

New Orleans Regional Intelligent Transportation Systems Architecture

The New Orleans Regional ITS Architecture document is the planning document for deployment of intelligent transportation systems for mobility, safety and the environment.

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Executive Summary

The New Orleans Regional ITS Architecture document is the planning document required by the FHWA to be developed by DOTD with the input of stakeholders for the deployment of intelligent transportation systems on the roadways. This requirement is stipulated in CFR 940.09 . The stakeholders engaged in this process included DOTD Safety, DOTD Traffic Engineering, DOTD District 02, New Orleans Regional Planning Commission, City of New Orleans, and Louisiana State Police (Troop B).The geographic scope for the study focused on the interstate road systems, US Highways and State routes within the MPO boundary of the Regional Planning Commission. Through the stakeholder engagements the needs within the region for mobility, safety and the environment were identified. The key challenges to mobility included congested corridors or bottlenecks with recurring congestion that needed capacity improvements. However there are several locations that the deployment of ITS will benefit the corridors and make them more resilient to both recurring and non-recurring congestion thus providing a cost effective way to manage those corridors and improving both mobility and safety for the public. The needs within the region have been identified and ITS projects proposed to address the challenges with mobility, safety and the environment.

This document is intended to guide the deployment of ITS for the next five years as funding becomes available for deployment. It is a living document and therefore stakeholders can revise as needed so it remains relevant to ITS planning and deployment in the region. Therefore Included in this document is a maintenance plan that will enable stakeholders to make needed updates to reflect emerging needs or priorities in the MPO or other national needs.



Acronyms / Abbreviations

ASC – Actuated Traffic Signal Controller
ATIS – Advanced Traveler Information System
ATMS – Advanced Transportation Management System
AVL – Automated Vehicle Location System
CAD – Computer Aided Dispatch
CCCD – Crescent City Connection Division
CCTV – Closed Circuit Television
CEA – Cooperative Endeavor Agreement
CFR – Code of Federal Regulations
CMU – Conflict Monitor Units
CORBA – Common Object Request Broker Architecture
DCM – Data Collection and Monitoring
DMS – Dynamic Message Signs
DOTD – Department of Transportation and Development
DTOE – District Traffic Operations Engineer
ELMS – Electrical and Lighting Management Systems
EMS – Emergency Medical Service
ESS – Environmental Sensor Stations
FHWA – Federal Highway Administration
FMS – Field Management Stations
FTA – Federal Transit Administration
GNOEC – Greater New Orleans Expressway Commission
HAR – Highway Advisory Radio
HAZMAT – Hazardous Materials
HOV – High Occupancy Vehicle
ITS – Intelligent Transportation Systems
JeT – Jefferson Transit
JPSO – Jefferson Parish Sheriff’s Office
LADOTD – Louisiana Department of Transportation and Development
LSP – Louisiana State Police
MAP – Motorist Assistance Patrol
MCCNO - New Orleans Ernest N. Morial Convention Center
MPA – Metropolitan Planning Area
MPO – Metropolitan Planning Organization
MS/ETMCC – Message Sets for External Traffic Management Center Communications
MTP – Metropolitan Transportation Plan
NTCIP – National Transportation Communications for Intelligent Transportation System Protocol
NOHSEP – New Orleans Office of Homeland Security and Emergency Preparedness
NOPB – New Orleans Public Belt
NOPD – New Orleans Police Department
NORPC – New Orleans Regional Planning Commission
NORTA – New Orleans Regional Transportation Authority
NOUPT – New Orleans Union Passenger Terminal
NTCIP – National Transportation Communications for Intelligent Transportation System Protocol



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Acronyms / Abbreviations

O & M – Operations and Maintenance
OPCD – Orleans Parish Communication District
PCMS – Portable Changeable Message Signs
PDA – Personal Digital Assistant
RTA – Regional Transit Authority
RTMC – Regional Traffic Management Center
RWIS – Road Weather Information System
SBURT–St. Bernard Urban Rapid Transit
SCP – Signal Control and Prioritization
SDO – Standards Development Organizations
SSM – Signal System Master
SSL – Signal System Local
TDM – Travel Demand Management
TIM – Traffic Incident Management
TIP – Transportation Improvement Program
TMA – Transportation Management Area
TMC – Traffic Management Center
TMDD – Traffic Management Data Dictionary
TSS – Transportation Sensor Systems
USDOT – United States Department of Transportation
UZA – Urbanized Area
XML – Extensive Markup Language



1 Introduction

This document describes the Intelligent Transportation System (ITS) Architecture for the New Orleans region. A Regional ITS Architecture is “a regional framework for ensuring institutional agreement and technical integration for the implementation of ITS projects or groups of projects”. Paragraph 940.9 (a) states that:

“A regional ITS architecture shall be developed to guide the development of ITS projects and programs and be consistent with ITS strategies and projects contained in applicable transportation plans. The National ITS Architecture shall be used as a resource in the development of the regional ITS architecture. The regional ITS architecture shall be on a scale commensurate with the scope of ITS investment in the region. Provision should be made to include participation from the following agencies, as appropriate, in the development of the regional ITS architecture: Highway agencies; public safety agencies (e.g., police, fire, emergency/medical); transit operators; Federal lands agencies; State motor carrier agencies; and other operating agencies necessary to fully address regional ITS integration.”

This Architecture conforms to Federal Highway Administration (FHWA) Final rule 940 part 11 which mandates that projects planning to use federal funds in their ITS deployments must have established an ITS Architecture for the region. Regional ITS Architectures have been promoted by the United States Department of Transportation (USDOT) as a tool for describing, through use of a standard vocabulary and set of concepts, regional deployments to aid in the integration of User Services and Service Packages to address regional transportation problems. Regional ITS Architectures are also used to constrain projects funded by the FHWA using high technology products to highway or transit applications.

1.1 Background

What are Intelligent Transportation Systems or ITS? Simply put, they are the application of technology to highway or transit applications. The formal description is as follows:

“ITS improves transportation safety and mobility and enhances productivity through the use of advanced information and communications technologies. Intelligent transportation systems (ITS) encompass a broad range of wireless and wire line communications-based information and electronics technologies. When integrated into the transportation system's infrastructure, and in vehicles themselves, these technologies relieve congestion, improve safety, and enhance American productivity.”

To effectively apply ITS to highway and transit projects, the National ITS Architecture, initiated in 1991 and sponsored by USDOT, is used to describe a wide range of likely ITS applications, using high technology products for highway and transit projects. In 2001, the FHWA and Federal Transit Administration (FTA) established 23 Code of Federal Regulations (CFR) 940 part 11 which required agencies using federal funds to establish ITS Architectures for their regions. The Architecture must contain the following:

- 1) Description of the region – **Section 2.2**
- 2) Identification of the participating agencies and other stakeholders – **Section 4**
- 3) Roles and responsibilities of the participating agencies and other stakeholders – **Section 8**
- 4) Agreements needed for operation – **Section 11**



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1 Introduction

- 5) System functional requirements – **Section 9** (*also see* the New Orleans Regional ITS Architecture RAD-IT source file)
- 6) Interface requirements and information exchanges with planned and existing systems – **Appendix A** (*also see* the New Orleans Regional ITS Architecture RAD-IT source file)
- 7) Identification of applicable standards (ITS Standards) – **APPENDIX B**
- 8) Sequence of projects necessary for implementation traceable to a portion of the regional architecture – **Section 12**

Products derived from the architecture development process provide a number of benefits to the transportation planners and engineers. The following are examples of these benefits:

- 1) Establishes a common terminology for the various ITS elements needed to implement and operate ITS applications.
- 2) Defines those elements and the functions they perform, and identifies, in theory, all of the possible interrelationships among the ITS elements.
- 3) The National ITS Architecture does not dictate a specific approach to implementing or operating any ITS application. Rather, it provides a common set of terms and concepts that local ITS implementers are encouraged to utilize in describing their specific ITS activities.
- 4) Provides a “living” planning document that promotes modularity, integration, and minimizes impacts when needs to regional issues change.
- 5) Promotes a thorough, coordinated, and multi-jurisdictional “systems” approach to ITS and the use of a Systems Engineering process to its deployment.
- 6) Fosters the utilization of the “standards” that are being developed through the USDOT Architecture Reference for Cooperative and Intelligent Transportation (ARC-IT) program.



2 Architecture Scope

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

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

2.1 Timeframe

The timeframe for a comprehensive review and updates to the New Orleans Regional ITS Architecture is five years. This timeframe is selected based on the rapid innovation that tends to happen in the technology space to allow DOTD to plan for and leverage nascent and emerging technologies to address needs in mobility, safety and the environment. Generally, projects identified through engagement with stakeholders are not all fully implemented during this five-year period due to funding constraints. However, with projects prioritized according to needs the most important projects are typically implemented first. Any remaining projects are reevaluated based on prevailing needs at the time of the ITS Architecture updates and ranked along with any new projects that emerge out of the architecture update process. Furthermore, DOTD can do an addendum update to the architecture to include any needs identified.

2.2 Geographic Scope

The boundary of the Architecture study is the New Orleans Metropolitan Planning Organization (MPO) boundary administered by the Regional Planning Commission (RPC). The geographic scope of the ITS architecture encompasses all of part of six parishes listed below.

1. Jefferson
2. Orleans
3. St. Bernard
4. Plaquemines
5. St. Charles
6. St. John the Baptist



Figure 1 shows the Urbanized Area (UZA) and the Metropolitan Planning Area of the New Orleans urbanized area (Source: MTP 2052 – New Orleans MPA)

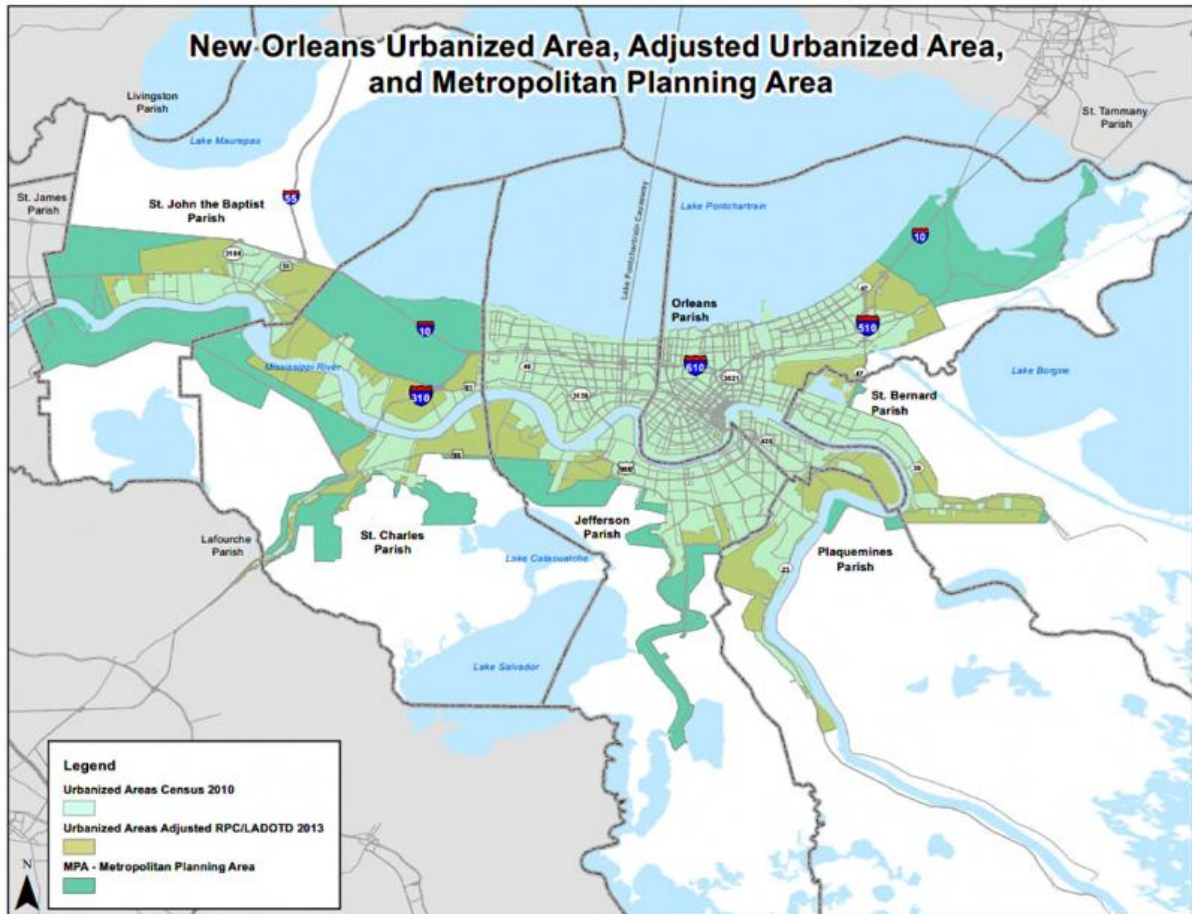


Figure 1: Map of New Orleans UZA and MPA

2.3 Service Scope

The challenges identified related to mobility safety and the environment, where feasible, will be addressed using technology. The Architecture Reference for Cooperative and Intelligent Transportation (ARC-IT) describes several Service Packages that bundle different functions to provide an ITS solution. The Service Packages will be selected to address existing and future ITS needs.



3 Relationship to Planning

The New Orleans Regional ITS Architecture is an integral part of planning for the operations and maintenance strategies that are addressed by the regional transportation planning process. This document serves as the planning document for the deployment of ITS in the region. The approach to the development of this document includes a review of Statewide and regional transportation planning documents, engagement of stakeholders to assess the relevant scope of ITS projects identified in planning documents. The architecture further provides a framework that connects operations and maintenance objectives and strategies with the integrated transportation system improvements that are implemented as a progressive series of ITS projects. The architecture also is used to define the data needs associated with performance monitoring that supports an informed planning process. This chapter identifies the planning objectives, strategies, and associated performance measures from the regional and statewide plan. These planning elements are connected with ITS services in the Regional Architecture Development for Intelligent Transportation (RAD-IT) database. Table 1 provides a summary of the planning objectives and associated performance measures.

Table 1 – Relationship to Planning

Number	Name	Description	Source	PM Category	Performance Measure
1	Enhance Safety	Continually improve the safety of the regional transportation system for all users. Safety is the first priority of any transportation planning, construction, or improvement process. It is the RPC's responsibility to the public to ensure that the transportation system is as safe as possible.	Metropolitan Transportation Plan New Orleans Urbanized Area	Crash rates	Crashes per year
				Crimes committed on transit	Number of crimes committed on transit vehicles or at transit stops
				Fatalities	Fatalities caused by motor vehicle crashes
				Transit crash rate	Number of transit vehicle crashes
2	Livable Communities	Coordinated transportation investments with other community needs to strategically foster more livable neighborhoods and an overall higher quality of life for the region. The transportation system is inextricably linked to community livability. It is the physical link through which people connect with each other or access work, recreation, and basic	Metropolitan Transportation Plan New Orleans Urbanized Area	Congestion	RPC's Congestion management index
				Delay	Hours of delay
				Headway	Average headway
				Performance	On-time performance
				Reliability	Travel time reliability
				Ridership	Ridership & Mode Share



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 3 Relationship to Planning

Number	Name	Description	Source	PM Category	Performance Measure
		necessities. A seamless, easy-to-use transportation system improves community livability by making everyday tasks easier to accomplish.		Transit stops	Percentage of population within walking distance of transit
3	State of Good Repair	Protect and maximize previous investments through comprehensive and timely infrastructure maintenance and modernization. The transportation systems in the New Orleans region developed over centuries and continues to evolve. It represents a massive public investment that provides the backbone for nearly all the activities that take place in the region. Given the significance of the system, its maintenance is one of the RPC's most important tasks.	Metropolitan Transportation Plan New Orleans Urbanized Area		
4	Economic Competitiveness	Utilize the strong link between infrastructure and the economy to encourage economic development, growth, and resilience.	Metropolitan Transportation Plan New Orleans Urbanized Area		
5	Environmental Sustainability	Develop a transportation system that encourages travel behavior, energy consumption and land use decisions that contribute to environmental sustainability.	Metropolitan Transportation Plan New Orleans Urbanized Area	Emissions	Reduction of vehicle emissions



4 ITS Stakeholders

Effective ITS operations involve the integration of multiple stakeholders and their transportation systems. This section describes the stakeholders who either participated in the creation of the New Orleans Regional ITS Architecture or whom the participating stakeholders felt were necessary to include in the Architecture. Some stakeholders have been grouped in order to better reflect mutual participation or involvement in transportation services and elements. Stakeholders in this section may be related to one or more of the transportation inventory elements described in **Section 5** either as an individual stakeholder or as a member of a stakeholder group.

Table 2: ITS Stakeholders

Stakeholder Name	Stakeholder Description
City of Kenner	The City of Kenner is an incorporated city providing municipal government services, including police and fire protection, to its residents and businesses. Land use plans and ordinances guide city administration, elected officials, and private citizens and developers. The population of City of Kenner is 66,448 (2020 census).
City of New Orleans	The City of New Orleans and Orleans Parish operate as a merged city-parish government. New Orleans' government is centralized in the City Council and Mayor's Office. The New Orleans government operates police and fire departments and the emergency medical services. One of its missions is to construct, maintain, and administer transportation elements affecting vehicular, pedestrian, and rail movement within the public right-of-way. The population of New Orleans is 383,997 (2020 census).
Freight / Commercial Vehicles	New Orleans, due to its location along the Mississippi River and the Gulf of Mexico, serves as a focal point for the transfer of goods through various transportation modes: commercial vehicles, trains, barges/ships, etc.
GNOEC	The five-member Greater New Orleans Expressway Commission (GNOEC) is the controlling body of the Causeway which includes the bridge system and the Causeway approach road system on the North Shore of Lake Pontchartrain. Called The Causeway Commission, it is an entity responsible for the maintenance, construction, and enforcement of safety laws on the Lake Pontchartrain Causeway. It is headquartered in the New Orleans suburb of Metairie. Also, the GNOEC polices the US 90, Huey P. Long Bridge.
Jefferson Parish	Jefferson Parish has a population of 440,781 (2020 census). The seat of parish government is Gretna. The Parish originally extended from present day Felicite Street in New Orleans, Louisiana, to the St. Charles Parish line. As Orleans Parish grew, it annexed from Jefferson Parish such established areas as the Garden District, Lafayette, Jefferson, and Carrollton. The present boundary was set in 1874, and in 1884 the seat of parish government was transferred to the West Bank, Gretna, where it has remained.



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4 ITS Stakeholders

Stakeholder Name	Stakeholder Description
Jefferson Parish Sheriff Office	The Jefferson Parish Sheriff's Office (JPSO) is a stand-alone governmental entity, separate and apart from the Parish Council. The Sheriff's position is reaffirmed by Article V, Section 27 of the Louisiana Constitution of 1974. The Sheriff is a separately elected official elected by the citizens of the parish in a general popular election every four years.
LADOTD	Louisiana Department of Transportation and Development (LADOTD) is an arm of the Louisiana government responsible for state-wide transportation. The LADOTD responsibilities include statewide transportation system operations. This stakeholder group includes all Department of Transportation and Development (DOTD) units (ITS, Office of Planning Programming, Highway Safety, Weights and Standards, Traffic Services, and Traffic Engineering) involved in transportation planning, operations, and maintenance. Some of the typical responsibilities include incident detection and response, evacuation planning and management, transportation data collection, management, and distribution for the local region as well as for the entire state.
Local Emergency Medical	This includes local hospitals and emergency medical service providers (i.e., ambulance, air-evacuation, etc) that are components of emergency management.
Local Levee Districts	The New Orleans area is composed of five levee districts under two of the levee authorities (Southeast Louisiana Flood Protection Authority - East and Southeast Louisiana Flood Protection Authority - West). Each levee district is responsible for building, operating and maintaining flood control systems. Also the levee districts provide safe and secure facilities for aviation, marine and recreational activities
Local/Regional Public Safety Agencies	Responsible for operating local police, sheriff, fire, and EMS offices and vehicles throughout region. This stakeholder group includes all the regional agencies that are involved in emergency, fire, sheriff, police, and other public safety/emergency response activities.
Louisiana State Police Troop B	Louisiana State Police Troop B is responsible for operating Louisiana State Police Centers in the ITS coverage area. This includes Computer Aided Dispatch database, which collects incident/emergency detection, dispatch, response, and status information related to the Louisiana State Police officers/equipment. They are also responsible for Louisiana State Police vehicles.
Media	This stakeholder group includes local TV/Radio Channels and print media that are responsible for receiving and distributing transportation information like traffic conditions, incidents and road weather conditions.
New Orleans International Airport	New Orleans International Airport is a Class B public use international airport in Jefferson Parish, Louisiana, and in the United States. It is owned by the City of New Orleans and is located 10 nautical miles (19 km) west of its central business district. The airport's address is 900 Airline Drive in Kenner, Louisiana. A small portion of Runway 10/28 is located in unincorporated St. Charles Parish. This airport is the primary commercial airport for the New Orleans metropolitan area and southeast Louisiana.
NORPC	The New Orleans Regional Planning Commission (NORPC) serves as the designated Economic Development District for Jefferson, Orleans, Plaquemines, St. Bernard and St. Tammany Parishes as well as the Metropolitan Planning Organization (MPO) for all of the named parishes in addition to St. Charles and St. John parishes. This regional body is comprised of a 26 voting member board with representation from each of the five core parishes and supported by a staff of planning professionals. This board, which consists of elected officials and citizen members, meets on a monthly basis to discuss issues that are regional in nature.



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4 ITS Stakeholders

Stakeholder Name	Stakeholder Description
Plaquemines Parish	This is the parish with the most combined land and water area in the U.S. state of Louisiana. The parish seat is Pointe à la Hache. As of 2010, the parish's population was 23,042. Plaquemines Parish is part of the New Orleans-Metairie-Kenner Metropolitan Statistical Area as well as the New Orleans-Metairie-Bogalusa Combined Statistical Area.
Public	Members of the general public own and operate various devices/systems to access ITS information including personal digital assistants (PDAs), cell phones, and personal computers.
St. Bernard Parish	A parish located southeast of New Orleans in the U.S. state of Louisiana. The parish seat is Chalmette, the largest community in the parish. As of 2010, its population was 35,897. It has been ranked the fastest-growing county (parish) in the United States from 2007 to 2008 by the U.S. Census Bureau, but it is only half as populated as it was in 2005. St. Bernard Parish is part of the New Orleans-Metairie-Kenner Metropolitan Statistical Area as well as the New Orleans-Metairie-Bogalusa Combined Statistical Area.
St. Charles Parish	The parish seat is Hahnville. In 2010, its population was 52,760. St. Charles Parish operates under a Home Rule Charter, which provides for separate legislative and executive branches independent of each other. Legislative matters are handled by an elected nine-member Council, while the elected Parish President serves as administrator. Prior to this, the Parish operated under the Policy Jury System. Under this system jurors were elected from Wards or Districts. They operated as both Legislators and Administrators, handling day-to-day operations of the Parish.
St. John the Baptist Parish	The parish seat is Edgard, an unincorporated area. In 2010, its population was 45,924. St. John the Baptist Parish is part of the New Orleans-Metairie-Kenner Metropolitan Statistical Area as well as the New Orleans-Metairie-Bogalusa Combined Statistical Area.
Tourism and Traveler Information Service Providers	This includes various tourism agencies, chambers of commerce, hotel associations, motorist services, and map search.



5 ITS Inventory

The inventory of existing and planned transportation systems is the basis for the New Orleans Regional ITS Architecture. The transportation system inventory was developed based on knowledge of and inputs from stakeholders of systems that can be leverage for operations. The inventory includes a list of ITS elements and the associated stakeholder responsible for system operation.

Table 3 describes surface transportation inventory elements for the region. A transportation element can be a center, vehicle, traveler, or field equipment. Each transportation element listed below has one or more stakeholders associated with it from **Section 4**. Each transportation inventory element is mapped to at least one ITS Architecture entity.

Table 3: ITS Inventory

Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
Airport ITS Field Equipment	This element represents an airport's ITS field equipment, which includes but is not limited to CCTV cameras, highway advisory radio (HAR), and road weather information systems (RWIS)	Planned	Connected Vehicle Roadside Equipment, ITS Roadway Equipment	New Orleans International Airport
		Existing	Archived Data User System, Emergency Management Center, Traffic Management Center	New Orleans International Airport



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5 ITS Inventory

Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
Airport Parking	Ticketless parking is available at either garage at the New Orleans International Airport. Visitors can insert a credit card into the machine as they enter either garage. The computer will record the license plate of the vehicle and return the credit card. When exiting the garage, the driver pulls up to any of the XPress Pay lanes and inserts the same credit card used to access the garage. The total cost is calculated and a receipt issued. This automated approach is fast and easy. No need to wait in line for a cashier.	Existing	Parking Area Equipment, Parking Management Center	New Orleans International Airport
Causeway Bascule Drawbridge	The bascule drawbridge is operated and managed by the GNOEC (Greater New Orleans Expressway Commission) and is located at the 16.0 mile marker on the Causeway Bridge with personnel on duty 24/7.	Existing	Archived Data User System, Connected Vehicle Roadside Equipment, ITS Roadway Equipment, Traffic Management Center	GNOEC
Causeway Information Archive	The information archive is maintained by the GNOEC.	Existing	Archived Data System	GNOEC



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 5 ITS Inventory

Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
Causeway ITS Field Elements	The field elements include call boxes, cameras, dynamic message signs, portable changeable message signs, traffic signals, vessel radar monitoring system, road weather information system, highway advisory radio, and communications.	Existing	Connected Vehicle Roadside Equipment, ITS Roadway Equipment	GNOEC
Causeway MAP	This element represents the Causeway Bridge Motorist Assistance Patrol (MAP). Daily patrol vehicles, tow vehicles, incident management, and operations are included within this element.	Existing	Emergency Management Center, Traffic Management Center	GNOEC
Causeway Police	The Causeway Police provides law enforcement and motorist assistance on the Causeway and Huey P. Long bridges. The officers assigned to this division are charged with enforcing state and local laws.	Existing	Emergency Management Center	GNOEC
Causeway Toll Collection Equipment	The toll collection equipment is operated and maintained by the GNOEC.	Existing	ITS Roadway Payment Equipment	GNOEC



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 5 ITS Inventory

Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
Causeway Toll Tag Office	GNOEC operates toll tag offices on both the Northshore and Southshore that provide sales of electronic tags as well as toll related customer service.	Existing	Payment Administration Center	GNOEC
Causeway Traffic Operations	This element represents the traffic operations component of the GNOEC.	Existing	Archived Data User System, Traffic Management Center	GNOEC
Causeway Traveler Information System	The motorist information system includes the website that contains toll information, radio station, cell phone information system, construction, and video images of traffic conditions. The website is operated and maintained by GNOEC.	Existing	Data Distribution System, Transportation Information Center	GNOEC
CCCD Commuter Ferries	Passenger and vehicular ferries are operated and maintained by the Crescent City Connection Divisions (CCCD). The CCCD police ensure the safety and security of the Commuter Ferries.	Existing	Archived Data User System, Traffic Management Center	LADOTD
CCCD Data Archive	This is the operations data collected and archived by the CCCD.	Existing	Archived Data System	LADOTD



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Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
Commercial Vehicles Operations	Commercial vehicles are operated to serve various local and out-of-area industries. This element represents local distribution of goods, as well as regional and national distribution.	Existing	Commercial Vehicle Administration Center, Fleet and Freight Management Center	Freight / Commercial Vehicles
Convention Center	The New Orleans Ernest N. Morial Convention Center (MCCNO) is the nation's sixth largest convention center. It is managed by New Orleans Public Facility Management Inc., a not-for-profit organization operating under the auspices of the Ernest N. Morial New Orleans Exhibition Hall Authority (Authority), a political subdivision of the state of Louisiana.	Existing	Data Distribution System, Transportation Information Center	Tourism and Traveler Information Service Providers



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Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
DOTD Adjacent District Office	Louisiana Department of Transportation and Development includes 8 other districts that are responsible for coordination with statewide ITS systems. These also include 2 adjacent districts which are involved in direct corridor level co-ordination with the New Orleans region, i.e. Corridor level co-ordination with Baton Rouge district (District 61) for traffic management operations and evacuation planning along I-10, I-12, and US 61 as well as with Lafayette district (District 03) for evacuation planning along US 61 and US 90.	Existing	Archived Data User System, Emergency Management Center, Maint and Constr Management Center, Traffic Management Center	LADOTD



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Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
DOTD District 02 Traffic Operation	This element represents traffic operations or traffic engineering within the district office that is responsible for traffic management activities within its jurisdiction. The typical activities include traffic monitoring, traffic data collection, traffic signal operations, and other traffic management related activities. This also includes communicating with Traffic Management Center (TMCs) and other departments like maintenance for roadway maintenance activities. District 02 traffic operations are housed within the DOTD Regional Transportation Management Center (RTMC) facility.	Existing	Archived Data User System, Emergency Management Center, Maint and Constr Management Center, Traffic Management Center	LADOTD
DOTD District 02 Traffic Operations Archive	Archives transportation data as part of District 02 traffic operations.	Existing	Archived Data System	LADOTD
DOTD District 02 Traffic Signal System	Field communications, field controllers, field masters, and vehicle detection on state highways (non-freeway) that are operated and maintained by the LADOTD.	Existing	Connected Vehicle Roadside Equipment, ITS Roadway Equipment	LADOTD



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Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
DOTD Flood Warning System	The flood warning system consists of water level monitoring equipment on roads at locations that are susceptible to flooding including underpasses, tunnels and low lying roadways.	Existing	Connected Vehicle Roadside Equipment, ITS Roadway Equipment	LADOTD
DOTD ITS Field Equipment	This element includes the equipment distributed on and along the roadway that monitors and controls traffic and monitors and manages the roadway itself. Equipment includes traffic signals, traffic detectors, environmental sensors, highway advisory radios, dynamic message signs, closed circuit television (CCTV) cameras and video image processing systems, weigh-in-motion, water level monitoring, and grade crossing warning systems.	Existing	Connected Vehicle Roadside Equipment, ITS Roadway Equipment	LADOTD



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Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
DOTD ITS Section	This element represents ITS Section (Section 56) under the LADOTD. The ITS section is responsible for the state-wide operations center located in DOTD headquarters. Also, the ITS section is responsible for the management of information systems for transportation, state-wide ITS elements operations, and maintenance. The ITS section is also responsible for maintenance of all ITS equipment in the state.	Existing	Archived Data System, Archived Data User System, Emergency Management Center, Maint and Constr Management Center, Traffic Management Center	LADOTD
DOTD MAP	This element represents the DOTD Motorist Assistance Patrol (MAP). Daily patrol vehicles, tow vehicles, incident management, and operations are included within this element.	Existing	Archived Data User System, Emergency Management Center, Traffic Management Center	LADOTD
DOTD Social Media	This includes Facebook and Twitter.	Existing	Data Distribution System, Transportation Information Center	LADOTD



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Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
DOTD Statewide TMC	This element represents the traffic operations center that is responsible for traffic management activities throughout the state. The typical activities include traffic monitoring, traffic data collection, operation of ITS elements (CCTV, DMS, etc.), detection and verification of incidents, traffic signal monitoring, and other traffic management related activities. This also includes communicating with other agencies, districts, TMCs, and DOTD departments such as maintenance for roadway maintenance activities.	Existing	Archived Data System, Archived Data User System, Data Distribution System, Emergency Management Center, Maint and Constr Management Center, Traffic Management Center, Transportation Information Center	LADOTD
East Jefferson General Hospital EMS	This element represents the East Jefferson General Hospital Emergency Medical Service (EMS) including dispatch, ambulances, communications and computer aided dispatch (CAD) system.	Existing	Emergency Management Center	Jefferson Parish
Event Promoter	Event promoters plan and manage various venues within the New Orleans Convention Center, Superdome to promote tourism within the New Orleans region.	Existing	Data Distribution System, Transportation Information Center	Tourism and Traveler Information Service Providers



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Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
HAZMAT Mobil Response	HAZMAT Mobil response includes dispatch and vehicles operated and maintained by Mobil Oil, which responds to HAZMAT occurrences near the Mobil Oil Refinery in Chalmette.	Existing	Emergency Management Center	Local/Regional Public Safety Agencies
Jefferson Parish 911	This element represents the parish emergency response operations including City fire, police, 911, and any other emergency response operators. This element is responsible for the emergency response operations and management within the parish jurisdiction	Existing	Emergency Management Center	Jefferson Parish



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Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
Jefferson Parish Dept. of Emergency Management	The mission of the Jefferson Parish Emergency Management Department is to provide emergency management planning for Jefferson Parish Departments and agencies and overall emergency management coordination and guidance during major emergencies within the Parish and providing for the continued safety of the citizens and visitors to Jefferson Parish. This office serves as the Parish's office of homeland security and emergency preparedness.	Existing	Emergency Management Center	Jefferson Parish
Jefferson Parish Fire Department	This element represents the fire department including the fire dispatch center (part of the 911 center), the fire trucks, communications and CAD system.	Existing	Emergency Management Center	Jefferson Parish
Jefferson Parish ITS Field Equipment	The field equipment includes field controllers, communications, signals, and vehicle detection. This equipment is operated and maintained by Jefferson Parish.	Existing	Connected Vehicle Roadside Equipment, ITS Roadway Equipment	Jefferson Parish



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Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
Jefferson Parish Traffic Operations	This element represents traffic operations or traffic engineering for the parish and is responsible for traffic management activities. The typical activities include traffic monitoring, traffic data collection, traffic signal operations, and other traffic management related activities. This also includes communicating with TMCs and other departments, such as maintenance, for roadway maintenance activities.	Existing	Archived Data User System, Traffic Management Center	Jefferson Parish
Jefferson Parish Traffic Signal System	This element represents traffic signals operated and maintained by Jefferson Parish.	Existing	Connected Vehicle Roadside Equipment, ITS Roadway Equipment	Jefferson Parish
Jefferson Transit (JeT)	This element is responsible for the operations and maintenance of buses on fixed scheduled routes and on-demand paratransit services throughout Jefferson Parish. JeT park and ride facilities, kiosk, and payment processing are also undertaken by JeT.	Existing	Archived Data User System, Transit Management Center	Jefferson Parish
JeT Information Center	This element represents the JeT Information Center, local kiosk, and web site.	Existing	Data Distribution System, Transportation Information Center	Jefferson Parish



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Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
JeT Transit Data Archive	This is the transit operations data collected by JeT	Existing	Archived Data System	Jefferson Parish
JPSO	This element represents the Jefferson Parish Sheriff's Office (JPSO) including its dispatch center (part of the 911 center), the police vehicles, communications, automated vehicle location system, and CAD system.	Existing	Emergency Management Center	Jefferson Parish Sheriff Office
Kenner Engineering	This element represents the engineering office.	Existing	Archived Data User System, Emergency Management Center, Traffic Management Center	City of Kenner
Kenner Police	This element represents the Kenner Police Department including its dispatch, the police vehicles, communications, automated vehicle location system, and CAD system.	Existing	Emergency Management Center	City of Kenner
Levee Flood Monitoring System	This element represents the flood monitoring system as part of the levee system.	Existing	Connected Vehicle Roadside Equipment, ITS Roadway Equipment	Local Levee Districts



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Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
Levee Police Patrol	This element represents the policing authority of the levee district as part of the levee system. It includes its police dispatch, the police vehicles, and communications.	Existing	Emergency Management Center	Local Levee Districts
Local Emergency Medical Service	This element represents local ambulance vehicles, dispatch, and other EMS equipment which are operated and maintained by public and private local medical providers.	Existing	Emergency Management Center	Local Emergency Medical
Local Emergency Operations Centers	This element represents emergency dispatch centers operated by local agencies including 911, emergency operation center, office of homeland security and emergency preparedness, and fire response dispatch center.	Existing	Emergency Management Center	Local/Regional Public Safety Agencies
Local Print and Broadcast Channels	This includes local newspapers as well as radio and television broadcast stations providing transportation information.	Existing	Data Distribution System, Transportation Information Center	Media
Louisiana 511/ Website	This element provides traveler information service provided by the LADOTD in conjunction with private partner.	Existing	Data Distribution System, Transportation Information Center	LADOTD



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Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
LSP Troop B	This element represents the Louisiana State Police department; the New Orleans (Southshore) area is covered by Troop B. Also, this element represents the troop's dispatch, vehicles, communications systems, computer aided dispatch and automatic vehicle location system (AVL).	Existing	Emergency Management Center	Louisiana State Police Troop B
Caesars Superdome	The Mercedes-Benz Superdome, previously known as the Louisiana Superdome and colloquially known as the Superdome, is a sports and exhibition arena located in the Central Business District of New Orleans, Louisiana.	Existing	Data Distribution System, Transportation Information Center	Tourism and Traveler Information Service Providers
New Orleans EMS	This element represents the New Orleans Emergency Medical Service (EMS) including the dispatch center (part of the 911 center), ambulances, communications, and computer aided dispatch (CAD) system.	Existing	Emergency Management Center	City of New Orleans



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Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
New Orleans Fire Department	This element represents the fire department including the fire dispatch center (part of the 911 center), the fire trucks, communications and computer aided dispatch (CAD) system.	Existing	Emergency Management Center	City of New Orleans
New Orleans ITS Field Equipment	Field equipment including controllers, communications, traffic signals, and field masters are operated and maintained by the City and Parish of New Orleans.	Existing	Connected Vehicle Roadside Equipment, ITS Roadway Equipment	City of New Orleans
New Orleans Police Department	This element represents the New Orleans Police Department (NOPD) including its dispatch center (part of the 911 center), the police vehicles, communications, automated vehicle location system, and CAD system.	Existing	Emergency Management Center	City of New Orleans



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Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
New Orleans Traffic Operations	This element represents traffic operations or traffic engineering for the city that is responsible for traffic management activities. The typical activities include traffic monitoring, traffic data collection, traffic signal operations, and other traffic management related activities. This also includes communicating with Traffic Management Centers (TMCs) and other departments like maintenance for roadway maintenance activities.	Existing	Archived Data User System, Traffic Management Center	City of New Orleans
New Orleans Traffic Signal System	This element represents traffic signals operated and maintained by the City of New Orleans.	Existing	Connected Vehicle Roadside Equipment, ITS Roadway Equipment	City of New Orleans
NOHSEP	The New Orleans Office of Homeland Security and Emergency Preparedness (NOHSEP) is the city organization that is responsible for coordinating the activities needed to protect the lives and property of its citizens from natural or man-made disasters through "All Hazards" emergency planning.	Existing	Emergency Management Center	City of New Orleans



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Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
NOLAReady	NOLAReady is an alert system that allows City Officials to contact residents during an emergency by sending text messages to email accounts (work, home, school, etc.), mobile phones, pagers, smart phones or hand held devices.	Existing	Data Distribution System, Transportation Information Center	City of New Orleans
NOPB Rail / Port of New Orleans Integration	The New Orleans Public Belt (NOPB) Railroad is unique among the railroads of the United States in that it is a publicly owned and operated terminal switching railroad. It is not owned or operated by the railroads with whom it connects, but rather by the community it serves; it is owned by the citizens of the City of New Orleans and operated through the Public Belt Railroad Commission. It is autonomous (or self-governing) jurisdictional entity. The NOPB directly operates with the Port of New Orleans as the sole rail connection from the river to the class 1 railroad company yards.	Existing	Fleet and Freight Management Center	Freight / Commercial Vehicles



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Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
NORPC	Regional Planning Agency capturing traffic data for planning purposes.	Existing	Archived Data System, Archived Data User System, Traffic Management Center	NORPC
NORPC Data Archives	The New Orleans Regional Planning Commission (NORPC) provides a repository of transportation data for the New Orleans region.	Existing	Archived Data System	NORPC
NOUPT	New Orleans Union Passenger Terminal (NOUPT) is the main train station in New Orleans, Louisiana. It is served by Amtrak, Crescent, and the City of New Orleans passenger trains, and played a role in the recovery efforts from Hurricane Katrina in 2005.	Existing	Archived Data User System, Transit Management Center	City of New Orleans



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Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
Orleans Parish Communications District (911)	Orleans Parish Communications District (OPCD) is the administrative office of 911 for the city of New Orleans. This office was created by State Legislature in 1982. Primary responsibilities include purchasing and the maintenance of equipment, providing training for new and experienced police, fire and emergency medical personnel. The OPCD includes fire, police, and EMS.	Existing	Emergency Management Center	City of New Orleans
Other Fire Department	This element represents fire departments, dispatch, trucks and other firefighting equipment which are operated and maintained by parish and local municipalities.	Existing	Emergency Management Center	Local/Regional Public Safety Agencies
Parish Sheriffs Office	This element represents the parish sheriff's office including its dispatch, patrol vehicles, communications, and the CAD system. This element includes the parishes of: Orleans, Plaquemines, St. Charles, St. John the Baptist and St. Bernard.	Existing	Emergency Management Center	Local/Regional Public Safety Agencies
Personal Devices	Primarily PDA, pagers, etc.	Existing	Personal Information Device	Public



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Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
Private Traveler Information Service Providers	This element provides traveler information to the public through private corporations. Private traveler information providers include MetroScan, Navteq, and TrafficLand.	Existing	Data Distribution System, Transportation Information Center	Media



Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
Regional Transportation Management Center	<p>The Regional Transportation Management Center (RTMC) is a facility that houses both the DOTD D02 Traffic ITS/TMC Operations and the NORPC, which allows the co-located agencies to fully plan and operate the ITS. This element represents the traffic/transportation operations center that is responsible for traffic management activities throughout New Orleans area. The typical activities include traffic monitoring, traffic data collection, operation of ITS elements (CCTV, DMS, etc.), detection and verification of incidents, traffic signal monitoring, and other traffic management related activities. This also includes communicating with other agencies, districts, TMCs, and DOTD departments such as maintenance for roadway maintenance activities.</p>	Existing	<p>Archived Data System, Archived Data User System, Data Distribution System, Emergency Management Center, Maint and Constr Management Center, Traffic Management Center, Transportation Information Center</p>	LADOTD
RR at Grade Crossing Controller	<p>Railroad at grade crossing controllers identify if a train is currently present at the intersection. This status allows for systems to be utilized for active traffic management.</p>	Existing	<p>Connected Vehicle Roadside Equipment, ITS Roadway Equipment</p>	Freight / Commercial Vehicles



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Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
RTA Information Center	This element represents the Regional Transit Authority (RTA) Information Center, local kiosk, and web site.	Existing	Data Distribution System, Transportation Information Center	City of New Orleans
RTA Transit	The RTA provides fixed route transit through the use of buses, streetcars, and paratransit. This element represents the vehicles and dispatch as well as park and ride facilities, and payment processing.	Existing	Archived Data User System, Transit Management Center	City of New Orleans
RTA Transit Data Archive	This is the transit operations data collected by RTA	Existing	Archived Data System	City of New Orleans
St. Bernard Urban Rapid Transit (SBURT)	This element is responsible for operations and maintenance of buses on fixed scheduled routes and on-demand paratransit services throughout St. Bernard Parish. SBURT also provides parish assisted evacuations during emergencies.	Existing	Archived Data User System, Transit Management Center	St. Bernard Parish
Tourism and Travel Service Information Sources	Private Tourism and Traveler Information Websites, local hotel associations, visitor centers, etc.	Existing	Data Distribution System, Event Promoter System, Transportation Information Center	Tourism and Traveler Information Service Providers



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Element Name	Element Description	Element Status	Associated Physical Objects	Stakeholder
West Jefferson Medical Center EMS	Dispatches the Westbank EMS vehicles only which are operated and maintained by West Jefferson Medical Center.	Existing	Emergency Management Center	Jefferson Parish



6 ITS Services

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

Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
CVO02	Freight Administration	This service package tracks the movement of cargo and monitors the cargo condition. Interconnections are provided to intermodal freight shippers and intermodal freight depots for tracking of cargo from origin to destination. In addition to exceptions that are reported, on-going indications of the state of the various freight equipment are reported to the Fleet and Freight Management Center.	Planned	Commercial Vehicles Operations, NOPB Rail / Port of New Orleans Integration



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CVO12	HAZMAT Management	<p>This service package integrates incident management capabilities with commercial vehicle tracking to assure effective treatment of HAZMAT material transport, including response to incidents. HAZMAT tracking is performed by the Fleet and Freight Management Center. The Emergency Management Center is notified by the Commercial Vehicle and the Fleet and Freight Management Center of the HAZMAT vehicle location and information about the HAZMAT load. If an incident occurs, the Emergency Management Center can use the information to coordinate the response. The response is tailored based on information that is provided as part of the original incident notification or derived from supplemental information provided by the Fleet and Freight Management Center. The latter information can be provided prior to the beginning of the trip, during the trip, or gathered following the incident depending on the selected policy and implementation.</p>	Planned	LSP Troop B
DM01	ITS Data Warehouse	<p>This service package provides access to</p>	Existing	Airport Parking, Causeway Information



Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		<p>transportation data to support transportation planning, condition and performance monitoring, safety analysis, and research. Configurations range from focused repositories that house data collected and owned by a single agency, district, private sector provider, or research institution to broad repositories that contain multimodal, multidimensional data from varied data sources covering a broader region. Both central repositories and physical distributed ITS data repositories are supported. Requests for data that are satisfied by access to a single repository in the ITS Data Warehouse service package may be parsed by the local repository and dynamically translated to requests to other repositories that relay the data necessary to satisfy the request. The repositories could include a data registry capability that allows registration of data identifiers or data definitions for interoperable use throughout a region.</p>		<p>Archive, Causeway Traffic Operations, Causeway Traveler Information System, CCCD Data Archive, DOTD District 02 Traffic Operation, DOTD District 02 Traffic Operations Archive, DOTD Statewide TMC, Jefferson Parish 911, Jefferson Parish Traffic Operations, JeT Transit Data Archive, Local Emergency Operations Centers, LSP Troop B, New Orleans Traffic Operations, NORPC, NORPC Data Archives, Orleans Parish Communications District (911), Regional Transportation Management Center, RTA Transit, RTA Transit Data Archive</p>



Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
DM02	Performance Monitoring	<p>The Performance Monitoring service package uses information collected from detectors and sensors, connected vehicles, and operational data feeds from centers to support performance monitoring and other uses of historical data including transportation planning, condition monitoring, safety analyses, and research. The information may be probe data information obtained from vehicles in the network to determine network performance measures such as speed and travel times, or it may be information collected from the vehicles and processed by the infrastructure, e.g. environmental data and infrastructure conditions monitoring data. Additional data are collected including accident data, road condition data, road closures and other operational decisions to provide context for measured transportation performance and additional safety and mobility-related measures. More complex performance measures may be derived from the collected data.</p>	Planned	DOTD District 02 Traffic Operations, DOTD ITS Section, New Orleans Traffic Operations



Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
MC01	Maintenance and Construction Vehicle and Equipment Tracking	This service package tracks the location of maintenance and construction vehicles and other equipment to ascertain the progress of their activities. Checks can include ensuring the correct roads are being plowed and work activity is being performed at the correct locations.	Planned	DOTD Adjacent District Office, DOTD District 02 Traffic Operation, DOTD ITS Section, DOTD Statewide TMC, Regional Transportation Management Center
MC05	Roadway Maintenance and Construction	This service package supports numerous services for scheduled and unscheduled maintenance and construction on a roadway system or right-of-way. Maintenance services include landscape maintenance, hazard removal (roadway debris, dead animals), routine maintenance activities (roadway cleaning, grass cutting), and repair and maintenance of both ITS and non-ITS equipment on the roadway (e.g., signs, traffic controllers, traffic detectors, dynamic message signs, traffic signals, CCTV, etc.). Environmental conditions information is also received from various weather sources to aid in scheduling maintenance and construction activities.	Existing	DOTD Adjacent District Office, DOTD District 02 Traffic Operation, DOTD ITS Section, DOTD Statewide TMC, Regional Transportation Management Center



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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
MC06	Work Zone Management	<p>This service package manages work zones, controlling traffic in areas of the roadway where maintenance, construction, and utility work activities are underway. Traffic conditions are monitored using CCTV cameras and controlled using dynamic message signs (DMS), Highway Advisory Radio (HAR), gates and barriers. Work zone information is coordinated with other groups (e.g., TIC, traffic management, other maintenance and construction centers). Work zone speeds and delays are provided to the motorist prior to the work zones.</p> <p>This service package provides control of field equipment in all maintenance and construction areas, including fixed, portable, and truck-mounted devices supporting both stationary and mobile work zones.</p>	Planned	DOTD District 02 Traffic Operation, DOTD ITS Field Equipment, DOTD Statewide TMC, Regional Transportation Management Center



Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
MC06	Work Zone Management (Instance 2)	<p>This service package manages work zones, controlling traffic in areas of the roadway where maintenance, construction, and utility work activities are underway. Traffic conditions are monitored using CCTV cameras and controlled using dynamic message signs (DMS), Highway Advisory Radio (HAR), gates and barriers. Work zone information is coordinated with other groups (e.g., ISP, traffic management, other maintenance and construction centers). Work zone speeds and delays are provided to the motorist prior to the work zones. This service package provides control of field equipment in all maintenance and construction areas, including fixed, portable, and truck-mounted devices supporting both stationary and mobile work zones.</p>	Existing	DOTD District 02 Traffic Operation, DOTD ITS Field Equipment, DOTD ITS Section, DOTD MAP, Regional Transportation Management Center



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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
MC07	Work Zone Safety Monitoring	This service package provides warnings to maintenance personnel within a work zone about potential hazards within the work zone. It enables vehicles or the infrastructure to provide warnings to workers in a work zone when a vehicle is moving in a manner that appears to create an unsafe condition (e.g., moving at high speed or entering the work zone).	Planned	DOTD District 02 Traffic Operations, DOTD ITS Field Equipment, DOTD ITS Section, DOTD Statewide TMC, New Orleans ITS Field Equipment
MC08	Maintenance and Construction Activity Coordination	This service package supports the dissemination of maintenance and construction activity to centers that can utilize it as part of their operations, or to Transportation Information Centers who can provide the information to travelers. Center to center coordination of work plans supports adjustments to reduce disruption to regional transportation operations.	Planned	DOTD Adjacent District Office, DOTD District 02 Traffic Operations, DOTD ITS Section, DOTD MAP, DOTD Statewide TMC



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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
MC09	Infrastructure Monitoring	<p>This service package monitors the condition of pavement, bridges, tunnels, associated hardware, and other transportation-related infrastructure (e.g., embedded track, culverts) using both fixed and vehicle-based infrastructure monitoring sensors. Fixed sensors monitor vibration, stress, temperature, continuity, and other parameters and mobile sensors and data logging devices collect information on current infrastructure condition. This service package also monitors vehicle probes for vertical acceleration data and other probe data that may be used to determine current pavement condition.</p>	Planned	<p>Airport ITS Field Equipment, Causeway ITS Field Elements, CCCD ITS Field Elements, DOTD ITS Field Equipment, DOTD ITS Section</p>



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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
PM01	Parking Space Management	This service package monitors and manages parking spaces in lots, garages, and other parking areas and facilities. It assists in the management of parking operations by monitoring parking lot ingress and egress, parking space occupancy and availability. Infrastructure-based detectors and/or connected vehicles may be used to monitor parking occupancy. The service package shares collected parking information with local drivers and information providers for broader distribution.	Planned	Airport Parking



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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
PM03	Parking Electronic Payment	<p>This service package supports electronic collection of parking fees. This includes all types of parking fee collection including short term and long term parking and pay-for-use loading zones. It collects parking fees from in-vehicle equipment, contact or proximity cards, or any smart payment device. This service package supports both payment via a local point of sale in the parking area or direct payment via wide area wireless communications. User accounts may be established to facilitate secure payment using only a secure ID and enhance services offered to frequent customers.</p>	Planned	Airport Parking



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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
PM04	Regional Parking Management	This service package supports communication and coordination between equipped parking facilities and also supports regional coordination between parking facilities and traffic and transit management systems. This service package also shares information with transit management centers and transportation information centers to support multimodal travel planning. Information including current parking availability, system status, and operating strategies are shared to enable local parking facility management that supports regional transportation strategies.	Planned	Airport Parking, Caesars Superdome, Event Promoter, Jefferson Transit, RTA Transit



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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
PM05	Parking Reservations	<p>This service package manages parking reservations, allowing a traveler to reserve parking as part of the trip planning process. Parking reservations may be part of a trip plan provided by a Transportation Information Center (TIC) based on parking information provided by one or more parking facilities. The request may include preferences or special needs such as disabled parking space, oversize space, electric vehicle charging required, etc. This parking plan is provided to the traveler/driver, which includes the option to make a reservation if available. If the parking reservation is selected by the traveler/driver, then the TIC will negotiate the parking reservation with the parking facility and provide a confirmation to the traveler/driver.</p>	Planned	JeT Information Center, Personal Devices, RTA Information Center



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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
PM06	Loading Zone Management	<p>This service package manages the occupancy of spaces in a loading/unloading zone. It monitors the current status of each loading/unloading zone space under its control and makes this information available to arriving vehicles. The service package also operates a reservation system for loading zones, providing the capability for loading zone users, including commercial vehicle drivers or fleet operators, to reserve and pay for future use of a loading/unloading space. Interfaces to the general Vehicle OBE are included since loading zones may be used by any vehicle, though commercial vehicles are the most frequent users.</p>	Planned	Caesars Superdome, Commercial Vehicles Operations, Convention Center, Event Promoter



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PS01	Emergency Call-Taking and Dispatch	<p>This service package provides basic public safety call-taking and dispatch services. It includes emergency vehicle equipment, equipment used to receive and route emergency calls, and wireless communications that enable safe and rapid deployment of appropriate resources to an emergency. Coordination between Emergency Management Centers supports emergency notification between agencies. Wide area wireless communications between the Emergency Management Center and an Emergency Vehicle supports dispatch and provision of information to responding personnel. This service package also provides information to support dynamic routing of emergency vehicles. Traffic information, road conditions, and weather advisories are provided to enhance emergency vehicle routing. The Emergency Management Center provides routing information based on real-time conditions and has the option to request an ingress/egress route from the Traffic Management Center.</p>	Existing	<p>Causeway MAP, Causeway Police, CCCD Police, DOTD MAP, DOTD Statewide TMC, East Jefferson General Hospital EMS, HAZMAT Mobil Response, Jefferson Parish 911, Jefferson Parish Dept. of Emergency Management, Jefferson Parish Fire Department, JPSO, Kenner Police, Levee Police Patrol, Local Emergency Medical Service, Local Emergency Operations Centers, LSP Troop B, New Orleans EMS, New Orleans Fire Department, New Orleans Police Department, Orleans Parish Communications District (911), Other Fire Department, Parish Sheriffs Office, Regional Transportation Management Center, West Jefferson Medical Center EMS</p>
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
PS02	Emergency Response	<p>This service package supports emergency/ incident response by personnel in the field. It includes emergency vehicle equipment used to provide response status as well as video or images from either the vehicle or from emergency personnel in the field. Wide area wireless communications between the Emergency Management Center, Emergency Personnel and Emergency Vehicles supports a sharing of emergency response information. The service package also includes tactical decision support, resource coordination, and communications integration for Incident Commands that are established by first responders at or near the incident scene to support local management of an incident, including the functions and interfaces commonly supported by a mobile command center.</p>	Existing, Planned	<p>Causeway MAP, Causeway Police, DOTD District 02 Traffic Operation, DOTD MAP, DOTD Statewide TMC, Jefferson Parish 911, JPSO, Local Emergency Operations Centers, LSP Troop B, New Orleans Police Department, Orleans Parish Communications District (911), Parish Sheriffs Office, Regional Transportation Management Center</p>



