

Missouri Department of Transportation Springfield Regional ITS Architecture Update

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Missouri Department of Transportation
Traffic Division

MODOT DISTRICT 8 OFFICE
M.O. Box 868
Springfield, MO 65801-000
417-837-57897

Functional Requirements



DISTRICT - 8

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TRANSCORE

**Missouri Department of Transportation
Springfield Regional ITS Architecture Update**

“Functional Requirements”

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408 East Bannister Road
Kansas City, MO 64131-3010
816.444.3345 tell 816.363.0556 fax

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Document Revision History

Date	Version	Description
6-11-2010	1.0	Initial document release
7-5-2010	2.0	Incorporated feedback and comments
7-19-2010	2.0	Final release



Overview

The following document details regional functional requirements for the Springfield Region ITS Architecture. These requirements form the basis of the functions specific centers and subsystems will perform as part of an integrated regional ITS vision. The document will serve as a preliminary list of roles each agency and its systems will perform as the region continues with upcoming and future ITS deployments. Understanding and documenting these functions are a needed to generating an updated ITS architectures, as well as a tool that further assist agencies with understanding each other's roles in the region.

1 Document Layout

The document is structured by regional stakeholders. Each stakeholder has the ITS system listed and then the functions that system is seen to perform in the region at this time or within the next five years. The functions are broken down by additional categories and into smaller subsections.

2 Methodology

The work in this section draws heavily from the National ITS Architecture. It is the foundation for many of the functions listed. Using the National Architecture make it easier to later develop a customized regional architecture and document it with the Turbo Database software package.

The region currently has a number of stakeholders, as well as established market packages that highlight local agency needs and objectives. Examining those files, and using the National ITS Architecture as a guide, provided a way to establish baseline functional requirements for each agency. The final product is a list of each agency, its system, and a series of statements that identify what functions that system “shall” perform within the region. These baseline functional requirements are a way of bridging the established regional packages with logical requirements to bring about stronger ITS integration.

By establishing these baseline requirements stakeholders can, if needed, be engaged in discussions on likely roles each will perform as the region move forward with planned ITS deployments. The document breaks those requirements into stakeholder and system specific tables that make the review process more effective and future input more easy to obtain.



3 Regional Functional Requirements

The following provides a list of preliminary functional requirements for stakeholders whose jurisdictions are within the District 8, Springfield Region. Each stakeholder has the stakeholder name highlighted along with the specific systems that interact with other stakeholders within the area.

3.1 Burlington Northern Santa Fe Railroad

Stakeholder: **Burlington Northern Santa Fe Railroad**
 System: **Traffic Management –Railroad Operations**

This system shall:

HRI Traffic Management

1. Remotely control highway-rail intersection (HRI) equipment located in the field.
2. Collect highway-rail intersection (HRI) equipment operational status and compare against the control information sent by the center.
3. Provide the highway-rail intersection (HRI) equipment operational status to rail operation centers.

Rail Operations Coordination

1. Exchange highway-rail intersection (HRI) information with rail operation centers. This information may include event schedules, requests for information for the Rail Operators, incident notification based on rail operations messages, and priority messages like notifications of a HAZMAT spill, equipment failure, or an intersection blockage.
2. Receive highway-rail intersection (HRI) maintenance schedules, train schedules, and incident notifications from rail operations centers.
3. Use the rail operations information to develop forecast HRI closure times and durations, which may be, applied in advance traffic control strategies for delivered as enhanced traveler information.

3.2 Christian County Emergency 911

Stakeholder: **Christian County Emergency 911**
 System: **Emergency Management**

This system shall:

Emergency Call-Taking

1. 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.
2. Receive emergency call information from 911 services and present the possible incident information to the emergency system operator.
3. Receive emergency notification information from other public safety agencies and present the possible incident information to the emergency system operator.
4. Receive emergency notification information from public transit systems and present the possible incident information to the emergency system operator.
5. Coordinate, correlate, and verify all emergency inputs, including those identified based on external calls and internal analysis of security sensor and surveillance data, and assign each a level of confidence.



6. Forward the verified emergency information to the responding agency based on the location and nature of the emergency.
7. Update the incident information log once the emergency system operator has verified the incident.

Emergency Dispatch

1. Dispatch emergency vehicles to respond to verified emergencies under center personnel control.
2. Relay location and incident details to the responding vehicles.
3. Track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.
4. Store and maintain the emergency service responses in an action log.
5. Receive traffic images to support dispatch of emergency vehicles.
6. Coordinate response to incidents with other Emergency Management centers to ensure appropriate resources are dispatched and utilized.

Emergency Early Warning System

1. 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).
2. Coordinate the broadcast of wide-area alerts and advisories with other emergency management centers.
3. Receive incident information from other transportation management centers to support the early warning system.
4. Present the alert and advisory information and the status of the actions taken in response to the alert by the other centers to the emergency system operator as received from other system inputs.

Emergency Evacuation Support

1. Manage inter-agency coordination of evacuation operations, from initial planning through the evacuation process and reentry.
2. Develop and exchange evacuation plans with allied agencies prior to the occurrence of a disaster.
3. Provide evacuation information to traffic, transit, maintenance and construction, rail operations, and other emergency management centers as needed.
4. 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.
5. Monitor the progress of the reentry process.

Emergency Response Management

1. Provide the capability to implement response plans and track progress through the incident by exchanging incident information and distributing response status to allied agencies.
2. Develop, coordinate with other agencies, and store emergency response plans.
3. Track the availability of resources and coordinate resource sharing with allied agency centers including traffic, maintenance, or other emergency centers.
4. Allocate the appropriate emergency services, resources, and vehicle (s) to respond to incidents, and shall provide the capability to override the current allocation to suit the special needs of a current incident.
5. Receive event scheduling information from Event Promoters.
6. Provide information to the media concerning the status of an emergency response.

Emergency Routing

1. Collect current traffic and road condition information for emergency vehicle route calculation.
2. Receive information on the location and status of traffic control equipment and work zones along potential emergency routes.



3. Calculate emergency vehicle routes, under center personnel control, based on the collected traffic and road conditions information.
4. Request and receive ingress and egress routes or other specialized emergency access routes from the traffic management center.

Incident Command

1. 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.
2. Provide incident command communications with public safety, emergency management, transportation, and other allied response agency centers.
3. Track and maintain resource information and action plans pertaining to the incident command.
4. 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.
5. Assess the status of responding emergency vehicles as part of an incident command.

Service Patrol Management

1. Dispatch roadway service patrol vehicles to identified incident locations.
2. Store the current status of all service patrol vehicles available for dispatch and those that have been dispatched.
3. Share incident information collected by the service patrol with traffic, maintenance and construction, and traveler information centers for incident management, incident notification to travelers, and incident cleanup.
4. Track the location and status of service patrol vehicles.

3.3 Christian County Sheriff's Office

Stakeholder: **Christian County Sheriff's Office**

System: **Dispatch Center**

This system shall:

Emergency Call-Taking

1. 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.
2. Receive emergency call information from 911 services and present the possible incident information to the emergency system operator.
3. Receive emergency notification information from other public safety agencies and present the possible incident information to the emergency system operator.
4. Receive emergency notification information from public transit systems and present the possible incident information to the emergency system operator.
5. Coordinate, correlate, and verify all emergency inputs, including those identified based on external calls and internal analysis of security sensor and surveillance data, and assign each a level of confidence.
6. Forward the verified emergency information to the responding agency based on the location and nature of the emergency.
7. Update the incident information log once the emergency system operator has verified the incident.

Emergency Dispatch

1. Dispatch emergency vehicles to respond to verified emergencies under center personnel control.
2. Relay location and incident details to the responding vehicles.



3. Track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.
4. Store and maintain the emergency service responses in an action log.
5. Receive traffic images to support dispatch of emergency vehicles.
6. Coordinate response to incidents with other Emergency Management centers to ensure appropriate resources are dispatched and utilized.

Emergency Evacuation Support

1. Manage inter-agency coordination of evacuation operations, from initial planning through the evacuation process and reentry.
2. Develop and exchange evacuation plans with allied agencies prior to the occurrence of a disaster.
3. Provide evacuation information to traffic, transit, maintenance and construction, rail operations, and other emergency management centers as needed.
4. 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.
5. Monitor the progress of the reentry process.

Emergency Response Management

1. Provide the capability to implement response plans and track progress through the incident by exchanging incident information and distributing response status to allied agencies.
2. Develop, coordinate with other agencies, and store emergency response plans.
3. Track the availability of resources and coordinate resource sharing with allied agency centers including traffic, maintenance, or other emergency centers.
4. Allocate the appropriate emergency services, resources, and vehicle (s) to respond to incidents, and shall provide the capability to override the current allocation to suit the special needs of a current incident.
5. Receive event scheduling information from Event Promoters.
6. Provide information to the media concerning the status of an emergency response.

Incident Command

1. 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.
2. Provide incident command communications with public safety, emergency management, transportation, and other allied response agency centers.
3. Track and maintain resource information and action plans pertaining to the incident command.
4. 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.
5. Assess the status of responding emergency vehicles as part of an incident command.

