forward the verified emergency information to the responding agency based on the location and nature of the emergency.	Planned	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Dispatch	No	1	The center shall dispatch emergency vehicles to respond to verified emergencies under center personnel control.	Existing	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Dispatch	No	2	The center shall store the current status of all emergency vehicles available for dispatch and those that have been dispatched.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Dispatch	No	3	The center shall relay location and incident details to the responding vehicles.	Existing	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Dispatch	No	4	The center shall track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.	Existing	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Dispatch	No	5	The center shall store and maintain the emergency service responses in an action log.	Existing	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Dispatch	No	7	The center shall receive traffic images to support dispatch of emergency vehicles.	Planned	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Dispatch	No	8	The center shall provide the capability to request remote control of traffic surveillance devices	Planned	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Dispatch	No	9	The center shall coordinate response to incidents with other Emergency Management centers to ensure appropriate resources are dispatched and utilized.	Planned	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Early Warning System	No	1	The center shall monitor information from Alerting and Advisory Systems such as the Information Sharing and Analysis Centers (ISACs), the National Infrastructure Protection Center (NIPC), the Homeland Security Advisory System (HSAS), etc. The information may include assessments (general incident and vulnerability awareness information), advisories (identification of threats or recommendations to increase preparedness levels), or alerts (information on imminent or in-progress emergencies).	Existing	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Early Warning System	No	2	The center shall provide the capability to correlate alerts and advisories, incident information, and security sensor and surveillance data.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Early Warning System	No	3	The center shall broadcast wide-area alerts and advisories to traffic management centers for emergency situations such as severe weather events, civil emergencies, child abduction (AMBER alert system), military activities, and other situations that pose a threat to life and property.	Existing	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Early Warning System	No	6	The center shall broadcast wide-area alerts and advisories to traveler information service providers for emergency situations such as severe weather events, civil emergencies, child abduction (AMBER alert system), military activities, and other situations that pose a threat to life and property.	Existing	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Early Warning System	No	8	The center shall broadcast wide-area alerts and advisories to other emergency management centers for emergency situations such as severe weather events, civil emergencies, child abduction (AMBER alert system), military activities, and other situations that pose a threat to life and property.	Existing	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Early Warning System	No	10	The center shall process status information from each of the centers that have been sent the wide-area alert.	Existing	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Response Management	No	9	The center shall provide the capability to remotely control and monitor CCTV systems normally operated by a traffic management center.	Planned	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Response Management	No	17	The center shall provide the capability to communicate information about emergency situations to local population through the Emergency Telecommunications System.	Existing	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Routing	No	2	The center shall receive information on the location and status of traffic control equipment and work zones along potential emergency routes.	Planned	No
IA State Patrol Communications Center (Atlantic)	Emergency Management	Emergency Routing	No	4	The center shall receive asset restriction information to support the dispatching of appropriate emergency resources.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
IA State Patrol Communications Center (Atlantic)	Emergency Telecommunications System		No				No
IA State Patrol Communications Center (Des Moines)	Emergency Management	Emergency Early Warning System	No	2	The center shall provide the capability to correlate alerts and advisories, incident information, and security sensor and surveillance data.	Existing	No
IA State Patrol Communications Center (Des Moines)	Emergency Management	Emergency Early Warning System	No	3	The center shall broadcast wide-area alerts and advisories to traffic management centers for emergency situations such as severe weather events, civil emergencies, child abduction (AMBER alert system), military activities, and other situations that pose a threat to life and property.	Existing	No
IA State Patrol Communications Center (Des Moines)	Emergency Management	Emergency Early Warning System	No	6	The center shall broadcast wide-area alerts and advisories to traveler information service providers for emergency situations such as severe weather events, civil emergencies, child abduction (AMBER alert system), military activities, and other situations that pose a threat to life and property.	Existing	No
IA State Patrol Communications Center (Des Moines)	Emergency Telecommunications System		No				No
IA State Patrol Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	No	1	The emergency vehicle, including roadway service patrols, shall track its current location.	Planned	No
IA State Patrol Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	No	2	The emergency vehicle, including roadway service patrols, shall send the vehicle's location and operational data to the center for emergency management and dispatch.	Planned	No
IA State Patrol Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	No	3	The emergency vehicle, including roadway service patrols, shall receive incident details and a suggested route when dispatched to a scene.	Planned	No
IA State Patrol Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	No	4	The emergency vehicle shall send the current en route status (including estimated time of arrival) and requests for emergency dispatch updates.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
IA State Patrol Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	No	6	The emergency vehicle shall provide the personnel on-board with dispatch information, including incident type and location, and forward an acknowledgment from personnel to the center that the vehicle is on its way to the incident scene.	Planned	No
IA State Patrol Emergency Vehicles	Emergency Vehicle	On-board EV Incident Management Communication	No	1	The emergency vehicle shall receive dispatch instructions sufficient to enable emergency personnel in the field to implement an effective incident response. It includes local traffic, road, and weather conditions, hazardous material information, and the current status of resources that have been allocated to an incident.	Planned	No
IA State Patrol Emergency Vehicles	Emergency Vehicle	On-board EV Incident Management Communication	No	2	The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the incident site such as the extent of injuries, identification of vehicles and people involved, hazardous material, etc.	Planned	No
IA State Patrol Emergency Vehicles	Emergency Vehicle	On-board EV Incident Management Communication	No	3	The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the current incident response status such as the identification of the resources on site, site management strategies in effect, and current clearance status.	Planned	No
IA State Patrol Emergency Vehicles - AVL	Emergency Vehicle	On-board EV En Route Support	No	1	The emergency vehicle, including roadway service patrols, shall track its current location.	Planned	No
IA State Patrol Emergency Vehicles - AVL	Emergency Vehicle	On-board EV En Route Support	No	2	The emergency vehicle, including roadway service patrols, shall send the vehicle's location and operational data to the center for emergency management and dispatch.	Planned	No
IA State Patrol Emergency Vehicles - MDTs	Emergency Vehicle	On-board EV En Route Support	No	3	The emergency vehicle, including roadway service patrols, shall receive incident details and a suggested route when dispatched to a scene.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
IA State Patrol Emergency Vehicles - MDTs	Emergency Vehicle	On-board EV En Route Support	No	4	The emergency vehicle shall send the current en route status (including estimated time of arrival) and requests for emergency dispatch updates.	Existing	No
IA State Patrol Emergency Vehicles - MDTs	Emergency Vehicle	On-board EV En Route Support	No	6	The emergency vehicle shall provide the personnel on-board with dispatch information, including incident type and location, and forward an acknowledgment from personnel to the center that the vehicle is on its way to the incident scene.	Existing	No
IA State Patrol Emergency Vehicles - MDTs	Emergency Vehicle	On-board EV Incident Management Communication	No	1	The emergency vehicle shall receive dispatch instructions sufficient to enable emergency personnel in the field to implement an effective incident response. It includes local traffic, road, and weather conditions, hazardous material information, and the current status of resources that have been allocated to an incident.	Existing	No
IA State Patrol Emergency Vehicles - MDTs	Emergency Vehicle	On-board EV Incident Management Communication	No	2	The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the incident site such as the extent of injuries, identification of vehicles and people involved, hazardous material, etc.	Existing	No
IA State Patrol Emergency Vehicles - Video Cameras	Emergency Vehicle	On-board EV Incident Management Communication	No	2	The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the incident site such as the extent of injuries, identification of vehicles and people involved, hazardous material, etc.	Planned	No
lowa DOT 511 System	Information Service Provider	Basic Information Broadcast	No	1	The center shall disseminate traffic and highway condition information to travelers, including incident information, detours and road closures, event information, recommended routes, and current speeds on specific routes.	Existing	No
lowa DOT 511 System	Information Service Provider	Basic Information Broadcast	No	2	The center shall disseminate maintenance and construction information to travelers, including scheduled maintenance and construction work activities and work zone activities.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
lowa DOT 511 System	Information Service Provider	Basic Information Broadcast	No	6	The center shall disseminate weather information to travelers.	Existing	No
lowa DOT 511 System	Information Service Provider	Basic Information Broadcast	No	7	The center shall disseminate event information to travelers.	Planned	No
lowa DOT 511 System	Information Service Provider	Interactive Infrastructure Information	No	10	The center shall provide all traveler information based on the traveler's current location or a specific location identified by the traveler, and filter or customize the provided information accordingly.	Existing	No
lowa DOT 511 System	Information Service Provider	Interactive Infrastructure Information	No	14	The center shall provide the capability to exchange information with another traveler information service provider current or predicted data for road links that are outside the area served by the local supplier.	Planned	No
lowa DOT 511 System	Information Service Provider	ISP Emergency Traveler Information	No	3	The center shall disseminate wide-area alert information to the traveler interface systems, including major emergencies such as a natural or man-made disaster, civil emergency, child abductions, severe weather watches and warnings, military activities, and law enforcement warnings.	Existing	No
lowa DOT 511 System	Information Service Provider	Traveler Telephone Information	No	1	The center shall provide the capability to process voice-formatted requests for traveler information from a traveler telephone information system, and return the information in the requested format.	Existing	No
Iowa DOT 511 System	Information Service Provider	Traveler Telephone Information	No	3	The center shall provide the capability to process traveler information requests from a traveler telephone information system.	Existing	No
Iowa DOT 511 System	Information Service Provider	Traveler Telephone Information	No	4	The center shall provide information on traffic conditions in the requested voice format and for the requested location.	Existing	No
Iowa DOT 511 System	Information Service Provider	Traveler Telephone Information	No	5	The center shall provide work zone and roadway maintenance information in the requested voice format and for the requested location.	Planned	No
Iowa DOT 511 System	Information Service Provider	Traveler Telephone Information	No	7	The center shall provide weather and event information in the requested voice format and for the requested location.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
lowa DOT 511 System	Information Service Provider	Traveler Telephone Information	No	12	The center shall receive and forward region- specific wide-area alert and advisory information to the traveler telephone information system, including major emergencies such as a natural or man-made disaster, civil emergency, child abductions, severe weather watches and warnings, military activities, and law enforcement warnings.	Planned	No
Iowa DOT 511 System	Telecommunications System for Traveler Information		No				No
lowa DOT ATRs	Roadway	Roadway Data Collection	No	1	The field element shall collect traffic, road, and environmental conditions information.	Existing	No
lowa DOT ATRs	Roadway	Roadway Data Collection	No	2	The field element shall include the sensors and supporting roadside devices that sense, collect, and send traffic, road, and environmental conditions information to a center for archival.	Existing	No
Iowa DOT ATRs	Roadway	Roadway Data Collection	No	3	The field element shall collect sensor status and sensor faults from roadside equipment and send it along with the recorded data to a center for archival.	Existing	No
Iowa DOT Automated Notification System	Information Service Provider	Basic Information Broadcast	No				No
Iowa DOT Automated Notification System	Traffic Management		No				No
Iowa DOT Automated Work Zone	Roadway	Roadway Work Zone Traffic Control	No				No
Iowa DOT Automatic Gate Systems	Roadway	Field Barrier System Control	No	1	The field element shall activate barrier systems for transportation facilities and infrastructure under center control. Barrier systems include automated or remotely controlled gates, barriers and other systems that manage entry to roadways.	Planned	No
Iowa DOT Automatic Gate Systems	Roadway	Field Barrier System Control	No	2	The field element shall return barrier system operational status to the controlling center.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Iowa DOT Automatic Gate Systems	Roadway	Field Barrier System Control	No	3	The field element shall return barrier system fault data to the maintenance center for repair.	Planned	No
lowa DOT CARS	Archived Data Management	ITS Data Repository	No	1	The center shall collect data to be archived from one or more data sources.	Existing	No
lowa DOT CARS	Archived Data Management	ITS Data Repository	No	3	The center shall store the archived data in a focused repository that is suited to a particular set of ITS data users.	Existing	No
lowa DOT CARS	Information Service Provider	Basic Information Broadcast	No				No
Iowa DOT CARS	Information Service Provider	ISP Operational Data Repository	No	1	The center shall select real-time information on the state of the regional transportation system including current traffic and road conditions, weather conditions, transit information, parking information, special event and incident information.	Existing	No
Iowa DOT CARS	Information Service Provider	ISP Operational Data Repository	No	2	The center shall distribute real-time transportation operations data to centers in the region. The data may be broadcast or customized based on the receiving center's specified requests or subscriptions.	Planned	No
Iowa DOT CARS	Information Service Provider	ISP Operational Data Repository	No	3	The center shall support the capability for the system operator to monitor and control the operational data repository and information distribution service.	Existing	No
Iowa DOT CARS	Information Service Provider	ISP Traveler Data Collection	No	1	The center shall collect, process, and store traffic and highway condition information, including incident information, detours and road closures, event information, recommended routes, and current speeds on specific routes.	Existing	No
Iowa DOT CARS	Information Service Provider	ISP Traveler Data Collection	No	2	The center shall collect, process, and store maintenance and construction information, including scheduled maintenance and construction work activities and work zone activities.	Existing	No
Iowa DOT CARS	Information Service Provider	ISP Traveler Data Collection	No	6	The center shall collect, process, and store current and forecast road conditions and surface weather conditions.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Iowa DOT CARS	Information Service Provider	Traveler Telephone Information	No				No
Iowa DOT CCTV	Roadway	Roadway Basic Surveillance	No	2	The field element shall collect, process, and send traffic images to the center for further analysis and distribution.	Planned	No
Iowa DOT CCTV	Roadway	Roadway Basic Surveillance	No	4	The field element shall return sensor and CCTV system operational status to the controlling center.	Planned	No
Iowa DOT CCTV	Roadway	Roadway Basic Surveillance	No	5	The field element shall return sensor and CCTV system fault data to the controlling center for repair.	Planned	No
Iowa DOT CCTV	Roadway	Roadway Field Device Monitoring	No	1	The field element shall monitor the operational status (state of the device, configuration, and fault data) of connected sensors (such as traffic, infrastructure, environmental, security, speed) and devices (such as highway advisory radio, dynamic message signs, automated roadway treatment systems, barrier and safeguard systems, cameras, traffic signals, ramp meters, short range communications equipment, security surveillance equipment).	Planned	No
Iowa DOT CCTV	Roadway	Roadway Field Device Monitoring	No	2	The field element shall send operational status of connected field equipment to the maintenance center.	Planned	No
Iowa DOT CCTV	Roadway	Roadway Field Device Monitoring	No	3	The field element shall send collected fault data to the maintenance center for repair.	Planned	No
Iowa DOT CCTV	Roadway	Roadway Incident Detection	No	1	The field element shall collect, process, and send traffic images to the center for further analysis and distribution.	Planned	No
Iowa DOT CCTV	Roadway	Roadway Incident Detection	No	2	The field element shall remotely process video data and provide an indication of potential incidents to the traffic management center.	Planned	No
Iowa DOT CCTV	Roadway	Roadway Incident Detection	No	3	The field element's video devices shall be remotely controlled by a traffic management center.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Iowa DOT CCTV	Roadway	Roadway Incident Detection	No	4	The field element shall provide operational status and fault data for the incident detection devices to the traffic management center.	Planned	No
Iowa DOT CCTV	Roadway	Roadway Work Zone Traffic Control	No	1	The field element shall collect, process, and send work zone images to the center for further analysis and distribution, under center control.	Planned	No
Iowa DOT CCTV	Roadway	Roadway Work Zone Traffic Control	No	5	The field element shall provide operational status for the surveillance (e.g. CCTV), driver information systems, and gates/barriers in work zones to the maintenance center.	Planned	No
Iowa DOT CCTV	Roadway	Roadway Work Zone Traffic Control	No	6	The field element shall provide fault data for the surveillance (e.g. CCTV), driver information systems, and gates/barriers in work zones to the maintenance center for repair.	Planned	No
Iowa DOT Central Headquarters Field Equipment	Roadway	Roadway Basic Surveillance	No				No
Iowa DOT Central Headquarters Field Equipment	Roadway	Roadway Data Collection	No				No
Iowa DOT Central Headquarters Field Equipment	Roadway	Roadway Environmental Monitoring	No				No
Iowa DOT Central Headquarters Field Equipment	Roadway	Roadway Equipment Coordination	No				No
Iowa DOT Central Headquarters Field Equipment	Roadway	Roadway Traffic Information Dissemination	No				No
lowa DOT Central Headquarters Office	Archived Data Management	Traffic and Roadside Data Archival	No				No
Iowa DOT Central Headquarters Office	Maintenance and Construction Management		No				No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Iowa DOT Central Headquarters Office	Traffic Management	TMC Traffic Information Dissemination	No	1	The center shall remotely control dynamic messages signs for dissemination of traffic and other information to drivers.	Existing	No
Iowa DOT Central Headquarters Office	Traffic Management	TMC Traffic Information Dissemination	No	3	The center shall collect operational status for the driver information systems equipment (DMS, HAR, etc.).	Existing	No
Iowa DOT Central Headquarters Office	Traffic Management	TMC Traffic Information Dissemination	No	4	The center shall collect fault data for the driver information systems equipment (DMS, HAR, etc.) for repair.	Existing	No
Iowa DOT Detection Stations	Roadway	Roadway Basic Surveillance	No				No
Iowa DOT Detection Stations	Roadway	Roadway Equipment Coordination	No				No
lowa DOT District 4 Field Equipment	Roadway	Field Barrier System Control	No				No
lowa DOT District 4 Field Equipment	Roadway	Roadway Basic Surveillance	No				No
lowa DOT District 4 Field Equipment	Roadway	Roadway Data Collection	No				No
