APPENDIX A – MARKET PACKAGE DEFINITIONS

Market Package	Market Package Name	Description
Traffic Management Service Area		
ATMS01	Network Surveillance	Includes traffic detectors, CCTV cameras, other surveillance equipment, supporting field equipment and fixed point to point communications to transmit the collected data back to a traffic management center.
ATMS02	Probe Surveillance	Provides an alternative approach for surveillance of the roadway network. Probe vehicles are tracked and position and speed information utilized to determine road network conditions such as average speed and congestion conditions.
ATMS03	Surface Street Control	Provides the central control and monitoring equipment, communication links and signal control equipment that support local street and/or arterial traffic management. This market package is consistent with typical urban traffic signal control systems.
ATMS04	Freeway Control	Provides the communications and roadside equipment to support ramp control, lane controls and interchange control for freeways. This market package is consistent with typical urban traffic freeway control systems. Also includes the capability to utilize surveillance information for detection of incidents.
ATMS05	HOV Lane Management	Manages HOV lanes by coordinating freeway ramp meters and connector signals with HOV lane usage signals.
ATMS06	Traffic Information Dissemination	Provides driver information using roadway equipment such as dynamic message signs or highway advisory radio. Information can include traffic and road conditions, closure and detour information, incident information, emergency alerts and driver advisories.
ATMS07	Regional Traffic Control	Sharing of traffic information and control among traffic management centers to support a regional control strategy. The nature of optimization and extent of information and control sharing is determined through working arrangements between jurisdictions.
ATMS08	Traffic Incident Management System	Manages both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. This market package includes incident detection capabilities and coordination with other agencies. It supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel.
ATMS09	Traffic Forecast and Demand Management	Includes advanced algorithms, processing, and mass storage capabilities that support historical evaluation, real-time assessment, and forecasts of the roadway network performance.
ATMS10	Electronic Toll Collection	Provides toll operators with the ability to collect tolls electronically and detect and process violations.
ATMS11	Emissions Monitoring and Management	Monitors individual vehicle emissions and provides general air quality monitoring using distributed sensors to collect the data.
ATMS12	Virtual TMC and Smart Probe Data	Provides for special requirements of rural road systems. By distributing traffic management over a very wide area (whole state or collection of states). Each locality can access available information for assessment of road conditions. Vehicles are used as smart probes to provide information on road conditions.
ATMS13	Standard Railroad Grade Crossing	Manages highway traffic at highway-rail intersections (HRIs) where rail operational speeds are less than 80 mph.
ATMS14	Advanced Railroad Grade Crossing	Manages highway traffic at highway-rail intersections (HRIs) where operational speeds are greater than 80 mph. Augments Standard Railroad Grade Crossing market package with additional safety features to mitigate the risks associated with higher rail speeds.
ATMS15	Railroad Operations Coordination	Provides an additional level of strategic coordination between freight rail operations and traffic management centers. Could include train schedules, maintenance schedules or any other anticipated HRI closures.

Market Package	Market Package Name	Description
Traffic Management Service Area (continued)		
ATMS16	Parking Facility Management	Provides enhanced monitoring and management of parking facilities. Market package assists in the management of parking operations, coordinates with transportation authorities, and supports electronic collection of parking fees.
ATMS17	Regional Parking Management	Supports coordination between parking facilities to enable regional parking management strategies.
ATMS18	Reversible Lane Management	Provides for the management of reversible lane facilities and includes the field equipment, physical lane access controls, and associated control electronics.
ATMS19	Speed Monitoring	Monitors the speeds of vehicles traveling through a roadway system.
ATMS20	Drawbridge Management	Supports systems that manage drawbridges at rivers and canals and other multimodal crossings. Includes control devices as well as traveler information systems.
ATMS21	Roadway Closure Management	Closes roadways to vehicular traffic when driving conditions are unsafe, maintenance must be performed, or other situations. Market package covers general road closures applications; specific closure systems that are used at railroad grade crossings, drawbridges, reversible lanes, etc. are covered by other market packages.
Emergency Management Service Area		
EM01	Emergency Call - Taking and Dispatch	Provides basic public safety call-taking and dispatch services. Includes emergency vehicle equipment, equipment used to receive and route emergency calls, wireless communications and coordination between emergency management agencies.
EM02	Emergency Routing	Supports automated vehicle location and dynamic routing of emergency vehicles. Traffic information, road conditions and suggested routing information are provided to enhance emergency vehicle routing. Includes signal preemption and priority applications.
EM03	Mayday Support	Allows the user to initiate a request for emergency assistance and enables the emergency management subsystem to locate the user, gather information about the incident and determine the appropriate response.
EM04	Roadway Service Patrols	Supports the roadway service patrol vehicles that aid motorists, offering rapid response to minor incidents (flat tire, accidents, out of gas) to minimize disruption to the traffic stream. This market package monitors service patrol vehicle locations and supports vehicle dispatch.
EM05	Transportation Infrastructure Protection	Includes the monitoring of transportation infrastructure (e.g. bridges, tunnels and management centers) for potential threats using sensors, surveillance equipment, barriers and safeguard systems to preclude an incident, control access during and after an incident or mitigate the impact of an incident. Threats can be acts of nature, terrorist attacks or other incidents causing damage to the infrastructure.
EM06	Wide-Area Alert	Uses ITS driver and traveler information systems to alert the public in emergency situations such as child abductions, severe weather, civil emergencies or other situations that pose a threat to life and property.
EM07	Early Warning System	Monitors and detects potential, looming and actual disasters including natural, technological and man-made disasters.
EM08	Disaster Response and Recovery	Enhances the ability of the surface transportation system to respond to and recover from disasters. Supports coordination of emergency response plans, provides enhanced access to the scene and better information about the transportation system in the vicinity of the disaster, and maintains situation awareness.

Market Package	Market Package Name	Description
Emergency Management Service Area (continued)		
EM09	Evacuation and Reentry Management	Supports evacuation of the general public from a disaster area and manages subsequent reentry to the disaster area. This market package supports both anticipated, well-planned and orderly evacuations such as for a hurricane, as well as sudden evacuations with little or no time for preparation or public warning such as a terrorist act. Employs a number of strategies to maximize capacity along an evacuation route including coordination with transit.
EM10	Disaster Traveler Information	Use of ITS to provide disaster-related traveler information to the general public, including evacuation and reentry information and other information concerning the operation of the transportation system during a disaster.
Maintenance and Construction Management Service Area		
MC01	Maintenance and Construction Vehicle and Equipment Tracking	Tracks the location of maintenance and construction vehicles and other equipment to ascertain the progress of their activities.
MC02	Maintenance and Construction Vehicle Maintenance	Performs vehicle maintenance scheduling and manages both routine and corrective maintenance activities. Includes on-board sensors capable of automatically performing diagnostics.
MC03	Road Weather Data Collection	Collects current road weather conditions using data collected from environmental sensors deployed on and about the roadway.
MC04	Weather Information Processing and Distribution	Processes and distributes the environmental information collected from the Road Weather Data Collection market package. This market package uses the environmental data to detect environmental hazards such as icy road conditions, high winds, dense fog, etc. so system operators can make decisions on corrective actions to take.
MC05	Roadway Automated Treatment	Automatically treats a roadway section based on environmental or atmospheric conditions. Includes the sensors that detect adverse conditions, automated treatment (such as anti-icing chemicals), and driver information systems.
MC06	Winter Maintenance	Supports winter road maintenance. Monitors environmental conditions and weather forecasts and uses the information to schedule winter maintenance activities.
MC07	Roadway Maintenance and Construction	Supports numerous services for scheduled and unscheduled maintenance and construction on a roadway system or right-of-way. Environmental conditions information is also received from various weather sources to aid in scheduling maintenance and construction activities.
MC08	Work Zone Management	Directs activity in work zones, controlling traffic through portable dynamic message signs and informing other groups of activity for better coordination management. Also provides speed and delay information to motorists prior to the work zone.
MC09	Work Zone Safety Monitoring	Includes systems that improve work crew safety and reduce collisions between the motoring public and maintenance and construction vehicles. Detects vehicle intrusions in work zones and warns workers and drivers of safety hazards when encroachment occurs.
MC10	Maintenance and Construction Activity Coordination	Supports the dissemination of maintenance and construction activity to centers that can utilize it as part of their operations. (i.e., traffic management, transit, emergency management)
Public Transportation Service Area		
APTS1	Transit Vehicle Tracking	Monitors current transit vehicle location using an automated vehicle location system. Location data may be used to determine real time schedule adherence and update the transit system's schedule in real time.
APTS2	Transit Fixed-Route Operations	Performs vehicle routing and scheduling, as well as operator assignment and system monitoring for fixed-route and flexible-route transit services.

Market Package	Market Package Name	Description
Public Transportation Service Area (continued)		
APTS3	Demand Response Transit Operations	Performs vehicle routing and scheduling, as well as operator assignment and system monitoring for demand responsive transit services.
APTS4	Transit Passenger and Fare Management	Manages passenger loading and fare payments on transit vehicles using electronic means.
APTS5	Transit Security	Provides for the physical security of transit passengers and transit vehicle operators. Includes on-board security cameras and panic buttons.
APTS6	Transit Maintenance	Supports automatic transit maintenance scheduling and monitoring for both routine and corrective maintenance.
APTS7	Multi-modal Coordination	Establishes two way communications between multiple transit and traffic agencies to improve service coordination.
APTS8	Transit Traveler Information	Provides transit users at transit stops and on board transit vehicles with ready access to transit information. Services include stop annunciation, imminent arrival signs and real-time transit schedule displays. Systems that provide custom transit trip itineraries and other tailored transit information services are also represented by this market package.
Commercial Vehicle Operations Service Area		
CVO01	Fleet Administration	Provides the capabilities to manage a fleet of commercial vehicles. Vehicle routing and tracking as well as notification of emergency management of any troublesome route deviations (such as a HAZMAT vehicle) are part of this market package.
CVO02	Freight Administration	Tracks the movement of cargo and monitors the cargo condition.
CVO03	Electronic Clearance	Provides for automatic clearance at roadside check facilities. Allows a good driver/vehicle/carrier to pass roadside facilities at highway speeds using transponders and dedicated short range communications to the roadside.
CVO04	Administrative Processes	Provides for electronic application, processing, fee collection, issuance and distribution of CVO credentials and tax filing.
CVO05	International Border Electronic Clearance	Provides for automated clearance at international border crossings.
CVO06	Weigh-In-Motion	Provides for high speed weigh-in-motion with or without automated vehicle identification capabilities.
CVO07	Roadside CVO Safety	Provides for automated roadside safety monitoring and reporting. Automates commercial vehicle safety inspections at the roadside check facilities.
CVO08	On-board CVO and Freight Safety & Security	Provides for on-board commercial vehicle safety monitoring and reporting as well as roadside support for reading on-board safety data via tags.
CVO09	CVO Fleet Maintenance	Supports maintenance of CVO fleet vehicles with on-board monitoring equipment and automated vehicle location capabilities.
CVO10	HAZMAT Management	Integrates incident management capabilities with commercial vehicle tracking to assure effective treatment of HAZMAT material and incidents.
CVO11	Roadside HAZMAT Security Detection and Mitigation	Provides the capability to detect and classify security sensitive HAZMAT on commercial vehicles using roadside sensing and imaging technology. Credentials information can be accessed to verify if the commercial driver, vehicle and carrier are permitted to transport the identified HAZMAT.
CVO12	Commercial Vehicle Driver Security Authentication	Provides the ability for Fleet and Freight Management to detect when an unauthorized commercial vehicle driver attempts to drive a vehicle based on stored identity information. If an unauthorized driver has been detected the commercial vehicle can be disabled.
CVO13	Freight Assignment Tracking	Provides for the planning and tracking of the commercial vehicle, freight equipment and the commercial vehicle driver.

Market Package	Market Package Name	Description
Traveler Information Service Area		
ATIS1	Broadcast Traveler Information	Collects traffic conditions, advisories, general public transportation, toll and parking information, incident information, roadway maintenance and construction information, air quality and weather information, and broadly disseminates this information through existing infrastructures (radio, cell phones, etc.).
ATIS2	Interactive Traveler Information	Provides tailored information in response to a traveler request. The traveler can obtain current information regarding traffic conditions, roadway maintenance and construction, transit services, ride share/ride match, parking management, detours and pricing information.
ATIS3	Autonomous Route Guidance	Using vehicle location and other information, this market package enables route planning and detailed route guidance based on static, stored information.
ATIS4	Dynamic Route Guidance	Offers advanced route planning and guidance that is responsive to current conditions.
ATIS5	ISP Based Route Guidance	Offers the user pre-trip route planning and turn-by-turn route guidance services. Routes may be based on static or real time network conditions.
ATIS6	Integrated Transportation Management/Route Guidance	Provides advanced route planning and guidance that is responsive to current conditions.
ATIS7	Yellow Pages and Reservation	Provides yellow pages and reservations services to the user.
ATIS8	Dynamic Ridesharing	Provides dynamic ridesharing/ride matching services to travelers.
ATIS9	In Vehicle Signing	Supports the distribution of traffic and travel advisory information to drivers through in-vehicle devices.
Archived Data Management Service Area		
AD1	ITS Data Mart	Provides a focused archive that houses data collected and owned by a single agency or other organization. Focused archive typically covers a single transportation mode and one jurisdiction.
AD2	ITS Data Warehouse	Includes all the data collection and management capabilities of the ITS Data Mart. Adds the functionality to allow collection of data from multiple agencies and data sources across modal and jurisdictional boundaries.
AD3	ITS Virtual Data Warehouse	Provides the same broad access to multimodal, multidimensional data from varied sources as in the ITS Data Warehouse Market Package, but provides this access using enhanced interoperability between physically distributed ITS archives that are each locally managed.

APPENDIX B – CUSTOMIZED MARKET PACKAGES

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Figure B1 – ATMS01 – Network Surveillance: TDOT Region 1 TMC - Knoxville

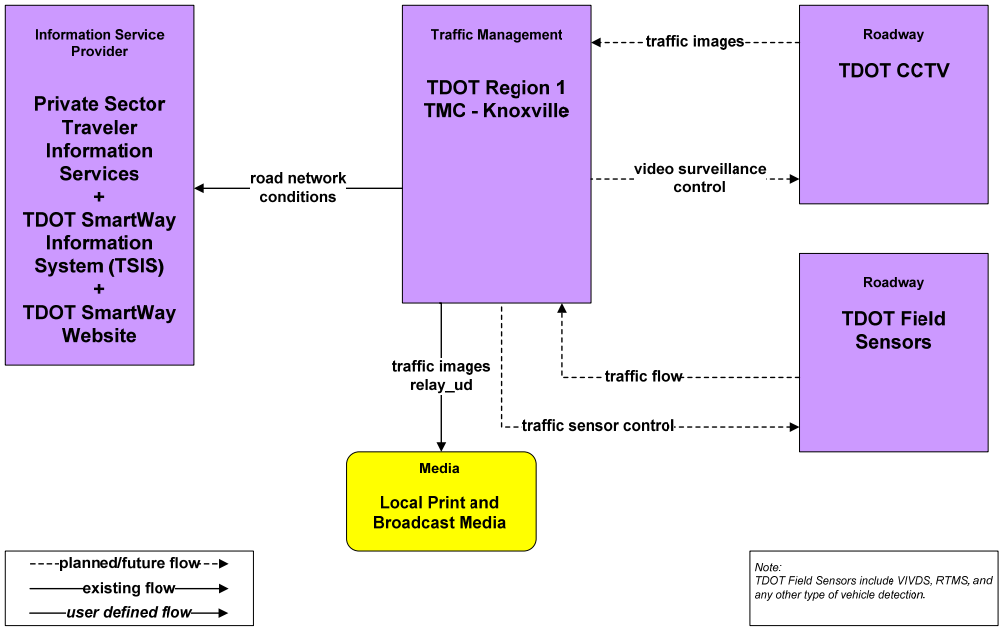


Figure B2 – ATMS01 – Network Surveillance: City of Johnson City

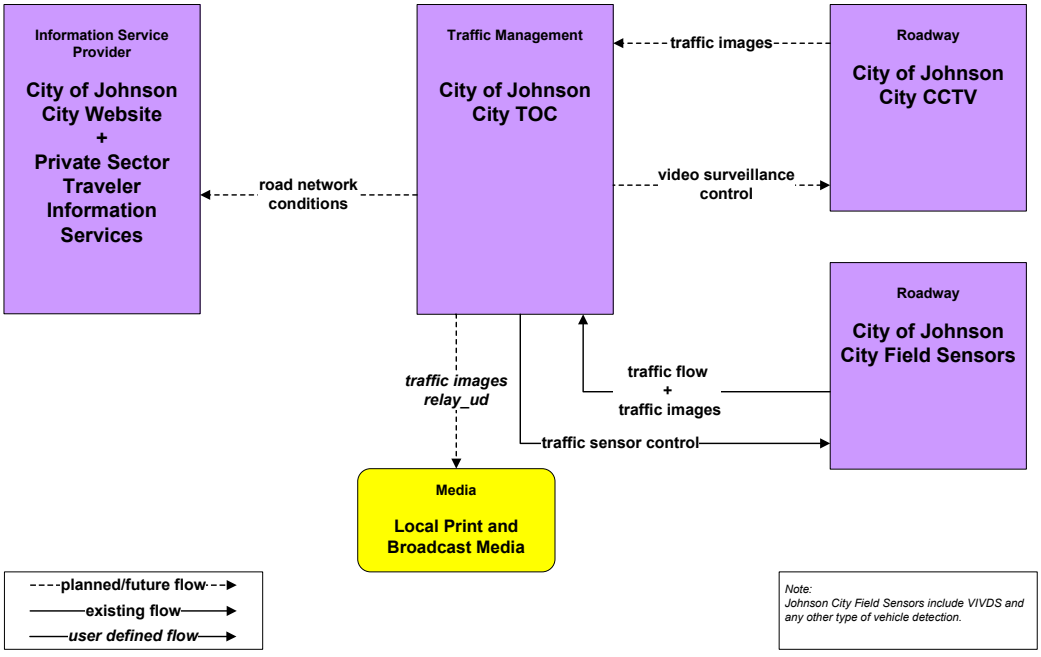


Figure B3 – ATMS01 – Network Surveillance:
City of Elizabethton

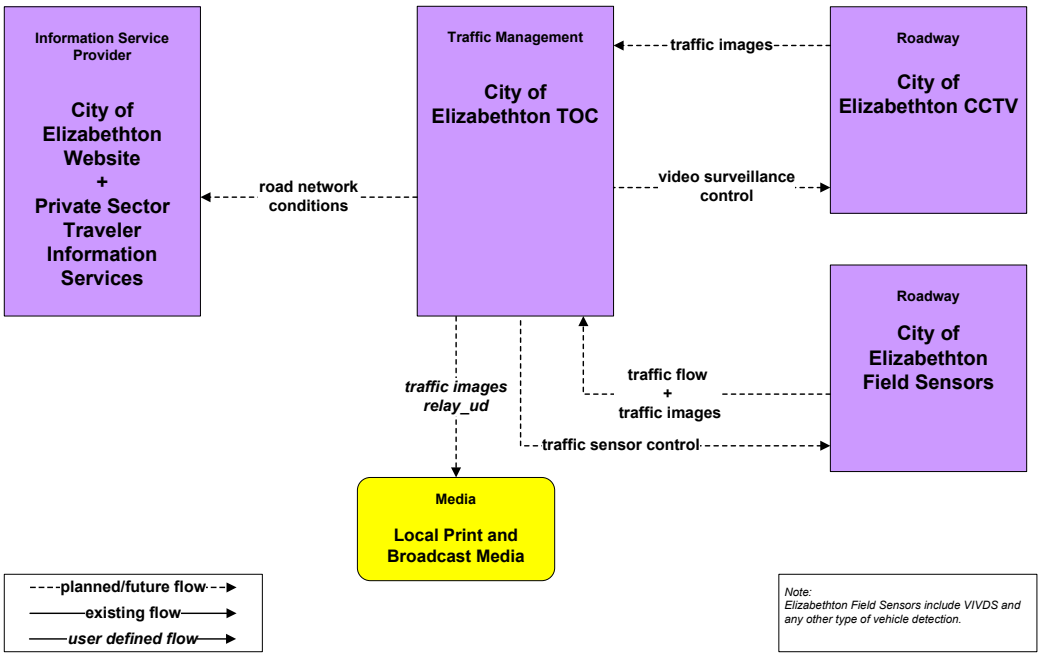
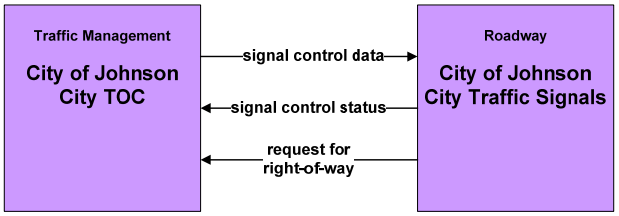


Figure B4 – ATMS03 – Surface Street Control:
City of Johnson City Signal System



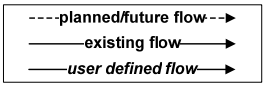
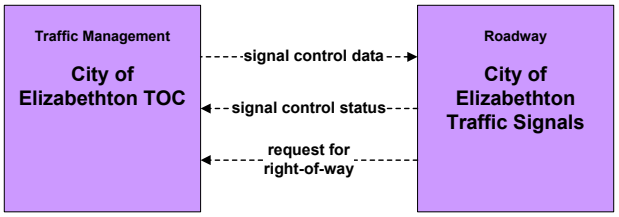


Figure B5 – ATMS03 – Surface Street Control: City of Elizabethton Signal System



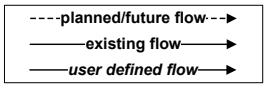
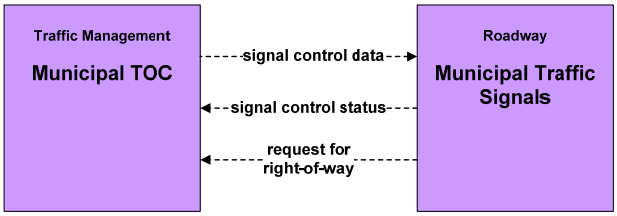
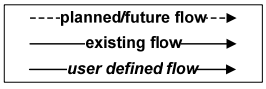


Figure B6 – ATMS03 – Surface Street Control: Municipal Signal System





Note: Jonesborough has signals currently controlled by Johnson City. Carter County Signals are privately maintained. Washington County signals are maintained by Johnson City.