Service Patrol Management

1. Dispatch roadway service patrol vehicles to identified incident locations.
2. Store the current status of all service patrol vehicles available for dispatch and those that have been dispatched.
3. Share incident information collected by the service patrol with traffic, maintenance and construction, and traveler information centers for incident management, incident notification to travelers, and incident cleanup.
4. Track the location and status of service patrol vehicles.



3.4 City of Branson Engineering Department

Stakeholder: **City of Branson Engineering Department**

System: **Maintenance and Construction**

This system shall:

Maintenance Decision Support

1. Provide an interface to the center personnel to input control parameters for the decision support process and receive decisions or information presentation.
2. Provide dispatch information to maintenance and construction vehicles based on the outputs of the decision support system, including recommended roadway treatment actions.

Roadway Maintenance and Construction

1. Respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other roadway maintenance.
2. Provide emergency management and traffic management centers with information about scheduled maintenance and construction work activities including anticipated closures and impact to the roadway, alternate routes, anticipated delays, closure times, and durations.
3. Receive equipment availability and materials storage status information from storage facilities to support the scheduling of roadway maintenance and construction activities.
4. Dispatch and route maintenance and construction vehicle drivers and support them with route-specific environmental, incident, advisory, threat, alert, and traffic congestion information.
5. Report the status of field equipment maintenance activities to the centers that operate the equipment.

Winter Maintenance Management

1. Respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other winter roadway maintenance.
2. Exchange information with administrative systems to support the planning and scheduling of winter maintenance activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.
3. 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.
4. Receive equipment availability and materials storage status information from storage facilities to support the scheduling of winter maintenance activities.
5. Determine the need for roadway treatment based on current and forecasted weather information, current usage of treatments and materials, available resources, requests for action from other agencies, and recommendations from the Maintenance Decision Support system, specifically under winter conditions. This supports winter maintenance such as plowing, treating, anti-icing, etc.
6. Provide dispatch instructions for vehicle operators based on input parameters from center personnel, specifically for winter conditions. This could include a treatment route, treatment application rates, start and end times, and other treatment instructions.
7. 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.

Work Activity Coordination

1. 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.
2. 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.
 3. Collect and respond to feedback concerning scheduled maintenance and construction activities with other management centers such as traffic, emergency, transit, and rail operations.
 4. Exchange rail schedules and work plans with rail operation centers.

Work Zone Management

1. Generate new work zone activity schedules for use by maintenance and construction vehicles, maintenance and construction operators, and for information coordination purposes.
2. Disseminate work zone information to other agencies and centers including traffic, transit, emergency management centers, other maintenance centers, traveler information providers, and the media.
3. Exchange information with administrative systems to support the planning and scheduling of work zone activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.

3.5 City of Lebanon

Stakeholder: **City of Lebanon**

System: **Maintenance and Construction**

This system shall:

Maintenance Decision Support

1. Provide an interface to the center personnel to input control parameters for the decision support process and receive decisions or information presentation.
2. Provide dispatch information to maintenance and construction vehicles based on the outputs of the decision support system, including recommended roadway treatment actions.

Roadway Maintenance and Construction

1. Respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other roadway maintenance.
2. Provide emergency management and traffic management centers with information about scheduled maintenance and construction work activities including anticipated closures and impact to the roadway, alternate routes, anticipated delays, closure times, and durations.
3. Receive equipment availability and materials storage status information from storage facilities to support the scheduling of roadway maintenance and construction activities.
4. Dispatch and route maintenance and construction vehicle drivers and support them with route-specific environmental, incident, advisory, threat, alert, and traffic congestion information.
5. Report the status of field equipment maintenance activities to the centers that operate the equipment.

Winter Maintenance Management

1. Respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other winter roadway maintenance.
2. Exchange information with administrative systems to support the planning and scheduling of winter maintenance activities. This information includes: equipment and consumables resupply



- purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.
3. 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.
 4. Receive equipment availability and materials storage status information from storage facilities to support the scheduling of winter maintenance activities.
 5. Determine the need for roadway treatment based on current and forecasted weather information, current usage of treatments and materials, available resources, requests for action from other agencies, and recommendations from the Maintenance Decision Support system, specifically under winter conditions. This supports winter maintenance such as plowing, treating, anti-icing, etc.
 6. Provide dispatch instructions for vehicle operators based on input parameters from center personnel, specifically for winter conditions. This could include a treatment route, treatment application rates, start and end times, and other treatment instructions.
 7. 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.

Work Activity Coordination

1. 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.
2. 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.
3. Collect and respond to feedback concerning scheduled maintenance and construction activities with other management centers such as traffic, emergency, transit, and rail operations.
4. Exchange rail schedules and work plans with rail operation centers.

Work Zone Management

1. Generate new work zone activity schedules for use by maintenance and construction vehicles, maintenance and construction operators, and for information coordination purposes.
2. Disseminate work zone information to other agencies and centers including traffic, transit, emergency management centers, other maintenance centers, traveler information providers, and the media.
3. Exchange information with administrative systems to support the planning and scheduling of work zone activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.



3.6 City of Marshfield

Stakeholder: **City of Marshfield**

System: **Maintenance and Construction**

This system shall:

Maintenance Decision Support

1. Provide an interface to the center personnel to input control parameters for the decision support process and receive decisions or information presentation.
2. Provide dispatch information to maintenance and construction vehicles based on the outputs of the decision support system, including recommended roadway treatment actions.

Roadway Maintenance and Construction

1. Respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other roadway maintenance.
2. Provide emergency management and traffic management centers with information about scheduled maintenance and construction work activities including anticipated closures and impact to the roadway, alternate routes, anticipated delays, closure times, and durations.
3. Receive equipment availability and materials storage status information from storage facilities to support the scheduling of roadway maintenance and construction activities.
4. Dispatch and route maintenance and construction vehicle drivers and support them with route-specific environmental, incident, advisory, threat, alert, and traffic congestion information.
5. Report the status of field equipment maintenance activities to the centers that operate the equipment.

Winter Maintenance Management

1. Respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other winter roadway maintenance.
2. Exchange information with administrative systems to support the planning and scheduling of winter maintenance activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.
3. 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.
4. Receive equipment availability and materials storage status information from storage facilities to support the scheduling of winter maintenance activities.
5. Determine the need for roadway treatment based on current and forecasted weather information, current usage of treatments and materials, available resources, requests for action from other agencies, and recommendations from the Maintenance Decision Support system, specifically under winter conditions. This supports winter maintenance such as plowing, treating, anti-icing, etc.
6. Provide dispatch instructions for vehicle operators based on input parameters from center personnel, specifically for winter conditions. This could include a treatment route, treatment application rates, start and end times, and other treatment instructions.
7. 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.

Work Activity Coordination

1. 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.
2. 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.
 3. Collect and respond to feedback concerning scheduled maintenance and construction activities with other management centers such as traffic, emergency, transit, and rail operations.
 4. Exchange rail schedules and work plans with rail operation centers.

Work Zone Management

1. Generate new work zone activity schedules for use by maintenance and construction vehicles, maintenance and construction operators, and for information coordination purposes.
2. Disseminate work zone information to other agencies and centers including traffic, transit, emergency management centers, other maintenance centers, traveler information providers, and the media.
3. Exchange information with administrative systems to support the planning and scheduling of work zone activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.

3.7 City of Nixa

Stakeholder: **City of Nixa**

System: **Maintenance and Construction**

This system shall:

Maintenance Decision Support

1. Provide an interface to the center personnel to input control parameters for the decision support process and receive decisions or information presentation.
2. Provide dispatch information to maintenance and construction vehicles based on the outputs of the decision support system, including recommended roadway treatment actions.

Roadway Maintenance and Construction

1. Respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other roadway maintenance.
2. Provide emergency management and traffic management centers with information about scheduled maintenance and construction work activities including anticipated closures and impact to the roadway, alternate routes, anticipated delays, closure times, and durations.
3. Receive equipment availability and materials storage status information from storage facilities to support the scheduling of roadway maintenance and construction activities.
4. Dispatch and route maintenance and construction vehicle drivers and support them with route-specific environmental, incident, advisory, threat, alert, and traffic congestion information.
5. Report the status of field equipment maintenance activities to the centers that operate the equipment.

Winter Maintenance Management

1. Respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other winter roadway maintenance.
2. Exchange information with administrative systems to support the planning and scheduling of winter maintenance activities. This information includes: equipment and consumables resupply



- purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.
3. 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.
 4. Receive equipment availability and materials storage status information from storage facilities to support the scheduling of winter maintenance activities.
 5. Determine the need for roadway treatment based on current and forecasted weather information, current usage of treatments and materials, available resources, requests for action from other agencies, and recommendations from the Maintenance Decision Support system, specifically under winter conditions. This supports winter maintenance such as plowing, treating, anti-icing, etc.
 6. Provide dispatch instructions for vehicle operators based on input parameters from center personnel, specifically for winter conditions. This could include a treatment route, treatment application rates, start and end times, and other treatment instructions.
 7. 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.

Work Activity Coordination

1. 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.
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3. Collect and respond to feedback concerning scheduled maintenance and construction activities with other management centers such as traffic, emergency, transit, and rail operations.
4. Exchange rail schedules and work plans with rail operation centers.