PS02	Emergency Response (Instance 2)	<p>This service package manages both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. The service package includes incident detection capabilities through roadside surveillance devices (e.g. CCTV) and through regional coordination with other traffic management, maintenance and construction management and emergency management centers as well as rail operations and event promoters. Information from these diverse sources is collected and correlated by this service package to detect and verify incidents and implement an appropriate response. This service package supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel to confirmed incidents. The response may include traffic control strategy modifications or resource coordination between center subsystems. Incident response also includes presentation of information</p>	Existing	DOTD District 02 Traffic Operation, DOTD ITS Section, DOTD MAP, Regional Transportation Management Center
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		<p>to affected travelers using the Traffic Information Dissemination service package and dissemination of incident information to travelers through the Broadcast Traveler Information or Interactive Traveler Information service packages. The roadside equipment used to detect and verify incidents also allows the operator to monitor incident status as the response unfolds. The coordination with emergency management might be through a CAD system or through other communication with emergency field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.</p>		



Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
PS03	Emergency Vehicle Preemption	<p>This service package provides signal preemption for public safety first responder vehicles. Both traditional signal preemption systems and new systems based on connected vehicle technology are covered. In more advanced systems, movement of public safety vehicles through the intersection can be facilitated by clearing queues and holding conflicting phases. In addition, this SP also covers the transition back to normal traffic signal operations after providing emergency vehicle preemption.</p>	Planned	<p>Causeway MAP, Causeway Police, CCCD Police, DOTD MAP, East Jefferson General Hospital EMS, HAZMAT Mobil Response, Jefferson Parish 911, Jefferson Parish Fire Department, JPSO, Kenner Police, Levee Police Patrol, Local Emergency Medical Service, LSP Troop B, New Orleans EMS, New Orleans Fire Department, New Orleans Police Department, Orleans Parish Communications District (911), Other Fire Department, Parish Sheriffs Office, Regional Transportation Management Center, West Jefferson Medical Center EMS</p>



Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
PS04	Mayday Notification	<p>This service package provides the capability for a vehicle to automatically transmit an emergency message when the vehicle has been involved in a crash or other distress situation. An automatic crash notification feature transmits key data on the crash recorded by sensors mounted in the vehicle (e.g. deployment of airbags) without the need for involvement of the driver. The emergency message is sent to emergency response services, which determines and carries out the appropriate response. This service package allows passing vehicles to receive and forward mayday requests in areas where no communications infrastructure exists. Emergency notifications from personal devices are also supported.</p>	Planned	Local Emergency Operations Centers, LSP Troop B



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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
PS05	Vehicle Emergency Response	<p>The Vehicle Emergency Response service package provides arriving public safety vehicles with information from connected vehicles involved in a crash. Emergency responders need information about the vehicles involved in a crash to respond safely and effectively to the vehicle crash. Information such as HAZMAT data can assist the responders. Information about air bag activations and other measures indicating the severity of the crash can provide useful input to ambulance staff. In addition information about the power system of the vehicle (e.g. hybrid, electric, or internal combustion engine) can affect the response.</p>	Planned	Local Emergency Operations Centers, LSP Troop B



PS06	Incident Scene Pre-Arrival Staging Guidance for Emergency Responders	<p>This service package will provide situational awareness to and coordination among emergency responders - upon dispatch, while en route to establish incident scene work zones, upon initial arrival and staging of assets, and afterward if circumstances require additional dispatch and staging. It collects a variety of data from emergency, traffic, and maintenance centers. It includes a vehicle and equipment staging function that supplies the en route responders with additional information about the scene of an incident that they can use to determine where to stage personnel and equipment prior to their arrival on-scene. The service package also includes a dynamic routing function which provides emergency responders with real-time navigation instructions to travel from their base to the incident scene, accounting for traffic conditions, road closures, and snowplow reports if needed. In addition it includes an emergency responder status reporting function which continuously monitors the location of the en route responder vehicles as well as the vehicles already on-scene. The function develops and</p>	Planned	<p>DOTD ITS Section, DOTD MAP, Jefferson Parish 911, Jefferson Parish Department of Emergency Management, Jefferson Parish Fire Department, Local Emergency Operations Centers, LSP Troop B, New Orleans EMS, New Orleans Fire Department, New Orleans Police Department, Other Fire Department, Parish Sheriffs Office</p>
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		maintains the current position of the responder's vehicles and provides updates for estimated time of arrival (ETA).		
PS07	Incident Scene Safety Monitoring	This service package employs communications technologies to provide warnings and alerts relating to incident zone operations. One aspect of the service is an in-vehicle messaging system that provides drivers with merging and speed guidance around an incident. Another aspect is providing in-vehicle incident scene alerts to drivers, both for the protection of the drivers as well as incident zone personnel. A third aspect is a warning system for on-scene workers when a vehicle approaching or in the incident zone is being operated outside of safe parameters for the conditions.	Planned	DOTD ITS Field Equipment, DOTD ITS Section, DOTD MAP, DOTD Statewide TMC



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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
PS08	Roadway Service Patrols	<p>This service package supports roadway service patrol vehicles that monitor roads and aid motorists, offering rapid response to minor incidents (flat tire, accidents, out of gas) to minimize disruption to the traffic stream. If problems are detected, the roadway service patrol vehicles will provide assistance to the motorist (e.g., push a vehicle to the shoulder or median). The service package monitors service patrol vehicle locations and supports vehicle dispatch to identified incident locations. Incident information collected by the service patrol is shared with traffic, maintenance and construction, and traveler information systems.</p>	Existing	Causeway MAP, Causeway Police, Causeway Traffic Operations, DOTD MAP, DOTD Statewide TMC, Regional Transportation Management Center



PS09	Transportation Infrastructure Protection	<p>This service package includes the monitoring of transportation infrastructure (e.g., bridges, tunnels and management centers) for potential threats using sensors and surveillance equipment and barrier and safeguard systems to control access, preclude an incident, and mitigate the impact of an incident if it occurs. Threats can result from acts of nature (e.g., hurricanes, earthquakes), terrorist attacks or other incidents causing damage to the infrastructure (e.g., stray barge hitting a bridge support). Infrastructure may be monitored with acoustic, environmental threat (such as nuclear, biological, chemical, and explosives), infrastructure condition and integrity, motion and object sensors and video and audio surveillance equipment. Data from such sensors and surveillance equipment may be processed in the field or sent to a center for processing. The data enables operators at the center to detect and verify threats. When a threat is detected, agencies are notified. Detected threats or advisories received from other agencies result in an increased level of system preparedness. In response to threats, barrier and safeguard systems may be</p>	Existing	Causeway ITS Field Elements, DOTD Flood Warning System, DOTD ITS Field Equipment
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		<p>activated to deter an incident, control access to an area or mitigate the impact of an incident. Barrier systems include gates, barriers and other automated and remotely controlled systems that manage entry to transportation infrastructure. Safeguard systems include blast shields, exhaust systems and other automated and remotely controlled systems that mitigate impact of an incident.</p>		



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PS10	Wide-Area Alert	<p>This service package uses ITS driver and traveler information systems to alert the public in emergency situations such as child abductions, severe weather events, civil emergencies, and other situations that pose a threat to life and property. The alert includes information and instructions for transportation system operators and the traveling public, improving public safety and enlisting the public's help in some scenarios. The ITS technologies will supplement and support other emergency and homeland security alert systems such as the Emergency Alert System (EAS). When an emergency situation is reported and verified and the terms and conditions for system activation are satisfied, a designated agency broadcasts emergency information to traffic agencies, transit agencies, information service providers, toll operators, and others that operate ITS systems. The ITS systems, in turn, provide the alert information to transportation system operators and the traveling public using ITS technologies such as dynamic message signs, highway advisory radios, in-vehicle displays, transit</p>	Planned	<p>DOTD Statewide TMC, Jefferson Parish 911, Jefferson Parish Dept. of Emergency Management, Local Emergency Operations Centers, LSP Troop B, NOHSEP, Orleans Parish Communications District (911), Regional Transportation Management Center</p>
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		displays, 511 traveler information systems, and traveler information websites.		
PS11	Early Warning System	This service package monitors and detects potential, looming, and actual disasters including natural disasters (hurricanes, earthquakes, floods, winter storms, tsunamis, etc.) and technological and man-made disasters (hazardous materials incidents, nuclear power plant accidents, and acts of terrorism including nuclear, chemical, biological, and radiological weapons attacks). The service package monitors alerting and advisory systems, ITS sensors and surveillance systems, field reports, and emergency call-taking systems to identify emergencies and notifies all responding agencies of detected emergencies.	Planned	DOTD Statewide TMC, Jefferson Parish Dept. of Emergency Management, Local Emergency Operations Centers, LSP Troop B, NOHSEP, Regional Transportation Management Center



PS12	Disaster Response and Recovery	<p>This service package enhances the ability of the surface transportation system to respond to and recover from disasters. It addresses the most severe incidents that require an extraordinary response from outside the local community. All types of disasters are addressed including natural disasters (hurricanes, earthquakes, floods, winter storms, tsunamis, etc.) and technological and man-made disasters (hazardous materials incidents, nuclear power plant accidents, and national security emergencies such as nuclear, chemical, biological, and radiological weapons attacks). The service package supports coordination of emergency response plans, including general plans developed before a disaster as well as specific tactical plans with short time horizon that are developed as part of a disaster response. The service package provides enhanced access to the scene for response personnel and resources, provides better information about the transportation system in the vicinity of the disaster, and maintains situation awareness regarding the disaster itself. In addition, this service package tracks and</p>	Planned	<p>DOTD Statewide TMC, Jefferson Parish Dept. of Emergency Management, Local Emergency Medical Service, Local Emergency Operations Centers, LSP Troop B, NOHSEP, Regional Transportation Management Center</p>
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		<p>coordinates the transportation resources - the transportation professionals, equipment, and materials - that constitute a portion of the disaster response. The service package identifies the key points of integration between transportation systems and the public safety, emergency management, public health, and other allied organizations that form the overall disaster response. In this service package, the Emergency Management Center represents the federal, regional, state, and local Emergency Operations Centers and the Incident Commands that are established to respond to the disaster. The interface between the Emergency Management Center and the other centers provides situation awareness and resource coordination among transportation and other allied response agencies. In its role, traffic management implements special traffic control strategies and detours and restrictions to effectively manage traffic in and around the disaster. Maintenance and construction provides damage assessment of road network facilities and manages service restoration. Transit</p>		
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		<p>management provides a similar assessment of status for transit facilities and modifies transit operations to meet the special demands of the disaster. As immediate public safety concerns are addressed and disaster response transitions into recovery, this service package supports transition back to normal transportation system operation, recovering resources, managing on-going transportation facility repair, supporting data collection and revised plan coordination, and other recovery activities. This service package builds on the basic traffic incident response service that is provided by TM08, the Traffic Incident Management service package. This service package addresses the additional complexities and coordination requirements that are associated with the most severe incidents that warrant an extraordinary response from outside the local jurisdictions and require special measures such as the activation of one or more emergency operations centers. Many users of ARC-IT will want to consider both TM08 and this service package since every region is concerned with both day-to-day management of traffic-</p>		
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		<p>related incidents and occasional management of disasters that require extraordinary response. Disaster Response and Recovery is also supported by PS14, the "Disaster Traveler Information" service package that keeps the public informed during a disaster response. See that service package for more information.</p>		



PS13	Evacuation and Reentry Management	<p>This service package supports evacuation of the general public from a disaster area and manages subsequent reentry to the disaster area. The service package addresses evacuations for all types of disasters, including disasters like hurricanes that are anticipated and occur slowly, allowing a well-planned orderly evacuation, as well as disasters like terrorist acts that occur rapidly, without warning, and allow little or no time for preparation or public warning. This service package supports coordination of evacuation plans among the federal, state, and local transportation, emergency, and law enforcement agencies that may be involved in a large-scale evacuation. All affected jurisdictions (e.g., states and counties) at the evacuation origin, evacuation destination, and along the evacuation route are informed of the plan. Information is shared with 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. Reversible lanes, shoulder use, closures, special signal</p>	Planned	<p>DOTD District 02 Traffic Operation, DOTD Statewide TMC, Jefferson Parish Dept. of Emergency Management, Local Emergency Operations Centers, LSP Troop B, NOHSEP, Regional Transportation Management Center</p>
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		<p>control strategies, and other special strategies may be implemented to maximize capacity along the evacuation routes. Transit resources play an important role in an evacuation, removing many people from an evacuated area while making efficient use of limited capacity. Additional shared transit resources may be added and managed in evacuation scenarios. Resource requirements are forecast based on the evacuation plans, and the necessary resources are located, shared between agencies if necessary, and deployed at the right locations at the appropriate times. Evacuations are also supported by PS14, the "Disaster Traveler Information" service package, which keeps the public informed during evacuations. See that service package for more information.</p>		



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PS14	Disaster Traveler Information	<p>This service package uses 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. This service package collects information from multiple sources including traffic, transit, public safety, emergency management, shelter provider, and travel service provider organizations. The collected information is processed and the public is provided with real-time disaster and evacuation information using ITS traveler information systems. A disaster will stress the surface transportation system since it may damage transportation facilities at the same time that it places unique demands on these facilities to support public evacuation and provide access for emergency responders. Similarly, a disaster may interrupt or degrade the operation of many traveler information systems at the same time that safety-critical information must be provided to the traveling public. This service package keeps the public informed in these</p>	Planned	<p>Jefferson Parish Dept. of Emergency Management, Local Emergency Operations Centers, Local Print and Broadcast Channels, NOHSEP, Private Traveler Information Service Providers, Tourism and Travel Service Information Sources</p>
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		<p>scenarios, using all available means to provide information about the disaster area including damage to the transportation system, detours and closures in effect, special traffic restrictions and allowances, special transit schedules, and real-time information on traffic conditions and transit system performance in and around the disaster. This service package also provides emergency information to assist the public with evacuations when necessary. Information on mandatory and voluntary evacuation zones, evacuation times, and instructions are provided. Available evacuation routes and destinations and current and anticipated travel conditions along those routes are provided so evacuees are prepared and know their destination and preferred evacuation route. Information on available transit services and traveler services (shelters, medical services, hotels, restaurants, gas stations, etc.) is also provided. In addition to general evacuation information, this service package provides specific evacuation trip planning information that is tailored for the evacuee based on origin, selected destination, and evacuee-</p>		
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		<p>specified evacuation requirements and route parameters. This service package augments the Traveler Information (TI) service packages that provide traveler information on a day-to-day basis for the surface transportation system. This service package provides focus on the special requirements for traveler information dissemination in disaster situations.</p>		
PT01	Transit Vehicle Tracking	<p>This service package monitors current transit vehicle location using an Automated Vehicle Location System. The location data may be used to determine real time schedule adherence and update the transit system's schedule in real-time.</p>	Existing	<p>Jefferson Transit (JeT), RTA Transit, St. Bernard Urban Rapid Transit (SBURT)</p>



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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
PT02	Transit Fixed-Route Operations	<p>This service package performs automated dispatch and system monitoring for fixed-route and flexible-route transit services. This service performs scheduling activities including the creation of schedules, blocks and runs, as well as operator assignment. This service monitors the transit vehicle trip performance against the schedule and provides information displays at the Transit Management Center.</p>	Existing	<p>Jefferson Transit (JeT), RTA Transit, St. Bernard Urban Rapid Transit (SBURT)</p>



Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
PT03	Dynamic Transit Operations	<p>The Dynamic Transit Operations service package allows travelers to request trips and obtain itineraries using a personal device such as a smart phone, tablet, or personal computer. The trips and itineraries cover multiple transportation services (public transportation modes, private transportation services, shared-ride, walking and biking). This service package builds on existing technology systems such as computer-aided dispatch/ automated vehicle location (CAD/AVL) systems and automated scheduling software, providing a coordination function within and between transit providers that would dynamically schedule and dispatch or modify the route of an in-service vehicle by matching compatible trips together. TI06 covers other shared use transportation options.</p>	Existing, Planned	<p>Jefferson Transit (JeT), JeT Information Center, RTA Information Center, RTA Transit, St. Bernard Urban Rapid Transit (SBURT)</p>



Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
PT04	Transit Fare Collection Management	<p>This service package manages transit fare collection on-board transit vehicles and at transit stops/stations using electronic means. It allows transit users to use a traveler card or other electronic payment device such as a smart phone. Readers located either in the infrastructure or on-board the transit vehicles enable electronic fare payment. Data is processed, stored, and displayed on the transit vehicle and communicated as needed to the Transit Management Center. This service supports ad-hoc payments to the transport provider (typically through the 'payment' and 'fare' flows), payments using a transport provider's account system using account-based tokens or integrated multi-provider account systems (typically through the 'account', 'secureID' and 'authorization' flows).</p>	Existing	Jefferson Transit (JeT), RTA Transit



PT05	Transit Security	<p>This service package provides for the physical security of transit passengers and transit vehicle operators. On-board equipment performs surveillance and sensor monitoring in order to identify potentially hazardous situations. The surveillance equipment includes video (e.g., CCTV cameras), audio systems and/or event recorder systems. The sensor equipment includes threat sensors (e.g., chemical agent, toxic industrial chemical, biological, explosives, and radiological sensors) and object detection sensors (e.g., metal detectors). Transit user or transit vehicle operator activated alarms are provided on-board. Public areas (e.g., transit stops, park and ride lots, stations) are also monitored with similar surveillance and sensor equipment and provided with transit user activated alarms. In addition this service package provides surveillance and sensor monitoring of non-public areas of transit facilities (e.g., transit yards) and transit infrastructure such as bridges, tunnels, and transit railways or bus rapid transit (BRT) guideways. The surveillance equipment includes video and/or audio</p>	Existing	<p>Jefferson Transit (JeT), RTA Transit, St. Bernard Urban Rapid Transit (SBURT)</p>
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		<p>systems. The sensor equipment includes threat sensors and object detection sensors as described above as well as, intrusion or motion detection sensors and infrastructure integrity monitoring (e.g., rail track continuity checking or bridge structural integrity monitoring).Most of the surveillance and sensor data that is collected by this service package may be monitored by either the Emergency Management Center or the Transit Management Center, providing two possible approaches to implementing this service package. This service package also supports remote transit vehicle disabling and transit vehicle operator authentication by the Transit Management Center.</p>		



Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
PT06	Transit Fleet Management	<p>This service package supports automatic transit maintenance scheduling and monitoring. On-board condition sensors monitor system status and transmit critical status information to the Transit Management Center. The Transit Management Center processes this data and schedules preventative and corrective maintenance. The service package also supports the day to day management of the transit fleet inventory, including the assignment of specific transit vehicles to blocks and the assignment of transit vehicle operators to runs.</p>	Planned	Jefferson Transit (JeT), RTA Transit, St. Bernard Urban Rapid Transit (SBURT)
PT07	Transit Passenger Counting	<p>This service package counts the number of passengers entering and exiting a transit vehicle using sensors mounted on the vehicle and communicates the collected passenger data back to the management center. The collected data can be used to calculate reliable ridership figures and measure passenger load information at particular stops/stations.</p>	Existing	Jefferson Transit (JeT), RTA Transit



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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
PT08	Transit Traveler Information	<p>This service package provides transit users at transit stops/stations and on-board transit vehicles with ready access to transit information. The information services include transit stop/station annunciation, imminent arrival signs, and real-time transit schedule displays that are of general interest to transit users. Systems that provide custom transit trip itineraries and other tailored transit information services are also represented by this service package.</p>	Planned	<p>Jefferson Transit (JeT), JeT Information Center, Personal Devices, RTA Information Center, RTA Transit</p>



Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
PT09	Transit Signal Priority	<p>The Transit Signal Priority service package allows a transit vehicle to request priority at one or a series of intersections. The request can be made via short range communications from the transit vehicle or using track circuits or other rail infrastructure for light rail transit implementations. The service package provides feedback to the transit vehicle operator indicating whether the signal priority has been granted or not. It supports transit-specific signal indicators that can be used to exclusively give right-of-way to transit vehicles, not other road users at the intersection. This service package can contribute to improved operating performance of the transit vehicles by reducing the time spent stopped at a red light.</p>	Planned	DOTD District 02 Traffic Signal System, RTA Transit



Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
PT11	Transit Pedestrian Indication	The Transit Pedestrian Indication service package provides vehicle to device communications to inform pedestrians at a station or stop about the presence of a transit vehicle. In addition, this service package would inform the transit vehicle operator about the presence of pedestrians nearby and those waiting for the transit vehicle. It would help prevent collisions between transit vehicles and pedestrians.	Planned	Personal Device
PT12	Transit Vehicle at Station/Stop Warnings	The Transit Vehicle at Station/Stop Warnings service package informs nearby vehicles of the presence of a transit vehicle at a station or stop. The service package also indicates the intention of the transit vehicle in terms of pulling into or out of a station/stop. The transit vehicle also exchanges information with nearby Personal Information Devices so that travelers in the vicinity of the transit vehicle are aware of imminent transit vehicle movement and the vehicle driver is aware of nearby pedestrians and other vulnerable road users.	Planned	Jefferson Transit, RTA Transit, St. Bernard Urban Rapid Transit



Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
PT14	Multi-modal Coordination	This service package establishes two way communications between multiple transit and traffic agencies to improve service coordination. Multimodal coordination between transit agencies can increase traveler convenience at transit transfer points and clusters (a collection of stops, stations, or terminals where transfers can be made conveniently) and also improve operating efficiency.	Planned	Airport Parking, DOTD District 02 Traffic Operation, Jefferson Parish Traffic Operations, Jefferson Transit (JeT), New Orleans Traffic Operations, Regional Transportation Management Center, RTA Transit
PT15	Transit Stop Request	This service package allows a transit passenger to send a stop request to an approaching transit vehicle. The transit vehicle receives the request and notifies the vehicle operator of the stop request.	Planned	Jefferson Transit, RTA Transit, St. Bernard Urban Rapid Transit



ST01	Emissions Monitoring	<p>This service package monitors individual vehicle emissions and provides general air quality monitoring using distributed sensors to collect the data. The collected information is transmitted to the Emissions Management Center for processing. Both area wide air quality monitoring and point emissions monitoring are supported by this service package. For area wide monitoring, this service package measures air quality, identifies sectors that are non-compliant with air quality standards, and collects, stores and reports supporting statistical data. For point emissions monitoring, this service package collects data from on-board diagnostic systems and measures tail pipe emissions to identify vehicles that exceed emissions standards and/or clean vehicles that could be released from standard emissions tests, depending on policy and regulations. Summary emissions information or warnings can also be displayed to drivers. The gathered information can be used to implement environmentally sensitive travel demand management (TDM) programs, policies, and regulations.</p>	Planned	DOTD District 02 Traffic Operation, NORPC
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
ST05	Electric Charging Stations Management	<p>The Electric Charging Station Management service package provides an exchange of information between the electric vehicle and charging station to manage the charging operation. The service package also supports interaction between a traveler in a vehicle and a transportation information center in order to plan a trip that will involve requesting locations and availability of charging stations as well as reserving a spot at a charging station if needed. The agency or company operating the charging station can use vehicle information such as the capability of the vehicle (e.g. operational status of the electrical system, how many amps can the vehicle handle, and % charge complete) to determine that the charge is being properly applied and determine an estimated time to complete charging.</p>	Planned	Private



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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
ST06	HOV/HOT Lane Management	<p>This service package manages high-occupancy vehicle (HOV) and high-occupancy toll (HOT) lanes by coordinating freeway ramp meters and connector signals with HOV lane usage signals. Preferential treatment is given to HOV lanes using special bypasses, reserved lanes, and exclusive rights-of-way that may vary by time of day. Vehicle occupancy can be detected to verify HOV compliance and to notify enforcement agencies of violations. For HOT lane configurations, tolls are collected for vehicles that do not meet the high-occupancy criteria for the lane.</p>	Existing	<p>CCCD ITS Field Elements, Regional Transportation Management Center</p>



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TI01	Broadcast Traveler Information	<p>This service package provides a digital broadcast service that disseminates traveler information to all equipped travelers within range. It collects traffic conditions, advisories, general public transportation, toll and parking information, incident information, roadway maintenance and construction information, air quality and weather information, and broadcasts the information to travelers using technologies such as FM subcarrier, satellite radio, cellular data broadcasts, and Internet streaming technologies. This service package also provides location-specific or situation-relevant information to travelers in vehicles using communications infrastructure supporting mobility service packages for connected vehicles. To deliver real-time traveler information including travel times, incident information, road conditions, and emergency traveler information to vehicles as they pass connected vehicle roadside equipment along their route. This service package provides public information that is available to all equipped vehicles in the vicinity of the roadside equipment.</p>	Planned	<p>Airport Landside Operations, Causeway Traffic Operations, JeT Information Center, Local Print and Broadcast Channels, LSP Troop B, New Orleans Police Department, New Orleans Traffic Operations, Personal Devices, Private Traveler Information Service Providers, Regional Transportation Management Center, RTA Information Center, Tourism and Travel Service Information Sources</p>
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
TI01	Broadcast Traveler Information (Instance 1)	<p>This service package collects traffic conditions, advisories, general public transportation, toll and parking information, incident information, roadway maintenance and construction information, air quality and weather information, and broadcasts the information to travelers using technologies such as FM subcarrier, satellite radio, cellular data broadcasts, and Internet web casts. The information may be provided directly to travelers or provided to merchants and other traveler service providers so that they can better inform their customers of travel conditions. Different from the service package ATMS06 - Traffic Information Dissemination, which provides localized HAR and DMS information capabilities, ATIS01 provides a wide area digital broadcast service. Successful deployment of this service package relies on availability of real-time traveler information from roadway instrumentation, probe vehicles or other sources.</p>	Existing	<None>



Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
TI01	Broadcast Traveler Information (Instance 2)	<p>This service package collects traffic conditions, advisories, general public transportation, toll and parking information, incident information, roadway maintenance and construction information, air quality and weather information, and broadcasts the information to travelers using technologies such as FM subcarrier, satellite radio, cellular data broadcasts, and Internet web casts. The information may be provided directly to travelers or provided to merchants and other traveler service providers so that they can better inform their customers of travel conditions. Different from the service package ATMS06 - Traffic Information Dissemination, which provides localized HAR and DMS information capabilities, ATIS01 provides a wide area digital broadcast service. Successful deployment of this service package relies on availability of real-time traveler information from roadway instrumentation, probe vehicles or other sources.</p>	Existing	DOTD District 02 Traffic Operation, Regional Transportation Management Center



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TI02	Personalized Traveler Information	<p>This service package provides tailored information in response to a traveler request. Both real-time interactive request/response systems and information systems that "push" a tailored stream of information to the traveler based on a submitted profile are supported. The traveler can obtain current information regarding traffic conditions, roadway maintenance and construction, transit services, ride share/ride match, parking management, detours and pricing information. Although the Internet is the predominate network used for traveler information dissemination, a range of two-way wide-area wireless and fixed-point to fixed-point communications systems may be used to support the required data communications with the traveler. A variety of interactive devices may be used by the traveler to access information prior to a trip or en route including phone via a 511-like portal and web pages via smart phone, tablet, personal computer, and a variety of in-vehicle devices.</p>	Planned	Personal Devices, Private Traveler Information Service Providers
TI06	Shared Use Mobility and	This service package addresses the range of	Planned	<None>



	<p>Dynamic Ridesharing</p>	<p>shared use mobility options that support a complete trip for travelers. This service supports planning, reservations, and on-trip guidance for these operations. The complete trip may be arranged and undertaken using an internet connected personal device. The service package includes temporary use of a vehicle or micromobility vehicle by the traveler as well as having a vehicle pick up the traveler at a specific location and take them to another location. This service package also addresses dynamic ridesharing/ride matching services to travelers. Dynamic ridesharing allows travelers to arrange carpool trips through a personal device with a wireless connection to a ride matching system (e.g., a web-based application). It uses inputs from both passengers and drivers pre-trip, during the trip, and post-trip . These inputs are then translated into “optimal” pairings between passengers and drivers to provide both with a convenient route between their two origin and destination locations. After the trip, information is provided back to the service package to improve the</p>		
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		user's experience for future trips.		
TI07	In-Vehicle Signage	<p>This service package augments regulatory, warning, and informational signs and signals by providing information directly to drivers through in-vehicle devices. The information provided would include static sign information (e.g., stop, curve warning, guide signs, service signs, and directional signs) and dynamic information (e.g., current signal states including highway intersection and highway-rail intersection status and local conditions warnings identified by local environmental sensors). This service package also includes the capability for maintenance and construction, emergency, and transit vehicles to transmit sign information to vehicles in the vicinity so that in vehicle signing can be used without fixed infrastructure in areas such as work zones, around incidents, and at bus stops.</p>	Planned	<None>



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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
TI09	Travel Services Information and Reservation	This service package provides travel service information and reservation services to the traveler pre-trip and while en route. This includes information for tourist attractions, lodging, dining, service stations, parking, emergency services, and other services and businesses of interest to the traveler.	Planned	<None>



Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
TM01	Infrastructure-Based Traffic Surveillance	<p>This service package includes traffic detectors, other surveillance equipment, the supporting field equipment, and Center to Field communications to transmit the collected data back to the Traffic Management Center. The derived data can be used locally such as when traffic detectors are connected directly to a signal control system or remotely (e.g., when a CCTV system sends data back to the Traffic Management Center). The data generated by this service package enables traffic managers to monitor traffic and road conditions, identify and verify incidents, detect faults in indicator operations, and collect census data for traffic strategy development and long range planning. The collected data can also be analyzed and made available to users and the Traveler Information Center physical object.</p>	Existing	<p>Causeway ITS Field Elements, Causeway Traffic Operations, CCCD ITS Field Elements, DOTD District 02 Traffic Operation, DOTD ITS Field Equipment, DOTD Statewide TMC, Jefferson Parish ITS Field Equipment, Jefferson Parish Traffic Operations, New Orleans ITS Field Equipment, New Orleans Traffic Operations, Regional Transportation Management Center</p>



Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
TM01	Infrastructure-Based Traffic Surveillance (Instance 2)	<p>This service package includes traffic detectors, other surveillance equipment, the supporting field equipment, and fixed-point to fixed-point communications to transmit the collected data back to the Traffic Management Subsystem. The derived data can be used locally such as when traffic detectors are connected directly to a signal control system or remotely (e.g., when a CCTV system sends data back to the Traffic Management Subsystem). The data generated by this service package enables traffic managers to monitor traffic and road conditions, identify and verify incidents, detect faults in indicator operations, and collect census data for traffic strategy development and long range planning. The collected data can also be analyzed and made available to users and the Information Service Provider Subsystem.</p>	Existing	DOTD District 02 Traffic Operation, DOTD ITS Field Equipment, DOTD MAP, Regional Transportation Management Center



TM02	Vehicle-Based Traffic Surveillance	<p>This service package uses probe data information obtained from vehicles in the network to support traffic operations, including incident detection and the implementation of localized operational strategies. Since traffic data is collected from vehicles, travel times and other related traffic performance measures are available. This service package includes the capability to collect data from Connected Vehicles so that "probe" data can be collected from all equipped vehicles, providing access to a large vehicle population as penetration increases. Incident detection enables transportation agencies to determine the location of potential incidents so the agencies can respond more quickly to the incident and mitigate any negative impacts to the transportation network. Vehicle data that can be used to detect potential incidents include changes in vehicle speeds indicating the disruption of traffic flow, when a vehicle's safety systems have been activated or deployed, or sudden vehicle turns or deceleration at a specific location (indicating a potential obstacle in the roadway).</p>	Existing, Planned	Causeway Toll Tag Office, Causeway Traffic Operations, CCCD Electronic Toll Collection Center, DOTD Statewide TMC, Regional Transportation Management Center
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
TM03	Traffic Signal Control	<p>This service package provides the central control and monitoring equipment, communication links, and the signal control equipment that support traffic control at signalized intersections. A range of traffic signal control systems are represented by this service package ranging from fixed-schedule control systems to fully traffic responsive systems that dynamically adjust control plans and strategies based on current traffic conditions and priority requests. This service package is generally an intra-jurisdictional package. Systems that achieve coordination across jurisdictions by using a common time base or other strategies that do not require real time coordination would also be represented by this package. Coordination of traffic signal systems using real-time communications is covered in the TM07-Regional Traffic Management service package. This service package is consistent with typical traffic signal control systems.</p>	Existing	<p>DOTD District 02 Traffic Operation, DOTD District 02 Traffic Signal System, Jefferson Parish Traffic Operations, Jefferson Parish Traffic Signal System, New Orleans Traffic Operations, New Orleans Traffic Signal System, Regional Transportation Management Center</p>



Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
TM05	Traffic Metering	<p>This service package provides central monitoring and control, communications, and field equipment that support metering of traffic. It supports the complete range of metering strategies including ramp, interchange, and mainline metering. This package incorporates the instrumentation included in the TM01 service package (traffic sensors are used to measure traffic flow and queues) to support traffic monitoring so responsive and adaptive metering strategies can be implemented. Also included is configurable field equipment to provide information to drivers approaching a meter, such as advance warning of the meter, its operational status (whether it is currently on or not, how many cars per green are allowed, etc.), lane usage at the meter (including a bypass lane for HOVs) and existing queue at the meter.</p>	Planned	Causeway ITS Field Elements, Causeway Traffic Operations, CCCD ITS Field Elements, DOTD ITS Field Equipment, DOTD Statewide TMC, Regional Transportation Management Center



Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
TM05	Traffic Metering (Instance 1)	<p>This service package provides central monitoring and control, communications, and field equipment that support metering of traffic. It supports the complete range of metering strategies including ramp, interchange, and mainline metering. This package incorporates the instrumentation included in the Network Surveillance service package (traffic sensors are used to measure traffic flow and queues) to support traffic monitoring so responsive and adaptive metering strategies can be implemented. Also included is configurable field equipment to provide information to drivers approaching a meter, such as advance warning of the meter, its operational status (whether it is currently on or not, how many cars per green are allowed, etc.), lane usage at the meter (including a bypass lane for HOVs) and existing queue at the meter.</p>	Planned	DOTD District 02 Traffic Operation, DOTD ITS Section, DOTD Statewide TMC, Regional Transportation Management Center



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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
TM05	Traffic Metering (Instance 2)	<p>This service package provides central monitoring and control, communications, and field equipment that support metering of traffic. It supports the complete range of metering strategies including ramp, interchange, and mainline metering. This package incorporates the instrumentation included in the Network Surveillance service package (traffic sensors are used to measure traffic flow and queues) to support traffic monitoring so responsive and adaptive metering strategies can be implemented. Also included is configurable field equipment to provide information to drivers approaching a meter, such as advance warning of the meter, its operational status (whether it is currently on or not, how many cars per green are allowed, etc.), lane usage at the meter (including a bypass lane for HOVs) and existing queue at the meter.</p>	Planned	DOTD District 02 Traffic Operation, DOTD Statewide TMC, Regional Transportation Management Center



<p>TM06</p>	<p>Traffic Information Dissemination</p>	<p>This service package provides driver information using roadway equipment such as dynamic message signs or highway advisory radio. A wide range of information can be disseminated including traffic and road conditions, closure and detour information, travel restrictions, incident information, and emergency alerts and driver advisories. This package provides information to drivers at specific equipped locations on the road network. Careful placement of the roadway equipment provides the information at points in the network where the drivers have recourse and can tailor their routes to account for the new information. This package also covers the equipment and interfaces that provide traffic information from a traffic management center to the media (for instance via a direct tie-in between a traffic management center and radio or television station computer systems), Transit Management, Emergency Management, and Transportation Information Centers. A link to the Maintenance and Construction Management Center allows real time information on road/bridge closures and restrictions due to maintenance and</p>	<p>Existing</p>	<p>Causeway ITS Field Elements, Causeway Traffic Operations, Causeway Traveler Information System, CCCD ITS Field Elements, DOTD ITS Field Equipment, DOTD Statewide TMC, Regional Transportation Management Center</p>
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		construction activities to be disseminated.		



TM07	Regional Traffic Management	<p>This service package provides for the sharing of information and control among traffic management centers to support regional traffic management strategies. Regional traffic management strategies that are supported include inter-jurisdictional, real-time coordinated traffic signal control systems and coordination between freeway operations and traffic signal control within a corridor. This service package advances the TM03-Traffic Signal Control and TM05-Traffic Metering service packages by adding the communications links and integrated control strategies that enable integrated, interjurisdictional traffic management. The nature of optimization and extent of information and control sharing is determined through working arrangements between jurisdictions. This package relies principally on roadside instrumentation supported by the Traffic Signal Control and Traffic Metering service packages and adds hardware, software, and fixed-point communications capabilities to implement traffic management strategies that are coordinated between allied traffic management centers. Several levels of coordination are supported</p>	Existing	<p>Causeway Traffic Operations, DOTD District 02 Traffic Operation, DOTD Statewide TMC, Jefferson Parish Traffic Operations, New Orleans Traffic Operations, Regional Transportation Management Center</p>
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		from sharing of information through sharing of device control between traffic management centers.		



TM07	Regional Traffic Management (Instance 1)	<p>This service package provides for the sharing of traffic information and control among traffic management centers to support regional traffic management strategies. Regional traffic management strategies that are supported include inter-jurisdictional, real-time coordinated traffic signal control systems and coordination between freeway operations and traffic signal control within a corridor. This service package advances the ATMS03-Traffic Signal Control and ATMS04-Traffic Metering service packages by adding the communications links and integrated control strategies that enable integrated, interjurisdictional traffic management. The nature of optimization and extent of information and control sharing is determined through working arrangements between jurisdictions. This package relies principally on roadside instrumentation supported by the Traffic Signal Control and Traffic Metering service packages and adds hardware, software, and fixed-point to fixed-point communications capabilities to implement traffic management strategies that are coordinated between allied</p>	Existing	DOTD District 02 Traffic Operation, DOTD ITS Section, DOTD Statewide TMC, Regional Transportation Management Center
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		traffic management centers. Several levels of coordination are supported from sharing of information through sharing of control between traffic management centers.		



TM07	Regional Traffic Management (Instance 2)	<p>This service package provides for the sharing of traffic information and control among traffic management centers to support regional traffic management strategies. Regional traffic management strategies that are supported include inter-jurisdictional, real-time coordinated traffic signal control systems and coordination between freeway operations and traffic signal control within a corridor. This service package advances the ATMS03-Traffic Signal Control and ATMS04-Traffic Metering service packages by adding the communications links and integrated control strategies that enable integrated, interjurisdictional traffic management. The nature of optimization and extent of information and control sharing is determined through working arrangements between jurisdictions. This package relies principally on roadside instrumentation supported by the Traffic Signal Control and Traffic Metering service packages and adds hardware, software, and fixed-point to fixed-point communications capabilities to implement traffic management strategies that are coordinated between allied</p>	Existing	DOTD District 02 Traffic Operation, DOTD ITS Section, DOTD MAP, Regional Transportation Management Center
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		traffic management centers. Several levels of coordination are supported from sharing of information through sharing of control between traffic management centers.		



<p>TM08</p>	<p>Traffic Incident Management System</p>	<p>This service package manages both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. The service package includes incident detection capabilities through roadside surveillance devices (e.g. CCTV) and through regional coordination with other traffic management, maintenance and construction management and emergency management centers as well as rail operations and event promoters. Information from these diverse sources is collected and correlated by this service package to detect and verify incidents and implement an appropriate response. This service package supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel to confirmed incidents. The response may include traffic control strategy modifications or resource coordination between centers. Incident response also includes presentation of information to affected travelers using</p>	<p>Existing, Planned</p>	<p>Causeway ITS Field Elements, Causeway MAP, Causeway Police, Causeway Traffic Operations, CCCD ITS Field Elements, Convention Center, DOTD District 02 Traffic Operation, DOTD ITS Field Equipment, DOTD MAP, DOTD Statewide TMC, Jefferson Parish 911, Jefferson Parish ITS Field Equipment, Jefferson Parish Traffic Operations, JPSO, Local Emergency Operations Centers, Louisiana 511/ Website, LSP Troop B, New Orleans ITS Field Equipment, New Orleans Police Department, New Orleans Traffic Operations, Orleans Parish Communications District (911), Parish Sheriffs Office, Private Traveler Information Service Providers, Regional Transportation Management Center</p>
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		<p>the Traffic Information Dissemination service package and dissemination of incident information to travelers through the Broadcast Traveler Information or Interactive Traveler Information service packages. The roadside equipment used to detect and verify incidents also allows the operator to monitor incident status as the response unfolds. The coordination with emergency management might be through a CAD system or through other communication with emergency personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel. This service package is closely related with the Public Safety service packages, which focus on services that support first responders. In particular, local management of the incident using an incident command system is covered by PS02.</p>		



<p>TM08</p>	<p>Traffic Incident Management System (Instance 2)</p>	<p>This service package manages both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. The service package includes incident detection capabilities through roadside surveillance devices (e.g. CCTV) and through regional coordination with other traffic management, maintenance and construction management and emergency management centers as well as rail operations and event promoters. Information from these diverse sources is collected and correlated by this service package to detect and verify incidents and implement an appropriate response. This service package supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel to confirmed incidents. The response may include traffic control strategy modifications or resource coordination between center subsystems. Incident response also includes presentation of information</p>	<p>Existing</p>	<p>DOTD District 02 Traffic Operation, DOTD ITS Field Equipment, DOTD ITS Section, DOTD MAP, Regional Transportation Management Center</p>
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		<p>to affected travelers using the Traffic Information Dissemination service package and dissemination of incident information to travelers through the Broadcast Traveler Information or Interactive Traveler Information service packages. The roadside equipment used to detect and verify incidents also allows the operator to monitor incident status as the response unfolds. The coordination with emergency management might be through a CAD system or through other communication with emergency field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.</p>		



<p>TM09</p>	<p>Integrated Decision Support and Demand Management</p>	<p>This service package recommends courses of action to transportation operators in a corridor, downtown area, or other heavily traveled area. Recommendations are based on an assessment of current and forecast transportation network performance and environmental conditions. Multi-modal transportation operational strategies are created that consider all modes and all roads in the travel area to correct network imbalances and effectively manage available capacity. As part of the operational strategies, this service package may also recommend lane restrictions, transit, parking, and toll strategies to influence traveler route and mode choices to support active demand management programs and policies managing both traffic and the environment. Operational strategies, including demand management recommendations, are coordinated to support operational decisions by each transportation operator that are consistent with the recommended strategy. All recommended operational strategies are based on historical evaluation, real-time</p>	<p>Planned</p>	<p>Causeway Traffic Operations, DOTD Statewide TMC, Jefferson Parish Traffic Operations, New Orleans Traffic Operations, Regional Transportation Management Center</p>
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		assessment, and forecast of the roadway network performance based on predicted travel demand patterns. This service package also collects air quality, parking availability, transit usage, and vehicle occupancy data to support operational strategies that manage and balance capacity and demand.		



TM09	Integrated Decision Support and Demand Management (Instance 1)	<p>This service package recommends courses of action to traffic operations personnel based on an assessment of current and forecast road network performance. Recommendations may include predefined incident response plans and regional surface street and freeway control strategies that correct network imbalances. Where applicable, this service package also recommends transit, parking, and toll strategies to influence traveler route and mode choices to support travel demand management (TDM) programs and policies managing both traffic and the environment. TDM recommendations are coordinated with transit, parking, and toll administration centers to support regional implementation of TDM strategies. Incident response and congestion management recommendations are implemented by the local traffic management center and coordinated with other regional centers by other service packages (see ATMS07-Regional Traffic Management and ATMS08-Traffic Incident Management). All recommendations are based on historical</p>	Planned	DOTD District 02 Traffic Operation, DOTD ITS Section, DOTD Statewide TMC, Regional Transportation Management Center
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		<p>evaluation, real-time assessment, and forecast of the roadway network performance based on predicted travel demand patterns. Traffic data is collected from sensors and surveillance equipment as well as other transportation management centers (see ATIS06-Transportation Operations Data Sharing). Forecasted traffic loads are derived from historical data and route plans supplied by the Information Service Provider Subsystem. This service package also collects air quality, parking availability, transit usage, and vehicle occupancy data to support TDM, where applicable.</p>		



TM09	Integrated Decision Support and Demand Management (Instance 2)	<p>This service package recommends courses of action to traffic operations personnel based on an assessment of current and forecast road network performance. Recommendations may include predefined incident response plans and regional surface street and freeway control strategies that correct network imbalances. Where applicable, this service package also recommends transit, parking, and toll strategies to influence traveler route and mode choices to support travel demand management (TDM) programs and policies managing both traffic and the environment. TDM recommendations are coordinated with transit, parking, and toll administration centers to support regional implementation of TDM strategies. Incident response and congestion management recommendations are implemented by the local traffic management center and coordinated with other regional centers by other service packages (see ATMS07-Regional Traffic Management and ATMS08-Traffic Incident Management). All recommendations are based on historical</p>	Planned	DOTD District 02 Traffic Operation, DOTD Statewide TMC, Regional Transportation Management Center
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		<p>evaluation, real-time assessment, and forecast of the roadway network performance based on predicted travel demand patterns. Traffic data is collected from sensors and surveillance equipment as well as other transportation management centers (see ATIS06-Transportation Operations Data Sharing). Forecasted traffic loads are derived from historical data and route plans supplied by the Information Service Provider Subsystem. This service package also collects air quality, parking availability, transit usage, and vehicle occupancy data to support TDM, where applicable.</p>		



Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
TM10	Electronic Toll Collection	<p>The Electronic Toll Collection service package provides toll operators with the ability to collect tolls electronically and detect and process violations. The fees that are collected may be adjusted to implement demand management strategies. Field-Vehicle Communication between the roadway equipment and the vehicle is required as well as Fixed Point-Fixed Point interfaces between the toll collection equipment and transportation authorities and the financial infrastructure that supports fee collection. Toll violations are identified and electronically posted to vehicle owners. Standards, inter-agency coordination, and financial clearinghouse capabilities enable broad interoperability for these services.</p>	Existing	Causeway Toll Collection Equipment, Causeway Toll Tag Office, CCCD Electronic Toll Collection Center, CCCD Tolling Field Equipment



<p>TM13</p>	<p>Standard Railroad Grade Crossing</p>	<p>This service package manages highway traffic at highway-rail intersections (HRIs) where operational requirements do not dictate more advanced features (e.g., where rail operational speeds are less than 80 miles per hour). Both passive (e.g., the crossbuck sign) and active warning systems (e.g., flashing lights and gates) are supported. (Note that passive systems exercise only the single interface between the ITS Roadway Equipment and the Driver in the physical view.) These traditional HRI warning systems may also be augmented with other standard traffic management devices. The warning systems are activated on notification of an approaching train by interfaced wayside equipment. The equipment at the HRI may also be interconnected with adjacent signalized intersections so that local control can be adapted to highway-rail intersection activities. Health monitoring of the HRI equipment and interfaces is performed; detected abnormalities are reported to both highway and railroad officials through wayside interfaces and</p>	<p>Existing</p>	<p>DOTD District 02 Traffic Operation, DOTD District 02 Traffic Signal System, DOTD ITS Field Equipment, Jefferson Parish ITS Field Equipment, Jefferson Parish Traffic Operations, Jefferson Parish Traffic Signal System, New Orleans ITS Field Equipment, New Orleans Traffic Operations, New Orleans Traffic Signal System, RR at Grade Crossing Controller</p>
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		interfaces to the Traffic Management Center.		
TM15	Railroad Operations Coordination	This service package provides an additional level of strategic coordination between freight rail operations and other transportation centers. Rail operations provides train schedules, maintenance schedules, and any other forecast events that will result in highway-rail intersection (HRI) closures. This information is used to develop forecast HRI closure times and durations that may be used in advanced traffic control strategies or to enhance the quality of traveler information.	Planned	DOTD District 02 Traffic Operation, Jefferson Parish Traffic Operations, New Orleans Traffic Operations



Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
TM16	Reversible Lane Management	<p>This service package provides for the management of reversible lane facilities. In addition to standard surveillance capabilities, this service package includes sensory functions that detect wrong-way vehicles and other special surveillance capabilities that mitigate safety hazards associated with reversible lanes. The package includes the field equipment, physical lane access controls, and associated control electronics that manage and control these special lanes. This service package also includes the equipment used to electronically reconfigure intersections and manage right-of-way to address dynamic demand changes and special events.</p>	Existing	<p>CCCD ITS Field Elements, DOTD ITS Field Equipment, DOTD Statewide TMC, Regional Transportation Management Center</p>



TM17	Speed Warning and Enforcement	<p>This service package monitors vehicle speeds and supports warning drivers when their speed is excessive. Also the service includes notifications to an enforcement agency to enforce the speed limit of the roadway. Speed monitoring can be made via spot speed or average speed measurements. Roadside equipment can display the speed of passing vehicles and/or suggest a safe driving speed. Environmental conditions and vehicle characteristics may be monitored and factored into the safe speed advisories that are provided to the motorist. For example, warnings can be generated recognizing the limitations of a given vehicle for the geometry of the roadway such as rollover risk for tall vehicles. This service focuses on monitoring of vehicle speeds and enforcement of the speed limit while the variable speed limits service (covered in TM20-Variable Speed Limits service package) focuses on varying the posted speed limits to create more uniform speeds along a roadway, to promote safer driving during adverse conditions (such as fog)</p>	Planned	DOTD ITS Field Equipment, DOTD Statewide TMC, Regional Transportation Management Center
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		and/or to reduce air pollution.		
TM18	Drawbridge Management	This service package supports systems that manage drawbridges at rivers and canals and other multimodal crossings (other than railroad grade crossings which are specifically covered by other service packages). The equipment managed by this service package includes control devices (e.g., gates, warning lights, dynamic message signs) at the drawbridge as well as the information systems that are used to keep travelers apprised of current and forecasted drawbridge status.	Planned	Causeway Bascule Drawbridge, Causeway Traffic Operations, DOTD ITS Field Equipment, DOTD Statewide TMC, Louisiana 511/ Website, Regional Transportation Management Center



TM19	Roadway Closure Management	<p>This service package closes roadways to vehicular traffic when driving conditions are unsafe, maintenance must be performed, and other scenarios where access to the roadway must be prohibited. The service package includes automatic or remotely controlled gates or barriers that control access to roadway segments including ramps and traffic lanes. Remote control systems allow the gates to be controlled from a central location or from a vehicle at the gate/barrier location, improving system efficiency and reducing personnel exposure to unsafe conditions during severe weather and other situations where roads must be closed. Surveillance systems allow operating personnel to visually verify the safe activation of the closure system and driver information systems (e.g., DMS) provide closure information to motorists in the vicinity of the closure. The equipment managed by this service package includes the control and monitoring systems, the field devices (e.g., gates, warning lights, DMS, CCTV cameras) at the closure location(s), and the information systems that notify other systems of a closure. This service</p>	Planned	DOTD District 02 Traffic Operation, DOTD ITS Section, DOTD MAP, Regional Transportation Management Center
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		package covers general road closure applications; specific closure systems that are used at railroad grade crossings, drawbridges, reversible lanes, etc. are covered by other ATMS service packages.		



WX01	Weather Data Collection	<p>This service package collects current road and weather conditions using data collected from environmental sensors deployed on and about the roadway. It also collects data from vehicles in the road network that can be used to directly measure or infer current environmental conditions. It leverages vehicle on-board systems that measure temperature, sense current weather conditions (rain and sun sensors) and also can monitor aspects of the vehicle operational status (e.g., use of headlights, wipers, and traction control system) to gather information about local environmental conditions. In addition, environmental sensor systems located on Maintenance and Construction Vehicles are also potential data sources. The collected environmental data is used by the Weather Information Processing and Distribution service package to process the information and make decisions on operations. The collected environmental data may be aggregated, combined with data attributes and sent to meteorological systems for data qualification and further data consolidation. The service package may also request and receive</p>	Planned	<p>Airport ITS Field Equipment, Causeway ITS Field Elements, DOTD ITS Field Equipment, DOTD ITS Section, DOTD Statewide TMC</p>
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		qualified data sets from meteorological systems.		
WX02	Weather Information Processing and Distribution	<p>This service package processes and distributes the environmental information collected from the Weather Data Collection service package. This service package uses the environmental data to detect environmental hazards such as icy road conditions, high winds, dense fog, etc. so operational centers and decision support systems can make decision on corrective actions to take. The continuing updates of road condition information and current temperatures can be used to more effectively deploy road maintenance resources, issue general traveler advisories, issue location specific warnings to drivers using the Traffic Information Dissemination service package, and aid operators in scheduling work activity.</p>	Planned	<p>Airport ITS Field Equipment, Causeway ITS Field Elements, DOTD ITS Field Equipment, DOTD ITS Section, DOTD Statewide TMC ,Regional Transportation Management Center</p>



<p>WX03</p>	<p>Spot Weather Impact Warning</p>	<p>This service package will alert drivers and other travelers to unsafe conditions or road closure at specific points on the downstream roadway as a result of weather-related impacts, which include, but are not limited to high winds, flood conditions, ice, fog, dust storms, snow drifts, avalanches, and rock falls. The service packages is designed to use standalone weather and advisory systems to warn drivers and other travelers about inclement weather conditions that may impact travel conditions. Real time weather information is collected from fixed environmental sensor stations, vehicle based sensors, weather services and advisory systems. The information is processed to determine the nature of the alert or warning to be delivered and then communicated to connected vehicles and personal devices. If the warning includes road closure then diversion information can be provided. For non-equipped vehicles the alerts or warnings will be provided via roadway signage. In addition, the roadway equipment may calculate the appropriate speed for current weather conditions and provide this information</p>	<p>Planned</p>	<p>Airport ITS Field Equipment, Causeway ITS Field Elements, DOTD ITS Field Equipment, DOTD ITS Section, DOTD Statewide TMC</p>
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Service Package	Service Package Name	Service Package Description	Service Package Status	Included Elements
		to the connected vehicle or on roadway signage.		
WX04	Roadway Micro-Prediction	This service package supports advanced systems which use environmental information collected from ITS roadway equipment or from the Surface Transportation Weather Service, along with advanced algorithms, to create micro-predictions of roadway conditions which can support improved safety warnings and maintenance planning and dispatch.	Planned	DOTD ITS Section, DOTD Statewide TMC



7 User Needs Identified

Review of planning documents and subsequent stakeholder engagements were the basis for determining the needs for mobility safety and the environment for this iteration of the ITS Architecture updates. Several stakeholder meetings were held and participants, who were subject matter experts, offered key insights into existing issues with mobility and safety, what each entity was doing to mitigate or solve the issues and emerging issues that were coming up. The issues have been discussed thematically below.