Figure B7 – ATMS06 – Traffic Information Dissemination: TDOT Region 1 TMC – Knoxville

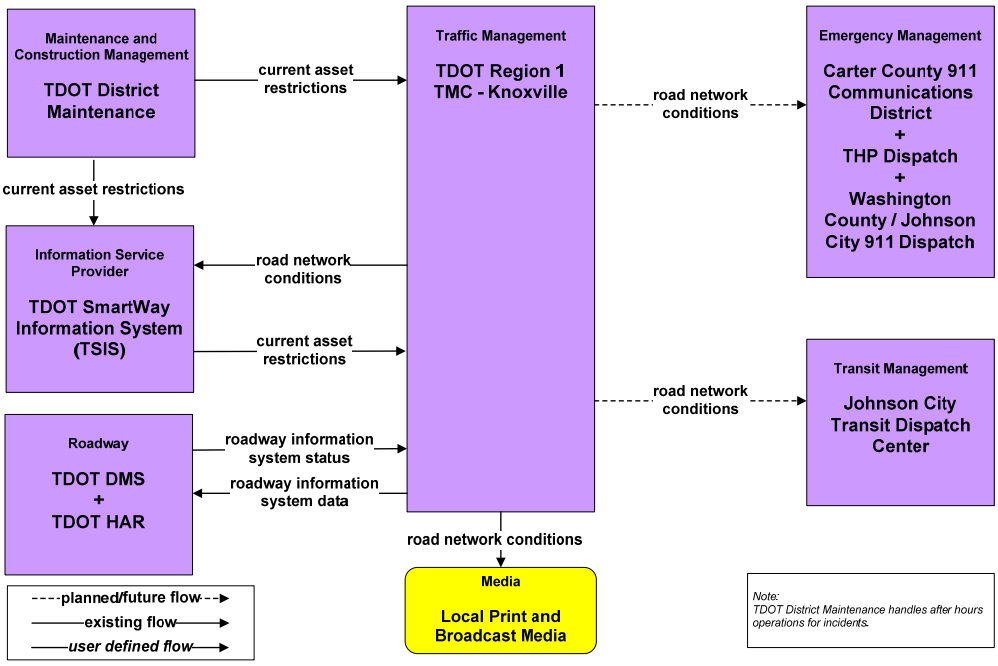


Figure B8 – ATMS06 – Traffic Information Dissemination: City of Johnson City

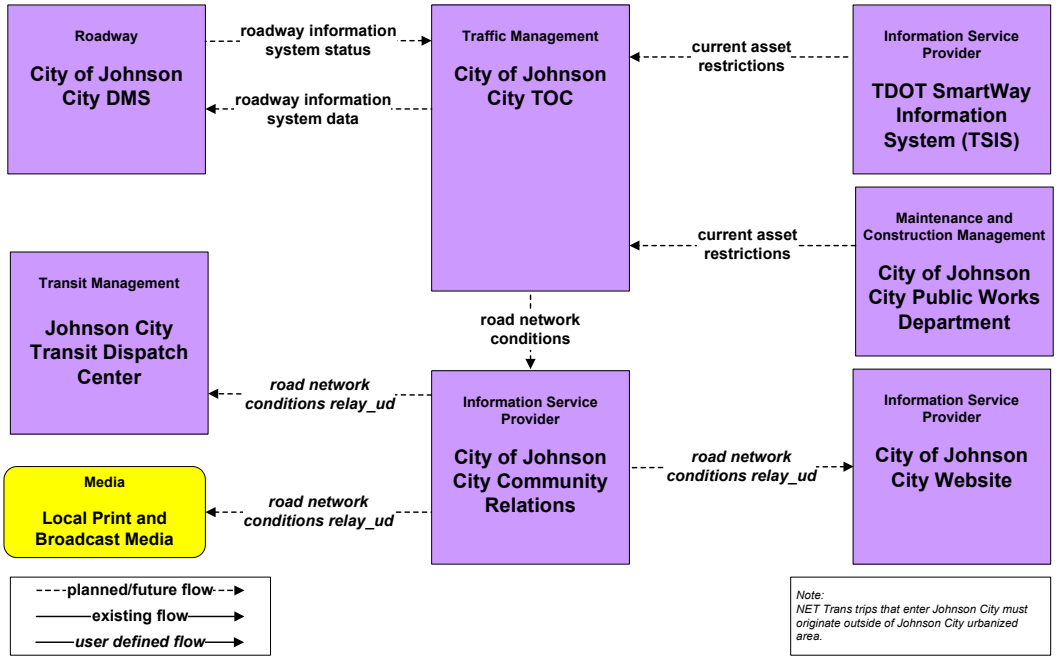


**Figure B9 – ATMS06 – Traffic Information Dissemination:
City of Elizabethton**

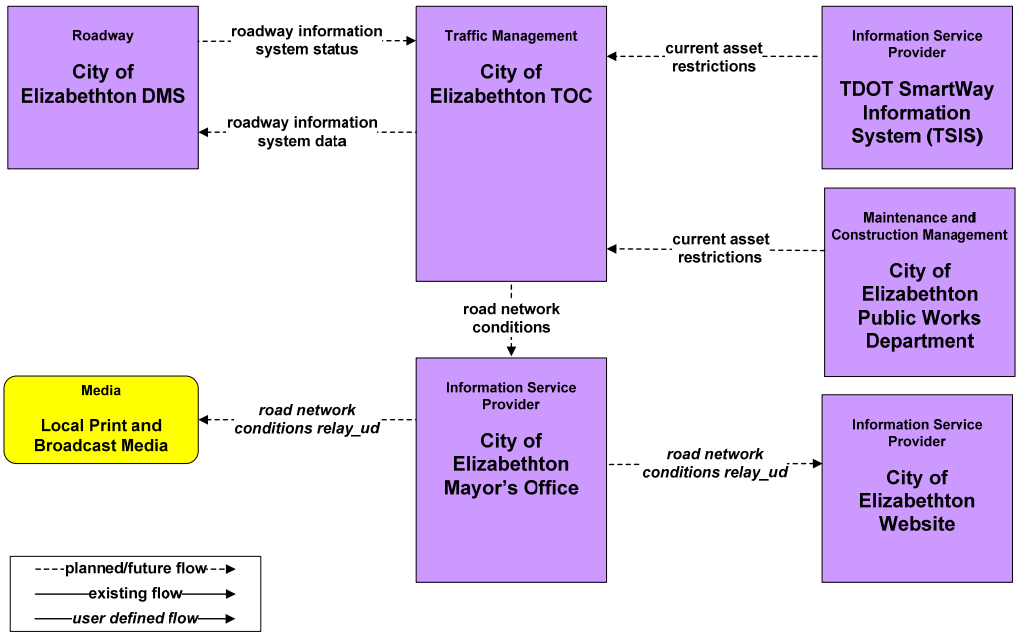


**Figure B10 – ATMS07 – Regional Traffic Control:
TDOT Region 1 TMC – Knoxville**

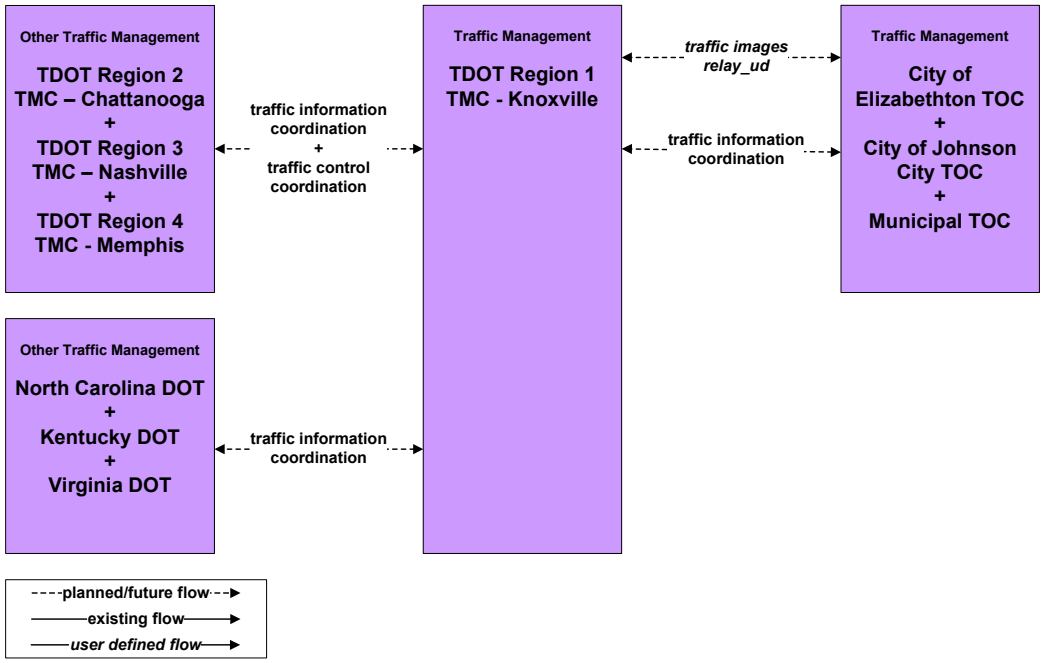


Figure B11 – ATMS07 – Regional Traffic Control: City of Johnson City and City of Elizabethton

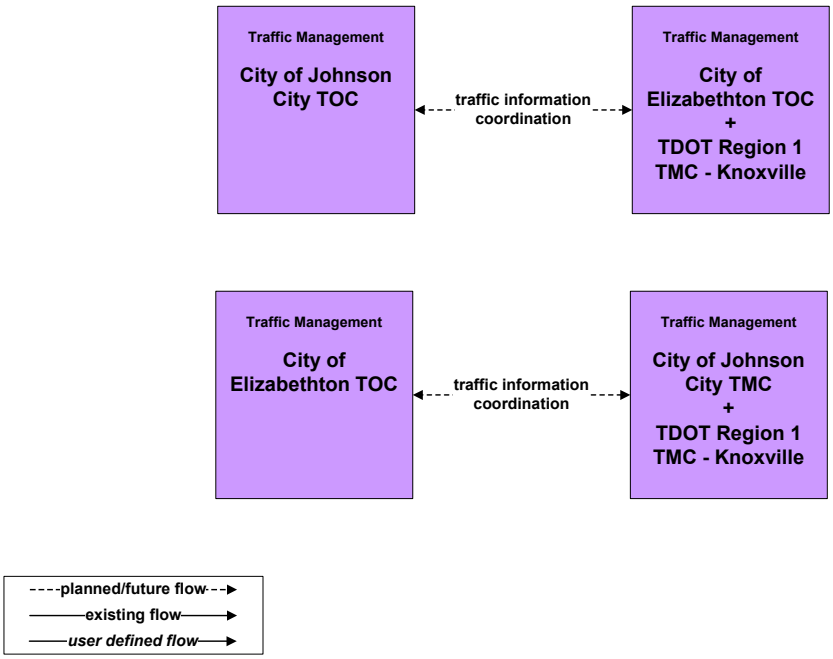


Figure B12 – ATMS07 – Regional Traffic Control: Municipal

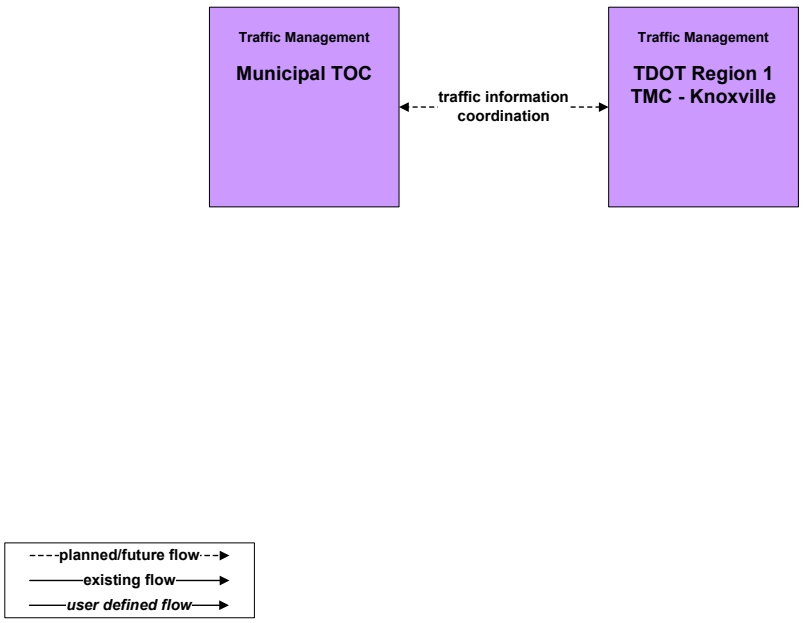


Figure B13 – ATMS08 – Traffic Incident Management System: TDOT Region 1 TMC – Knoxville

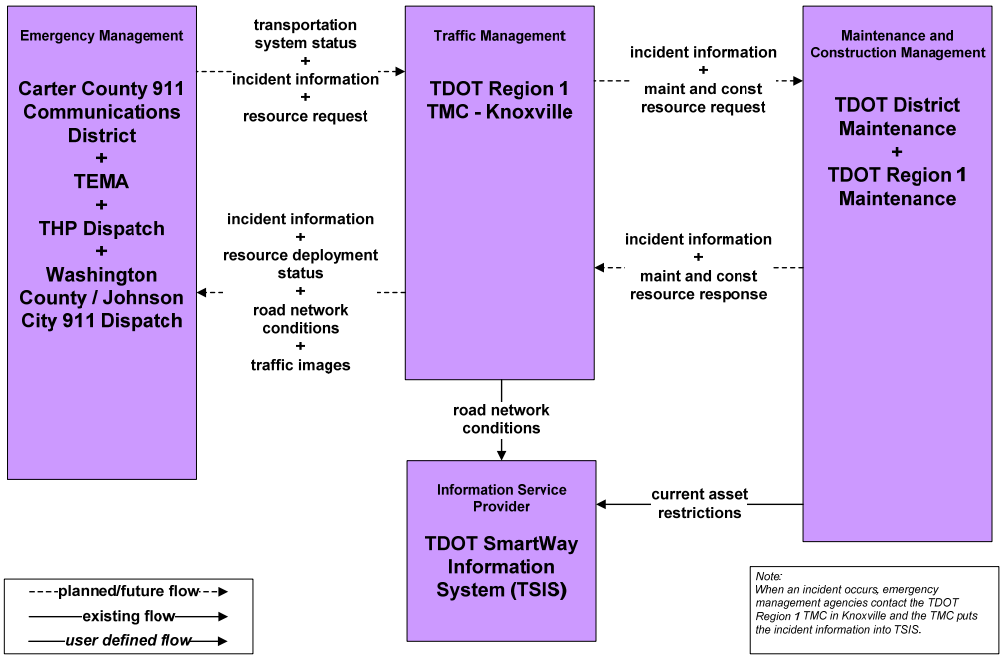


Figure B14 – ATMS08 – Traffic Incident Management System: City of Johnson City TOC

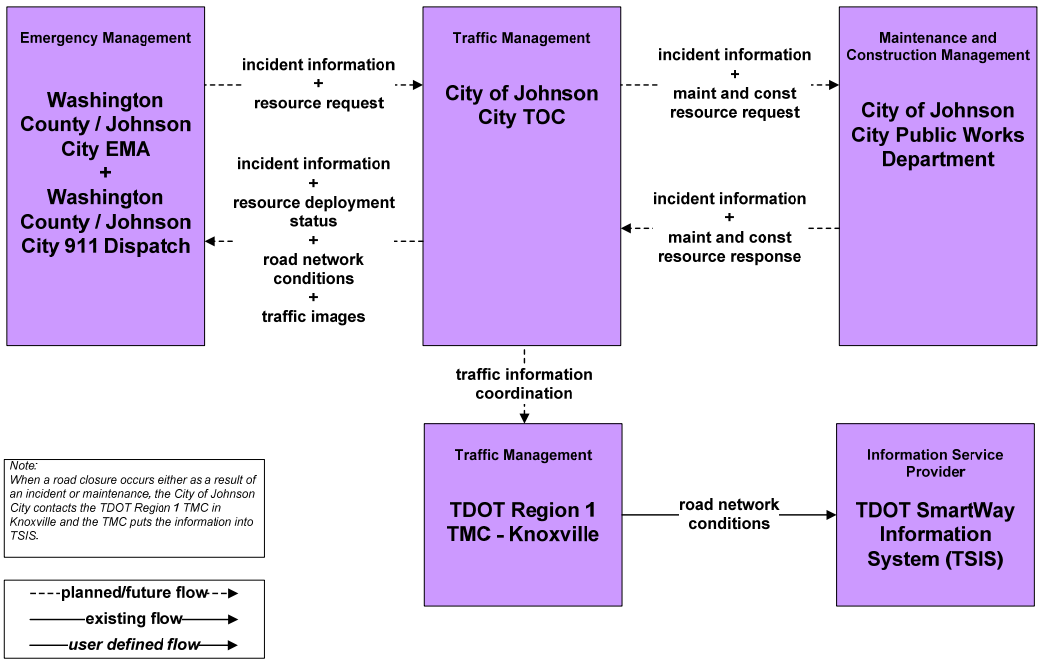


Figure B15 – ATMS08 – Traffic Incident Management System: City of Elizabethton TOC