Work Zone Management

1. Generate new work zone activity schedules for use by maintenance and construction vehicles, maintenance and construction operators, and for information coordination purposes.
2. Disseminate work zone information to other agencies and centers including traffic, transit, emergency management centers, other maintenance centers, traveler information providers, and the media.
3. Exchange information with administrative systems to support the planning and scheduling of work zone activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.



3.8 City of Ozark

Stakeholder: **City of Ozark**

System: **Maintenance and Construction**

This system shall:

Maintenance Decision Support

1. Provide an interface to the center personnel to input control parameters for the decision support process and receive decisions or information presentation.
2. Provide dispatch information to maintenance and construction vehicles based on the outputs of the decision support system, including recommended roadway treatment actions.

Roadway Maintenance and Construction

1. Respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other roadway maintenance.
2. Provide emergency management and traffic management centers with information about scheduled maintenance and construction work activities including anticipated closures and impact to the roadway, alternate routes, anticipated delays, closure times, and durations.
3. Receive equipment availability and materials storage status information from storage facilities to support the scheduling of roadway maintenance and construction activities.
4. Dispatch and route maintenance and construction vehicle drivers and support them with route-specific environmental, incident, advisory, threat, alert, and traffic congestion information.
5. Report the status of field equipment maintenance activities to the centers that operate the equipment.

Winter Maintenance Management

1. Respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other winter roadway maintenance.
2. Exchange information with administrative systems to support the planning and scheduling of winter maintenance activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.
3. 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.
4. Receive equipment availability and materials storage status information from storage facilities to support the scheduling of winter maintenance activities.
5. Determine the need for roadway treatment based on current and forecasted weather information, current usage of treatments and materials, available resources, requests for action from other agencies, and recommendations from the Maintenance Decision Support system, specifically under winter conditions. This supports winter maintenance such as plowing, treating, anti-icing, etc.
6. Provide dispatch instructions for vehicle operators based on input parameters from center personnel, specifically for winter conditions. This could include a treatment route, treatment application rates, start and end times, and other treatment instructions.
7. 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.

Work Activity Coordination

1. 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.
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 3. Collect and respond to feedback concerning scheduled maintenance and construction activities with other management centers such as traffic, emergency, transit, and rail operations.
 4. Exchange rail schedules and work plans with rail operation centers.

Work Zone Management

1. Generate new work zone activity schedules for use by maintenance and construction vehicles, maintenance and construction operators, and for information coordination purposes.
2. Disseminate work zone information to other agencies and centers including traffic, transit, emergency management centers, other maintenance centers, traveler information providers, and the media.
3. Exchange information with administrative systems to support the planning and scheduling of work zone activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.

3.9 City of Republic

Stakeholder: **City of Republic**

System: **Maintenance and Construction**

This system shall:

Maintenance Decision Support

1. Provide an interface to the center personnel to input control parameters for the decision support process and receive decisions or information presentation.
2. Provide dispatch information to maintenance and construction vehicles based on the outputs of the decision support system, including recommended roadway treatment actions.

Roadway Maintenance and Construction

1. Respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other roadway maintenance.
2. Provide emergency management and traffic management centers with information about scheduled maintenance and construction work activities including anticipated closures and impact to the roadway, alternate routes, anticipated delays, closure times, and durations.
3. Receive equipment availability and materials storage status information from storage facilities to support the scheduling of roadway maintenance and construction activities.
4. Dispatch and route maintenance and construction vehicle drivers and support them with route-specific environmental, incident, advisory, threat, alert, and traffic congestion information.
5. Report the status of field equipment maintenance activities to the centers that operate the equipment.

Winter Maintenance Management

1. Respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other winter roadway maintenance.
2. Exchange information with administrative systems to support the planning and scheduling of winter maintenance activities. This information includes: equipment and consumables resupply



- purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.
3. 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.
 4. Receive equipment availability and materials storage status information from storage facilities to support the scheduling of winter maintenance activities.
 5. Determine the need for roadway treatment based on current and forecasted weather information, current usage of treatments and materials, available resources, requests for action from other agencies, and recommendations from the Maintenance Decision Support system, specifically under winter conditions. This supports winter maintenance such as plowing, treating, anti-icing, etc.
 6. Provide dispatch instructions for vehicle operators based on input parameters from center personnel, specifically for winter conditions. This could include a treatment route, treatment application rates, start and end times, and other treatment instructions.
 7. 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.

Work Activity Coordination

1. 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.
2. 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.
3. Collect and respond to feedback concerning scheduled maintenance and construction activities with other management centers such as traffic, emergency, transit, and rail operations.
4. Exchange rail schedules and work plans with rail operation centers.

Work Zone Management

1. Generate new work zone activity schedules for use by maintenance and construction vehicles, maintenance and construction operators, and for information coordination purposes.
2. Disseminate work zone information to other agencies and centers including traffic, transit, emergency management centers, other maintenance centers, traveler information providers, and the media.
3. Exchange information with administrative systems to support the planning and scheduling of work zone activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.



3.10 City of Springfield Department of Public Works

Stakeholder: **City of Springfield Department of Public Works**

System: **Traffic and Maintenance**

This system shall:

Maintenance Decision Support

1. Provide an interface to the center personnel to input control parameters for the decision support process and receive decisions or information presentation.
2. Provide dispatch information to maintenance and construction vehicles based on the outputs of the decision support system, including recommended roadway treatment actions.

Roadway Maintenance and Construction

1. Respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other roadway maintenance.
2. Provide emergency management and traffic management centers with information about scheduled maintenance and construction work activities including anticipated closures and impact to the roadway, alternate routes, anticipated delays, closure times, and durations.
3. Receive equipment availability and materials storage status information from storage facilities to support the scheduling of roadway maintenance and construction activities.
4. Dispatch and route maintenance and construction vehicle drivers and support them with route-specific environmental, incident, advisory, threat, alert, and traffic congestion information.
5. Report the status of field equipment maintenance activities to the centers that operate the equipment.

Winter Maintenance Management

1. Respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other winter roadway maintenance.
2. Exchange information with administrative systems to support the planning and scheduling of winter maintenance activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.
3. 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.
4. Receive equipment availability and materials storage status information from storage facilities to support the scheduling of winter maintenance activities.
5. Determine the need for roadway treatment based on current and forecasted weather information, current usage of treatments and materials, available resources, requests for action from other agencies, and recommendations from the Maintenance Decision Support system, specifically under winter conditions. This supports winter maintenance such as plowing, treating, anti-icing, etc.
6. Provide dispatch instructions for vehicle operators based on input parameters from center personnel, specifically for winter conditions. This could include a treatment route, treatment application rates, start and end times, and other treatment instructions.
7. 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.

Work Activity Coordination

1. 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.
2. 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.
 3. Collect and respond to feedback concerning scheduled maintenance and construction activities with other management centers such as traffic, emergency, transit, and rail operations.
 4. Exchange rail schedules and work plans with rail operation centers.

Work Zone Management

1. Generate new work zone activity schedules for use by maintenance and construction vehicles, maintenance and construction operators, and for information coordination purposes.
2. Disseminate work zone information to other agencies and centers including traffic, transit, emergency management centers, other maintenance centers, traveler information providers, and the media.
3. Exchange information with administrative systems to support the planning and scheduling of work zone activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.

3.11 City (Utilities) of Springfield Transit

Stakeholder: **City (Utilities) of Springfield Transit**
 System: **Transit Center**

This system shall:

Transit Center Fixed-Route Operations

1. Able to generate special routes and schedules to support an incident, disaster, evacuation, or other emergency.
2. Dispatch fixed route or flexible route transit vehicles.
3. Collect transit operational data for use in the generation of routes and schedules.
4. Exchange information with Maintenance and Construction Operations concerning work zones, roadway conditions, asset restrictions, and work plans.
5. Disseminate up-to-date schedules and route information to other centers for fixed and flexible route services.

Transit Center Information Services

1. 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.
2. Provide transit information to the media including details of deviations from schedule of regular transit services.
3. Provide transit service information to traveler information service providers including routes, schedules, schedule adherence, and fare information as well as transit service information during evacuation.

Transit Center Security

1. Send wide-area alert information to travelers (on board transit vehicles or at stations/stops) and transit vehicle operators.



2. Coordinate the response to security incidents involving transit with other agencies including Emergency Management, other transit agencies, media, traffic management, and traveler information service providers.

Transit Center Vehicle Tracking

1. Monitor the locations of all transit vehicles within its network.
2. Determine adherence of transit vehicles to their assigned schedule.
3. Provide transit operational data to traveler information service providers.

3.12 City of Willard

Stakeholder: **City of Willard**

System: **Maintenance and Construction**

This system shall:

Maintenance Decision Support

1. Provide an interface to the center personnel to input control parameters for the decision support process and receive decisions or information presentation.
2. Provide dispatch information to maintenance and construction vehicles based on the outputs of the decision support system, including recommended roadway treatment actions.

Roadway Maintenance and Construction

1. Respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other roadway maintenance.
2. Provide emergency management and traffic management centers with information about scheduled maintenance and construction work activities including anticipated closures and impact to the roadway, alternate routes, anticipated delays, closure times, and durations.
3. Receive equipment availability and materials storage status information from storage facilities to support the scheduling of roadway maintenance and construction activities.
4. Dispatch and route maintenance and construction vehicle drivers and support them with route-specific environmental, incident, advisory, threat, alert, and traffic congestion information.
5. Report the status of field equipment maintenance activities to the centers that operate the equipment.