7.1 Commercial Vehicle Operations

Freight movement within and through New Orleans is very important to support the economy. New Orleans has a port (Port of New Orleans) which is the largest container port in Louisiana. The region moves grain, coal, crude oil and other bulk products¹. There are also six Class I railroads and two Class III railroads. These intermodal facilities generate significant truck traffic onto the highway system from local access roads to the interstate freeway system connecting warehouses, terminals and businesses. **Figure 2** (sourced from the Metropolitan Transportation Plan 2052) shows the freight related facilities and the roadway network used for movement of freight.

¹ Metropolitan Transportation Plan 2052, New Orleans Metropolitan Planning Area



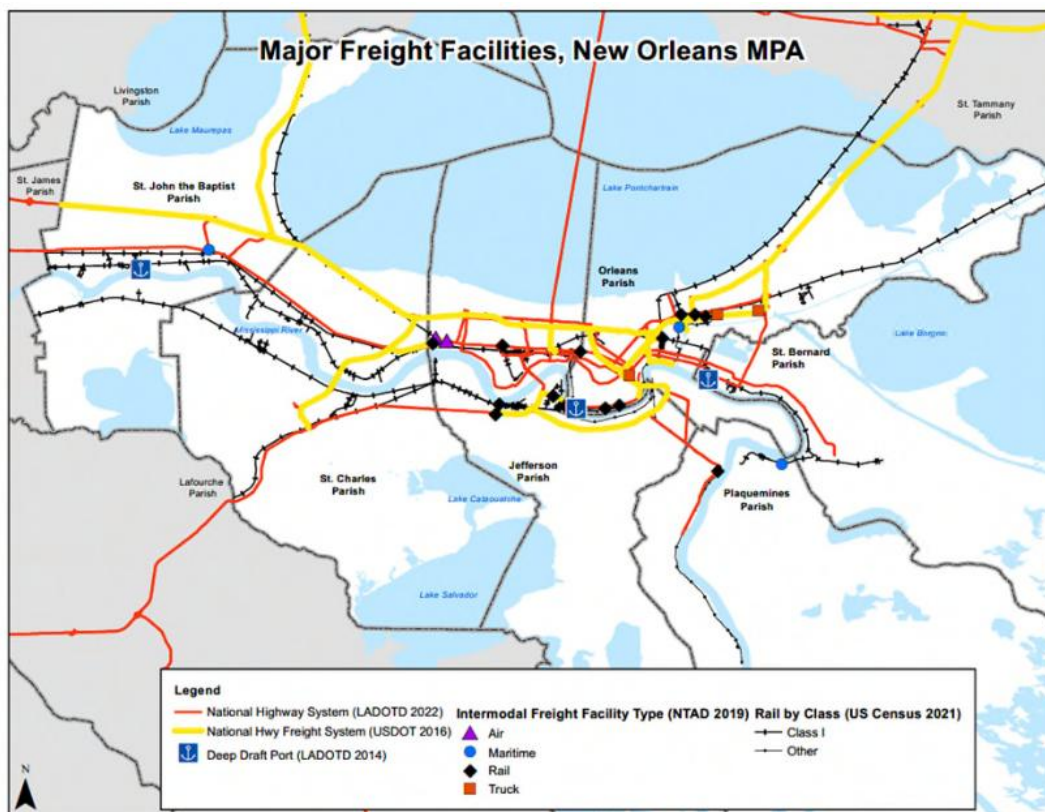


Figure 2: Major Freight Facilities in the New Orleans MPA

7.1.1 Freight Congestion

Travel time reliability and total delay are very important for freight movement especially when it comes to on-time delivery to industries or manufacturing plants. Locations of concern for freight mobility in the New Orleans area include the following:

- Elmwood Business Park off of Clearview Parkway
- Huey P Long Bridge has significant congestion
- The West Bank has significant growth off the Huey P Long Bridge Corridor.
- Significant rail traffic from the port in Plaquemine
- Major bottlenecks include I-10 in Metairie and the US-90B corridor
- Congestion on Tchoupitoulas Street, Felicity Street and Calliope Street also affect freight movement because these serve as the main entrance to the Port of New Orleans uptown terminals

Tchoupitoulas Street and Felicity Street are City streets that must be used for freight movement. These routes need to be accounted for and funded but have been neglected for quite some time. There are a series of signals that significantly impact ingress and egress to the port and the bottleneck is trucks coming on and off US 90B at Calliope Street. These locations are listed below:



- Off-ramp: Calliope Street (riverbound) at Annunciation Street, Calliope Street (riverbound) at Tchoupitoulas Street
- On-ramp: Calliope Street (riverbound) at Tchoupitoulas Street, Calliope Street (lakebound) at Tchoupitoulas Street, Calliope (lakebound) at Annunciation Street

7.1.2 Freight Routing

Freight routing is important to the municipality to ensure that heavy vehicles use designated routes and do not cause undue damage to infrastructure. Freight vehicles using unauthorized routes pose a mobility and safety problem for the general public. Some locations identified with this issue are discussed below:

- Port traffic must access at specific gates on Felicity Street
- Uptown complex generates the most issues. Traffic from upriver side come in through smaller streets that are not designed for truck use. Also traffic coming from Jefferson Parish
- Facilities along the industrial canal
- Freight is supposed to enter through the Felicity entrance accessible via US 90. All other entrances are not open to truck traffic.
- Trucks are cutting through neighborhoods and striking other vehicles or bringing down utility lines
- Engage with trucking companies to make sure truckers are being provided proper guidance and training.
- Smaller trucking companies are hard to engage with and are using Google Maps, which typically provides the quickest route, utilizing all road types.
- The River Road issue (state route turns into a local route) is driven by truck operators that don't know the area or truckers that know the area and try to use it as a shortcut.
- Provide advance notice for trucks to avoid driving on local routes.

7.1.3 Truck Parking

Truck parking is important and impact safety and efficiency of the transportation system. Truck parking helps combat driver fatigue. Commercial vehicle drivers have limits on the number of hours they are permitted to drive based on the Hours of Service (HOS) regulation. It is important for truck drivers to comply with this regulation and get needed rest between trips. Truck parking also provides a safe location off the highway for heavy vehicles to park in case of emergencies such as mechanical problems or inclement weather. If suitable truck parking is not provided, truck drivers tend to use ramps, shoulders or roadways, local roads or other infrastructure that may not be designed for heavy vehicles thus hastening the deterioration of the infrastructure. Below are some of the issues stakeholders pointed out with truck parking:

- US 51 / I-10 truck parking on shoulder, and occasionally on SR 641
- Truck drivers are removing the no parking signs



7.1.4 Truck Weigh Stations

Truck Weigh Stations are important for commercial vehicle operations to enforce axle load restrictions which have direct impact on safety and infrastructure life span. Overloaded trucks pose a hazard to the public if braking limits are exceeded and vehicle control is compromised. Overweight axles can cause premature failure of pavement and bridges leading to expensive repairs and disruption of traffic flow. Weigh stations may be used to check commercial vehicles for other regulatory compliance. LSP is not aware of any overweight vehicles being a problem with freight movement in their jurisdiction. Existing weigh stations on Airline Highway has been closed temporarily in addition to other weigh stations. Trucks are running on backroads and Parish roads but not necessarily bypassing weigh stations to avoid enforcement.

7.2 Traveler Information System

Traveler information system is important to keep motorist informed of roadway conditions en-route. There are various ways travelers can receive roadway information such as through the media, dynamic message signs and virtual signs in-vehicle. Where necessary congestion and detour information can be provided to enable travelers use alternate routes to get to their destinations sooner. There are several identified locations that can use traveler information:

- I-10 Eastbound before SR 641 for travelers to avoid the spillway and detour onto US 61 earlier.
- Traveler information desired in the I-10 corridor in New Orleans East
- Critical decision points needing traveler information in the I-310 corridor include the following:
 - LA 18
 - LA 48
 - LA 3127
 - Airline Highway
- I-510 corridor will also require traveler information to and from the Louisiana International Terminal area

7.3 Traffic Management

Traffic Management embodies all activities that are used to monitor all types of vehicles, traveler, cyclists and pedestrians throughout the transportation network to enhance safety and efficiency. This involves using diverse ITS to obtain realtime information of the network, evaluating operational scenarios and implementing operational strategies to mitigate the impacts of congestion, incidents, emergencies, special events or inclement weather. The systems range from the use of foundational services such as traffic monitoring or surveillance, traveler information dissemination and traffic signal control, to more complex services such as integrated decision support and demand management strategies and in recent times artificial intelligence. The Sections below discuss the specific needs of stakeholders during the stakeholder engagement process.



7.3.1 Cameras

LSP Troop B utilizes existing cameras all the time to dispatch units, determine staging and monitor staging for the duration of incident response. It is important for them to be able to assess the severity of any incident and dispatch appropriate level of resources. More camera coverage would help them dispatch units more effectively. The following locations were identified by LSP Troop B that more camera deployments will help with incident management.

- Alternate route from I-10 is US 61. Troop B expresses desire for cameras at US 61 signals (such as at SR 51) to monitor flow and also DMS in advance of interchanges at LA 641 and Belle Terre on I-10 EB to detour traffic to US 61 from the interstate when there is an accident.
- The new Loyola flyover camera view is currently obstructed. Camera is scheduled to be replaced as noted in the Bonnet Carre SEA.
- More camera coverage required on I-10 in the Metairie-Kenner area to fill in gaps in coverage. Heavy congestion in the area exacerbates the impacts of a crash.
- Cameras on I-10 between Clearview/Causeway and Clearview and Veterans. Area goes from 5 lanes to 3 lanes and drivers use exit lanes to cut in front of queues and causes crashes
- Curve in Veterans has a curve where sight distances are limited until you reach the transcontinental.
- US 90 Corridor in New Orleans East: Morrison to Irish Bayou to Twin Span Bridge
- US 90 Business Corridor (including Harvey Canal Bridge)
- Huey P Long Bridge
- Manhattan Blvd
- Barataria Blvd (over the canal)
- The Claiborne Avenue Superdome Exit has several crashes and TMC is unable to see the location until MAP arrives to provide information.
- I-310 corridor needs camera coverage to fill in gaps from I-10 to LA 3127 including coverage over the Mississippi River (Luling Bridge)

7.3.2 License Plate Readers

Troop B mentioned the need for License Plate Readers to help with law enforcement such as identify potential locations of vehicles that may have been used to commit a crime. In the event of say an AMBER alert, license plate readers can help identify a suspects vehicle if the license plate number is known.

7.4 Inclement Weather Management

Dense fog occurs frequently in the New Orleans area. Recent superfog (a mixture of smoke and moisture from damp smoldering organic matter) occurred on October 23, 2023 led massive pile up of at least 157 vehicles, at least 7 fatalities, and several with injuries on I-55. This hazard continues to exist in the area. During stakeholder engagements, one idea brought up by the Louisiana State Police to combat dense fog issues in the New Orleans East area:



- Having lights on the side of the road that gives the driver a reference of how far they can see as a gauge as how fast they should drive in fog.
- Need to confirm such beacons are sanctioned in MUTCD
- Troop B is in favor of use of VSLs during foggy conditions to reduce speeds

7.5 Connected and Automated Vehicle Operations

Connected and automated vehicles are being developed by OEMs and new vehicles are gradually being equipped with enabling technologies. As progress is made the level of penetration of highly automate vehicles will continue to increase in the vehicle using the roadways. Level 5 (SAE) automation is in limited use in few cities and in limited corridors. Recent road show by Waymo to New Orleans during the 2025 SuperBowl, and subsequent planned road trips to collect data is a good indicator that Level 5 automated vehicles could soon be in the New Orleans area. LSP expressed concerns about incident management involving automated vehicles. These include the following:

- When Autonomous Vehicles (AVs) get in a crash the wheels immediately lock up and it becomes very difficult to move them. Tow trucks are having trouble loading AV's without damaging them further. There are potential liability issues for first responders when this happens.
- There are hazards associated with battery fires and electrocution when electric vehicles (EVs) generally get in a crash. The supervisors don't know enough to advise troopers on the road how to handle or mitigate potential fires. The fire hazards persist even in storage when a damaged battery develops thermal runaway where battery cells that are physically damaged can overheat beyond a critical point and cause a self-sustaining reaction that ignite fires or explosions. First responders even run the risk of electrocution if the body of the damaged electric vehicle becomes energized.
- Classes on disabling batteries in EVs and getting wheels rotating again would hasten incident clearance and reduce potential secondary incidents, and also reduce the exposure of first responders to live traffic.
- It is not certain how AVs will respond to an officer using hand signals to direct traffic around an incident.

There is not much guidance on how to handle EVs and AVs in crashes at the moment. DOTD is engaged in the pool fund study for incident management involving CAVs.

7.6 Highway-Rail Crossings

Jefferson Parish piloted a rail crossing app that provided real-time information including live video feed at rail crossings. This pilot will help drivers know what crossings were currently closed and subsequent crossing that were going to be impacted. This information helped drivers find appropriate alternate routes to avoid congestion or conflict with trains The City of New Orleans expressed a desire to leverage similar technology because it has worked well in Jefferson Parish.



7.7 Motorist Assistance Patrol (MAP)

MAP service has been popular in the State and several MPOs have been able to leverage this service to improve mobility and safety on the roads where MAP services. The stakeholders expressed a desire to expand MAP from I-10 out towards I-510 area in St. Bernard Parish. This expansion has been on the radar of NORPC for some time now. NORPC has engaged DOTD to receive a quote to understand the financial commitment. DOTD ITS and the MPOs have been burdened by financial commitment to provide MAP services. Current agreement is structured such that any MPO desiring MAP service will have to contribute 50% of the cost of the service. Additional appropriations from the Legislature should be sought for both DOTD and the MPOs to fund this effective safety service.

7.8 Transit Services

The stakeholders desire ITS services or strategies for transit operations to be Integrated or implemented on bus routes. Jefferson Parish has a successful Transit Signal Priority on Veterans Blvd. This can be expanded to cover other critical transit routes to enhance transit and traffic operations on a surface network. Other needs identified are listed below

- Intermittent Bus Lanes is also another strategy that can help reduce conflict between transit buses and other vehicles and improve transit travel time and on time arrival of transit vehicles.
- Pedestrian involvement appears to be a major concern in the area
- Pedestrian access to transit needs to improve
- Pedestrian crossings need to improve
- Various maintenance / investing in equipment that enhances safety for pedestrians altogether

Generally, the stakeholders called for a comprehensive action to address needs of Vulnerable Road Users in the area of safety. The rate of pedestrian and bike crashes classified as fatal or serious injury are overrepresented on state routes system. Improve intersection signal control to include pedestrian signal heads / pedestrian detection systems are desired to improve local pedestrian safety.

Nighttime fatalities involving pedestrians are also an issue. Chef Menteur Highway (US 90) between Mayo Road and Bundy Road experiences some nighttime fatalities in this stretch. This stretch of roadway has a majority of T-intersections with the state highways. North and South Claiborne Avenue (US 90 and LA 39) also have high pedestrian safety issues. The stakeholders recommended using speed management solutions for the area. The stakeholders were mindful that not all solutions have to be ITS related. The context of the problem and solutions trialed in the past, if any, need to be reviewed holistically and appropriate countermeasures selected. In some instances that would require a layered approach which can start with signage to ITS deployment.

7.9 Transit Signal Priority and Dynamic Signal Timing

Transit signal priority can help to enhance the efficient operation of transit vehicles helping to keep arrival times on schedule and minimizing delays. Dynamic Signal Timing can also improve traffic signal



operations reducing delays and enhancing safety. The following systems are desired to enhance traffic signal operations in the MPO:

- Desire for image-based detection systems that dynamically assign green time at intersections.
- Transit routes: busiest bus routes on State Roads (US90, US61, LA46).
- BRT moving into design stage, key to this operation is the TSP on State Routes.
- New bus routes coming in 2025 that will need to be accommodated.
- Camera based enforcement around HOV occupancy, dedicated transit lanes, and Crescent City connection bridge HOV enforcement.
- Intermittent Bus Lanes: parking lanes can convert into a bus lane during peak times.

Toll tag standard architecture to use for interoperability. GeauxPass should pursue interoperability with neighboring states. For instance the SunPass in Florida is part of the E-Zpass network of nearly 20 states and would provide great value to Louisiana drivers and traffic passing through.

RTA publishes an RSS feed that goes into alerts and mobile apps, can be used as possible integration with GTFS and GTFS-RT.

7.10 Special Events Management

New Orleans area hosts several special events including large conventions, Mardi Gras, Essence Festival, Jazz Festival and sporting events such as Super Bowls that draw large crowds of people and require several roadway closures over an extended period. These special events can be very disruptive to the flow of traffic and could use some ITS devices (including temporary portable devices) to manage and enhance mobility, safety and security for residents and visitors. The following are some of the needs identified:

- Strengthening information flow like road closures on 511, Google Maps or other apps (DOTD does this already).

7.11 Other Operational Needs

New Orleans is prone to flooding and therefore roads have to be closed when flooding renders a road unsafe for use. Flood prone locations should have flood sensors that can provide early detection and warning for travelers including alternate routes available for safe use. These systems will provide better capability to manage disruptions or emergencies associated with floods. Furthermore, several at-grade railroad crossings and drawbridges over canals disrupt the flow of traffic during a crossing event. These locations also require early detection, warning and traveler information with alternate routes. Jefferson Parish for instance has developed an app that informs travelers of active train crossings at specific intersections and helps travelers reroute to avoid delays. It also makes these crossings safer by diverting traffic away from this conflict. The following needs have been identified to help with operational improvements or traffic management for events or emergencies that disrupt traffic flow:

- Railroad crossing of state highways that back up, particularly at LA46.



New Orleans Regional Intelligent Transportation Systems Architecture

7 User Needs Identified

- Flood rerouting – underpasses get flooded and vehicles cannot get off the interstate.
 - Need preemptive alerts for road users.
- Draw bridges across industrial canal.
 - Need advance warnings and better communication for LA46, LA39, US90, and LA1291.

The absence of ITS devices to help with early detection, warning and alternate routes compels several motorists to cut through residential neighborhoods due to lack of alerts upstream. This can compromise safety for all, especially vulnerable road users.



8 Roles and Responsibilities

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

RR Area Name	Stakeholder	RR Description	RR Status
Archived Data Systems for New Orleans Regional ITS Architecture	City of New Orleans, GNOEC, Jefferson Parish, LADOTD	Archive traffic operations data	Existing
Archived Data Systems for New Orleans Regional ITS Architecture	Jefferson Parish Sheriff Office, Local/Regional Public Safety Agencies, Louisiana State Police Troop B	Archive traffic crash reports	Existing
Archived Data Systems for New Orleans Regional ITS Architecture	NORPC	Archive traffic operations data	Existing
Commercial Vehicle Operations for New Orleans Regional ITS Architecture	Freight / Commercial Vehicles	Operate commercial vehicles, Disseminate transportation information	Planned
Electronic Toll Collection for New Orleans Regional ITS Architecture	GNOEC, LADOTD	Archive traffic operations data	Planned
Electronic Toll Collection for New Orleans Regional ITS Architecture	GNOEC, LADOTD	Operate toll facility, Traffic data collection	Existing



New Orleans Regional Intelligent Transportation Systems Architecture
 8 Roles and Responsibilities

RR Area Name	Stakeholder	RR Description	RR Status
Emergency Management for New Orleans Regional ITS Architecture	City of New Orleans	Operate traffic signal systems	Existing
Emergency Management for New Orleans Regional ITS Architecture	City of New Orleans	Traffic control	Planned
Emergency Management for New Orleans Regional ITS Architecture	GNOEC	Emergency response, Infrastructure monitoring, Motorists information systems, Traffic control	Existing
Emergency Management for New Orleans Regional ITS Architecture	Jefferson Parish	Emergency response, Infrastructure monitoring	Existing
Emergency Management for New Orleans Regional ITS Architecture	Jefferson Parish Sheriff Office, Local/Regional Public Safety Agencies, Louisiana State Police Troop B	Traffic control	Existing
Emergency Management for New Orleans Regional ITS Architecture	LADOTD	Event monitoring, Motorist information system	Planned
Emergency Management for New Orleans Regional ITS Architecture	LADOTD	Infrastructure monitoring, Resources for emergency, Traffic control	Existing
Emergency Management for New Orleans Regional ITS Architecture	Local Levee Districts	Monitor infrastructure	Existing



New Orleans Regional Intelligent Transportation Systems Architecture
8 Roles and Responsibilities

RR Area Name	Stakeholder	RR Description	RR Status
Emergency Management for New Orleans Regional ITS Architecture	New Orleans International Airport	Resource Provider	Existing
Emergency Management for New Orleans Regional ITS Architecture, Incident Management for New Orleans Regional ITS Architecture	Local Emergency Medical	Medical response	Existing
Freeway Management for New Orleans Regional ITS Architecture	City of Kenner	Incident management, Incident response, Speed enforcement, Traffic control	Existing
Freeway Management for New Orleans Regional ITS Architecture	City of New Orleans	Speed enforcement, Traffic control, Incident response, Incident management	Existing
Freeway Management for New Orleans Regional ITS Architecture	GNOEC	Operate toll facility, Motorists information systems, Traffic control, Motorist assistance, Incident management, Incident response	Existing
Freeway Management for New Orleans Regional ITS Architecture	Jefferson Parish Sheriff Office, Local/Regional Public Safety Agencies	Traffic control, Speed enforcement, Incident response	Existing
Freeway Management for New Orleans Regional ITS Architecture	LADOTD	Operate toll facility, Event monitoring, Infrastructure monitoring, Motorist information system, Traffic control, Motorist assistance	Existing



New Orleans Regional Intelligent Transportation Systems Architecture
 8 Roles and Responsibilities

RR Area Name	Stakeholder	RR Description	RR Status
Freeway Management for New Orleans Regional ITS Architecture	Louisiana State Police Troop B	Traffic control, Speed enforcement, Incident response, Incident management	Existing
Freeway Management for New Orleans Regional ITS Architecture, Incident Management for New Orleans Regional ITS Architecture, Traveler Information for New Orleans Regional ITS Architecture	Media, Tourism and Traveler Information Service Providers	Motorist information	Existing
Incident Management for New Orleans Regional ITS Architecture	City of Kenner	Incident management, Incident response, Traffic control	Existing
Incident Management for New Orleans Regional ITS Architecture	City of New Orleans, Louisiana State Police Troop B	Traffic control, Incident response, Incident management	Existing
Incident Management for New Orleans Regional ITS Architecture	GNOEC	Infrastructure monitoring, Motorists information systems, Traffic control, Motorist assistance, Incident management, Incident response	Existing
Incident Management for New Orleans Regional ITS Architecture	Jefferson Parish Sheriff Office	Incident management	Planned
Incident Management for New Orleans Regional ITS Architecture	Jefferson Parish Sheriff Office	Traffic control, Speed enforcement, Incident response	Existing



New Orleans Regional Intelligent Transportation Systems Architecture
 8 Roles and Responsibilities

RR Area Name	Stakeholder	RR Description	RR Status
Incident Management for New Orleans Regional ITS Architecture	LADOTD	Event monitoring, Infrastructure monitoring, Motorist information system, Resources for emergency, Traffic control, Motorist assistance	Existing
Incident Management for New Orleans Regional ITS Architecture	Local/Regional Public Safety Agencies	Traffic control, Incident response	Existing
Maintenance and Construction for New Orleans Regional ITS Architecture	City of Kenner	Surface street maintenance and construction provider	Planned
Maintenance and Construction for New Orleans Regional ITS Architecture	City of New Orleans	Surface street maintenance and construction provider, Traffic data collection, Traffic signal system maintenance and construction	Existing
Maintenance and Construction for New Orleans Regional ITS Architecture	GNOEC	Infrastructure monitoring, Traffic control	Planned
Maintenance and Construction for New Orleans Regional ITS Architecture	GNOEC	Roadway maintenance and construction, Traffic data collection	Existing
Maintenance and Construction for New Orleans Regional ITS Architecture	Jefferson Parish	Roadway maintenance and construction, Traffic data collection, Traffic signal system maintenance and construction	Existing



New Orleans Regional Intelligent Transportation Systems Architecture
 8 Roles and Responsibilities

RR Area Name	Stakeholder	RR Description	RR Status
Maintenance and Construction for New Orleans Regional ITS Architecture	LADOTD	Infrastructure monitoring	Planned
Maintenance and Construction for New Orleans Regional ITS Architecture	LADOTD	Traffic data collection, Traffic signal system maintenance and construction, Roadway maintenance and construction	Existing
Maintenance and Construction for New Orleans Regional ITS Architecture	Media	Motorist information	Existing
Maintenance and Construction for New Orleans Regional ITS Architecture	Tourism and Traveler Information Service Providers	Motorist information	Planned
Maintenance and Construction for New Orleans Regional ITS Architecture, Surface Street Management for New Orleans Regional ITS Architecture	City of Kenner	Traffic data collection	Existing
Parking Management for New Orleans Regional ITS Architecture	City of Kenner, Jefferson Parish, Local/Regional Public Safety Agencies	Parking coordination	Planned
Parking Management for New Orleans Regional ITS Architecture	New Orleans International Airport	Parking coordination	Planned
Surface Street Management for New Orleans Regional ITS Architecture	City of New Orleans, Jefferson Parish, LADOTD	Traffic data collection, Traffic signal operations	Existing



New Orleans Regional Intelligent Transportation Systems Architecture
 8 Roles and Responsibilities

RR Area Name	Stakeholder	RR Description	RR Status
Transit Services for New Orleans Regional ITS Architecture	Jefferson Parish	Transit data collection	Existing
Transit Services for New Orleans Regional ITS Architecture	Jefferson Parish	Transit provider	Planned
Transit Services for New Orleans Regional ITS Architecture	NORPC	Transit coordination and planning	Existing
Transit Services for New Orleans Regional ITS Architecture	Public	Transit user	Existing
Transit Services for New Orleans Regional ITS Architecture	Tourism and Traveler Information Service Providers	Motorist information	Existing
Traveler Information for New Orleans Regional ITS Architecture	LADOTD	Motorist information system	Existing
Traveler Information for New Orleans Regional ITS Architecture	Public	End user of traveler information	Existing



9 Functionality

Each ITS system operated by the stakeholders must perform certain functions to effectively deliver the envisioned project capabilities. The primary functions that each system needs to perform are broadly defined in the New Orleans Regional ITS Architecture as a set of Functional Objects that make up the physical elements of the architecture. As projects get implemented requirements will need to be written to determine what each element must do in order to achieve its given set of functions. Those requirements can be traced back to the Needs of the Stakeholders for the project.

Table 4 – Functional Objects Table

Element Name	Physical Object	Functional Object	Functional Object Description
Airport ITS Field Equipment	ITS Roadway Equipment	Roadway Infrastructure Monitoring	'Roadway Infrastructure Monitoring' monitors the condition of pavement, bridges, tunnels, associated hardware, and other transportation-related infrastructure (e.g., culverts). It includes sensors that monitor the infrastructure and the communications necessary to report this data to a center or vehicle-based maintenance system.



Element Name	Physical Object	Functional Object	Functional Object Description
Airport Landside Operations	Emergency Management Center	Emergency Evacuation Support	<p>'Emergency Evacuation Support' coordinates evacuation plans among allied agencies and manages evacuation and reentry of a population in the vicinity of a disaster or other emergency that poses a risk to public safety. Where appropriate, the affected population is evacuated in shifts, using more than one evacuation route, and including several evacuation destinations to spread demand and thereby expedite the evacuation. All affected jurisdictions (e.g., states and counties) at the evacuation origin, evacuation destination, and along the evacuation route are informed of the plan. The public is provided with real-time evacuation guidance including basic information to assist potential evacuees in determining whether evacuation is necessary. Resource requirements are forecast based on the evacuation plans, and the necessary resources are located, shared between agencies if necessary, and deployed at the right locations at the appropriate times. The evacuation and reentry status are monitored and used to refine the plan and resource allocations during the evacuation and subsequent reentry. It communicates with public health systems to develop evacuation plans and recommended strategies for disasters and evacuation scenarios involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Airport Landside Operations	Emergency Management Center	Emergency Secure Area Surveillance	'Emergency Secure Area Surveillance' monitors surveillance inputs from secure areas in the transportation system. The surveillance may be of secure areas frequented by travelers (i.e., transit stops, transit stations, rest areas, park and ride lots, modal interchange facilities, on-board a transit vehicle, etc.) or around transportation infrastructure such as bridges, tunnels and transit railways or guideways. It provides both video and audio surveillance information to emergency personnel and automatically alerts emergency personnel of potential incidents.
Airport Landside Operations	Traffic Management Center	TMC Basic Surveillance	'TMC Basic Surveillance' remotely monitors and controls traffic sensor systems and surveillance (e.g., CCTV) equipment, and collects, processes and stores the collected traffic data. Current traffic information and other real-time transportation information is also collected from other centers. The collected information is provided to traffic operations personnel and made available to other centers.
Airport Parking	Parking Area Equipment	Parking Area Electronic Payment	'Parking Area Electronic Payment' supports electronic payment of parking fees using in-vehicle equipment (e.g., tags) or contact or proximity cards. It includes the field elements that provide the interface to the in-vehicle or card payment device and the back-office functionality that performs the transaction.



Element Name	Physical Object	Functional Object	Functional Object Description
Airport Parking	Parking Area Equipment	Parking Area Management	'Parking Area Management' detects and classifies vehicles at parking facility entrances, exits, and other designated locations within the facility. Current parking availability is monitored and used to inform drivers through dynamic message signs/displays so that vehicles are efficiently routed to available spaces. Parking facility information, including current parking rates and directions to entrances and available exits, is also provided to drivers.
Airport Parking	Parking Management Center	Parking Data Collection	'Parking Data Collection' collects and stores parking information that is collected in the course of parking system operations. This data can be used directly by operations personnel or it can be made available to other data users and archives in the region.
Caesars Superdome	Transportation Information Center	TIC Traveler Information Broadcast	'TIC Traveler Information Broadcast' disseminates traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, and weather information. The same information is broadcast to all equipped traveler interface systems and vehicles.



Element Name	Physical Object	Functional Object	Functional Object Description
Causeway Bascule Drawbridge	ITS Roadway Equipment	Roadway Multimodal Crossing Control	'Roadway Multimodal Crossing Control' monitors multimodal crossings and monitors and controls traffic control equipment in the vicinity of the crossing. Equipment controlled includes warning lights, gates, dynamic message signs, and other systems associated with multimodal crossings. It manages draw bridges and miscellaneous other crossings between highway traffic and other modes. Railroad grade crossings are covered by other functional objects.
Causeway Bascule Drawbridge	Traffic Management Center	TMC Multimodal Crossing Management	'TMC Multimodal Crossing Management' remotely monitors and manages multimodal crossings, including draw bridges and other crossings between highway traffic and other modes. Equipment controlled includes warning lights, gates, dynamic message signs, and other systems that provide driver information and control traffic at multimodal crossings. Railroad grade crossings are covered by other functional objects.



Element Name	Physical Object	Functional Object	Functional Object Description
Causeway Information Archive	Archived Data System	Archive Data Repository	'Archive Data Repository' collects data and data catalogs from one or more data sources and stores the data in a focused repository that is suited to a particular set of ITS data users. It includes capabilities for performing quality checks on the incoming data, error notification, and archive to archive coordination. It includes the capability to define a data registry that allows registration of data identifiers or data definitions for interoperable use throughout a region. It supports a broad range of implementations, ranging from simple data marts that collect a focused set of data and serve a particular user community to large-scale data warehouses that collect, integrate, and summarize transportation data from multiple sources and serve a broad array of users within a region. Repositories may be established to support operations planning, performance monitoring and management, and policy and investment decisions.
Causeway Information Archive	Archived Data System	Archive Government Reporting	'Archive Government Reporting' selects and formats data residing in an ITS archive to facilitate local, state, and federal government data reporting requirements. It provides transportation system statistics and performance measures in required formats to support investment and policy decisions.



Element Name	Physical Object	Functional Object	Functional Object Description
Causeway Information Archive	Archived Data System	Archive Situation Data Archival	'Archive Situation Data Archival' collects and archives traffic, roadway, and environmental information for use in off-line planning, research, and analysis. It controls and collects information directly from equipment at the roadside, reflecting the deployment of traffic detectors that are used primarily for traffic monitoring and planning purposes, rather than for traffic management. It also collects situation data from connected vehicles. The data collected, quality checks performed, and aggregation strategies are defined to support transportation system performance monitoring and management.
Causeway ITS Field Elements	Connected Vehicle Roadside Equipment	RSE Device Management	'RSE Device Management' provides executive control and monitoring of the RSE hardware and installed software applications. It monitors the operational status of the hardware and other attached field devices and detects and reports fault conditions. A back office interface supports application installation, upgrade, and configuration as well as remote control of the operating mode and hardware configuration settings and initiation of remote diagnostics. A local interface is provided to field personnel for local monitoring and diagnostics, supporting field maintenance, repair, and replacement.



Element Name	Physical Object	Functional Object	Functional Object Description
Causeway ITS Field Elements	Connected Vehicle Roadside Equipment	RSE Traffic Monitoring	'RSE Traffic Monitoring' monitors the basic safety messages that are shared between connected vehicles and distills this data into traffic flow measures that can be used to manage the network in combination with or in lieu of traffic data collected by infrastructure-based sensors. As connected vehicle penetration rates increase, the measures provided by this application can expand beyond vehicle speeds that are directly reported by vehicles to include estimated volume, occupancy, and other measures. This object also supports incident detection by monitoring for changes in speed and vehicle control events that indicate a potential incident.
Causeway ITS Field Elements	ITS Roadway Equipment	Roadway Barrier System Control	'Roadway Barrier System Control' includes the field equipment that controls barrier systems used to control access to transportation facilities and infrastructure. Barrier systems include automatic or remotely controlled gates, barriers and other access control systems.
Causeway ITS Field Elements	ITS Roadway Equipment	Roadway Basic Surveillance	'Roadway Basic Surveillance' monitors traffic conditions using fixed equipment such as loop detectors and CCTV cameras.



Element Name	Physical Object	Functional Object	Functional Object Description
Causeway ITS Field Elements	ITS Roadway Equipment	Roadway Incident Detection	'Roadway Incident Detection' provides incident detection using traffic detectors and surveillance equipment. It monitors for unusual traffic conditions that may indicate an incident or processes surveillance images, watching for potential incidents. It provides potential incident information as well as traffic flow and images to the center for processing and presentation to traffic operations personnel.
Causeway ITS Field Elements	ITS Roadway Equipment	Roadway Infrastructure Monitoring	'Roadway Infrastructure Monitoring' monitors the condition of pavement, bridges, tunnels, associated hardware, and other transportation-related infrastructure (e.g., culverts). It includes sensors that monitor the infrastructure and the communications necessary to report this data to a center or vehicle-based maintenance system.
Causeway ITS Field Elements	ITS Roadway Equipment	Roadway Traffic Information Dissemination	'Roadway Traffic Information Dissemination' includes field elements that provide information to drivers, including dynamic message signs and highway advisory radios.



Element Name	Physical Object	Functional Object	Functional Object Description
Causeway MAP	Emergency Management Center	Emergency Dispatch	<p>'Emergency Dispatch' tracks the location and status of emergency vehicles and dispatches these vehicles to incidents. Pertinent incident information is gathered from the public and other public safety agencies and relayed to the responding units. Incident status and the status of the responding units is tracked so that additional units can be dispatched and/or unit status can be returned to available when the incident is cleared and closed.</p>
Causeway MAP	Emergency Management Center	Emergency Incident Command	<p>'Emergency Incident Command' provides tactical decision support, resource coordination, and communications integration for Incident Commands that are established by first responders at or near the incident scene to support local management of an incident. It supports communications with public safety, emergency management, transportation, and other allied response agency centers, tracks and maintains resource information, action plans, and the incident command organization itself. Information is shared with agency centers including resource deployment status, hazardous material information, traffic, road, and weather conditions, evacuation advice, and other information that enables emergency or maintenance personnel in the field to implement an effective, safe incident response. It supports the functions and interfaces commonly supported by a mobile command center.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Causeway MAP	Emergency Management Center	Emergency Response Management	<p>'Emergency Response Management' provides the strategic emergency response capabilities and broad inter-agency interfaces that are implemented for extraordinary incidents and disasters that require response from outside the local community. It provides the functional capabilities and interfaces commonly associated with Emergency Operations Centers. It develops and stores emergency response plans and manages overall coordinated response to emergencies. It monitors real-time information on the state of the regional transportation system including current traffic and road conditions, weather conditions, special event and incident information. It tracks the availability of resources and assists in the appropriate allocation of these resources for a particular emergency response. It also provides coordination between multiple allied agencies before and during emergencies to implement emergency response plans and track progress through the incident. It also coordinates with the public through the Emergency Telecommunication Systems (e.g., Reverse 911). It coordinates with public health systems to provide the most appropriate response for emergencies involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Causeway MAP	Emergency Management Center	Emergency Routing	'Emergency Routing' supports routing of emergency vehicles and enlists support from the Traffic Management Center to facilitate travel along these routes. Routes may be determined based on real-time traffic information and road conditions or routes may be provided by the Traffic Management Center on request. Vehicles are tracked and routes are based on current vehicle location. It may coordinate with the Traffic Management Center to provide preemption or otherwise adapt the traffic control strategy along the selected route. It may also coordinate with Transportation Information Centers to notify other drivers of public safety vehicles that are enroute.
Causeway MAP	Traffic Management Center	TMC Service Patrol Management	'TMC Service Patrol Management' supports dispatch and communication with service patrol vehicles that monitor roads to aid motorists, offering rapid response to minor incidents.
Causeway Police	Emergency Management Center	Emergency Call-Taking	'Emergency Call-Taking' supports the emergency call-taker, collecting available information about the caller and the reported emergency, and forwarding this information to other objects that formulate and manage the emergency response. It receives 9-1-1, 7-digit local access, and motorist call-box calls and interfaces to other agencies to assist in the verification and assessment of the emergency and to forward the emergency information to the appropriate response agency.



Element Name	Physical Object	Functional Object	Functional Object Description
Causeway Police	Emergency Management Center	Emergency Dispatch	'Emergency Dispatch' tracks the location and status of emergency vehicles and dispatches these vehicles to incidents. Pertinent incident information is gathered from the public and other public safety agencies and relayed to the responding units. Incident status and the status of the responding units is tracked so that additional units can be dispatched and/or unit status can be returned to available when the incident is cleared and closed.
Causeway Police	Emergency Management Center	Emergency Incident Command	'Emergency Incident Command' provides tactical decision support, resource coordination, and communications integration for Incident Commands that are established by first responders at or near the incident scene to support local management of an incident. It supports communications with public safety, emergency management, transportation, and other allied response agency centers, tracks and maintains resource information, action plans, and the incident command organization itself. Information is shared with agency centers including resource deployment status, hazardous material information, traffic, road, and weather conditions, evacuation advice, and other information that enables emergency or maintenance personnel in the field to implement an effective, safe incident response. It supports the functions and interfaces commonly supported by a mobile command center.



Element Name	Physical Object	Functional Object	Functional Object Description
Causeway Police	Emergency Management Center	Emergency Response Management	<p>'Emergency Response Management' provides the strategic emergency response capabilities and broad inter-agency interfaces that are implemented for extraordinary incidents and disasters that require response from outside the local community. It provides the functional capabilities and interfaces commonly associated with Emergency Operations Centers. It develops and stores emergency response plans and manages overall coordinated response to emergencies. It monitors real-time information on the state of the regional transportation system including current traffic and road conditions, weather conditions, special event and incident information. It tracks the availability of resources and assists in the appropriate allocation of these resources for a particular emergency response. It also provides coordination between multiple allied agencies before and during emergencies to implement emergency response plans and track progress through the incident. It also coordinates with the public through the Emergency Telecommunication Systems (e.g., Reverse 911). It coordinates with public health systems to provide the most appropriate response for emergencies involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Causeway Police	Emergency Management Center	Emergency Routing	'Emergency Routing' supports routing of emergency vehicles and enlists support from the Traffic Management Center to facilitate travel along these routes. Routes may be determined based on real-time traffic information and road conditions or routes may be provided by the Traffic Management Center on request. Vehicles are tracked and routes are based on current vehicle location. It may coordinate with the Traffic Management Center to provide preemption or otherwise adapt the traffic control strategy along the selected route. It may also coordinate with Transportation Information Centers to notify other drivers of public safety vehicles that are enroute.
Causeway Toll Collection Equipment	ITS Roadway Payment Equipment	Roadway Toll Collection Support	'Roadway Toll Collection Support' provides toll plazas the capability to identify properly equipped vehicles, collect electronic tolls, and provide a positive indication to the driver that a toll was collected. Violators are identified and images are collected. Toll transactions are stored and reported to the Payment Administration Center.



Element Name	Physical Object	Functional Object	Functional Object Description
Causeway Toll Tag Office	Payment Administration Center	PAC Payment Administration	'PAC Payment Administration' provides administration and management of payments associated with electronic toll collection, parking payments, and other e-payments. It provides the back office functions that support enrollment, pricing, reduced fare eligibility, payment reconciliation with financial institutions, and violation notification to enforcement agencies. It also supports dynamic pricing to support demand management, allow/block-list management and token validation.
Causeway Traffic Operations	Traffic Management Center	TMC Basic Surveillance	'TMC Basic Surveillance' remotely monitors and controls traffic sensor systems and surveillance (e.g., CCTV) equipment, and collects, processes and stores the collected traffic data. Current traffic information and other real-time transportation information is also collected from other centers. The collected information is provided to traffic operations personnel and made available to other centers.
Causeway Traffic Operations	Traffic Management Center	TMC Data Collection	'TMC Data Collection' collects and stores information that is created in the course of traffic operations performed by the Traffic Management Center. This data can be used directly by operations personnel or it can be made available to other data users and archives in the region.



Element Name	Physical Object	Functional Object	Functional Object Description
Causeway Traffic Operations	Traffic Management Center	TMC Incident Detection	'TMC Incident Detection' identifies and reports incidents to Traffic Operations Personnel. It remotely monitors and controls traffic sensor and surveillance systems that support incident detection and verification. It analyzes and reduces the collected sensor and surveillance data, external alerting and advisory and incident reporting systems, anticipated demand information from intermodal freight depots, border crossings, special event information, and identifies and reports incidents and hazardous conditions
Causeway Traffic Operations	Traffic Management Center	TMC Incident Dispatch Coordination	'TMC Incident Dispatch Coordination' formulates and manages an incident response that takes into account the incident potential, incident impacts, and resources required for incident management. It provides information to support dispatch and routing of emergency response and service vehicles as well as coordination with other cooperating agencies. It provides access to traffic management resources that provide surveillance of the incident, traffic control in the surrounding area, and support for the incident response. It monitors the incident response and collects performance measures such as incident response and clearance times.



Element Name	Physical Object	Functional Object	Functional Object Description
Causeway Traffic Operations	Traffic Management Center	TMC Multimodal Crossing Management	'TMC Multimodal Crossing Management' remotely monitors and manages multimodal crossings, including draw bridges and other crossings between highway traffic and other modes. Equipment controlled includes warning lights, gates, dynamic message signs, and other systems that provide driver information and control traffic at multimodal crossings. Railroad grade crossings are covered by other functional objects.
Causeway Traffic Operations	Traffic Management Center	TMC Regional Traffic Management	'TMC Regional Traffic Management' supports coordination between Traffic Management Centers in order to share traffic information between centers as well as control of traffic management field equipment. This coordination supports wide area optimization and regional coordination that spans jurisdictional boundaries; for example, coordinated signal control in a metropolitan area or coordination between freeway operations and arterial signal control within a corridor.



Element Name	Physical Object	Functional Object	Functional Object Description
Causeway Traffic Operations	Traffic Management Center	TMC Roadway Equipment Monitoring	'TMC Roadway Equipment Monitoring' monitors the operational status of field equipment and detects failures. It presents field equipment status to Traffic Operations Personnel and reports failures to the Maintenance and Construction Management Center. It tracks the repair or replacement of the failed equipment. The entire range of ITS field equipment may be monitored including sensors (traffic, infrastructure, environmental, security, speed, etc.) and devices (highway advisory radio, dynamic message signs, automated roadway treatment systems, barrier and safeguard systems, cameras, traffic signals and override equipment, ramp meters, beacons, security surveillance equipment, etc.).
Causeway Traffic Operations	Traffic Management Center	TMC Situation Data Management	'TMC Situation Data Management' collects, assimilates, and disseminates vehicle probe data collected from roadside short range communications equipment and centers controlling transit vehicles, toll collection points, and route-guided vehicles. It estimates traffic and road conditions based on the aggregated probe data and disseminates this information to other centers.



Element Name	Physical Object	Functional Object	Functional Object Description
Causeway Traffic Operations	Traffic Management Center	TMC Traffic Information Dissemination	'TMC Traffic Information Dissemination' disseminates traffic and road conditions, closure and detour information, incident information, driver advisories, and other traffic-related data to other centers, the media, and driver information systems. It monitors and controls driver information system field equipment including dynamic message signs and highway advisory radio, managing dissemination of driver information through these systems.



Element Name	Physical Object	Functional Object	Functional Object Description
Causeway Traffic Operations	Traffic Management Center	TMC Traffic Management Decision Support	'TMC Traffic Management Decision Support' recommends courses of action to the traffic operator based on current and forecast road and traffic conditions. Traffic incidents, special events, maintenance activities and other events or conditions that impact capacity or demand are monitored. Historical data and models are used to compare the impact of potential courses of action and make recommendations to the operator. Decisions are supported through presentation of filtered and fused network-wide road and traffic conditions that identify network imbalances and recommended courses of action. The recommended actions may include predefined incident response plans, signal timing plan changes, DMS/HAR messages, truck restrictions, lane control strategies, metering strategies, and adjustment of variable speed limits. Multimodal strategies may also be recommended that include suggested transit strategies and suggested route and mode choices for travelers. Once a course of action is selected, traffic operations personnel implement these actions within the Traffic Management Center and coordinate the response with other centers in the region.



Element Name	Physical Object	Functional Object	Functional Object Description
Causeway Traffic Operations	Traffic Management Center	TMC Traffic Network Performance Evaluation	'TMC Traffic Network Performance Evaluation' measures traffic network performance and predicts travel demand patterns to support traffic flow optimization, demand management, and incident management. It collects traffic data from sensors and surveillance equipment as well as input from other Traffic Management Centers, emissions management, transit operations, and event promoters and uses this information to measure traffic network performance. It collects route planning information from transportation information centers and integrates and uses this information to predict future traffic conditions. The planned control strategies can be passed back to the transportation information center so that the intended strategies can be reflected in future route planning.
Causeway Traveler Information System	Transportation Information Center	TIC Operations Data Collection	'TIC Operations Data Collection' collects and stores information that is collected about the transportation information service including data on the number of clients serviced and the services that were provided. This data can be used directly by operations personnel or it can be made available to other data users and archives in the region.



Element Name	Physical Object	Functional Object	Functional Object Description
Causeway Traveler Information System	Transportation Information Center	TIC Traveler Information Broadcast	'TIC Traveler Information Broadcast' disseminates traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, and weather information. The same information is broadcast to all equipped traveler interface systems and vehicles.
Commercial Vehicles Operations	Commercial Vehicle Administration Center	CVAC Information Exchange	'CVAC Information Exchange' supports the exchange of safety, credentials, permit data, and other data concerning the operation of commercial vehicles among jurisdictions. The object also supports the exchange of safety (e.g., driver logs), credentials, permit, and operations data between systems (for example, an administrative center and the roadside check facilities) within a single jurisdiction. Data are collected from multiple authoritative sources and packaged into snapshots (top-level summary and critical status information) and profiles (detailed and historical data). Data is made available to fleet operators and other information requestors on request or based on subscriptions established by the requestor.