lowa DOT District 4 Field Equipment	Roadway	Roadway Equipment Coordination	No				No
lowa DOT District 4 Field Equipment	Roadway	Roadway Incident Detection	No				No
lowa DOT District 4 Field Equipment	Roadway	Roadway Probe Data Communications	No				No
lowa DOT District 4 Field Equipment	Roadway	Roadway Speed Monitoring and Warning	No				No
lowa DOT District 4 Field Equipment	Roadway	Roadway Traffic Information Dissemination	No				No
Iowa DOT District 4 Field Equipment	Roadway	Roadway Work Zone Traffic Control	No				No
lowa DOT District 4 Offices	Archived Data Management		No				No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
lowa DOT District 4 Offices	Maintenance and Construction Management	MCM Incident Management	No	5	The center shall respond to requests from emergency management to provide maintenance and construction resources to implement response plans, assist in clean up, verify an incident, etc. This may also involve coordination with traffic management centers and other maintenance centers.	Planned	No
lowa DOT District 4 Offices	Maintenance and Construction Management	MCM Incident Management	No	6	The center shall exchange road network status assessment information with emergency management and traffic management centers including an assessment of damage sustained by the road network including location and extent of the damage, estimate of remaining capacity, required closures, alternate routes, necessary restrictions, and time frame for repair and recovery.	Planned	No
Iowa DOT District 4 Offices	Maintenance and Construction Management	MCM Incident Management	No	7	The center shall provide work zone activities affecting the road network including the nature of the maintenance or construction activity, location, impact to the roadway, expected time(s) and duration of impact, anticipated delays, alternate routes, and suggested speed limits. This information may be augmented with images that provide a visual indication of current work zone status and traffic impacts.	Planned	No
lowa DOT District 4 Offices	Maintenance and Construction Management	MCM Incident Management	No	8	The center shall receive information indicating the damage sustained by transportation assets, derived from aerial surveillance, field reports, inspections, tests, and analyses to support incident management.	Planned	No
Iowa DOT District 4 Offices	Maintenance and Construction Management	MCM Speed Monitoring and Warning	No	1	The center shall remotely control vehicle speed sensors typically placed in work zones; control parameters may include environmental and traffic conditions.	Planned	No
Iowa DOT District 4 Offices	Maintenance and Construction Management	MCM Vehicle Tracking	No	1	The center shall monitor the locations of all maintenance and construction vehicles and other equipment under its jurisdiction.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Iowa DOT District 4 Offices	Maintenance and Construction Management	MCM Vehicle Tracking	No	2	The center shall present location data to center personnel for the fleet of maintenance and construction vehicles and other equipment.	Existing	No
Iowa DOT District 4 Offices	Maintenance and Construction Management	MCM Winter Maintenance Management	No	1	The center shall respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other winter roadway maintenance.	Existing	No
Iowa DOT District 4 Offices	Maintenance and Construction Management	MCM Winter Maintenance Management	No	3	The center shall provide status information about scheduled winter maintenance activities including anticipated closures and impact to the roadway, alternate routes, anticipated delays, closure times, and durations. The information is provided to other management centers such as traffic, emergency, transit, traveler information providers, other maintenance centers, and the media.	Planned	No
lowa DOT District 4 Offices	Maintenance and Construction Management	MCM Winter Maintenance Management	No	6	The center shall collect real-time information on the state of the regional transportation system from other centers including current traffic and road conditions, weather conditions, special event and incident information and use the collected information to support winter maintenance operations.	Existing	No
Iowa DOT District 4 Offices	Maintenance and Construction Management	MCM Winter Maintenance Management	No	11	The center shall assess the current status of all winter maintenance activities, including actual work activities performed, current locations and operational conditions of vehicles, materials and equipment inventories, field equipment status, environmental information, etc.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
lowa DOT District 4 Offices	Maintenance and Construction Management	MCM Work Activity Coordination	No	1	The center shall provide work zone activities affecting the road network including the nature of the maintenance or construction activity, location, impact to the roadway, expected time(s) and duration of impact, anticipated delays, alternate routes, and suggested speed limits. This information may be augmented with images that provide a visual indication of current work zone status and traffic impacts.	Existing	No
Iowa DOT District 4 Offices	Maintenance and Construction Management	MCM Work Activity Coordination	No	2	The center shall provide status information about scheduled maintenance and construction activities including anticipated closures and impact to the roadway, alternate routes, anticipated delays, closure times, and durations. The information is provided to other management centers such as traffic, emergency, transit, traveler information providers, other maintenance centers, multimodal transportation providers, rail operations, and the media.	Existing	No
Iowa DOT District 4 Offices	Maintenance and Construction Management	MCM Work Zone Management	No	2	The center shall control the collection of work zone status information including video images from cameras located in or near the work zone.	Planned	No
Iowa DOT District 4 Offices	Maintenance and Construction Management	MCM Work Zone Management	No	3	The center shall disseminate work zone information to other agencies and centers including traffic, transit, emergency management centers, other maintenance centers, traveler information providers, and the media.	Planned	No
Iowa DOT District 4 Offices	Maintenance and Construction Management	MCM Work Zone Management	No	4	The center shall control traffic in work zones by providing remote control of dynamic message signs, highway advisory radio systems, gates, and barriers located in or near the work zone.	Planned	No
Iowa DOT District 4 Offices	Traffic Management	Barrier System Management	No	1	The center shall remotely control barrier systems for transportation facilities and infrastructure. Barrier systems include automated or remotely controlled gates, barriers and other systems that manage entry to roadways.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Iowa DOT District 4 Offices	Traffic Management	Barrier System Management	No	2	The center shall collect barrier system operational status.	Planned	No
Iowa DOT District 4 Offices	Traffic Management	Collect Traffic Surveillance	No	1	The center shall monitor, analyze, and store traffic sensor data (speed, volume, occupancy) collected from field elements under remote control of the center.	Existing	No
Iowa DOT District 4 Offices	Traffic Management	Collect Traffic Surveillance	No	2	The center shall monitor, analyze, and distribute traffic images from CCTV systems under remote control of the center.	Planned	No
Iowa DOT District 4 Offices	Traffic Management	Collect Traffic Surveillance	No	4	The center shall distribute road network conditions data (raw or processed) based on collected and analyzed traffic sensor and surveillance data to other centers.	Planned	No
lowa DOT District 4 Offices	Traffic Management	Collect Traffic Surveillance	No	7	The center shall support an interface with a map update provider, or other appropriate data sources, through which updates of digitized map data can be obtained and used as a background for traffic data.	Planned	No
lowa DOT District 4 Offices	Traffic Management	TMC Incident Detection	No	1	The center shall receive inputs from the Alerting and Advisory System concerning the possibility or occurrence of severe weather, terrorist activity, or other major emergency, including information provided by the Emergency Alert System.	Existing	No
Iowa DOT District 4 Offices	Traffic Management	TMC Incident Detection	No	2	The center shall collect and store traffic flow and image data from the field equipment to detect and verify incidents.	Planned	No
lowa DOT District 4 Offices	Traffic Management	TMC Incident Detection	No	4	The center shall exchange incident and threat information with emergency management centers as well as maintenance and construction centers; including notification of existence of incident and expected severity, location, time and nature of incident.	Planned	No
lowa DOT District 4 Offices	Traffic Management	TMC Incident Detection	No	5	The center shall support requests from emergency management centers and border inspection systems to remotely control sensor and surveillance equipment located in the field.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Iowa DOT District 4 Offices	Traffic Management	TMC Incident Detection	No	6	The center shall provide road network conditions and traffic images to emergency management centers to support the detection, verification, and classification of incidents.	Planned	No
Iowa DOT District 4 Offices	Traffic Management	TMC Incident Detection	No	7	The center shall provide video and traffic sensor control commands to the field equipment to detect and verify incidents.	Planned	No
Iowa DOT District 4 Offices	Traffic Management	TMC Incident Dispatch Coordination/Communication	No	1	The center shall exchange alert information and status with emergency management centers. The information includes notification of a major emergency such as a natural or man-made disaster, civil emergency, or child abduction for distribution to the public. The information may include the alert originator, the nature of the emergency, the geographic area affected by the emergency, the effective time period, and information and instructions necessary for the public to respond to the alert. This may also identify specific information that should not be released to the public.	Existing	No
Iowa DOT District 4 Offices	Traffic Management	TMC Incident Dispatch Coordination/Communication	No	3	The center shall support requests from emergency management centers to remotely control sensor and surveillance equipment located in the field, provide special routing for emergency vehicles, and to provide responding emergency vehicles with signal preemption.	Planned	No
Iowa DOT District 4 Offices	Traffic Management	TMC Incident Dispatch Coordination/Communication	No	5	The center shall share resources with allied agency centers to implement special traffic control measures, assist in clean up, verify an incident, etc. This may also involve coordination with maintenance centers.	Existing	No
lowa DOT District 4 Offices	Traffic Management	TMC Incident Dispatch Coordination/Communication	No	7	The center shall provide road network conditions and traffic images to emergency management centers, maintenance and construction centers, and traveler information service providers.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Iowa DOT District 4 Offices	Traffic Management	TMC Incident Dispatch Coordination/Communication	No	9	The center shall exchange road network status assessment information with emergency management and maintenance centers including an assessment of damage sustained by the road network including location and extent of the damage, estimate of remaining capacity, required closures, alternate routes, necessary restrictions, and time frame for repair and recovery.	Planned	No
Iowa DOT District 4 Offices	Traffic Management	TMC Incident Dispatch Coordination/Communication	No	12	The center shall support an interface with a map update provider, or other appropriate data sources, through which updates of digitized map data can be obtained and used as a background for traffic incident management.	Planned	No
Iowa DOT District 4 Offices	Traffic Management	TMC Multimodal Coordination	No				No
Iowa DOT District 4 Offices	Traffic Management	TMC Regional Traffic Management	No	1	The center shall exchange traffic information with other traffic management centers including incident information, congestion data, traffic data, signal timing plans, and real-time signal control information.	Planned	No
Iowa DOT District 4 Offices	Traffic Management	TMC Regional Traffic Management	No	2	The center shall exchange traffic control information with other traffic management centers to support remote monitoring and control of traffic management devices (e.g. signs, sensors, signals, cameras, etc.).	Planned	No
Iowa DOT District 4 Offices	Traffic Management	TMC Traffic Information Dissemination	No	1	The center shall remotely control dynamic messages signs for dissemination of traffic and other information to drivers.	Existing	No
Iowa DOT District 4 Offices	Traffic Management	TMC Traffic Information Dissemination	No	2	The center shall remotely control driver information systems that communicate directly from a center to the vehicle radio (such as Highway Advisory Radios) for dissemination of traffic and other information to drivers.	Planned	No
Iowa DOT District 4 Offices	Traffic Management	TMC Traffic Information Dissemination	No	3	The center shall collect operational status for the driver information systems equipment (DMS, HAR, etc.).	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Iowa DOT District 4 Offices	Traffic Management	TMC Traffic Information Dissemination	No	4	The center shall collect fault data for the driver information systems equipment (DMS, HAR, etc.) for repair.	Existing	No
Iowa DOT District 4 Offices	Traffic Management	TMC Traffic Information Dissemination	No	5	The center shall retrieve locally stored traffic information, including current and forecasted traffic information, road and weather conditions, traffic incident information, information on diversions and alternate routes, closures, and special traffic restrictions (lane/shoulder use, weight restrictions, width restrictions, HOV requirements), and the definition of the road network itself.	Planned	No
Iowa DOT District 4 Offices	Traffic Management	TMC Traffic Information Dissemination	No	6	The center shall distribute traffic data to maintenance and construction centers, transit centers, emergency management centers, and traveler information providers.	Existing	No
Iowa DOT District 4 Offices	Traffic Management	TMC Traffic Information Dissemination	No	7	The center shall distribute traffic data to the media; the capability to provide the information in both data stream and graphical display shall be supported.	Planned	No
Iowa DOT District 4 Offices	Traffic Management	TMC Traffic Information Dissemination	No	8	The center shall provide the capability for center personnel to control the nature of the data that is available to non-traffic operations centers and the media.	Planned	No
Iowa DOT District 4 Offices	Traffic Management	TMC Transportation Operations Data Collection	No	1	The center shall collect real-time information on the state of the regional transportation system including current traffic and road conditions, weather conditions, special event and incident information.	Existing	No
Iowa DOT District 4 Offices	Traffic Management	TMC Work Zone Traffic Management	No	1	The center shall receive work zone images from a maintenance center.	Planned	No
Iowa DOT District 4 Offices	Traffic Management	TMC Work Zone Traffic Management	No	2	The center shall analyze work zone images for indications of a possible incident.	Planned	No
Iowa DOT District 4 Offices	Traffic Management	TMC Work Zone Traffic Management	No	3	The center shall remotely control driver information systems (such as dynamic messages signs, highway advisory radios) to advise drivers of activity around a work zone.	Planned	No
lowa DOT District 4	Traffic Management	Traffic Data Collection	No				No
Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
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Iowa DOT District 4 Offices	Traffic Management	Traffic Equipment Maintenance	No	1	The center shall collect and store sensor (traffic, pedestrian, multimodal crossing) operational status.	Existing	No
Iowa DOT District 4 Offices	Traffic Management	Traffic Equipment Maintenance	No	2	The center shall collect and store CCTV surveillance system (traffic, pedestrian) operational status.	Planned	No
Iowa DOT District 4 Offices	Traffic Management	Traffic Equipment Maintenance	No	3	The center shall collect and store sensor (traffic, pedestrian, multimodal crossing) fault data and send to the maintenance center for repair.	Existing	No
Iowa DOT District 4 Offices	Traffic Management	Traffic Equipment Maintenance	No	4	The center shall collect and store CCTV surveillance system (traffic, pedestrian) fault data send to the maintenance center for repair.	Planned	No
Iowa DOT District 4 Offices	Traffic Management	Traffic Equipment Maintenance	No	5	The center shall collect environmental sensor operational status.	Existing	No
Iowa DOT District 4 Offices	Traffic Management	Traffic Equipment Maintenance	No	6	The center shall collect environmental sensor equipment fault data and send to the maintenance center for repair.	Existing	No
lowa DOT Freeway Sensors	Roadway	Roadway Basic Surveillance	No	1	The field element shall collect, process, digitize, and send traffic sensor data (speed, volume, and occupancy) to the center for further analysis and storage, under center control.	Planned	No
lowa DOT Freeway Sensors	Roadway	Roadway Data Collection	No	1	The field element shall collect traffic, road, and environmental conditions information.	Planned	No
lowa DOT Freeway Sensors	Roadway	Roadway Data Collection	No	2	The field element shall include the sensors and supporting roadside devices that sense, collect, and send traffic, road, and environmental conditions information to a center for archival.	Planned	No
Iowa DOT Freeway Sensors	Roadway	Roadway Data Collection	No	3	The field element shall collect sensor status and sensor faults from roadside equipment and send it along with the recorded data to a center for archival.	Planned	No
Iowa DOT Freeway Sensors	Roadway	Roadway Equipment Coordination	No	1	The field element shall include sensors that provide data and status information to other field element devices, without center control.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Iowa DOT Freeway Sensors	Roadway	Roadway Field Device Monitoring	No	1	The field element shall monitor the operational status (state of the device, configuration, and fault data) of connected sensors (such as traffic, infrastructure, environmental, security, speed) and devices (such as highway advisory radio, dynamic message signs, automated roadway treatment systems, barrier and safeguard systems, cameras, traffic signals, ramp meters, short range communications equipment, security surveillance equipment).	Planned	No
Iowa DOT Freeway Sensors	Roadway	Roadway Field Device Monitoring	No	2	The field element shall send operational status of connected field equipment to the maintenance center.	Planned	No
lowa DOT Freeway Sensors	Roadway	Roadway Field Device Monitoring	No	3	The field element shall send collected fault data to the maintenance center for repair.	Planned	No
lowa DOT Freeway Sensors	Roadway	Roadway Incident Detection	No	4	The field element shall provide operational status and fault data for the incident detection devices to the traffic management center.	Planned	No
Iowa DOT Freeway Sensors	Roadway	Roadway Speed Monitoring and Warning	No	1	The field element shall include sensors to detect vehicle speeds, under traffic or maintenance center control.	Planned	No
Iowa DOT Freeway Sensors	Roadway	Roadway Speed Monitoring and Warning	No	3	If the speed detected by vehicle speed sensors is determined to be excessive, the field element shall provide a safe speed advisory to passing drivers via a driver information system (such as portable messages signs, field to vehicle communications to in-vehicle signing systems, etc.).	Planned	No
Iowa DOT Freeway Sensors	Roadway	Roadway Speed Monitoring and Warning	No	6	The field element shall return operational status for the vehicle speed sensors to the controlling traffic or maintenance center; including measured speeds, warning messages displayed, and violation records.	Planned	No
Iowa DOT Freeway Sensors	Roadway	Roadway Speed Monitoring and Warning	No	8	The field element shall return fault data for the vehicle speed sensors to the controlling center for repair.	Planned	No
lowa DOT HAR	Roadway	Roadway Field Device Monitoring	No				No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Iowa DOT HAR	Roadway	Roadway Traffic Information Dissemination	No	2	The field element shall include driver information systems that communicate directly from a center to the vehicle radio (such as Highway Advisory Radios) for dissemination of traffic and other information to drivers, under center control.	Planned	No
Iowa DOT HAR	Roadway	Roadway Traffic Information Dissemination	No	4	The field element shall provide operational status for the driver information systems equipment (DMS, HAR, etc.) to the center.	Planned	No
Iowa DOT HAR	Roadway	Roadway Traffic Information Dissemination	No	5	The field element shall provide fault data for the driver information systems equipment (DMS, HAR, etc.) to the center for repair.	Planned	No
Iowa DOT Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Environmental Monitoring	No				No
Iowa DOT Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Vehicle Location Tracking	No	1	The maintenance and construction vehicle shall track its current location.	Existing	No
Iowa DOT Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Vehicle Location Tracking	No	2	The maintenance and construction vehicle shall send the time stamped vehicle location to the controlling center.	Existing	No
Iowa DOT Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Work Zone Support	No	1	The maintenance and construction vehicle shall monitor, operate, and control work zone devices located at or alongside the roadway. The devices operated on board the vehicle include driver information devices (e.g. dynamic message signs) and work zone intrusion detection and alert devices.	Planned	No
Iowa DOT Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Work Zone Support	No	2	The maintenance and construction vehicle shall provide an interface for field personnel to input status of their work zone activities.	Existing	No