Winter Maintenance Management

1. Respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other winter roadway maintenance.
2. Exchange information with administrative systems to support the planning and scheduling of winter maintenance activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.
3. 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.
4. Receive equipment availability and materials storage status information from storage facilities to support the scheduling of winter maintenance activities.
5. Determine the need for roadway treatment based on current and forecasted weather information, current usage of treatments and materials, available resources, requests for action from other agencies, and recommendations from the Maintenance Decision Support system, specifically under winter conditions. This supports winter maintenance such as plowing, treating, anti-icing, etc.



6. Provide dispatch instructions for vehicle operators based on input parameters from center personnel, specifically for winter conditions. This could include a treatment route, treatment application rates, start and end times, and other treatment instructions.
7. 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.

Work Activity Coordination

1. 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.
2. 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.
3. Collect and respond to feedback concerning scheduled maintenance and construction activities with other management centers such as traffic, emergency, transit, and rail operations.

Work Zone Management

1. Generate new work zone activity schedules for use by maintenance and construction vehicles, maintenance and construction operators, and for information coordination purposes.
2. Disseminate work zone information to other agencies and centers including traffic, transit, emergency management centers, other maintenance centers, traveler information providers, and the media.
3. Exchange information with administrative systems to support the planning and scheduling of work zone activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.

3.13 CityView

Stakeholder: **CityView (Government Access Channel)**

System: **Information Service Provider**

This system shall:

Basic Information Broadcast

1. 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.
2. Disseminate maintenance and construction information to travelers, including scheduled maintenance and construction work activities and work zone activities.
3. Disseminate transit routes and schedules, transit transfer options, transit fares, and real-time schedule adherence information to travelers.
4. Disseminate event information to travelers.

ISP Operational Data Repository

1. Provide a web site that provides real-time transportation data to transportation system operators in the region.

3.14 Cox Heath Systems

Stakeholder: **Cox Health Systems**
 System: **Emergency Management**

This system shall:

Emergency Response Management

1. Provide the capability to implement response plans and track progress through the incident by exchanging incident information and distributing response status to allied agencies.
2. Develop, coordinate with other agencies, and store emergency response plans.
3. Track the availability of resources and coordinate resource sharing with allied agency centers including traffic, maintenance, or other emergency centers.
4. Allocate the appropriate emergency services, resources, and vehicle (s) to respond to incidents, and shall provide the capability to override the current allocation to suit the special needs of a current incident.
5. Receive event scheduling information from Event Promoters.

3.15 Greene County Highway Department

Stakeholder: **Greene County Highway Department**
 System: **County Maintenance and Construction**

This system shall:

Maintenance Decision Support

1. Provide an interface to the center personnel to input control parameters for the decision support process and receive decisions or information presentation.
2. Provide dispatch information to maintenance and construction vehicles based on the outputs of the decision support system, including recommended roadway treatment actions.

Roadway Maintenance and Construction

1. Respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other roadway maintenance.
2. Provide emergency management and traffic management centers with information about scheduled maintenance and construction work activities including anticipated closures and impact to the roadway, alternate routes, anticipated delays, closure times, and durations.
3. Receive equipment availability and materials storage status information from storage facilities to support the scheduling of roadway maintenance and construction activities.
4. Dispatch and route maintenance and construction vehicle drivers and support them with route-specific environmental, incident, advisory, threat, alert, and traffic congestion information.
5. Report the status of field equipment maintenance activities to the centers that operate the equipment.

Winter Maintenance Management

1. Respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other winter roadway maintenance.
2. Exchange information with administrative systems to support the planning and scheduling of winter maintenance activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.



3. 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.
4. Receive equipment availability and materials storage status information from storage facilities to support the scheduling of winter maintenance activities.
5. Determine the need for roadway treatment based on current and forecasted weather information, current usage of treatments and materials, available resources, requests for action from other agencies, and recommendations from the Maintenance Decision Support system, specifically under winter conditions. This supports winter maintenance such as plowing, treating, anti-icing, etc.
6. Provide dispatch instructions for vehicle operators based on input parameters from center personnel, specifically for winter conditions. This could include a treatment route, treatment application rates, start and end times, and other treatment instructions.
7. 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.

Work Activity Coordination

1. 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.
2. 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.
3. Collect and respond to feedback concerning scheduled maintenance and construction activities with other management centers such as traffic, emergency, transit, and rail operations.
4. Exchange rail schedules and work plans with rail operation centers.

Work Zone Management

1. Generate new work zone activity schedules for use by maintenance and construction vehicles, maintenance and construction operators, and for information coordination purposes.
2. Disseminate work zone information to other agencies and centers including traffic, transit, emergency management centers, other maintenance centers, traveler information providers, and the media.
3. Exchange information with administrative systems to support the planning and scheduling of work zone activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.



3.16 Greene County Sheriff's Office

Stakeholder: **Greene County Sheriff's Office**

System: **Dispatch Center**

This system shall:

Emergency Call-Taking

1. 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.
2. Receive emergency call information from 911 services and present the possible incident information to the emergency system operator.
3. Receive emergency notification information from other public safety agencies and present the possible incident information to the emergency system operator.
4. Receive emergency notification information from public transit systems and present the possible incident information to the emergency system operator.
5. Coordinate, correlate, and verify all emergency inputs, including those identified based on external calls and internal analysis of security sensor and surveillance data, and assign each a level of confidence.
6. Forward the verified emergency information to the responding agency based on the location and nature of the emergency.
7. Update the incident information log once the emergency system operator has verified the incident.

Emergency Dispatch

1. Dispatch emergency vehicles to respond to verified emergencies under center personnel control.
2. Relay location and incident details to the responding vehicles.
3. Track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.
4. Store and maintain the emergency service responses in an action log.
5. Receive traffic images to support dispatch of emergency vehicles.
6. Coordinate response to incidents with other Emergency Management centers to ensure appropriate resources are dispatched and utilized.

Emergency Evacuation Support

1. Manage inter-agency coordination of evacuation operations, from initial planning through the evacuation process and reentry.
2. Develop and exchange evacuation plans with allied agencies prior to the occurrence of a disaster.
3. Provide evacuation information to traffic, transit, maintenance and construction, rail operations, and other emergency management centers as needed.
4. 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.
5. Monitor the progress of the reentry process.

Emergency Response Management

1. Provide the capability to implement response plans and track progress through the incident by exchanging incident information and distributing response status to allied agencies.
2. Develop, coordinate with other agencies, and store emergency response plans.
3. Track the availability of resources and coordinate resource sharing with allied agency centers including traffic, maintenance, or other emergency centers.
4. Allocate the appropriate emergency services, resources, and vehicle (s) to respond to incidents, and shall provide the capability to override the current allocation to suit the special needs of a current incident.
5. Receive event scheduling information from Event Promoters.



6. Provide information to the media concerning the status of an emergency response.

Incident Command

1. 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.
2. Provide incident command communications with public safety, emergency management, transportation, and other allied response agency centers.
3. Track and maintain resource information and action plans pertaining to the incident command.
4. 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.
5. Assess the status of responding emergency vehicles as part of an incident command.

Service Patrol Management

1. Dispatch roadway service patrol vehicles to identified incident locations.
2. Store the current status of all service patrol vehicles available for dispatch and those that have been dispatched.
3. Share incident information collected by the service patrol with traffic, maintenance and construction, and traveler information centers for incident management, incident notification to travelers, and incident cleanup.
4. Track the location and status of service patrol vehicles.

3.17 KRZK/KOMC

Stakeholder: **KRZK/KOMC (Local Radio Station)**

System: **Information Service Provider**

This system shall:

Basic Information Broadcast

1. 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.
2. Disseminate maintenance and construction information to travelers, including scheduled maintenance and construction work activities and work zone activities.
3. Disseminate transit routes and schedules, transit transfer options, transit fares, and real-time schedule adherence information to travelers.
4. Disseminate parking information to travelers, including location, availability, and fees.
5. Disseminate weather information to travelers.
6. Disseminate event information to travelers.

3.18 KSPR 33 (ABC)

Stakeholder: **KSPR 33 (ABC) (Local Television Station)**

System: **Information Service Provider**

This system shall:

Basic Information Broadcast

1. 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.
2. Disseminate maintenance and construction information to travelers, including scheduled maintenance and construction work activities and work zone activities.
3. Disseminate transit routes and schedules, transit transfer options, transit fares, and real-time schedule adherence information to travelers.
4. Disseminate parking information to travelers, including location, availability, and fees.
5. Disseminate weather information to travelers.
6. Disseminate event information to travelers.

3.19 KTTS

Stakeholder: **KTTS (Local Radio Station)**

System: **Information Service Provider**

This system shall:

Basic Information Broadcast

1. 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.
2. Disseminate maintenance and construction information to travelers, including scheduled maintenance and construction work activities and work zone activities.
3. Disseminate transit routes and schedules, transit transfer options, transit fares, and real-time schedule adherence information to travelers.
4. Disseminate parking information to travelers, including location, availability, and fees.
5. Disseminate weather information to travelers.
6. Disseminate event information to travelers.