Element Name	Physical Object	Functional Object	Functional Object Description
Commercial Vehicles Operations	Commercial Vehicle Administration Center	CVAC Safety and Security Administration	<p>'CVAC Safety and Security Administration' provides commercial vehicle safety and security criteria to roadside check facilities, collects and reviews safety and security data from the field and distributes safety and security information to other centers, carriers, and enforcement agencies. It also supports wireless roadside inspections, including carrier enrollment, managing and distributing information about trigger areas where wireless inspections may occur, and monitoring the condition of the commercial vehicle and driver using wireless communications at identified trigger areas. It supports the collection and review of carrier and driver safety and security data and supports determination of the carrier and driver safety and security ratings. It clears the out-of-service status when the responsible carrier or driver reports that deficiencies flagged during inspections have been corrected.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Commercial Vehicles Operations	Fleet and Freight Management Center	Fleet Administration	<p>'Fleet Administration' provides vehicle tracking, dispatch, and reporting capabilities to fleet management personnel. It gathers current road conditions, commercial vehicle-specific traffic and parking information, prepares vehicle routes, and provides a fleet interface for toll collection. It also provides route plan information for network performance evaluation. As part of the tracking function, it monitors commercial vehicle location, compares it against the known route and notifies the Emergency Management Center and Fleet-Freight Manager of any deviations, including HAZMAT route restriction violations. It supports carrier participation in wireless roadside inspection programs, monitoring geographic trigger areas and providing current safety data on behalf of the commercial vehicles it manages. It supports pre-hiring checks for potential drivers and monitors the performance of each driver who is hired. It also supports ongoing monitoring of the company's safety performance.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Commercial Vehicles Operations	Fleet and Freight Management Center	Freight Administration and Management	'Freight Administration and Management' manages the movement of freight from source to destination. It interfaces to intermodal customers to setup and schedule transportation and coordinates with intermodal terminals and freight consolidation stations to coordinate the shipment. It coordinates with the appropriate government agencies to expedite the movement of trucks, their drivers, and their cargo across international borders. The application monitors the status of the freight and freight equipment (container, trailer, or chassis) and monitors freight location and compares it against the planned route.
Convention Center	Transportation Information Center	TIC Traveler Information Broadcast	'TIC Traveler Information Broadcast' disseminates traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, and weather information. The same information is broadcast to all equipped traveler interface systems and vehicles.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD Adjacent District Office	Maint and Constr Management Center	MCM Roadway Maintenance	<p>'MCM Roadway Maintenance' provides overall management and support for routine maintenance on a roadway system or right-of-way. Services managed include landscape maintenance, hazard removal (roadway debris, dead animals), routine maintenance activities (roadway cleaning, grass cutting), and repair and maintenance of non-ITS equipment on the roadway (e.g., signs, gantries, cabinets, guard rails, etc.).</p> <p>Environmental conditions information is also received from various weather sources to aid in scheduling routine maintenance activities. See also MCM Field Equipment Maintenance for maintenance of ITS field equipment.</p>
DOTD District 02 Traffic Operation	Emergency Management Center	Emergency Data Collection	<p>'Emergency Data Collection' collects and stores emergency information that is collected in the course of operations by the Emergency Management Center. This data can be used directly by operations personnel or it can be made available to other data users and archives in the region.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD District 02 Traffic Operation	Emergency Management Center	Emergency Evacuation Support	<p>'Emergency Evacuation Support' coordinates evacuation plans among allied agencies and manages evacuation and reentry of a population in the vicinity of a disaster or other emergency that poses a risk to public safety. Where appropriate, the affected population is evacuated in shifts, using more than one evacuation route, and including several evacuation destinations to spread demand and thereby expedite the evacuation. All affected jurisdictions (e.g., states and counties) at the evacuation origin, evacuation destination, and along the evacuation route are informed of the plan. The public is provided with real-time evacuation guidance including basic information to assist potential evacuees in determining whether evacuation is necessary. Resource requirements are forecast based on the evacuation plans, and the necessary resources are located, shared between agencies if necessary, and deployed at the right locations at the appropriate times. The evacuation and reentry status are monitored and used to refine the plan and resource allocations during the evacuation and subsequent reentry. It communicates with public health systems to develop evacuation plans and recommended strategies for disasters and evacuation scenarios involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD District 02 Traffic Operation	Emergency Management Center	Emergency Incident Command	<p>'Emergency Incident Command' provides tactical decision support, resource coordination, and communications integration for Incident Commands that are established by first responders at or near the incident scene to support local management of an incident. It supports communications with public safety, emergency management, transportation, and other allied response agency centers, tracks and maintains resource information, action plans, and the incident command organization itself. Information is shared with agency centers including resource deployment status, hazardous material information, traffic, road, and weather conditions, evacuation advice, and other information that enables emergency or maintenance personnel in the field to implement an effective, safe incident response. It supports the functions and interfaces commonly supported by a mobile command center.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD District 02 Traffic Operation	Traffic Management Center	TMC Advanced Rail Crossing Management	'TMC Advanced Rail Crossing Management' monitors and controls rail crossing traffic control equipment at advanced crossings that provide additional information on approaching trains, detect and report obstructions on the grade crossing, and communicate directly with equipped vehicles approaching the crossing. It remotely monitors and reports the status of the rail crossing equipment and sends control plan updates to the equipment. It also provides enhanced coordination between rail operations and traffic management centers that supports forecast of closure times and durations that may be applied to advanced traffic control strategies or delivered as enhanced traveler information.
DOTD District 02 Traffic Operation	Traffic Management Center	TMC Basic Surveillance	'TMC Basic Surveillance' remotely monitors and controls traffic sensor systems and surveillance (e.g., CCTV) equipment, and collects, processes and stores the collected traffic data. Current traffic information and other real-time transportation information is also collected from other centers. The collected information is provided to traffic operations personnel and made available to other centers.
DOTD District 02 Traffic Operation	Traffic Management Center	TMC Data Collection	'TMC Data Collection' collects and stores information that is created in the course of traffic operations performed by the Traffic Management Center. This data can be used directly by operations personnel or it can be made available to other data users and archives in the region.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD District 02 Traffic Operation	Traffic Management Center	TMC Evacuation Support	'TMC Evacuation Support' supports development, coordination, and execution of special traffic management strategies during evacuation and subsequent reentry of a population in the vicinity of a disaster or major emergency. A traffic management strategy is developed based on anticipated demand, the capacity of the road network including access to and from the evacuation routes, and existing and forecast conditions. The strategy supports efficient evacuation and also protects and optimizes movement of response vehicles and other resources that are responding to the emergency.
DOTD District 02 Traffic Operation	Traffic Management Center	TMC Multi-Modal Coordination	'TMC Multi-Modal Coordination' supports center-to-center coordination between the Traffic Management and Transit Management Centers. It monitors transit operations and provides traffic signal priority for transit vehicles on request from the Transit Management Center.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD District 02 Traffic Operation	Traffic Management Center	TMC Roadway Equipment Monitoring	'TMC Roadway Equipment Monitoring' monitors the operational status of field equipment and detects failures. It presents field equipment status to Traffic Operations Personnel and reports failures to the Maintenance and Construction Management Center. It tracks the repair or replacement of the failed equipment. The entire range of ITS field equipment may be monitored including sensors (traffic, infrastructure, environmental, security, speed, etc.) and devices (highway advisory radio, dynamic message signs, automated roadway treatment systems, barrier and safeguard systems, cameras, traffic signals and override equipment, ramp meters, beacons, security surveillance equipment, etc.).
DOTD District 02 Traffic Operation	Traffic Management Center	TMC Signal Control	'TMC Signal Control' provides the capability for traffic managers to monitor and manage the traffic flow at signalized intersections. This capability includes analyzing and reducing the collected data from traffic surveillance equipment and developing and implementing control plans for signalized intersections. Control plans may be developed and implemented that coordinate signals at many intersections under the domain of a single Traffic Management Center and are responsive to traffic conditions and adapt to support incidents, preemption and priority requests, pedestrian crossing calls, etc.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD District 02 Traffic Operation	Traffic Management Center	TMC Standard Rail Crossing Management	'TMC Standard Rail Crossing Management' monitors and controls rail crossing traffic control equipment. This version provides basic support for standard active warning systems at grade crossings. It remotely monitors and reports the status of the rail crossing equipment and sends control plan updates to the equipment.
DOTD District 02 Traffic Operation	Traffic Management Center	TMC Traffic Metering	'TMC Traffic Metering' provides center monitoring and control of traffic metering systems including on ramps, through interchanges, and on the mainline roadway. All types of metering are covered including pre-timed/fixed time, time-based, dynamic and adaptive metering strategies and special bypasses. Metering rates can be calculated based upon historical data or current conditions including traffic, air quality, etc.
DOTD District 02 Traffic Operation	Traffic Management Center	TMC Work Zone Traffic Management	'TMC Work Zone Traffic Management' coordinates work plans with maintenance systems so that work zones are established that have minimum traffic impact. Traffic control strategies are implemented to further mitigate traffic impacts associated with work zones that are established, providing work zone information to driver information systems such as dynamic message signs.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD District 02 Traffic Operations Archive	Archived Data System	Archive Data Repository	'Archive Data Repository' collects data and data catalogs from one or more data sources and stores the data in a focused repository that is suited to a particular set of ITS data users. It includes capabilities for performing quality checks on the incoming data, error notification, and archive to archive coordination. It includes the capability to define a data registry that allows registration of data identifiers or data definitions for interoperable use throughout a region. It supports a broad range of implementations, ranging from simple data marts that collect a focused set of data and serve a particular user community to large-scale data warehouses that collect, integrate, and summarize transportation data from multiple sources and serve a broad array of users within a region. Repositories may be established to support operations planning, performance monitoring and management, and policy and investment decisions.
DOTD District 02 Traffic Operations Archive	Archived Data System	Archive Government Reporting	'Archive Government Reporting' selects and formats data residing in an ITS archive to facilitate local, state, and federal government data reporting requirements. It provides transportation system statistics and performance measures in required formats to support investment and policy decisions.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD District 02 Traffic Operations Archive	Archived Data System	Archive Situation Data Archival	'Archive Situation Data Archival' collects and archives traffic, roadway, and environmental information for use in off-line planning, research, and analysis. It controls and collects information directly from equipment at the roadside, reflecting the deployment of traffic detectors that are used primarily for traffic monitoring and planning purposes, rather than for traffic management. It also collects situation data from connected vehicles. The data collected, quality checks performed, and aggregation strategies are defined to support transportation system performance monitoring and management.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD District 02 Traffic Signal System	ITS Roadway Equipment	Roadway Signal Control	'Roadway Signal Control' includes the field elements that monitor and control signalized intersections. It includes the traffic signal controllers, detectors, conflict monitors, signal heads, and other ancillary equipment that supports traffic signal control. It also includes field masters, and equipment that supports communications with a central monitoring and/or control system, as applicable. The communications link supports upload and download of signal timings and other parameters and reporting of current intersection status. It represents the field equipment used in all levels of traffic signal control from basic actuated systems that operate on fixed timing plans through adaptive systems. It also supports all signalized intersection configurations, including those that accommodate pedestrians. In advanced, future implementations, environmental data may be monitored and used to support dilemma zone processing and other aspects of signal control that are sensitive to local environmental conditions.
DOTD Flood Warning System	ITS Roadway Equipment	Roadway Barrier System Control	'Roadway Barrier System Control' includes the field equipment that controls barrier systems used to control access to transportation facilities and infrastructure. Barrier systems include automatic or remotely controlled gates, barriers and other access control systems.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD ITS Field Equipment	Connected Vehicle Roadside Equipment	RSE Device Management	'RSE Device Management' provides executive control and monitoring of the RSE hardware and installed software applications. It monitors the operational status of the hardware and other attached field devices and detects and reports fault conditions. A back office interface supports application installation, upgrade, and configuration as well as remote control of the operating mode and hardware configuration settings and initiation of remote diagnostics. A local interface is provided to field personnel for local monitoring and diagnostics, supporting field maintenance, repair, and replacement.
DOTD ITS Field Equipment	Connected Vehicle Roadside Equipment	RSE Traffic Monitoring	'RSE Traffic Monitoring' monitors the basic safety messages that are shared between connected vehicles and distills this data into traffic flow measures that can be used to manage the network in combination with or in lieu of traffic data collected by infrastructure-based sensors. As connected vehicle penetration rates increase, the measures provided by this application can expand beyond vehicle speeds that are directly reported by vehicles to include estimated volume, occupancy, and other measures. This object also supports incident detection by monitoring for changes in speed and vehicle control events that indicate a potential incident.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD ITS Field Equipment	ITS Roadway Equipment	Roadway Barrier System Control	'Roadway Barrier System Control' includes the field equipment that controls barrier systems used to control access to transportation facilities and infrastructure. Barrier systems include automatic or remotely controlled gates, barriers and other access control systems.
DOTD ITS Field Equipment	ITS Roadway Equipment	Roadway Basic Surveillance	'Roadway Basic Surveillance' monitors traffic conditions using fixed equipment such as loop detectors and CCTV cameras.
DOTD ITS Field Equipment	ITS Roadway Equipment	Roadway Incident Detection	'Roadway Incident Detection' provides incident detection using traffic detectors and surveillance equipment. It monitors for unusual traffic conditions that may indicate an incident or processes surveillance images, watching for potential incidents. It provides potential incident information as well as traffic flow and images to the center for processing and presentation to traffic operations personnel.
DOTD ITS Field Equipment	ITS Roadway Equipment	Roadway Multimodal Crossing Control	'Roadway Multimodal Crossing Control' monitors multimodal crossings and monitors and controls traffic control equipment in the vicinity of the crossing. Equipment controlled includes warning lights, gates, dynamic message signs, and other systems associated with multimodal crossings. It manages draw bridges and miscellaneous other crossings between highway traffic and other modes. Railroad grade crossings are covered by other functional objects.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD ITS Field Equipment	ITS Roadway Equipment	Roadway Reversible Lanes	'Roadway Reversible Lanes' includes field elements that monitor and control reversible lane facilities. It includes the traffic sensors, surveillance equipment, lane control signals, physical lane access controls, and other field elements that manage traffic on these facilities. It provides current reversible lane facility status information and accepts requests and control commands from the controlling center.
DOTD ITS Field Equipment	ITS Roadway Equipment	Roadway Speed Monitoring and Warning	'Roadway Speed Monitoring and Warning' includes the field elements that monitor vehicle speeds. If the speed is determined to be excessive, an advisory or warning is displayed. Current environmental conditions and other factors that may reduce safe operating speeds may also be taken into account. The operational status (state of the device, configuration, and fault data) is provided to the center. This application can also provide an enforcement function, reporting speed violations to an enforcement agency.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD ITS Field Equipment	ITS Roadway Equipment	Roadway Standard Rail Crossing	'Roadway Standard Rail Crossing' manages highway traffic at highway-rail intersections (HRIs) where operational requirements do not dictate advanced features (e.g., where rail operational speeds are less than 80 miles per hour). Either passive (e.g., the crossbuck sign) or active warning systems (e.g., flashing lights and gates) are supported depending on the specific requirements for each intersection. These traditional HRI warning systems may also be augmented with other standard traffic management devices. The warning systems are activated on notification of an approaching train by interfaced wayside equipment. The equipment at the HRI may also be interconnected with adjacent signalized intersections so that local control can be adapted to highway-rail intersection activities. Health monitoring of the HRI equipment and interfaces is performed; detected abnormalities are reported through interfaces to the wayside interface equipment and the Traffic Management Center.
DOTD ITS Field Equipment	ITS Roadway Equipment	Roadway Traffic Information Dissemination	'Roadway Traffic Information Dissemination' includes field elements that provide information to drivers, including dynamic message signs and highway advisory radios.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD ITS Field Equipment	ITS Roadway Equipment	Roadway Traffic Metering	'Roadway Traffic Metering' includes the field equipment used to meter traffic on ramps, through interchanges, and on the mainline roadway. The equipment includes dynamic messages signs to provide guidance and information to drivers at and approaching a meter, including information for any special bypass lanes.
DOTD ITS Field Equipment	ITS Roadway Equipment	Roadway Work Zone Traffic Control	'Roadway Work Zone Traffic Control' controls traffic in areas of the roadway where maintenance and construction activities are underway, monitoring and controlling traffic using field equipment such as CCTV cameras, dynamic messages signs, and gates/barriers. Work zone speeds and delays are provided to the motorist prior to the work zones.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD ITS Section	Emergency Management Center	Emergency Evacuation Support	<p>'Emergency Evacuation Support' coordinates evacuation plans among allied agencies and manages evacuation and reentry of a population in the vicinity of a disaster or other emergency that poses a risk to public safety. Where appropriate, the affected population is evacuated in shifts, using more than one evacuation route, and including several evacuation destinations to spread demand and thereby expedite the evacuation. All affected jurisdictions (e.g., states and counties) at the evacuation origin, evacuation destination, and along the evacuation route are informed of the plan. The public is provided with real-time evacuation guidance including basic information to assist potential evacuees in determining whether evacuation is necessary. Resource requirements are forecast based on the evacuation plans, and the necessary resources are located, shared between agencies if necessary, and deployed at the right locations at the appropriate times. The evacuation and reentry status are monitored and used to refine the plan and resource allocations during the evacuation and subsequent reentry. It communicates with public health systems to develop evacuation plans and recommended strategies for disasters and evacuation scenarios involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD ITS Section	Emergency Management Center	Emergency Incident Command	<p>'Emergency Incident Command' provides tactical decision support, resource coordination, and communications integration for Incident Commands that are established by first responders at or near the incident scene to support local management of an incident. It supports communications with public safety, emergency management, transportation, and other allied response agency centers, tracks and maintains resource information, action plans, and the incident command organization itself. Information is shared with agency centers including resource deployment status, hazardous material information, traffic, road, and weather conditions, evacuation advice, and other information that enables emergency or maintenance personnel in the field to implement an effective, safe incident response. It supports the functions and interfaces commonly supported by a mobile command center.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD ITS Section	Emergency Management Center	Emergency Response Management	<p>'Emergency Response Management' provides the strategic emergency response capabilities and broad inter-agency interfaces that are implemented for extraordinary incidents and disasters that require response from outside the local community. It provides the functional capabilities and interfaces commonly associated with Emergency Operations Centers. It develops and stores emergency response plans and manages overall coordinated response to emergencies. It monitors real-time information on the state of the regional transportation system including current traffic and road conditions, weather conditions, special event and incident information. It tracks the availability of resources and assists in the appropriate allocation of these resources for a particular emergency response. It also provides coordination between multiple allied agencies before and during emergencies to implement emergency response plans and track progress through the incident. It also coordinates with the public through the Emergency Telecommunication Systems (e.g., Reverse 911). It coordinates with public health systems to provide the most appropriate response for emergencies involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD ITS Section	Maint and Constr Management Center	MCM Roadway Maintenance	<p>'MCM Roadway Maintenance' provides overall management and support for routine maintenance on a roadway system or right-of-way. Services managed include landscape maintenance, hazard removal (roadway debris, dead animals), routine maintenance activities (roadway cleaning, grass cutting), and repair and maintenance of non-ITS equipment on the roadway (e.g., signs, gantries, cabinets, guard rails, etc.).</p> <p>Environmental conditions information is also received from various weather sources to aid in scheduling routine maintenance activities. See also MCM Field Equipment Maintenance for maintenance of ITS field equipment.</p>
DOTD ITS Section	Traffic Management Center	TMC Roadway Equipment Monitoring	<p>'TMC Roadway Equipment Monitoring' monitors the operational status of field equipment and detects failures. It presents field equipment status to Traffic Operations Personnel and reports failures to the Maintenance and Construction Management Center. It tracks the repair or replacement of the failed equipment. The entire range of ITS field equipment may be monitored including sensors (traffic, infrastructure, environmental, security, speed, etc.) and devices (highway advisory radio, dynamic message signs, automated roadway treatment systems, barrier and safeguard systems, cameras, traffic signals and override equipment, ramp meters, beacons, security surveillance equipment, etc.).</p>



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD ITS Section	Traffic Management Center	TMC Service Patrol Management	'TMC Service Patrol Management' supports dispatch and communication with service patrol vehicles that monitor roads to aid motorists, offering rapid response to minor incidents.
DOTD MAP	Traffic Management Center	TMC Incident Dispatch Coordination	'TMC Incident Dispatch Coordination' formulates and manages an incident response that takes into account the incident potential, incident impacts, and resources required for incident management. It provides information to support dispatch and routing of emergency response and service vehicles as well as coordination with other cooperating agencies. It provides access to traffic management resources that provide surveillance of the incident, traffic control in the surrounding area, and support for the incident response. It monitors the incident response and collects performance measures such as incident response and clearance times.
DOTD MAP	Traffic Management Center	TMC Service Patrol Management	'TMC Service Patrol Management' supports dispatch and communication with service patrol vehicles that monitor roads to aid motorists, offering rapid response to minor incidents.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD Social Media	Transportation Information Center	TIC Traveler Information Broadcast	'TIC Traveler Information Broadcast' disseminates traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, and weather information. The same information is broadcast to all equipped traveler interface systems and vehicles.
DOTD Statewide TMC	Archived Data System	Archive Data Repository	'Archive Data Repository' collects data and data catalogs from one or more data sources and stores the data in a focused repository that is suited to a particular set of ITS data users. It includes capabilities for performing quality checks on the incoming data, error notification, and archive to archive coordination. It includes the capability to define a data registry that allows registration of data identifiers or data definitions for interoperable use throughout a region. It supports a broad range of implementations, ranging from simple data marts that collect a focused set of data and serve a particular user community to large-scale data warehouses that collect, integrate, and summarize transportation data from multiple sources and serve a broad array of users within a region. Repositories may be established to support operations planning, performance monitoring and management, and policy and investment decisions.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD Statewide TMC	Archived Data System	Archive Government Reporting	'Archive Government Reporting' selects and formats data residing in an ITS archive to facilitate local, state, and federal government data reporting requirements. It provides transportation system statistics and performance measures in required formats to support investment and policy decisions.
DOTD Statewide TMC	Archived Data System	Archive Situation Data Archival	'Archive Situation Data Archival' collects and archives traffic, roadway, and environmental information for use in off-line planning, research, and analysis. It controls and collects information directly from equipment at the roadside, reflecting the deployment of traffic detectors that are used primarily for traffic monitoring and planning purposes, rather than for traffic management. It also collects situation data from connected vehicles. The data collected, quality checks performed, and aggregation strategies are defined to support transportation system performance monitoring and management.
DOTD Statewide TMC	Emergency Management Center	Emergency Data Collection	'Emergency Data Collection' collects and stores emergency information that is collected in the course of operations by the Emergency Management Center. This data can be used directly by operations personnel or it can be made available to other data users and archives in the region.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD Statewide TMC	Emergency Management Center	Emergency Early Warning System	'Emergency Early Warning System' monitors alerting and advisory systems, information collected by ITS surveillance and sensors, and reports from other agencies and uses this information to identify potential, imminent, or in-progress major incidents or disasters. Notification is provided to initiate the emergency response, including public notification using ITS traveler information systems, where appropriate.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD Statewide TMC	Emergency Management Center	Emergency Evacuation Support	<p>'Emergency Evacuation Support' coordinates evacuation plans among allied agencies and manages evacuation and reentry of a population in the vicinity of a disaster or other emergency that poses a risk to public safety. Where appropriate, the affected population is evacuated in shifts, using more than one evacuation route, and including several evacuation destinations to spread demand and thereby expedite the evacuation. All affected jurisdictions (e.g., states and counties) at the evacuation origin, evacuation destination, and along the evacuation route are informed of the plan. The public is provided with real-time evacuation guidance including basic information to assist potential evacuees in determining whether evacuation is necessary. Resource requirements are forecast based on the evacuation plans, and the necessary resources are located, shared between agencies if necessary, and deployed at the right locations at the appropriate times. The evacuation and reentry status are monitored and used to refine the plan and resource allocations during the evacuation and subsequent reentry. It communicates with public health systems to develop evacuation plans and recommended strategies for disasters and evacuation scenarios involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD Statewide TMC	Emergency Management Center	Emergency Incident Command	'Emergency Incident Command' provides tactical decision support, resource coordination, and communications integration for Incident Commands that are established by first responders at or near the incident scene to support local management of an incident. It supports communications with public safety, emergency management, transportation, and other allied response agency centers, tracks and maintains resource information, action plans, and the incident command organization itself. Information is shared with agency centers including resource deployment status, hazardous material information, traffic, road, and weather conditions, evacuation advice, and other information that enables emergency or maintenance personnel in the field to implement an effective, safe incident response. It supports the functions and interfaces commonly supported by a mobile command center.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD Statewide TMC	Emergency Management Center	Emergency Response Management	<p>'Emergency Response Management' provides the strategic emergency response capabilities and broad inter-agency interfaces that are implemented for extraordinary incidents and disasters that require response from outside the local community. It provides the functional capabilities and interfaces commonly associated with Emergency Operations Centers. It develops and stores emergency response plans and manages overall coordinated response to emergencies. It monitors real-time information on the state of the regional transportation system including current traffic and road conditions, weather conditions, special event and incident information. It tracks the availability of resources and assists in the appropriate allocation of these resources for a particular emergency response. It also provides coordination between multiple allied agencies before and during emergencies to implement emergency response plans and track progress through the incident. It also coordinates with the public through the Emergency Telecommunication Systems (e.g., Reverse 911). It coordinates with public health systems to provide the most appropriate response for emergencies involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD Statewide TMC	Maint and Constr Management Center	MCM Data Collection	'MCM Data Collection' collects and stores maintenance and construction information that is collected in the course of operations by the Maintenance and Construction Management Center. This data can be used directly by operations personnel or it can be made available to other data users and archives in the region.
DOTD Statewide TMC	Maint and Constr Management Center	MCM Incident Management	'MCM Incident Management' supports maintenance and construction participation in coordinated incident response. Incident notifications are shared, incident response resources are managed, and the overall incident situation and incident response status is coordinated among allied response organizations.
DOTD Statewide TMC	Maint and Constr Management Center	MCM Maintenance Decision Support	'MCM Maintenance Decision Support' recommends maintenance courses of action based on current and forecast environmental and road conditions and additional application specific information. Decisions are supported through understandable presentation of filtered and fused environmental and road condition information for specific time horizons as well as specific maintenance recommendations that are generated by the system based on this integrated information. The recommended courses of action are supported by information on the anticipated consequences of action or inaction, when available.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD Statewide TMC	Maint and Constr Management Center	MCM Reduced Speed Zone Warning	'MCM Reduced Speed Zone Warning' supports remote control and monitoring of reduced speed zone warning roadside equipment. It provides posted speed limits and associated schedules and information about associated road configuration changes including lane merges and shifts. It monitors field equipment operation and reports current status to the operator.
DOTD Statewide TMC	Maint and Constr Management Center	MCM Roadway Maintenance	'MCM Roadway Maintenance' provides overall management and support for routine maintenance on a roadway system or right-of-way. Services managed include landscape maintenance, hazard removal (roadway debris, dead animals), routine maintenance activities (roadway cleaning, grass cutting), and repair and maintenance of non-ITS equipment on the roadway (e.g., signs, gantries, cabinets, guard rails, etc.). Environmental conditions information is also received from various weather sources to aid in scheduling routine maintenance activities. See also MCM Field Equipment Maintenance for maintenance of ITS field equipment.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD Statewide TMC	Maint and Constr Management Center	MCM Work Zone Management	'MCM Work Zone Management' remotely monitors and supports work zone activities, controlling traffic through dynamic message signs (DMS), Highway Advisory Radio (HAR), gates and barriers, and informing other groups of activity (e.g., traveler information, traffic management, other maintenance and construction centers) for better coordination management. Work zone speeds, and delays, and closures are provided to the motorist prior to the work zones. This application provides control of field equipment in all maintenance areas, including fixed and portable field equipment supporting both stationary and mobile work zones.
DOTD Statewide TMC	Traffic Management Center	TMC Basic Surveillance	'TMC Basic Surveillance' remotely monitors and controls traffic sensor systems and surveillance (e.g., CCTV) equipment, and collects, processes and stores the collected traffic data. Current traffic information and other real-time transportation information is also collected from other centers. The collected information is provided to traffic operations personnel and made available to other centers.
DOTD Statewide TMC	Traffic Management Center	TMC Data Collection	'TMC Data Collection' collects and stores information that is created in the course of traffic operations performed by the Traffic Management Center. This data can be used directly by operations personnel or it can be made available to other data users and archives in the region.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD Statewide TMC	Traffic Management Center	TMC Evacuation Support	'TMC Evacuation Support' supports development, coordination, and execution of special traffic management strategies during evacuation and subsequent reentry of a population in the vicinity of a disaster or major emergency. A traffic management strategy is developed based on anticipated demand, the capacity of the road network including access to and from the evacuation routes, and existing and forecast conditions. The strategy supports efficient evacuation and also protects and optimizes movement of response vehicles and other resources that are responding to the emergency.
DOTD Statewide TMC	Traffic Management Center	TMC Incident Detection	'TMC Incident Detection' identifies and reports incidents to Traffic Operations Personnel. It remotely monitors and controls traffic sensor and surveillance systems that support incident detection and verification. It analyzes and reduces the collected sensor and surveillance data, external alerting and advisory and incident reporting systems, anticipated demand information from intermodal freight depots, border crossings, special event information, and identifies and reports incidents and hazardous conditions



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD Statewide TMC	Traffic Management Center	TMC Incident Dispatch Coordination	'TMC Incident Dispatch Coordination' formulates and manages an incident response that takes into account the incident potential, incident impacts, and resources required for incident management. It provides information to support dispatch and routing of emergency response and service vehicles as well as coordination with other cooperating agencies. It provides access to traffic management resources that provide surveillance of the incident, traffic control in the surrounding area, and support for the incident response. It monitors the incident response and collects performance measures such as incident response and clearance times.
DOTD Statewide TMC	Traffic Management Center	TMC Multimodal Crossing Management	'TMC Multimodal Crossing Management' remotely monitors and manages multimodal crossings, including draw bridges and other crossings between highway traffic and other modes. Equipment controlled includes warning lights, gates, dynamic message signs, and other systems that provide driver information and control traffic at multimodal crossings. Railroad grade crossings are covered by other functional objects.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD Statewide TMC	Traffic Management Center	TMC Regional Traffic Management	'TMC Regional Traffic Management' supports coordination between Traffic Management Centers in order to share traffic information between centers as well as control of traffic management field equipment. This coordination supports wide area optimization and regional coordination that spans jurisdictional boundaries; for example, coordinated signal control in a metropolitan area or coordination between freeway operations and arterial signal control within a corridor.
DOTD Statewide TMC	Traffic Management Center	TMC Reversible Lane Management	'TMC Reversible Lane Management' remotely monitors and controls reversible lanes. It provides an interface to reversible lane field equipment (traffic sensors, surveillance equipment, lane control signals, physical lane access controls, etc.) and to traffic operations personnel to support central monitoring and control of these facilities.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD Statewide TMC	Traffic Management Center	TMC Roadway Equipment Monitoring	'TMC Roadway Equipment Monitoring' monitors the operational status of field equipment and detects failures. It presents field equipment status to Traffic Operations Personnel and reports failures to the Maintenance and Construction Management Center. It tracks the repair or replacement of the failed equipment. The entire range of ITS field equipment may be monitored including sensors (traffic, infrastructure, environmental, security, speed, etc.) and devices (highway advisory radio, dynamic message signs, automated roadway treatment systems, barrier and safeguard systems, cameras, traffic signals and override equipment, ramp meters, beacons, security surveillance equipment, etc.).
DOTD Statewide TMC	Traffic Management Center	TMC Service Patrol Management	'TMC Service Patrol Management' supports dispatch and communication with service patrol vehicles that monitor roads to aid motorists, offering rapid response to minor incidents.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD Statewide TMC	Traffic Management Center	TMC Signal Control	'TMC Signal Control' provides the capability for traffic managers to monitor and manage the traffic flow at signalized intersections. This capability includes analyzing and reducing the collected data from traffic surveillance equipment and developing and implementing control plans for signalized intersections. Control plans may be developed and implemented that coordinate signals at many intersections under the domain of a single Traffic Management Center and are responsive to traffic conditions and adapt to support incidents, preemption and priority requests, pedestrian crossing calls, etc.
DOTD Statewide TMC	Traffic Management Center	TMC Situation Data Management	'TMC Situation Data Management' collects, assimilates, and disseminates vehicle probe data collected from roadside short range communications equipment and centers controlling transit vehicles, toll collection points, and route-guided vehicles. It estimates traffic and road conditions based on the aggregated probe data and disseminates this information to other centers.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD Statewide TMC	Traffic Management Center	TMC Speed Warning	'TMC Speed Warning' supports remote control and monitoring of reduced speed zone warning roadside equipment. It provides the location and extent of the reduced speed zone, the posted speed limit(s) with information about the applicability of the speed limit(s) (e.g., time of day, day of week, seasonality, relevant vehicle types) and information about associated road configuration changes including lane merges and shifts. It monitors field equipment operation and reports current status to the operator.
DOTD Statewide TMC	Traffic Management Center	TMC Traffic Information Dissemination	'TMC Traffic Information Dissemination' disseminates traffic and road conditions, closure and detour information, incident information, driver advisories, and other traffic-related data to other centers, the media, and driver information systems. It monitors and controls driver information system field equipment including dynamic message signs and highway advisory radio, managing dissemination of driver information through these systems.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD Statewide TMC	Traffic Management Center	TMC Traffic Network Performance Evaluation	'TMC Traffic Network Performance Evaluation' measures traffic network performance and predicts travel demand patterns to support traffic flow optimization, demand management, and incident management. It collects traffic data from sensors and surveillance equipment as well as input from other Traffic Management Centers, emissions management, transit operations, and event promoters and uses this information to measure traffic network performance. It collects route planning information from transportation information centers and integrates and uses this information to predict future traffic conditions. The planned control strategies can be passed back to the transportation information center so that the intended strategies can be reflected in future route planning.
DOTD Statewide TMC	Traffic Management Center	TMC Work Zone Traffic Management	'TMC Work Zone Traffic Management' coordinates work plans with maintenance systems so that work zones are established that have minimum traffic impact. Traffic control strategies are implemented to further mitigate traffic impacts associated with work zones that are established, providing work zone information to driver information systems such as dynamic message signs.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD Statewide TMC	Transportation Information Center	TIC Data Collection	'TIC Data Collection' collects transportation-related data from other centers, performs data quality checks on the collected data and then consolidates, verifies, and refines the data and makes it available in a consistent format to applications that support operational data sharing between centers and deliver traveler information to end-users. A broad range of data is collected including traffic and road conditions, transit data, emergency information and advisories, weather data, special event information, traveler services, parking, multimodal data, and toll/pricing data. It also shares data with other transportation information centers.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD Statewide TMC	Transportation Information Center	TIC Emergency Traveler Information	'TIC Emergency Traveler Information' provides emergency information to the public, including wide-area alerts and evacuation information. It provides emergency alerts, information on evacuation zones and evacuation requirements, evacuation destinations and shelter information, available transportation modes, and traffic and road conditions at the origin, destination, and along the evacuation routes. In addition to general evacuation information, personalized information including tailored evacuation routes, service information, and estimated travel times is also provided based on traveler specified origin, destination, and route parameters. Updated information is provided throughout the evacuation and subsequent reentry as status changes and plans are adapted.
DOTD Statewide TMC	Transportation Information Center	TIC Operations Data Collection	'TIC Operations Data Collection' collects and stores information that is collected about the transportation information service including data on the number of clients serviced and the services that were provided. This data can be used directly by operations personnel or it can be made available to other data users and archives in the region.



Element Name	Physical Object	Functional Object	Functional Object Description
DOTD Statewide TMC	Transportation Information Center	TIC Situation Data Management	'TIC Situation Data Management' manages connected vehicle situation data collection, quality controls, filtering, aggregation, and storage. Through this process, raw data reported by connected vehicles are transformed into information products that can be accessed and used to support transportation operations and traveler information. The distribution of the connected vehicle-derived information products is handled by other functional objects.
East Jefferson General Hospital EMS	Emergency Management Center	Emergency Dispatch	'Emergency Dispatch' tracks the location and status of emergency vehicles and dispatches these vehicles to incidents. Pertinent incident information is gathered from the public and other public safety agencies and relayed to the responding units. Incident status and the status of the responding units is tracked so that additional units can be dispatched and/or unit status can be returned to available when the incident is cleared and closed.



Element Name	Physical Object	Functional Object	Functional Object Description
East Jefferson General Hospital EMS	Emergency Management Center	Emergency Routing	<p>'Emergency Routing' supports routing of emergency vehicles and enlists support from the Traffic Management Center to facilitate travel along these routes. Routes may be determined based on real-time traffic information and road conditions or routes may be provided by the Traffic Management Center on request. Vehicles are tracked and routes are based on current vehicle location. It may coordinate with the Traffic Management Center to provide preemption or otherwise adapt the traffic control strategy along the selected route. It may also coordinate with Transportation Information Centers to notify other drivers of public safety vehicles that are enroute.</p>
Event Promoter	Transportation Information Center	TIC Traveler Information Broadcast	<p>'TIC Traveler Information Broadcast' disseminates traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, and weather information. The same information is broadcast to all equipped traveler interface systems and vehicles.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
HAZMAT Mobil Response	Emergency Management Center	Emergency Dispatch	'Emergency Dispatch' tracks the location and status of emergency vehicles and dispatches these vehicles to incidents. Pertinent incident information is gathered from the public and other public safety agencies and relayed to the responding units. Incident status and the status of the responding units is tracked so that additional units can be dispatched and/or unit status can be returned to available when the incident is cleared and closed.
HAZMAT Mobil Response	Emergency Management Center	Emergency Environmental Monitoring	'Emergency Environmental Monitoring' collects current and forecast road conditions and surface weather information from a variety of sources. The collected environmental information is monitored and presented to the operator and used to more effectively manage incidents.



Element Name	Physical Object	Functional Object	Functional Object Description
HAZMAT Mobil Response	Emergency Management Center	Emergency Evacuation Support	<p>'Emergency Evacuation Support' coordinates evacuation plans among allied agencies and manages evacuation and reentry of a population in the vicinity of a disaster or other emergency that poses a risk to public safety. Where appropriate, the affected population is evacuated in shifts, using more than one evacuation route, and including several evacuation destinations to spread demand and thereby expedite the evacuation. All affected jurisdictions (e.g., states and counties) at the evacuation origin, evacuation destination, and along the evacuation route are informed of the plan. The public is provided with real-time evacuation guidance including basic information to assist potential evacuees in determining whether evacuation is necessary. Resource requirements are forecast based on the evacuation plans, and the necessary resources are located, shared between agencies if necessary, and deployed at the right locations at the appropriate times. The evacuation and reentry status are monitored and used to refine the plan and resource allocations during the evacuation and subsequent reentry. It communicates with public health systems to develop evacuation plans and recommended strategies for disasters and evacuation scenarios involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Jefferson Parish 911	Emergency Management Center	Emergency Call-Taking	'Emergency Call-Taking' supports the emergency call-taker, collecting available information about the caller and the reported emergency, and forwarding this information to other objects that formulate and manage the emergency response. It receives 9-1-1, 7-digit local access, and motorist call-box calls and interfaces to other agencies to assist in the verification and assessment of the emergency and to forward the emergency information to the appropriate response agency.
Jefferson Parish 911	Emergency Management Center	Emergency Dispatch	'Emergency Dispatch' tracks the location and status of emergency vehicles and dispatches these vehicles to incidents. Pertinent incident information is gathered from the public and other public safety agencies and relayed to the responding units. Incident status and the status of the responding units is tracked so that additional units can be dispatched and/or unit status can be returned to available when the incident is cleared and closed.



Element Name	Physical Object	Functional Object	Functional Object Description
Jefferson Parish Dept. of Emergency Management	Emergency Management Center	Emergency Evacuation Support	<p>'Emergency Evacuation Support' coordinates evacuation plans among allied agencies and manages evacuation and reentry of a population in the vicinity of a disaster or other emergency that poses a risk to public safety. Where appropriate, the affected population is evacuated in shifts, using more than one evacuation route, and including several evacuation destinations to spread demand and thereby expedite the evacuation. All affected jurisdictions (e.g., states and counties) at the evacuation origin, evacuation destination, and along the evacuation route are informed of the plan. The public is provided with real-time evacuation guidance including basic information to assist potential evacuees in determining whether evacuation is necessary. Resource requirements are forecast based on the evacuation plans, and the necessary resources are located, shared between agencies if necessary, and deployed at the right locations at the appropriate times. The evacuation and reentry status are monitored and used to refine the plan and resource allocations during the evacuation and subsequent reentry. It communicates with public health systems to develop evacuation plans and recommended strategies for disasters and evacuation scenarios involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Jefferson Parish Dept. of Emergency Management	Emergency Management Center	Emergency Response Management	<p>'Emergency Response Management' provides the strategic emergency response capabilities and broad inter-agency interfaces that are implemented for extraordinary incidents and disasters that require response from outside the local community. It provides the functional capabilities and interfaces commonly associated with Emergency Operations Centers. It develops and stores emergency response plans and manages overall coordinated response to emergencies. It monitors real-time information on the state of the regional transportation system including current traffic and road conditions, weather conditions, special event and incident information. It tracks the availability of resources and assists in the appropriate allocation of these resources for a particular emergency response. It also provides coordination between multiple allied agencies before and during emergencies to implement emergency response plans and track progress through the incident. It also coordinates with the public through the Emergency Telecommunication Systems (e.g., Reverse 911). It coordinates with public health systems to provide the most appropriate response for emergencies involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Jefferson Parish Fire Department	Emergency Management Center	Emergency Dispatch	'Emergency Dispatch' tracks the location and status of emergency vehicles and dispatches these vehicles to incidents. Pertinent incident information is gathered from the public and other public safety agencies and relayed to the responding units. Incident status and the status of the responding units is tracked so that additional units can be dispatched and/or unit status can be returned to available when the incident is cleared and closed.
Jefferson Parish Fire Department	Emergency Management Center	Emergency Routing	'Emergency Routing' supports routing of emergency vehicles and enlists support from the Traffic Management Center to facilitate travel along these routes. Routes may be determined based on real-time traffic information and road conditions or routes may be provided by the Traffic Management Center on request. Vehicles are tracked and routes are based on current vehicle location. It may coordinate with the Traffic Management Center to provide preemption or otherwise adapt the traffic control strategy along the selected route. It may also coordinate with Transportation Information Centers to notify other drivers of public safety vehicles that are enroute.



Element Name	Physical Object	Functional Object	Functional Object Description
Jefferson Parish ITS Field Equipment	ITS Roadway Equipment	Roadway Incident Detection	'Roadway Incident Detection' provides incident detection using traffic detectors and surveillance equipment. It monitors for unusual traffic conditions that may indicate an incident or processes surveillance images, watching for potential incidents. It provides potential incident information as well as traffic flow and images to the center for processing and presentation to traffic operations personnel.
Jefferson Parish ITS Field Equipment	ITS Roadway Equipment	Roadway Standard Rail Crossing	'Roadway Standard Rail Crossing' manages highway traffic at highway-rail intersections (HRIs) where operational requirements do not dictate advanced features (e.g., where rail operational speeds are less than 80 miles per hour). Either passive (e.g., the crossbuck sign) or active warning systems (e.g., flashing lights and gates) are supported depending on the specific requirements for each intersection. These traditional HRI warning systems may also be augmented with other standard traffic management devices. The warning systems are activated on notification of an approaching train by interfaced wayside equipment. The equipment at the HRI may also be interconnected with adjacent signalized intersections so that local control can be adapted to highway-rail intersection activities. Health monitoring of the HRI equipment and interfaces is performed; detected abnormalities are reported through interfaces to the wayside interface equipment and the Traffic Management Center.



Element Name	Physical Object	Functional Object	Functional Object Description
Jefferson Parish Traffic Operations	Traffic Management Center	TMC Advanced Rail Crossing Management	'TMC Advanced Rail Crossing Management' monitors and controls rail crossing traffic control equipment at advanced crossings that provide additional information on approaching trains, detect and report obstructions on the grade crossing, and communicate directly with equipped vehicles approaching the crossing. It remotely monitors and reports the status of the rail crossing equipment and sends control plan updates to the equipment. It also provides enhanced coordination between rail operations and traffic management centers that supports forecast of closure times and durations that may be applied to advanced traffic control strategies or delivered as enhanced traveler information.
Jefferson Parish Traffic Operations	Traffic Management Center	TMC Data Collection	'TMC Data Collection' collects and stores information that is created in the course of traffic operations performed by the Traffic Management Center. This data can be used directly by operations personnel or it can be made available to other data users and archives in the region.



Element Name	Physical Object	Functional Object	Functional Object Description
Jefferson Parish Traffic Operations	Traffic Management Center	TMC Roadway Equipment Monitoring	'TMC Roadway Equipment Monitoring' monitors the operational status of field equipment and detects failures. It presents field equipment status to Traffic Operations Personnel and reports failures to the Maintenance and Construction Management Center. It tracks the repair or replacement of the failed equipment. The entire range of ITS field equipment may be monitored including sensors (traffic, infrastructure, environmental, security, speed, etc.) and devices (highway advisory radio, dynamic message signs, automated roadway treatment systems, barrier and safeguard systems, cameras, traffic signals and override equipment, ramp meters, beacons, security surveillance equipment, etc.).
Jefferson Parish Traffic Operations	Traffic Management Center	TMC Signal Control	'TMC Signal Control' provides the capability for traffic managers to monitor and manage the traffic flow at signalized intersections. This capability includes analyzing and reducing the collected data from traffic surveillance equipment and developing and implementing control plans for signalized intersections. Control plans may be developed and implemented that coordinate signals at many intersections under the domain of a single Traffic Management Center and are responsive to traffic conditions and adapt to support incidents, preemption and priority requests, pedestrian crossing calls, etc.



Element Name	Physical Object	Functional Object	Functional Object Description
Jefferson Parish Traffic Operations	Traffic Management Center	TMC Standard Rail Crossing Management	'TMC Standard Rail Crossing Management' monitors and controls rail crossing traffic control equipment. This version provides basic support for standard active warning systems at grade crossings. It remotely monitors and reports the status of the rail crossing equipment and sends control plan updates to the equipment.



Element Name	Physical Object	Functional Object	Functional Object Description
Jefferson Parish Traffic Operations	Traffic Management Center	TMC Traffic Management Decision Support	<p>'TMC Traffic Management Decision Support' recommends courses of action to the traffic operator based on current and forecast road and traffic conditions. Traffic incidents, special events, maintenance activities and other events or conditions that impact capacity or demand are monitored. Historical data and models are used to compare the impact of potential courses of action and make recommendations to the operator. Decisions are supported through presentation of filtered and fused network-wide road and traffic conditions that identify network imbalances and recommended courses of action. The recommended actions may include predefined incident response plans, signal timing plan changes, DMS/HAR messages, truck restrictions, lane control strategies, metering strategies, and adjustment of variable speed limits. Multimodal strategies may also be recommended that include suggested transit strategies and suggested route and mode choices for travelers. Once a course of action is selected, traffic operations personnel implement these actions within the Traffic Management Center and coordinate the response with other centers in the region.</p>
Jefferson Parish Traffic Signal System	ITS Roadway Equipment	Roadway Basic Surveillance	<p>'Roadway Basic Surveillance' monitors traffic conditions using fixed equipment such as loop detectors and CCTV cameras.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Jefferson Parish Traffic Signal System	ITS Roadway Equipment	Roadway Signal Control	<p>'Roadway Signal Control' includes the field elements that monitor and control signalized intersections. It includes the traffic signal controllers, detectors, conflict monitors, signal heads, and other ancillary equipment that supports traffic signal control. It also includes field masters, and equipment that supports communications with a central monitoring and/or control system, as applicable. The communications link supports upload and download of signal timings and other parameters and reporting of current intersection status. It represents the field equipment used in all levels of traffic signal control from basic actuated systems that operate on fixed timing plans through adaptive systems. It also supports all signalized intersection configurations, including those that accommodate pedestrians. In advanced, future implementations, environmental data may be monitored and used to support dilemma zone processing and other aspects of signal control that are sensitive to local environmental conditions.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Jefferson Transit (JeT)	Transit Management Center	Transit Center Fare Management	'Transit Center Fare Management' manages fare collection and passenger load management at the transit center. It provides the back office functions that support transit fare collection, supporting payment reconciliation with links to financial institutions and enforcement agencies for fare violations. It collects data required to determine accurate ridership levels, establish fares, and distribute fare information. It loads fare data into the vehicle prior to the beginning of normal operations and unloads fare collection data from the vehicle at the close out of normal operations. It manages allow/block lists and performs token validation.
Jefferson Transit (JeT)	Transit Management Center	Transit Center Fixed-Route Operations	'Transit Center Fixed-Route Operations' manages fixed route transit operations. It supports creation of schedules, blocks and runs for fixed and flexible route transit services. It allows fixed-route and flexible-route transit services to disseminate schedules and automatically updates customer service operator systems with the most current schedule information. It also supports automated dispatch of transit vehicles. Current vehicle schedule adherence and optimum scenarios for schedule adjustment are also provided. It also receives and processes transit vehicle loading data.



Element Name	Physical Object	Functional Object	Functional Object Description
Jefferson Transit (JeT)	Transit Management Center	Transit Center Information Services	<p>'Transit Center Information Services' collects the latest available information for a transit service and makes it available to transit customers and to Transportation Information Centers for further distribution. Customers are provided information at transit stops and other public transportation areas before they embark and on-board the transit vehicle once they are en route. Information provided can include the latest available information on transit routes, schedules, transfer options, fares, real-time schedule adherence, current incidents, weather conditions, yellow pages, and special events. In addition to general service information, tailored information (e.g., itineraries) are provided to individual transit users.</p>
Jefferson Transit (JeT)	Transit Management Center	Transit Center Multi-Modal Coordination	<p>'Transit Center Multi-Modal Coordination' supports transit service coordination between transit properties and coordinates with other surface and air transportation modes. As part of service coordination, it shares schedule and trip information, as well as transit transfer cluster (a collection of stop points, stations, or terminals where transfers can be made conveniently) and transfer point information between Multimodal Transportation Service Providers, Transit Agencies, and ISPs. An interface to Traffic Management also supports demand management strategies.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Jefferson Transit (JeT)	Transit Management Center	Transit Center Paratransit Operations	'Transit Center Paratransit Operations' manages demand responsive transit services, including paratransit services. It supports planning and scheduling of these services, allowing paratransit and other demand response transit services to plan efficient routes and better estimate arrival times. It also supports automated dispatch of paratransit vehicles and tracks passenger pick-ups and drop-offs. Customer service operator systems are updated with the most current schedule information.
Jefferson Transit (JeT)	Transit Management Center	Transit Center Passenger Counting	'Transit Center Passenger Counting' receives and processes transit vehicle loading data using two-way communications from equipped transit vehicles.
Jefferson Transit (JeT)	Transit Management Center	Transit Center Security	'Transit Center Security' monitors transit vehicle operator or traveler activated alarms received from on-board a transit vehicle. It supports transit vehicle operator authentication and provides the capability to remotely disable a transit vehicle. It also includes the capability to alert operators and police to potential incidents identified by these security features.



Element Name	Physical Object	Functional Object	Functional Object Description
Jefferson Transit (JeT)	Transit Management Center	Transit Center Vehicle Assignment	'Transit Center Vehicle Assignment' assigns individual transit vehicles to vehicle blocks and downloads this information to the transit vehicle. It also provides an exception handling process for the vehicle assignment function to generate new, supplemental vehicle assignments when required by changes during the operating day. It provides an inventory management function for the transit facility which stores functional attributes about each of the vehicles owned by the transit operator. These attributes permit the planning and assignment functions to match vehicles with routes based on suitability for the types of service required by the particular routes.
Jefferson Transit (JeT)	Transit Management Center	Transit Center Vehicle Tracking	'Transit Center Vehicle Tracking' monitors transit vehicle location. The location information is collected via a data communication link between the transit vehicles and the transit center. The location information is presented to the transit operator on a digitized map of the transit service area. The location data may be used to determine real time schedule adherence and update the transit system's schedule in real-time. The real-time schedule information is disseminated to other information providers, which furnish the information to travelers.



Element Name	Physical Object	Functional Object	Functional Object Description
Jefferson Transit (JeT)	Transit Management Center	Transit Garage Maintenance	'Transit Garage Maintenance' provides advanced maintenance functions for the transit property. It collects operational and maintenance data from transit vehicles, manages vehicle service histories, and monitors operators and vehicles. It collects vehicle mileage data and uses it to automatically generate preventative maintenance schedules for each vehicle by utilizing vehicle tracking data. In addition, it provides information to service personnel to support maintenance activities and records and verifies that maintenance work was performed.
JeT Information Center	Transportation Information Center	TIC Data Collection	'TIC Data Collection' collects transportation-related data from other centers, performs data quality checks on the collected data and then consolidates, verifies, and refines the data and makes it available in a consistent format to applications that support operational data sharing between centers and deliver traveler information to end-users. A broad range of data is collected including traffic and road conditions, transit data, emergency information and advisories, weather data, special event information, traveler services, parking, multimodal data, and toll/pricing data. It also shares data with other transportation information centers.



Element Name	Physical Object	Functional Object	Functional Object Description
JeT Information Center	Transportation Information Center	TIC Trip Planning	<p>'TIC Trip Planning' provides pre-trip and en route trip planning services for travelers. It receives origin, destination, constraints, and preferences and returns trip plan(s) that meet the supplied criteria. Trip plans may be based on current traffic and road conditions, transit schedule information, and other real-time traveler information. Candidate trip plans are multimodal and may include vehicle, transit, and alternate mode segments (e.g., rail, ferry, bicycle routes, and walkways) based on traveler preferences. It also confirms the trip plan for the traveler and supports reservations and advanced payment for portions of the trip. The trip plan includes specific routing information and instructions for each segment of the trip and may also include information and reservations for additional services (e.g., parking) along the route.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
JeT Transit Data Archive	Archived Data System	Archive Data Repository	<p>'Archive Data Repository' collects data and data catalogs from one or more data sources and stores the data in a focused repository that is suited to a particular set of ITS data users. It includes capabilities for performing quality checks on the incoming data, error notification, and archive to archive coordination. It includes the capability to define a data registry that allows registration of data identifiers or data definitions for interoperable use throughout a region. It supports a broad range of implementations, ranging from simple data marts that collect a focused set of data and serve a particular user community to large-scale data warehouses that collect, integrate, and summarize transportation data from multiple sources and serve a broad array of users within a region. Repositories may be established to support operations planning, performance monitoring and management, and policy and investment decisions.</p>
JeT Transit Data Archive	Archived Data System	Archive Government Reporting	<p>'Archive Government Reporting' selects and formats data residing in an ITS archive to facilitate local, state, and federal government data reporting requirements. It provides transportation system statistics and performance measures in required formats to support investment and policy decisions.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
JPSO	Emergency Management Center	Emergency Dispatch	<p>'Emergency Dispatch' tracks the location and status of emergency vehicles and dispatches these vehicles to incidents. Pertinent incident information is gathered from the public and other public safety agencies and relayed to the responding units. Incident status and the status of the responding units is tracked so that additional units can be dispatched and/or unit status can be returned to available when the incident is cleared and closed.</p>
JPSO	Emergency Management Center	Emergency Incident Command	<p>'Emergency Incident Command' provides tactical decision support, resource coordination, and communications integration for Incident Commands that are established by first responders at or near the incident scene to support local management of an incident. It supports communications with public safety, emergency management, transportation, and other allied response agency centers, tracks and maintains resource information, action plans, and the incident command organization itself. Information is shared with agency centers including resource deployment status, hazardous material information, traffic, road, and weather conditions, evacuation advice, and other information that enables emergency or maintenance personnel in the field to implement an effective, safe incident response. It supports the functions and interfaces commonly supported by a mobile command center.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
JPSO	Emergency Management Center	Emergency Response Management	<p>'Emergency Response Management' provides the strategic emergency response capabilities and broad inter-agency interfaces that are implemented for extraordinary incidents and disasters that require response from outside the local community. It provides the functional capabilities and interfaces commonly associated with Emergency Operations Centers. It develops and stores emergency response plans and manages overall coordinated response to emergencies. It monitors real-time information on the state of the regional transportation system including current traffic and road conditions, weather conditions, special event and incident information. It tracks the availability of resources and assists in the appropriate allocation of these resources for a particular emergency response. It also provides coordination between multiple allied agencies before and during emergencies to implement emergency response plans and track progress through the incident. It also coordinates with the public through the Emergency Telecommunication Systems (e.g., Reverse 911). It coordinates with public health systems to provide the most appropriate response for emergencies involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Kenner Engineering	Emergency Management Center	Emergency Response Management	<p>'Emergency Response Management' provides the strategic emergency response capabilities and broad inter-agency interfaces that are implemented for extraordinary incidents and disasters that require response from outside the local community. It provides the functional capabilities and interfaces commonly associated with Emergency Operations Centers. It develops and stores emergency response plans and manages overall coordinated response to emergencies. It monitors real-time information on the state of the regional transportation system including current traffic and road conditions, weather conditions, special event and incident information. It tracks the availability of resources and assists in the appropriate allocation of these resources for a particular emergency response. It also provides coordination between multiple allied agencies before and during emergencies to implement emergency response plans and track progress through the incident. It also coordinates with the public through the Emergency Telecommunication Systems (e.g., Reverse 911). It coordinates with public health systems to provide the most appropriate response for emergencies involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Kenner Engineering	Traffic Management Center	TMC Data Collection	'TMC Data Collection' collects and stores information that is created in the course of traffic operations performed by the Traffic Management Center. This data can be used directly by operations personnel or it can be made available to other data users and archives in the region.
Kenner Engineering	Traffic Management Center	TMC Signal Control	'TMC Signal Control' provides the capability for traffic managers to monitor and manage the traffic flow at signalized intersections. This capability includes analyzing and reducing the collected data from traffic surveillance equipment and developing and implementing control plans for signalized intersections. Control plans may be developed and implemented that coordinate signals at many intersections under the domain of a single Traffic Management Center and are responsive to traffic conditions and adapt to support incidents, preemption and priority requests, pedestrian crossing calls, etc.
Kenner Police	Emergency Management Center	Emergency Dispatch	'Emergency Dispatch' tracks the location and status of emergency vehicles and dispatches these vehicles to incidents. Pertinent incident information is gathered from the public and other public safety agencies and relayed to the responding units. Incident status and the status of the responding units is tracked so that additional units can be dispatched and/or unit status can be returned to available when the incident is cleared and closed.



Element Name	Physical Object	Functional Object	Functional Object Description
Kenner Police	Emergency Management Center	Emergency Incident Command	<p>'Emergency Incident Command' provides tactical decision support, resource coordination, and communications integration for Incident Commands that are established by first responders at or near the incident scene to support local management of an incident. It supports communications with public safety, emergency management, transportation, and other allied response agency centers, tracks and maintains resource information, action plans, and the incident command organization itself. Information is shared with agency centers including resource deployment status, hazardous material information, traffic, road, and weather conditions, evacuation advice, and other information that enables emergency or maintenance personnel in the field to implement an effective, safe incident response. It supports the functions and interfaces commonly supported by a mobile command center.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Kenner Police	Emergency Management Center	Emergency Response Management	<p>'Emergency Response Management' provides the strategic emergency response capabilities and broad inter-agency interfaces that are implemented for extraordinary incidents and disasters that require response from outside the local community. It provides the functional capabilities and interfaces commonly associated with Emergency Operations Centers. It develops and stores emergency response plans and manages overall coordinated response to emergencies. It monitors real-time information on the state of the regional transportation system including current traffic and road conditions, weather conditions, special event and incident information. It tracks the availability of resources and assists in the appropriate allocation of these resources for a particular emergency response. It also provides coordination between multiple allied agencies before and during emergencies to implement emergency response plans and track progress through the incident. It also coordinates with the public through the Emergency Telecommunication Systems (e.g., Reverse 911). It coordinates with public health systems to provide the most appropriate response for emergencies involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Levee Flood Monitoring System	ITS Roadway Equipment	Roadway Barrier System Control	'Roadway Barrier System Control' includes the field equipment that controls barrier systems used to control access to transportation facilities and infrastructure. Barrier systems include automatic or remotely controlled gates, barriers and other access control systems.
Levee Flood Monitoring System	ITS Roadway Equipment	Roadway Basic Surveillance	'Roadway Basic Surveillance' monitors traffic conditions using fixed equipment such as loop detectors and CCTV cameras.
Levee Police Patrol	Emergency Management Center	Emergency Dispatch	'Emergency Dispatch' tracks the location and status of emergency vehicles and dispatches these vehicles to incidents. Pertinent incident information is gathered from the public and other public safety agencies and relayed to the responding units. Incident status and the status of the responding units is tracked so that additional units can be dispatched and/or unit status can be returned to available when the incident is cleared and closed.