lowa DOT Maintenance and Construction Vehicles	Vehicle		No				No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Define <u>d</u>
Iowa DOT Maintenance and Construction Vehicles - AVL	Maintenance and Construction Vehicle	MCV Vehicle Location Tracking	No	1	The maintenance and construction vehicle shall track its current location.	Planned	No
lowa DOT Maintenance and Construction Vehicles - AVL	Maintenance and Construction Vehicle	MCV Vehicle Location Tracking	No	2	The maintenance and construction vehicle shall send the time stamped vehicle location to the controlling center.	Planned	No
lowa DOT Maintenance and Construction Vehicles - MDTs	Maintenance and Construction Vehicle	MCV Barrier System Control	No	1	The vehicle shall remotely control barrier systems. Barrier systems include automated or remotely controlled gates, barriers and other systems that manage entry to roadways.	Planned	No
lowa DOT Maintenance and Construction Vehicles - MDTs	Maintenance and Construction Vehicle	MCV Roadway Maintenance and Construction	No	4	The maintenance and construction vehicle shall respond to dispatch information from the center, presented to the vehicle operator for acknowledgement and returning status.	Existing	No
lowa DOT Maintenance and Construction Vehicles - MDTs	Maintenance and Construction Vehicle	MCV Winter Maintenance	No	4	The maintenance and construction vehicle shall respond to dispatch information from the center, presented to the vehicle operator for acknowledgement and returning status.	Planned	No
Iowa DOT Maintenance and Construction Vehicles - MDTs	Maintenance and Construction Vehicle	MCV Work Zone Support	No	1	The maintenance and construction vehicle shall monitor, operate, and control work zone devices located at or alongside the roadway. The devices operated on board the vehicle include driver information devices (e.g. dynamic message signs) and work zone intrusion detection and alert devices.	Existing	No
lowa DOT Maintenance and Construction Vehicles - MDTs	Maintenance and Construction Vehicle	MCV Work Zone Support	No	2	The maintenance and construction vehicle shall provide an interface for field personnel to input status of their work zone activities.	Existing	No
Iowa DOT Maintenance and Construction Vehicles - MDTs	Maintenance and Construction Vehicle	MCV Work Zone Support	No	3	The maintenance and construction vehicle shall collect inputs from field personnel and from work zone devices on-board the maintenance and construction vehicle and send them to the controlling center.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Iowa DOT Maintenance and Construction Vehicles - Onboard Arrow Boards	Maintenance and Construction Vehicle	MCV Work Zone Support	No	1	The maintenance and construction vehicle shall monitor, operate, and control work zone devices located at or alongside the roadway. The devices operated on board the vehicle include driver information devices (e.g. dynamic message signs) and work zone intrusion detection and alert devices.	Existing	No
lowa DOT Maintenance and Construction Vehicles - On-Board Environmental Sensors	Maintenance and Construction Vehicle		No				No
lowa DOT Maintenance and Construction Vehicles - On-Board Environmental Sensors	Vehicle		No				No
lowa DOT Permanent DMS - Freeway	Roadway	Field Barrier System Control	No				No
lowa DOT Permanent DMS - Freeway	Roadway	Roadway Basic Surveillance	No				No
lowa DOT Permanent DMS - Freeway	Roadway	Roadway Equipment Coordination	No				No
Iowa DOT Permanent DMS - Freeway	Roadway	Roadway Field Device Monitoring	No	1	The field element shall monitor the operational status (state of the device, configuration, and fault data) of connected sensors (such as traffic, infrastructure, environmental, security, speed) and devices (such as highway advisory radio, dynamic message signs, automated roadway treatment systems, barrier and safeguard systems, cameras, traffic signals, ramp meters, short range communications equipment, security surveillance equipment).	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
lowa DOT Permanent DMS - Freeway	Roadway	Roadway Field Device Monitoring	No	2	The field element shall send operational status of connected field equipment to the maintenance center.	Planned	No
lowa DOT Permanent DMS - Freeway	Roadway	Roadway Field Device Monitoring	No	3	The field element shall send collected fault data to the maintenance center for repair.	Planned	No
Iowa DOT Permanent DMS - Freeway	Roadway	Roadway Traffic Information Dissemination	No	1	The field element shall include dynamic messages signs for dissemination of traffic and other information to drivers, under center control; the DMS may be either those that display variable text messages, or those that have fixed format display(s) (e.g. vehicle restrictions, or lane open/close).	Existing	No
lowa DOT Permanent DMS - Freeway	Roadway	Roadway Traffic Information Dissemination	No	4	The field element shall provide operational status for the driver information systems equipment (DMS, HAR, etc.) to the center.	Existing	No
lowa DOT Permanent DMS - Freeway	Roadway	Roadway Traffic Information Dissemination	No	5	The field element shall provide fault data for the driver information systems equipment (DMS, HAR, etc.) to the center for repair.	Existing	No
Iowa DOT Permanent DMS - Freeway	Roadway	Roadway Work Zone Traffic Control	No	2	Under traffic and maintenance center control, the field element shall include driver information systems (such as dynamic messages signs and highway advisory radios) that advise drivers of activity around the work zone through which they are currently passing.	Planned	No
Iowa DOT Permanent DMS - Freeway	Roadway	Roadway Work Zone Traffic Control	No	3	Under the control of field personnel within maintenance vehicles, the field element shall include driver information systems (such as dynamic messages signs and highway advisory radios) that advise drivers of activity around a work zone through which they are currently passing.	Planned	No
lowa DOT Permanent DMS - Freeway	Roadway	Roadway Work Zone Traffic Control	No	5	The field element shall provide operational status for the surveillance (e.g. CCTV), driver information systems, and gates/barriers in work zones to the maintenance center.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
lowa DOT Permanent DMS - Freeway	Roadway	Roadway Work Zone Traffic Control	No	6	The field element shall provide fault data for the surveillance (e.g. CCTV), driver information systems, and gates/barriers in work zones to the maintenance center for repair.	Planned	No
Iowa DOT Permanent DMS - Rest Areas	Roadway	Roadway Field Device Monitoring	No				No
Iowa DOT Permanent DMS - Rest Areas	Roadway	Roadway Traffic Information Dissemination	No	1	The field element shall include dynamic messages signs for dissemination of traffic and other information to drivers, under center control; the DMS may be either those that display variable text messages, or those that have fixed format display(s) (e.g. vehicle restrictions, or lane open/close).	Existing	No
lowa DOT Portable DMS	Roadway	Roadway Traffic Information Dissemination	No	1	The field element shall include dynamic messages signs for dissemination of traffic and other information to drivers, under center control; the DMS may be either those that display variable text messages, or those that have fixed format display(s) (e.g. vehicle restrictions, or lane open/close).	Existing	No
lowa DOT Portable DMS	Roadway	Roadway Work Zone Traffic Control	No	2	Under traffic and maintenance center control, the field element shall include driver information systems (such as dynamic messages signs and highway advisory radios) that advise drivers of activity around the work zone through which they are currently passing.	Planned	No
Iowa DOT Rest Area Kiosks	Remote Traveler Support	Remote Basic Information Reception	No	1	The public interface for travelers shall receive traffic information from a center and present it to the traveler.	Existing	No
Iowa DOT Rest Area Kiosks	Remote Traveler Support	Remote Basic Information Reception	No	2	The public interface for travelers shall receive transit information from a center and present it to the traveler.	Existing	No
lowa DOT Rest Area Kiosks	Remote Traveler Support	Remote Basic Information Reception	No	5	The public interface for travelers shall receive wide-area alerts and present it to the traveler.	Existing	No
Iowa DOT Rest Area Kiosks	Remote Traveler Support	Remote Basic Information Reception	No	6	The public interface for travelers shall provide the capability for digitized map data to act as the background to the information presented to the traveler.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
lowa DOT Rest Area Kiosks	Remote Traveler Support	Remote Basic Information Reception	No	8	The public interface for travelers shall present information to the traveler in audible or visual forms consistent with a kiosk, including those that are suitable for travelers with hearing or vision physical disabilities.	Planned	No
Iowa DOT Rest Area Kiosks	Remote Traveler Support	Remote Interactive Information Reception	No	1	The public interface for travelers shall receive traffic information from a center and present it to the traveler upon request.	Existing	No
Iowa DOT Rest Area Kiosks	Remote Traveler Support	Remote Interactive Information Reception	No	3	The public interface for travelers shall receive yellow pages information (such as lodging, restaurants, theaters, bicycle facilities, and other tourist activities) from a center and present it to the traveler upon request.	Existing	No
lowa DOT Rest Area Kiosks	Remote Traveler Support	Remote Interactive Information Reception	No	6	The public interface for travelers shall receive wide-area alerts and present it to the traveler.	Existing	No
Iowa DOT Rest Area Kiosks	Remote Traveler Support	Remote Interactive Information Reception	No	10	The public interface for travelers shall base requests from the traveler on the traveler's current location or a specific location identified by the traveler, and filter the provided information accordingly.	Existing	No
Iowa DOT Rest Area Kiosks	Remote Traveler Support	Remote Interactive Information Reception	No	11	The public interface for travelers shall provide digitized map data to act as the background to the information presented to the traveler.	Existing	No
lowa DOT RWIS Sensors	Roadway	Roadway Basic Surveillance	No				No
Iowa DOT RWIS Sensors	Roadway	Roadway Environmental Monitoring	No	1	The field element shall include surface and sub-surface environmental sensors that measure road surface temperature, moisture, icing, salinity, and other measures.	Existing	No
Iowa DOT RWIS Sensors	Roadway	Roadway Environmental Monitoring	No	2	The field element shall include environmental sensors that measure weather conditions including temperature, wind, humidity, precipitation, and visibility.	Existing	No
Iowa DOT RWIS Sensors	Roadway	Roadway Environmental Monitoring	No	7	The field element shall provide environmental sensor equipment operational status to the controlling center or maintenance vehicle.	Existing	No
Iowa DOT RWIS Sensors	Roadway	Roadway Environmental Monitoring	No	8	The field element shall provide environmental sensor equipment fault indication to the controlling center or maintenance vehicle.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
lowa DOT RWIS Sensors	Roadway	Roadway Environmental Monitoring	No	10	The field element shall provide weather and road surface condition data to centers.	Existing	No
Iowa DOT RWIS Sensors	Roadway	Roadway Equipment Coordination	No	1	The field element shall include sensors that provide data and status information to other field element devices, without center control.	Existing	No
lowa DOT RWIS Sensors	Roadway	Roadway Probe Data Communications	No				No
lowa DOT RWIS Sensors	Roadway	Roadway Speed Monitoring and Warning	No				No
Iowa DOT Statewide TOC	Maintenance and Construction Management		No				No
lowa DOT Statewide TOC	Traffic Management		No				No
lowa DOT Website and Social Media	Information Service Provider	Basic Information Broadcast	No	1	The center shall disseminate traffic and highway condition information to travelers, including incident information, detours and road closures, event information, recommended routes, and current speeds on specific routes.	Existing	No
lowa DOT Website and Social Media	Information Service Provider	Basic Information Broadcast	No	2	The center shall disseminate maintenance and construction information to travelers, including scheduled maintenance and construction work activities and work zone activities.	Existing	No
lowa DOT Website and Social Media	Information Service Provider	Basic Information Broadcast	No	6	The center shall disseminate weather information to travelers.	Existing	No
lowa DOT Website and Social Media	Information Service Provider	ISP Emergency Traveler Information	No	1	The center shall disseminate emergency evacuation information to the traveler interface systems, including evacuation zones, shelter information, available transportation modes, road closures and detours, changes to transit services, and traffic and road conditions at the origin, destination, and along the evacuation routes.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
lowa DOT Website and Social Media	Information Service Provider	ISP Emergency Traveler Information	No	3	The center shall disseminate wide-area alert information to the traveler interface systems, including major emergencies such as a natural or man-made disaster, civil emergency, child abductions, severe weather watches and warnings, military activities, and law enforcement warnings.	Existing	No
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Emergency Call-Taking	No	1	The center shall support the interface to the Emergency Telecommunications System (e.g. 911 or 7-digit call routing) to receive emergency notification information and provide it to the emergency system operator.	Existing	No
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Emergency Call-Taking	No	2	The center shall receive emergency call information from 911 services and present the possible incident information to the emergency system operator.	Existing	No
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Emergency Call-Taking	No	4	The center shall receive emergency call information from mayday service providers and present the possible incident information to the emergency system operator.	Existing	No
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Emergency Call-Taking	No	5	The center shall receive emergency notification information from other public safety agencies and present the possible incident information to the emergency system operator.	Existing	No
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Emergency Call-Taking	No	6	The center shall receive emergency notification information from public transit systems and present the possible incident information to the emergency system operator.	Existing	No
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Emergency Call-Taking	No	8	The center shall send a request for remote control of CCTV systems from a traffic management center in order to verify the reported incident.	Planned	No
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Emergency Dispatch	No	1	The center shall dispatch emergency vehicles to respond to verified emergencies under center personnel control.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Emergency Dispatch	No	2	The center shall store the current status of all emergency vehicles available for dispatch and those that have been dispatched.	Existing	No
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Emergency Dispatch	No	3	The center shall relay location and incident details to the responding vehicles.	Existing	No
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Emergency Dispatch	No	4	The center shall track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.	Existing	No
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Emergency Dispatch	No	7	The center shall receive traffic images to support dispatch of emergency vehicles.	Planned	No
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Emergency Dispatch	No	8	The center shall provide the capability to request remote control of traffic surveillance devices	Planned	No
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Emergency Dispatch	No	9	The center shall coordinate response to incidents with other Emergency Management centers to ensure appropriate resources are dispatched and utilized.	Existing	No
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Emergency Early Warning System	No				No
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Emergency Response Management	No				No
Local Law Enforcement Dispatch and E911 Center	Emergency Management	Incident Command	No				No
Local Law Enforcement Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	No	1	The emergency vehicle, including roadway service patrols, shall track its current location.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Local Law Enforcement Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	No	2	The emergency vehicle, including roadway service patrols, shall send the vehicle's location and operational data to the center for emergency management and dispatch.	Planned	No
Local Law Enforcement Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	No	3	The emergency vehicle, including roadway service patrols, shall receive incident details and a suggested route when dispatched to a scene.	Planned	No
Local Law Enforcement Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	No	4	The emergency vehicle shall send the current en route status (including estimated time of arrival) and requests for emergency dispatch updates.	Planned	No
Local Law Enforcement Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	No	5	The emergency vehicle shall send requests to traffic signal control equipment at the roadside to preempt the signal.	Planned	No
Local Law Enforcement Emergency Vehicles	Emergency Vehicle	On-board EV En Route Support	No	6	The emergency vehicle shall provide the personnel on-board with dispatch information, including incident type and location, and forward an acknowledgment from personnel to the center that the vehicle is on its way to the incident scene.	Planned	No
Local Law Enforcement Emergency Vehicles	Emergency Vehicle	On-board EV Incident Management Communication	No	1	The emergency vehicle shall receive dispatch instructions sufficient to enable emergency personnel in the field to implement an effective incident response. It includes local traffic, road, and weather conditions, hazardous material information, and the current status of resources that have been allocated to an incident.	Planned	No
Local Law Enforcement Emergency Vehicles	Emergency Vehicle	On-board EV Incident Management Communication	No	2	The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the incident site such as the extent of injuries, identification of vehicles and people involved, hazardous material, etc.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Local Law Enforcement Emergency Vehicles	Emergency Vehicle	On-board EV Incident Management Communication	No	3	The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the current incident response status such as the identification of the resources on site, site management strategies in effect, and current clearance status.	Planned	No
Local Law Enforcement Emergency Vehicles - AVL	Emergency Vehicle	On-board EV En Route Support	No	1	The emergency vehicle, including roadway service patrols, shall track its current location.	Existing	No
Local Law Enforcement Emergency Vehicles - AVL	Emergency Vehicle	On-board EV En Route Support	No	2	The emergency vehicle, including roadway service patrols, shall send the vehicle's location and operational data to the center for emergency management and dispatch.	Existing	No
Local Law Enforcement Emergency Vehicles - AVL	Emergency Vehicle	On-board EV Incident Management Communication	No	1	The emergency vehicle shall receive dispatch instructions sufficient to enable emergency personnel in the field to implement an effective incident response. It includes local traffic, road, and weather conditions, hazardous material information, and the current status of resources that have been allocated to an incident.	Planned	No
Local Law Enforcement Emergency Vehicles - AVL	Emergency Vehicle	On-board EV Incident Management Communication	No	2	The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the incident site such as the extent of injuries, identification of vehicles and people involved, hazardous material, etc.	Planned	No
Local Law Enforcement Emergency Vehicles - AVL	Emergency Vehicle	On-board EV Incident Management Communication	No	3	The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the current incident response status such as the identification of the resources on site, site management strategies in effect, and current clearance status.	Planned	No
Local Law Enforcement Emergency Vehicles - MDTs	Emergency Vehicle	On-board EV En Route Support	No	3	The emergency vehicle, including roadway service patrols, shall receive incident details and a suggested route when dispatched to a scene.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Local Law Enforcement Emergency Vehicles - MDTs	Emergency Vehicle	On-board EV En Route Support	No	4	The emergency vehicle shall send the current en route status (including estimated time of arrival) and requests for emergency dispatch updates.	Existing	No
Local Law Enforcement Emergency Vehicles - MDTs	Emergency Vehicle	On-board EV En Route Support	No	6	The emergency vehicle shall provide the personnel on-board with dispatch information, including incident type and location, and forward an acknowledgment from personnel to the center that the vehicle is on its way to the incident scene.	Existing	No
Local Law Enforcement Emergency Vehicles - MDTs	Emergency Vehicle	On-board EV Incident Management Communication	No	1	The emergency vehicle shall receive dispatch instructions sufficient to enable emergency personnel in the field to implement an effective incident response. It includes local traffic, road, and weather conditions, hazardous material information, and the current status of resources that have been allocated to an incident.	Existing	No
Local Law Enforcement Emergency Vehicles - MDTs	Emergency Vehicle	On-board EV Incident Management Communication	No	2	The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the incident site such as the extent of injuries, identification of vehicles and people involved, hazardous material, etc.	Existing	No