3.20 KY 3 (NBC)

Stakeholder: **KY 3 (NBC) (Local Television Station)**

System: **Information Service Provider**

This system shall:

Basic Information Broadcast

1. 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.
2. Disseminate maintenance and construction information to travelers, including scheduled maintenance and construction work activities and work zone activities.



3. Disseminate transit routes and schedules, transit transfer options, transit fares, and real-time schedule adherence information to travelers.
4. Disseminate parking information to travelers, including location, availability, and fees.
5. Disseminate weather information to travelers.
6. Disseminate event information to travelers.

3.21 Missouri Department of Transportation – District 8

Stakeholder: **Missouri Department of Transportation –Traffic Division**

System: **Traffic and ITS**

This system shall:

Collect Traffic Surveillance

1. Monitor, analyze, and store traffic sensor data (speed, volume, occupancy) collected from field elements under remote control of the center.
2. Monitor, analyze and distribute traffic images from CCTV systems under remote control of the center.
3. Distribute road network conditions data (raw or processed) based on collected and analyzed traffic sensor and surveillance data to other centers.
4. Respond to control data from center personnel regarding sensor and surveillance data collection, analysis, storage, and distribution.

Freeway Management

1. Remotely control systems to manage use of the freeways, including ramp meters, mainline metering, and lane controls.
2. Collect operational status from ramp meters, mainline metering, and lane controls and compare against the control information sent by the center.
3. Collect fault data from ramp meters, mainline metering, and lane controls.
4. Implement control strategies, under control of center personnel, on some or all of the freeway network devices (e.g. ramp meters, mainline metering, and lane controls), based on data from sensors monitoring traffic conditions upstream, downstream, and queue data on the ramps themselves.

HRI Traffic Management

1. Collect incident information related to a highway-rail intersection (HRI), such as intersection blockages or crashes or equipment malfunctions.
2. Implement control plans to coordinate signalized intersections around highway-rail intersection (HRI), under control of center personnel, based on data from sensors and surveillance monitoring traffic conditions, incidents, equipment faults, pedestrian crossings, etc.

Incident Detection

1. Receive inputs concerning upcoming events that would affect the traffic network from event promoters, traveler information service providers, and intermodal freight depots.
2. 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.
3. Provide road network conditions and traffic images to emergency management centers to support the detection, verification, and classification of incidents.

Incident Dispatch Coordination/Communication

1. 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.



2. Coordinate planning for incidents with emergency management centers, including pre-planning activities for disaster response, evacuation, and recovery operations.
3. Exchange incident information with emergency management centers, maintenance and construction centers, transit centers, information service providers, and media including description, location, traffic impact, status, expected duration, and response information.
4. 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.
5. Receive inputs concerning upcoming events that would affect the traffic network from event promoters, traveler information service providers, media, and rail operations centers.
6. Provide road network conditions and traffic images to emergency management centers, maintenance and construction centers, and traveler information service providers.

Probe Information Collection

1. Assimilate current and forecast travel conditions based on collected probe data and distribute to other centers for dissemination to travelers.
2. Collect operational status for the roadside probe data collection equipment.
3. Collect fault data for the roadside probe data collection equipment for repair.

Regional Traffic Management

1. Exchange traffic information with other traffic management centers, including incident information, congestion data, traffic data, signal timing plans, and real-time signal control information.
2. Exchange traffic control information with other traffic management centers, includes remote monitoring and control of traffic management devices (e.g. signs, sensors, signals, cameras, etc.).

Signal Control

1. Remotely control traffic signal controllers.
2. Collect traffic signal controller fault data from the field.
3. Implement control plans to coordinate signalized intersections, under control of center personnel, based on data from sensors and surveillance monitoring traffic conditions, incidents, emergency vehicle preemptions, the passage of commercial vehicles with unusual loads, equipment faults, pedestrian crossings, etc.

Traffic Information Dissemination

1. Remotely control dynamic messages signs for dissemination of traffic and other information to drivers.
2. Collect operational status for the driver information systems equipment (DMS, HAR, etc.).
3. Collect fault data for the driver information systems equipment (DMS, HAR, etc.) for repair.
4. Distribute traffic data to maintenance and construction centers, transit centers, emergency management centers, and traveler information providers.
5. Distribute traffic data to the media upon request; the capability to provide the information in both data stream and graphical display shall be supported.

Traffic Maintenance

1. Collect and store sensor (traffic, pedestrian, multimodal crossing) fault data and send to the maintenance center for repair.
2. Collect and store CCTV surveillance system (traffic, pedestrian) fault data send to the maintenance center for repair.
3. Collect environmental sensor equipment fault data and send to the maintenance center for repair.
4. Exchange data with maintenance centers concerning the reporting of faulty equipment and the schedule/status of their repair. Information exchanged includes details of new equipment faults, and clearances when the faults are cleared.



Traffic Management and Decision Support

1. Provide center personnel with an integrated regional view of current and forecast road and traffic conditions including traffic incidents, special events, maintenance activities and other events or conditions that impact capacity or demand.

Traffic Network Performance Evaluation

1. Monitor, analyze, and store traffic sensor data (speed, volume, occupancy) collected from field elements under remote control of the center to support overall network performance evaluations.
2. Collect and store plans from event promoters for major future events possible impacting traffic to support overall network performance evaluations.
3. Exchange traffic information with other traffic management centers, including incidents, congestion data, traffic data, signal timing plans, and real-time signal control information to support overall network performance evaluations.

3.22 Missouri Department of Transportation –Highway

Stakeholder: **Missouri Department of Transportation – Highway**

System: **Maintenance and Construction**

This system shall:

Automated Treatment System Control

1. Remotely control automated roadway treatment systems. Treatments can be in the form of fog dispersion, anti-icing chemicals, etc.
2. Collect automated roadway treatment system and associated environmental sensor operational status.
3. Collect automated roadway treatment system and associated environmental sensor fault data and request repair.
4. Accept requests for automated roadway treatment system activation from center personnel.

Environmental Information Collection

1. Provide weather and road condition information to weather service providers and center personnel.
2. Collect operational status for the roadside and vehicle-based environmental sensor equipment.
3. Collect fault data for the roadside and vehicle-based environmental sensor equipment for repair.

Environmental Information Processing

1. Assimilate current and forecast road conditions and surface weather information using a combination of weather service provider information (such as the National Weather Service and value-added sector specific meteorological services) and local environmental sensor data.
2. Use the various data inputs of environmental sensors and road weather data to develop a view of current and predicted road weather and road conditions.
3. Disseminate current and forecasted road weather and road condition information to weather service providers (such as the National Weather Service and value-added sector specific meteorological services) as well as other agencies including traffic, emergency, and transit management, traveler information providers, rail operations centers, media, and other maintenance management centers.

Maintenance Decision Support

1. Provide an interface to the center personnel to input control parameters for the decision support process and receive decisions or information presentation.
2. Provide dispatch information to maintenance and construction vehicles based on the outputs of the decision support system, including recommended roadway treatment actions.



Roadway Maintenance and Construction

1. Respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other roadway maintenance.
2. Provide emergency management and traffic management centers with information about scheduled maintenance and construction work activities including anticipated closures and impact to the roadway, alternate routes, anticipated delays, closure times, and durations.
3. Receive equipment availability and materials storage status information from storage facilities to support the scheduling of roadway maintenance and construction activities.
4. Dispatch and route maintenance and construction vehicle drivers and support them with route-specific environmental, incident, advisory, threat, alert, and traffic congestion information.
5. Report the status of field equipment maintenance activities to the centers that operate the equipment.

Winter Maintenance Management

1. Respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other winter roadway maintenance.
2. Exchange information with administrative systems to support the planning and scheduling of winter maintenance activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.
3. 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.
4. Receive equipment availability and materials storage status information from storage facilities to support the scheduling of winter maintenance activities.
5. Determine the need for roadway treatment based on current and forecasted weather information, current usage of treatments and materials, available resources, requests for action from other agencies, and recommendations from the Maintenance Decision Support system, specifically under winter conditions. This supports winter maintenance such as plowing, treating, anti-icing, etc.
6. Provide dispatch instructions for vehicle operators based on input parameters from center personnel, specifically for winter conditions. This could include a treatment route, treatment application rates, start and end times, and other treatment instructions.
7. 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.

Work Activity Coordination

1. 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.
2. 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.
3. Collect and respond to feedback concerning scheduled maintenance and construction activities with other management centers such as traffic, emergency, transit, and rail operations.
4. Exchange rail schedules and work plans with rail operation centers.



Work Zone Management

1. Generate new work zone activity schedules for use by maintenance and construction vehicles, maintenance and construction operators, and for information coordination purposes.
2. Disseminate work zone information to other agencies and centers including traffic, transit, emergency management centers, other maintenance centers, traveler information providers, and the media.
3. Exchange information with administrative systems to support the planning and scheduling of work zone activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.