Element Name	Physical Object	Functional Object	Functional Object Description
Levee Police Patrol	Emergency Management Center	Emergency Response Management	<p>'Emergency Response Management' provides the strategic emergency response capabilities and broad inter-agency interfaces that are implemented for extraordinary incidents and disasters that require response from outside the local community. It provides the functional capabilities and interfaces commonly associated with Emergency Operations Centers. It develops and stores emergency response plans and manages overall coordinated response to emergencies. It monitors real-time information on the state of the regional transportation system including current traffic and road conditions, weather conditions, special event and incident information. It tracks the availability of resources and assists in the appropriate allocation of these resources for a particular emergency response. It also provides coordination between multiple allied agencies before and during emergencies to implement emergency response plans and track progress through the incident. It also coordinates with the public through the Emergency Telecommunication Systems (e.g., Reverse 911). It coordinates with public health systems to provide the most appropriate response for emergencies involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Local Emergency Medical Service	Emergency Management Center	Emergency Dispatch	'Emergency Dispatch' tracks the location and status of emergency vehicles and dispatches these vehicles to incidents. Pertinent incident information is gathered from the public and other public safety agencies and relayed to the responding units. Incident status and the status of the responding units is tracked so that additional units can be dispatched and/or unit status can be returned to available when the incident is cleared and closed.
Local Emergency Medical Service	Emergency Management Center	Emergency Routing	'Emergency Routing' supports routing of emergency vehicles and enlists support from the Traffic Management Center to facilitate travel along these routes. Routes may be determined based on real-time traffic information and road conditions or routes may be provided by the Traffic Management Center on request. Vehicles are tracked and routes are based on current vehicle location. It may coordinate with the Traffic Management Center to provide preemption or otherwise adapt the traffic control strategy along the selected route. It may also coordinate with Transportation Information Centers to notify other drivers of public safety vehicles that are enroute.



Element Name	Physical Object	Functional Object	Functional Object Description
Local Emergency Operations Centers	Emergency Management Center	Emergency Call-Taking	'Emergency Call-Taking' supports the emergency call-taker, collecting available information about the caller and the reported emergency, and forwarding this information to other objects that formulate and manage the emergency response. It receives 9-1-1, 7-digit local access, and motorist call-box calls and interfaces to other agencies to assist in the verification and assessment of the emergency and to forward the emergency information to the appropriate response agency.
Local Emergency Operations Centers	Emergency Management Center	Emergency Dispatch	'Emergency Dispatch' tracks the location and status of emergency vehicles and dispatches these vehicles to incidents. Pertinent incident information is gathered from the public and other public safety agencies and relayed to the responding units. Incident status and the status of the responding units is tracked so that additional units can be dispatched and/or unit status can be returned to available when the incident is cleared and closed.
Local Emergency Operations Centers	Emergency Management Center	Emergency Early Warning System	'Emergency Early Warning System' monitors alerting and advisory systems, information collected by ITS surveillance and sensors, and reports from other agencies and uses this information to identify potential, imminent, or in-progress major incidents or disasters. Notification is provided to initiate the emergency response, including public notification using ITS traveler information systems, where appropriate.



Element Name	Physical Object	Functional Object	Functional Object Description
Local Emergency Operations Centers	Emergency Management Center	Emergency Evacuation Support	<p>'Emergency Evacuation Support' coordinates evacuation plans among allied agencies and manages evacuation and reentry of a population in the vicinity of a disaster or other emergency that poses a risk to public safety. Where appropriate, the affected population is evacuated in shifts, using more than one evacuation route, and including several evacuation destinations to spread demand and thereby expedite the evacuation. All affected jurisdictions (e.g., states and counties) at the evacuation origin, evacuation destination, and along the evacuation route are informed of the plan. The public is provided with real-time evacuation guidance including basic information to assist potential evacuees in determining whether evacuation is necessary. Resource requirements are forecast based on the evacuation plans, and the necessary resources are located, shared between agencies if necessary, and deployed at the right locations at the appropriate times. The evacuation and reentry status are monitored and used to refine the plan and resource allocations during the evacuation and subsequent reentry. It communicates with public health systems to develop evacuation plans and recommended strategies for disasters and evacuation scenarios involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Local Emergency Operations Centers	Emergency Management Center	Emergency Response Management	<p>'Emergency Response Management' provides the strategic emergency response capabilities and broad inter-agency interfaces that are implemented for extraordinary incidents and disasters that require response from outside the local community. It provides the functional capabilities and interfaces commonly associated with Emergency Operations Centers. It develops and stores emergency response plans and manages overall coordinated response to emergencies. It monitors real-time information on the state of the regional transportation system including current traffic and road conditions, weather conditions, special event and incident information. It tracks the availability of resources and assists in the appropriate allocation of these resources for a particular emergency response. It also provides coordination between multiple allied agencies before and during emergencies to implement emergency response plans and track progress through the incident. It also coordinates with the public through the Emergency Telecommunication Systems (e.g., Reverse 911). It coordinates with public health systems to provide the most appropriate response for emergencies involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Local Print and Broadcast Channels	Transportation Information Center	TIC Emergency Traveler Information	'TIC Emergency Traveler Information' provides emergency information to the public, including wide-area alerts and evacuation information. It provides emergency alerts, information on evacuation zones and evacuation requirements, evacuation destinations and shelter information, available transportation modes, and traffic and road conditions at the origin, destination, and along the evacuation routes. In addition to general evacuation information, personalized information including tailored evacuation routes, service information, and estimated travel times is also provided based on traveler specified origin, destination, and route parameters. Updated information is provided throughout the evacuation and subsequent reentry as status changes and plans are adapted.
Local Print and Broadcast Channels	Transportation Information Center	TIC Traveler Information Broadcast	'TIC Traveler Information Broadcast' disseminates traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, and weather information. The same information is broadcast to all equipped traveler interface systems and vehicles.



Element Name	Physical Object	Functional Object	Functional Object Description
Louisiana 511/ Website	Transportation Information Center	TIC Traveler Information Broadcast	'TIC Traveler Information Broadcast' disseminates traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, and weather information. The same information is broadcast to all equipped traveler interface systems and vehicles.
Louisiana 511/ Website	Transportation Information Center	TIC Traveler Telephone Information	'TIC Traveler Telephone Information' services voice-based traveler requests for information that supports traveler telephone information systems like 511. It takes requests for traveler information, which could be voice-formatted traveler requests, dual-tone multi-frequency (DTMF)-based requests, or a simple traveler information request, and returns the requested traveler information in the proper format. In addition to servicing requests for traveler information, it also collects and forwards alerts and advisories to traveler telephone information systems.



Element Name	Physical Object	Functional Object	Functional Object Description
LSP Troop B	Emergency Management Center	Emergency Dispatch	<p>'Emergency Dispatch' tracks the location and status of emergency vehicles and dispatches these vehicles to incidents. Pertinent incident information is gathered from the public and other public safety agencies and relayed to the responding units. Incident status and the status of the responding units is tracked so that additional units can be dispatched and/or unit status can be returned to available when the incident is cleared and closed.</p>
LSP Troop B	Emergency Management Center	Emergency Early Warning System	<p>'Emergency Early Warning System' monitors alerting and advisory systems, information collected by ITS surveillance and sensors, and reports from other agencies and uses this information to identify potential, imminent, or in-progress major incidents or disasters. Notification is provided to initiate the emergency response, including public notification using ITS traveler information systems, where appropriate.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
LSP Troop B	Emergency Management Center	Emergency Evacuation Support	<p>'Emergency Evacuation Support' coordinates evacuation plans among allied agencies and manages evacuation and reentry of a population in the vicinity of a disaster or other emergency that poses a risk to public safety. Where appropriate, the affected population is evacuated in shifts, using more than one evacuation route, and including several evacuation destinations to spread demand and thereby expedite the evacuation. All affected jurisdictions (e.g., states and counties) at the evacuation origin, evacuation destination, and along the evacuation route are informed of the plan. The public is provided with real-time evacuation guidance including basic information to assist potential evacuees in determining whether evacuation is necessary. Resource requirements are forecast based on the evacuation plans, and the necessary resources are located, shared between agencies if necessary, and deployed at the right locations at the appropriate times. The evacuation and reentry status are monitored and used to refine the plan and resource allocations during the evacuation and subsequent reentry. It communicates with public health systems to develop evacuation plans and recommended strategies for disasters and evacuation scenarios involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
LSP Troop B	Emergency Management Center	Emergency Incident Command	'Emergency Incident Command' provides tactical decision support, resource coordination, and communications integration for Incident Commands that are established by first responders at or near the incident scene to support local management of an incident. It supports communications with public safety, emergency management, transportation, and other allied response agency centers, tracks and maintains resource information, action plans, and the incident command organization itself. Information is shared with agency centers including resource deployment status, hazardous material information, traffic, road, and weather conditions, evacuation advice, and other information that enables emergency or maintenance personnel in the field to implement an effective, safe incident response. It supports the functions and interfaces commonly supported by a mobile command center.



Element Name	Physical Object	Functional Object	Functional Object Description
LSP Troop B	Emergency Management Center	Emergency Response Management	<p>'Emergency Response Management' provides the strategic emergency response capabilities and broad inter-agency interfaces that are implemented for extraordinary incidents and disasters that require response from outside the local community. It provides the functional capabilities and interfaces commonly associated with Emergency Operations Centers. It develops and stores emergency response plans and manages overall coordinated response to emergencies. It monitors real-time information on the state of the regional transportation system including current traffic and road conditions, weather conditions, special event and incident information. It tracks the availability of resources and assists in the appropriate allocation of these resources for a particular emergency response. It also provides coordination between multiple allied agencies before and during emergencies to implement emergency response plans and track progress through the incident. It also coordinates with the public through the Emergency Telecommunication Systems (e.g., Reverse 911). It coordinates with public health systems to provide the most appropriate response for emergencies involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
New Orleans EMS	Emergency Management Center	Emergency Dispatch	<p>'Emergency Dispatch' tracks the location and status of emergency vehicles and dispatches these vehicles to incidents. Pertinent incident information is gathered from the public and other public safety agencies and relayed to the responding units. Incident status and the status of the responding units is tracked so that additional units can be dispatched and/or unit status can be returned to available when the incident is cleared and closed.</p>
New Orleans EMS	Emergency Management Center	Emergency Routing	<p>'Emergency Routing' supports routing of emergency vehicles and enlists support from the Traffic Management Center to facilitate travel along these routes. Routes may be determined based on real-time traffic information and road conditions or routes may be provided by the Traffic Management Center on request. Vehicles are tracked and routes are based on current vehicle location. It may coordinate with the Traffic Management Center to provide preemption or otherwise adapt the traffic control strategy along the selected route. It may also coordinate with Transportation Information Centers to notify other drivers of public safety vehicles that are enroute.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
New Orleans Fire Department	Emergency Management Center	Emergency Dispatch	'Emergency Dispatch' tracks the location and status of emergency vehicles and dispatches these vehicles to incidents. Pertinent incident information is gathered from the public and other public safety agencies and relayed to the responding units. Incident status and the status of the responding units is tracked so that additional units can be dispatched and/or unit status can be returned to available when the incident is cleared and closed.
New Orleans Fire Department	Emergency Management Center	Emergency Routing	'Emergency Routing' supports routing of emergency vehicles and enlists support from the Traffic Management Center to facilitate travel along these routes. Routes may be determined based on real-time traffic information and road conditions or routes may be provided by the Traffic Management Center on request. Vehicles are tracked and routes are based on current vehicle location. It may coordinate with the Traffic Management Center to provide preemption or otherwise adapt the traffic control strategy along the selected route. It may also coordinate with Transportation Information Centers to notify other drivers of public safety vehicles that are enroute.
New Orleans ITS Field Equipment	ITS Roadway Equipment	Roadway Basic Surveillance	'Roadway Basic Surveillance' monitors traffic conditions using fixed equipment such as loop detectors and CCTV cameras.



Element Name	Physical Object	Functional Object	Functional Object Description
New Orleans ITS Field Equipment	ITS Roadway Equipment	Roadway Standard Rail Crossing	<p>'Roadway Standard Rail Crossing' manages highway traffic at highway-rail intersections (HRIs) where operational requirements do not dictate advanced features (e.g., where rail operational speeds are less than 80 miles per hour). Either passive (e.g., the crossbuck sign) or active warning systems (e.g., flashing lights and gates) are supported depending on the specific requirements for each intersection. These traditional HRI warning systems may also be augmented with other standard traffic management devices. The warning systems are activated on notification of an approaching train by interfaced wayside equipment. The equipment at the HRI may also be interconnected with adjacent signalized intersections so that local control can be adapted to highway-rail intersection activities. Health monitoring of the HRI equipment and interfaces is performed; detected abnormalities are reported through interfaces to the wayside interface equipment and the Traffic Management Center.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
New Orleans Police Department	Emergency Management Center	Emergency Dispatch	<p>'Emergency Dispatch' tracks the location and status of emergency vehicles and dispatches these vehicles to incidents. Pertinent incident information is gathered from the public and other public safety agencies and relayed to the responding units. Incident status and the status of the responding units is tracked so that additional units can be dispatched and/or unit status can be returned to available when the incident is cleared and closed.</p>
New Orleans Police Department	Emergency Management Center	Emergency Incident Command	<p>'Emergency Incident Command' provides tactical decision support, resource coordination, and communications integration for Incident Commands that are established by first responders at or near the incident scene to support local management of an incident. It supports communications with public safety, emergency management, transportation, and other allied response agency centers, tracks and maintains resource information, action plans, and the incident command organization itself. Information is shared with agency centers including resource deployment status, hazardous material information, traffic, road, and weather conditions, evacuation advice, and other information that enables emergency or maintenance personnel in the field to implement an effective, safe incident response. It supports the functions and interfaces commonly supported by a mobile command center.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
New Orleans Police Department	Emergency Management Center	Emergency Response Management	<p>'Emergency Response Management' provides the strategic emergency response capabilities and broad inter-agency interfaces that are implemented for extraordinary incidents and disasters that require response from outside the local community. It provides the functional capabilities and interfaces commonly associated with Emergency Operations Centers. It develops and stores emergency response plans and manages overall coordinated response to emergencies. It monitors real-time information on the state of the regional transportation system including current traffic and road conditions, weather conditions, special event and incident information. It tracks the availability of resources and assists in the appropriate allocation of these resources for a particular emergency response. It also provides coordination between multiple allied agencies before and during emergencies to implement emergency response plans and track progress through the incident. It also coordinates with the public through the Emergency Telecommunication Systems (e.g., Reverse 911). It coordinates with public health systems to provide the most appropriate response for emergencies involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
New Orleans Traffic Operations	Traffic Management Center	TMC Advanced Rail Crossing Management	'TMC Advanced Rail Crossing Management' monitors and controls rail crossing traffic control equipment at advanced crossings that provide additional information on approaching trains, detect and report obstructions on the grade crossing, and communicate directly with equipped vehicles approaching the crossing. It remotely monitors and reports the status of the rail crossing equipment and sends control plan updates to the equipment. It also provides enhanced coordination between rail operations and traffic management centers that supports forecast of closure times and durations that may be applied to advanced traffic control strategies or delivered as enhanced traveler information.
New Orleans Traffic Operations	Traffic Management Center	TMC Basic Surveillance	'TMC Basic Surveillance' remotely monitors and controls traffic sensor systems and surveillance (e.g., CCTV) equipment, and collects, processes and stores the collected traffic data. Current traffic information and other real-time transportation information is also collected from other centers. The collected information is provided to traffic operations personnel and made available to other centers.
New Orleans Traffic Operations	Traffic Management Center	TMC Data Collection	'TMC Data Collection' collects and stores information that is created in the course of traffic operations performed by the Traffic Management Center. This data can be used directly by operations personnel or it can be made available to other data users and archives in the region.



Element Name	Physical Object	Functional Object	Functional Object Description
New Orleans Traffic Operations	Traffic Management Center	TMC Demand Management Coordination	'TMC Demand Management Coordination' provides the capability to gather information on regional toll, parking, and transit usage and request changes to pricing and other mechanisms to manage overall transportation demand.
New Orleans Traffic Operations	Traffic Management Center	TMC Multi-Modal Coordination	'TMC Multi-Modal Coordination' supports center-to-center coordination between the Traffic Management and Transit Management Centers. It monitors transit operations and provides traffic signal priority for transit vehicles on request from the Transit Management Center.
New Orleans Traffic Operations	Traffic Management Center	TMC Roadway Equipment Monitoring	'TMC Roadway Equipment Monitoring' monitors the operational status of field equipment and detects failures. It presents field equipment status to Traffic Operations Personnel and reports failures to the Maintenance and Construction Management Center. It tracks the repair or replacement of the failed equipment. The entire range of ITS field equipment may be monitored including sensors (traffic, infrastructure, environmental, security, speed, etc.) and devices (highway advisory radio, dynamic message signs, automated roadway treatment systems, barrier and safeguard systems, cameras, traffic signals and override equipment, ramp meters, beacons, security surveillance equipment, etc.).



Element Name	Physical Object	Functional Object	Functional Object Description
New Orleans Traffic Operations	Traffic Management Center	TMC Signal Control	'TMC Signal Control' provides the capability for traffic managers to monitor and manage the traffic flow at signalized intersections. This capability includes analyzing and reducing the collected data from traffic surveillance equipment and developing and implementing control plans for signalized intersections. Control plans may be developed and implemented that coordinate signals at many intersections under the domain of a single Traffic Management Center and are responsive to traffic conditions and adapt to support incidents, preemption and priority requests, pedestrian crossing calls, etc.
New Orleans Traffic Operations	Traffic Management Center	TMC Standard Rail Crossing Management	'TMC Standard Rail Crossing Management' monitors and controls rail crossing traffic control equipment. This version provides basic support for standard active warning systems at grade crossings. It remotely monitors and reports the status of the rail crossing equipment and sends control plan updates to the equipment.
New Orleans Traffic Signal System	ITS Roadway Equipment	Roadway Basic Surveillance	'Roadway Basic Surveillance' monitors traffic conditions using fixed equipment such as loop detectors and CCTV cameras.



Element Name	Physical Object	Functional Object	Functional Object Description
New Orleans Traffic Signal System	ITS Roadway Equipment	Roadway Signal Control	<p>'Roadway Signal Control' includes the field elements that monitor and control signalized intersections. It includes the traffic signal controllers, detectors, conflict monitors, signal heads, and other ancillary equipment that supports traffic signal control. It also includes field masters, and equipment that supports communications with a central monitoring and/or control system, as applicable. The communications link supports upload and download of signal timings and other parameters and reporting of current intersection status. It represents the field equipment used in all levels of traffic signal control from basic actuated systems that operate on fixed timing plans through adaptive systems. It also supports all signalized intersection configurations, including those that accommodate pedestrians. In advanced, future implementations, environmental data may be monitored and used to support dilemma zone processing and other aspects of signal control that are sensitive to local environmental conditions.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
NOHSEP	Emergency Management Center	Emergency Evacuation Support	<p>'Emergency Evacuation Support' coordinates evacuation plans among allied agencies and manages evacuation and reentry of a population in the vicinity of a disaster or other emergency that poses a risk to public safety. Where appropriate, the affected population is evacuated in shifts, using more than one evacuation route, and including several evacuation destinations to spread demand and thereby expedite the evacuation. All affected jurisdictions (e.g., states and counties) at the evacuation origin, evacuation destination, and along the evacuation route are informed of the plan. The public is provided with real-time evacuation guidance including basic information to assist potential evacuees in determining whether evacuation is necessary. Resource requirements are forecast based on the evacuation plans, and the necessary resources are located, shared between agencies if necessary, and deployed at the right locations at the appropriate times. The evacuation and reentry status are monitored and used to refine the plan and resource allocations during the evacuation and subsequent reentry. It communicates with public health systems to develop evacuation plans and recommended strategies for disasters and evacuation scenarios involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
NOHSEP	Emergency Management Center	Emergency Response Management	<p>'Emergency Response Management' provides the strategic emergency response capabilities and broad inter-agency interfaces that are implemented for extraordinary incidents and disasters that require response from outside the local community. It provides the functional capabilities and interfaces commonly associated with Emergency Operations Centers. It develops and stores emergency response plans and manages overall coordinated response to emergencies. It monitors real-time information on the state of the regional transportation system including current traffic and road conditions, weather conditions, special event and incident information. It tracks the availability of resources and assists in the appropriate allocation of these resources for a particular emergency response. It also provides coordination between multiple allied agencies before and during emergencies to implement emergency response plans and track progress through the incident. It also coordinates with the public through the Emergency Telecommunication Systems (e.g., Reverse 911). It coordinates with public health systems to provide the most appropriate response for emergencies involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
NOLAReady	Transportation Information Center	TIC Traveler Information Broadcast	'TIC Traveler Information Broadcast' disseminates traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, and weather information. The same information is broadcast to all equipped traveler interface systems and vehicles.
NOPB Rail / Port of New Orleans Integration	Fleet and Freight Management Center	Freight Administration and Management	'Freight Administration and Management' manages the movement of freight from source to destination. It interfaces to intermodal customers to setup and schedule transportation and coordinates with intermodal terminals and freight consolidation stations to coordinate the shipment. It coordinates with the appropriate government agencies to expedite the movement of trucks, their drivers, and their cargo across international borders. The application monitors the status of the freight and freight equipment (container, trailer, or chassis) and monitors freight location and compares it against the planned route.
NORPC	Traffic Management Center	TMC Data Collection	'TMC Data Collection' collects and stores information that is created in the course of traffic operations performed by the Traffic Management Center. This data can be used directly by operations personnel or it can be made available to other data users and archives in the region.



Element Name	Physical Object	Functional Object	Functional Object Description
NORPC Data Archives	Archived Data System	Archive Data Repository	'Archive Data Repository' collects data and data catalogs from one or more data sources and stores the data in a focused repository that is suited to a particular set of ITS data users. It includes capabilities for performing quality checks on the incoming data, error notification, and archive to archive coordination. It includes the capability to define a data registry that allows registration of data identifiers or data definitions for interoperable use throughout a region. It supports a broad range of implementations, ranging from simple data marts that collect a focused set of data and serve a particular user community to large-scale data warehouses that collect, integrate, and summarize transportation data from multiple sources and serve a broad array of users within a region. Repositories may be established to support operations planning, performance monitoring and management, and policy and investment decisions.
NORPC Data Archives	Archived Data System	Archive Government Reporting	'Archive Government Reporting' selects and formats data residing in an ITS archive to facilitate local, state, and federal government data reporting requirements. It provides transportation system statistics and performance measures in required formats to support investment and policy decisions.



Element Name	Physical Object	Functional Object	Functional Object Description
NORPC Data Archives	Archived Data System	Archive On-Line Analysis and Mining	'Archive On-Line Analysis and Mining' provides advanced data analysis, summarization, and mining features that facilitate discovery of information, patterns, and correlations in large data sets. Multidimensional analysis, selective summarization and expansion of data details, and many other advanced analysis services may be offered. Complex performance measures that are derived from multiple data sources may also be produced.
NOUPT	Transit Management Center	Transit Center Data Collection	'Transit Center Data Collection' collects and stores transit information that is collected in the course of transit operations performed by the Transit Management Center. This data can be used directly by operations personnel or it can be made available to other data users and archives in the region.
NOUPT	Transit Management Center	Transit Center Fare Management	'Transit Center Fare Management' manages fare collection and passenger load management at the transit center. It provides the back office functions that support transit fare collection, supporting payment reconciliation with links to financial institutions and enforcement agencies for fare violations. It collects data required to determine accurate ridership levels, establish fares, and distribute fare information. It loads fare data into the vehicle prior to the beginning of normal operations and unloads fare collection data from the vehicle at the close out of normal operations. It manages allow/block lists and performs token validation.



Element Name	Physical Object	Functional Object	Functional Object Description
NOUPT	Transit Management Center	Transit Center Information Services	<p>'Transit Center Information Services' collects the latest available information for a transit service and makes it available to transit customers and to Transportation Information Centers for further distribution. Customers are provided information at transit stops and other public transportation areas before they embark and on-board the transit vehicle once they are en route. Information provided can include the latest available information on transit routes, schedules, transfer options, fares, real-time schedule adherence, current incidents, weather conditions, yellow pages, and special events. In addition to general service information, tailored information (e.g., itineraries) are provided to individual transit users.</p>
NOUPT	Transit Management Center	Transit Center Multi-Modal Coordination	<p>'Transit Center Multi-Modal Coordination' supports transit service coordination between transit properties and coordinates with other surface and air transportation modes. As part of service coordination, it shares schedule and trip information, as well as transit transfer cluster (a collection of stop points, stations, or terminals where transfers can be made conveniently) and transfer point information between Multimodal Transportation Service Providers, Transit Agencies, and ISPs. An interface to Traffic Management also supports demand management strategies.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
NOUPT	Transit Management Center	Transit Center Passenger Counting	'Transit Center Passenger Counting' receives and processes transit vehicle loading data using two-way communications from equipped transit vehicles.
NOUPT	Transit Management Center	Transit Center Security	'Transit Center Security' monitors transit vehicle operator or traveler activated alarms received from on-board a transit vehicle. It supports transit vehicle operator authentication and provides the capability to remotely disable a transit vehicle. It also includes the capability to alert operators and police to potential incidents identified by these security features.
NOUPT	Transit Management Center	Transit Center Vehicle Tracking	'Transit Center Vehicle Tracking' monitors transit vehicle location. The location information is collected via a data communication link between the transit vehicles and the transit center. The location information is presented to the transit operator on a digitized map of the transit service area. The location data may be used to determine real time schedule adherence and update the transit system's schedule in real-time. The real-time schedule information is disseminated to other information providers, which furnish the information to travelers.



Element Name	Physical Object	Functional Object	Functional Object Description
Orleans Parish Communications District (911)	Emergency Management Center	Emergency Call-Taking	'Emergency Call-Taking' supports the emergency call-taker, collecting available information about the caller and the reported emergency, and forwarding this information to other objects that formulate and manage the emergency response. It receives 9-1-1, 7-digit local access, and motorist call-box calls and interfaces to other agencies to assist in the verification and assessment of the emergency and to forward the emergency information to the appropriate response agency.
Orleans Parish Communications District (911)	Emergency Management Center	Emergency Dispatch	'Emergency Dispatch' tracks the location and status of emergency vehicles and dispatches these vehicles to incidents. Pertinent incident information is gathered from the public and other public safety agencies and relayed to the responding units. Incident status and the status of the responding units is tracked so that additional units can be dispatched and/or unit status can be returned to available when the incident is cleared and closed.



Element Name	Physical Object	Functional Object	Functional Object Description
Other Fire Department	Emergency Management Center	Emergency Dispatch	<p>'Emergency Dispatch' tracks the location and status of emergency vehicles and dispatches these vehicles to incidents. Pertinent incident information is gathered from the public and other public safety agencies and relayed to the responding units. Incident status and the status of the responding units is tracked so that additional units can be dispatched and/or unit status can be returned to available when the incident is cleared and closed.</p>
Other Fire Department	Emergency Management Center	Emergency Routing	<p>'Emergency Routing' supports routing of emergency vehicles and enlists support from the Traffic Management Center to facilitate travel along these routes. Routes may be determined based on real-time traffic information and road conditions or routes may be provided by the Traffic Management Center on request. Vehicles are tracked and routes are based on current vehicle location. It may coordinate with the Traffic Management Center to provide preemption or otherwise adapt the traffic control strategy along the selected route. It may also coordinate with Transportation Information Centers to notify other drivers of public safety vehicles that are enroute.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Parish Sheriffs Office	Emergency Management Center	Emergency Dispatch	'Emergency Dispatch' tracks the location and status of emergency vehicles and dispatches these vehicles to incidents. Pertinent incident information is gathered from the public and other public safety agencies and relayed to the responding units. Incident status and the status of the responding units is tracked so that additional units can be dispatched and/or unit status can be returned to available when the incident is cleared and closed.
Parish Sheriffs Office	Emergency Management Center	Emergency Incident Command	'Emergency Incident Command' provides tactical decision support, resource coordination, and communications integration for Incident Commands that are established by first responders at or near the incident scene to support local management of an incident. It supports communications with public safety, emergency management, transportation, and other allied response agency centers, tracks and maintains resource information, action plans, and the incident command organization itself. Information is shared with agency centers including resource deployment status, hazardous material information, traffic, road, and weather conditions, evacuation advice, and other information that enables emergency or maintenance personnel in the field to implement an effective, safe incident response. It supports the functions and interfaces commonly supported by a mobile command center.



Element Name	Physical Object	Functional Object	Functional Object Description
Parish Sheriffs Office	Emergency Management Center	Emergency Response Management	<p>'Emergency Response Management' provides the strategic emergency response capabilities and broad inter-agency interfaces that are implemented for extraordinary incidents and disasters that require response from outside the local community. It provides the functional capabilities and interfaces commonly associated with Emergency Operations Centers. It develops and stores emergency response plans and manages overall coordinated response to emergencies. It monitors real-time information on the state of the regional transportation system including current traffic and road conditions, weather conditions, special event and incident information. It tracks the availability of resources and assists in the appropriate allocation of these resources for a particular emergency response. It also provides coordination between multiple allied agencies before and during emergencies to implement emergency response plans and track progress through the incident. It also coordinates with the public through the Emergency Telecommunication Systems (e.g., Reverse 911). It coordinates with public health systems to provide the most appropriate response for emergencies involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Personal Devices	Personal Information Device	Personal Traveler Information Reception	'Personal Traveler Information Reception' receives formatted traffic advisories, road conditions, traffic regulations, transit information, broadcast alerts, and other general traveler information broadcasts and presents the information to the traveler. The traveler information broadcasts are received by personal devices including personal computers and personal portable devices such as smart phones.
Private Traveler Information Service Providers	Transportation Information Center	TIC Data Collection	'TIC Data Collection' collects transportation-related data from other centers, performs data quality checks on the collected data and then consolidates, verifies, and refines the data and makes it available in a consistent format to applications that support operational data sharing between centers and deliver traveler information to end-users. A broad range of data is collected including traffic and road conditions, transit data, emergency information and advisories, weather data, special event information, traveler services, parking, multimodal data, and toll/pricing data. It also shares data with other transportation information centers.



Element Name	Physical Object	Functional Object	Functional Object Description
Private Traveler Information Service Providers	Transportation Information Center	TIC Emergency Traveler Information	'TIC Emergency Traveler Information' provides emergency information to the public, including wide-area alerts and evacuation information. It provides emergency alerts, information on evacuation zones and evacuation requirements, evacuation destinations and shelter information, available transportation modes, and traffic and road conditions at the origin, destination, and along the evacuation routes. In addition to general evacuation information, personalized information including tailored evacuation routes, service information, and estimated travel times is also provided based on traveler specified origin, destination, and route parameters. Updated information is provided throughout the evacuation and subsequent reentry as status changes and plans are adapted.
Private Traveler Information Service Providers	Transportation Information Center	TIC Traveler Information Broadcast	'TIC Traveler Information Broadcast' disseminates traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, and weather information. The same information is broadcast to all equipped traveler interface systems and vehicles.



Element Name	Physical Object	Functional Object	Functional Object Description
Regional Transportation Management Center	Archived Data System	Archive Data Repository	<p>'Archive Data Repository' collects data and data catalogs from one or more data sources and stores the data in a focused repository that is suited to a particular set of ITS data users. It includes capabilities for performing quality checks on the incoming data, error notification, and archive to archive coordination. It includes the capability to define a data registry that allows registration of data identifiers or data definitions for interoperable use throughout a region. It supports a broad range of implementations, ranging from simple data marts that collect a focused set of data and serve a particular user community to large-scale data warehouses that collect, integrate, and summarize transportation data from multiple sources and serve a broad array of users within a region. Repositories may be established to support operations planning, performance monitoring and management, and policy and investment decisions.</p>
Regional Transportation Management Center	Archived Data System	Archive Government Reporting	<p>'Archive Government Reporting' selects and formats data residing in an ITS archive to facilitate local, state, and federal government data reporting requirements. It provides transportation system statistics and performance measures in required formats to support investment and policy decisions.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Regional Transportation Management Center	Archived Data System	Archive Situation Data Archival	'Archive Situation Data Archival' collects and archives traffic, roadway, and environmental information for use in off-line planning, research, and analysis. It controls and collects information directly from equipment at the roadside, reflecting the deployment of traffic detectors that are used primarily for traffic monitoring and planning purposes, rather than for traffic management. It also collects situation data from connected vehicles. The data collected, quality checks performed, and aggregation strategies are defined to support transportation system performance monitoring and management.
Regional Transportation Management Center	Emergency Management Center	Emergency Data Collection	'Emergency Data Collection' collects and stores emergency information that is collected in the course of operations by the Emergency Management Center. This data can be used directly by operations personnel or it can be made available to other data users and archives in the region.
Regional Transportation Management Center	Emergency Management Center	Emergency Early Warning System	'Emergency Early Warning System' monitors alerting and advisory systems, information collected by ITS surveillance and sensors, and reports from other agencies and uses this information to identify potential, imminent, or in-progress major incidents or disasters. Notification is provided to initiate the emergency response, including public notification using ITS traveler information systems, where appropriate.



Element Name	Physical Object	Functional Object	Functional Object Description
Regional Transportation Management Center	Emergency Management Center	Emergency Evacuation Support	<p>'Emergency Evacuation Support' coordinates evacuation plans among allied agencies and manages evacuation and reentry of a population in the vicinity of a disaster or other emergency that poses a risk to public safety. Where appropriate, the affected population is evacuated in shifts, using more than one evacuation route, and including several evacuation destinations to spread demand and thereby expedite the evacuation. All affected jurisdictions (e.g., states and counties) at the evacuation origin, evacuation destination, and along the evacuation route are informed of the plan. The public is provided with real-time evacuation guidance including basic information to assist potential evacuees in determining whether evacuation is necessary. Resource requirements are forecast based on the evacuation plans, and the necessary resources are located, shared between agencies if necessary, and deployed at the right locations at the appropriate times. The evacuation and reentry status are monitored and used to refine the plan and resource allocations during the evacuation and subsequent reentry. It communicates with public health systems to develop evacuation plans and recommended strategies for disasters and evacuation scenarios involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Regional Transportation Management Center	Emergency Management Center	Emergency Incident Command	'Emergency Incident Command' provides tactical decision support, resource coordination, and communications integration for Incident Commands that are established by first responders at or near the incident scene to support local management of an incident. It supports communications with public safety, emergency management, transportation, and other allied response agency centers, tracks and maintains resource information, action plans, and the incident command organization itself. Information is shared with agency centers including resource deployment status, hazardous material information, traffic, road, and weather conditions, evacuation advice, and other information that enables emergency or maintenance personnel in the field to implement an effective, safe incident response. It supports the functions and interfaces commonly supported by a mobile command center.



Element Name	Physical Object	Functional Object	Functional Object Description
Regional Transportation Management Center	Emergency Management Center	Emergency Response Management	<p>'Emergency Response Management' provides the strategic emergency response capabilities and broad inter-agency interfaces that are implemented for extraordinary incidents and disasters that require response from outside the local community. It provides the functional capabilities and interfaces commonly associated with Emergency Operations Centers. It develops and stores emergency response plans and manages overall coordinated response to emergencies. It monitors real-time information on the state of the regional transportation system including current traffic and road conditions, weather conditions, special event and incident information. It tracks the availability of resources and assists in the appropriate allocation of these resources for a particular emergency response. It also provides coordination between multiple allied agencies before and during emergencies to implement emergency response plans and track progress through the incident. It also coordinates with the public through the Emergency Telecommunication Systems (e.g., Reverse 911). It coordinates with public health systems to provide the most appropriate response for emergencies involving biological or other medical hazards.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Regional Transportation Management Center	Maint and Constr Management Center	MCM Data Collection	'MCM Data Collection' collects and stores maintenance and construction information that is collected in the course of operations by the Maintenance and Construction Management Center. This data can be used directly by operations personnel or it can be made available to other data users and archives in the region.
Regional Transportation Management Center	Maint and Constr Management Center	MCM Incident Management	'MCM Incident Management' supports maintenance and construction participation in coordinated incident response. Incident notifications are shared, incident response resources are managed, and the overall incident situation and incident response status is coordinated among allied response organizations.
Regional Transportation Management Center	Maint and Constr Management Center	MCM Maintenance Decision Support	'MCM Maintenance Decision Support' recommends maintenance courses of action based on current and forecast environmental and road conditions and additional application specific information. Decisions are supported through understandable presentation of filtered and fused environmental and road condition information for specific time horizons as well as specific maintenance recommendations that are generated by the system based on this integrated information. The recommended courses of action are supported by information on the anticipated consequences of action or inaction, when available.



Element Name	Physical Object	Functional Object	Functional Object Description
Regional Transportation Management Center	Maint and Constr Management Center	MCM Reduced Speed Zone Warning	'MCM Reduced Speed Zone Warning' supports remote control and monitoring of reduced speed zone warning roadside equipment. It provides posted speed limits and associated schedules and information about associated road configuration changes including lane merges and shifts. It monitors field equipment operation and reports current status to the operator.
Regional Transportation Management Center	Maint and Constr Management Center	MCM Roadway Maintenance	'MCM Roadway Maintenance' provides overall management and support for routine maintenance on a roadway system or right-of-way. Services managed include landscape maintenance, hazard removal (roadway debris, dead animals), routine maintenance activities (roadway cleaning, grass cutting), and repair and maintenance of non-ITS equipment on the roadway (e.g., signs, gantries, cabinets, guard rails, etc.). Environmental conditions information is also received from various weather sources to aid in scheduling routine maintenance activities. See also MCM Field Equipment Maintenance for maintenance of ITS field equipment.



Element Name	Physical Object	Functional Object	Functional Object Description
Regional Transportation Management Center	Maint and Constr Management Center	MCM Work Zone Management	'MCM Work Zone Management' remotely monitors and supports work zone activities, controlling traffic through dynamic message signs (DMS), Highway Advisory Radio (HAR), gates and barriers, and informing other groups of activity (e.g., traveler information, traffic management, other maintenance and construction centers) for better coordination management. Work zone speeds, and delays, and closures are provided to the motorist prior to the work zones. This application provides control of field equipment in all maintenance areas, including fixed and portable field equipment supporting both stationary and mobile work zones.
Regional Transportation Management Center	Traffic Management Center	TMC Basic Surveillance	'TMC Basic Surveillance' remotely monitors and controls traffic sensor systems and surveillance (e.g., CCTV) equipment, and collects, processes and stores the collected traffic data. Current traffic information and other real-time transportation information is also collected from other centers. The collected information is provided to traffic operations personnel and made available to other centers.
Regional Transportation Management Center	Traffic Management Center	TMC Data Collection	'TMC Data Collection' collects and stores information that is created in the course of traffic operations performed by the Traffic Management Center. This data can be used directly by operations personnel or it can be made available to other data users and archives in the region.



Element Name	Physical Object	Functional Object	Functional Object Description
Regional Transportation Management Center	Traffic Management Center	TMC Evacuation Support	'TMC Evacuation Support' supports development, coordination, and execution of special traffic management strategies during evacuation and subsequent reentry of a population in the vicinity of a disaster or major emergency. A traffic management strategy is developed based on anticipated demand, the capacity of the road network including access to and from the evacuation routes, and existing and forecast conditions. The strategy supports efficient evacuation and also protects and optimizes movement of response vehicles and other resources that are responding to the emergency.
Regional Transportation Management Center	Traffic Management Center	TMC Incident Detection	'TMC Incident Detection' identifies and reports incidents to Traffic Operations Personnel. It remotely monitors and controls traffic sensor and surveillance systems that support incident detection and verification. It analyzes and reduces the collected sensor and surveillance data, external alerting and advisory and incident reporting systems, anticipated demand information from intermodal freight depots, border crossings, special event information, and identifies and reports incidents and hazardous conditions



Element Name	Physical Object	Functional Object	Functional Object Description
Regional Transportation Management Center	Traffic Management Center	TMC Incident Dispatch Coordination	'TMC Incident Dispatch Coordination' formulates and manages an incident response that takes into account the incident potential, incident impacts, and resources required for incident management. It provides information to support dispatch and routing of emergency response and service vehicles as well as coordination with other cooperating agencies. It provides access to traffic management resources that provide surveillance of the incident, traffic control in the surrounding area, and support for the incident response. It monitors the incident response and collects performance measures such as incident response and clearance times.
Regional Transportation Management Center	Traffic Management Center	TMC Multimodal Crossing Management	'TMC Multimodal Crossing Management' remotely monitors and manages multimodal crossings, including draw bridges and other crossings between highway traffic and other modes. Equipment controlled includes warning lights, gates, dynamic message signs, and other systems that provide driver information and control traffic at multimodal crossings. Railroad grade crossings are covered by other functional objects.



Element Name	Physical Object	Functional Object	Functional Object Description
Regional Transportation Management Center	Traffic Management Center	TMC Regional Traffic Management	'TMC Regional Traffic Management' supports coordination between Traffic Management Centers in order to share traffic information between centers as well as control of traffic management field equipment. This coordination supports wide area optimization and regional coordination that spans jurisdictional boundaries; for example, coordinated signal control in a metropolitan area or coordination between freeway operations and arterial signal control within a corridor.
Regional Transportation Management Center	Traffic Management Center	TMC Reversible Lane Management	'TMC Reversible Lane Management' remotely monitors and controls reversible lanes. It provides an interface to reversible lane field equipment (traffic sensors, surveillance equipment, lane control signals, physical lane access controls, etc.) and to traffic operations personnel to support central monitoring and control of these facilities.



Element Name	Physical Object	Functional Object	Functional Object Description
Regional Transportation Management Center	Traffic Management Center	TMC Roadway Equipment Monitoring	'TMC Roadway Equipment Monitoring' monitors the operational status of field equipment and detects failures. It presents field equipment status to Traffic Operations Personnel and reports failures to the Maintenance and Construction Management Center. It tracks the repair or replacement of the failed equipment. The entire range of ITS field equipment may be monitored including sensors (traffic, infrastructure, environmental, security, speed, etc.) and devices (highway advisory radio, dynamic message signs, automated roadway treatment systems, barrier and safeguard systems, cameras, traffic signals and override equipment, ramp meters, beacons, security surveillance equipment, etc.).
Regional Transportation Management Center	Traffic Management Center	TMC Service Patrol Management	'TMC Service Patrol Management' supports dispatch and communication with service patrol vehicles that monitor roads to aid motorists, offering rapid response to minor incidents.



Element Name	Physical Object	Functional Object	Functional Object Description
Regional Transportation Management Center	Traffic Management Center	TMC Signal Control	'TMC Signal Control' provides the capability for traffic managers to monitor and manage the traffic flow at signalized intersections. This capability includes analyzing and reducing the collected data from traffic surveillance equipment and developing and implementing control plans for signalized intersections. Control plans may be developed and implemented that coordinate signals at many intersections under the domain of a single Traffic Management Center and are responsive to traffic conditions and adapt to support incidents, preemption and priority requests, pedestrian crossing calls, etc.
Regional Transportation Management Center	Traffic Management Center	TMC Situation Data Management	'TMC Situation Data Management' collects, assimilates, and disseminates vehicle probe data collected from roadside short range communications equipment and centers controlling transit vehicles, toll collection points, and route-guided vehicles. It estimates traffic and road conditions based on the aggregated probe data and disseminates this information to other centers.



Element Name	Physical Object	Functional Object	Functional Object Description
Regional Transportation Management Center	Traffic Management Center	TMC Speed Warning	'TMC Speed Warning' supports remote control and monitoring of reduced speed zone warning roadside equipment. It provides the location and extent of the reduced speed zone, the posted speed limit(s) with information about the applicability of the speed limit(s) (e.g., time of day, day of week, seasonality, relevant vehicle types) and information about associated road configuration changes including lane merges and shifts. It monitors field equipment operation and reports current status to the operator.
Regional Transportation Management Center	Traffic Management Center	TMC Traffic Information Dissemination	'TMC Traffic Information Dissemination' disseminates traffic and road conditions, closure and detour information, incident information, driver advisories, and other traffic-related data to other centers, the media, and driver information systems. It monitors and controls driver information system field equipment including dynamic message signs and highway advisory radio, managing dissemination of driver information through these systems.



Element Name	Physical Object	Functional Object	Functional Object Description
Regional Transportation Management Center	Traffic Management Center	TMC Traffic Network Performance Evaluation	'TMC Traffic Network Performance Evaluation' measures traffic network performance and predicts travel demand patterns to support traffic flow optimization, demand management, and incident management. It collects traffic data from sensors and surveillance equipment as well as input from other Traffic Management Centers, emissions management, transit operations, and event promoters and uses this information to measure traffic network performance. It collects route planning information from transportation information centers and integrates and uses this information to predict future traffic conditions. The planned control strategies can be passed back to the transportation information center so that the intended strategies can be reflected in future route planning.
Regional Transportation Management Center	Traffic Management Center	TMC Work Zone Traffic Management	'TMC Work Zone Traffic Management' coordinates work plans with maintenance systems so that work zones are established that have minimum traffic impact. Traffic control strategies are implemented to further mitigate traffic impacts associated with work zones that are established, providing work zone information to driver information systems such as dynamic message signs.



Element Name	Physical Object	Functional Object	Functional Object Description
Regional Transportation Management Center	Transportation Information Center	TIC Data Collection	'TIC Data Collection' collects transportation-related data from other centers, performs data quality checks on the collected data and then consolidates, verifies, and refines the data and makes it available in a consistent format to applications that support operational data sharing between centers and deliver traveler information to end-users. A broad range of data is collected including traffic and road conditions, transit data, emergency information and advisories, weather data, special event information, traveler services, parking, multimodal data, and toll/pricing data. It also shares data with other transportation information centers.



Element Name	Physical Object	Functional Object	Functional Object Description
Regional Transportation Management Center	Transportation Information Center	TIC Emergency Traveler Information	'TIC Emergency Traveler Information' provides emergency information to the public, including wide-area alerts and evacuation information. It provides emergency alerts, information on evacuation zones and evacuation requirements, evacuation destinations and shelter information, available transportation modes, and traffic and road conditions at the origin, destination, and along the evacuation routes. In addition to general evacuation information, personalized information including tailored evacuation routes, service information, and estimated travel times is also provided based on traveler specified origin, destination, and route parameters. Updated information is provided throughout the evacuation and subsequent reentry as status changes and plans are adapted.
Regional Transportation Management Center	Transportation Information Center	TIC Operations Data Collection	'TIC Operations Data Collection' collects and stores information that is collected about the transportation information service including data on the number of clients serviced and the services that were provided. This data can be used directly by operations personnel or it can be made available to other data users and archives in the region.



Element Name	Physical Object	Functional Object	Functional Object Description
Regional Transportation Management Center	Transportation Information Center	TIC Situation Data Management	'TIC Situation Data Management' manages connected vehicle situation data collection, quality controls, filtering, aggregation, and storage. Through this process, raw data reported by connected vehicles are transformed into information products that can be accessed and used to support transportation operations and traveler information. The distribution of the connected vehicle-derived information products is handled by other functional objects.



Element Name	Physical Object	Functional Object	Functional Object Description
RR at Grade Crossing Controller	ITS Roadway Equipment	Roadway Standard Rail Crossing	<p>'Roadway Standard Rail Crossing' manages highway traffic at highway-rail intersections (HRIs) where operational requirements do not dictate advanced features (e.g., where rail operational speeds are less than 80 miles per hour). Either passive (e.g., the crossbuck sign) or active warning systems (e.g., flashing lights and gates) are supported depending on the specific requirements for each intersection. These traditional HRI warning systems may also be augmented with other standard traffic management devices. The warning systems are activated on notification of an approaching train by interfaced wayside equipment. The equipment at the HRI may also be interconnected with adjacent signalized intersections so that local control can be adapted to highway-rail intersection activities. Health monitoring of the HRI equipment and interfaces is performed; detected abnormalities are reported through interfaces to the wayside interface equipment and the Traffic Management Center.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
RTA Information Center	Transportation Information Center	TIC Data Collection	'TIC Data Collection' collects transportation-related data from other centers, performs data quality checks on the collected data and then consolidates, verifies, and refines the data and makes it available in a consistent format to applications that support operational data sharing between centers and deliver traveler information to end-users. A broad range of data is collected including traffic and road conditions, transit data, emergency information and advisories, weather data, special event information, traveler services, parking, multimodal data, and toll/pricing data. It also shares data with other transportation information centers.



Element Name	Physical Object	Functional Object	Functional Object Description
RTA Information Center	Transportation Information Center	TIC Trip Planning	'TIC Trip Planning' provides pre-trip and en route trip planning services for travelers. It receives origin, destination, constraints, and preferences and returns trip plan(s) that meet the supplied criteria. Trip plans may be based on current traffic and road conditions, transit schedule information, and other real-time traveler information. Candidate trip plans are multimodal and may include vehicle, transit, and alternate mode segments (e.g., rail, ferry, bicycle routes, and walkways) based on traveler preferences. It also confirms the trip plan for the traveler and supports reservations and advanced payment for portions of the trip. The trip plan includes specific routing information and instructions for each segment of the trip and may also include information and reservations for additional services (e.g., parking) along the route.



Element Name	Physical Object	Functional Object	Functional Object Description
RTA Transit	Transit Management Center	Transit Center Fare Management	'Transit Center Fare Management' manages fare collection and passenger load management at the transit center. It provides the back office functions that support transit fare collection, supporting payment reconciliation with links to financial institutions and enforcement agencies for fare violations. It collects data required to determine accurate ridership levels, establish fares, and distribute fare information. It loads fare data into the vehicle prior to the beginning of normal operations and unloads fare collection data from the vehicle at the close out of normal operations. It manages allow/block lists and performs token validation.
RTA Transit	Transit Management Center	Transit Center Fixed-Route Operations	'Transit Center Fixed-Route Operations' manages fixed route transit operations. It supports creation of schedules, blocks and runs for fixed and flexible route transit services. It allows fixed-route and flexible-route transit services to disseminate schedules and automatically updates customer service operator systems with the most current schedule information. It also supports automated dispatch of transit vehicles. Current vehicle schedule adherence and optimum scenarios for schedule adjustment are also provided. It also receives and processes transit vehicle loading data.



Element Name	Physical Object	Functional Object	Functional Object Description
RTA Transit	Transit Management Center	Transit Center Information Services	<p>'Transit Center Information Services' collects the latest available information for a transit service and makes it available to transit customers and to Transportation Information Centers for further distribution. Customers are provided information at transit stops and other public transportation areas before they embark and on-board the transit vehicle once they are en route. Information provided can include the latest available information on transit routes, schedules, transfer options, fares, real-time schedule adherence, current incidents, weather conditions, yellow pages, and special events. In addition to general service information, tailored information (e.g., itineraries) are provided to individual transit users.</p>
RTA Transit	Transit Management Center	Transit Center Multi-Modal Coordination	<p>'Transit Center Multi-Modal Coordination' supports transit service coordination between transit properties and coordinates with other surface and air transportation modes. As part of service coordination, it shares schedule and trip information, as well as transit transfer cluster (a collection of stop points, stations, or terminals where transfers can be made conveniently) and transfer point information between Multimodal Transportation Service Providers, Transit Agencies, and ISPs. An interface to Traffic Management also supports demand management strategies.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
RTA Transit	Transit Management Center	Transit Center Paratransit Operations	'Transit Center Paratransit Operations' manages demand responsive transit services, including paratransit services. It supports planning and scheduling of these services, allowing paratransit and other demand response transit services to plan efficient routes and better estimate arrival times. It also supports automated dispatch of paratransit vehicles and tracks passenger pick-ups and drop-offs. Customer service operator systems are updated with the most current schedule information.
RTA Transit	Transit Management Center	Transit Center Passenger Counting	'Transit Center Passenger Counting' receives and processes transit vehicle loading data using two-way communications from equipped transit vehicles.
RTA Transit	Transit Management Center	Transit Center Security	'Transit Center Security' monitors transit vehicle operator or traveler activated alarms received from on-board a transit vehicle. It supports transit vehicle operator authentication and provides the capability to remotely disable a transit vehicle. It also includes the capability to alert operators and police to potential incidents identified by these security features.



Element Name	Physical Object	Functional Object	Functional Object Description
RTA Transit	Transit Management Center	Transit Center Vehicle Assignment	<p>'Transit Center Vehicle Assignment' assigns individual transit vehicles to vehicle blocks and downloads this information to the transit vehicle. It also provides an exception handling process for the vehicle assignment function to generate new, supplemental vehicle assignments when required by changes during the operating day. It provides an inventory management function for the transit facility which stores functional attributes about each of the vehicles owned by the transit operator. These attributes permit the planning and assignment functions to match vehicles with routes based on suitability for the types of service required by the particular routes.</p>
RTA Transit	Transit Management Center	Transit Center Vehicle Tracking	<p>'Transit Center Vehicle Tracking' monitors transit vehicle location. The location information is collected via a data communication link between the transit vehicles and the transit center. The location information is presented to the transit operator on a digitized map of the transit service area. The location data may be used to determine real time schedule adherence and update the transit system's schedule in real-time. The real-time schedule information is disseminated to other information providers, which furnish the information to travelers.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
RTA Transit	Transit Management Center	Transit Garage Maintenance	'Transit Garage Maintenance' provides advanced maintenance functions for the transit property. It collects operational and maintenance data from transit vehicles, manages vehicle service histories, and monitors operators and vehicles. It collects vehicle mileage data and uses it to automatically generate preventative maintenance schedules for each vehicle by utilizing vehicle tracking data. In addition, it provides information to service personnel to support maintenance activities and records and verifies that maintenance work was performed.



Element Name	Physical Object	Functional Object	Functional Object Description
RTA Transit Data Archive	Archived Data System	Archive Data Repository	'Archive Data Repository' collects data and data catalogs from one or more data sources and stores the data in a focused repository that is suited to a particular set of ITS data users. It includes capabilities for performing quality checks on the incoming data, error notification, and archive to archive coordination. It includes the capability to define a data registry that allows registration of data identifiers or data definitions for interoperable use throughout a region. It supports a broad range of implementations, ranging from simple data marts that collect a focused set of data and serve a particular user community to large-scale data warehouses that collect, integrate, and summarize transportation data from multiple sources and serve a broad array of users within a region. Repositories may be established to support operations planning, performance monitoring and management, and policy and investment decisions.
RTA Transit Data Archive	Archived Data System	Archive Government Reporting	'Archive Government Reporting' selects and formats data residing in an ITS archive to facilitate local, state, and federal government data reporting requirements. It provides transportation system statistics and performance measures in required formats to support investment and policy decisions.