Local Law Enforcement Emergency Vehicles - MDTs	Emergency Vehicle	On-board EV Incident Management Communication	No	3	The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the current incident response status such as the identification of the resources on site, site management strategies in effect, and current clearance status.	Existing	No
MAPA Data Collection	Archived Data Management	Virtual Data Warehouse Services	No	1	The center shall provide capabilities to access "in-place" data from geographically dispersed archives. These capabilities may include analysis, data fusion, or data mining.	Existing	No
MAPA Data Collection	Archived Data Management	Virtual Data Warehouse Services	No	5	The center shall use data collected from different archives to build a set of global schema including the data archive definitions for the local archive plus any archives known to the local archive.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
MAPA Data Collection	Archived Data Management	Virtual Data Warehouse Services	No	6	The center shall provide the local archived data schema to other archive systems.	Planned	No
MAPA Data Collection	Archived Data User Systems		No				No
MAPA Rideshare	Information Service Provider	Infrastructure Provided Dynamic Ridesharing	No	1	The center shall accept requests from traveler interface systems for ridesharing as part of a trip plan request.	Planned	No
MAPA Rideshare	Information Service Provider	Infrastructure Provided Dynamic Ridesharing	No	2	The center shall provide a rideshare match based on origin and destination of the traveler's proposed trip, any routing constraints, preferences specified by the traveler, compatibility of this rideshare with rideshares confirmed by other travelers, the requesting traveler's eligibility data, and traffic data.	Planned	No
MAPA Rideshare	Information Service Provider	Infrastructure Provided Dynamic Ridesharing	No	5	The center shall provide a confirmation of the traveler's rideshare match and provide the capability to support a payment transaction for the rideshare service.	Planned	No
MAPA Rideshare	Information Service Provider	Infrastructure Provided Dynamic Ridesharing	No	6	The center shall store all rideshare matches and traveler eligibility data.	Planned	No
Media CCTV	Roadway	Roadway Basic Surveillance	No	2	The field element shall collect, process, and send traffic images to the center for further analysis and distribution.	Existing	No
Media CCTV	Roadway	Roadway Equipment Coordination	No				No
Media CCTV	Roadway	Roadway Incident Detection	No				No
Media TV, Radio and News Outlets	Information Service Provider	Basic Information Broadcast	No	1	The center shall disseminate traffic and highway condition information to travelers, including incident information, detours and road closures, event information, recommended routes, and current speeds on specific routes.	Existing	No
Media TV, Radio and News Outlets	Information Service Provider	Basic Information Broadcast	No	2	The center shall disseminate maintenance and construction information to travelers, including scheduled maintenance and construction work activities and work zone activities.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Media TV, Radio and News Outlets	Information Service Provider	Basic Information Broadcast	No	6	The center shall disseminate weather information to travelers.	Existing	No
Media TV, Radio and News Outlets	Information Service Provider	Basic Information Broadcast	No	7	The center shall disseminate event information to travelers.	Existing	No
Media TV, Radio and News Outlets	Media		No				No
Media TV, Radio and News Outlets	Traffic Management		No				No
Metro Bus Departure Signs	Remote Traveler Support	Remote Transit Information Services	No	1	The public interface for travelers shall collect and provide real-time travel-related information at transit stops, multi-modal transfer points, and other public transportation areas.	Planned	No
Metro Bus Departure Signs	Remote Traveler Support	Remote Transit Information Services	No	2	The public interface for travelers shall collect and present to the transit traveler information on transit routes, schedules, and real-time schedule adherence.	Planned	No
Metro Bus Departure Signs	Remote Traveler Support	Remote Transit Information Services	No	3	The public interface for travelers shall provide support for general annunciation and/or display of imminent arrival information and other information of general interest to transit users.	Planned	No
Metro Bus Departure Signs	Remote Traveler Support	Remote Transit Information Services	No	4	The public interface for travelers shall present information to the traveler in a form suitable for travelers with physical disabilities.	Planned	No
Metro Dispatch Center	Traffic Management		No				No
Metro Dispatch Center	Transit Management	Transit Center Fixed-Route Operations	No	2	The center shall provide the interface to the system operator to control the generation of new routes and schedules (transit services) including the ability to review and update the parameters used by the routes and schedules generation processes and to initiate these processes	Planned	No
Metro Dispatch Center	Transit Management	Transit Center Fixed-Route Operations	No	6	The center shall provide instructions or corrective actions to the transit vehicle operators based upon operational needs.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Metro Dispatch Center	Transit Management	Transit Center Fixed-Route Operations	No	9	The center shall exchange information with Maintenance and Construction Operations concerning work zones, roadway conditions, asset restrictions, work plans, etc.	Existing	No
Metro Dispatch Center	Transit Management	Transit Center Fixed-Route Operations	No	10	The center shall disseminate up-to-date schedules and route information to other centers for fixed and flexible route services.	Planned	No
Metro Dispatch Center	Transit Management	Transit Center Information Services	No	1	The center shall provide travelers using public transportation with traffic and advisory information upon request. Such information may include transit routes, schedules, transfer options, fares, real-time schedule adherence, current incidents, weather conditions, and special events.	Planned	No
Metro Dispatch Center	Transit Management	Transit Center Information Services	No	2	The center shall provide transit information to the media including details of deviations from schedule of regular transit services.	Existing	No
Metro Dispatch Center	Transit Management	Transit Center Multi-Modal Coordination	No	3	The center shall accept requests from traffic management to change routes and schedules as part of the implementation of demand management strategies.	Planned	No
Metro Dispatch Center	Transit Management	Transit Center Paratransit Operations	No	1	The center shall process trip requests for demand responsive transit services, i.e. paratransit. Sources of the requests may include traveler information service providers.	Existing	No
Metro Dispatch Center	Transit Management	Transit Center Paratransit Operations	No	2	The center shall monitor the operational status of the demand response vehicles including status of passenger pick-up and drop-off.	Planned	No
Metro Dispatch Center	Transit Management	Transit Center Paratransit Operations	No	4	The center shall dispatch demand response (paratransit) transit vehicles.	Existing	No
Metro Dispatch Center	Transit Management	Transit Center Paratransit Operations	No	5	The center shall exchange information with Maintenance and Construction Operations concerning work zones, roadway conditions, asset restrictions, work plans, etc.	Existing	No
Metro Dispatch Center	Transit Management	Transit Center Security	No	2	The center shall receive reports of emergencies on-board transit vehicles entered directly be the transit vehicle operator or from a traveler through interfaces such as panic buttons or alarm switches.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Metro Dispatch Center	Transit Management	Transit Center Security	No	5	The center shall receive information pertaining to a wide-area alert such as weather alerts, disaster situations, or child abductions. This information may come from Emergency Management or from other Alerting and Advisory Systems.	Planned	No
Metro Dispatch Center	Transit Management	Transit Center Security	No	6	The center shall send wide-area alert information to travelers (on-board transit vehicles or at stations/stops) and transit vehicle operators.	Planned	No
Metro Dispatch Center	Transit Management	Transit Center Vehicle Tracking	No	1	The center shall monitor the locations of all transit vehicles within its network.	Existing	No
Metro Dispatch Center	Transit Management	Transit Center Vehicle Tracking	No	2	The center shall determine adherence of transit vehicles to their assigned schedule.	Planned	No
Metro Dispatch Center	Transit Management	Transit Center Vehicle Tracking	No	3	The center shall support an interface with a map update provider, or other appropriate data sources, through which updates of digitized map data can be obtained and used as a background for transit tracking and dispatch.	Planned	No
Metro Dispatch Center	Transit Management	Transit Transportation Operations Data Collection	No	1	The center shall collect real-time information on the state of the regional transportation system including current traffic and road conditions, weather conditions, special event and incident information.	Planned	No
Metro E Card	Traveler Card		No				No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Schedule Management	No	1	The transit vehicle shall receive a vehicle assignment including transit route information, transit service instructions, traffic information, road conditions, and other information for the operator.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Schedule Management	No	2	The transit vehicle shall use the route information and its current location to determine the deviation from the predetermined schedule.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Schedule Management	No	3	The transit vehicle shall calculate the estimated times of arrival (ETA) at transit stops.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Schedule Management	No	4	The transit vehicle shall determine scenarios to correct the schedule deviation.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Schedule Management	No	5	The transit vehicle shall provide the schedule deviations and instructions for schedule corrections to the transit vehicle operator if the deviation is small, or the transit vehicle is operating in an urban area.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Schedule Management	No	6	The transit vehicle shall send the schedule deviation and estimated arrival time information to the center.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Schedule Management	No	7	The transit vehicle shall support the operations of a flexible route service. This may include requests for route deviations that would then lead to schedule corrective actions.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Schedule Management	No	8	The transit vehicle shall notify the transit center of vehicle location and operational status as the vehicle exits and returns to the transit facility to support future vehicle assignments.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Fare Management	No	1	The transit vehicle shall read data from the traveler card / payment instrument presented by boarding passengers.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Fare Management	No	2	The transit vehicle shall provide an image of all travelers which shall be used for violation processing of those who do not have a traveler card / payment instrument or whose transit fare transaction fails.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Fare Management	No	3	The transit vehicle shall determine the traveler's travel routing based on the transit vehicle's current location and the traveler's destination.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Fare Management	No	4	The transit vehicle shall calculate the traveler's fare based on the origin and destination provided by the traveler as well as factors such as the transit routing, transit fare category, traveler history, and route-specific information.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Fare Management	No	5	The transit vehicle shall have access to the complete range of transit services (routes and schedules) that are available to the traveler.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Fare Management	No	6	The transit vehicle shall provide a transit fare payment interface that is suitable for travelers with physical disabilities.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Fare Management	No	7	The transit vehicle shall include a database on-board the transit vehicle for use in fare processing from which the fares for all possible trips within the transit operational network can be determined.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Fare Management	No	8	The transit vehicle shall support an emergency fare structure overriding all other fares that can be activated during disasters, states of emergency or evacuations.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Fare Management	No	9	The transit vehicle shall support the support advanced payments for tolls, and/or parking lot charges, and/or transit fares via the traveler card / payment instrument.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Fare Management	No	10	The transit vehicle shall provide fare statistics data to the center.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Information Services	No	1	The transit vehicle shall enable traffic and travel advisory information to be requested and output to the traveler. Such information may include transit routes, schedules, transfer options, fares, real-time schedule adherence, current incidents, weather conditions, and special events.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Information Services	No	2	The transit vehicle shall enable yellow pages (including non-motorized transportation) information to be requested and output to the traveler.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Information Services	No	3	The transit vehicle shall broadcast advisories about the imminent arrival of the transit vehicle at the next stop via an on-board automated annunciation system.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Information Services	No	4	The transit vehicle shall support input and output forms that are suitable for travelers with physical disabilities.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Information Services	No	5	The transit vehicle shall gather transit advisory data, including alerts and advisories pertaining to major emergencies, or man made disasters.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Information Services	No	6	The transit vehicle shall tailor the output of the request traveler information based on the current location of the transit vehicle.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Security	No	1	The transit vehicle shall perform video and audio surveillance inside of transit vehicles and output raw video or audio data for either local monitoring (for processing or direct output to the transit vehicle operator), remote monitoring or for local storage (e.g., in an event recorder).	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Security	No	2	The transit vehicle shall perform local monitoring of video or audio surveillance data collected inside of transit vehicles, and identify potential incidents or threats based on received processing parameters.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Security	No	3	The transit vehicle shall output an indication of potential incidents or threats and the processed video or audio information to the center along with the vehicle's current location.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Security	No	4	The transit vehicle shall detect potential threats via sensors for chemical agents, toxic industrial chemicals, biological agents, explosives, and radiation.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Security	No	5	The transit vehicle shall detect potential threats via object detection sensors (e.g. metal detectors).	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Security	No	6	The transit vehicle shall output an indication of potential incidents or threats and the processed sensor information to the center along with the vehicle's current location.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Security	No	7	The transit vehicle shall accept sensor control data to allow remote control of the sensors.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Security	No	8	The transit vehicle shall monitor and output surveillance and sensor equipment status and fault indications.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Security	No	9	The transit vehicle shall accept emergency inputs from either the transit vehicle operator or a traveler through such interfaces as panic buttons, silent or audible alarms, etc.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Security	No	10	The transit vehicle shall output reported emergencies to the center.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Security	No	11	The transit vehicle shall receive acknowledgments of the emergency request from the center and output this acknowledgment to the transit vehicle operator or to the travelers.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Security	No	12	The transit vehicle shall be capable of receiving an emergency message for broadcast to the travelers or to the transit vehicle operator.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Security	No	13	The transit vehicle shall be capable of disabling or enabling the transit vehicle based on commands from the center or authentic inputs from the transit vehicle operator.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Security	No	14	The transit vehicle shall perform authentication of the transit vehicle operator.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Signal Priority	No	1	The transit vehicle shall determine the schedule deviation and estimated times of arrival (ETA) at transit stops.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Signal Priority	No	2	The transit vehicle shall send priority requests to traffic signal controllers at intersections, pedestrian crossings, and multimodal crossings on the roads (surface streets) and freeway (ramp controls) network that enable a transit vehicle schedule deviation to be corrected.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Signal Priority	No	3	The transit vehicle shall send the schedule deviation data and status of priority requests to the transit vehicle operator and provide the capability for the transit vehicle operator to control the priority system.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Trip Monitoring	No	1	The transit vehicle shall track the current location of the transit vehicle.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Trip Monitoring	No	2	The transit vehicle shall support the computation of the location of a transit vehicle using on-board sensors to augment the location determination function. This may include proximity to the transit stops or other known reference points as well as recording trip length.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Trip Monitoring	No	3	The transit vehicle shall record transit trip monitoring data including vehicle mileage and fuel usage.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Trip Monitoring	No	4	The transit vehicle shall record transit trip monitoring data including operational status information such as doors open/closed, running times, etc.	Planned	No
Metro Fixed-line Transit Vehicles	Transit Vehicle	On-board Transit Trip Monitoring	No	5	The transit vehicle shall send the transit vehicle trip monitoring data to center-based trip monitoring functions.	Planned	No
Metro MOBY Vehicles	Transit Vehicle	On-board Paratransit Operations	No				No
Metro MOBY Vehicles	Transit Vehicle	On-board Transit Trip Monitoring	No				No
Metro Ticket Vending Machines	Remote Traveler Support	Remote Transit Fare Management	No	1	The public interface for travelers shall accept and process current transit passenger fare collection information.	Planned	No
Metro Ticket Vending Machines	Remote Traveler Support	Remote Transit Fare Management	No	3	The public interface for travelers shall provide an interface to a transit user traveler card in support of payment for transit fares, tolls, and/or parking lot charges. The stored credit value data from the card shall be collected and updated based on the fare or other charges, or the credit identity shall be collected.	Planned	No
Metro Ticket Vending Machines	Remote Traveler Support	Remote Transit Fare Management	No	4	The public interface for travelers shall provide information to the center for financial authorization and transaction processing.	Planned	No
Metro Ticket Vending Machines	Remote Traveler Support	Remote Transit Fare Management	No	5	The public interface for travelers shall provide an image of all travelers purchasing rides or services to be used for violation processing.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Metro Ticket Vending Machines	Remote Traveler Support	Remote Transit Fare Management	No	8	The public interface for travelers shall present information to the traveler in a form suitable for travelers with physical disabilities.	Planned	No
Metro Website	Information Service Provider		No				No
NDOR 511 System	Information Service Provider	Basic Information Broadcast	No	1	The center shall disseminate traffic and highway condition information to travelers, including incident information, detours and road closures, event information, recommended routes, and current speeds on specific routes.	Existing	No
NDOR 511 System	Information Service Provider	Basic Information Broadcast	No	2	The center shall disseminate maintenance and construction information to travelers, including scheduled maintenance and construction work activities and work zone activities.	Existing	No
NDOR 511 System	Information Service Provider	Basic Information Broadcast	No	6	The center shall disseminate weather information to travelers.	Existing	No
NDOR 511 System	Information Service Provider	Interactive Infrastructure Information	No	10	The center shall provide all traveler information based on the traveler's current location or a specific location identified by the traveler, and filter or customize the provided information accordingly.	Existing	No