3.23 Missouri State Highway Patrol – Troop G

Stakeholder: **Missouri State Highway Patrol Troop G**

System: **Dispatch Center**

This system shall:

Emergency Call-Taking

1. 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.
2. Receive emergency call information from 911 services and present the possible incident information to the emergency system operator.
3. Receive emergency notification information from other public safety agencies and present the possible incident information to the emergency system operator.
4. Receive emergency notification information from public transit systems and present the possible incident information to the emergency system operator.
5. Coordinate, correlate, and verify all emergency inputs, including those identified based on external calls and internal analysis of security sensor and surveillance data, and assign each a level of confidence.
6. Forward the verified emergency information to the responding agency based on the location and nature of the emergency.
7. Update the incident information log once the emergency system operator has verified the incident.

Emergency Dispatch

1. Dispatch emergency vehicles to respond to verified emergencies under center personnel control.
2. Relay location and incident details to the responding vehicles.
3. Track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.
4. Store and maintain the emergency service responses in an action log.
5. Receive traffic images to support dispatch of emergency vehicles.
6. Coordinate response to incidents with other Emergency Management centers to ensure appropriate resources are dispatched and utilized.

Emergency Early Warning System

1. 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).



2. Coordinate the broadcast of wide-area alerts and advisories with other emergency management centers.
3. Receive incident information from other transportation management centers to support the early warning system.
4. Present the alert and advisory information and the status of the actions taken in response to the alert by the other centers to the emergency system operator as received from other system inputs.

Emergency Evacuation Support

1. Manage inter-agency coordination of evacuation operations, from initial planning through the evacuation process and reentry.
2. Develop and exchange evacuation plans with allied agencies prior to the occurrence of a disaster.
3. Provide evacuation information to traffic, transit, maintenance and construction, rail operations, and other emergency management centers as needed.
4. 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.
5. Monitor the progress of the reentry process.

Emergency Response Management

1. Provide the capability to implement response plans and track progress through the incident by exchanging incident information and distributing response status to allied agencies.
2. Develop, coordinate with other agencies, and store emergency response plans.
3. Track the availability of resources and coordinate resource sharing with allied agency centers including traffic, maintenance, or other emergency centers.
4. Allocate the appropriate emergency services, resources, and vehicle (s) to respond to incidents, and shall provide the capability to override the current allocation to suit the special needs of a current incident.
5. Receive event scheduling information from Event Promoters.
6. Provide information to the media concerning the status of an emergency response.

Emergency Routing

1. Collect current traffic and road condition information for emergency vehicle route calculation.
2. Receive information on the location and status of traffic control equipment and work zones along potential emergency routes.
3. Calculate emergency vehicle routes, under center personnel control, based on the collected traffic and road conditions information.
4. Request and receive ingress and egress routes or other specialized emergency access routes from the traffic management center.

Incident Command

1. 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.
2. Provide incident command communications with public safety, emergency management, transportation, and other allied response agency centers.
3. Track and maintain resource information and action plans pertaining to the incident command.
4. 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.
5. Assess the status of responding emergency vehicles as part of an incident command.

Service Patrol Management

1. Dispatch roadway service patrol vehicles to identified incident locations.
2. Store the current status of all service patrol vehicles available for dispatch and those that have been dispatched.



3. Share incident information collected by the service patrol with traffic, maintenance and construction, and traveler information centers for incident management, incident notification to travelers, and incident cleanup.
4. Track the location and status of service patrol vehicles.

3.24 Missouri State University Transit

Stakeholder: **Missouri State University Transit**
 System: **Transit Center**

This system shall:

Transit Center Fixed-Route Operations

1. Able to generate special routes and schedules to support an incident, disaster, evacuation, or other emergency.
2. Dispatch fixed route or flexible route transit vehicles.
3. Collect transit operational data for use in the generation of routes and schedules.
4. Exchange information with Maintenance and Construction Operations concerning work zones, roadway conditions, asset restrictions, and work plans.

Transit Center Security

1. Exchange transit incident information along with other service data with other transit agencies.
2. Send wide-area alert information to travelers (on board transit vehicles or at stations/stops) and transit vehicle operators.
3. Coordinate the response to security incidents involving transit with other agencies including Emergency Management, other transit agencies, media, traffic management, and traveler information service providers.

Transit Center Vehicle Tracking

1. Monitor the locations of all transit vehicles within its network.
2. Determine adherence of transit vehicles to their assigned schedule.
3. Provide transit operational data to traveler information service providers.

3.25 Ozark Transportation Organization

Stakeholder: **Ozark Transportation Organization (MPO)**
 System: **Archived Data**

This system shall:

Government Reporting Systems Support

1. Provide data from an ITS archive to federal, state, or local government reporting systems.
2. Provide the capability to select data from an ITS archive for use in government reports.
3. Provide the capability to format data from an ITS archive suitable for input into government reports.
4. Support requests for ITS archived data from Government Reporting Systems.

ITS Data Repository

1. Collect data to be archived from one or more data sources.
2. Collect data catalogs from one or more data sources.



3. Store the archived data in a focused repository that is suited to a particular set of ITS data users.
4. Include capabilities for performing quality checks on the incoming archived data.
5. Include capabilities for error notification on the incoming archived data.
6. Include capabilities for archive-to-archive coordination.
7. Perform quality checks on received data.
8. Respond to requests from the administrator interface function to maintain the archive data.

3.26 St. John's Regional Health Systems (EMS)

Stakeholder: **St. John's Regional Health Systems (EMS)**

System: **Emergency Management**

This system shall:

Emergency Response Management

1. Provide the capability to implement response plans and track progress through the incident by exchanging incident information and distributing response status to allied agencies.
2. Develop, coordinate with other agencies, and store emergency response plans.
3. Track the availability of resources and coordinate resource sharing with allied agency centers including traffic, maintenance, or other emergency centers.
4. Allocate the appropriate emergency services, resources, and vehicle (s) to respond to incidents, and shall provide the capability to override the current allocation to suit the special needs of a current incident.
5. Receive event-scheduling information from Event Promoters.

3.27 Southwest Missouri Council of Governments (SMCOG)

Stakeholder: **Southwest Missouri Council of Governments (SMCOG)**

System: **Archived Data**

This system shall:

Government Reporting Systems Support

1. Provide data from an ITS archive to federal, state, or local government reporting systems.
2. Provide the capability to select data from an ITS archive for use in government reports.
3. Provide the capability to format data from an ITS archive suitable for input into government reports.
4. Support requests for ITS archived data from Government Reporting Systems.

ITS Data Repository

1. Collect data to be archived from one or more data sources.
2. Collect data catalogs from one or more data sources.
3. Store the archived data in a focused repository that is suited to a particular set of ITS data users.
4. Include capabilities for performing quality checks on the incoming archived data.
5. Include capabilities for error notification on the incoming archived data.
6. Include capabilities for archive to archive coordination.
7. Perform quality checks on received data.
8. Respond to requests from the administrator interface function to maintain the archive data.

3.28 Springfield Business Journal

Stakeholder: **Springfield Business Journal (Local Press)**

System: **Information Service Provider**

This system shall:

Basic Information Broadcast

1. Disseminate event information to travelers.

3.29 Springfield Fire Department

Stakeholder: **Springfield Fire Department**

System: **Emergency Response**

This system shall:

Emergency Evacuation Support

1. 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.

Emergency Response Management

1. Provide the capability to implement response plans and track progress through the incident by exchanging incident information and distributing response status to allied agencies.
2. Develop, coordinate with other agencies, and store emergency response plans.
3. Track the availability of resources and coordinate resource sharing with allied agency centers including traffic, maintenance, or other emergency centers.
4. Allocate the appropriate emergency services, resources, and vehicle (s) to respond to incidents, and shall provide the capability to override the current allocation to suit the special needs of a current incident.
5. Receive event scheduling information from Event Promoters.
6. Provide information to the media concerning the status of an emergency response.

Incident Command

1. 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.
2. Provide incident command communications with public safety, emergency management, transportation, and other allied response agency centers.
3. Track and maintain resource information and action plans pertaining to the incident command.
4. 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.
5. Assess the status of responding emergency vehicles as part of an incident command.

3.30 Springfield News Leader

Stakeholder: **Springfield News Journal (Local Press)**

System: **Information Service Provider**

This system shall:

Basic Information Broadcast

1. Disseminate maintenance and construction information to travelers, including scheduled maintenance and construction work activities and work zone activities.
2. Disseminate event information to travelers.

3.31 Springfield Police Department

Stakeholder: **Springfield Police Department**

System: **Dispatch Center**

This system shall:

Emergency Call-Taking

1. 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.
2. Receive emergency call information from 911 services and present the possible incident information to the emergency system operator.
3. Receive emergency notification information from other public safety agencies and present the possible incident information to the emergency system operator.
4. Receive emergency notification information from public transit systems and present the possible incident information to the emergency system operator.
5. Coordinate, correlate, and verify all emergency inputs, including those identified based on external calls and internal analysis of security sensor and surveillance data, and assign each a level of confidence.
6. Forward the verified emergency information to the responding agency based on the location and nature of the emergency.
7. Update the incident information log once the emergency system operator has verified the incident.

Emergency Dispatch

1. Dispatch emergency vehicles to respond to verified emergencies under center personnel control.
2. Relay location and incident details to the responding vehicles.
3. Track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.
4. Store and maintain the emergency service responses in an action log.
5. Receive traffic images to support dispatch of emergency vehicles.
6. Coordinate response to incidents with other Emergency Management centers to ensure appropriate resources are dispatched and utilized.