Element Name	Physical Object	Functional Object	Functional Object Description
St. Bernard Urban Rapid Transit (SBURT)	Transit Management Center	Transit Center Data Collection	'Transit Center Data Collection' collects and stores transit information that is collected in the course of transit operations performed by the Transit Management Center. This data can be used directly by operations personnel or it can be made available to other data users and archives in the region.
St. Bernard Urban Rapid Transit (SBURT)	Transit Management Center	Transit Center Environmental Monitoring	'Transit Center Environmental Monitoring' assimilates current and forecast road conditions and surface weather information from a variety of sources, including both weather service providers and vehicle probes. The collected environmental information is monitored and used to support transit operations.
St. Bernard Urban Rapid Transit (SBURT)	Transit Management Center	Transit Center Fare Management	'Transit Center Fare Management' manages fare collection and passenger load management at the transit center. It provides the back office functions that support transit fare collection, supporting payment reconciliation with links to financial institutions and enforcement agencies for fare violations. It collects data required to determine accurate ridership levels, establish fares, and distribute fare information. It loads fare data into the vehicle prior to the beginning of normal operations and unloads fare collection data from the vehicle at the close out of normal operations. It manages allow/block lists and performs token validation.



Element Name	Physical Object	Functional Object	Functional Object Description
St. Bernard Urban Rapid Transit (SBURT)	Transit Management Center	Transit Center Fixed-Route Operations	'Transit Center Fixed-Route Operations' manages fixed route transit operations. It supports creation of schedules, blocks and runs for fixed and flexible route transit services. It allows fixed-route and flexible-route transit services to disseminate schedules and automatically updates customer service operator systems with the most current schedule information. It also supports automated dispatch of transit vehicles. Current vehicle schedule adherence and optimum scenarios for schedule adjustment are also provided. It also receives and processes transit vehicle loading data.
St. Bernard Urban Rapid Transit (SBURT)	Transit Management Center	Transit Center Information Services	'Transit Center Information Services' collects the latest available information for a transit service and makes it available to transit customers and to Transportation Information Centers for further distribution. Customers are provided information at transit stops and other public transportation areas before they embark and on-board the transit vehicle once they are en route. Information provided can include the latest available information on transit routes, schedules, transfer options, fares, real-time schedule adherence, current incidents, weather conditions, yellow pages, and special events. In addition to general service information, tailored information (e.g., itineraries) are provided to individual transit users.



Element Name	Physical Object	Functional Object	Functional Object Description
St. Bernard Urban Rapid Transit (SBURT)	Transit Management Center	Transit Center Multi-Modal Coordination	'Transit Center Multi-Modal Coordination' supports transit service coordination between transit properties and coordinates with other surface and air transportation modes. As part of service coordination, it shares schedule and trip information, as well as transit transfer cluster (a collection of stop points, stations, or terminals where transfers can be made conveniently) and transfer point information between Multimodal Transportation Service Providers, Transit Agencies, and ISPs. An interface to Traffic Management also supports demand management strategies.
St. Bernard Urban Rapid Transit (SBURT)	Transit Management Center	Transit Center Paratransit Operations	'Transit Center Paratransit Operations' manages demand responsive transit services, including paratransit services. It supports planning and scheduling of these services, allowing paratransit and other demand response transit services to plan efficient routes and better estimate arrival times. It also supports automated dispatch of paratransit vehicles and tracks passenger pick-ups and drop-offs. Customer service operator systems are updated with the most current schedule information.
St. Bernard Urban Rapid Transit (SBURT)	Transit Management Center	Transit Center Passenger Counting	'Transit Center Passenger Counting' receives and processes transit vehicle loading data using two-way communications from equipped transit vehicles.



Element Name	Physical Object	Functional Object	Functional Object Description
St. Bernard Urban Rapid Transit (SBURT)	Transit Management Center	Transit Center Priority Management	'Transit Center Priority Management' monitors transit schedule performance and generates requests for transit priority on routes and at certain intersections. It may coordinate with the Traffic Management Center to provide transit priority along the selected route, including allocation of dynamic lanes and granting signal priority. It also coordinates with the Transit Vehicle OBE to monitor and manage local transit signal priority requests at individual intersections.
St. Bernard Urban Rapid Transit (SBURT)	Transit Management Center	Transit Center Security	'Transit Center Security' monitors transit vehicle operator or traveler activated alarms received from on-board a transit vehicle. It supports transit vehicle operator authentication and provides the capability to remotely disable a transit vehicle. It also includes the capability to alert operators and police to potential incidents identified by these security features.



Element Name	Physical Object	Functional Object	Functional Object Description
St. Bernard Urban Rapid Transit (SBURT)	Transit Management Center	Transit Center Vehicle Assignment	'Transit Center Vehicle Assignment' assigns individual transit vehicles to vehicle blocks and downloads this information to the transit vehicle. It also provides an exception handling process for the vehicle assignment function to generate new, supplemental vehicle assignments when required by changes during the operating day. It provides an inventory management function for the transit facility which stores functional attributes about each of the vehicles owned by the transit operator. These attributes permit the planning and assignment functions to match vehicles with routes based on suitability for the types of service required by the particular routes.
St. Bernard Urban Rapid Transit (SBURT)	Transit Management Center	Transit Center Vehicle Tracking	'Transit Center Vehicle Tracking' monitors transit vehicle location. The location information is collected via a data communication link between the transit vehicles and the transit center. The location information is presented to the transit operator on a digitized map of the transit service area. The location data may be used to determine real time schedule adherence and update the transit system's schedule in real-time. The real-time schedule information is disseminated to other information providers, which furnish the information to travelers.



Element Name	Physical Object	Functional Object	Functional Object Description
St. Bernard Urban Rapid Transit (SBURT)	Transit Management Center	Transit Evacuation Support	'Transit Evacuation Support' manages transit resources to support evacuation and subsequent reentry of a population in the vicinity of a disaster or other emergency. It supports coordination of regional evacuation plans, identifying the transit role in a regional evacuation and identifying transit resources that would be used. During an evacuation, it coordinates the use of transit and school bus fleets, supporting evacuation of those with special needs and the general population. Transit service and fare schedules are adjusted and updated service and fare information is made available through traveler information systems.
St. Bernard Urban Rapid Transit (SBURT)	Transit Management Center	Transit Garage Maintenance	'Transit Garage Maintenance' provides advanced maintenance functions for the transit property. It collects operational and maintenance data from transit vehicles, manages vehicle service histories, and monitors operators and vehicles. It collects vehicle mileage data and uses it to automatically generate preventative maintenance schedules for each vehicle by utilizing vehicle tracking data. In addition, it provides information to service personnel to support maintenance activities and records and verifies that maintenance work was performed.



Element Name	Physical Object	Functional Object	Functional Object Description
Tourism and Travel Service Information Sources	Transportation Information Center	TIC Traveler Information Broadcast	'TIC Traveler Information Broadcast' disseminates traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, and weather information. The same information is broadcast to all equipped traveler interface systems and vehicles.
West Jefferson Medical Center EMS	Emergency Management Center	Emergency Dispatch	'Emergency Dispatch' tracks the location and status of emergency vehicles and dispatches these vehicles to incidents. Pertinent incident information is gathered from the public and other public safety agencies and relayed to the responding units. Incident status and the status of the responding units is tracked so that additional units can be dispatched and/or unit status can be returned to available when the incident is cleared and closed.



Element Name	Physical Object	Functional Object	Functional Object Description
West Jefferson Medical Center EMS	Emergency Management Center	Emergency Routing	'Emergency Routing' supports routing of emergency vehicles and enlists support from the Traffic Management Center to facilitate travel along these routes. Routes may be determined based on real-time traffic information and road conditions or routes may be provided by the Traffic Management Center on request. Vehicles are tracked and routes are based on current vehicle location. It may coordinate with the Traffic Management Center to provide preemption or otherwise adapt the traffic control strategy along the selected route. It may also coordinate with Transportation Information Centers to notify other drivers of public safety vehicles that are enroute.



10 Interfaces Between Systems

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

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

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

Information about the interfaces of the systems in the region is contained in the RAD-IT database. RAD-IT can be used to create tailored interconnect and information flow diagrams for any system in the database.



11 Agreements

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



New Orleans Regional Intelligent Transportation Systems Architecture
11 Agreements

Agreement Title	Description	Lead Stakeholder
ITS Deployment and Operations - LADOTD/Jeff Parish	LADOTD has installed CCTV cameras along state and federal highways throughout the state. As ITS further develops in New Orleans, ITS field equipment will need to be deployed on local routes that serve as alternate routes for the state and federal routes. Since LADOTD has already staffed the TMC with operators to monitor its CCTV cameras, it is feasible that cameras on local alternate routes may be installed and monitored by the TMC operations staff.	LADOTD
LADOTD Cooperative Endeavor Agreement Regional Traffic Management Center with RPC	Cooperative Endeavor Agreement (CEA) between LADOTD and NORPC for the operations, management and maintenance of the RTMC facility. The agreement was fully executed on May 16, 2007.	LADOTD
LADOTD Cooperative Endeavor Agreement Regional Traffic Management Center with RPC	Cooperative Endeavor Agreement (CEA) between LADOTD and NORPC for the operations, management and maintenance of the RTMC facility. The agreement was fully executed on May 16, 2007.	LADOTD
Traffic Data Sharing - NORPC/DOTD/Jeff Parish	Due to the multi-jurisdictional layout of the New Orleans MPO area and the abundance of signalized intersections, the NORPC has taken an initiative to become the central repository for traffic data. As part of this initiative, an agreement for data sharing must be developed between NORPC and the entities performing traffic signal operations.	NORPC
Traffic Data Sharing - NORPC/DOTD/Jeff Parish	Due to the multi-jurisdictional layout of the New Orleans MPO area and the abundance of signalized intersections, the NORPC has taken an initiative to become the central repository for traffic data. As part of this initiative, an agreement for data sharing must be developed between NORPC and the entities performing traffic signal operations.	NORPC
Traffic Data Sharing - NORPC/DOTD/Jeff Parish	Due to the multi-jurisdictional layout of the New Orleans MPO area and the abundance of signalized intersections, the NORPC has taken an initiative to become the central repository for traffic data. As part of this initiative, an agreement for data sharing must be developed between NORPC and the entities performing traffic signal operations.	NORPC
Traffic Detection and Data Dissemination - LADOTD/NAVTEQ	LADOTD has entered into an agreement with NAVTEQ for installation and operations of NAVTEQ field equipment on existing structures along state highways. In exchange for use of the structures, LADOTD is provided with traffic data and travel times from the field equipment.	LADOTD



New Orleans Regional Intelligent Transportation Systems Architecture
11 Agreements

Agreement Title	Description	Lead Stakeholder
Traffic Detection and Data Dissemination - LADOTD/NAVTEQ	LADOTD has entered into an agreement with NAVTEQ for installation and operations of NAVTEQ field equipment on existing structures along state highways. In exchange for use of the structures, LADOTD is provided with traffic data and travel times from the field equipment.	LADOTD
Traffic Signal Maintenance Agreement - LADOTD/City of New Orleans	Agreement between LADOTD and City of New Orleans for providing maintenance and operations of traffic signals at state intersections within the city limits. Maintenance and operations include: payment for electricity, inspection, replacement of inoperative light bulbs and fuses, and straightening of signal heads and signs	LADOTD
Traffic Signal Maintenance Agreement - LADOTD/Jefferson Parish	Agreement between LADOTD and Jefferson Parish for providing maintenance and operations of traffic signals at state intersections within the parish. Maintenance and operations include: payment for electricity, inspection, replacement of inoperative light bulbs and fuses, and straightening of signal heads and signs	LADOTD
Traffic Signal Operations - LADOTD/Jeff Parish/City of New Orleans	With the evolution of ITS, traffic signal operations are envisioned to be one day performed by TMC staff. Due to the growth in traveler demands and fiscally constrained budgets, the use of existing staff to operate and/or monitor traffic signal may be considered.	LADOTD



12 ITS Deployment Plan

Based on stakeholder engagements and needs identified, Table 5 provides a list of projects that will guide the deployment in the New Orleans MPO. The Table gives a brief description of the project, the geographic scope, the service packages that are applicable or closely related to the service desired and the priority order ranked by the stakeholders. The needs of the region will vary as further infrastructure developments are made, or changes in economic drivers or demographics of the region. The intent of this plan is not meant to be rigid and therefore stakeholders, through a consensus addendum update can change the projects or the order of deployment to meet emerging needs in mobility and safety.



New Orleans Regional Intelligent Transportation Systems Architecture

Table 5: ITS Project Deployment

Name	Description	Geographic Scope	Priority	Service packages
Traveler Information System	Deploy traveler information system including digital infrastructure to enhance situational awareness for travelers and help manage congestion and incidents	LA 18, LA 48, LA 3127, Airline Highway, I-510 and proposed access to Louisiana International Terminal area	High	TI07, TM06
Traffic Monitoring	Deploy infrastructure such as cameras for monitoring the roadways for better situational awareness, incident detection and verification, incident management, emergency management and special event management.	Fill gaps in the I-10 corridor in New Orleans East, Metairie and Kenner I-310 Corridor from US 61 to bridge across Mississippi River and LA 3127 US 90 Business Corridor US 61 Corridor New Loyola Interchange at I-10 near the airport Clairborne Avenue near Superdome Luling Bridge	High	TM01, TM08
Highway Rail Crossing Safety Improvements	Deploy Intelligent transportation systems to enhance safety at at-grade crossings and approaches. System will notify the public of any closed crossings due to an active train event.	High frequency highway-rail crossings within the MPO.	High	TM13, TM15
Transit System Enhancements	Deploy systems that will enhance transit operations and reliability within the MPO such as transit signal priority, Intermittent bus lanes,	All critical transit routes: (US90, US61, LA46).	High	PT09, PT10



New Orleans Regional Intelligent Transportation Systems Architecture

Name	Description	Geographic Scope	Priority	Service packages
Vulnerable Road User Safety	Deploy systems including Artificial Intelligence based detection systems that will enhance vulnerable road user safety especially at locations with significant conflicts such as intersections along transit routes	Transit Routes, High Pedestrian and bicyclist corridors	High	PT11, PT16, TI02, TI08, VS12, VS13, VS19
Freight Parking and Freight Advanced Traveler Information System (FRATIS)	Develop freight parking sites with information on occupancy or available spaces at the parking facility to support commercial vehicle operations	Locations within the MPO to support commercial vehicle operations through the region, to the Port of New Orleans and other regional or cross-country freight vehicles	Medium	CVO05
Artificial Intelligence and Decision Support System	Deploy AI intelligence to support TMC operations in identify, verifying and notifying TMC operators of congestion or incidents on monitored roadways. The Decision Support System will help TMC Operator better manage incidents.	Deploy AI and DSS at New Orleans TMC.	Medium	TM07, TM08, TM09
Freight Signal Priority	Deploy freight signal priority at signalized intersections on freight corridors to enhance freight movement, reduce number of stops, reduce emissions and noise.	US 90-B Corridor, Clearview Parkway, Tchoupitoulas Street, Annunciation Street, Felicity Street, Calliope Street and Henderson Street	Medium	CVO06
Truck Weigh Stations	Maintain existing truck weigh stations and deploy new weigh stations where needed including the use of virtual weigh stations to enhance enforcement of axle loads for pavement preservation and safety.	East of New Orleans (I-10, I-59) and access routes to and from the Port of New Orleans and other intermodal facilities	Medium	CVO08
Connected and Automated Vehicle Deployments	Provide training and guidance on how law enforcement and MAP operators will interact with driverless vehicles in the event of incidents to control traffic, properly de-energize electric vehicles, manage fires related to EV batteries, and safely relocate vehicles off roadway	Deployments and training for first responders to include LSP, Local Police, Fire, EMS, MAP and any other stakeholders to support automated vehicle operations	Medium	VS01, VS02, VS03, VS04, VS17



Appendix A Interface Details

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

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

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

Information about the interfaces of the systems in the region is contained in the RAD-IT database. RAD-IT can be used to create tailored interconnect and information flow diagrams for any system in the database.



A.1 New Orleans Regional ITS Architecture Context Diagrams

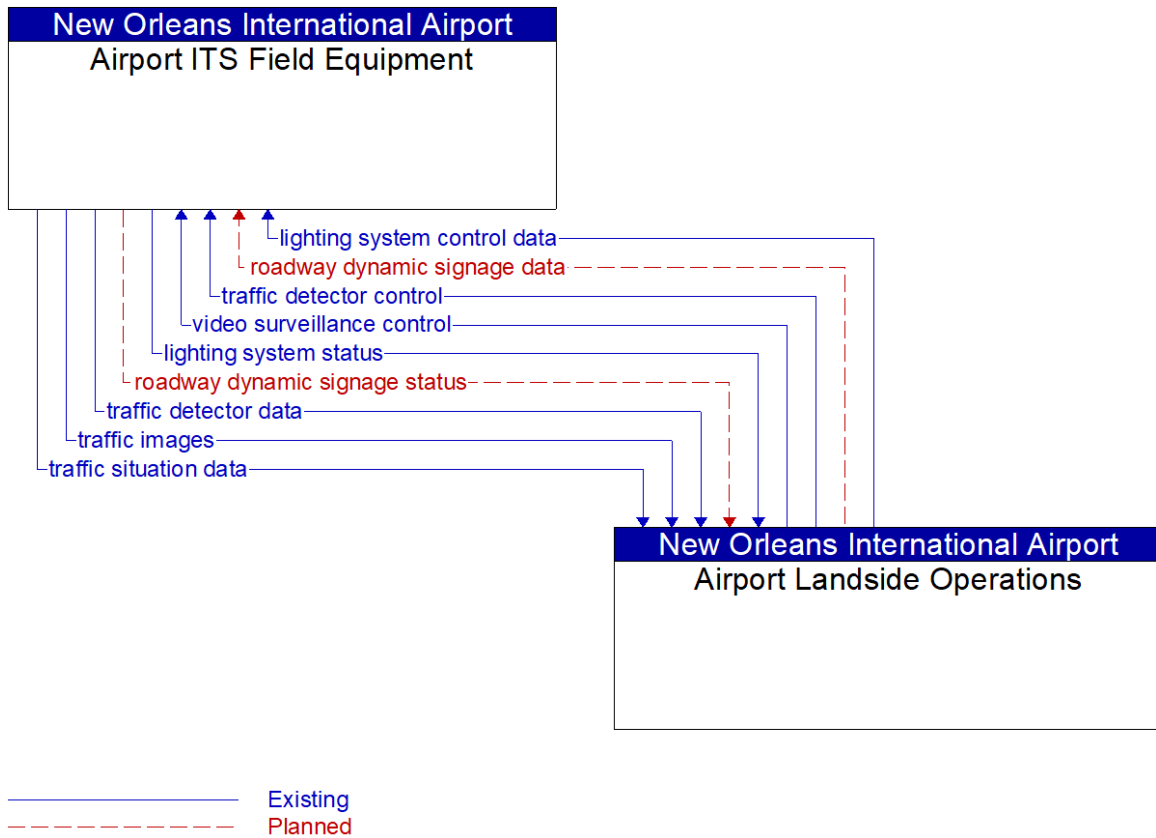


Figure 3: Airport ITS Field Equipment Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

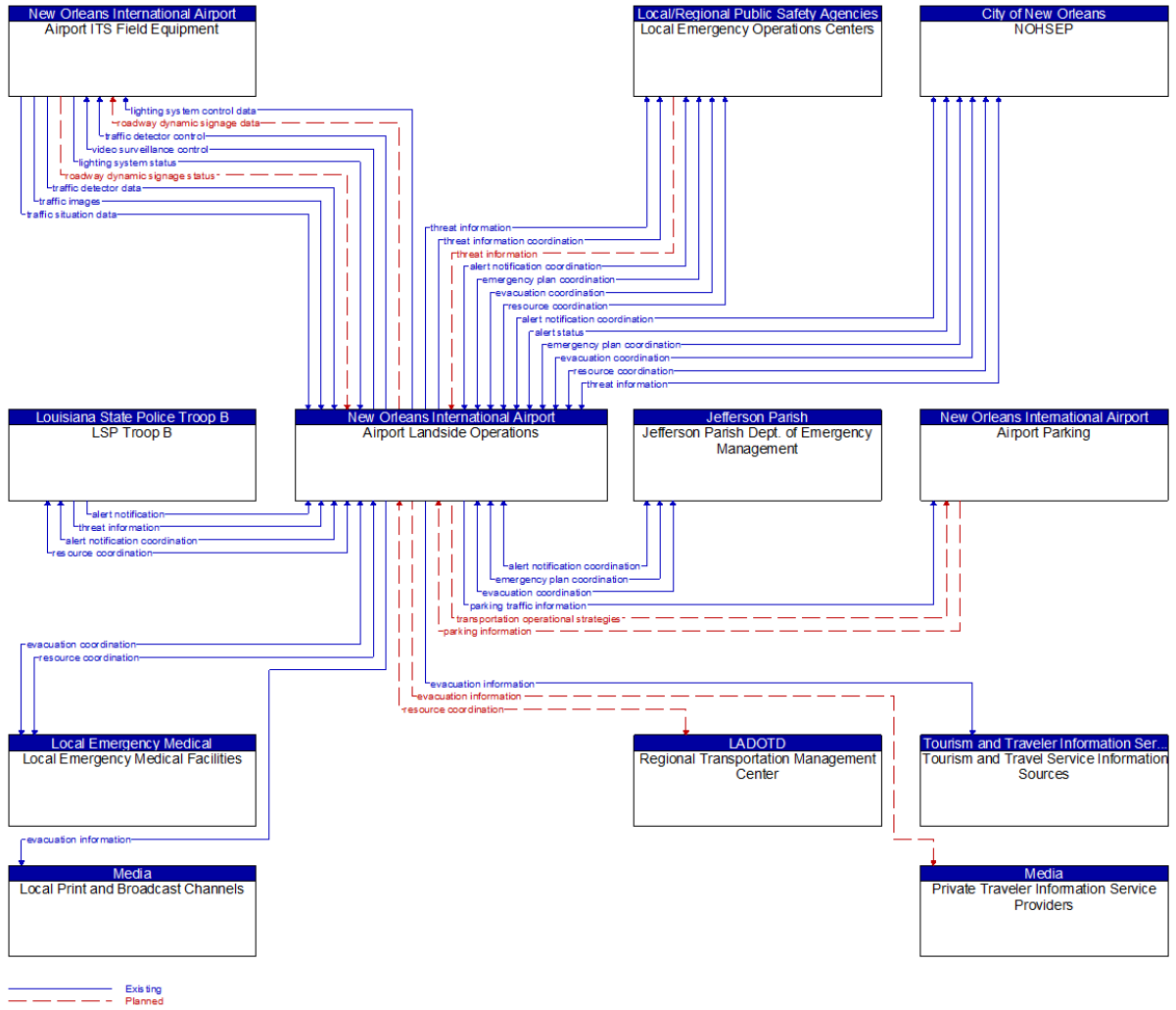


Figure 4: Airport Landside Operations Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

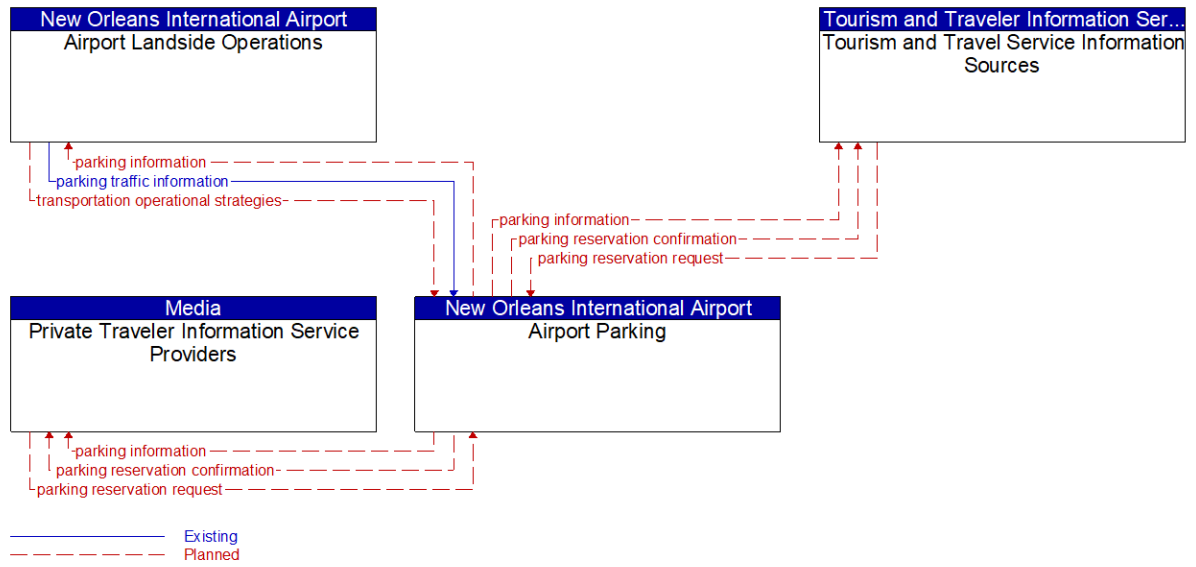


Figure 5: Airport Parking Context Diagram

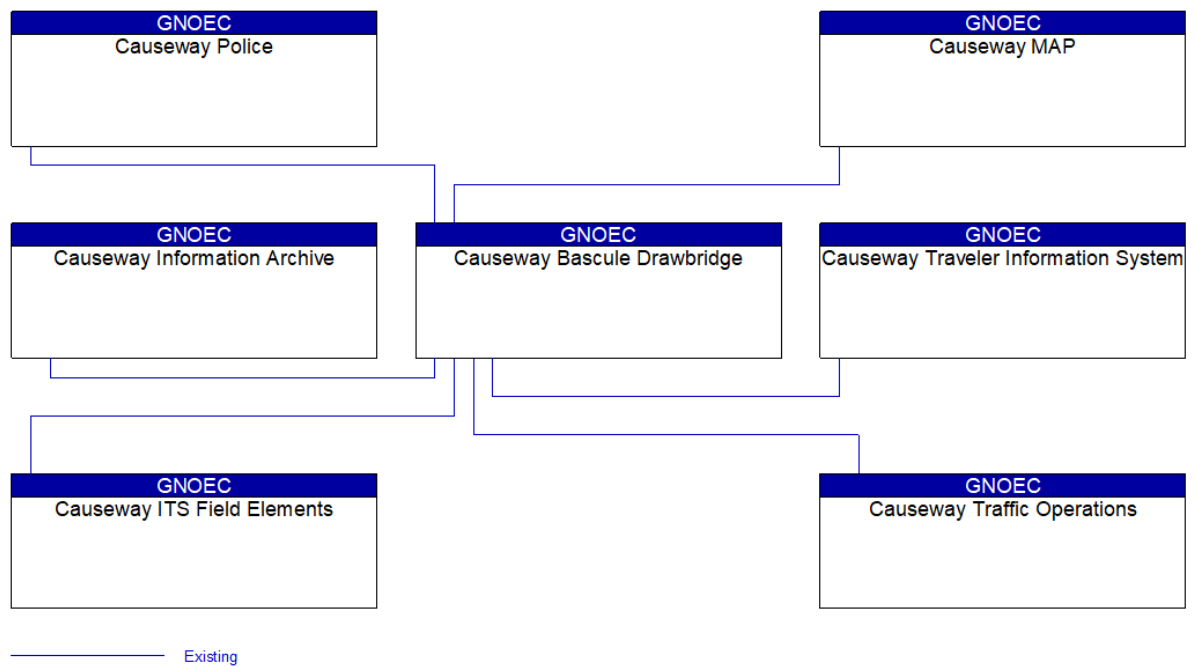


Figure 6: Causeway Bascule Drawbridge Interconnect Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

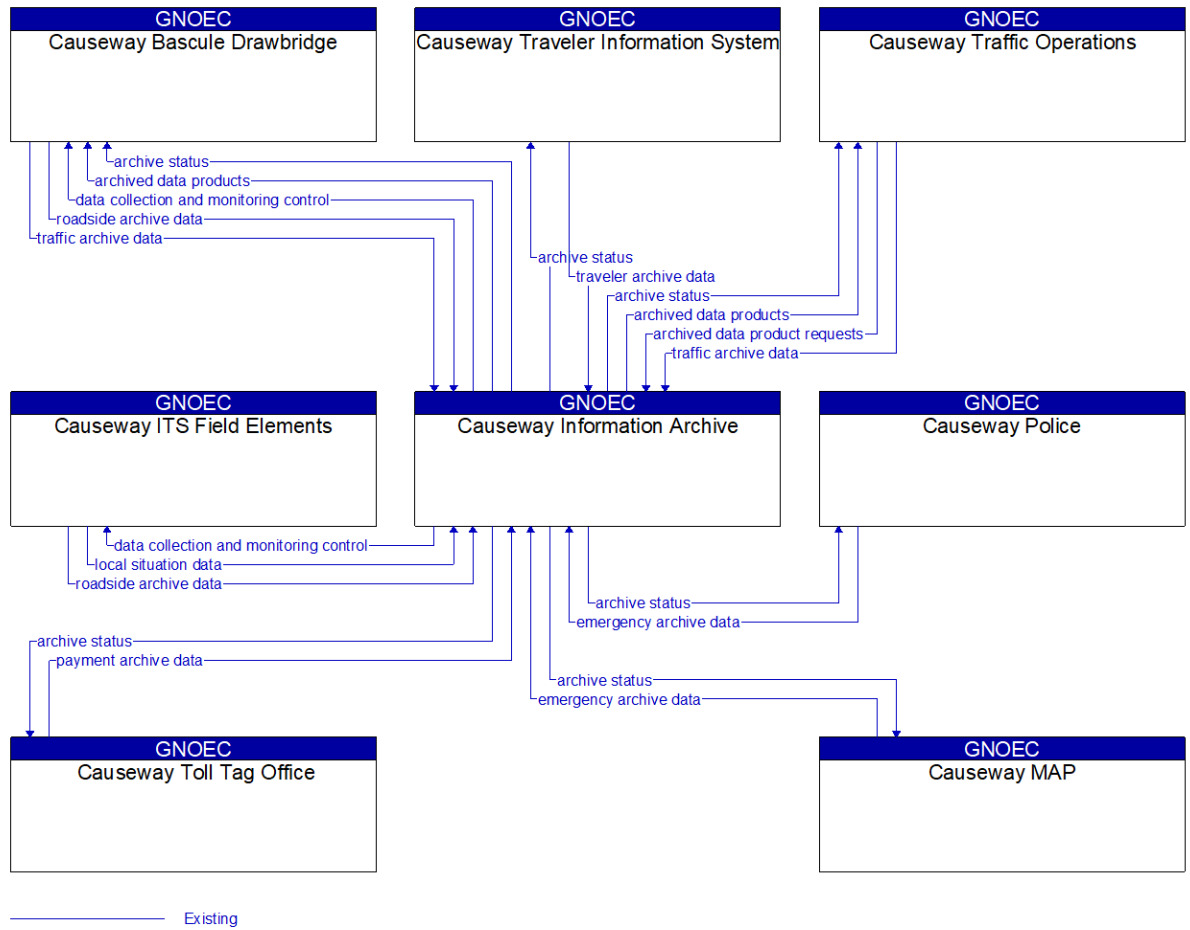


Figure 7: Causeway Information Archive Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

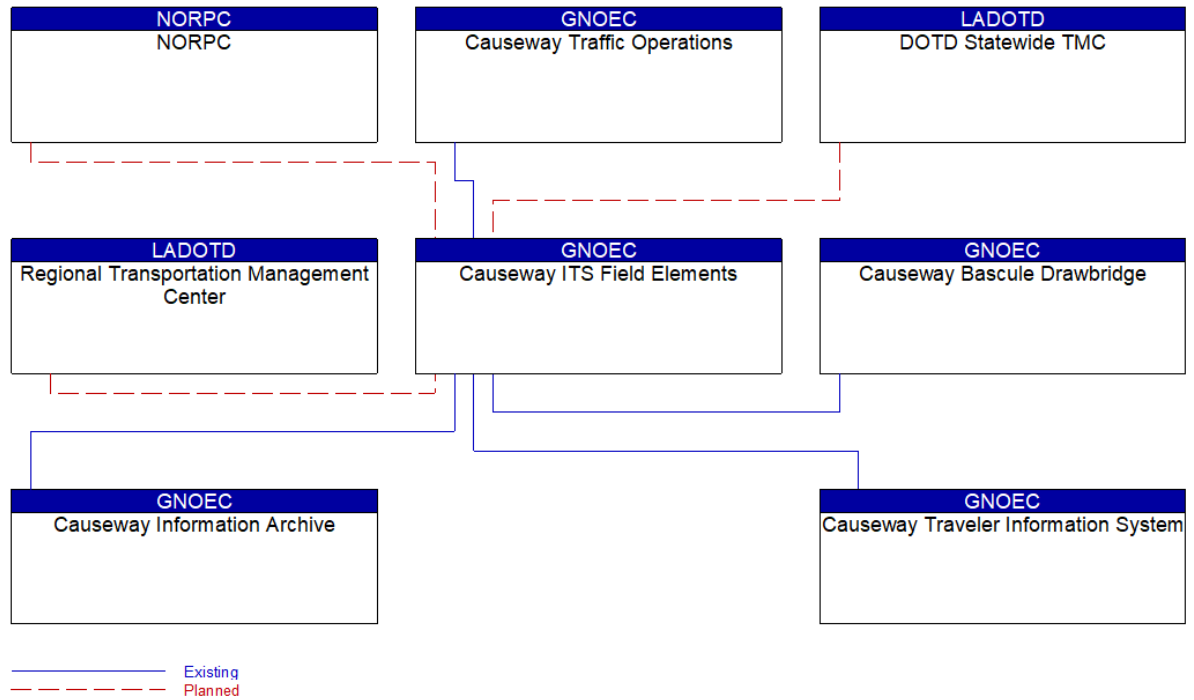


Figure 8: Causeway ITS Field Elements Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

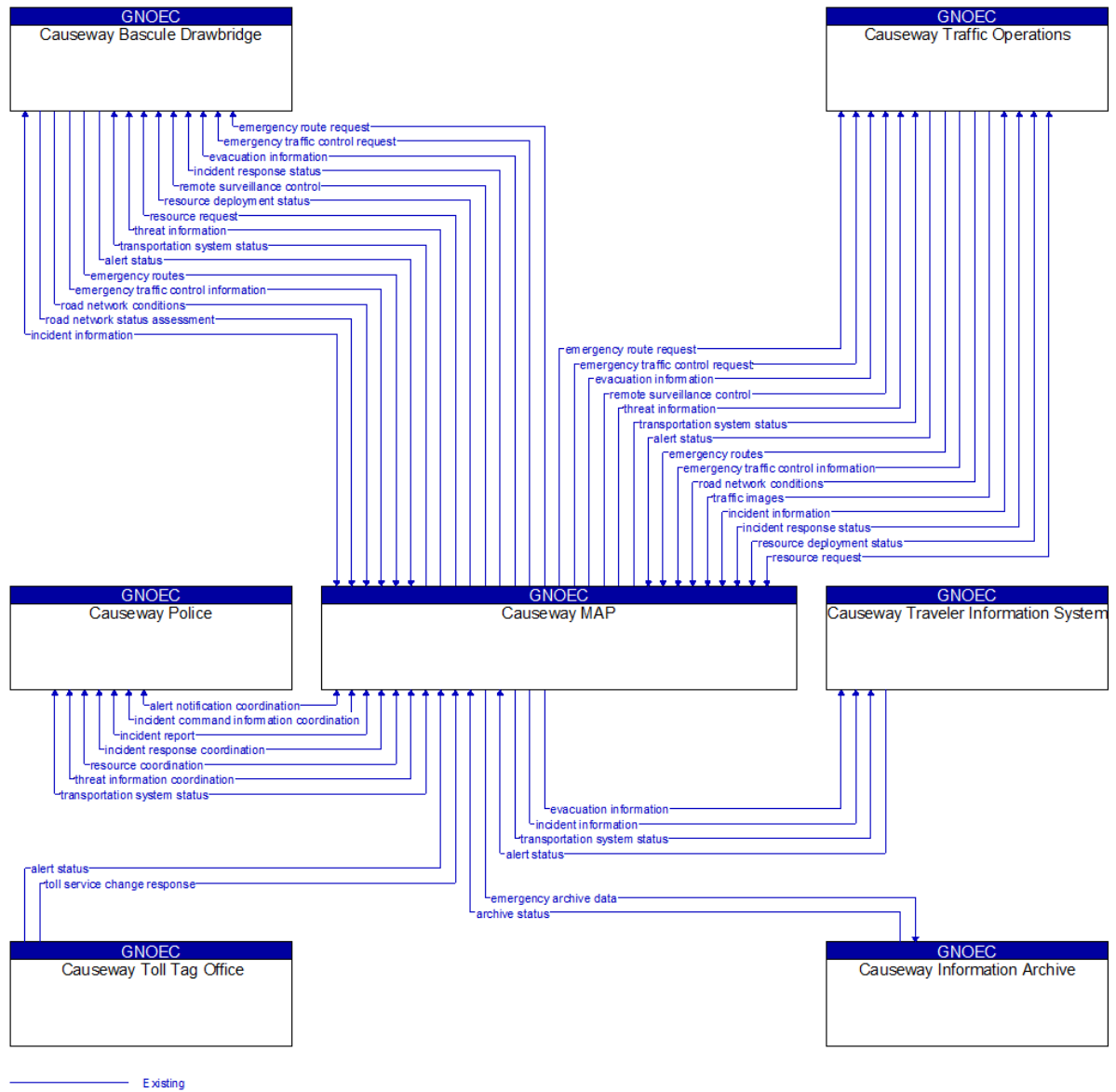


Figure 9: Causeway MAP Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

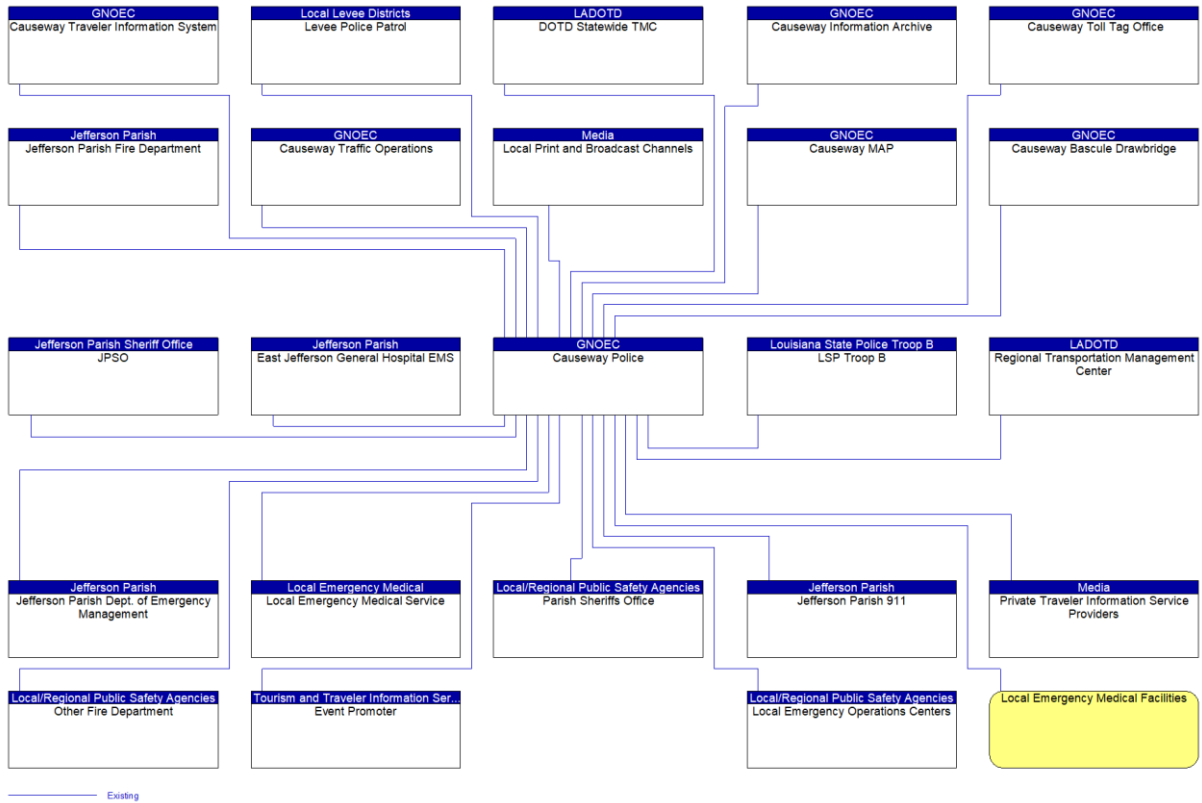


Figure 10: Causeway Police Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

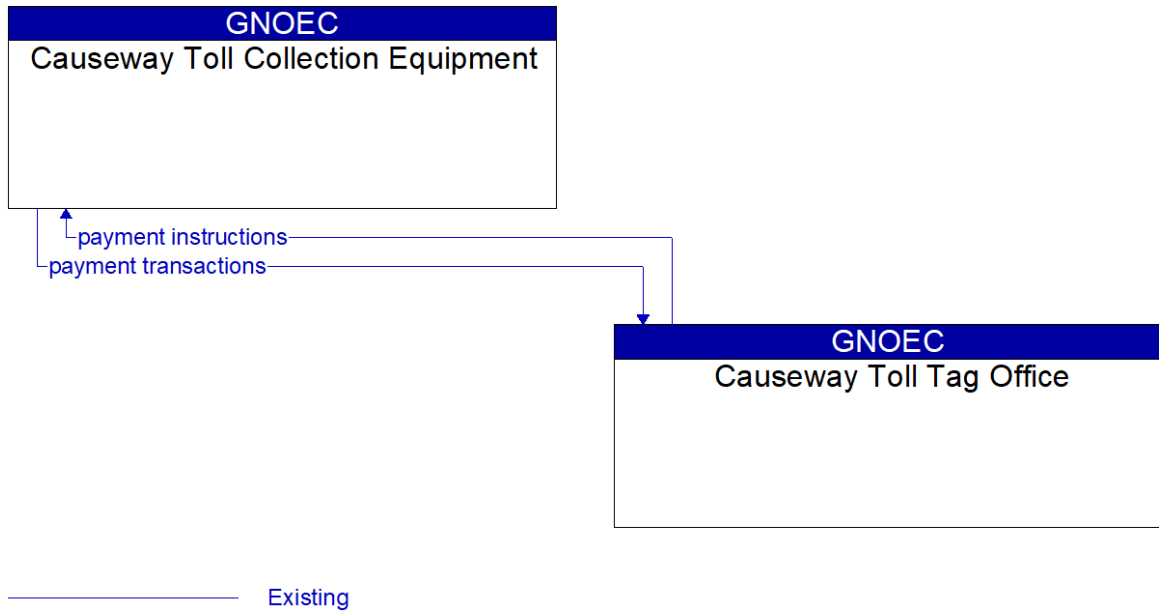


Figure 11: Causeway Toll Collection Equipment Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

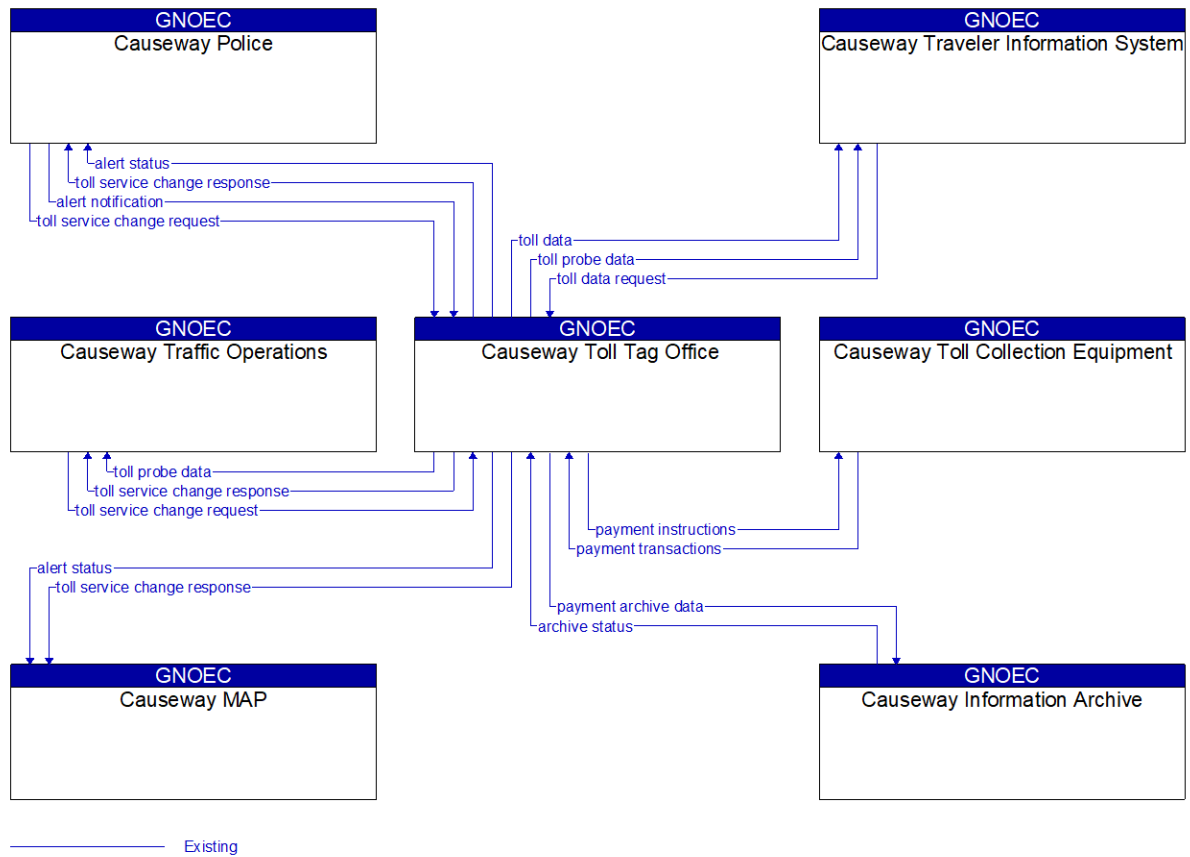


Figure 12: Causeway Toll Tag Office Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

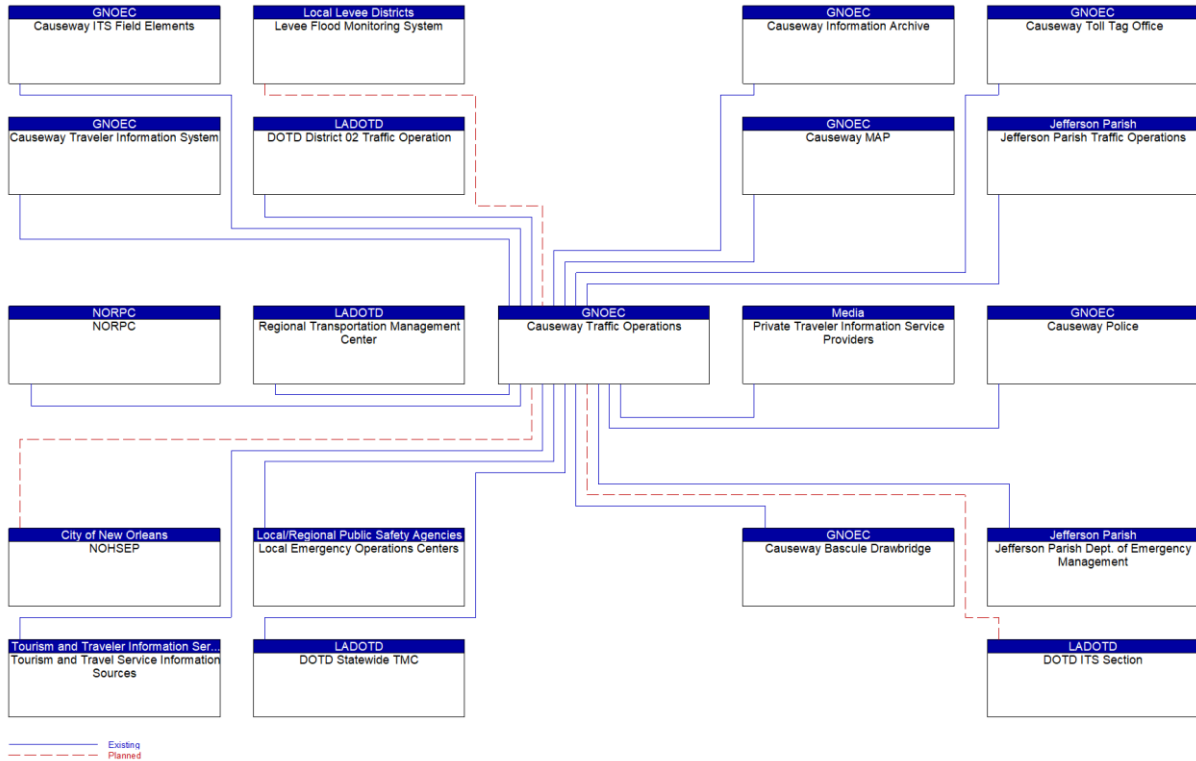


Figure 13: Causeway Traffic Operations Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

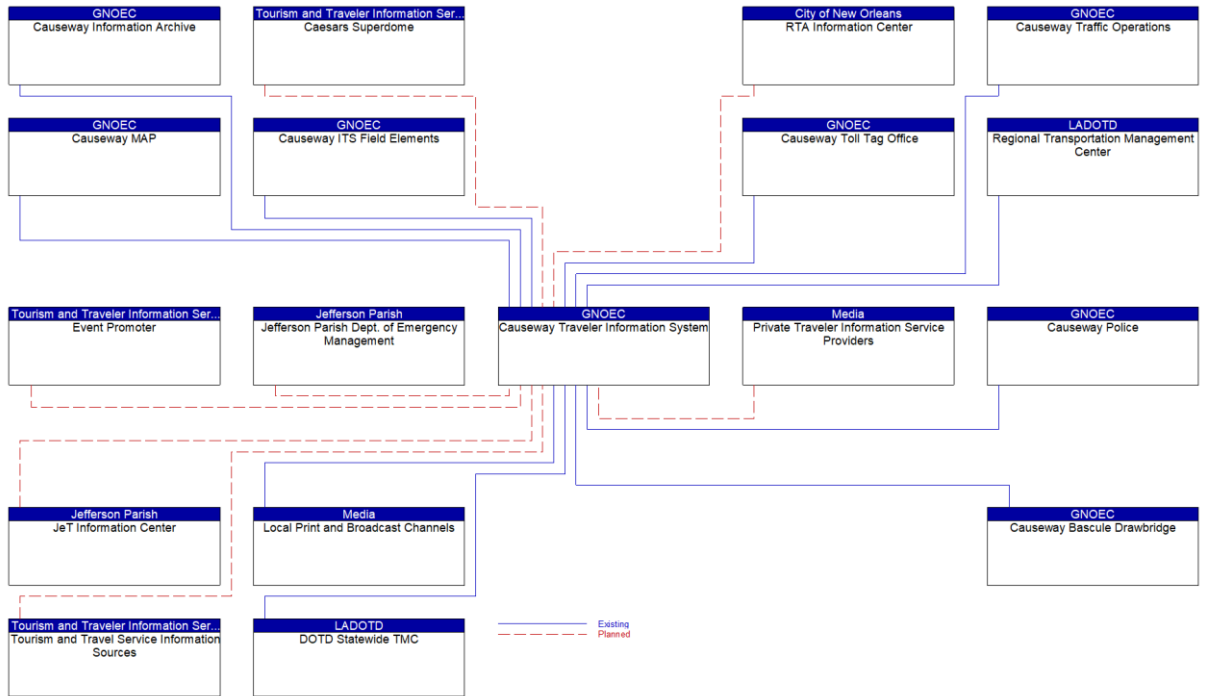


Figure 14: Causeway Traveler Information System Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

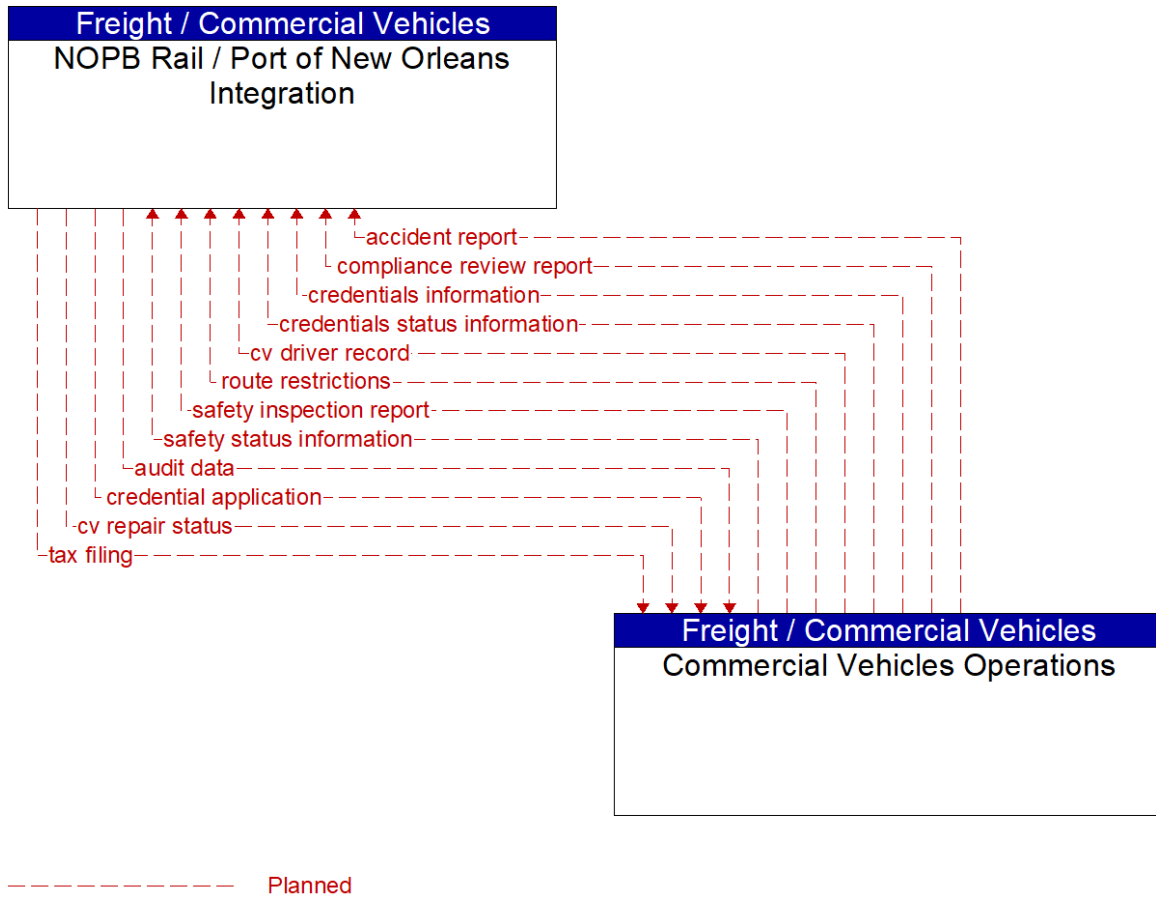


Figure 15: Commercial Vehicles Operations Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