NDOR 511 System	Information Service Provider	ISP Emergency Traveler Information	No	3	The center shall disseminate wide-area alert information to the traveler interface systems, including major emergencies such as a natural or man-made disaster, civil emergency, child abductions, severe weather watches and warnings, military activities, and law enforcement warnings.	Existing	No
NDOR 511 System	Information Service Provider	Traveler Telephone Information	No	1	The center shall provide the capability to process voice-formatted requests for traveler information from a traveler telephone information system, and return the information in the requested format.	Existing	No
NDOR 511 System	Information Service Provider	Traveler Telephone Information	No	2	The center shall provide the capability to process dual-tone multifrequency (DTMF)- based requests (touch-tone) for traveler information from a traveler telephone information system.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
NDOR 511 System	Information Service Provider	Traveler Telephone Information	No	3	The center shall provide the capability to process traveler information requests from a traveler telephone information system.	Existing	No
NDOR 511 System	Information Service Provider	Traveler Telephone Information	No	4	The center shall provide information on traffic conditions in the requested voice format and for the requested location.	Existing	No
NDOR 511 System	Information Service Provider	Traveler Telephone Information	No	5	The center shall provide work zone and roadway maintenance information in the requested voice format and for the requested location.	Existing	No
NDOR 511 System	Information Service Provider	Traveler Telephone Information	No	6	The center shall provide roadway environment conditions information in the requested voice format and for the requested location.	Existing	No
NDOR 511 System	Information Service Provider	Traveler Telephone Information	No	7	The center shall provide weather and event information in the requested voice format and for the requested location.	Existing	No
NDOR 511 System	Information Service Provider	Traveler Telephone Information	No	9	The center shall provide yellow pages services information in the requested voice format and for the requested location.	Existing	No
NDOR 511 System	Information Service Provider	Traveler Telephone Information	No	12	The center shall receive and forward region- specific wide-area alert and advisory information to the traveler telephone information system, including major emergencies such as a natural or man-made disaster, civil emergency, child abductions, severe weather watches and warnings, military activities, and law enforcement warnings.	Existing	No
NDOR 511 System	Telecommunications System for Traveler Information		No				No
NDOR Anti-Icing Stations	Roadway	Roadway Automated Treatment	No				No
NDOR Anti-Icing Stations	Roadway	Roadway Basic Surveillance	No				No
NDOR Anti-Icing Stations	Roadway	Roadway Environmental Monitoring	No				No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
NDOR Anti-Icing Stations	Roadway	Roadway Equipment Coordination	No				No
NDOR Anti-Icing Stations	Roadway	Roadway Probe Data Communications	No				No
NDOR Anti-Icing Stations	Roadway	Roadway Traffic Information Dissemination	No				No
NDOR ATR	Roadway		No				No
NDOR Automated Gate Closure	Roadway	Field Barrier System Control	No				No
NDOR Automated Gate Closure	Roadway	Roadway Basic Surveillance	No				No
NDOR Automated Gate Closure	Roadway	Roadway Equipment Coordination	No				No
NDOR Automated Gate Closure	Roadway	Roadway Traffic Information Dissemination	No				No
NDOR Automated Gate Closure	Roadway	Roadway Traffic Metering	No				No
NDOR Automated Work Zone	Roadway	Field Barrier System Control	No				No
NDOR Automated Work Zone	Roadway	Roadway Basic Surveillance	No				No
NDOR Automated Work Zone	Roadway	Roadway Equipment Coordination	No				No
NDOR Automated Work Zone	Roadway	Roadway Traffic Information Dissemination	No				No
NDOR Automated Work Zone	Roadway	Roadway Traffic Metering	No				No
NDOR Automated Work Zone	Roadway	Roadway Work Zone Traffic Control	No				No
NDOR CCTV	Roadway	Field Barrier System Control	No				No
NDOR CCTV	Roadway	Roadway Basic Surveillance	No	2	The field element shall collect, process, and send traffic images to the center for further analysis and distribution.	Existing	No
NDOR CCTV	Roadway	Roadway Basic Surveillance	No	4	The field element shall return sensor and CCTV system operational status to the controlling center.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
NDOR CCTV	Roadway	Roadway Basic Surveillance	No	5	The field element shall return sensor and CCTV system fault data to the controlling center for repair.	Existing	No
NDOR CCTV	Roadway	Roadway Equipment Coordination	No				No
NDOR CCTV	Roadway	Roadway Incident Detection	No	1	The field element shall collect, process, and send traffic images to the center for further analysis and distribution.	Existing	No
NDOR CCTV	Roadway	Roadway Incident Detection	No	2	The field element shall remotely process video data and provide an indication of potential incidents to the traffic management center.	Planned	No
NDOR CCTV	Roadway	Roadway Incident Detection	No	3	The field element's video devices shall be remotely controlled by a traffic management center.	Existing	No
NDOR CCTV	Roadway	Roadway Incident Detection	No	4	The field element shall provide operational status and fault data for the incident detection devices to the traffic management center.	Existing	No
NDOR CCTV	Roadway	Roadway Traffic Information Dissemination	No				No
NDOR Detection Stations	Roadway	Field Barrier System Control	No				No
NDOR Detection Stations	Roadway	Field Safeguard System Control	No				No
NDOR Detection Stations	Roadway	Roadway Basic Surveillance	No				No
NDOR Detection Stations	Roadway	Roadway Equipment Coordination	No				No
NDOR Detection Stations	Roadway	Roadway Speed Monitoring and Warning	No				No
NDOR Detection Stations	Roadway	Roadway Traffic Metering	No				No
NDOR DMS	Roadway	Field Barrier System Control	No				No
NDOR DMS	Roadway	Roadway Basic Surveillance	No				No
NDOR DMS	Roadway	Roadway Equipment Coordination	No				No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
NDOR DMS	Roadway	Roadway Field Device Monitoring	No	2	The field element shall send operational status of connected field equipment to the maintenance center.	Planned	No
NDOR DMS	Roadway	Roadway Field Device Monitoring	No	3	The field element shall send collected fault data to the maintenance center for repair.	Planned	No
NDOR DMS	Roadway	Roadway Field Device Monitoring	No	4	The field element shall include a local interface that provides operational status and fault data for connected field equipment to field personnel.	Planned	No
NDOR DMS	Roadway	Roadway Field Device Monitoring	No	5	The field element shall include a local interface that allows field personnel to command diagnostic tests on connected field equipment.	Planned	No
NDOR DMS	Roadway	Roadway Traffic Information Dissemination	No	1	The field element shall include dynamic messages signs for dissemination of traffic and other information to drivers, under center control; the DMS may be either those that display variable text messages, or those that have fixed format display(s) (e.g. vehicle restrictions, or lane open/close).	Existing	No
NDOR DMS	Roadway	Roadway Traffic Information Dissemination	No	4	The field element shall provide operational status for the driver information systems equipment (DMS, HAR, etc.) to the center.	Existing	No
NDOR DMS	Roadway	Roadway Traffic Information Dissemination	No	5	The field element shall provide fault data for the driver information systems equipment (DMS, HAR, etc.) to the center for repair.	Existing	No
NDOR DMS	Roadway	Roadway Work Zone Traffic Control	No				No
NDOR DOC	Archived Data Management		No				No
NDOR DOC	Maintenance and Construction Management		No				No
NDOR DOC	Traffic Management	Barrier System Management	No	1	The center shall remotely control barrier systems for transportation facilities and infrastructure. Barrier systems include automated or remotely controlled gates, barriers and other systems that manage entry to roadways.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
NDOR DOC	Traffic Management	Barrier System Management	No	2	The center shall collect barrier system operational status.	Existing	No
NDOR DOC	Traffic Management	Collect Traffic Surveillance	No	1	The center shall monitor, analyze, and store traffic sensor data (speed, volume, occupancy) collected from field elements under remote control of the center.	Existing	No
NDOR DOC	Traffic Management	Collect Traffic Surveillance	No	2	The center shall monitor, analyze, and distribute traffic images from CCTV systems under remote control of the center.	Existing	No
NDOR DOC	Traffic Management	Collect Traffic Surveillance	No	4	The center shall distribute road network conditions data (raw or processed) based on collected and analyzed traffic sensor and surveillance data to other centers.	Existing	No
NDOR DOC	Traffic Management	Collect Traffic Surveillance	No	5	The center shall respond to control data from center personnel regarding sensor and surveillance data collection, analysis, storage, and distribution.	Existing	No
NDOR DOC	Traffic Management	Collect Traffic Surveillance	No	7	The center shall support an interface with a map update provider, or other appropriate data sources, through which updates of digitized map data can be obtained and used as a background for traffic data.	Existing	No
NDOR DOC	Traffic Management	TMC Incident Detection	No				No
NDOR DOC	Traffic Management	TMC Incident Dispatch Coordination/Communication	No				No
NDOR DOC	Traffic Management	TMC Multimodal Coordination	No				No
NDOR DOC	Traffic Management	TMC Signal Control	No				No
NDOR DOC	Traffic Management	TMC Traffic Information Dissemination	No				No
NDOR DOC	Traffic Management	TMC Transportation Operations Data Collection	No	1	The center shall collect real-time information on the state of the regional transportation system including current traffic and road conditions, weather conditions, special event and incident information.	Existing	No
NDOR DOC	Traffic Management	Traffic Data Collection	No				No
NDOR Field Equipment	Roadway	Field Barrier System Control	No				No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
NDOR Field Equipment	Roadway	Roadway Automated Treatment	No				No
NDOR Field Equipment	Roadway	Roadway Basic Surveillance	No				No
NDOR Field Equipment	Roadway	Roadway Data Collection	No				No
NDOR Field Equipment	Roadway	Roadway Environmental Monitoring	No				No
NDOR Field Equipment	Roadway	Roadway Equipment Coordination	No				No
NDOR Field Equipment	Roadway	Roadway Incident Detection	No				No
NDOR Field Equipment	Roadway	Roadway Speed Monitoring and Warning	No				No
NDOR Field Equipment	Roadway	Roadway Traffic Information Dissemination	No				No
NDOR Field Equipment	Roadway	Roadway Work Zone Traffic Control	No				No
NDOR HCRS	Information Service Provider	Basic Information Broadcast	No	1	The center shall disseminate traffic and highway condition information to travelers, including incident information, detours and road closures, event information, recommended routes, and current speeds on specific routes.	Existing	No
NDOR HCRS	Information Service Provider	Basic Information Broadcast	No	2	The center shall disseminate maintenance and construction information to travelers, including scheduled maintenance and construction work activities and work zone activities.	Existing	No
NDOR HCRS	Information Service Provider	Basic Information Broadcast	No	6	The center shall disseminate weather information to travelers.	Existing	No
NDOR HCRS	Information Service Provider	Basic Information Broadcast	No	7	The center shall disseminate event information to travelers.	Existing	No
NDOR HCRS	Information Service Provider	Basic Information Broadcast	No	9	The center shall provide the capability to support requests from the media for traffic and incident data.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
NDOR HCRS	Information Service Provider	Basic Information Broadcast	No	10	The center shall provide the capability for a system operator to control the type and update frequency of broadcast traveler information.	Existing	No
NDOR HCRS	Information Service Provider	ISP Traveler Data Collection	No	1	The center shall collect, process, and store traffic and highway condition information, including incident information, detours and road closures, event information, recommended routes, and current speeds on specific routes.	Existing	No
NDOR HCRS	Information Service Provider	ISP Traveler Data Collection	No	2	The center shall collect, process, and store maintenance and construction information, including scheduled maintenance and construction work activities and work zone activities.	Existing	No
NDOR HCRS	Information Service Provider	ISP Traveler Data Collection	No	6	The center shall collect, process, and store current and forecast road conditions and surface weather conditions.	Existing	No
NDOR HCRS	Information Service Provider	ISP Traveler Data Collection	No	7	The center shall collect, process, and store event information.	Existing	No
NDOR Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Roadway Maintenance and Construction	No	1	The maintenance and construction vehicle shall track the location and status of safety systems on-board the vehicle.	Existing	No
NDOR Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Roadway Maintenance and Construction	No	2	The maintenance and construction vehicle shall respond to control information from the center to allow remote operation of the on- board vehicle systems. These systems include routine maintenance equipment for cutting, repairs, hazard removal, etc.	Existing	No
NDOR Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Roadway Maintenance and Construction	No	3	The maintenance and construction vehicle shall monitor materials information including remaining quantity and current application rate of materials on the vehicle.	Existing	No
NDOR Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Roadway Maintenance and Construction	No	4	The maintenance and construction vehicle shall respond to dispatch information from the center, presented to the vehicle operator for acknowledgement and returning status.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
NDOR Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Roadway Maintenance and Construction	No	5	The maintenance and construction vehicle shall send operational data to the center including the operational state of the maintenance equipment (e.g., blade up/down, spreader pattern), types and quantities of materials used for construction and maintenance activities, and a record of the actual work performed.	Existing	No
NDOR Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Vehicle Location Tracking	No	1	The maintenance and construction vehicle shall track its current location.	Existing	No
NDOR Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Vehicle Location Tracking	No	2	The maintenance and construction vehicle shall send the time stamped vehicle location to the controlling center.	Existing	No
NDOR Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Winter Maintenance	No	1	The maintenance and construction vehicle shall track the location and status of safety systems on-board the vehicle.	Existing	No
NDOR Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Winter Maintenance	No	2	The maintenance and construction vehicle shall respond to control information from the center to allow remote operation of the on- board vehicle systems. These systems include winter maintenance equipment for plowing, treating, and anti-icing.	Existing	No
NDOR Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Winter Maintenance	No	3	The maintenance and construction vehicle shall monitor materials information including remaining quantity and current application rate of materials on the vehicle.	Existing	No
NDOR Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Winter Maintenance	No	4	The maintenance and construction vehicle shall respond to dispatch information from the center, presented to the vehicle operator for acknowledgement and returning status.	Existing	No
NDOR Maintenance and Construction Vehicles	Maintenance and Construction Vehicle	MCV Winter Maintenance	No	5	The maintenance and construction vehicle shall send operational data to the center including the operational state of the maintenance equipment (e.g., blade up/down, spreader pattern), types and quantities of materials used for construction and maintenance activities, and a record of the actual work performed.	Existing	No
NDOR RWIS	Roadway	Roadway Basic Surveillance	No				No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
NDOR RWIS	Roadway	Roadway Environmental Monitoring	No				No
NDOR RWIS	Roadway	Roadway Equipment Coordination	No				No
NDOR RWIS	Roadway	Roadway Probe Data Communications	No				No
NDOR RWIS	Roadway	Roadway Speed Monitoring and Warning	No				No
NDOR Signal System	Roadway	Roadway Equipment Coordination	No	1	The field element shall include sensors that provide data and status information to other field element devices, without center control.	Existing	No
NDOR Signal System	Roadway	Roadway Equipment Coordination	No	2	The field element shall include sensors that receive configuration data from other field element devices, without center control.	Existing	No
NDOR Signal System	Roadway	Roadway Equipment Coordination	No	3	The field element shall include devices that provide data and status information to other field element devices without center control.	Existing	No
NDOR Signal System	Roadway	Roadway Signal Controls	No	2	The field element shall respond to pedestrian crossing requests by accommodating the pedestrian crossing.	Existing	No
NDOR Website and Social Media	Information Service Provider	Basic Information Broadcast	No	1	The center shall disseminate traffic and highway condition information to travelers, including incident information, detours and road closures, event information, recommended routes, and current speeds on specific routes.	Existing	No
NDOR Website and Social Media	Information Service Provider	Basic Information Broadcast	No	2	The center shall disseminate maintenance and construction information to travelers, including scheduled maintenance and construction work activities and work zone activities.	Existing	No
NDOR Website and Social Media	Information Service Provider	Basic Information Broadcast	No	6	The center shall disseminate weather information to travelers.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
NDOR Website and Social Media	Information Service Provider	ISP Emergency Traveler Information	No	1	The center shall disseminate emergency evacuation information to the traveler interface systems, including evacuation zones, shelter information, available transportation modes, road closures and detours, changes to transit services, and traffic and road conditions at the origin, destination, and along the evacuation routes.	Existing	No
NDOR Website and Social Media	Information Service Provider	ISP Emergency Traveler Information	No	3	The center shall disseminate wide-area alert information to the traveler interface systems, including major emergencies such as a natural or man-made disaster, civil emergency, child abductions, severe weather watches and warnings, military activities, and law enforcement warnings.	Existing	No
NE State Patrol Communications Center (Omaha)	Emergency Management	Emergency Call-Taking	No				No
NE State Patrol Communications Center (Omaha)	Emergency Management	Emergency Dispatch	No				No
NE State Patrol Communications Center (Omaha)	Emergency Management	Emergency Response Management	No				No
NE State Patrol Communications Center (Omaha)	Emergency Management	Incident Command	No				No
NE State Patrol Communications Center (Omaha)	Emergency Management	Service Patrol Management	No				No
NE State Patrol Communications Center (Omaha)	Emergency Telecommunications System		No				No
NE State Patrol Emergency Vehicles	Emergency Vehicle	On-board EV Incident Management Communication	No				No
NE State Patrol Motorist Assist Vehicles	Emergency Vehicle	On-board EV En Route Support	No	1	The emergency vehicle, including roadway service patrols, shall track its current location.	Planned	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
NE State Patrol Motorist Assist Vehicles	Emergency Vehicle	On-board EV En Route Support	No	2	The emergency vehicle, including roadway service patrols, shall send the vehicle's location and operational data to the center for emergency management and dispatch.	Planned	No
NE State Patrol Motorist Assist Vehicles	Emergency Vehicle	On-board EV En Route Support	No	3	The emergency vehicle, including roadway service patrols, shall receive incident details and a suggested route when dispatched to a scene.	Existing	No
NE State Patrol Motorist Assist Vehicles	Emergency Vehicle	On-board EV Incident Management Communication	No	1	The emergency vehicle shall receive dispatch instructions sufficient to enable emergency personnel in the field to implement an effective incident response. It includes local traffic, road, and weather conditions, hazardous material information, and the current status of resources that have been allocated to an incident.	Existing	No
Other Local PWD Field Equipment	Roadway	Roadway Basic Surveillance	No				No
Other Local PWD Field Equipment	Roadway	Roadway Equipment Coordination	No				No
Other Local PWD Field Equipment	Roadway	Roadway Signal Controls	No				No
Personal Communications and Computing Devices	Personal Information Access	Personal Autonomous Route Guidance	No	5	The personal traveler interface shall support an interface with a map update provider, or other appropriate data sources, through which updates of digitized map data can be obtained and used for route guidance.	Planned	No
Personal Communications and Computing Devices	Personal Information Access	Personal Basic Information Reception	No	1	The personal traveler interface shall receive traffic information from a center and present it to the traveler.	Existing	No
Personal Communications and Computing Devices	Personal Information Access	Personal Basic Information Reception	No	7	The personal traveler interface shall support traveler input in audio or manual form.	Existing	No
Personal Communications and Computing Devices	Personal Information Access	Personal Basic Information Reception	No	8	The personal traveler interface shall present information to the traveler in audible or visual forms, consistent with a personal device.	Existing	No

Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
Personal Communications and Computing Devices	Personal Information Access	Personal Interactive Information Reception	No	1	The personal traveler interface shall receive traffic information from a center and present it to the traveler upon request.	Existing	No
Personal Communications and Computing Devices	Personal Information Access	Personal Interactive Information Reception	No	11	The personal traveler interface shall provide digitized map data to act as the background to the information presented to the traveler.	Planned	No
Personal Communications and Computing Devices	Personal Information Access	Personal Interactive Information Reception	No	12	The personal traveler interface shall support traveler input in audio or manual form.	Existing	No
Personal Communications and Computing Devices	Personal Information Access	Personal Interactive Information Reception	No	13	The personal traveler interface shall present information to the traveler in audible or visual forms consistent with a personal device, and suitable for travelers with hearing and vision physical disabilities.	Existing	No
Personal Communications and Computing Devices	Personal Information Access	Personal Location Determination	No	1	The personal traveler interface shall provide the traveler's current location. It is intended for use by traveler personal navigation and guidance systems, as well as emergency notification systems.	Planned	No
Personal Communications and Computing Devices	Personal Information Access	Personal Mayday I/F	No	1	The personal traveler interface shall provide the capability for a traveler to report an emergency and summon assistance.	Existing	No
Private Agency Websites	Travel Services Provider		No				No
Public Vehicles	Basic Vehicle		No				No
Public Vehicles	Vehicle	Basic Vehicle Reception	No	1	The vehicle shall receive formatted traffic information from a center and present it to the driver.	Existing	No
Public Vehicles	Vehicle	Basic Vehicle Reception	No	5	The vehicle shall receive wide-area alerts and present it to the driver.	Existing	No
Public Vehicles	Vehicle	Basic Vehicle Reception	No	8	The vehicle shall support driver input in audio or manual form.	Existing	No
Element Name	Entity Name	Functional Area	FA User Defined	RequirementID	Requirement	Status	Req User Defined
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Public Vehicles	Vehicle	Basic Vehicle Reception	No	9	The vehicle shall present information to the driver in audible or visual forms without impairing the driver's ability to control the vehicle in a safe manner.	Existing	No
Public Vehicles	Vehicle	Vehicle Mayday I/F	No	1	The vehicle shall provide the capability for a driver to report an emergency and summon assistance.	Existing	No
Public Vehicles	Vehicle	Vehicle Mayday I/F	No	2	The vehicle shall provide the capability to accept input from a driver via a panic button or some other functionally similar form of input device provided as part of the in-vehicle equipment.	Existing	No
Public Vehicles	Vehicle	Vehicle Mayday I/F	No	3	The vehicle shall provide the capability to automatically identify that a collision has occurred using equipment such as collision detection sensors with an interface to mayday type equipment that would automatically detect vehicle problems and send appropriate distress signals to a center.	Existing	No
Public Vehicles	Vehicle	Vehicle Mayday I/F	No	4	The vehicle shall forward a request for assistance to a center containing the driver's current location, its identity and basic vehicle data relevant to its current condition, as well as any other data, such as personal medical history, vehicle orientation, etc., that may be developed in-vehicle by other systems.	Existing	No
Tow Service Operators	Emergency Vehicle	On-board EV En Route Support	No				No
Tow Service Operators	Emergency Vehicle	On-board EV Incident Management Communication	No				No
Traffic	Traffic		No				No
Traveler Card	Traveler Card		No				No
Travelers	Traveler		No				No