Emergency Evacuation Support

1. Manage inter-agency coordination of evacuation operations, from initial planning through the evacuation process and reentry.
2. Develop and exchange evacuation plans with allied agencies prior to the occurrence of a disaster.
3. Provide evacuation information to traffic, transit, maintenance and construction, rail operations, and other emergency management centers as needed.



4. 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.
5. Monitor the progress of the reentry process.

Emergency Response Management

1. Provide the capability to implement response plans and track progress through the incident by exchanging incident information and distributing response status to allied agencies.
2. Develop, coordinate with other agencies, and store emergency response plans.
3. Track the availability of resources and coordinate resource sharing with allied agency centers including traffic, maintenance, or other emergency centers.
4. Allocate the appropriate emergency services, resources, and vehicle (s) to respond to incidents, and shall provide the capability to override the current allocation to suit the special needs of a current incident.
5. Receive event scheduling information from Event Promoters.
6. Provide information to the media concerning the status of an emergency response.

Incident Command

1. 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.
2. Provide incident command communications with public safety, emergency management, transportation, and other allied response agency centers.
3. Track and maintain resource information and action plans pertaining to the incident command.
4. 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.
5. Assess the status of responding emergency vehicles as part of an incident command.

Service Patrol Management

1. Dispatch roadway service patrol vehicles to identified incident locations.
2. Store the current status of all service patrol vehicles available for dispatch and those that have been dispatched.
3. Share incident information collected by the service patrol with traffic, maintenance and construction, and traveler information centers for incident management, incident notification to travelers, and incident cleanup.
4. Track the location and status of service patrol vehicles.

3.32 Springfield/OzarkTraffic Traffic Management Center

Stakeholder: **Springfield/OzarkTraffic Traffic Management Center**

System: **Transportation Management Center**

This system shall:

Collect Traffic Surveillance

1. Monitor, analyze, and store traffic sensor data (speed, volume, occupancy) collected from field elements under remote control of the center.
2. Monitor, analyze and distribute traffic images from CCTV systems under remote control of the center.
3. Distribute road network conditions data (raw or processed) based on collected and analyzed traffic sensor and surveillance data to other centers.
4. Respond to control data from center personnel regarding sensor and surveillance data collection, analysis, storage, and distribution.



Freeway Management

1. Remotely control systems to manage use of the freeways, including ramp meters, mainline metering, and lane controls.
2. Collect operational status from ramp meters, mainline metering, and lane controls and compare against the control information sent by the center.
3. Collect fault data from ramp meters, mainline metering, and lane controls.
4. Implement control strategies, under control of center personnel, on some or all of the freeway network devices (e.g. ramp meters, mainline metering, and lane controls), based on data from sensors monitoring traffic conditions upstream, downstream, and queue data on the ramps themselves.

HRI Traffic Management

1. Accept collect highway-rail intersection (HRI) advisory or alert data from rail operation centers.
2. Collect incident information related to a highway-rail intersection (HRI), such as intersection blockages or crashes or equipment malfunctions.
3. Implement control plans to coordinate signalized intersections around highway-rail intersection (HRI), under control of center personnel, based on data from sensors and surveillance monitoring traffic conditions, incidents, equipment faults, pedestrian crossings, etc.

Incident Detection

1. Receive inputs concerning upcoming events that would affect the traffic network from event promoters, traveler information service providers, and intermodal freight depots.
2. 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.
3. Provide road network conditions and traffic images to emergency management centers to support the detection, verification, and classification of incidents.

Incident Dispatch Coordination/Communication

1. 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.
2. Coordinate planning for incidents with emergency management centers, including pre-planning activities for disaster response, evacuation, and recovery operations.
3. Exchange incident information with emergency management centers, maintenance and construction centers, transit centers, information service providers, and media including description, location, traffic impact, status, expected duration, and response information.
4. 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.
5. Receive inputs concerning upcoming events that would affect the traffic network from event promoters, traveler information service providers, media, and rail operations centers.
6. Provide road network conditions and traffic images to emergency management centers, maintenance and construction centers, and traveler information service providers.

Regional Traffic Management

1. Exchange traffic information with other traffic management centers, including incident information, congestion data, traffic data, signal timing plans, and real-time signal control information.
2. Exchange traffic control information with other traffic management centers, includes remote monitoring and control of traffic management devices (e.g. signs, sensors, signals, cameras, etc.).

Signal Control

1. Remotely control traffic signal controllers.
2. Collect traffic signal controller fault data from the field.



3. Implement control plans to coordinate signalized intersections, under control of center personnel, based on data from sensors and surveillance monitoring traffic conditions, incidents, emergency vehicle preemptions, the passage of commercial vehicles with unusual loads, equipment faults, pedestrian crossings, etc.

Traffic Information Dissemination

1. Remotely control dynamic messages signs for dissemination of traffic and other information to drivers.
2. Collect operational status for the driver information systems equipment (DMS, HAR, etc.).
3. Collect fault data for the driver information systems equipment (DMS, HAR, etc.) for repair.
4. Distribute traffic data to maintenance and construction centers, transit centers, emergency management centers, and traveler information providers.
5. Distribute traffic data to the media upon request; the capability to provide the information in both data stream and graphical display shall be supported.

Traffic Maintenance

1. Collect and store sensor (traffic, pedestrian, multimodal crossing) fault data and send to the maintenance center for repair.
2. Collect and store CCTV surveillance system (traffic, pedestrian) fault data send to the maintenance center for repair.
3. Exchange data with maintenance centers concerning the reporting of faulty equipment and the schedule/status of their repair. Information exchanged includes details of new equipment faults, and clearances when the faults are cleared.

Traffic Management and Decision Support

1. Provide center personnel with an integrated regional view of current and forecast road and traffic conditions including traffic incidents, special events, maintenance activities and other events or conditions that impact capacity or demand.

Traffic Network Performance Evaluation

1. Monitor, analyze, and store traffic sensor data (speed, volume, occupancy) collected from field elements under remote control of the center to support overall network performance evaluations.
2. Collect and store plans from event promoters for major future events possible impacting traffic to support overall network performance evaluations.
3. Exchange traffic information with other traffic management centers, including incidents, congestion data, traffic data, signal timing plans, and real-time signal control information to support overall network performance evaluations.

3.33 Springfield/Greene County 911

Stakeholder: **Springfield/Greene County 911**

System: **Emergency Management**

This system shall:

Emergency Call-Taking

1. 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.
2. Receive emergency call information from 911 services and present the possible incident information to the emergency system operator.
3. Receive emergency notification information from other public safety agencies and present the possible incident information to the emergency system operator.



4. Receive emergency notification information from public transit systems and present the possible incident information to the emergency system operator.
5. Coordinate, correlate, and verify all emergency inputs, including those identified based on external calls and internal analysis of security sensor and surveillance data, and assign each a level of confidence.
6. Forward the verified emergency information to the responding agency based on the location and nature of the emergency.
7. Update the incident information log once the emergency system operator has verified the incident.

Emergency Dispatch

1. Dispatch emergency vehicles to respond to verified emergencies under center personnel control.
2. Relay location and incident details to the responding vehicles.
3. Track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.
4. Store and maintain the emergency service responses in an action log.
5. Receive traffic images to support dispatch of emergency vehicles.
6. Coordinate response to incidents with other Emergency Management centers to ensure appropriate resources are dispatched and utilized.

Emergency Evacuation Support

1. Manage inter-agency coordination of evacuation operations, from initial planning through the evacuation process and reentry.
2. Provide evacuation information to traffic, transit, maintenance and construction, rail operations, and other emergency management centers as needed.
3. 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.
4. Monitor the progress of the reentry process.

Emergency Response Management

1. Provide the capability to implement response plans and track progress through the incident by exchanging incident information and distributing response status to allied agencies.
2. Develop, coordinate with other agencies, and store emergency response plans.
3. Track the availability of resources and coordinate resource sharing with allied agency centers including traffic, maintenance, or other emergency centers.
4. Allocate the appropriate emergency services, resources, and vehicle (s) to respond to incidents, and shall provide the capability to override the current allocation to suit the special needs of a current incident.
5. Receive event-scheduling information from Event Promoters.
6. Provide information to the media concerning the status of an emergency response.

Emergency Routing

1. Collect current traffic and road condition information for emergency vehicle route calculation.
2. Receive information on the location and status of traffic control equipment and work zones along potential emergency routes.
3. Calculate emergency vehicle routes, under center personnel control, based on the collected traffic and road conditions information.
4. Request and receive ingress and egress routes or other specialized emergency access routes from the traffic management center.

Incident Command

1. 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.



2. Provide incident command communications with public safety, emergency management, transportation, and other allied response agency centers.
3. Track and maintain resource information and action plans pertaining to the incident command.
4. 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.
5. Assess the status of responding emergency vehicles as part of an incident command.

Service Patrol Management

1. Dispatch roadway service patrol vehicles to identified incident locations.
2. Store the current status of all service patrol vehicles available for dispatch and those that have been dispatched.
3. Share incident information collected by the service patrol with traffic, maintenance and construction, and traveler information centers for incident management, incident notification to travelers, and incident cleanup.
4. Track the location and status of service patrol vehicles.