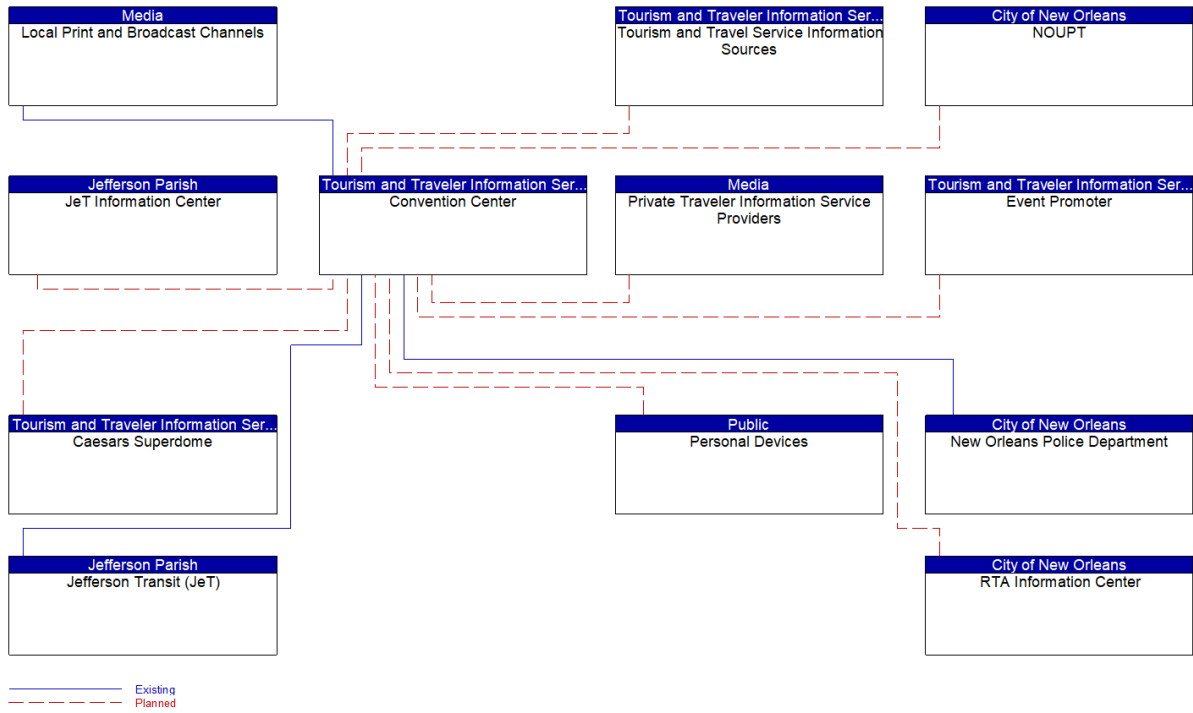


Figure 16: Convention Center Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

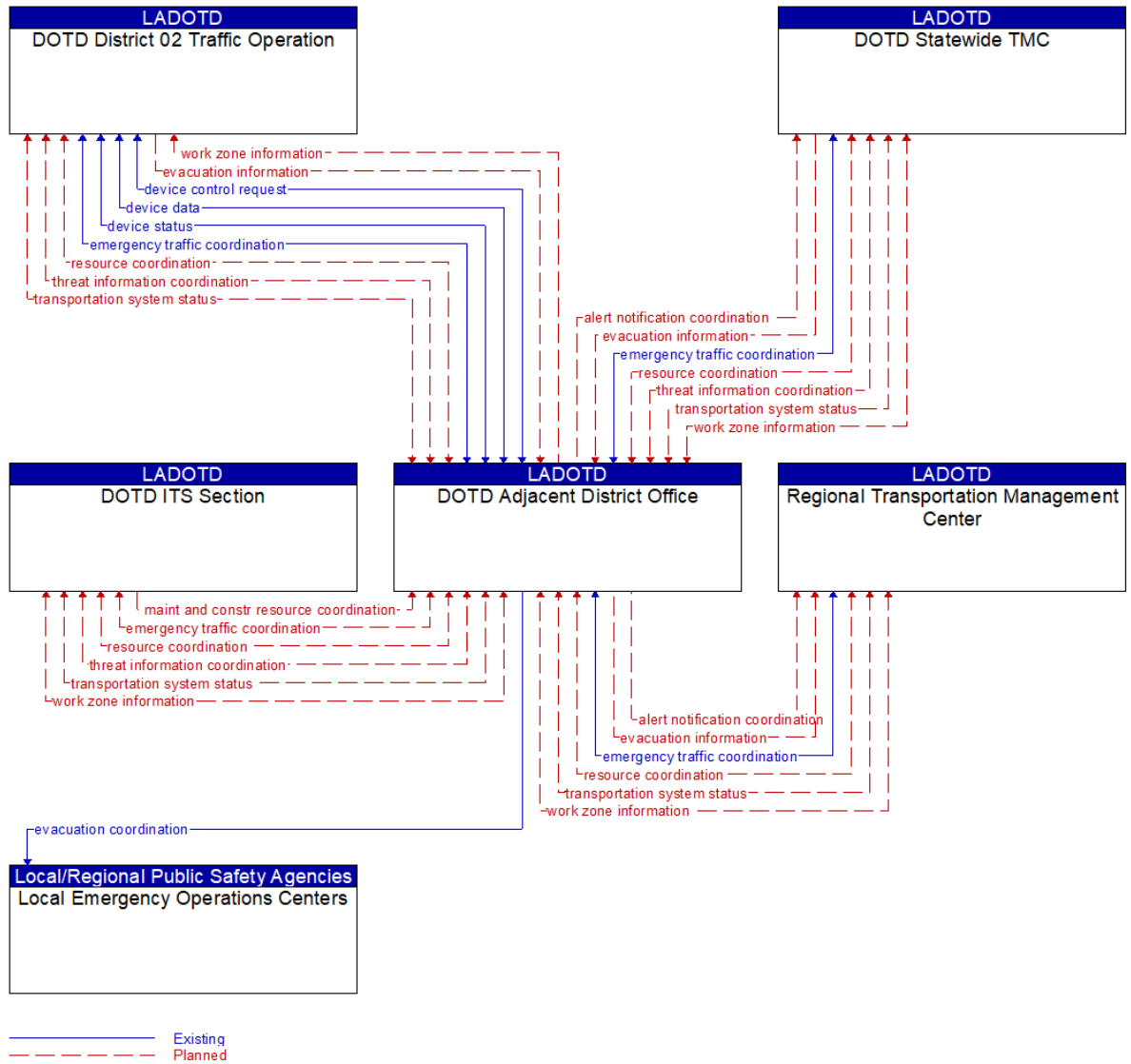


Figure 17: DOTD Adjacent District Office Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

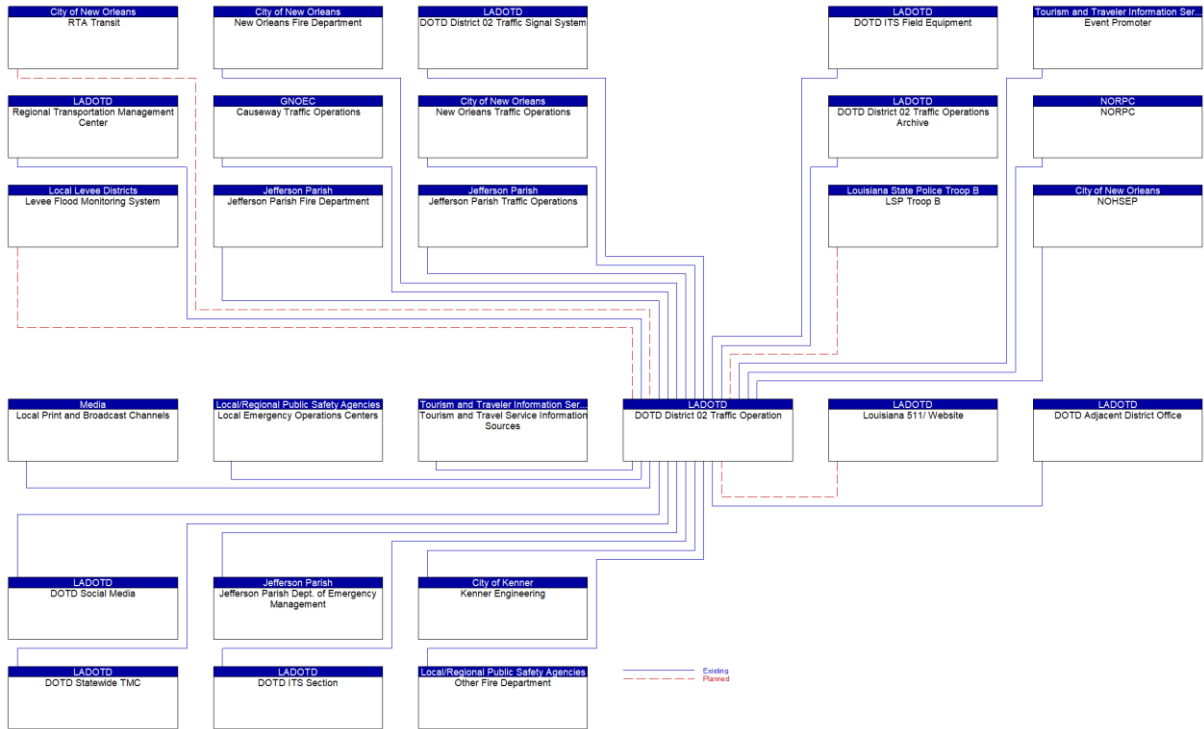


Figure 18: DOTD District 02 Traffic Operation Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

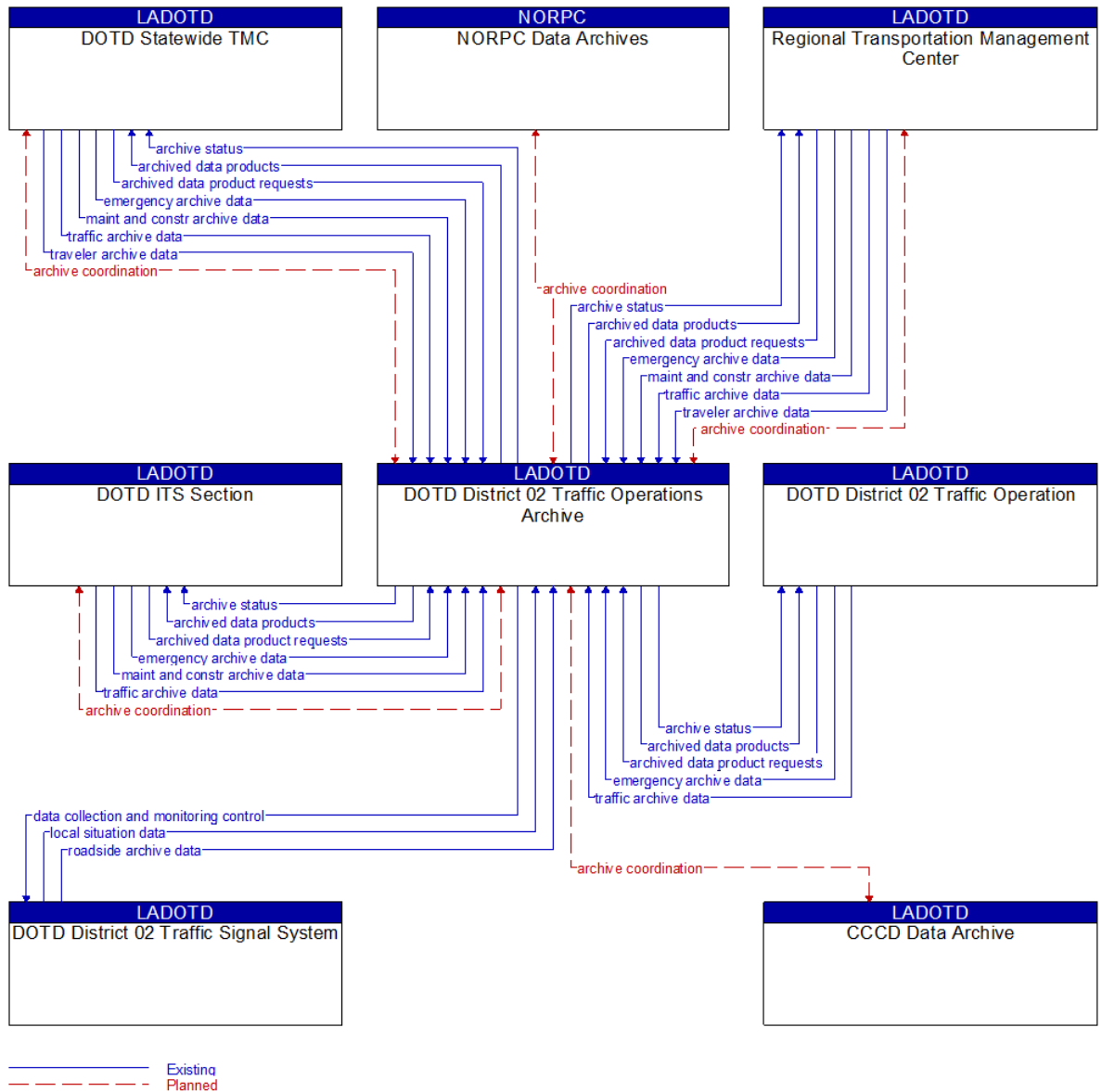


Figure 19: DOTD District 02 Traffic Operations Archive Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

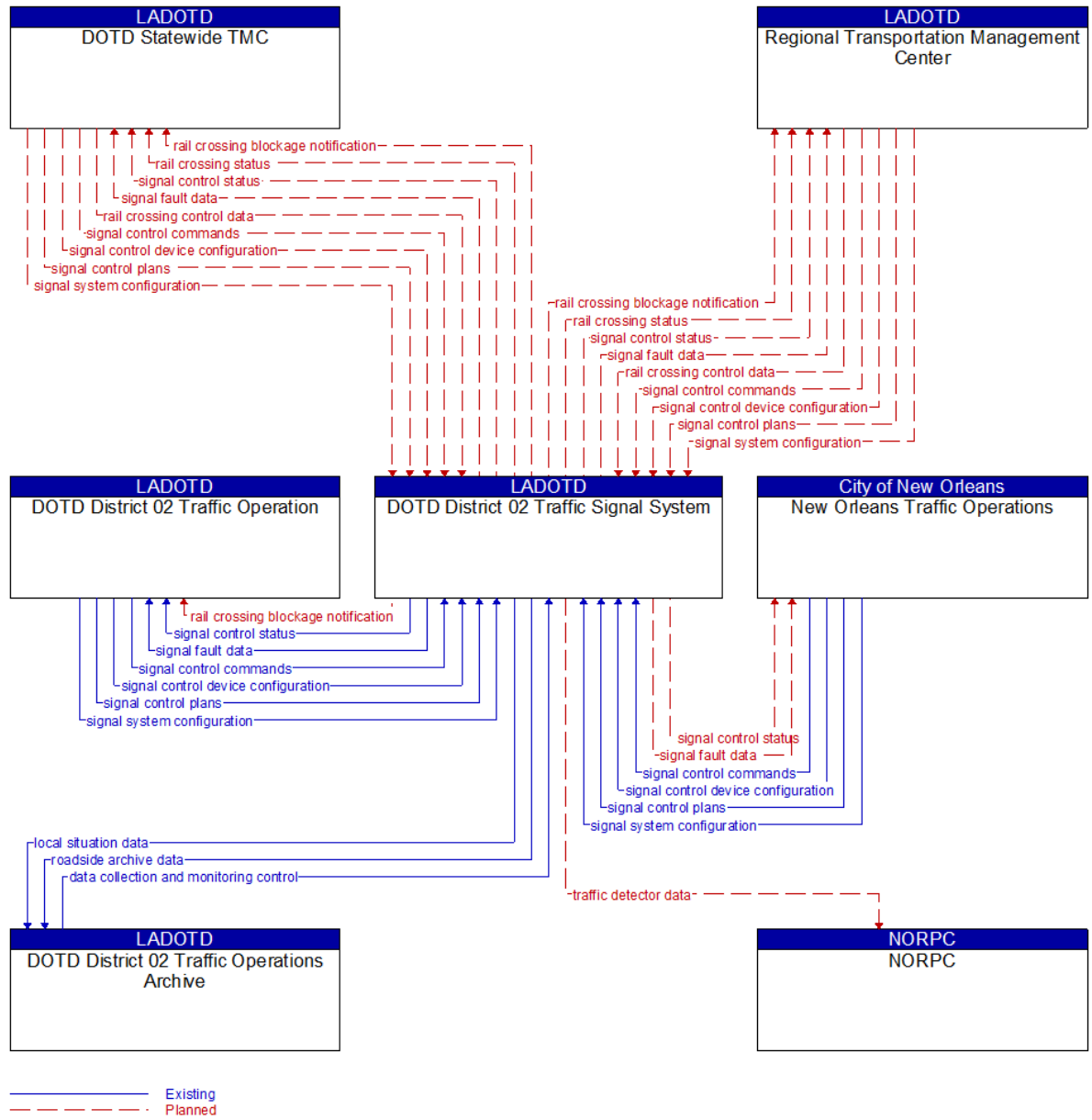


Figure 20: DOTD District 02 Traffic Signal System Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

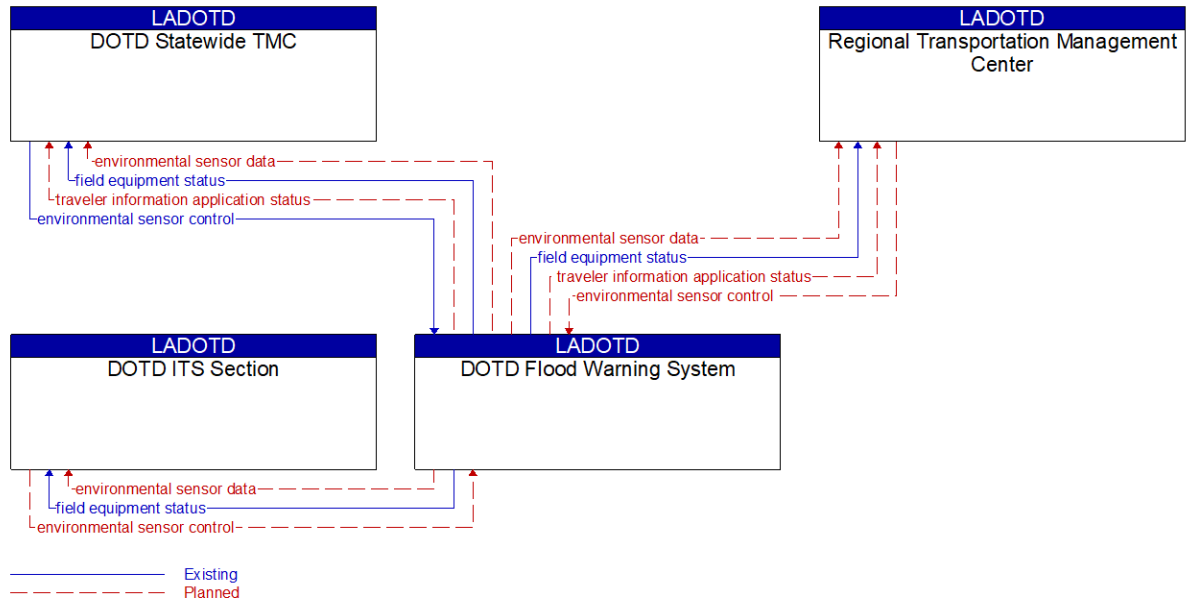


Figure 21: DOTD Flood Warning System Context Diagram

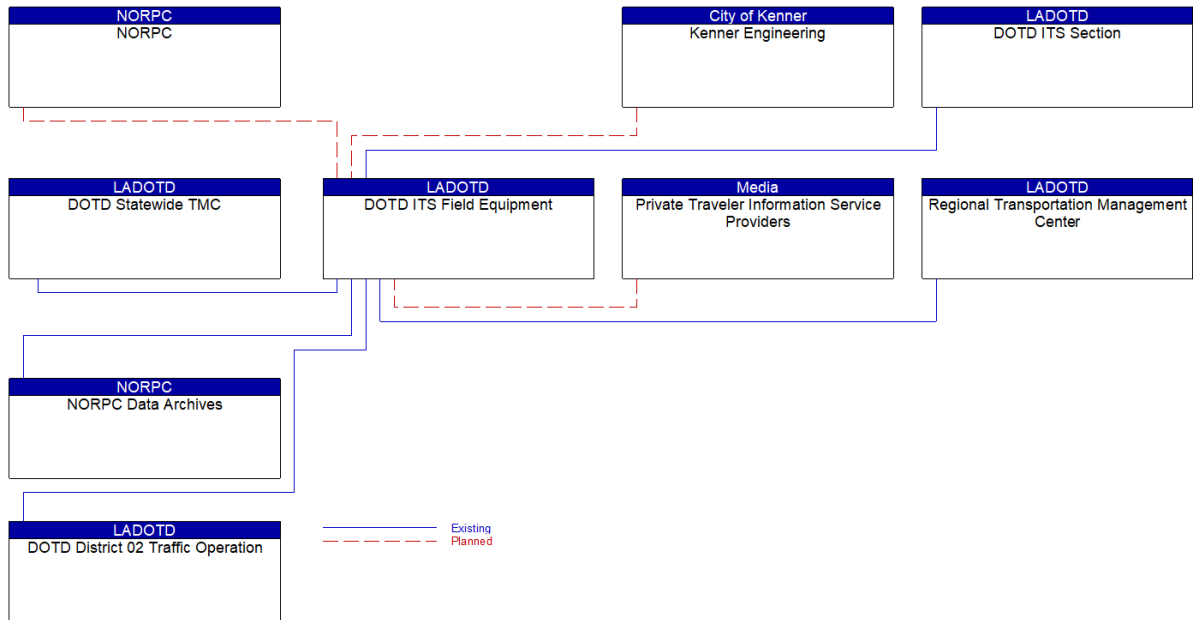


Figure 22: DOTD ITS Field Equipment Context Diagram



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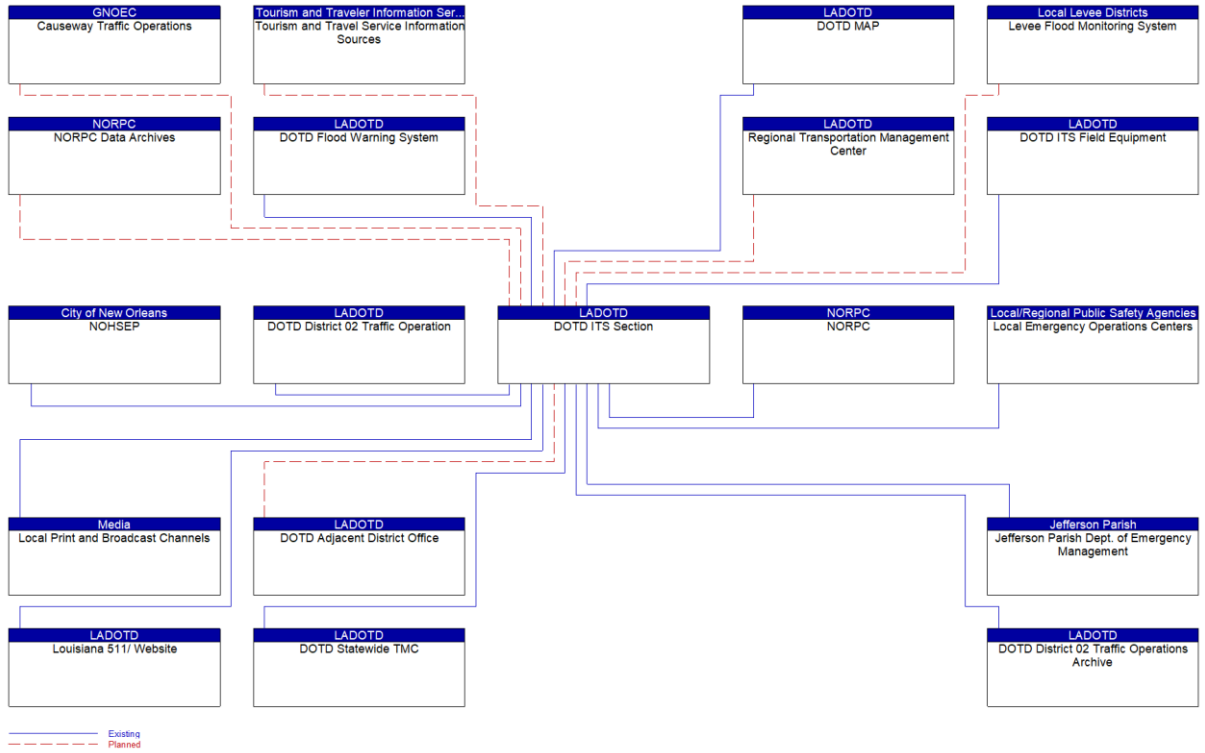


Figure 23: DOTD ITS Section Context Diagram



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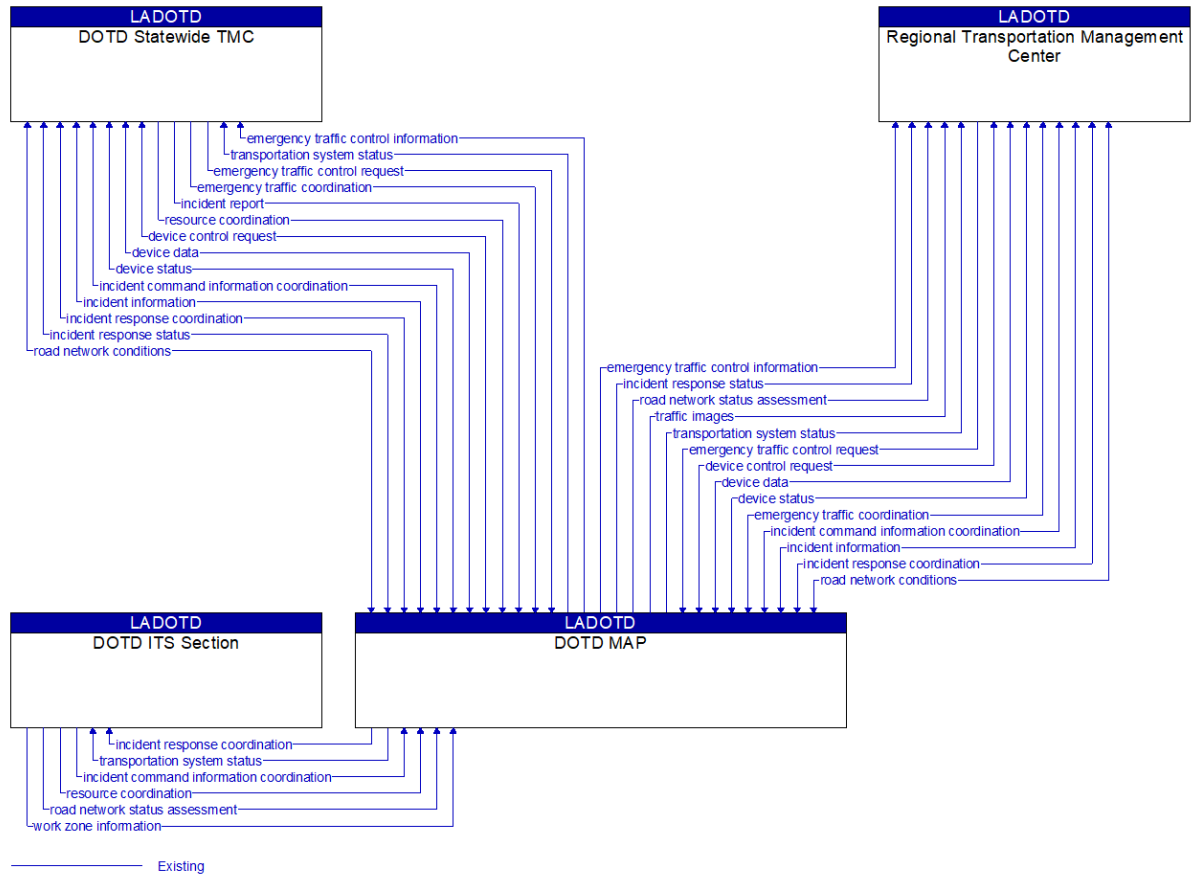


Figure 24: DOTD MAP Context Diagram



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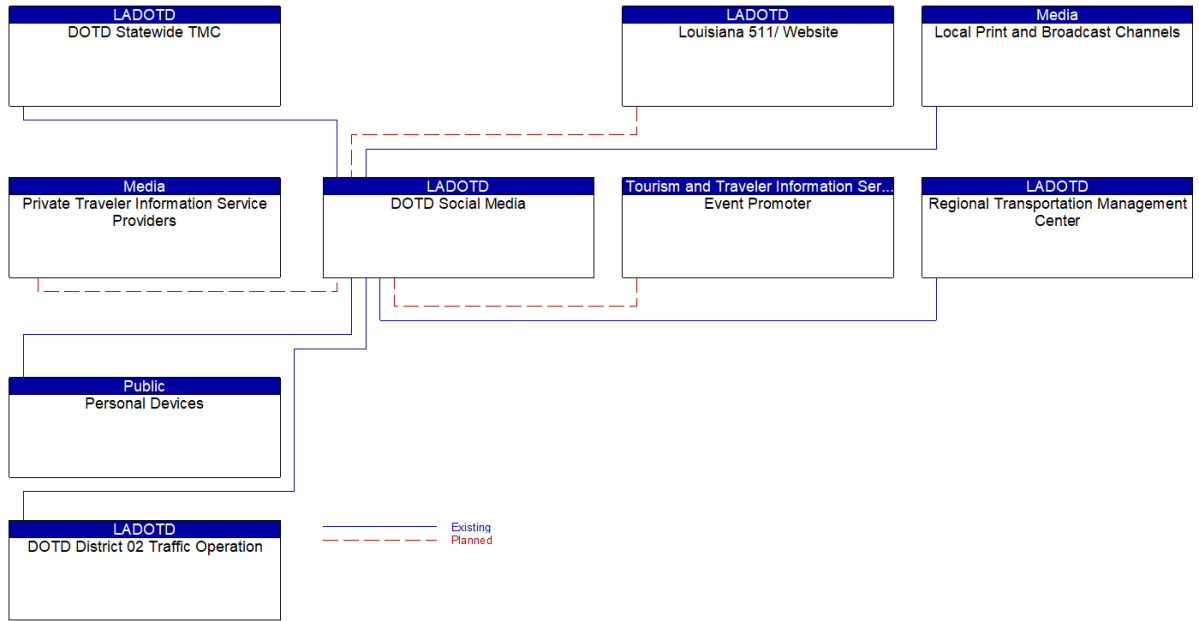


Figure 25: DOTD Social Media Context Diagram



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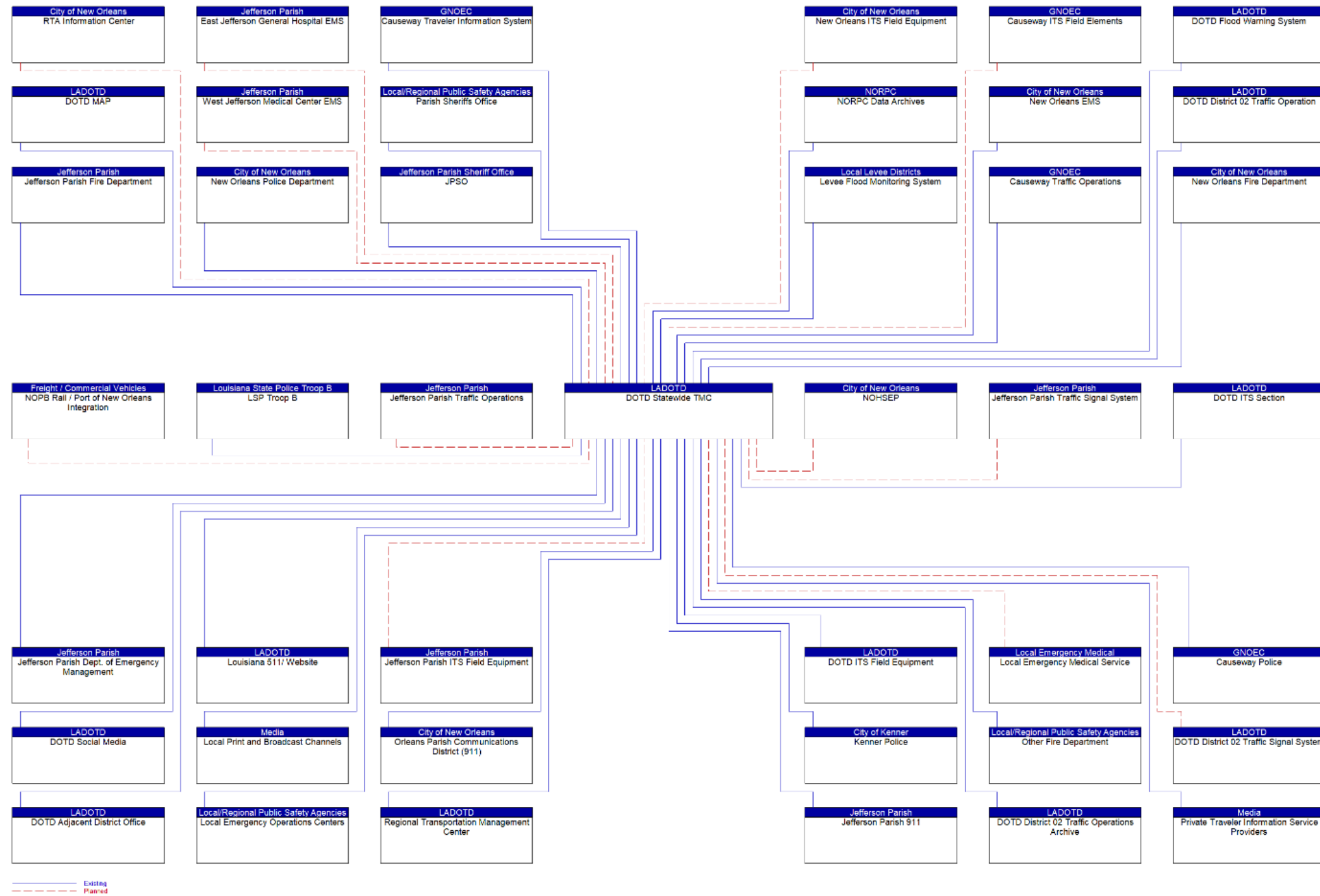


Figure 26: DOTD Statewide TMC Context Diagram



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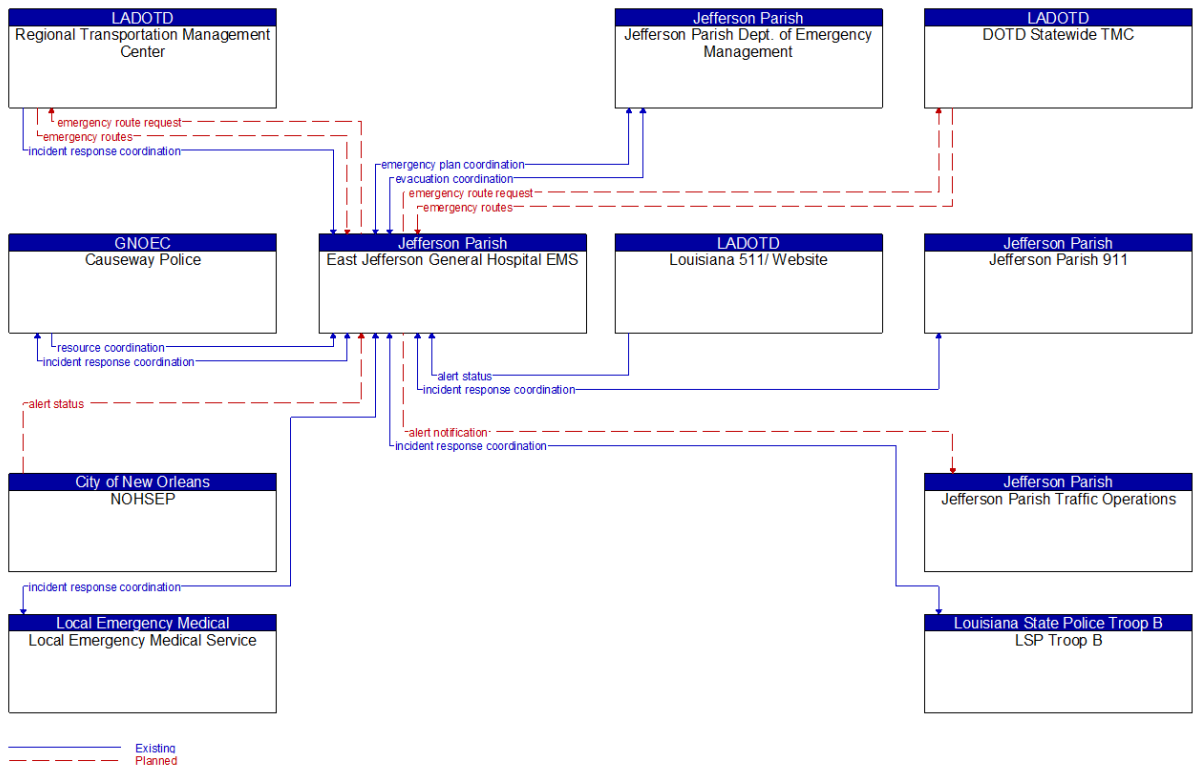


Figure 27: East Jefferson General Hospital EMS Context Diagram



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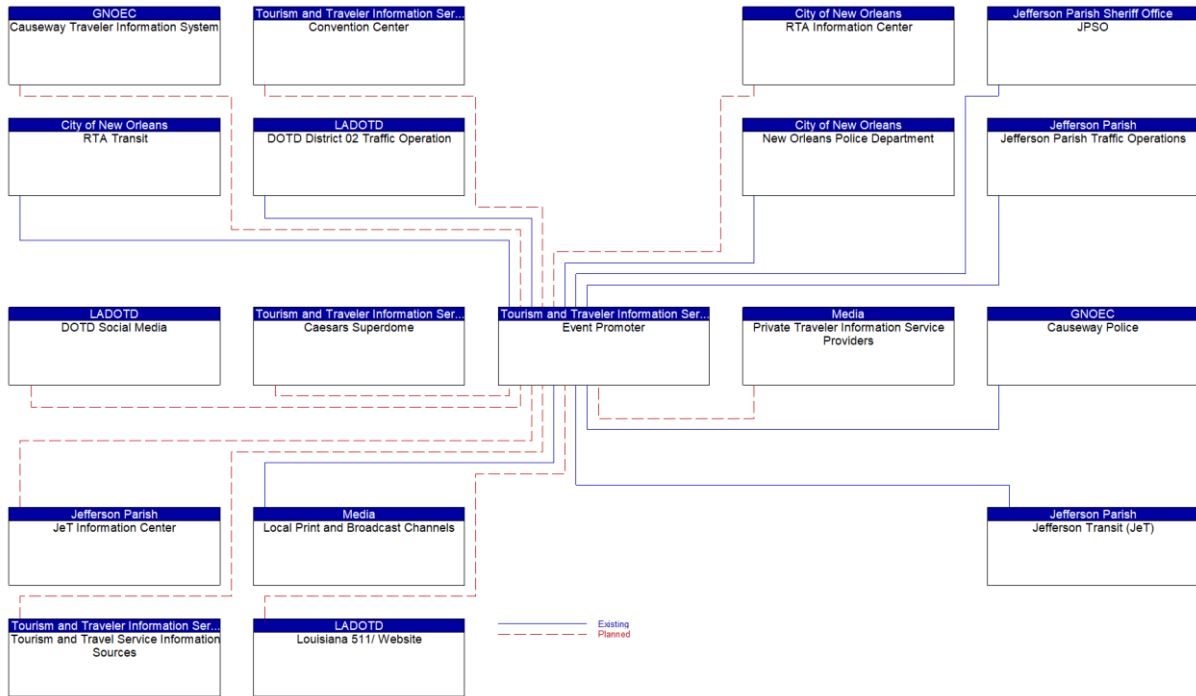


Figure 28: Event Promoter Context Diagram



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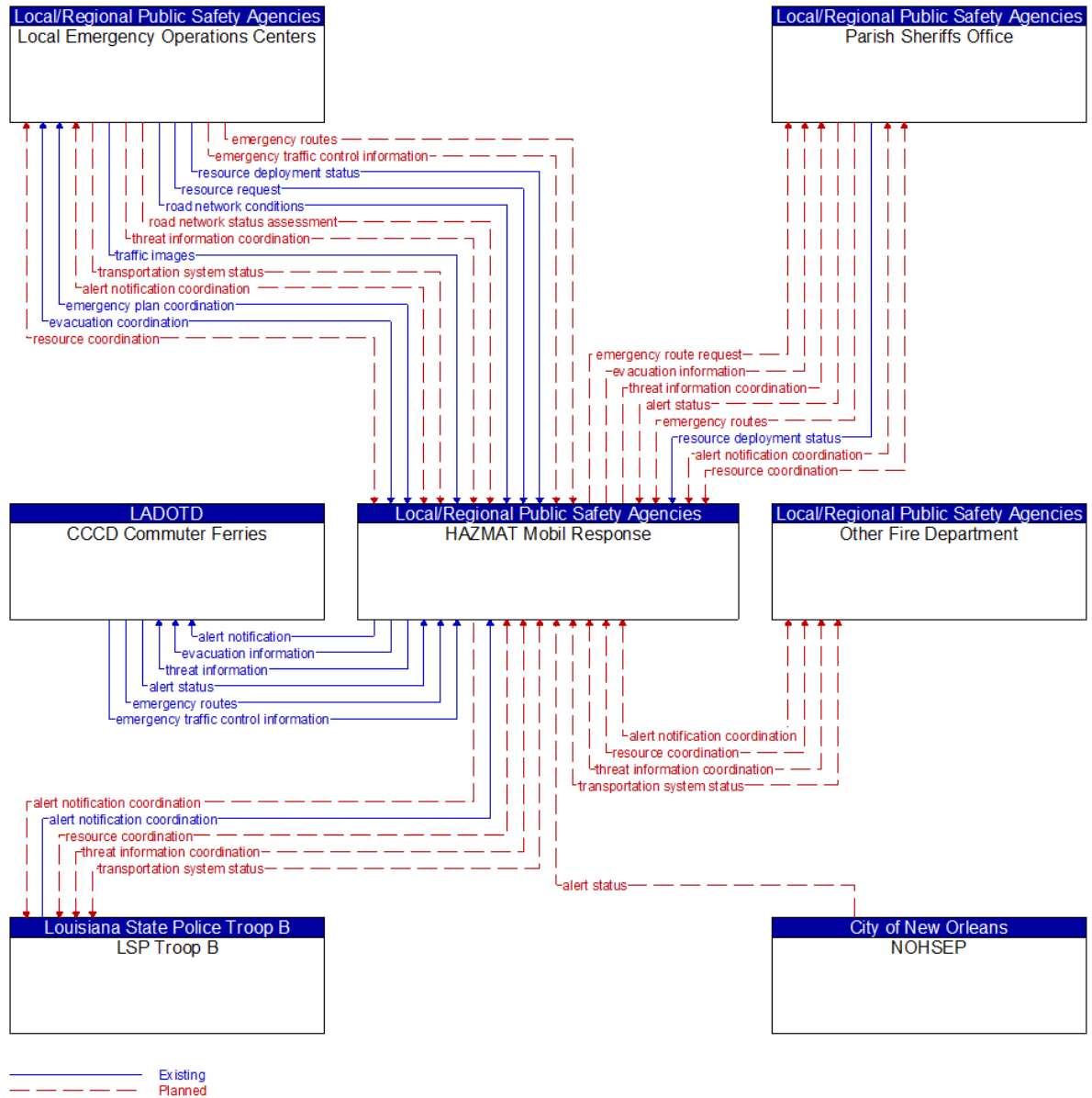


Figure 29: HAZMAT Mobil Response Context Diagram



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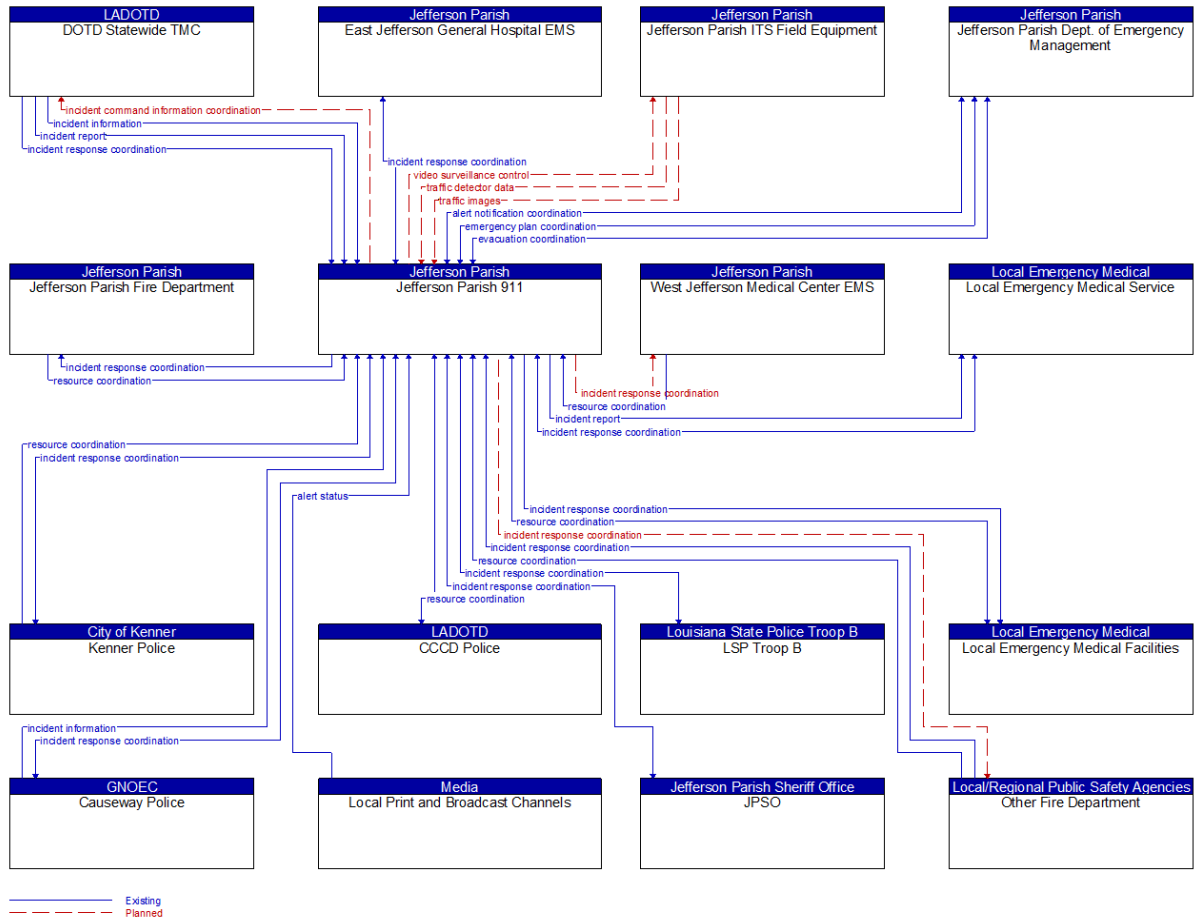


Figure 30: Jefferson Parish 911 Context Diagram



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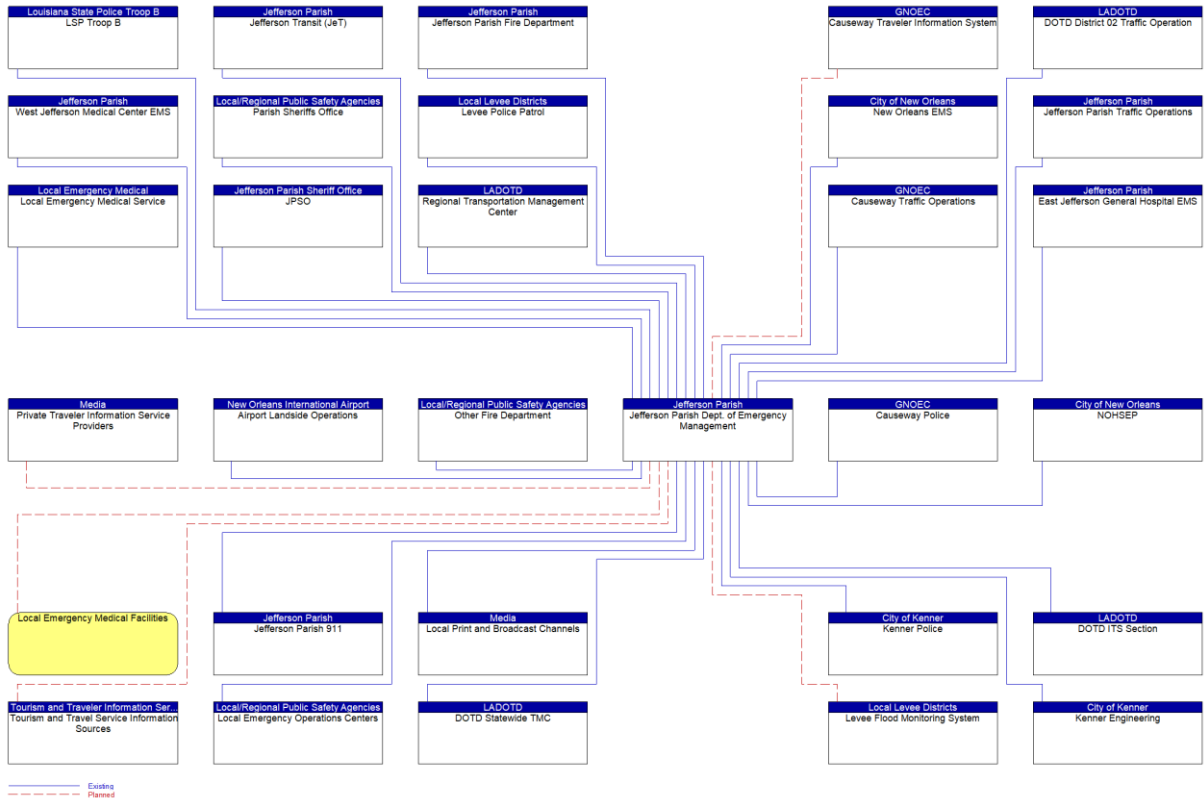


Figure 31: Jefferson Parish Dept. of Emergency Management Context Diagram



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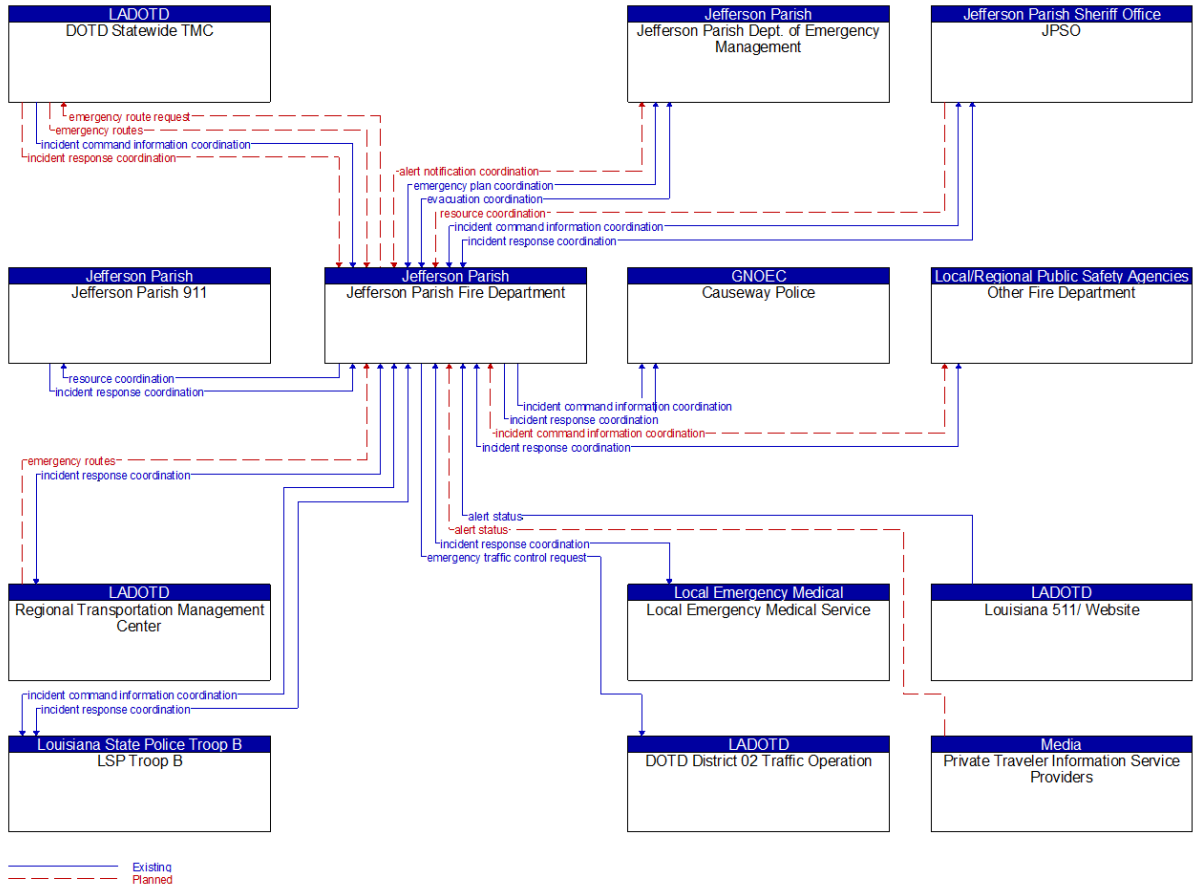


Figure 32: Jefferson Parish Fire Department Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