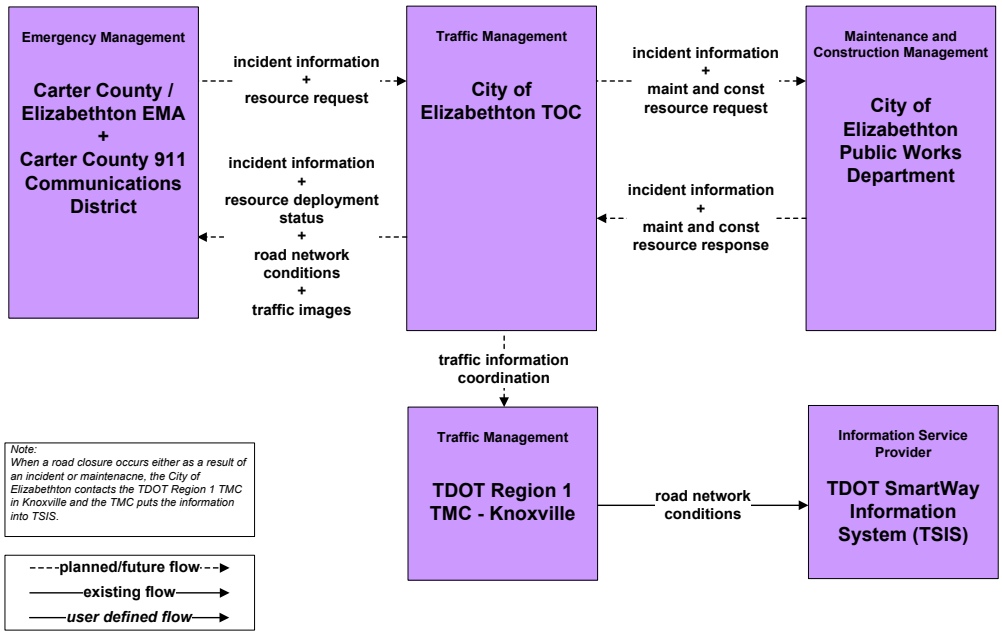


Figure B16 – ATMS13 – Standard Railroad Grade Crossing: City of Johnson City

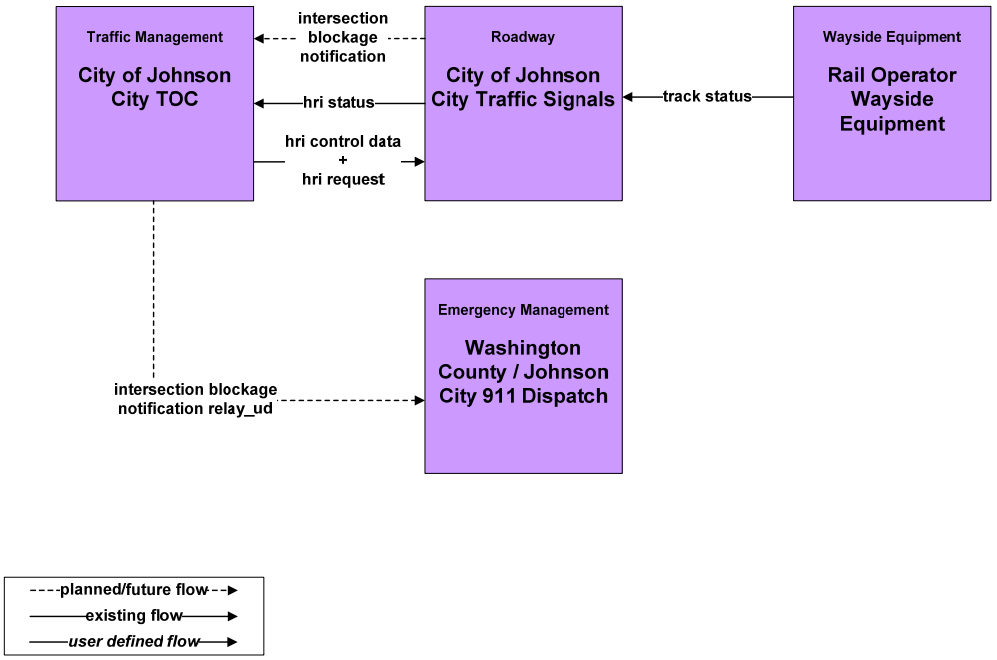


Figure B17 – ATMS13 – Standard Railroad Grade Crossing: City of Elizabethton

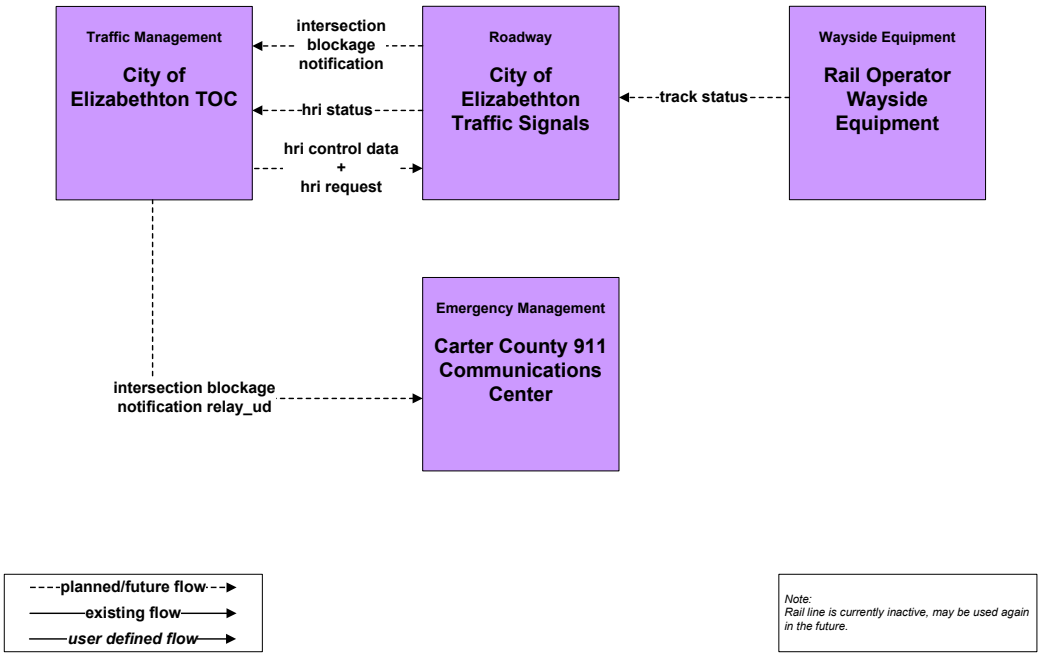


Figure B18 – ATMS19 – Speed Monitoring

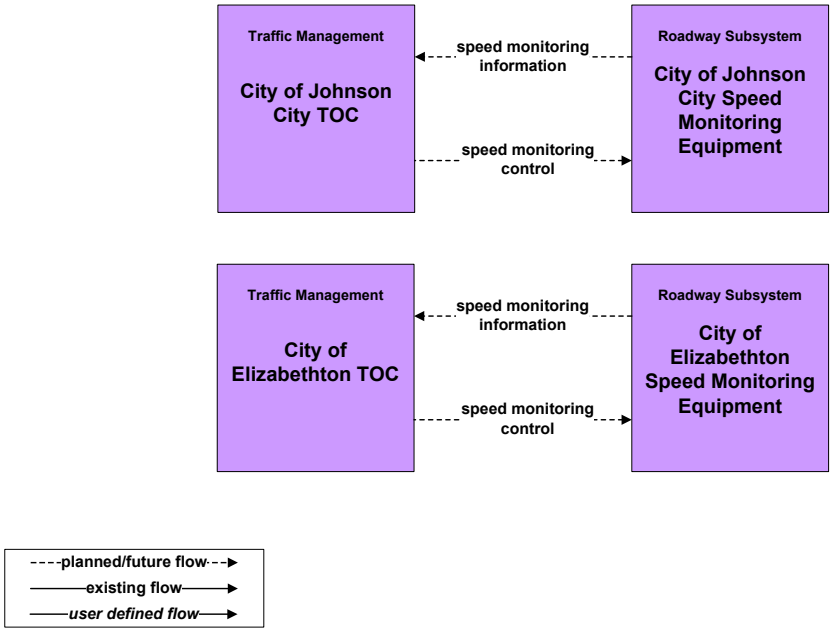
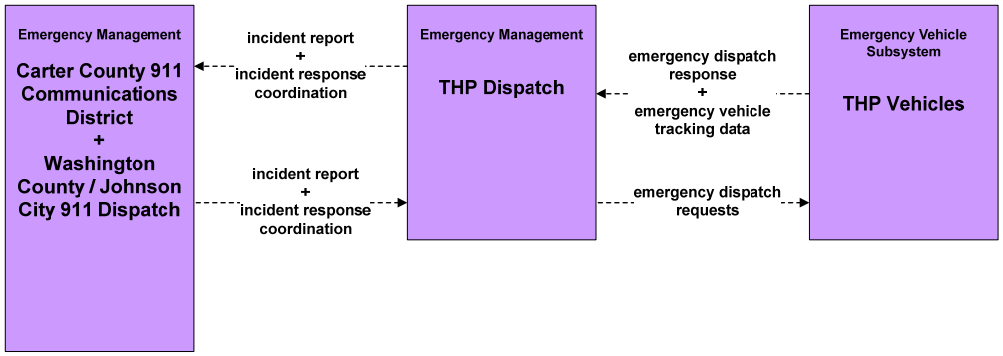


Figure B19 – EM01 – Emergency Call Taking and Dispatch: Tennessee Highway Patrol



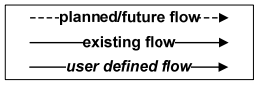
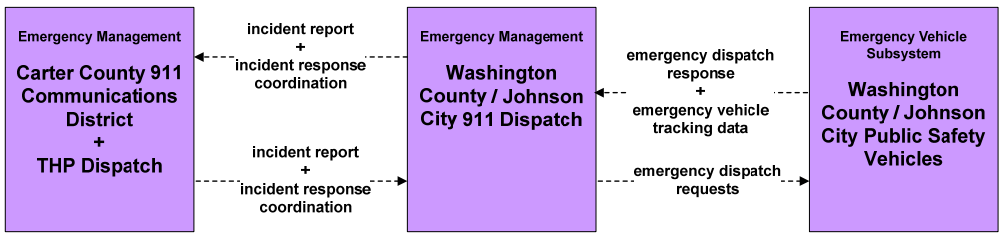


Figure B20 – EM01 – Emergency Call Taking and Dispatch: Washington County/Johnson City 911 Dispatch



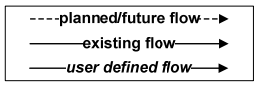


Figure B21 – EM01 – Emergency Call Taking and Dispatch: Carter County 911 Communications Dispatch

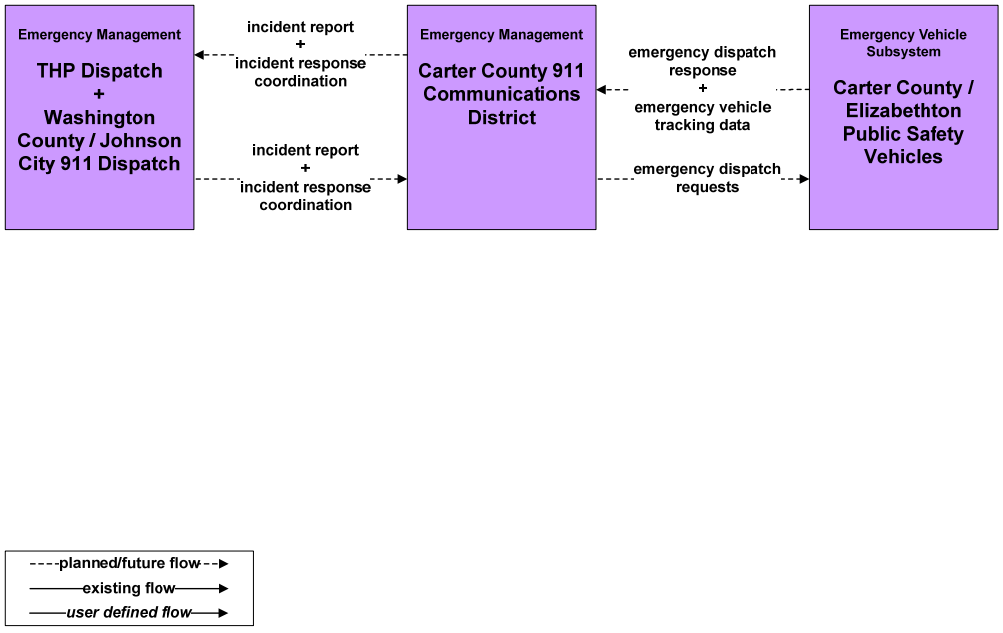


Figure B22 – EM02 – Emergency Routing: Washington County/Johnson City 911 Dispatch