3.34 Springfield/Greene County Office of Emergency Management

Stakeholder: **Springfield/Greene County Office of Emergency Management**

System: **Emergency Management**

This system shall:

Center Secure Area Surveillance

1. Exchange surveillance data with other emergency centers.
2. Remotely control security surveillance devices in secure areas including facilities (e.g. transit yards) and transportation infrastructure (e.g. bridges, tunnels, interchanges, roadway infrastructure, and transit railways or guideways).

Emergency Early Warning System

1. 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).
2. Coordinate the broadcast of wide-area alerts and advisories with other emergency management centers.
3. Receive incident information from other transportation management centers to support the early warning system.
4. Present the alert and advisory information and the status of the actions taken in response to the alert by the other centers to the emergency system operator as received from other system inputs.

Emergency Evacuation Support

1. Manage inter-agency coordination of evacuation operations, from initial planning through the evacuation process and reentry.
2. Develop and exchange evacuation plans with allied agencies prior to the occurrence of a disaster.
3. Provide evacuation information to traffic, transit, maintenance and construction, rail operations, and other emergency management centers as needed.
4. 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.



5. Monitor the progress of the reentry process.

Emergency Response Management

1. Provide the capability to implement response plans and track progress through the incident by exchanging incident information and distributing response status to allied agencies.
2. Develop, coordinate with other agencies, and store emergency response plans.
3. Track the availability of resources and coordinate resource sharing with allied agency centers including traffic, maintenance, or other emergency centers.
4. Allocate the appropriate emergency services, resources, and vehicle (s) to respond to incidents, and shall provide the capability to override the current allocation to suit the special needs of a current incident.
5. Receive event scheduling information from Event Promoters.
6. Provide information to the media concerning the status of an emergency response.

Incident Command

1. 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.
2. Provide incident command communications with public safety, emergency management, transportation, and other allied response agency centers.
3. Track and maintain resource information and action plans pertaining to the incident command.
4. 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.
5. Assess the status of responding emergency vehicles as part of an incident command.

3.35 Stone County Emergency Services 911

Stakeholder: **Stone County Emergency Services 911**

System: **Emergency Management**

This system shall:

Emergency Call-Taking

1. 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.
2. Receive emergency call information from 911 services and present the possible incident information to the emergency system operator.
3. Receive emergency notification information from other public safety agencies and present the possible incident information to the emergency system operator.
4. Receive emergency notification information from public transit systems and present the possible incident information to the emergency system operator.
5. Coordinate, correlate, and verify all emergency inputs, including those identified based on external calls and internal analysis of security sensor and surveillance data, and assign each a level of confidence.
6. Forward the verified emergency information to the responding agency based on the location and nature of the emergency.
7. Update the incident information log once the emergency system operator has verified the incident.

Emergency Dispatch

1. Dispatch emergency vehicles to respond to verified emergencies under center personnel control.
2. Relay location and incident details to the responding vehicles.



3. Track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.
4. Store and maintain the emergency service responses in an action log.
5. Receive traffic images to support dispatch of emergency vehicles.
6. Coordinate response to incidents with other Emergency Management centers to ensure appropriate resources are dispatched and utilized.

Emergency Evacuation Support

1. Manage inter-agency coordination of evacuation operations, from initial planning through the evacuation process and reentry.
2. Develop and exchange evacuation plans with allied agencies prior to the occurrence of a disaster.
3. Provide evacuation information to traffic, transit, maintenance and construction, rail operations, and other emergency management centers as needed.
4. 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.
5. Monitor the progress of the reentry process.

Emergency Response Management

1. Provide the capability to implement response plans and track progress through the incident by exchanging incident information and distributing response status to allied agencies.
2. Develop, coordinate with other agencies, and store emergency response plans.
3. Track the availability of resources and coordinate resource sharing with allied agency centers including traffic, maintenance, or other emergency centers.
4. Allocate the appropriate emergency services, resources, and vehicle (s) to respond to incidents, and shall provide the capability to override the current allocation to suit the special needs of a current incident.
5. Receive event scheduling information from Event Promoters.
6. Provide information to the media concerning the status of an emergency response.

Incident Command

1. 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.
2. Provide incident command communications with public safety, emergency management, transportation, and other allied response agency centers.
3. Track and maintain resource information and action plans pertaining to the incident command.
4. 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.
5. Assess the status of responding emergency vehicles as part of an incident command.

Service Patrol Management

1. Dispatch roadway service patrol vehicles to identified incident locations.
2. Store the current status of all service patrol vehicles available for dispatch and those that have been dispatched.
3. Share incident information collected by the service patrol with traffic, maintenance and construction, and traveler information centers for incident management, incident notification to travelers, and incident cleanup.
4. Track the location and status of service patrol vehicles.



3.36 Taney County 911 Administration

Stakeholder: **Taney County 911 Administration**

System: **Emergency Management**

This system shall:

Emergency Call-Taking

1. 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.
2. Receive emergency call information from 911 services and present the possible incident information to the emergency system operator.
3. Receive emergency notification information from other public safety agencies and present the possible incident information to the emergency system operator.
4. Receive emergency notification information from public transit systems and present the possible incident information to the emergency system operator.
5. Coordinate, correlate, and verify all emergency inputs, including those identified based on external calls and internal analysis of security sensor and surveillance data, and assign each a level of confidence.
6. Forward the verified emergency information to the responding agency based on the location and nature of the emergency.
7. Update the incident information log once the emergency system operator has verified the incident.

Emergency Dispatch

1. Dispatch emergency vehicles to respond to verified emergencies under center personnel control.
2. Relay location and incident details to the responding vehicles.
3. Track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.
4. Store and maintain the emergency service responses in an action log.
5. Receive traffic images to support dispatch of emergency vehicles.
6. Coordinate response to incidents with other Emergency Management centers to ensure appropriate resources are dispatched and utilized.

Emergency Evacuation Support

1. Manage inter-agency coordination of evacuation operations, from initial planning through the evacuation process and reentry.
2. Develop and exchange evacuation plans with allied agencies prior to the occurrence of a disaster.
3. Provide evacuation information to traffic, transit, maintenance and construction, rail operations, and other emergency management centers as needed.
4. 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.
5. Monitor the progress of the reentry process.

Emergency Response Management

1. Provide the capability to implement response plans and track progress through the incident by exchanging incident information and distributing response status to allied agencies.
2. Develop, coordinate with other agencies, and store emergency response plans.
3. Track the availability of resources and coordinate resource sharing with allied agency centers including traffic, maintenance, or other emergency centers.
4. Allocate the appropriate emergency services, resources, and vehicle (s) to respond to incidents, and shall provide the capability to override the current allocation to suit the special needs of a current incident.
5. Receive event scheduling information from Event Promoters.



6. Provide information to the media concerning the status of an emergency response.

Emergency Routing

1. Collect current traffic and road condition information for emergency vehicle route calculation.
2. Receive information on the location and status of traffic control equipment and work zones along potential emergency routes.
3. Calculate emergency vehicle routes, under center personnel control, based on the collected traffic and road conditions information.
4. Request and receive ingress and egress routes or other specialized emergency access routes from the traffic management center.

Incident Command

1. 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.
2. Provide incident command communications with public safety, emergency management, transportation, and other allied response agency centers.
3. Track and maintain resource information and action plans pertaining to the incident command.
4. 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.
5. Assess the status of responding emergency vehicles as part of an incident command.

Service Patrol Management

1. Dispatch roadway service patrol vehicles to identified incident locations.
2. Store the current status of all service patrol vehicles available for dispatch and those that have been dispatched.
3. Share incident information collected by the service patrol with traffic, maintenance and construction, and traveler information centers for incident management, incident notification to travelers, and incident cleanup.
4. Track the location and status of service patrol vehicles.

3.37 Western Taney County Fire Department

Stakeholder: **Western Taney County Fire Department**

System: **Emergency Response**

This system shall:

Emergency Dispatch

1. Dispatch emergency vehicles to respond to verified emergencies under center personnel control.
2. Relay location and incident details to the responding vehicles.
3. Track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.
4. Store and maintain the emergency service responses in an action log.
5. Receive traffic images to support dispatch of emergency vehicles.
6. Coordinate response to incidents with other Emergency Management centers to ensure appropriate resources are dispatched and utilized.

Emergency Evacuation Support

1. 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.



Emergency Response Management

1. Provide the capability to implement response plans and track progress through the incident by exchanging incident information and distributing response status to allied agencies.
2. Develop, coordinate with other agencies, and store emergency response plans.
3. Track the availability of resources and coordinate resource sharing with allied agency centers including traffic, maintenance, or other emergency centers.
4. Allocate the appropriate emergency services, resources, and vehicle (s) to respond to incidents, and shall provide the capability to override the current allocation to suit the special needs of a current incident.
5. Receive event scheduling information from Event Promoters.
6. Provide information to the media concerning the status of an emergency response.

Incident Command

1. 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.
2. Provide incident command communications with public safety, emergency management, transportation, and other allied response agency centers.
3. Track and maintain resource information and action plans pertaining to the incident command.
4. 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.
5. Assess the status of responding emergency vehicles as part of an incident command.