Appendix C. Interfaces Details

The interfaces of the transportation systems in the Omaha-Council Bluffs Regional ITS Architecture are based on the National ITS Architecture and tailored to reflect the plan for the region. Architecture diagrams display the transportation systems in the Omaha-Council Bluffs Regional ITS Architecture, and more importantly, how these systems are and will be connected with one another so information can be exchanged and transportation services can be coordinated. Stakeholders may use these diagrams to identify integration opportunities. Each system in the region is represented with two types of diagrams, a context diagram and an architecture flow diagram.

A context diagram shows a particular system and all other systems with which it shares information. Interconnects are represented as single lines and indicate information sharing without specifying the type of information being shared or the direction of the information movement.

Following each interconnect context diagram are a series of architecture flow diagrams showing the information (i.e. architecture flows) movement between the various systems. Descriptions of the architecture flows are included at the end of the chapter.

Information about the interfaces of the systems in the region is contained in the Turbo Architecture[™] database. Turbo Architecture[™] can be used to create tailored interconnect and architecture flow diagrams for any system in the database.

Omaha-Council Bluffs Regional ITS Architecture Context Diagrams



Figure 1: Adjacent Region TOC Operators Context Diagram



Figure 2: City of Bellevue PWD Field Equipment Context Diagram



Figure 3: City of Council Bluffs PWD Field Equipment Context Diagram



Figure 4: City of Council Bluffs TOC Context Diagram



Figure 5: City of Council Bluffs Website and Social Media Context Diagram



Figure 6: City of Omaha PWD Field Equipment Context Diagram



Figure 7: City of Omaha Smart Parking Meters Context Diagram



Figure 8: City of Omaha TOC Context Diagram



Figure 9: City of Omaha Website and Social Media Context Diagram



Figure 10: County Emergency Operations Centers Context Diagram



Figure 11: County of Pottawattamie 911 Center Context Diagram



Figure 12: County of Pottawattamie EOC Context Diagram



Figure 13: Driver Context Diagram



Figure 14: Enforcement Agencies Context Diagram



Figure 15: Financial Institution Context Diagram



Figure 16: Fire and Rescue Emergency Vehicles Context Diagram



Figure 17: IA State Patrol Communications Center (Atlantic) Context Diagram



Figure 18: IA State Patrol Communications Center (Des Moines) Context Diagram



Figure 19: IA State Patrol Emergency Vehicles Context Diagram



Existing

Figure 20: Iowa DOT 511 System Context Diagram



----- Planned

Figure 21: Iowa DOT Automated Notification System Context Diagram



Figure 22: Iowa DOT Automated Work Zone Context Diagram



Existing
Planned

Figure 23: Iowa DOT CARS Context Diagram



Figure 24: Iowa DOT Central Headquarters Field Equipment Context Diagram



Figure 25: Iowa DOT Central Headquarters Office Context Diagram



Figure 26: Iowa DOT District 4 Field Equipment Context Diagram



Figure 27: Iowa DOT District 4 Offices Context Diagram



Figure 28: Iowa DOT Maintenance and Construction Vehicles Context Diagram



Figure 29: Iowa DOT Permanent DMS - Rest Areas Context Diagram



Existing Planned

Figure 30: Iowa DOT Rest Area Kiosks Context Diagram



Figure 31: Iowa DOT Statewide TOC Context Diagram



Figure 32: Iowa DOT Website and Social Media Context Diagram



Figure 33: Local Law Enforcement Dispatch and E911 Center Context Diagram



Figure 34: Local Law Enforcement Emergency Vehicles Context Diagram



Figure 35: MAPA Data Collection Context Diagram



Figure 36: MAPA Rideshare Context Diagram



Figure 37: Media CCTV Context Diagram



Figure 38: Media TV, Radio and News Outlets Context Diagram



Figure 39: Metro Bus Departure Signs Context Diagram


Figure 40: Metro Dispatch Center Context Diagram



Figure 41: Metro E Card Context Diagram



Figure 42: Metro Fixed-line Transit Vehicles Context Diagram



Planned

Figure 43: Metro MOBY Vehicles Context Diagram



Figure 44: Metro Ticket Vending Machines Context Diagram



Figure 45: Metro Website Context Diagram



Figure 46: NDOR 511 System Context Diagram





Figure 47: NDOR Automated Work Zone Context Diagram



Figure 48: NDOR DOC Context Diagram



Figure 49: NDOR Field Equipment Context Diagram



Figure 50: NDOR HCRS Context Diagram



Existing

Figure 51: NDOR Maintenance and Construction Vehicles Context Diagram



Figure 52: NDOR Website and Social Media Context Diagram



Figure 53: NE State Patrol Communications Center (Omaha) Context Diagram



Existing Planned

Figure 54: NE State Patrol Emergency Vehicles Context Diagram



Figure 55: NE State Patrol Motorist Assist Vehicles Context Diagram



Figure 56: Other Local PWD Field Equipment Context Diagram



Figure 57: Personal Communications and Computing Devices Context Diagram



Figure 58: Private Agency Websites Context Diagram



Figure 59: Public Vehicles Context Diagram



Figure 60: Tow Service Operators Context Diagram



Existing

Figure 61: Traffic Context Diagram



Figure 62: Traveler Card Context Diagram



Figure 63: Travelers Context Diagram

Architecture Flow Definitions

Flow Name	Description
alarm acknowledge	Confirmation that alarm was received, instructions and additional information for the alarm initiator, and requests for additional information.
alarm notification	Notification of activation of an audible or silent alarm by a traveler in a public area or by a transit vehicle operator using an on-board device.
alert notification	Notification of a major emergency such as a natural or man-made disaster, civil emergency, or child abduction for distribution to the public. The flow identifies the alert originator, the nature of the emergency, the geographic area affected by the emergency, the effective time period, and information and instructions necessary for the public to respond to the alert. This flow may also identify specific information that should not be released to the public.
alert notification coordination	Coordination of emergency alerts to be distributed to the public. This includes notification of a major emergency such as a natural or man-made disaster, civil emergency, or child abduction for distribution to the public and status of the public notification.
alert status	Information indicating the current status of the emergency alert including identification of the traveler and driver information systems that are being used to provide the alert.
alerts and advisories	Assessments (general incident and vulnerability awareness information), advisories (identification of threats or recommendations to increase preparedness levels), and alerts (information on imminent or in- progress emergencies). This flow also provides supporting descriptive detail on incidents, threats, and vulnerabilities to increase preparedness and support effective response to threats against the surface transportation system.
archive requests	A request to a data source for information on available data (i.e. "catalog") or a request that defines the data to be archived. The request can be a general subscription intended to initiate a continuous or regular data stream or a specific request intended to initiate a one-time response from the recipient.
archive status	Notification that data provided to an archive contains erroneous, missing, or suspicious data or verification that the data provided appears valid. If an error has been detected, the offending data and the nature of the potential problem are identified.
archived data product requests	A user-specified request for archived data products (i.e. data, meta data, or data catalogs). The request also includes information that is used to identify and authenticate the user and support electronic payment requirements, if any.
archived data products	Raw or processed data, meta data, data catalogs and other data products provided to a user system upon request. The response may also include any associated transaction information.
bad tag list	List of invalid transit user tags which may have previously failed a fare payment transaction.
barrier system control	Information used to configure and control barrier systems that are represented by gates, barriers and other automated or remotely controlled systems used to manage entry to roadways.
barrier system status	Current operating status of barrier systems. Barrier systems represent gates, barriers and other automated or remotely controlled systems used to manage entry to roadways. Status of the systems includes operating condition and current operational state.
boarding and alighting	Detection of transit passenger boarding and alighting. This flow represents the travelers' physical presence as they board a transit vehicle that can be detected or monitored by on-board sensors.
broadcast advisories	General broadcast advisories that are provided over wide-area wireless communications direct to the vehicle radio. These analog advisory messages may provide similar content to ITS broadcast information flows, but include no digital data component. Existing Highway-Advisory Radio (HAR) advisory messages are a prime example of this flow.
broadcast traveler information	General traveler information that contains traffic and road conditions, link travel times, incidents, advisories, restrictions, transit service information, weather information, parking information, and other related traveler information.
current asset restrictions	Restrictions levied on transportation asset usage based on infrastructure design, surveys, tests, or analyses. This includes standard facility design height, width, and weight restrictions, special restrictions such as spring weight restrictions, and temporary facility restrictions that are imposed during maintenance and construction.
data collection and monitoring control	Information used to configure and control data collection and monitoring systems.

Flow Name	Description
decision support information	Information provided to support effective and safe incident response, including local traffic, road, and weather conditions, hazardous material information, and the current status of resources that have been allocated to an incident.
demand response passenger and use data	Data collected on board a demand response vehicle relating to the picking up and discharging of passengers.
device control request	Request for device control action
device data	Data from detectors, environmental sensor stations, and traffic control devices including device inventory information.
device status	Status information from devices
driver information	Regulatory, warning, and guidance information provided to the driver while en route to support safe and efficient vehicle operation.
emergency acknowledge	Acknowledge request for emergency assistance and provide additional details regarding actions and verification requirements.
emergency dispatch requests	Emergency vehicle dispatch instructions including incident location and available information concerning the incident.
emergency dispatch response	Request for additional emergency dispatch information and provision of en route status.
emergency notification	An emergency request for assistance automatically initiated by a vehicle or originated by a traveler using an in-vehicle or personal device.
emergency plan coordination	Information that supports coordination of emergency management plans, continuity of operations plans, emergency response and recovery plans, evacuation plans, and other emergency plans between agencies. This includes general plans that are coordinated prior to an incident and shorter duration tactical plans that are prepared during an incident.
emergency route request	Request for access routes for emergency response vehicles and equipment. This may be a request for ingress or egress routes or other emergency routes.
emergency routes	Suggested ingress and egress routes for access to and between the scene and staging areas or other specialized emergency access routes.
emergency traffic control information	Status of a special traffic control strategy or system activation implemented in response to an emergency traffic control request, a request for emergency access routes, a request for evacuation, a request to activate closure systems, a request to employ driver information systems to support public safety objectives, or other special requests. Identifies the selected traffic control strategy and system control status.
emergency traffic control request	Special request to preempt the current traffic control strategy in effect at one or more signalized intersections or highway segments, activate traffic control and closure systems such as gates and barriers, activate safeguard systems, or use driver information systems. For example, this flow can request all signals to red-flash, request a progression of traffic control preemptions along an emergency vehicle route, request a specific evacuation traffic control plan, request activation of a road closure barrier system, or place a public safety or emergency-related message on a dynamic message sign.
emergency traffic coordination	Coordination supporting disaster response including evacuation and reentry. Includes coordination of special traffic control strategies that support efficient evacuation and reentry while protecting and optimizing movement of response vehicles and other resources responding to the emergency.
emergency transit schedule information	Information on transit schedule and service changes that adapt the service to better meet needs of responders and the general public in an emergency situation, including special service schedules supporting evacuation.
emergency transit service request	Request to modify transit service and fare schedules to address emergencies, including requests for transit services to evacuate people from and/or deploy response agency personnel to an emergency scene. The request may poll for resource availability or request pre-staging, staging, or immediate dispatch of transit resources.
emergency transit service response	Response indicating changes to transit service, fares, and/or restrictions that will be made and status of transit resources to be deployed to support emergency response and/or evacuation.
emergency traveler information	Public notification of an emergency such as a natural or man-made disaster, civil emergency, or child abduction. This flow also includes evacuation information including evacuation instructions, evacuation zones, recommended evacuation times, tailored evacuation routes and destinations, traffic and road conditions along the evacuation routes, traveler services and shelter information, and reentry times and instructions.

Flow Name	Description
emergency traveler information request	Request for alerts, evacuation information, and other emergency information provided to the traveling public.
emergency vehicle tracking data	The current location and operating status of the emergency vehicle.
environmental conditions data	Current road conditions (e.g., surface temperature, subsurface temperature, moisture, icing, treatment status) and surface weather conditions (e.g., air temperature, wind speed, precipitation, visibility) as measured and reported by fixed and/or mobile environmental sensors and aggregated by the data collector. Attributes relating to the data collection (and aggregation) are also included.
environmental probe data	Data from vehicle safety and convenience systems that can be used to estimate environmental conditions, including measured air temperature, exterior light status, wiper status, sun sensor status, rain sensor status, traction control status, anti-lock brake status, and other collected vehicle system status and sensor information. The collected data is reported along with the location, heading, and time that the data was collected. Both current data and snapshots of recent events (e.g., traction control or anti-lock brake system activations) may be reported.
environmental sensor data	Current road conditions (e.g., surface temperature, subsurface temperature, moisture, icing, treatment status) and surface weather conditions (e.g., air temperature, wind speed, precipitation, visibility) as measured and reported by fixed and/or mobile environmental sensors. Operational status of the sensors is also included.
environmental sensors control	Data used to configure and control environmental sensors.
evacuation coordination	Coordination of information regarding a pending or in-process evacuation. Includes evacuation zones, evacuation times, evacuation routes, forecast network conditions, and reentry times.
external reports	Traffic and incident information that is collected by the media through a variety of mechanisms (e.g., radio station call-in programs, air surveillance).
fare collection data	Fare collection information including the summary of on-board fare system data and financial payment transaction data.
fare management information	Transit fare information and transaction data used to manage transit fare processing on the transit vehicle.
incident command information coordination	Information that supports local management of an incident. It includes resource deployment status, hazardous material information, traffic, road, and weather conditions, evacuation advice, and other information that enables emergency or maintenance personnel in the field to implement an effective, safe incident response.
incident information	Notification of existence of incident and expected severity, location, time and nature of incident. As additional information is gathered and the incident evolves, updated incident information is provided. Incidents include any event that impacts transportation system operation ranging from routine incidents (e.g., disabled vehicle at the side of the road) through large-scale natural or human-caused disasters that involve loss of life, injuries, extensive property damage, and multi-jurisdictional response. This also includes special events, closures, and other planned events that may impact the transportation system.
incident notification	The notification of an incident including its nature, severity, and location.
incident notification response	Interactive acknowledgement and verification of the incident information received, requests for additional information, and general information on incident response status.
incident report	Report of an identified incident including incident location, type, severity and other information necessary to initiate an appropriate incident response.
incident response coordination	Incident response procedures and current incident response status that are shared between allied response agencies to support a coordinated response to incidents. This flow provides current situation information, including a summary of incident status and its impact on the transportation system and other infrastructure, and current and planned response activities. This flow also coordinates a positive hand off of responsibility for all or part of an incident response between agencies.
incident response status	Status of the current incident response including a summary of incident status and its impact on the transportation system, traffic management strategies implemented at the site (e.g., closures, diversions, traffic signal control overrides), and current and planned response activities.
incident status	Information gathered at the incident site that more completely characterizes the incident and provides current incident response status.
interactive traveler information	Traveler information provided in response to a traveler request. The provided information includes traffic and road conditions, advisories, incidents, payment information, transit services, parking information, weather information, and other travel-related data updates and confirmations.
lane management control	Information used to configure and control dynamic lane management systems.