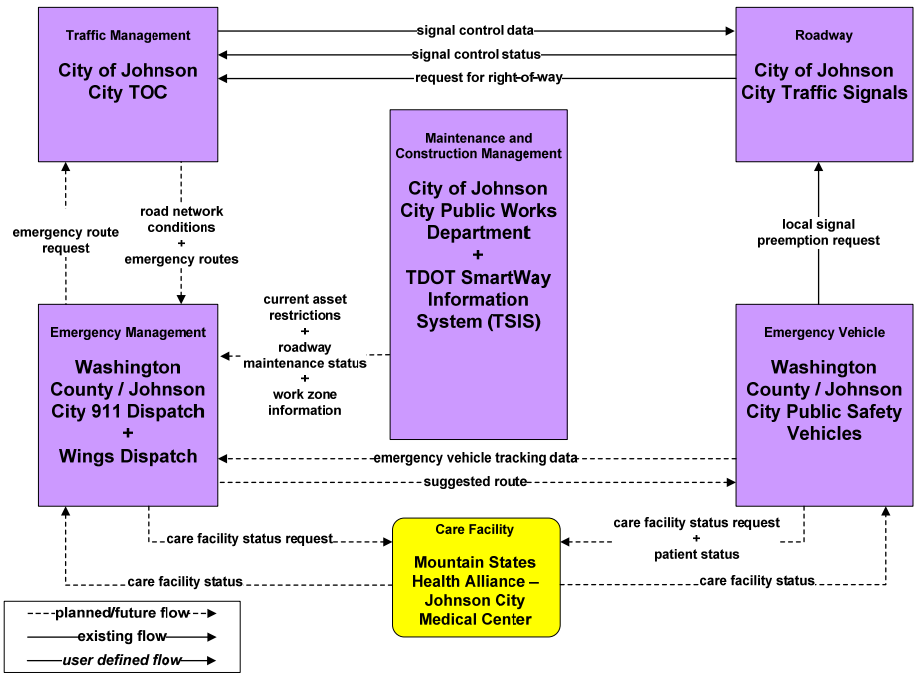


Figure B23 – EM02 – Emergency Routing: Carter County 911 Communications District

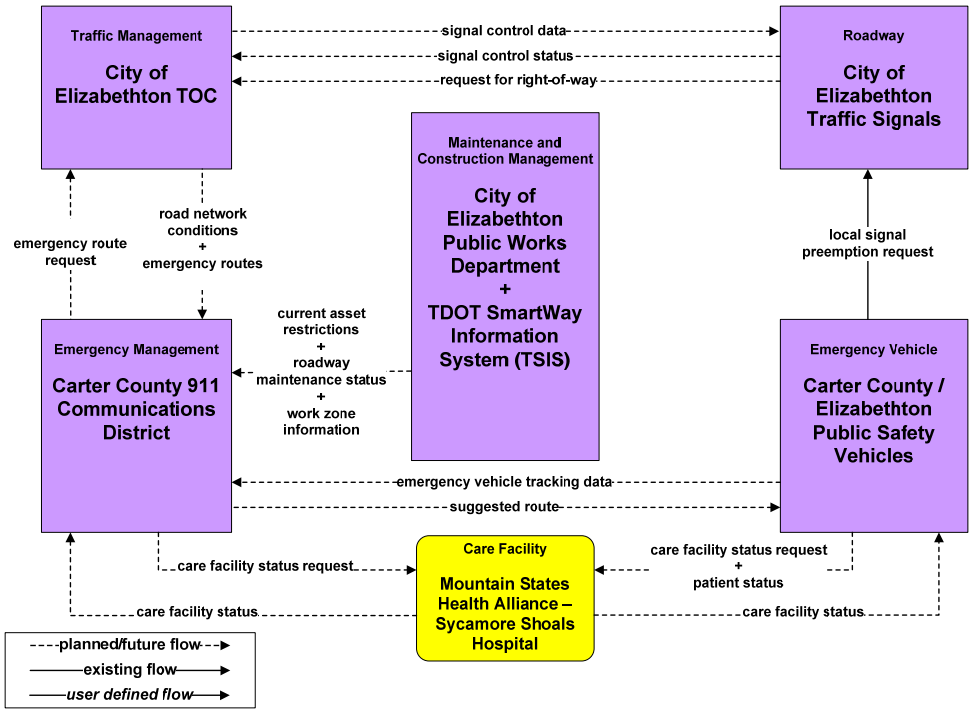


Figure B24 – EM04 – Roadway Service Patrols: HELP

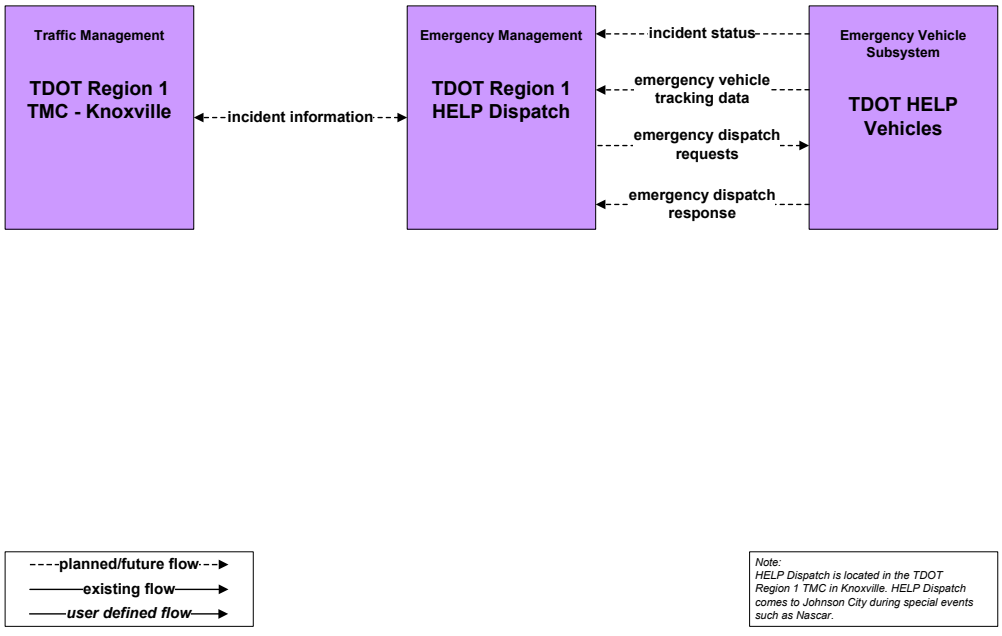


Figure B25 – EM06 – Wide-Area Alerts: Tennessee AMBER Alert

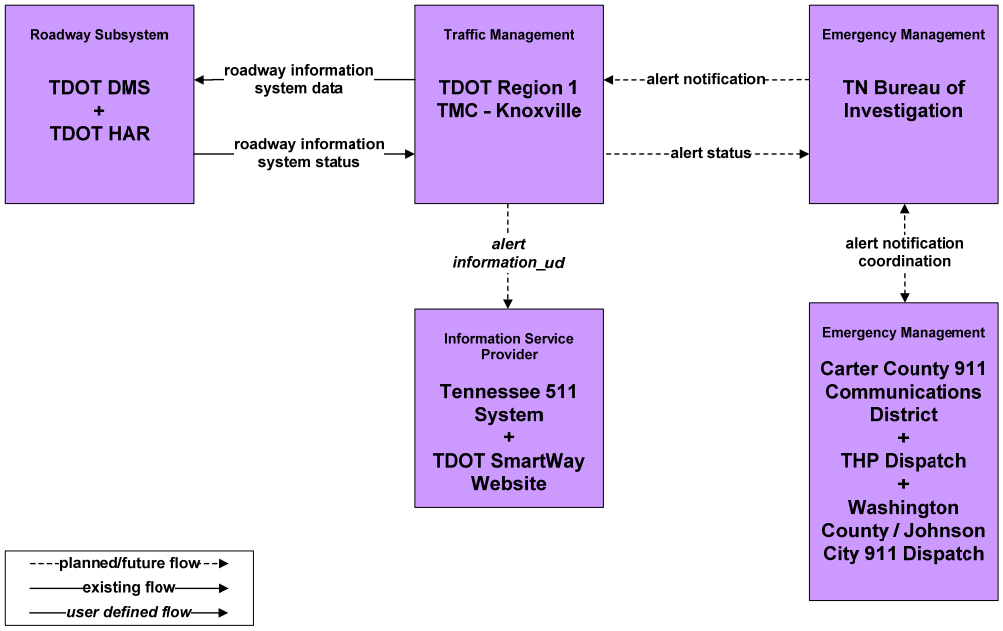


Figure B26 – EM06 – Wide-Area Alerts: Future Regional AMBER Alert Network

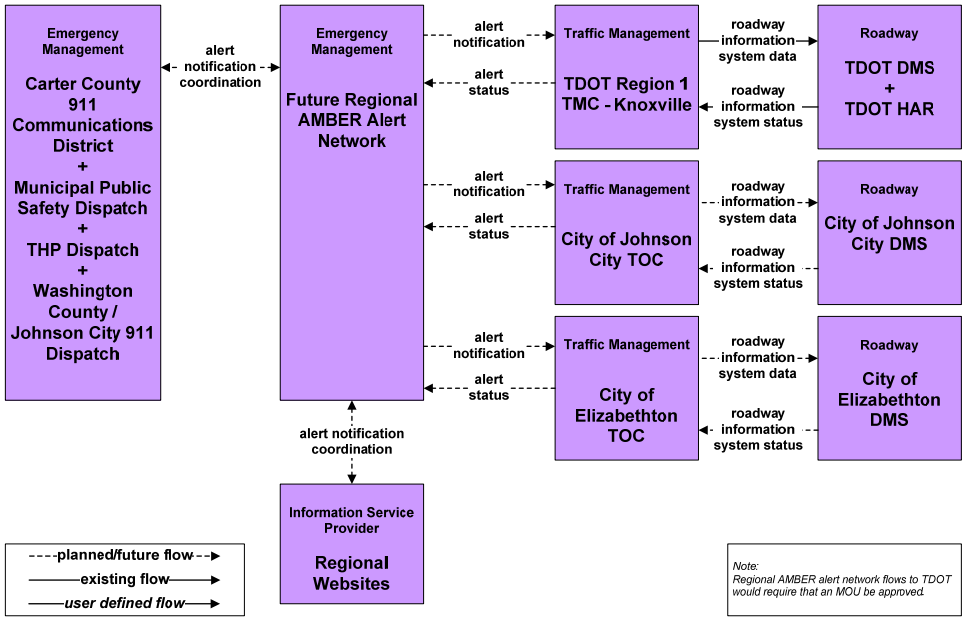


Figure B27 – EM08 – Disaster Response and Recovery: TEMA

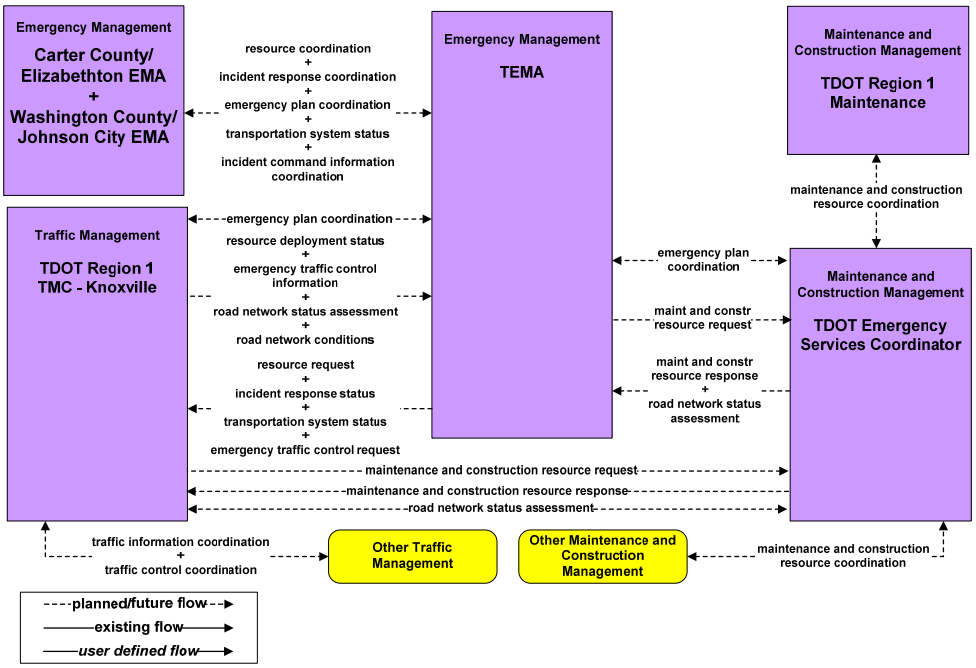


Figure B28 – EM08 – Disaster Response and Recovery: Local EMA – Carter County/Elizabethton EMA

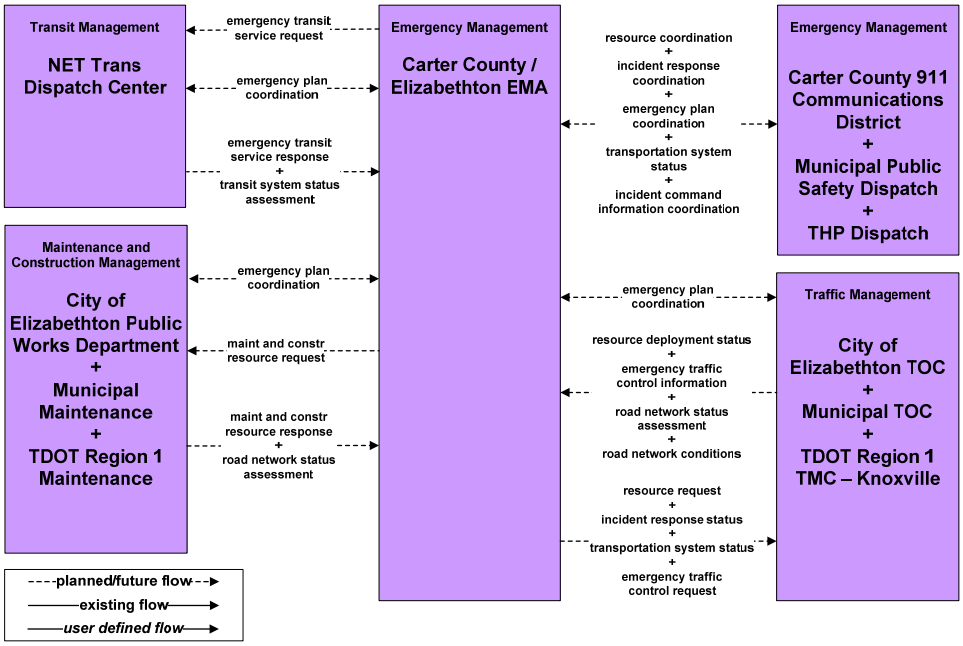


Figure B29 – EM08 – Disaster Response and Recovery: Local EMA – Washington County/Johnson City EMA

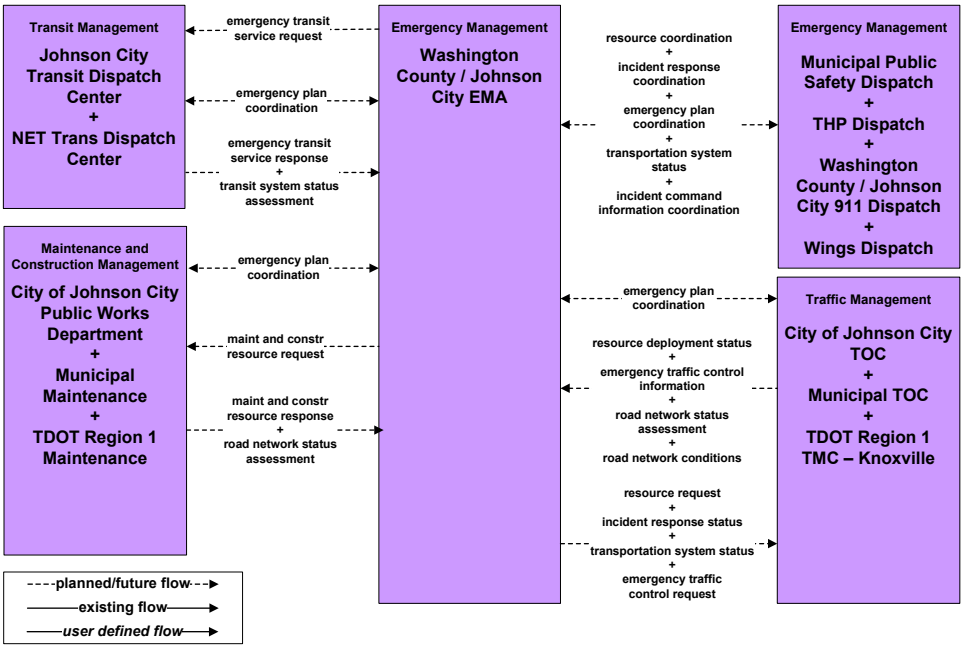


Figure B30 – EM09 – Evacuation and Reentry Management: TEMA

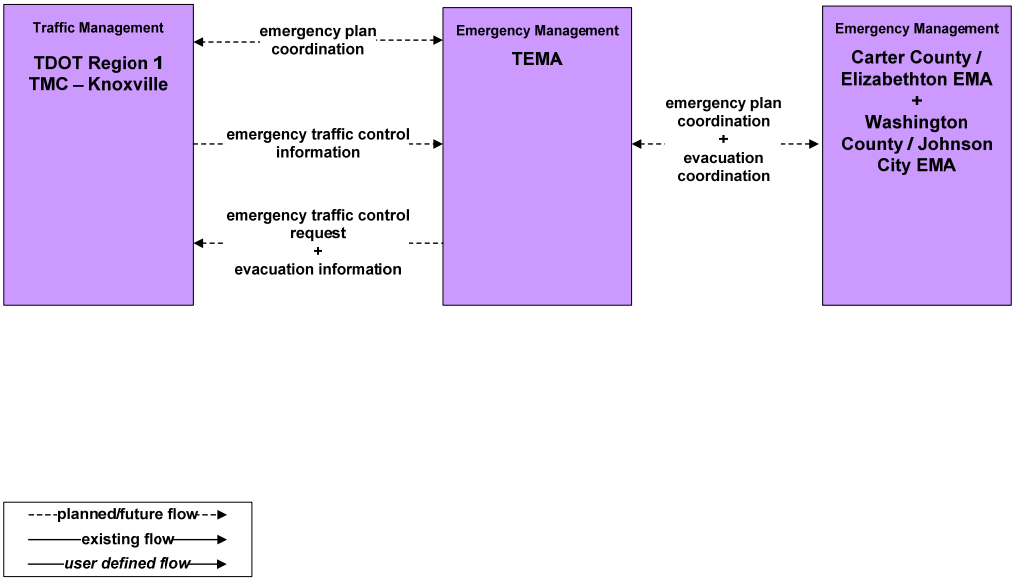


Figure B31 – EM09 – Evacuation and Reentry Management: Local EMA – Carter County/Elizabethton EMA

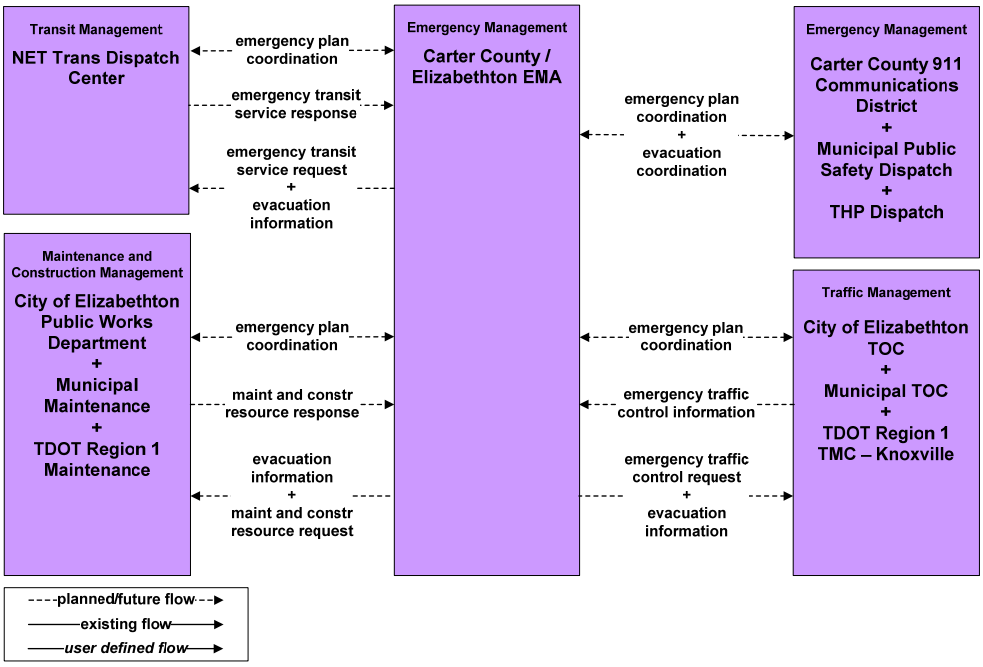


Figure B32 – EM09 – Evacuation and Reentry Management: Local EMA – Washington County/Johnson City EMA

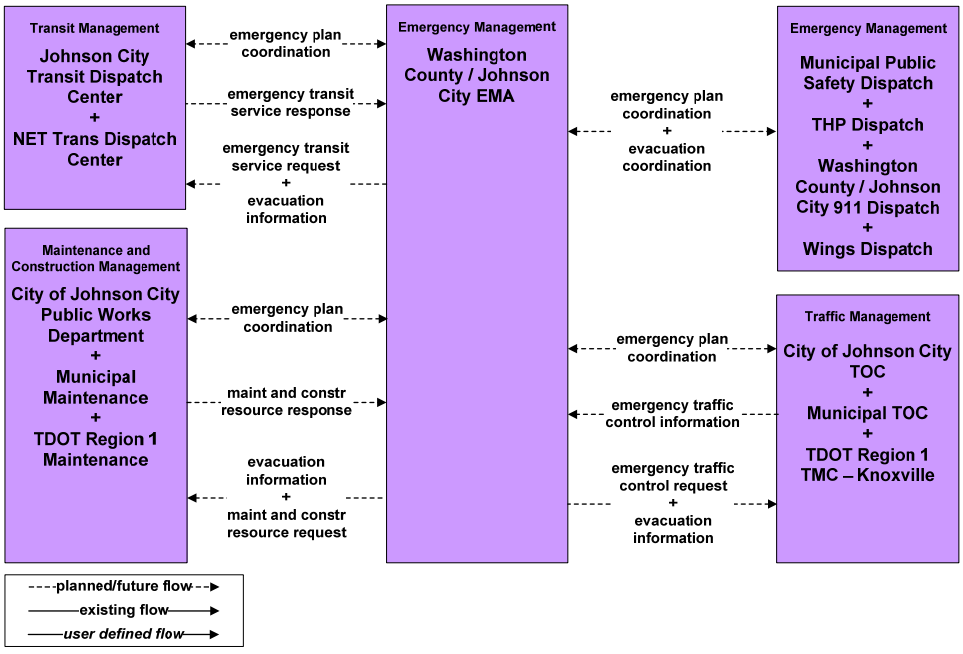


Figure B33 – EM10 – Disaster Traveler Information: TDOT

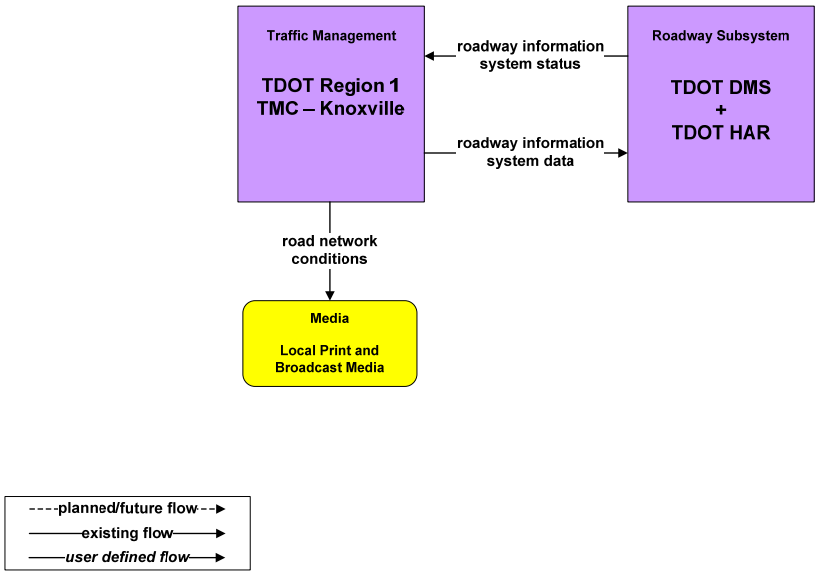


Figure B34 – EM10 – Disaster Traveler Information: Tennessee 511 and TSIS

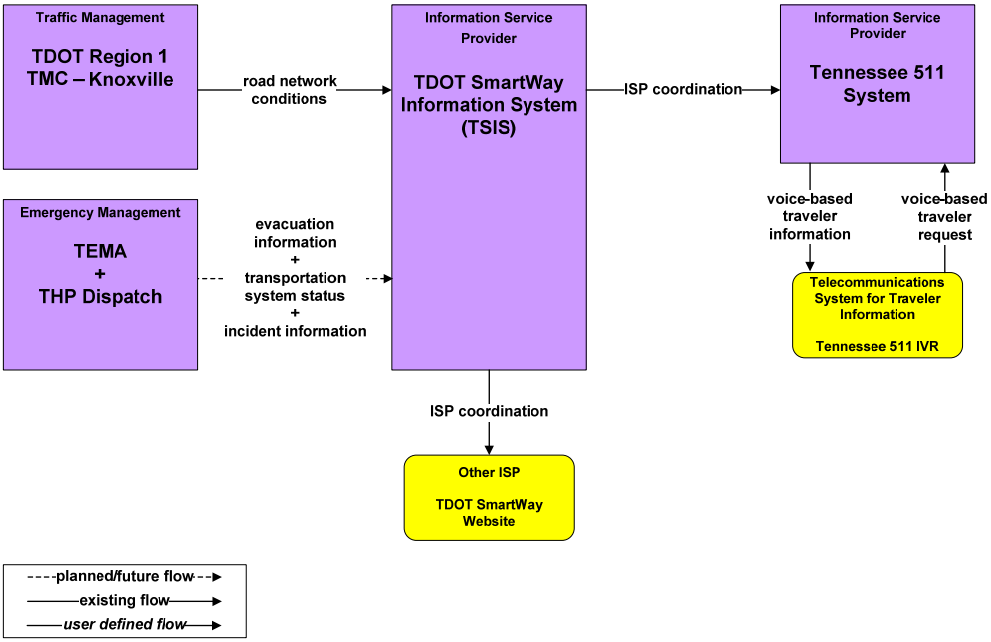


Figure B35 – MC01 – Maintenance and Construction Vehicle and Equipment Tracking: TDOT District Maintenance

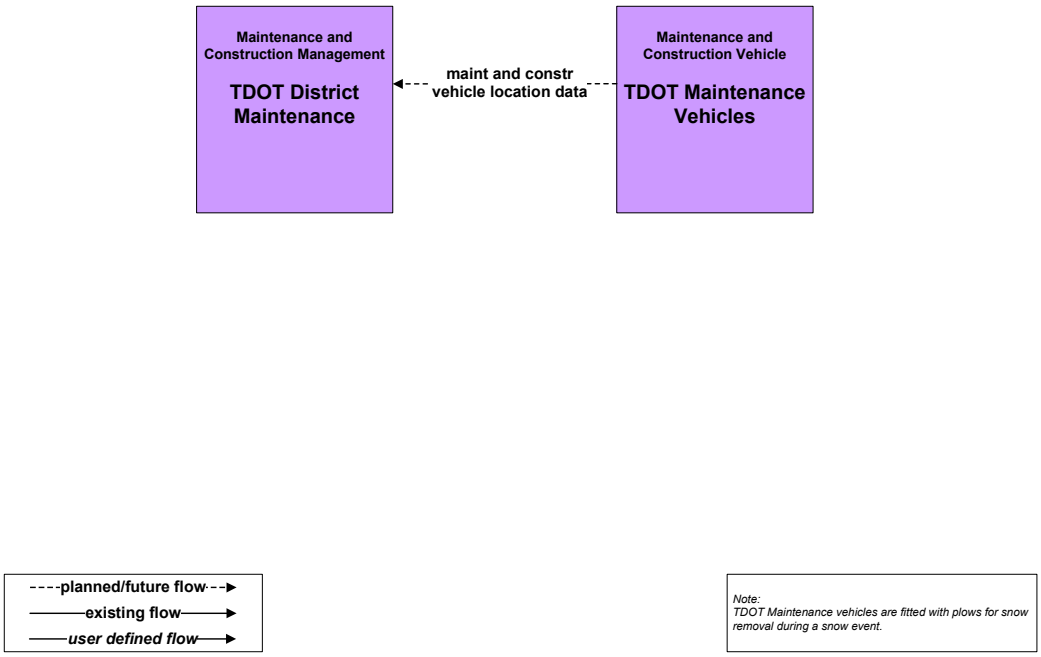


Figure B36 – MC01 – Maintenance and Construction Vehicle and Equipment Tracking: City of Johnson City

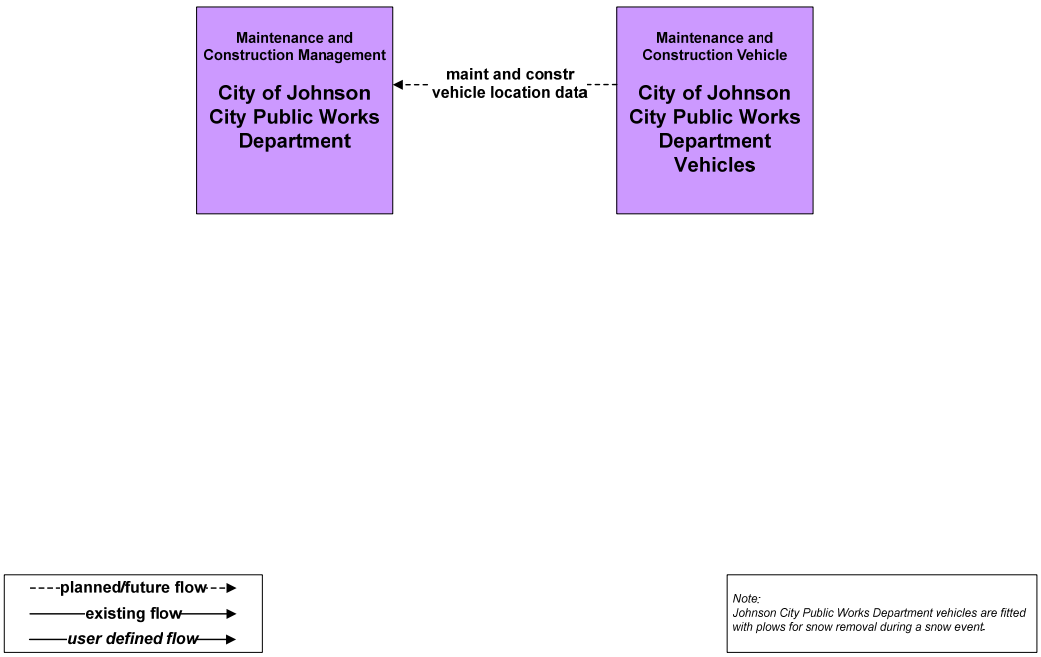


Figure B37 – MC01 – Maintenance and Construction Vehicle and Equipment Tracking: City of Elizabethton

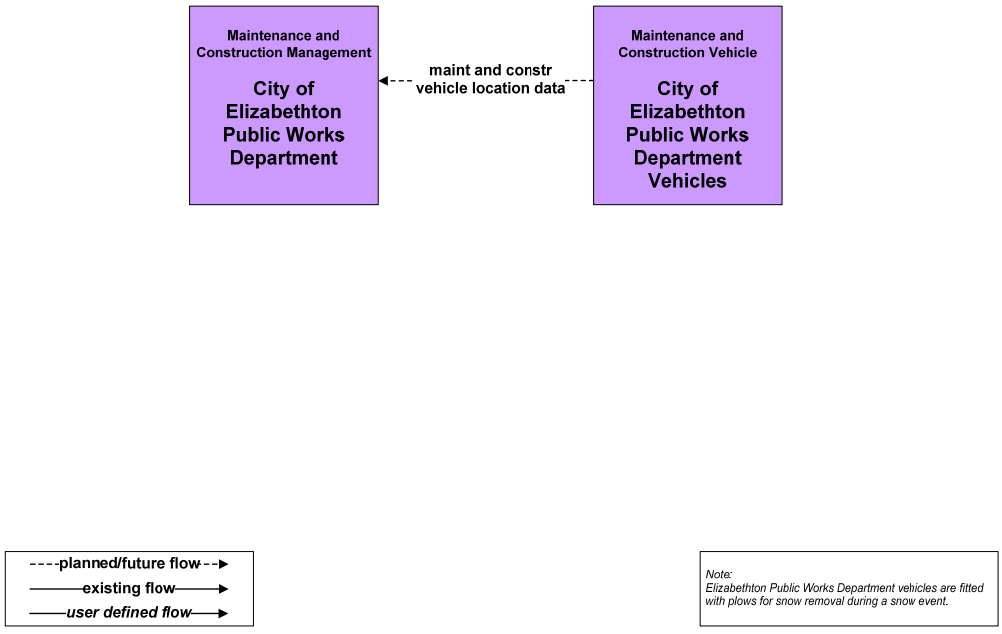


Figure B38 – MC03 – Road Weather Data Collection: TDOT RWIS

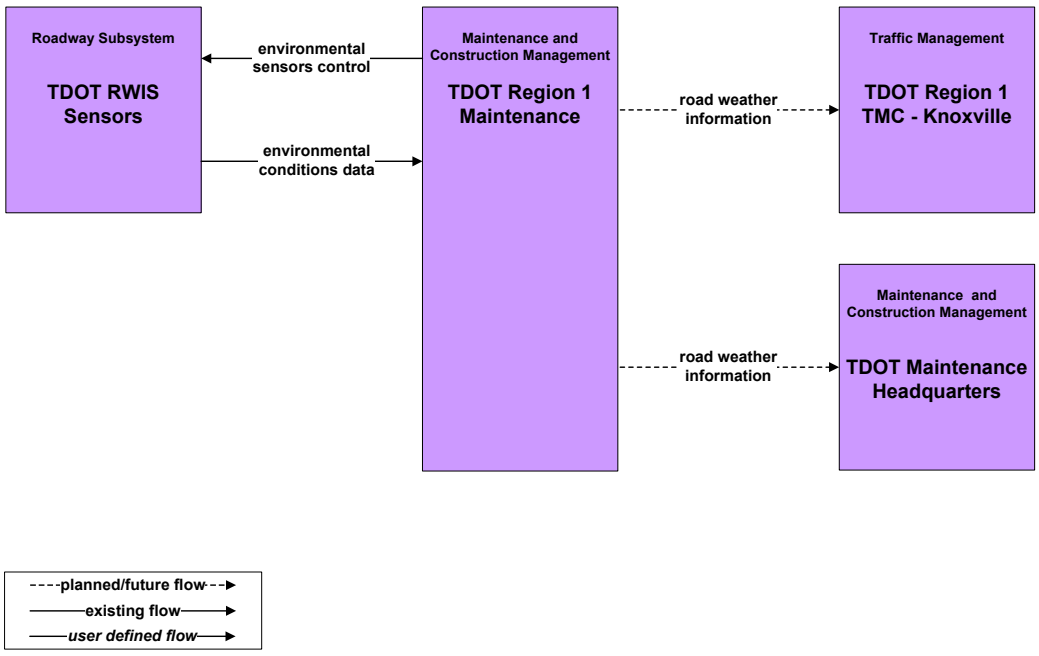


**Figure B39 – MC03 – Road Weather Data Collection:
City of Johnson City**

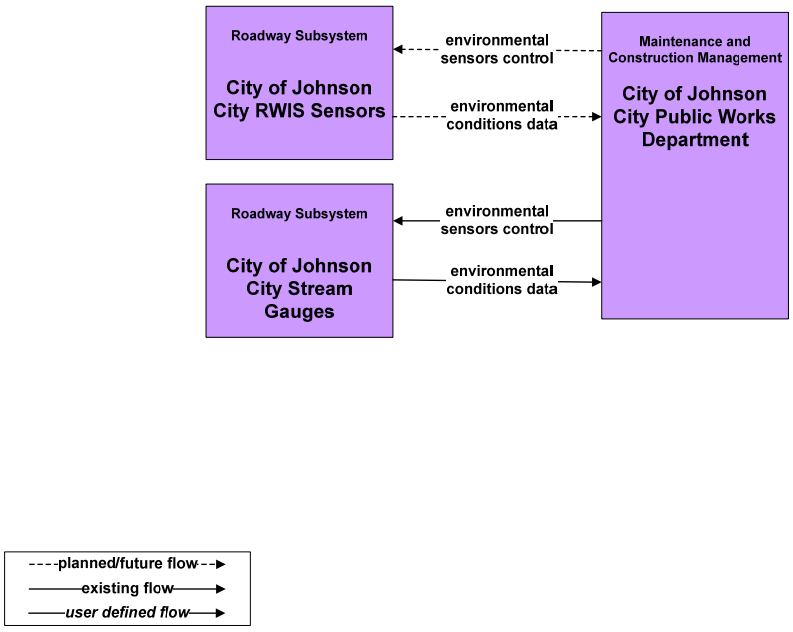


**Figure B40 – MC04 – Weather Information Processing and Distribution:
TDOT Region 1 Maintenance**

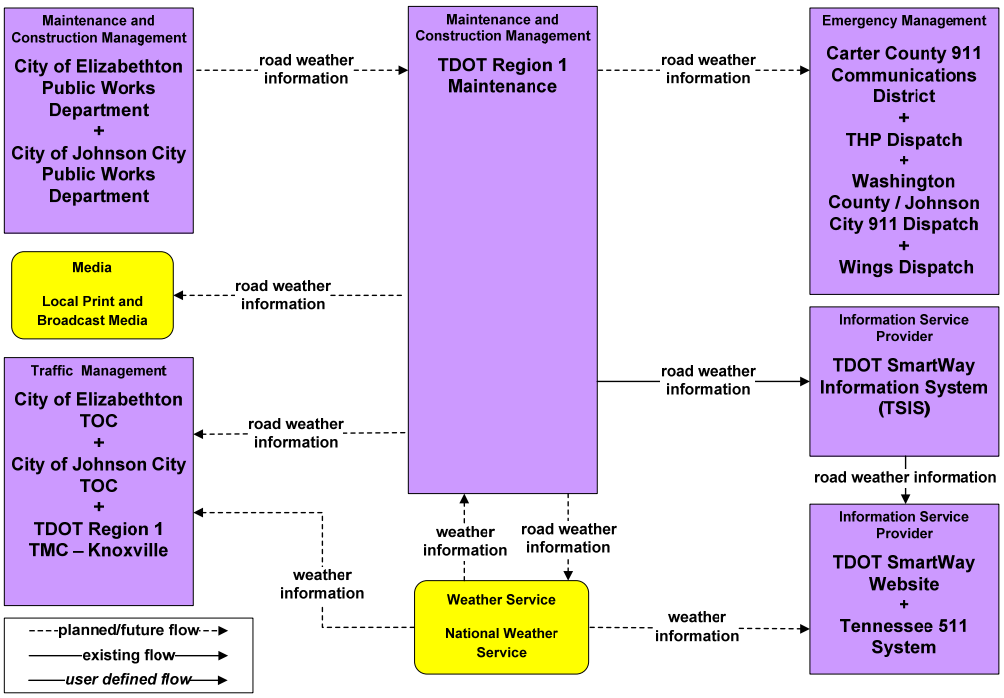


Figure B41 – MC04 – Weather Information Processing and Distribution: City of Johnson City