Flow Name	Description
lane management information	System status including current operational state, violations, and logged information.
local signal preemption request	Direct control signal or message to a signalized intersection that results in preemption of the current control plan and grants right-of-way to the requesting vehicle.
local signal priority request	Request from a vehicle to a signalized intersection for priority at that intersection.
maint and constr archive data	Information describing road construction and maintenance activities identifying the type of activity, the work performed, and work zone information including work zone configuration and safety (e.g., a record of intrusions and vehicle speeds) information. For construction activities, this information also includes a description of the completed infrastructure, including as-built plans as applicable. Content may include a catalog of available information, the actual information to be archived, and associated meta data that describes the archived information.
maint and constr dispatch information	Information used to dispatch maintenance and construction vehicles, equipment, and crews and information used to keep work zone crews informed. This information includes routing information, traffic information, road restrictions, incident information, environmental information, decision support information, maintenance schedule data, dispatch instructions, personnel assignments, alert notifications, and corrective actions.
maint and constr dispatch status	Current maintenance and construction status including work data, operator status, crew status, and equipment status.
maint and constr resource request	Request for road maintenance and construction resources that can be used in the diversion of traffic (cones, portable signs), clearance of a road hazard, repair of ancillary damage, or any other incident response. The request may poll for resource availability or request pre-staging, staging, or immediate dispatch of resources.
maint and constr resource response	Current status of maintenance and construction resources including availability and deployment status. General resource inventory information covering vehicles, equipment, materials, and people and specific resource deployment status may be included.
maint and constr vehicle location data	The current location and related status (e.g., direction and speed) of the maintenance/construction vehicle.
maint and constr vehicle operational data	Data that describes the maintenance and construction activity performed by the vehicle. Operational data includes materials usage (amount stored and current application rate), operational state of the maintenance equipment (e.g., blade up/down, spreader pattern), vehicle safety status, and other measures associated with the operation of a maintenance, construction, or other special purpose vehicle. Operational data may include basic operational status of the vehicle equipment or a more precise record of the work performed (e.g., application of crack sealant with precise locations and application characteristics).
maint and constr vehicle system control	Configure and control data that supports remote control of on-board maintenance and construction vehicle systems and field equipment that is remotely controlled by the vehicle. For example, the data can be used to adjust material application rates and spread patterns.
maint and constr work plans	Future construction and maintenance work schedules and activities including anticipated closures with anticipated impact to the roadway, alternate routes, anticipated delays, closure times, and durations.
payment	Payment of some kind (e.g., toll, parking, fare) by traveler which, in most cases, can be related to a credit account.
payment request	Request for payment from financial institution.
personal transit information	General and personalized transit information for a particular fixed route, flexible route, or paratransit system.
probe archive data	Probe data that allows calculation of travel times, volumes, and other measures that support transportation planning. Optionally, this flow also includes origin and destination information for vehicles that opt to provide this information.
remote surveillance control	The control commands used to remotely operate another center's sensors or surveillance equipment so that roadside surveillance assets can be shared by more than one agency.
request for bad tag list	Request for list of bad vehicle tag IDs.
request for enforcement	Request for traffic enforcement of speed limits, lane controls, etc. on a roadway including in a work zone or other special situations.
request for payment	Request to deduct cost of service from user's payment account.
request transit information	Request for transit service information and current transit status.

Flow Name	Description
resource coordination	Coordination of resource inventory information, specific resource status information, resource prioritization and reallocation between jurisdictions, and specific requests for resources and responses that service those requests.
resource deployment status	Status of resource deployment identifying the resources (vehicles, equipment, materials, and personnel) available and their current status. General resource inventory information and specific status of deployed resources may be included.
resource request	A request for resources to implement special traffic control measures, assist in clean up, verify an incident, etc. The request may poll for resource availability or request pre-staging, staging, or immediate deployment of resources. Resources may be explicitly requested or a service may be requested and the specific resource deployment may be determined by the responding agency.
reversible lane control	Control of automated reversible lane configuration and driver information systems.
reversible lane status	Current reversible lane status including traffic sensor and surveillance data and the operational status and mode of the reversible lane control equipment.
right-of-way request notification	Notice that a request has occurred for signal prioritization, signal preemption, pedestrian call, multi- modal crossing activation, or other source for right-of-way.
road network conditions	Current and forecasted traffic information, road and weather conditions, and other road network status. Either raw data, processed data, or some combination of both may be provided by this architecture flow. Information on diversions and alternate routes, closures, and special traffic restrictions (lane/shoulder use, weight restrictions, width restrictions, HOV requirements) in effect is included along with a definition of the links, nodes, and routes that make up the road network.
road network environmental probe data	Aggregated vehicle probe information that can be used to estimate current environmental conditions. Collected information would include measured air temperature, exterior light status, wiper status, sun sensor status, rain sensor status, traction control status, ALB status, and other collected vehicle system status and sensor information.
road network status assessment	Assessment of damage sustained by the road network including location and extent of the damage, estimate of remaining capacity, required closures, alternate routes, necessary restrictions, and time frame for repair and recovery.
road weather information	Road conditions and weather information that are made available by road maintenance operations to other transportation system operators.
roadside archive data	A broad set of data derived from roadside sensors that includes current traffic conditions, environmental conditions, and any other data that can be directly collected by roadside sensors. This data also indicates the status of the sensors and reports of any identified sensor faults.
roadway equipment coordination	The direct flow of information between field equipment. This includes transfer of information between sensors and driver information systems (e.g., DMS, HAR, variable speed limit signs, dynamic lane signs) or control devices (e.g., traffic signals, ramp meters), direct coordination between adjacent control devices, interfaces between detection and warning or alarm systems, and any other direct communications between field equipment.
roadway information system data	Information used to initialize, configure, and control roadside systems that provide driver information (e.g., dynamic message signs, highway advisory radio, beacon systems). This flow can provide message content and delivery attributes, local message store maintenance requests, control mode commands, status queries, and all other commands and associated parameters that support remote management of these systems.
roadway information system status	Current operating status of dynamic message signs, highway advisory radios, beacon systems, or other configurable field equipment that provides dynamic information to the driver.
roadway maintenance status	Summary of maintenance fleet operations affecting the road network. This includes the status of winter maintenance (snow plow schedule and current status).
roadway treatment system control	Control data for remotely located, automated devices, that affect the roadway surface (e.g. de-icing applications).
roadway treatment system status	Current operational status of automated roadway treatment devices (e.g., anti-icing systems).
signal control commands	Control of traffic signal controllers or field masters including clock synchronization.
signal control device configuration	Data used to configure traffic signal control equipment including local controllers and system masters.
signal control plans	Traffic signal timing parameters including minimum green time and interval durations for basic operation and cycle length, splits, offset, phase sequence, etc. for coordinated systems.

Flow Name	Description
signal control status	Operational and status data of traffic signal control equipment including operating condition and current indications.
signal fault data	Faults from traffic signal control equipment.
signal system configuration	Data used to configure traffic signal systems including configuring control sections and mode of operation (time based or traffic responsive).
speed monitoring control	Information used to configure and control automated speed monitoring, speed warning, and speed enforcement systems.
speed monitoring information	System status including current operational state and logged information including measured speeds, warning messages displayed, and violation records.
suggested route	Suggested route for a dispatched emergency or maintenance vehicle that may reflect current network conditions and the additional routing options available to en route emergency or maintenance vehicles that are not available to the general public.
traffic archive data	Information describing the use and vehicle composition on transportation facilities and the traffic control strategies employed. Content may include a catalog of available information, the actual information to be archived, and associated meta data that describes the archived information.
traffic characteristics	Physical traffic characteristics which are monitored and translated into macroscopic measures like occupancy, volume, density, and average speed. Point measures support presence detection and individual vehicle measures like speed.
traffic flow	Raw and/or processed traffic detector data which allows derivation of traffic flow variables (e.g., speed, volume, and density measures) and associated information (e.g., congestion, potential incidents). This flow includes the traffic data and the operational status of the traffic detectors.
traffic images	High fidelity, real-time traffic images suitable for surveillance monitoring by the operator or for use in machine vision applications.
traffic information for media	Report of traffic conditions including traffic incident reports and traffic images for public dissemination through the media. The reports may also include information on diversions and alternate routes, closures, and special traffic restrictions in effect.
traffic sensor control	Information used to configure and control traffic sensor systems.
traffic violation notification	Notification to enforcement agency of a detected traffic violation including speed violations, HOV violations, and dynamic lane violations.
transaction status	Response to transaction request. Normally dealing with a request for payment.
transit and fare schedules	Transit service information including routes, schedules, and fare information.
transit information request	Request for transit operations information including schedule and fare information. The request can be a subscription that initiates as-needed information updates as well as a one-time request for information.
transit information user request	Request for special transit routing, real-time schedule information, and availability information.
transit request confirmation	Confirmation of a request for transit information or service.
transit schedule information	Current and projected transit schedule information used to initialize the transit vehicle with a vehicle assignment, monitor schedule performance, and develop corrective actions on-board.
transit system data	Current transit system operations information indicating current transit routes, the level of service on each route, and the progress of individual vehicles along their routes for use in forecasting demand and estimating current transportation network performance.
transit system status assessment	Assessment of damage sustained by the public transportation system including location and extent of the damage, current operational status including an estimate of remaining capacity and necessary restrictions, and time frame for repair and recovery.
transit traveler information	Transit information prepared to support transit users and other travelers. It contains transit schedules, real-time arrival information, fare schedules, alerts and advisories, and general transit service information.
transit vehicle loading data	Data collected on board the transit vehicle relating to passenger boarding and alighting.
transit vehicle location data	Current transit vehicle location and related operational conditions data provided by a transit vehicle.

Flow Name	Description
transit vehicle operator authentication information	Information regarding on-board transit operator authentication
transit vehicle operator authentication update	Results of authentication process or update of on-board authentication database.
transit vehicle operator information	Transit service instructions, wide area alerts, traffic information, road conditions, and other information for both transit and paratransit operators.
transit vehicle schedule performance	Estimated times of arrival and anticipated schedule deviations reported by a transit vehicle.
transportation information for operations	Information on the state of transportation system operations including traffic and road conditions, advisories, incidents, transit service information, weather information, parking information, and other related data.
transportation system status	Current status and condition of transportation infrastructure (e.g., tunnels, bridges, interchanges, TMC offices, maintenance facilities). In case of disaster or major incident, this flow provides an assessment of damage sustained by the surface transportation system including location and extent of the damage, estimate of remaining capacity and necessary restrictions, and time frame for repair and recovery.
travel service information	Information supplied by a service provider (e.g., a hotel or restaurant) that identifies the service provider and provides details of the service offering. This flow covers initial registration of a service provider and subsequent submittal of new information and status updates so that data currency is maintained.
travel service information request	Requests for travel service information. This flow supports initial registration of service providers and requests for additional traveler service information from registered providers.
travel service reservation request	Reservation request for traveler services (e.g. for a hotel or restaurant) including billing information when applicable.
travel service reservations	Traveler service (e.g., for a hotel or restaurant) reservation information and status, including information on associated billing transactions, when applicable.
travel services information	Travel service information and reservations for tourist attractions, lodging, dining, service stations, emergency services, and other services and businesses of interest to the traveler.
travel services request	Request for travel service information including tourist attractions, lodging, restaurants, service stations, and emergency services. The request identifies the type of service, the area of interest, optional reservation request information, parameters that are used to prioritize or filter the returned information, and sorting preferences.
traveler alerts	Traveler information alerts reporting congestion, incidents, adverse road or weather conditions, parking availability, transit service delays or interruptions, and other information that may impact the traveler. Relevant alerts are provided based on traveler-supplied profile information including trip characteristics and preferences.
traveler information for media	General traveler information regarding incidents, unusual traffic conditions, transit issues, or other advisory information that has been desensitized and provided to the media.
traveler inputs	User input from a traveler to summon assistance, request travel information, make a reservation, or request any other traveler service.
traveler interface updates	Visual or audio information (e.g., routes, messages, guidance, emergency information) that is provided to the traveler.
traveler profile	Information about a traveler including equipment capabilities, personal preferences, and traveler alert subscriptions.
traveler request	A request for traveler information including traffic, transit, toll, parking, road weather conditions, event, and passenger rail information. The request identifies the type of information, the area of interest, parameters that are used to prioritize or filter the returned information, and sorting preferences.
trip plan	A travel itinerary identifying a route and associated traveler information and instructions identifying recommended modes and transfer information, ride sharing options, and transit and parking reservation information.
trip request	Request for trip planning services that identifies the trip origin, destination(s), timing, preferences, and constraints. The request may also include a request for transit and parking reservations and ridesharing options associated with the trip.

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Flow Name	Description
video surveillance control	Information used to configure and control video surveillance systems.
voice-based traveler information	Traveler information sent to the telecommunications systems for traveler information terminator. This flow may represent the bulk transfer of traveler information, including traffic conditions, incident information, transit information and weather and road condition information. It may be specially formatted for voice-based traveler information.
work plan coordination	Coordination of work plan schedules and activities between maintenance and construction organizations or systems. This information includes the work plan schedules and comments and suggested changes that are exchanged as work plans are coordinated and finalized.
work plan feedback	Comments and suggested changes to proposed construction and maintenance work schedules and activities. This information influences work plan schedules so that they minimize impact to other system operations and the overall transportation system.
work zone information	Summary of maintenance and construction work zone activities affecting the road network including the nature of the maintenance or construction activity, location, impact to the roadway, expected time(s) and duration of impact, anticipated delays, alternate routes, and suggested speed limits. This information may be augmented with images that provide a visual indication of current work zone status and traffic impacts.
work zone status	Current work zone status including current location (and future locations for moving work zones), impact to the roadway, required lane shifts, expected time(s) and duration of impact, anticipated delays, alternate routes, and suggested speed limits.
work zone warning device control	Data used to configure and control work zone safety monitoring and warning devices.
work zone warning notification	Notification of a work zone emergency or safety issue. This flow identifies that a work zone emergency or safety issue has occurred so that warnings may be generated by more than one system in the work zone.
work zone warning status	Status of a work zone safety monitoring and warning devices. This flow documents system activations and includes additional supporting information (e.g., an image) that allows verification of the alarm.