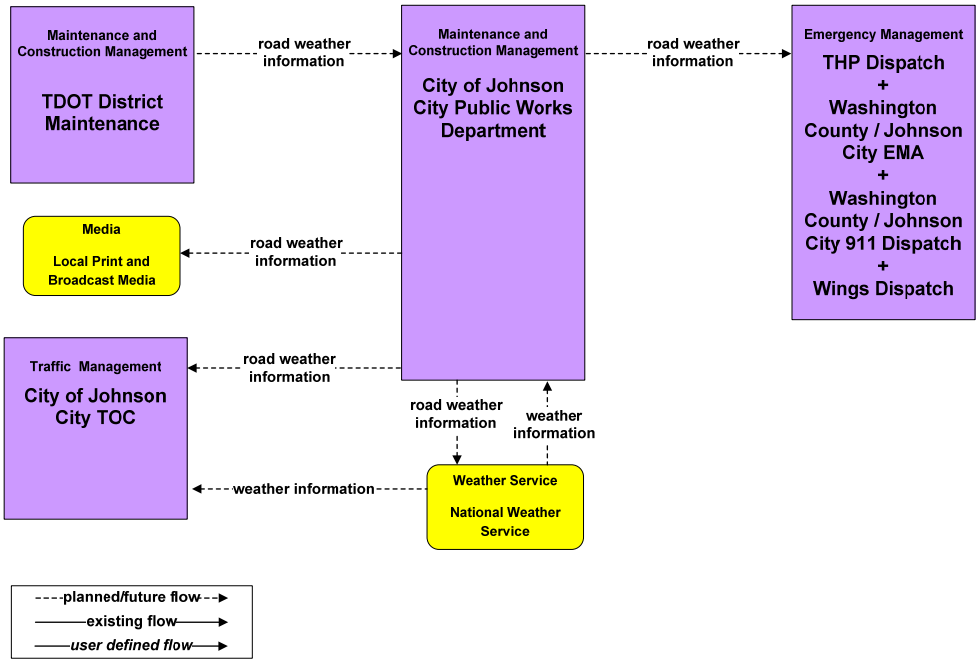


Figure B42 – MC06 – Winter Maintenance: TDOT

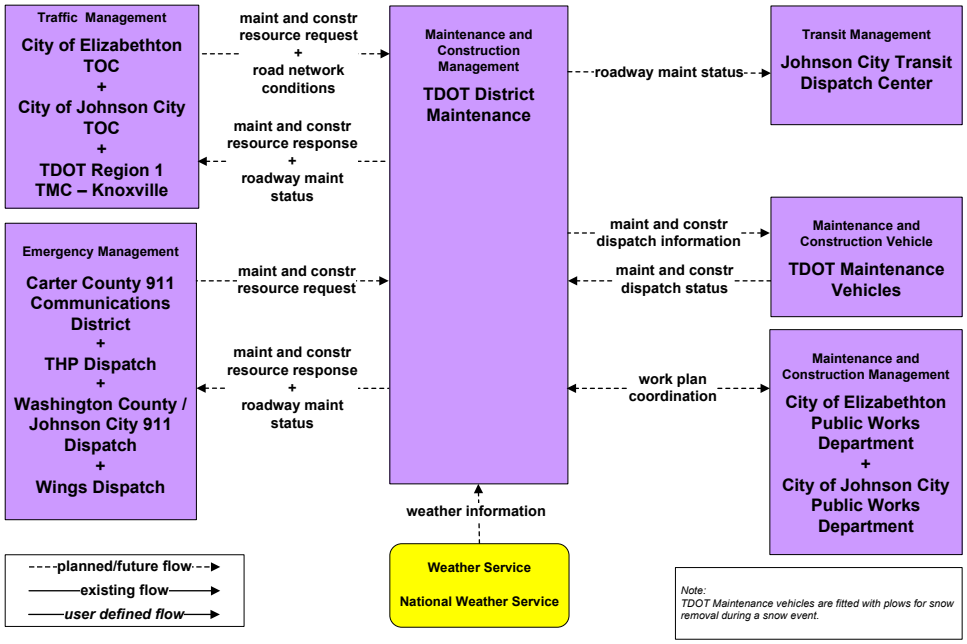


Figure B43 – MC06 – Winter Maintenance: City of Johnson City

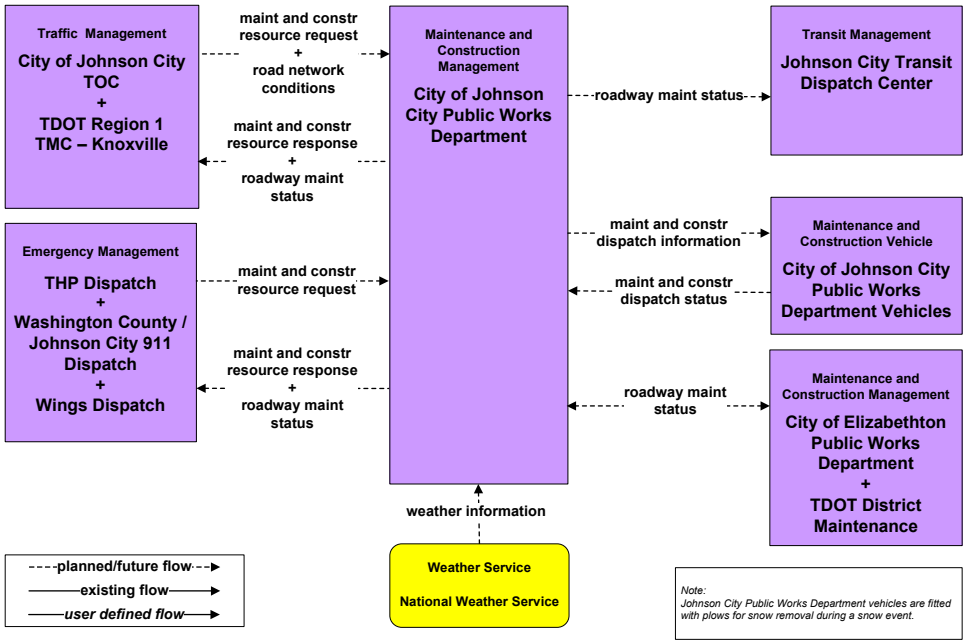


Figure B44 – MC06 – Winter Maintenance: City of Elizabethton

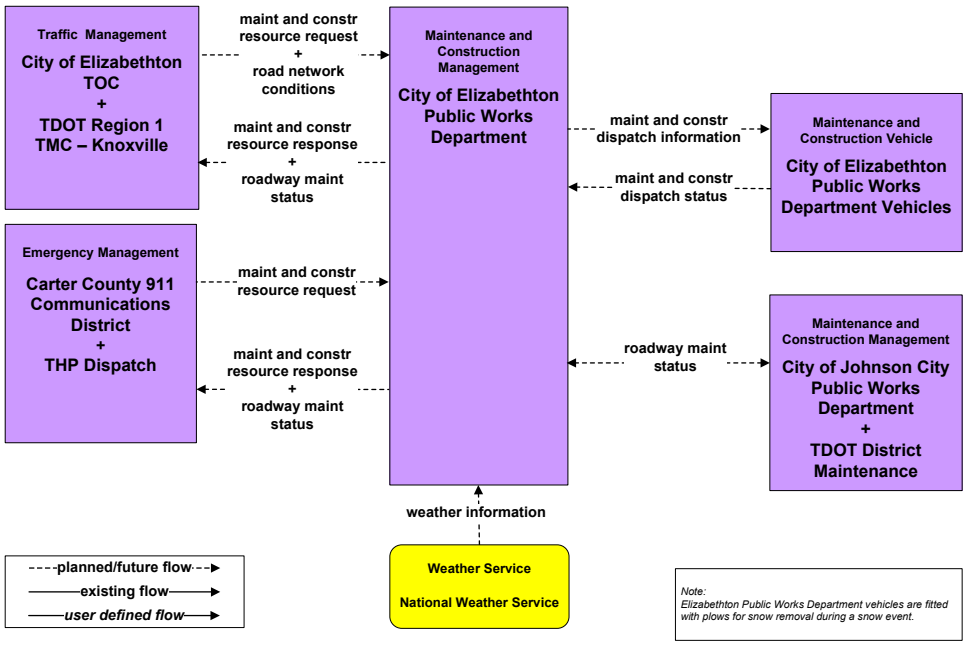


Figure B45 – MC08 – Workzone Management: TDOT District Maintenance

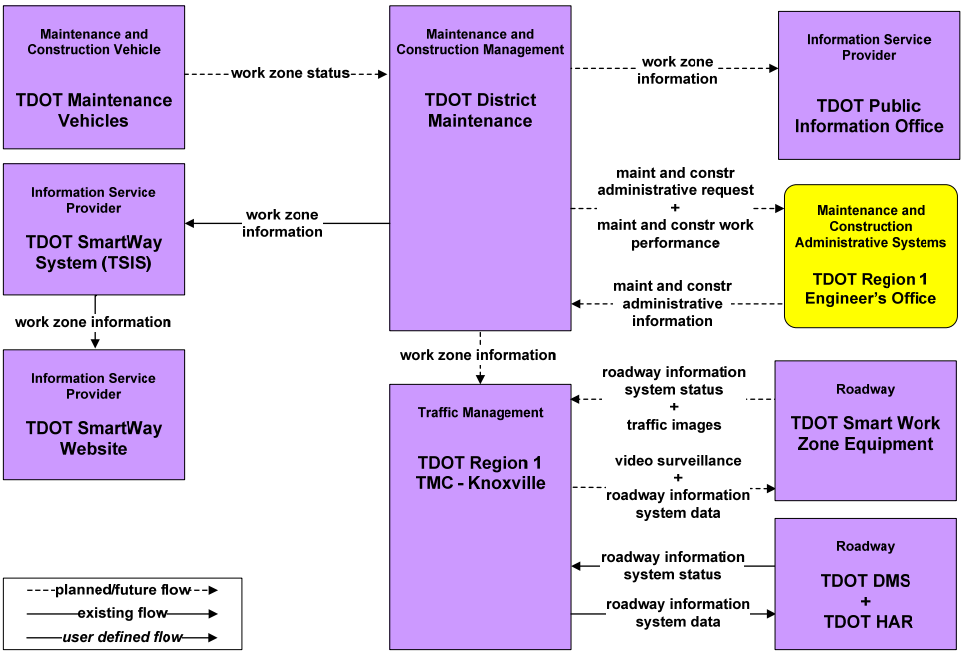


Figure B46 – MC08 – Workzone Management: TDOT Region 1 Construction Office

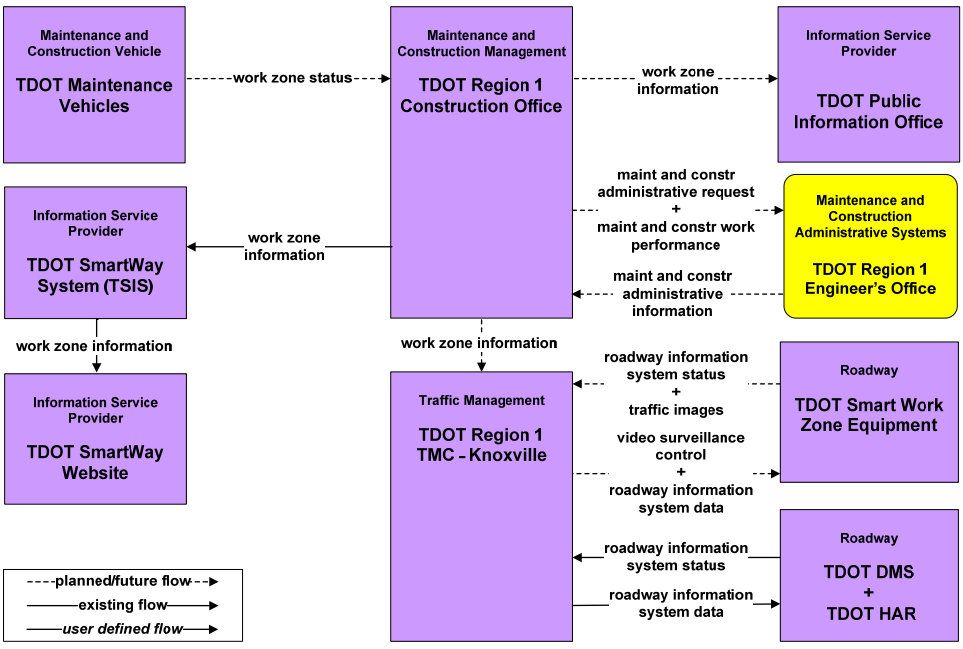


Figure B47 – MC08 – Workzone Management: City of Johnson City

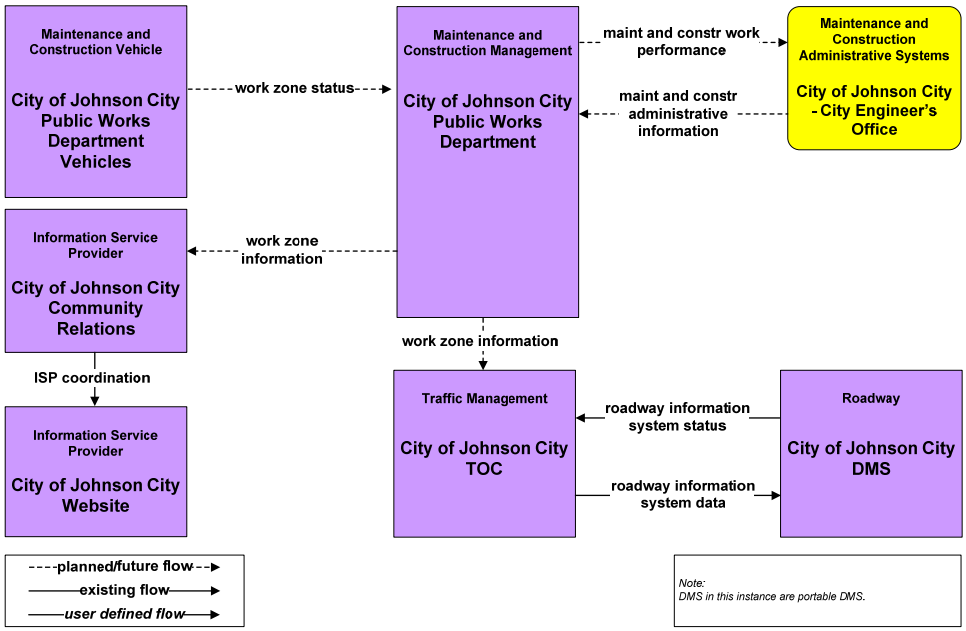


Figure B48 – MC08 – Workzone Management: City of Elizabethton

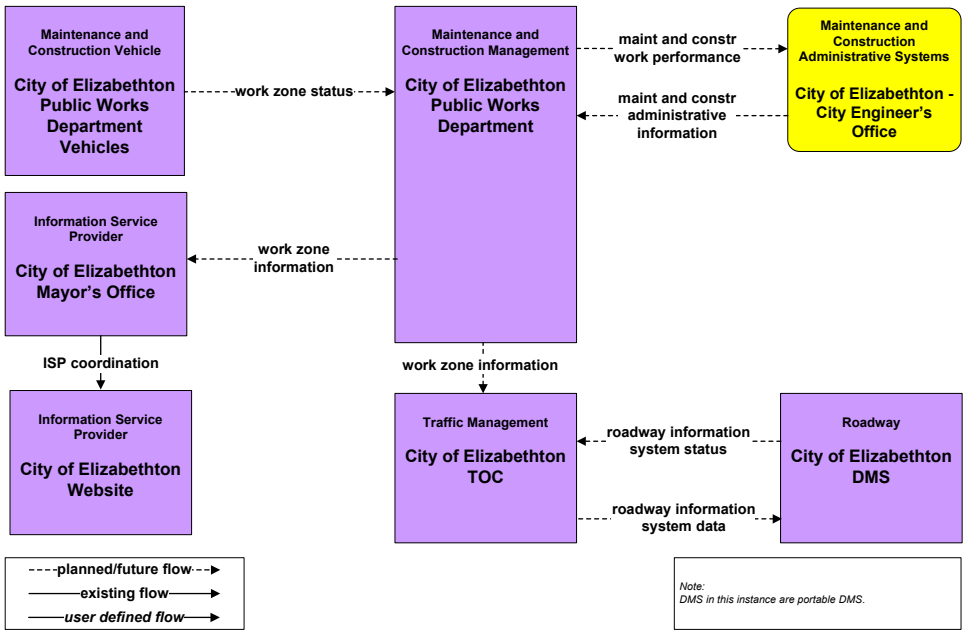


Figure B49 – MC10 – Maintenance and Construction Activity Coordination: TDOT

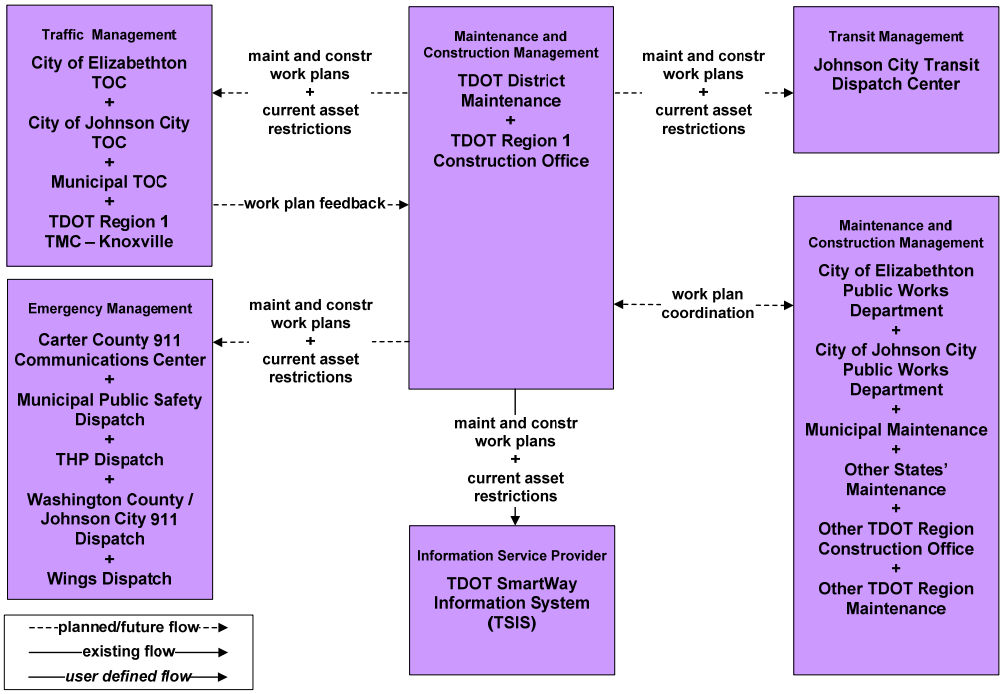


Figure B50 – MC10 – Maintenance and Construction Activity Coordination: City of Johnson City

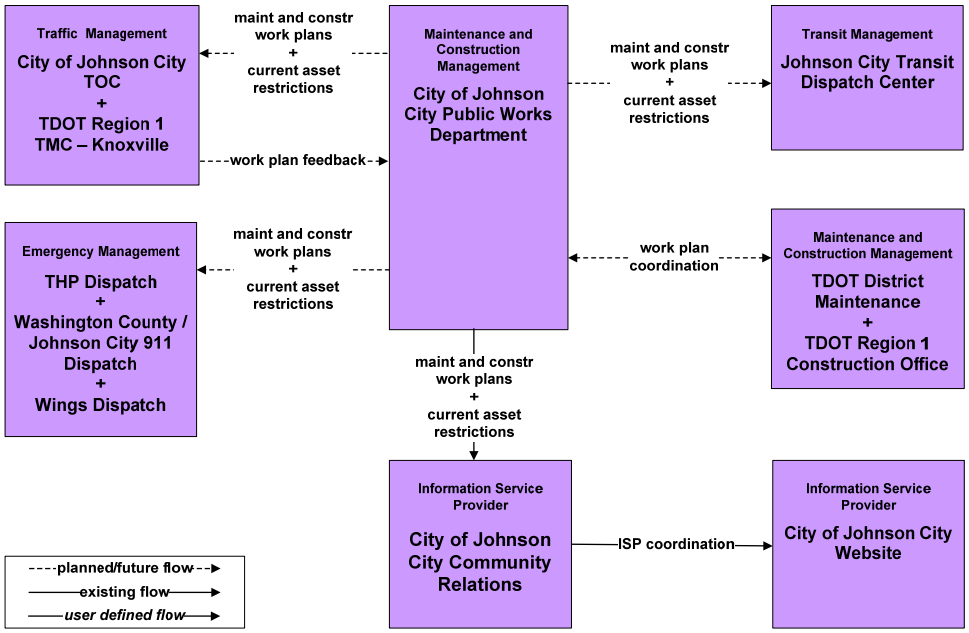


Figure B51 – MC10 – Maintenance and Construction Activity Coordination: City of Elizabethton

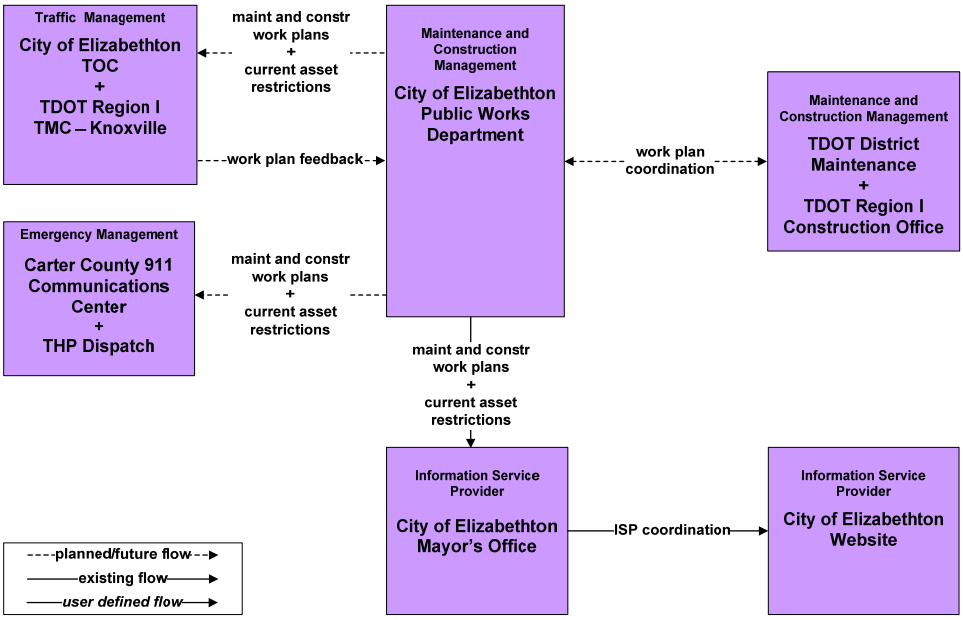


Figure B52 – APTS1 – Transit Vehicle Tracking: Johnson City Transit

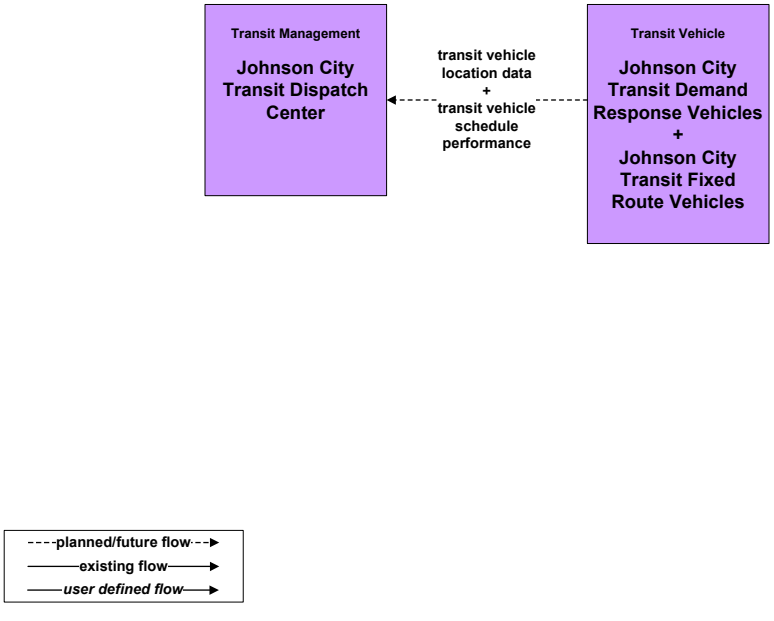


Figure B53 – APTS2 – Transit Fixed Route Operations: Johnson City Transit

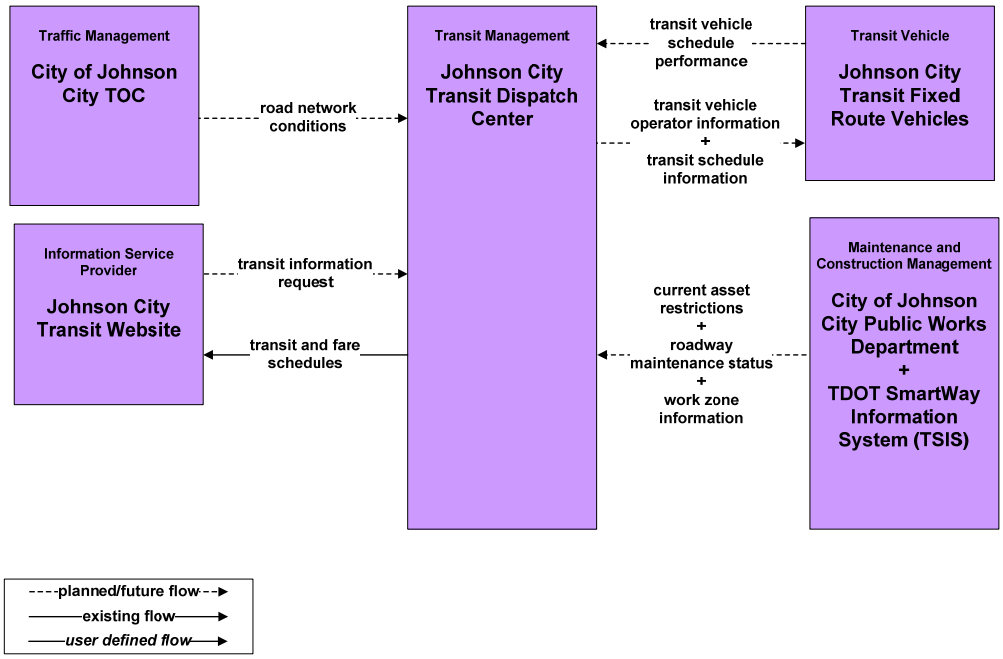


Figure B54 – APTS3 – Demand Response Transit Operations: Johnson City Transit

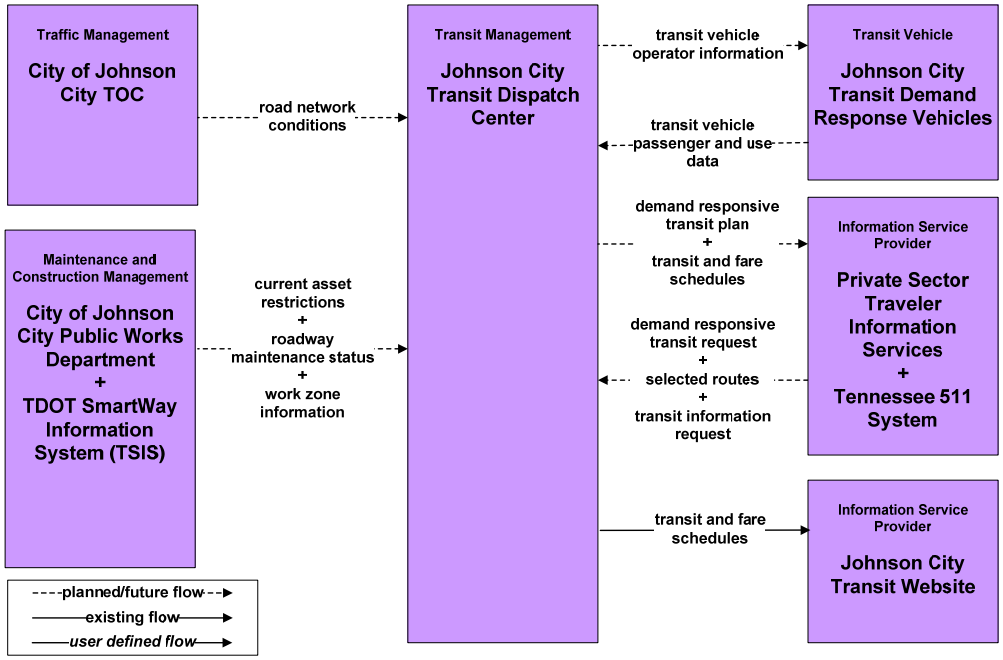


Figure B55 – APTS4 – Transit Passenger and Fare Management: Johnson City Transit

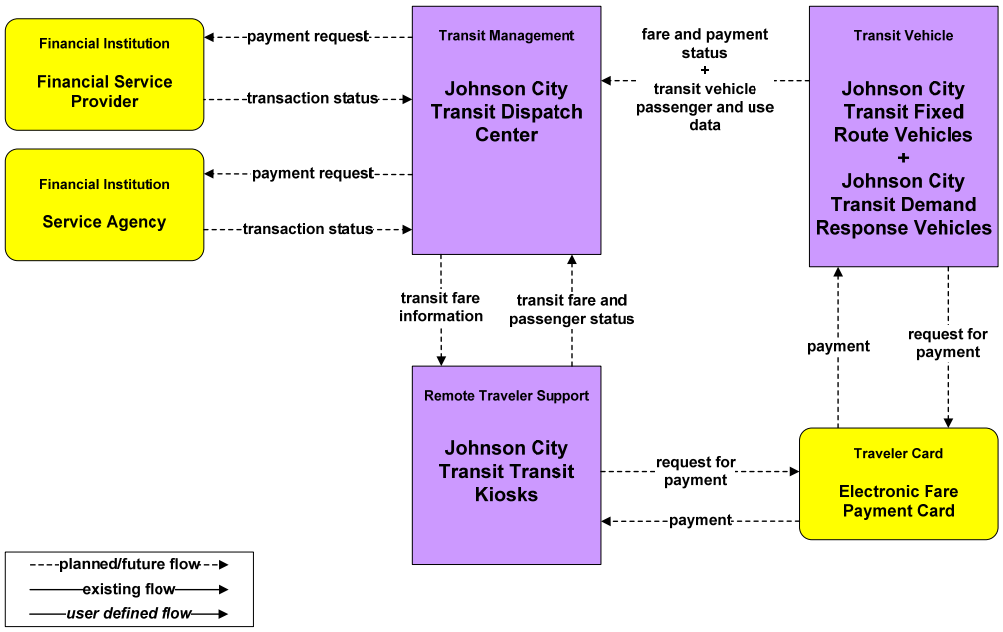


Figure B56 – APTS5 – Transit Security: Johnson City Transit Dispatch

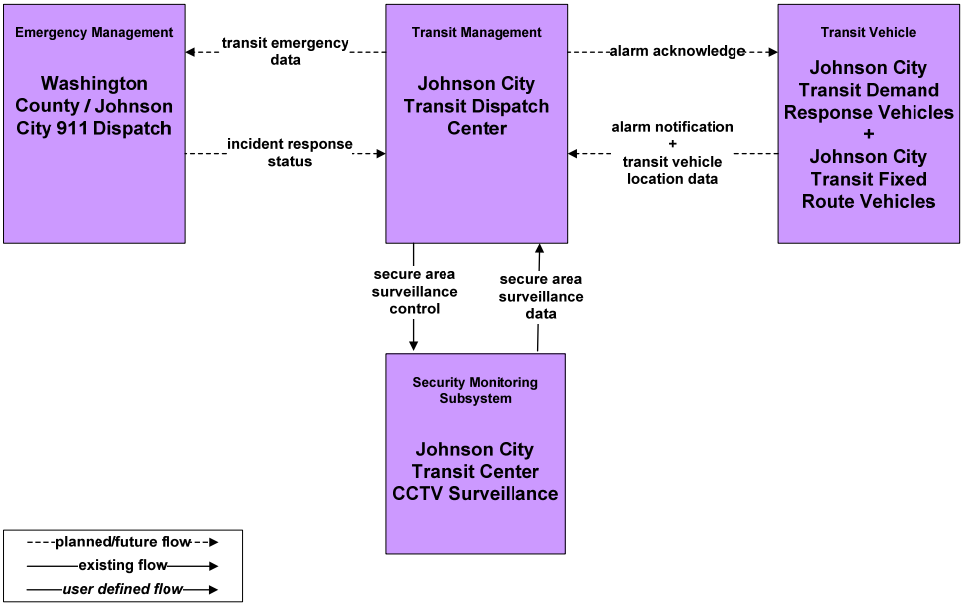


Figure B57 – APTS6 – Transit Maintenance: Johnson City Transit

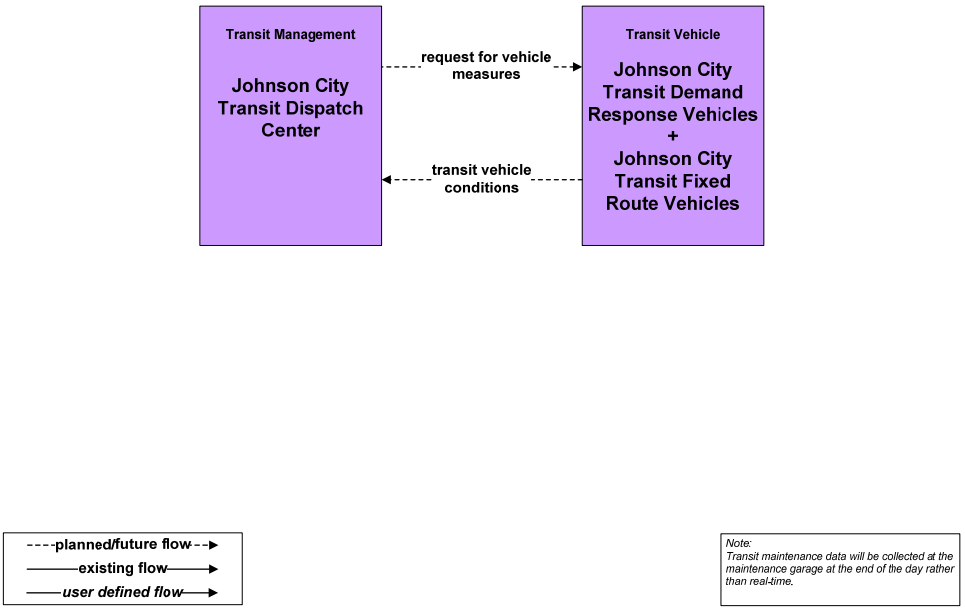


Figure B58 – APTS7 – Multi-modal Coordination

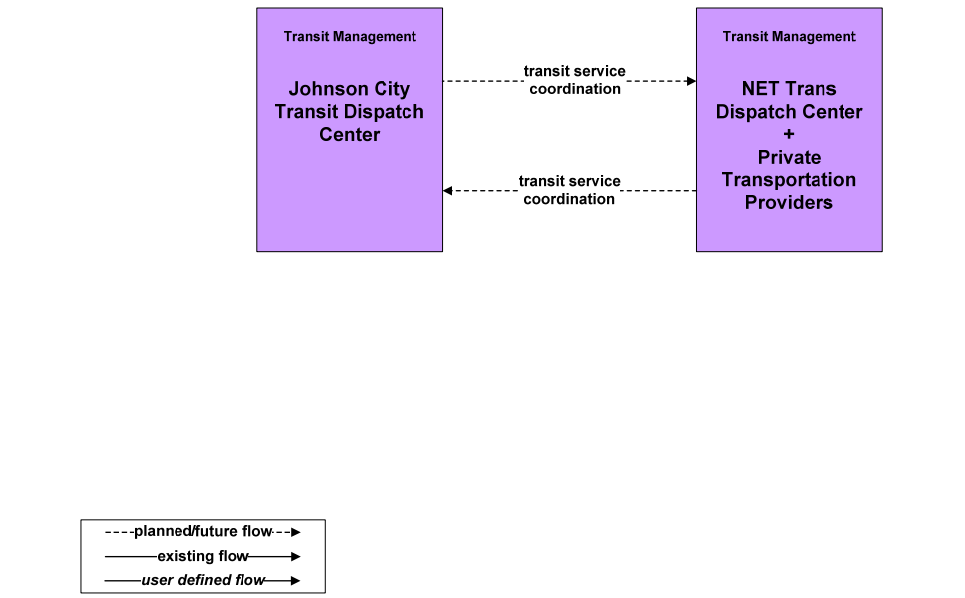


Figure B59 – APTS8 – Transit Traveler Information: Johnson City Transit

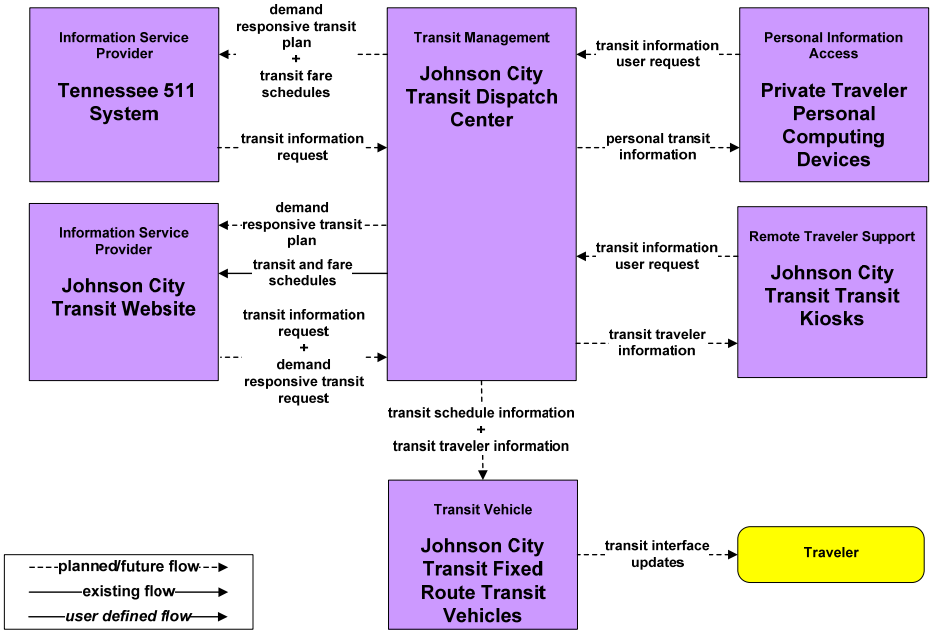


Figure B60 – ATIS1 – Broadcast Traveler Information: TSIS

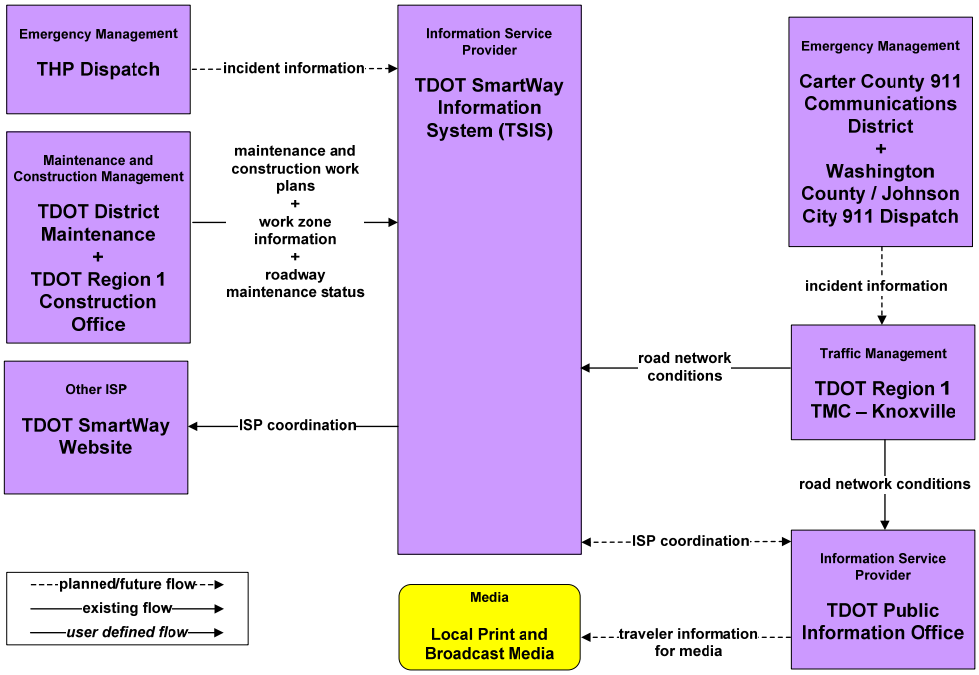


Figure B61 – ATIS1 – Broadcast Traveler Information: City of Johnson City

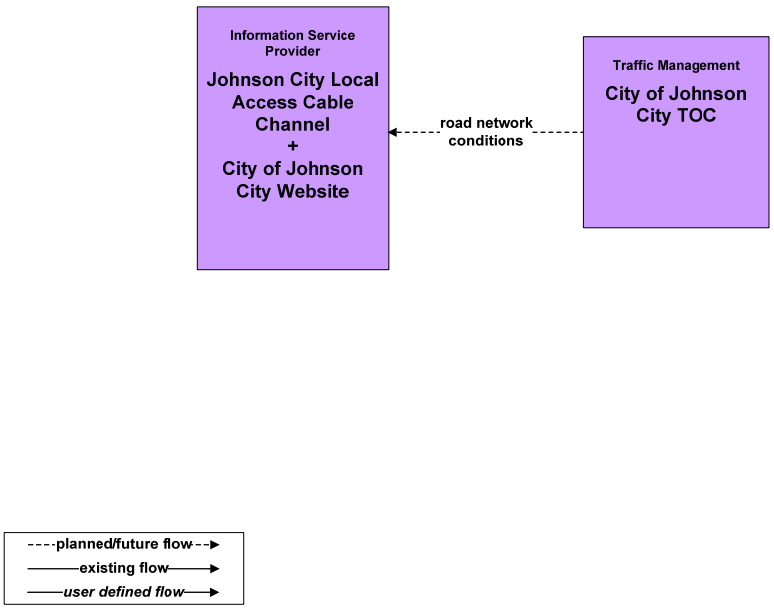


Figure B62 – ATIS2 – Interactive Traveler Information: Tennessee GoSmart Kiosks and TDOT SmartWay Website

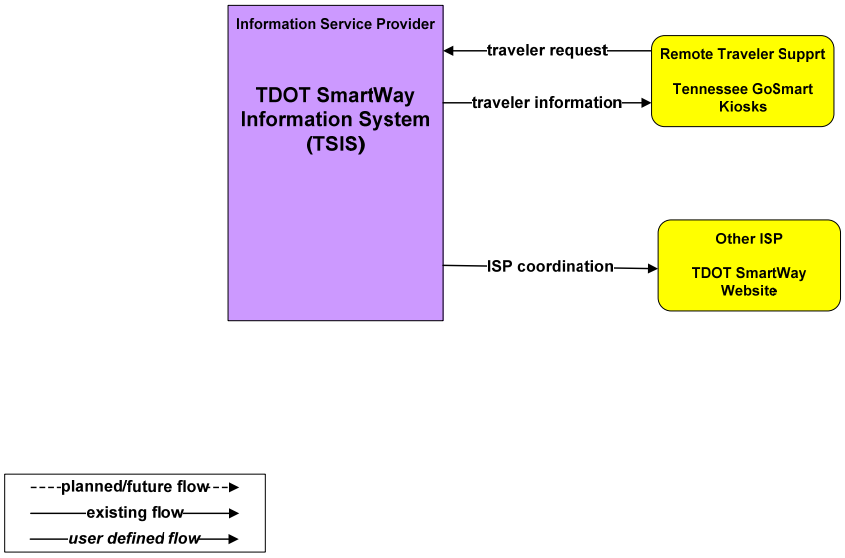


Figure B63 – ATIS2 – Interactive Traveler Information: Tennessee 511

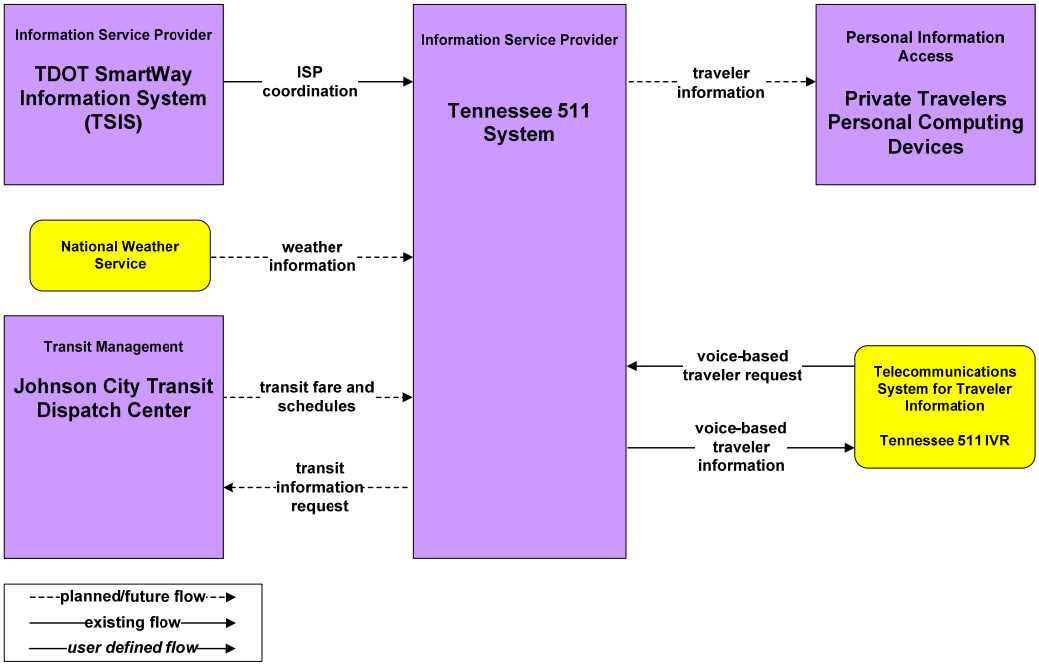


Figure B64 – AD1 – ITS Data Mart: TDOT

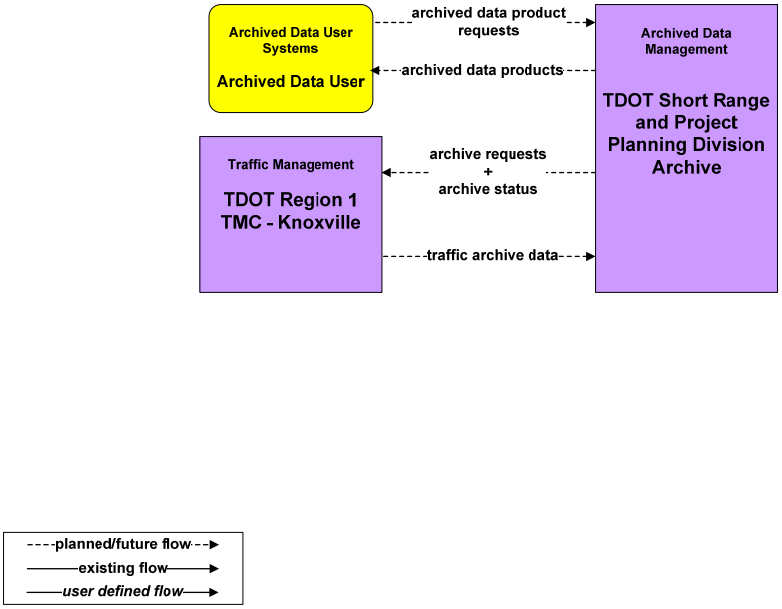


Figure B65 – AD1 – ITS Data Mart: Johnson City Transit

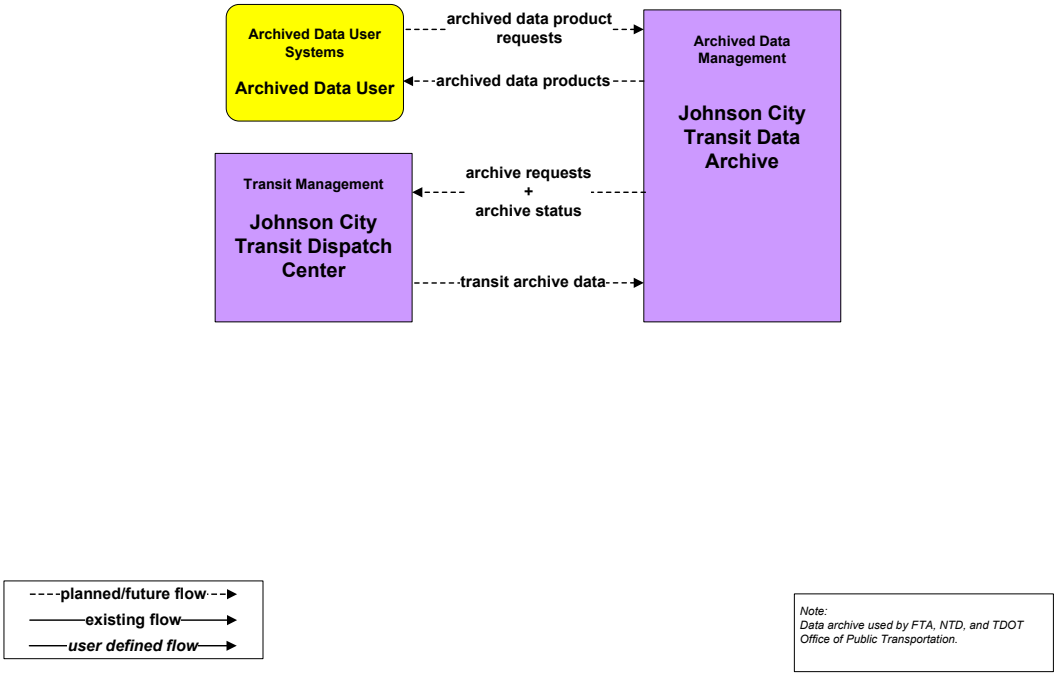
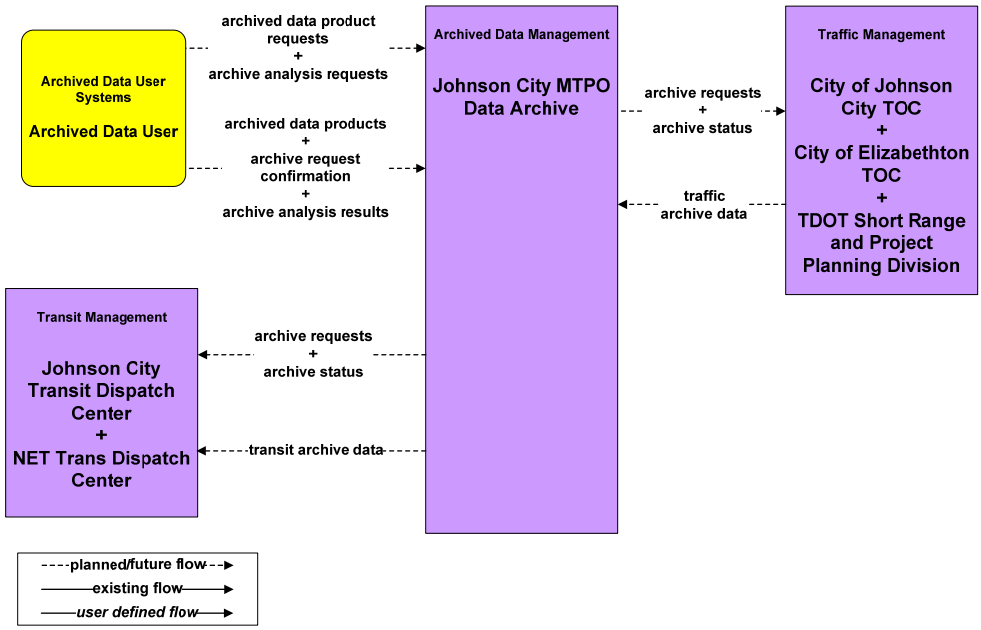


Figure B68 – AD2 – ITS Data Warehouse: Johnson City MTPO



APPENDIX C – ELEMENT FUNCTIONS

Element Name	Equipment Package (Function)
Archived Data User	Government Reporting Systems Support
	ITS Data Repository
Carter County 911 Communications District	Emergency Call-Taking
	Emergency Dispatch
	Emergency Evacuation Support
	Emergency Response Management
	Emergency Routing
	Incident Command
Carter County/Elizabethton EMA	Emergency Evacuation Support
	Emergency Response Management
	Incident Command
Carter County/Elizabethton Public Safety Vehicles	On-board EV En Route Support
City of Elizabethton CCTV	Roadway Basic Surveillance
	Roadway Incident Detection
City of Elizabethton DMS	Roadway Traffic Information Dissemination
	Roadway Work Zone Traffic Control
City of Elizabethton Field Sensors	Roadway Basic Surveillance
	Roadway Data Collection
	Roadway Incident Detection
City of Elizabethton Mayor's Office	Basic Information Broadcast
	ISP Emergency Traveler Information
City of Elizabethton Public Works Department	MCM Incident Management
	MCM Roadway Maintenance and Construction
	MCM Vehicle Tracking
	MCM Winter Maintenance Management
	MCM Work Activity Coordination
	MCM Work Zone Management
	MCV Vehicle Location Tracking
	MCV Work Zone Support
City of Elizabethton Speed Monitoring Equipment	Roadway Data Collection
	Roadway Speed Monitoring
City of Elizabethton TOC	Collect Traffic Surveillance
	HRI Traffic Management
	TMC Evacuation Support
	TMC Incident Detection

Element Name	Equipment Package (Function)
City of Elizabethton TOC (continued)	TMC Incident Dispatch Coordination/Communication
	TMC Regional Traffic Control
	TMC Signal Control
	TMC Speed Monitoring
	TMC Traffic Information Dissemination
	TMC Work Zone Traffic Management
	Traffic Data Collection
	Traffic Maintenance
City of Elizabethton Traffic Signals	Roadway Basic Surveillance
	Roadway Equipment Coordination
	Roadway Signal Controls
	Roadway Signal Priority
	Standard Rail Crossing
City of Elizabethton Website	Basic Information Broadcast
	ISP Emergency Traveler Information
	ISP Traveler Data Collection
City of Johnson City CCTV	Roadway Basic Surveillance
	Roadway Incident Detection
City of Johnson City Community Relations	Basic Information Broadcast
	ISP Emergency Traveler Information
City of Johnson City DMS	Roadway Traffic Information Dissemination
	Roadway Work Zone Traffic Control
City of Johnson City Field Sensors	Roadway Basic Surveillance
	Roadway Data Collection
	Roadway Incident Detection
City of Johnson City Public Works Department	MCM Environmental Information Collection
	MCM Environmental Information Processing
	MCM Incident Management
	MCM Roadway Maintenance and Construction
City of Elizabethton TOC	HRI Traffic Management
	TMC Evacuation Support
	TMC Incident Detection
	TMC Incident Dispatch Coordination/Communication
City of Johnson City Public Works Department	MCM Vehicle Tracking
	MCM Winter Maintenance Management
	MCM Work Activity Coordination

Element Name	Equipment Package (Function)
City of Johnson City Public Works Department Vehicles	MCM Work Zone Management
	MCV Vehicle Location Tracking
	MCV Work Zone Support
City of Johnson City RWIS Sensors	Roadway Environmental Monitoring
City of Johnson City Speed Monitoring Equipment	Roadway Data Collection
	Roadway Speed Monitoring
City of Johnson City Stream Gauges	Roadway Environmental Monitoring
City of Johnson City TOC	Collect Traffic Surveillance
	HRI Traffic Management
	TMC Environmental Monitoring
	TMC Evacuation Support
	TMC Freeway Management
	TMC Incident Detection
	TMC Incident Dispatch Coordination/Communication
	TMC Regional Traffic Control
	TMC Signal Control
	TMC Speed Monitoring
	TMC Traffic Information Dissemination
	TMC Work Zone Traffic Management
	Traffic Data Collection
	Traffic Maintenance
City of Johnson City Traffic Signals	Roadway Basic Surveillance
	Roadway Equipment Coordination
	Roadway Signal Controls
	Roadway Signal Priority
	Standard Rail Crossing
City of Johnson City Website	Basic Information Broadcast
	ISP Emergency Traveler Information
	ISP Traveler Data Collection
Future Regional AMBER Alert Network	Emergency Response Management
	Incident Command
Johnson City Local Access Cable Channel	Basic Information Broadcast
	ISP Emergency Traveler Information
Johnson City MTPO Data Archive	Government Reporting Systems Support
	ITS Data Repository
Johnson City Transit Center CCTV	Field Secure Area Surveillance

Element Name	Equipment Package (Function)
Surveillance	
Johnson City Transit Data Archive	Government Reporting Systems Support
	ITS Data Repository
Johnson City Transit Demand Response Vehicles	On-board Maintenance
	On-board Paratransit Operations
	On-board Transit Fare and Load Management
	On-board Transit Information Services
	On-board Transit Security
	On-board Transit Trip Monitoring
Johnson City Transit Dispatch Center	Center Secure Area Alarm Support
	Center Secure Area Surveillance
	Emergency Data Collection
	Emergency Evacuation Support
	Emergency Response Management
	Incident Command
	Mayday Support
	Transit Center Fare and Load Management
	Transit Center Fixed-Route Operations
	Transit Center Information Services
	Transit Center Multi-Modal Coordination
	Transit Center Paratransit Operations
	Transit Center Security
	Transit Center Vehicle Tracking
	Transit Data Collection
	Transit Evacuation Support
	Transit Garage Maintenance
	Transit Vehicle Operator Scheduling
Johnson City Transit Fixed Route Vehicles	On-board Fixed Route Schedule Management
	On-board Maintenance
	On-board Transit Fare and Load Management
	On-board Transit Information Services
	On-board Transit Security
Johnson City Transit Fixed Route Vehicles (continued)	On-board Transit Trip Monitoring
Johnson City Transit Kiosks	Remote Basic Information Reception
	Remote Interactive Information Reception

Element Name	Equipment Package (Function)
	Remote Transit Fare Management
	Remote Transit Information Services
Johnson City Transit Website	Basic Information Broadcast
	Infrastructure Provided Trip Planning
	Interactive Infrastructure Information
Municipal Maintenance	MCM Incident Management
	MCM Roadway Maintenance and Construction
	MCM Work Activity Coordination
Municipal Public Safety Dispatch	Emergency Dispatch
	Emergency Evacuation Support
	Emergency Response Management
	Emergency Routing
	Incident Command
	Mayday Support
Municipal TOC	TMC Regional Traffic Control
	TMC Signal Control
	Traffic Maintenance
Municipal Traffic Signals	Roadway Basic Surveillance
	Roadway Equipment Coordination
	Roadway Signal Controls
NET Trans Dispatch Center	Transit Center Multi-Modal Coordination
	Transit Center Paratransit Operations
	Transit Center Vehicle Tracking
Other States Maintenance	MCM Environmental Information Processing
	MCM Incident Management
	MCM Work Activity Coordination
	MCM Work Zone Management
Other TDOT Region Construction Office	MCM Work Activity Coordination
Other TDOT Region Maintenance	MCM Incident Management
	MCM Work Activity Coordination
Private Sector Traveler Information Services	Infrastructure Provided Trip Planning
	Interactive Infrastructure Information
	ISP Emergency Traveler Information
Private Transportation Providers	Transit Center Multi-Modal Coordination
Private Traveler Personal Computing Devices	Personal Autonomous Route Guidance
	Personal Basic Information Reception

Element Name	Equipment Package (Function)
Private Traveler Personal Computing Devices (continued)	Personal Interactive Information Reception
	Personal Trip Planning and Route Guidance
Rail Operator Wayside Equipment	Standard Rail Crossing
Regional Websites	Basic Information Broadcast
	ISP Emergency Traveler Information
	ISP Traveler Data Collection
TDOT CCTV	Roadway Basic Surveillance
	Roadway Incident Detection
	Roadway Work Zone Traffic Control
TDOT District Maintenance	MCM Environmental Information Processing
	MCM Incident Management
	MCM Roadway Maintenance and Construction
	MCM Vehicle Tracking
	MCM Winter Maintenance Management
	MCM Work Activity Coordination
	MCM Work Zone Management
TDOT DMS	Roadway Traffic Information Dissemination
	Roadway Work Zone Traffic Control
TDOT Emergency Services Coordinator	MCM Incident Management
	MCM Roadway Maintenance and Construction
TDOT Field Sensors	Roadway Basic Surveillance
	Roadway Data Collection
	Roadway Equipment Coordination
	Roadway Incident Detection
TDOT HAR	Roadway Traffic Information Dissemination
	Roadway Work Zone Traffic Control
TDOT HELP Vehicles	On-board EV En Route Support
	On-board EV Incident Management Communication
TDOT Maintenance Vehicles	MCV Vehicle Location Tracking
	MCV Winter Maintenance
	MCV Work Zone Support
TDOT Public Information Office	Basic Information Broadcast
	ISP Emergency Traveler Information
	Traveler Telephone Information
TDOT Region 1 Construction Office	MCM Work Activity Coordination
	MCM Work Zone Management

Element Name	Equipment Package (Function)
TDOT Region 1 HELP Dispatch	Emergency Evacuation Support
	Incident Command
	Service Patrol Management
TDOT Region 1 Maintenance	MCM Environmental Information Collection
	MCM Environmental Information Processing
	MCM Incident Management
	MCM Roadway Maintenance and Construction
	MCM Vehicle Tracking
	MCM Winter Maintenance Management
	MCM Work Zone Management
TDOT Region 1 TMC - Knoxville	Collect Traffic Surveillance
	TMC Environmental Monitoring
	TMC Evacuation Support
	TMC Freeway Management
	TMC Incident Detection
	TMC Incident Dispatch Coordination/Communication
	TMC Regional Traffic Control
	TMC Traffic Information Dissemination
	TMC Work Zone Traffic Management
	Traffic Data Collection
	Traffic Maintenance
TDOT RWIS Sensors	Roadway Environmental Monitoring
TDOT Short Range and Project Planning Division Archive	Government Reporting Systems Support
	ITS Data Repository
	Traffic and Roadside Data Archival
	Traffic Data Collection
TDOT Smart Work Zone Equipment	Roadway Basic Surveillance
	Roadway Incident Detection
	Roadway Traffic Information Dissemination
	Roadway Work Zone Traffic Control
TDOT SmartWay Information System (TSIS)	Basic Information Broadcast
	Interactive Infrastructure Information
	ISP Traveler Data Collection
	MCM Environmental Information Processing
TDOT SmartWay Website	Basic Information Broadcast
	ISP Emergency Traveler Information

Element Name	Equipment Package (Function)
TDOT SmartWay Website (continued)	ISP Traveler Data Collection
TEMA	Emergency Evacuation Support
	Emergency Response Management
	Incident Command
Tennessee 511 System	Basic Information Broadcast
	Interactive Infrastructure Information
	ISP Emergency Traveler Information
	ISP Traveler Data Collection
	Traveler Telephone Information
THP Dispatch	Emergency Dispatch
	Emergency Evacuation Support
	Emergency Response Management
	Emergency Routing
	Incident Command
THP Vehicles	On-board EV En Route Support
	On-board EV Incident Management Communication
TN Bureau of Investigation	Emergency Response Management
	Incident Command
Washington County/Johnson City 911 Dispatch	Emergency Call-Taking
	Emergency Dispatch
	Emergency Evacuation Support
	Emergency Response Management
	Emergency Routing
	Incident Command
Washington County/Johnson City EMA	Emergency Evacuation Support
	Emergency Response Management
	Incident Command
Washington County/Johnson City Public Safety Vehicles	On-board EV En Route Support
	On-board EV Incident Management Communication
Wings Dispatch	Emergency Dispatch
	Emergency Environmental Monitoring
	Emergency Evacuation Support
	Emergency Response Management
	Emergency Routing
	Incident Command

APPENDIX D – STAKEHOLDER DATABASE

Stakeholder Attendance Record

Invitees			*Workshop Attendance*			
Organization	***First Name***	***Last Name***	***Kick-Off***	***ITS Architecture***	***ITS Deployment Plan***	***Comment Resolution***
Washington County – Johnson City Emergency Management Agency	Nester	Levotch	☐	☐	☑	☐
City of Johnson City Fire Department	Paul	Greene	☐	☐	☐	☐
City of Johnson City Police Bureau	John	Lowry	☐	☐	☐	☐
City of Johnson City Public Works Department – Traffic Division	Anthony	Todd	☑	☑	☐	☑
Johnson City Transit System	Eldonna	Janutolo	☐	☐	☐	☐
City of Johnson City	Pete	Peterson	☐	☐	☐	☐
City of Elizabethton	Roger	Day	☐	☐	☐	☐
Town of Jonesborough	Bob	Browning	☐	☐	☐	☐
Washington County Highway Department	Johnny	Deakins	☐	☐	☐	☐
Office of Local Planning Assistance	Stan	Harrison	☐	☐	☐	☐
First Tennessee Development District	Susan	Reid	☐	☐	☐	☐
Johnson City Metropolitan Transportation Planning Organization	Jeff	Rawles	☐	☑	☑	☑
Johnson City Metropolitan Transportation Planning Organization	Glenn	Berry	☑	☑	☑	☑
Washington County	George	Jaynes	☐	☐	☐	☐
Washington County Sheriff's Office	Edwin	Graybeal Jr.	☐	☐	☐	☐
Washington County – Johnson City Emergency Medical Services	Allen	Taylor	☐	☐	☐	☐
City of Elizabethton Fire Department	Mike	Shouse	☐	☐	☐	☐
City of Elizabethton Police Department	Roger	Deal	☐	☐	☐	☐

Organization	*First Name*	*Last Name*	*Kick-Off*	*ITS Architecture*	*ITS Deployment Plan*	*Comment Resolution*
City of Elizabethton Department of Public Works	Ted	Leger	☐	☐	☐	☐
City of Elizabethton Department of Public Works	Alan	Pope	☐	☐	☐	☐
Carter County Highway Department	Jack	Perkins	☐	☐	☐	☐
Carter County Sheriff's Department	John	Hensen	☐	☐	☐	☐
Carter County	Dale	Fair	☐	☐	☐	☐
Town of Jonesborough Police Department	Matt	Rice	☐	☐	☐	☐
Town of Jonesborough Fire Department		Fritz	☐	☐	☐	☐
Town of Jonesborough Public Works Department	Jeff	Thomas	☐	☐	☐	☐
Tennessee Department of Transportation	Kathy	Dannenhold	☐	☐	☐	☐
	Roland	Jones	☐	☐	☐	☐
Tennessee Department of Transportation	Pete	Hiett, P.E.	☑	☐	☑	☐
Tennessee Department of Transportation Region I Traffic	Mark	Best	☑	☑	☑	☑
Tennessee Department of Transportation HELP Service Patrols	Mickey	Campbell	☐	☐	☐	☐
Tennessee Department of Transportation Knoxville TMC	Andy	Russell	☑	☐	☐	☐
Johnson City Transit System	Donna	Bridwell	☑	☑	☑	☑
Johnson City Transit System	Jane	Fillers	☑	☑	☑	☑
City of Elizabethton	Mike	Potter	☑	☑	☐	☑
Federal Highway Administration - TN Division	Donald	Gedge	☐	☑	☑	☑
Tennessee Department of Transportation	Deborah	Fleming	☐	☐	☐	☐
First Tennessee Development District	Matt	Garland	☑	☑	☐	☐
Tennessee Department of Transportation HELP	Eddie	Newcomb	☑	☐	☐	☐

Organization	*First Name*	*Last Name*	*Kick-Off*	*ITS Architecture*	*ITS Deployment Plan*	*Comment Resolution*
City of Johnson City – Planning Department	Steve	Neilson	☑	☐	☐	☐
Tennessee Department of Transportation	Joe Ed	Armstrong, PhD	☑	☑	☑	☑
Tennessee Department of Transportation	Teresa	Estes	☑	☐	☐	☐
Tennessee Department of Transportation	Leonard (Rusty)	Staggs	☐	☐	☐	☐
Tennessee Department of Transportation	Joe	Roach	☐	☑	☑	☑
Tennessee Department of Transportation Knoxville TMC	John	Benditz	☑	☑	☑	☐

APPENDIX E – ARCHITECTURE MAINTENANCE DOCUMENTATION FORM

Johnson City Regional ITS Architecture

Architecture Maintenance Documentation Form

Please complete the following questionnaire to document changes for the Johnson City Regional ITS Architecture. Modifications will be made during the next architecture update.

Agency	
Agency Contact Person	
Street Address	
City	
State, Zip Code	
Telephone	
Fax	
E-Mail	

Change Information

Please indicate the type of change:
____ new market package (please attach sketch if possible)
____ existing market package modification (please attach marked up market package)
____ other: _____

Please indicate the reason for the change:
____ new stakeholder
____ new project/element(s)

Market Package(s) Impacted	
Describe requested change	
Have you coordinated with any other stakeholders on this change? If so, who?	
Are there any additional stakeholders that could be affected by this change?	

Please submit change forms to:

Glenn Berry
Johnson City Metropolitan Transportation Planning Organization
137 West Market Street
Johnson City, Tennessee 37604
glennberry@jcmpo.org

Date Request Filed: _____