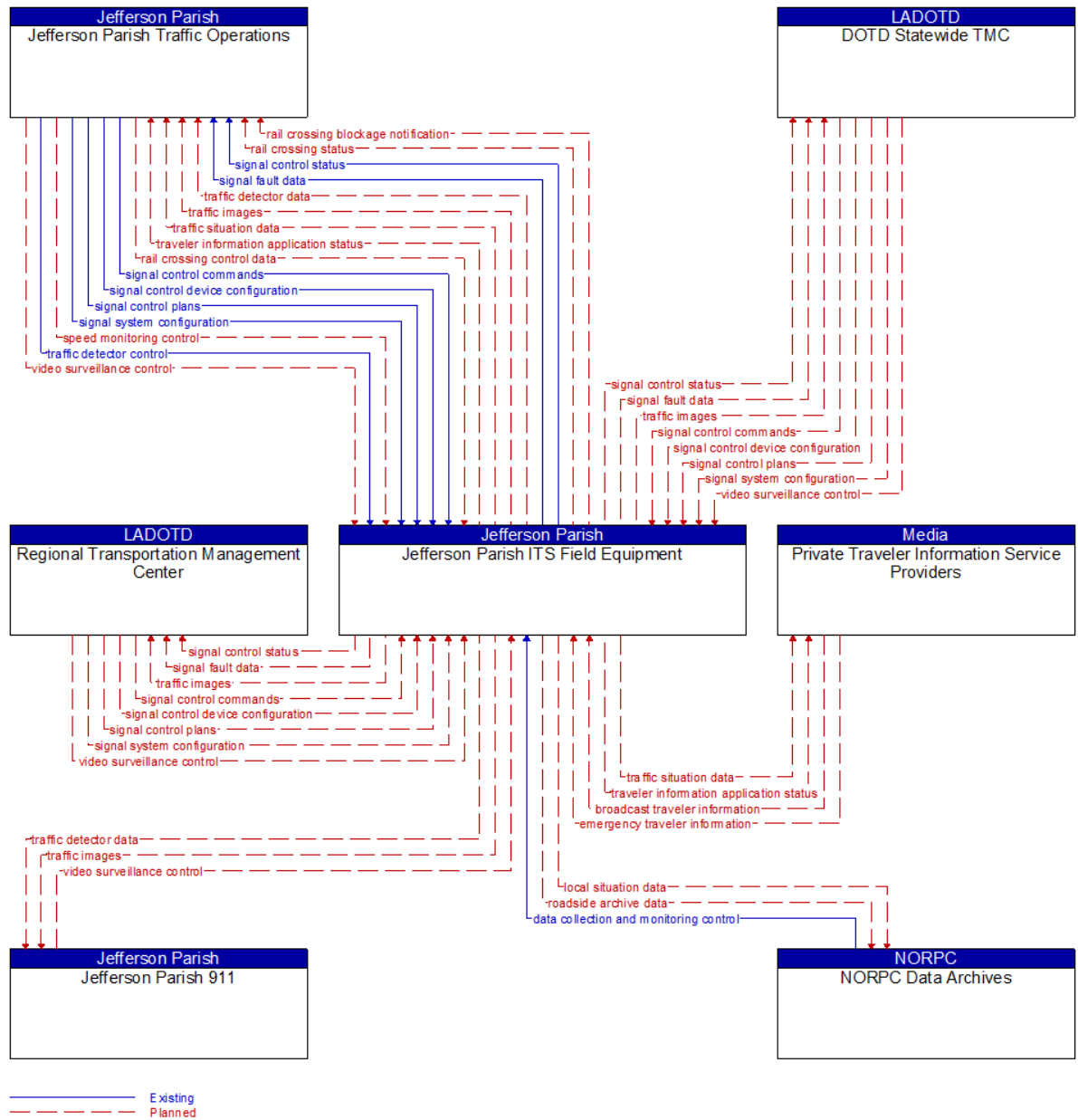


Figure 33: Jefferson Parish ITS Field Equipment Context Diagram



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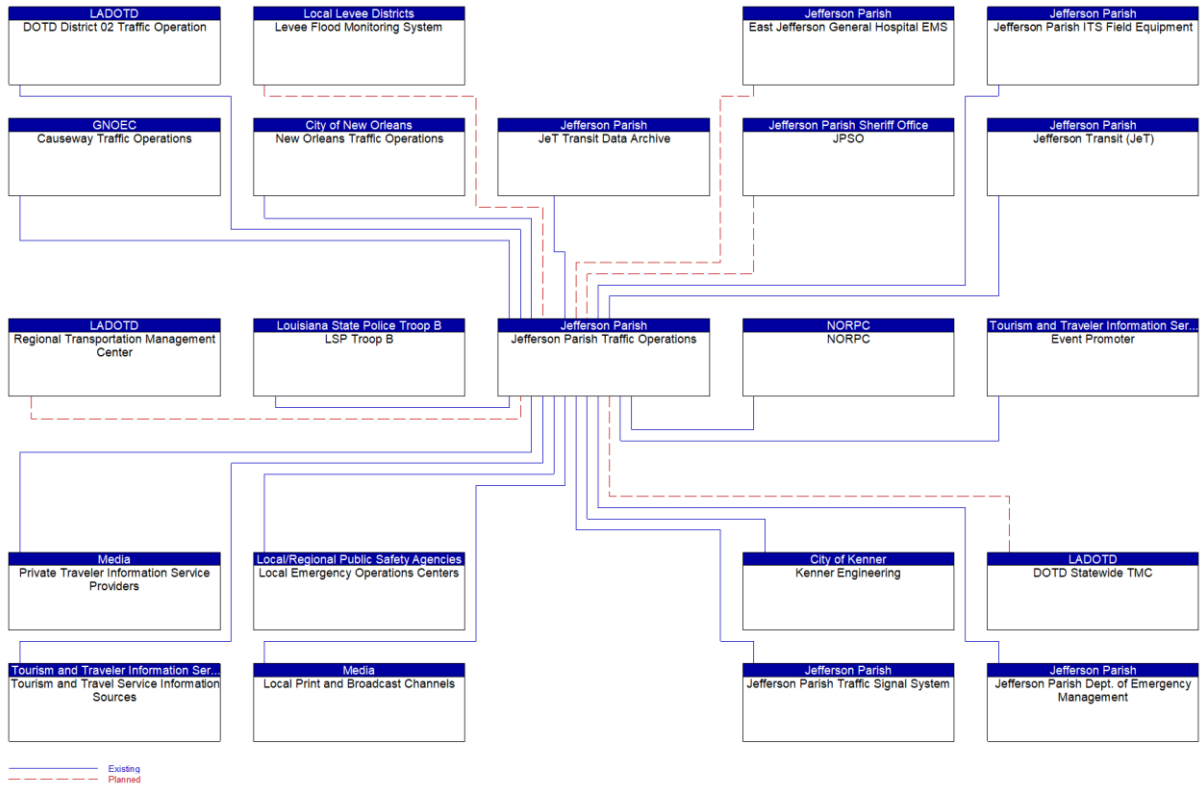


Figure 34: Jefferson Parish Traffic Operations Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

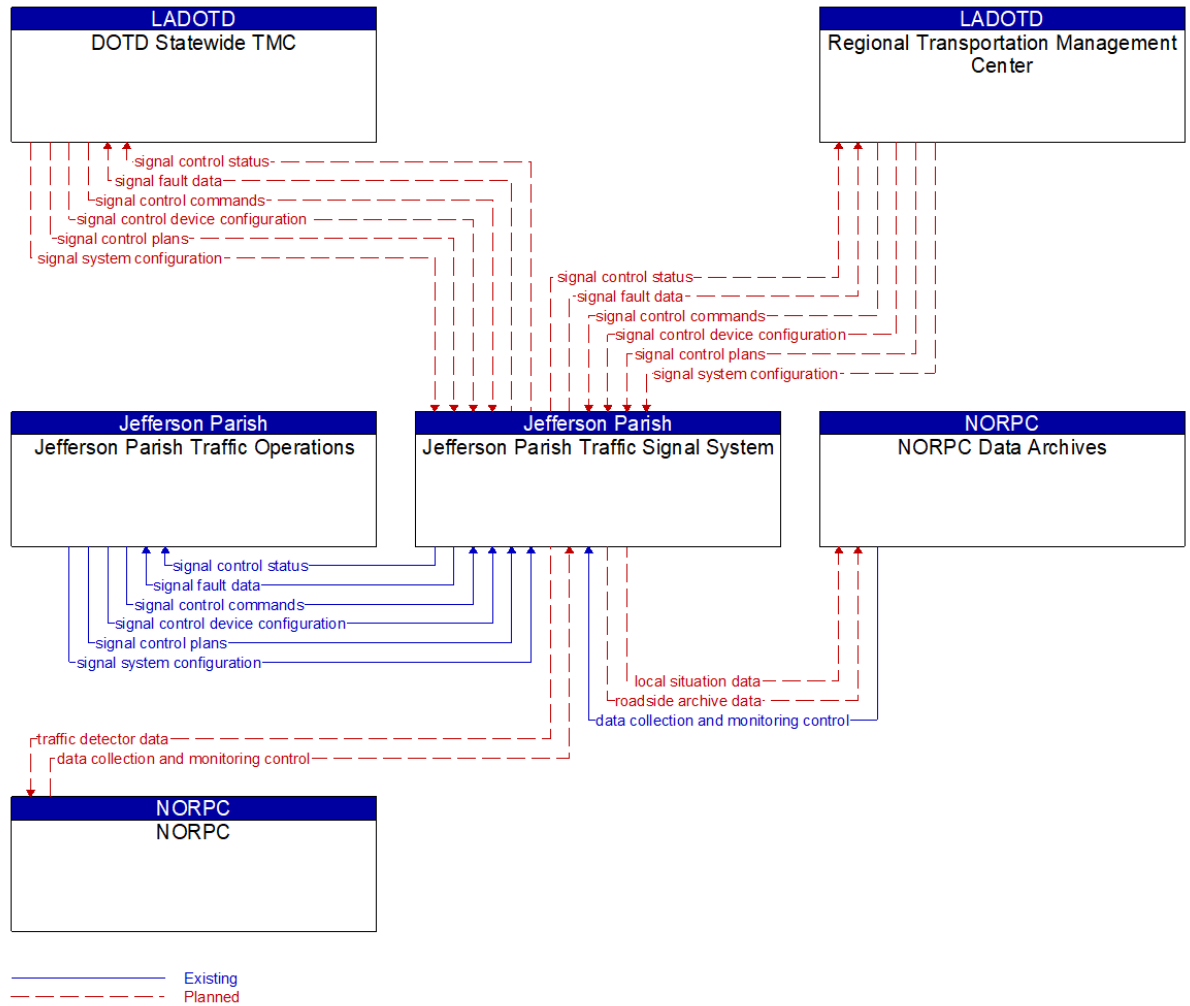


Figure 35: Jefferson Parish Traffic Signal System Context Diagram



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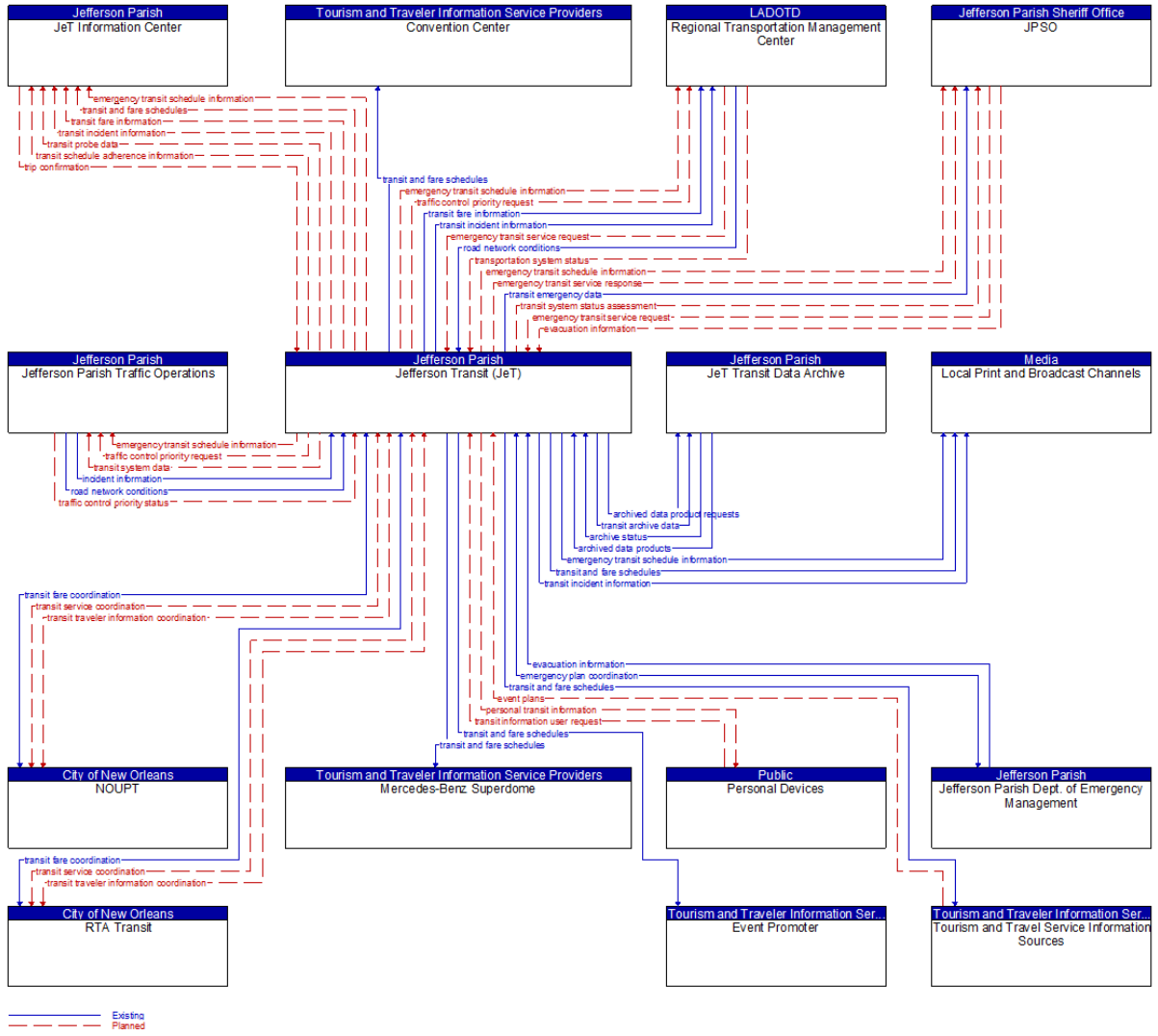


Figure 36: Jefferson Transit (JeT) Context Diagram



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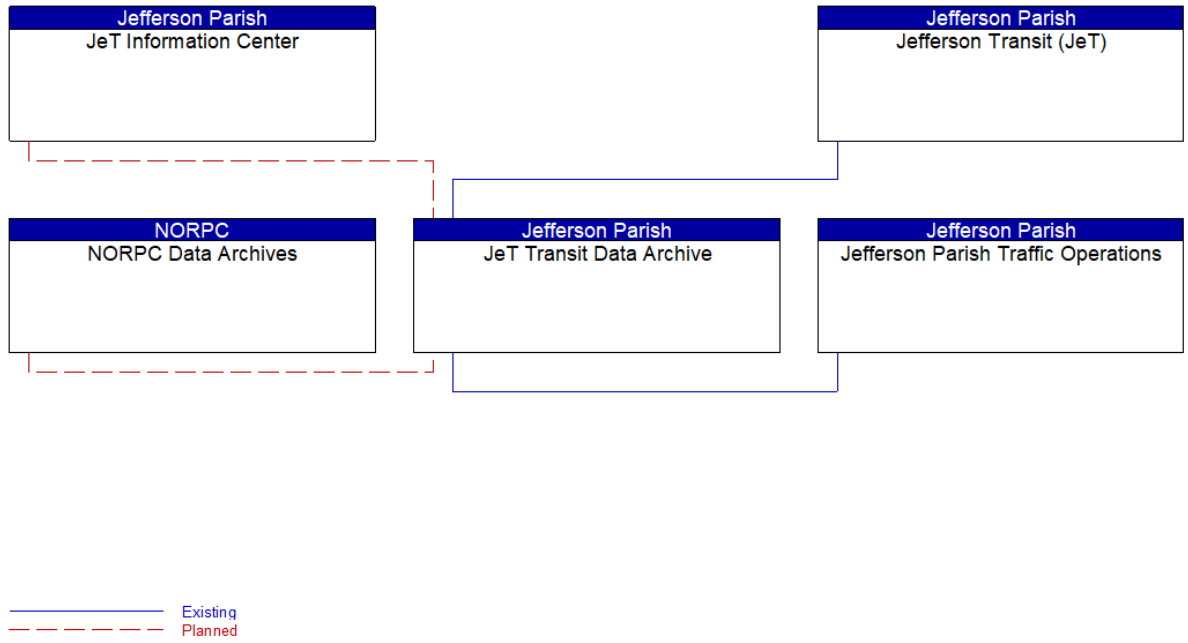


Figure 37: JeT Information Center Context Diagram



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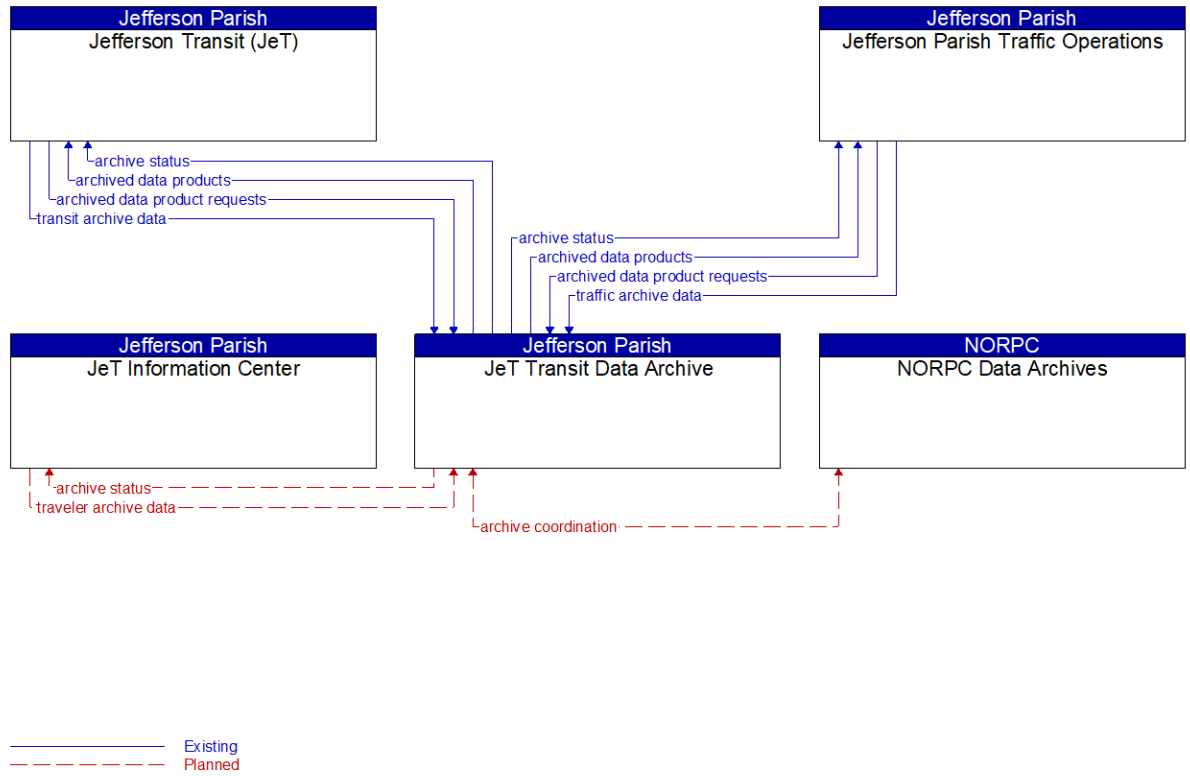


Figure 38: JeT Transit Data Archive Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

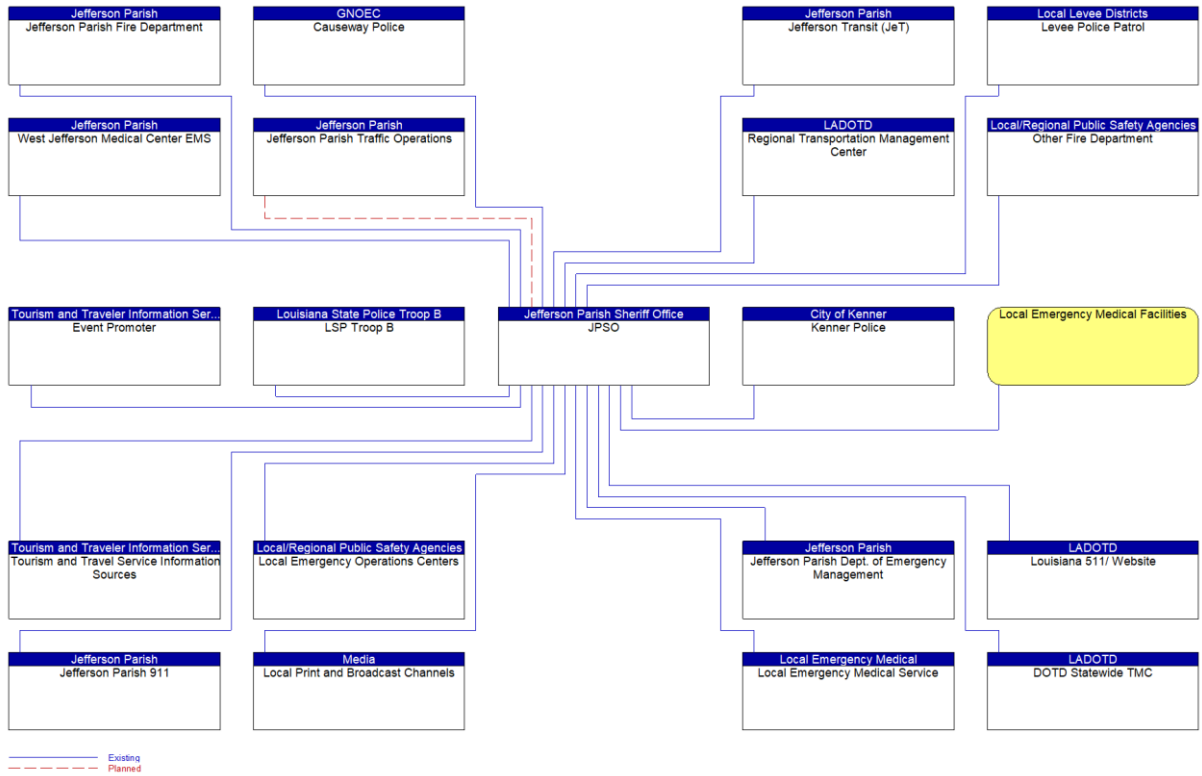


Figure 39: JPSO Context Diagram



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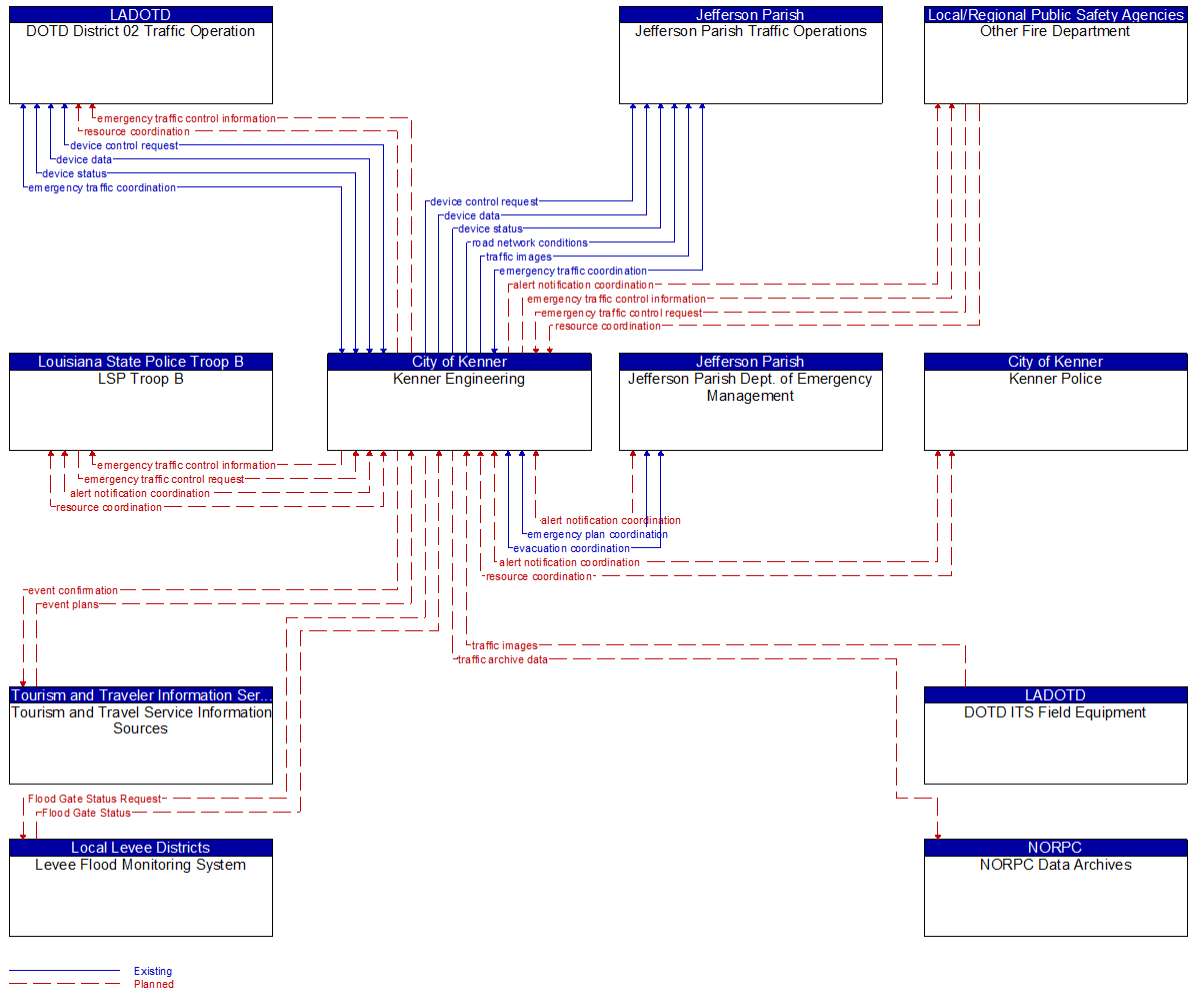


Figure 40: Kenner Engineering Context Diagram



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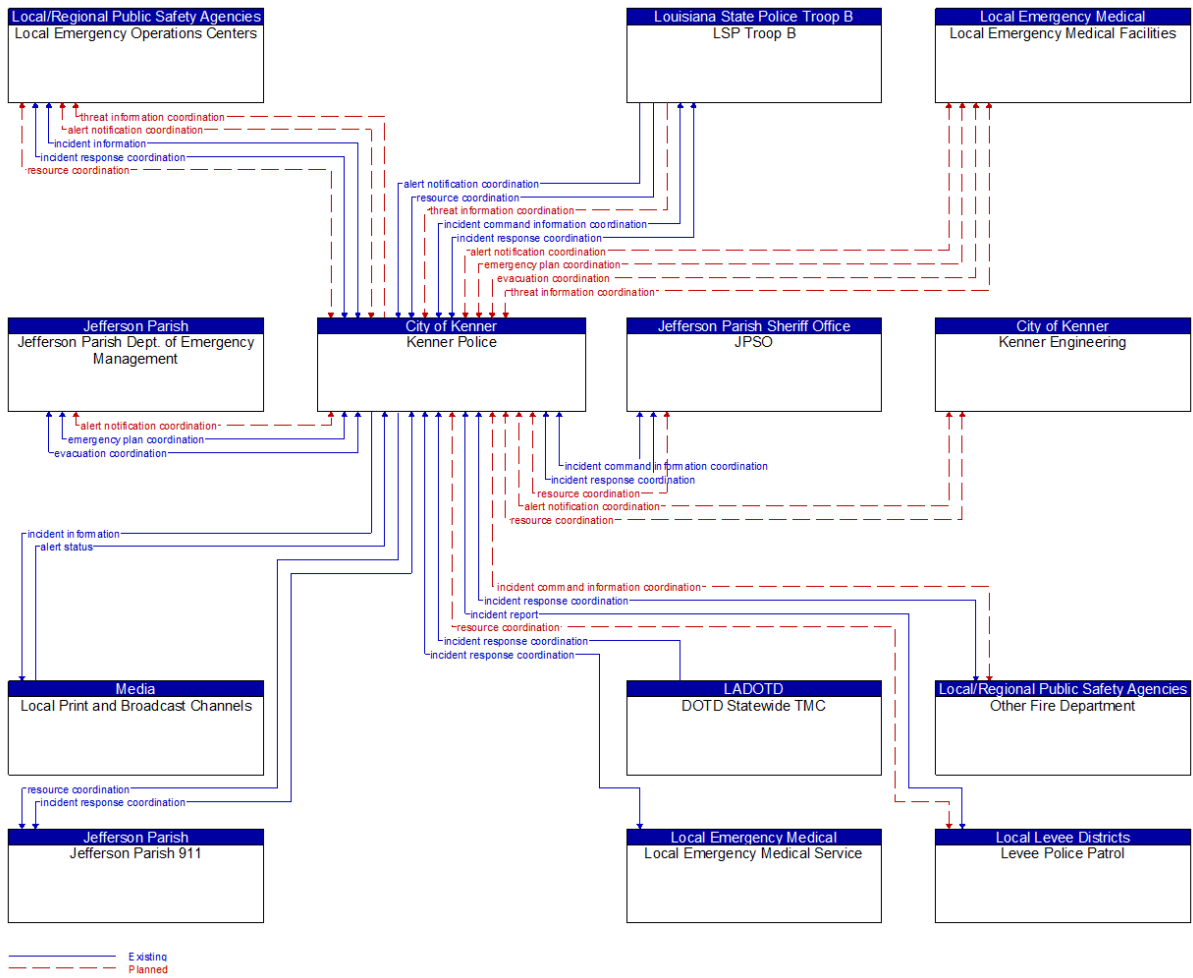


Figure 41: Kenner Police Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

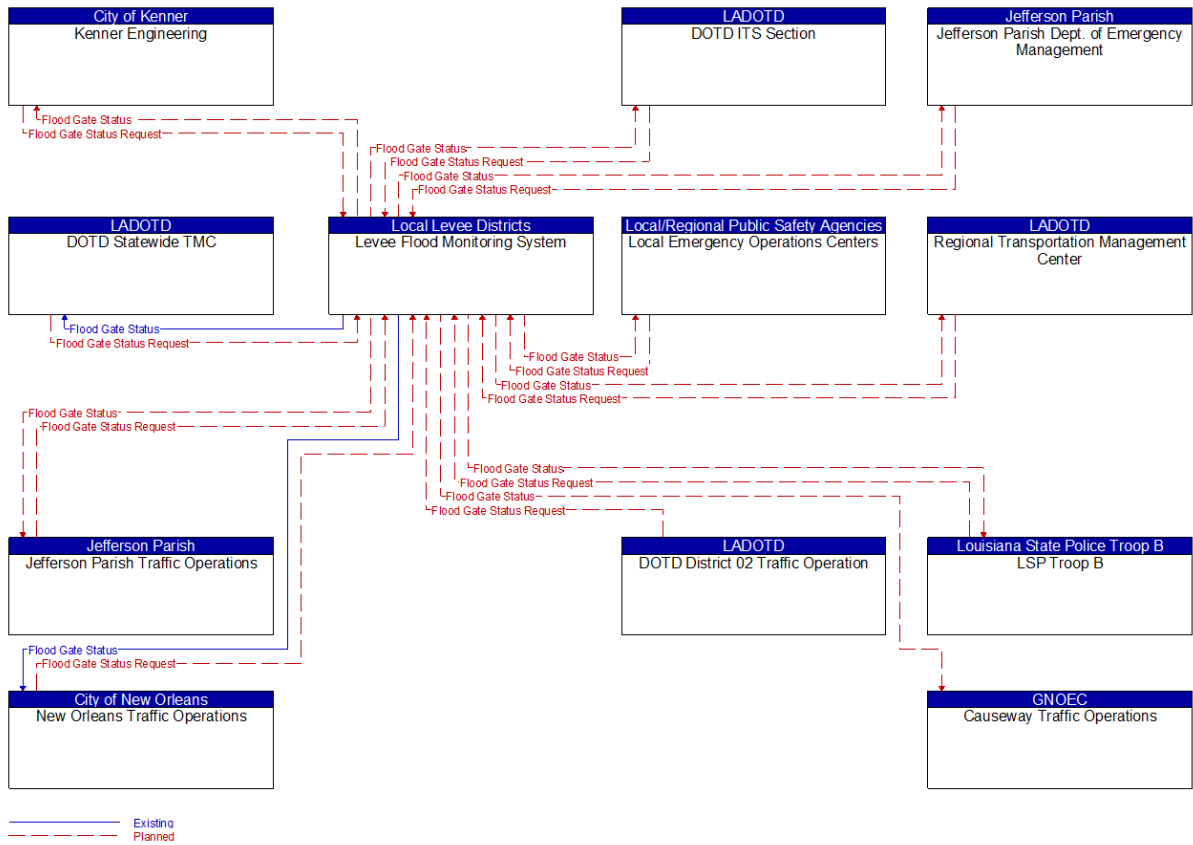


Figure 42: Levee Flood Monitoring System Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

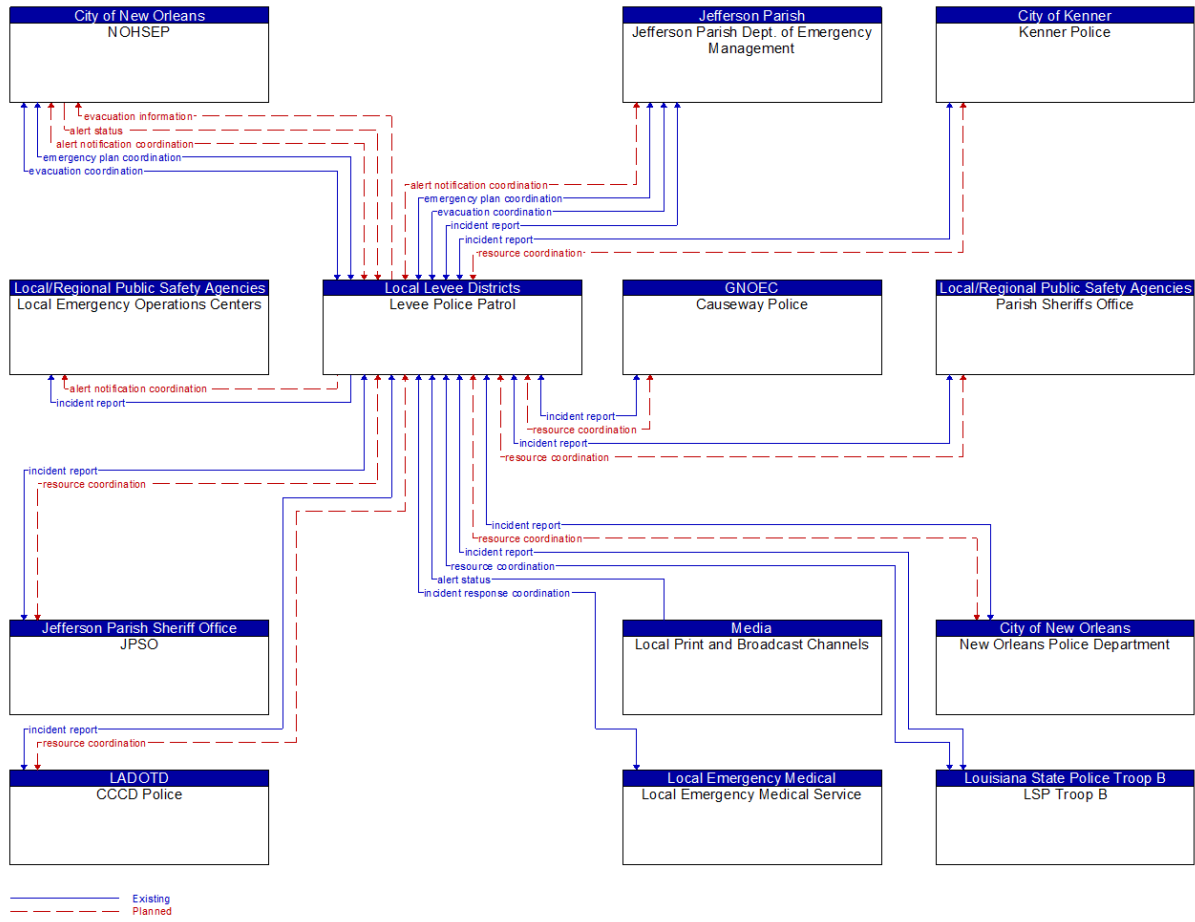


Figure 43: Levee Police Patrol Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

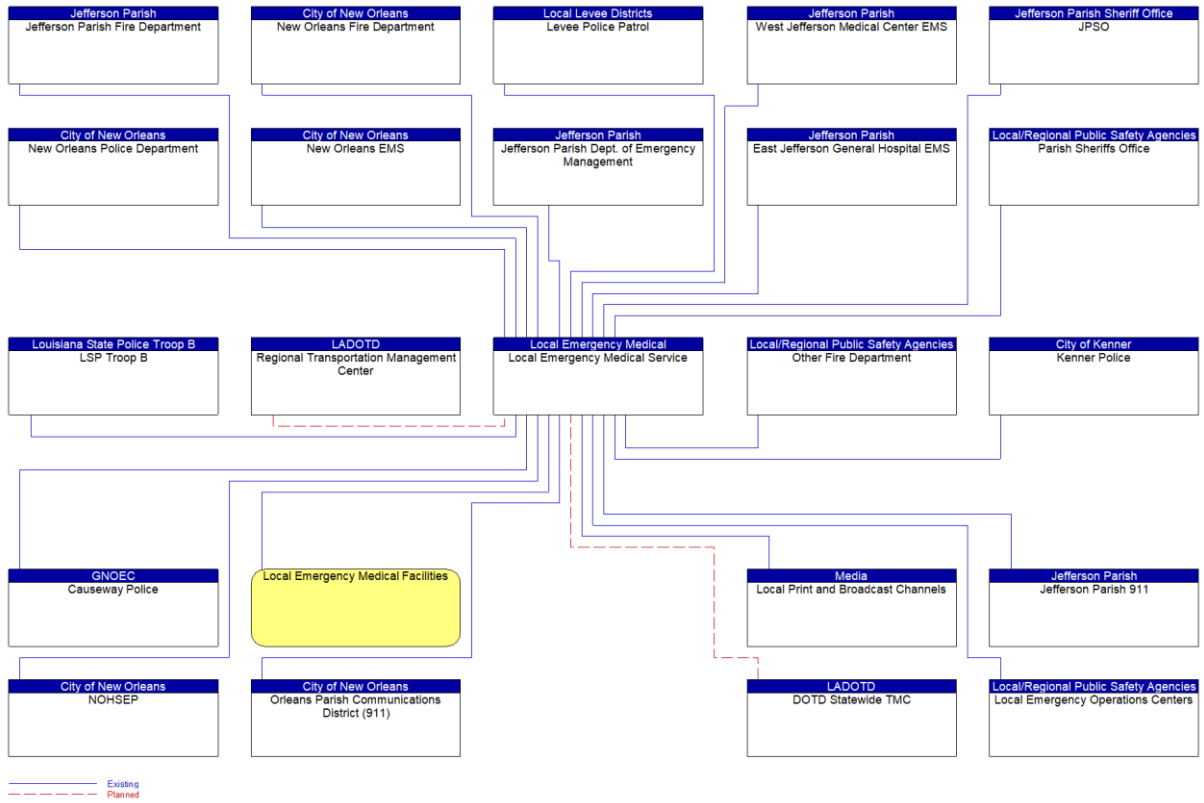


Figure 44: Local Emergency Medical Service Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

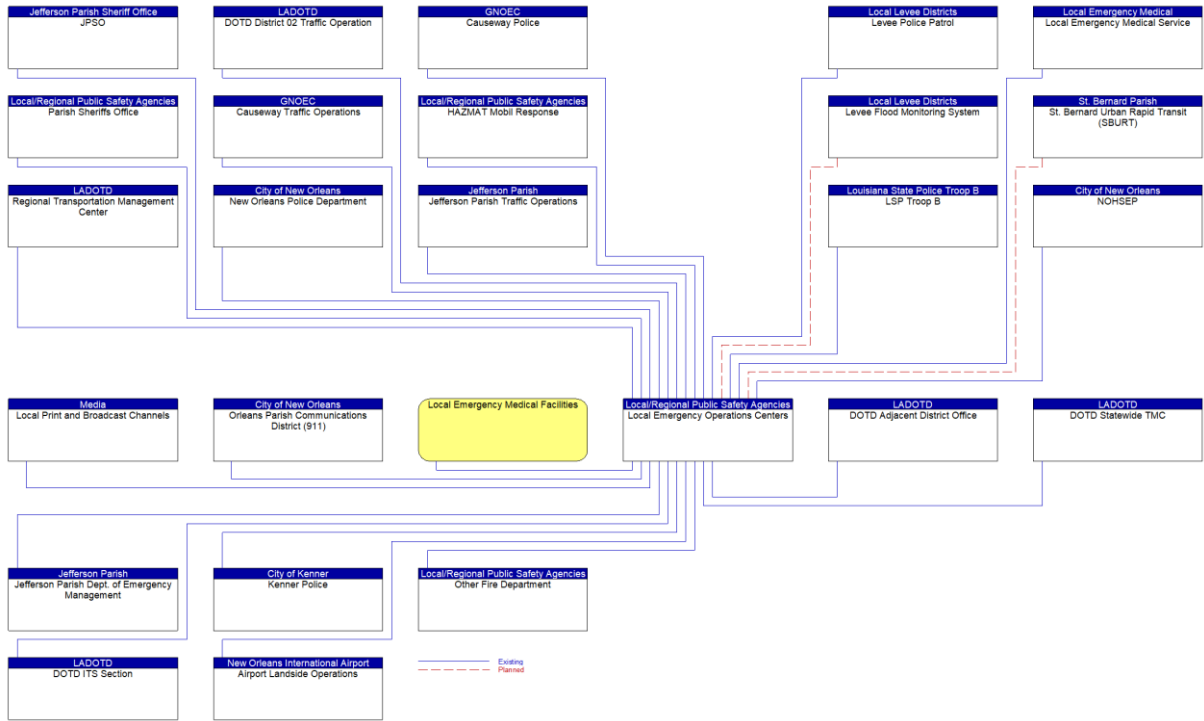


Figure 45: Local Emergency Operations Centers Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

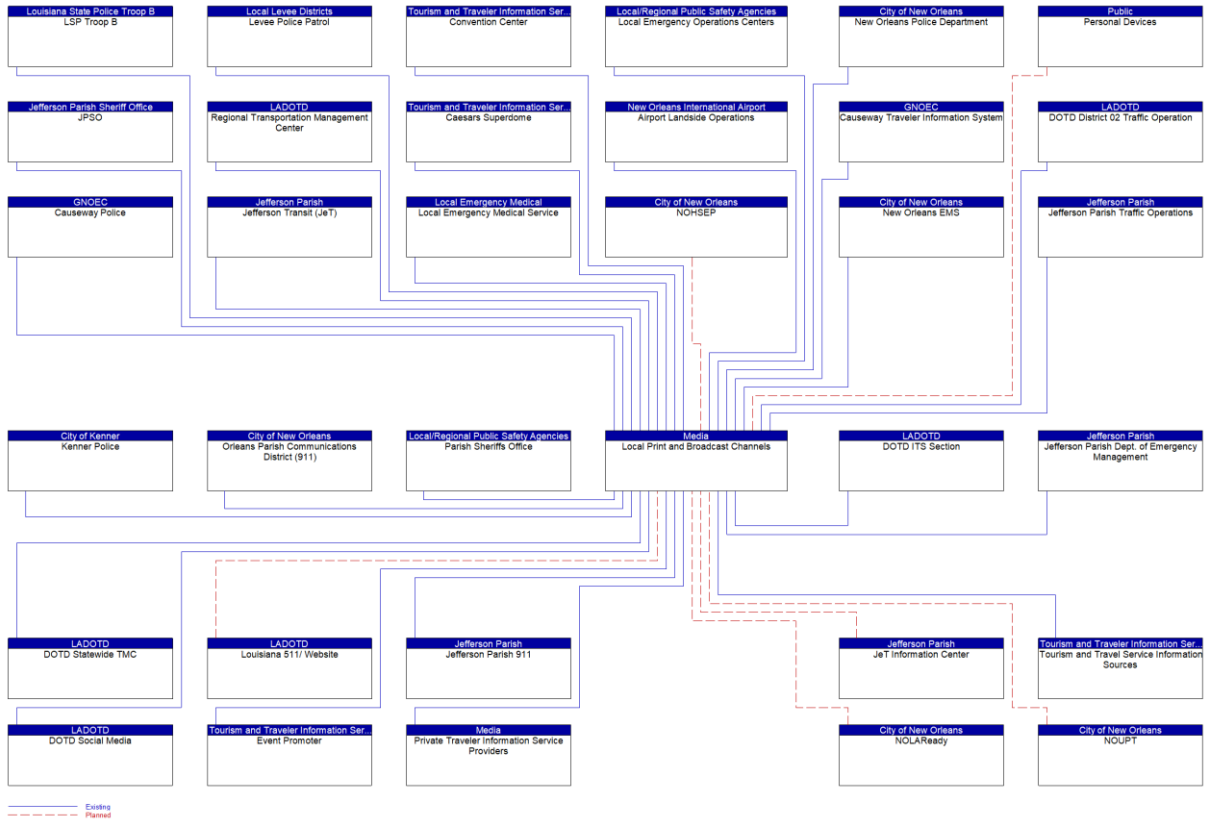


Figure 46: Local Print and Broadcast Channels Context Diagram



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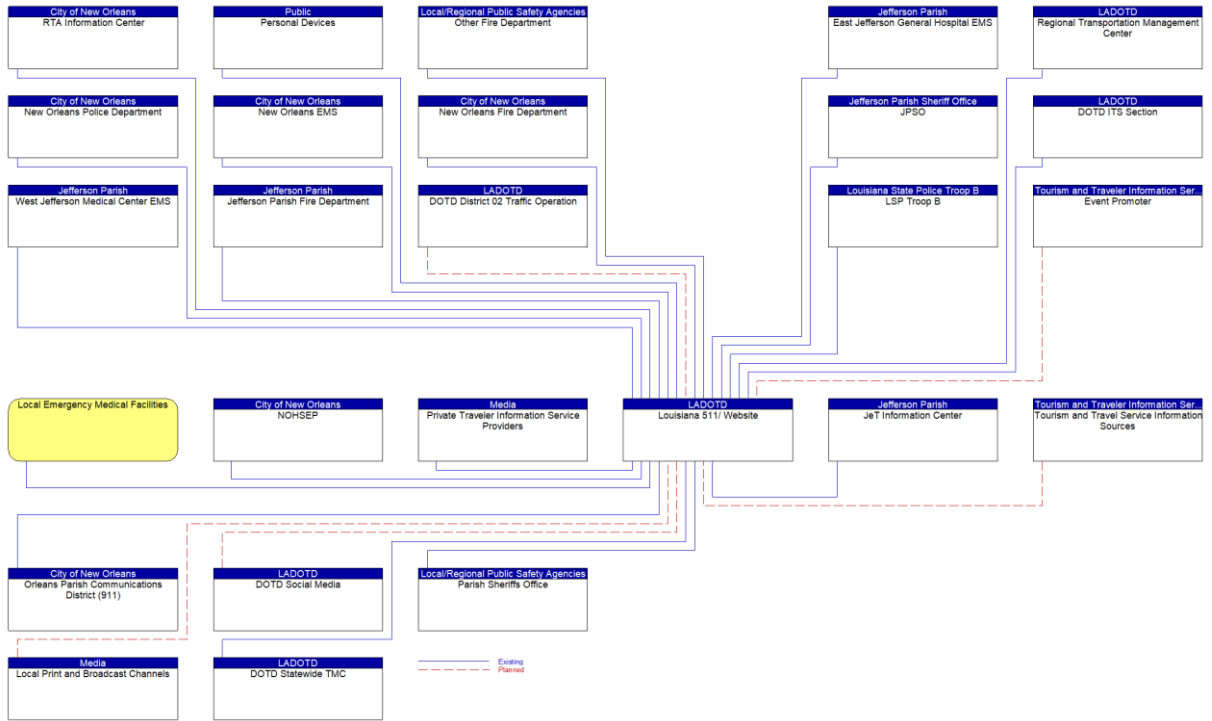


Figure 47: Louisiana 511/ Website Context Diagram



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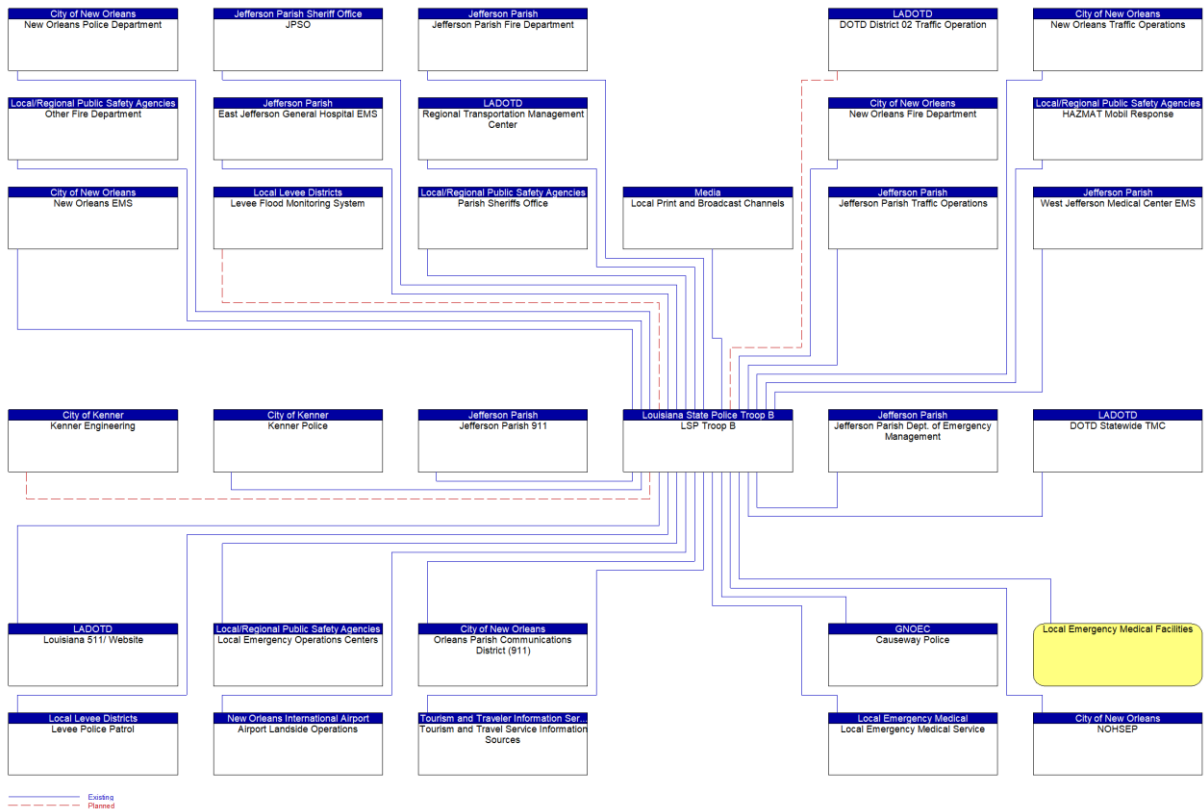


Figure 48: LSP Troop B Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

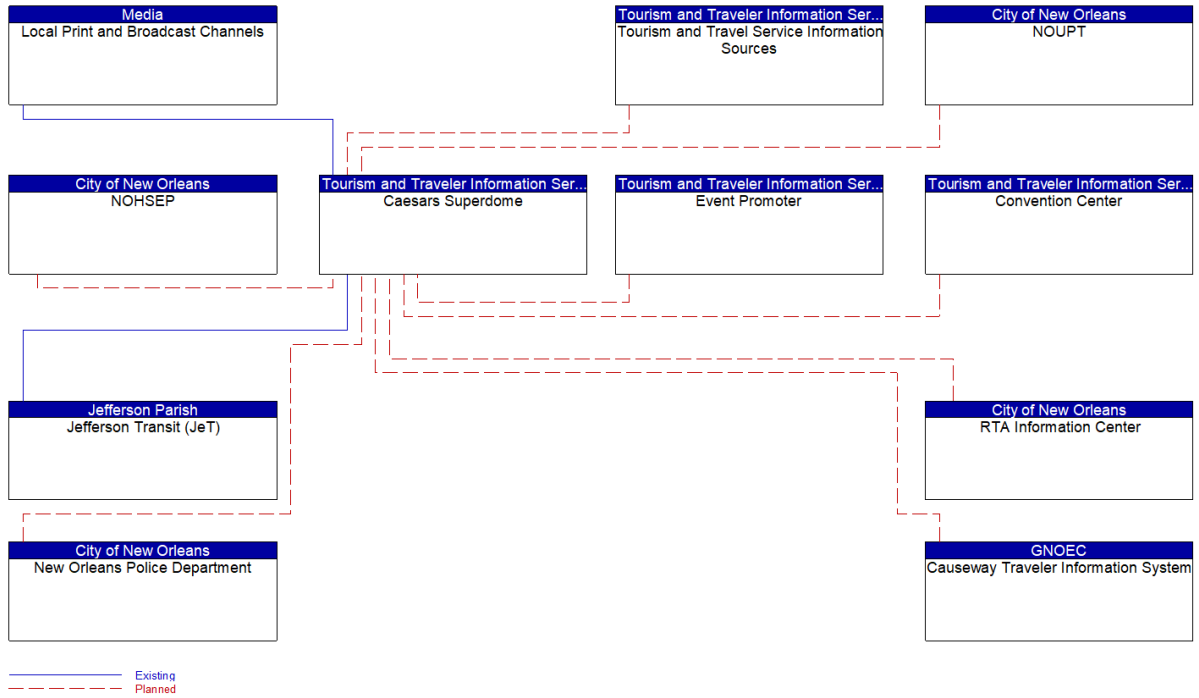


Figure 49: Caesars Superdome Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

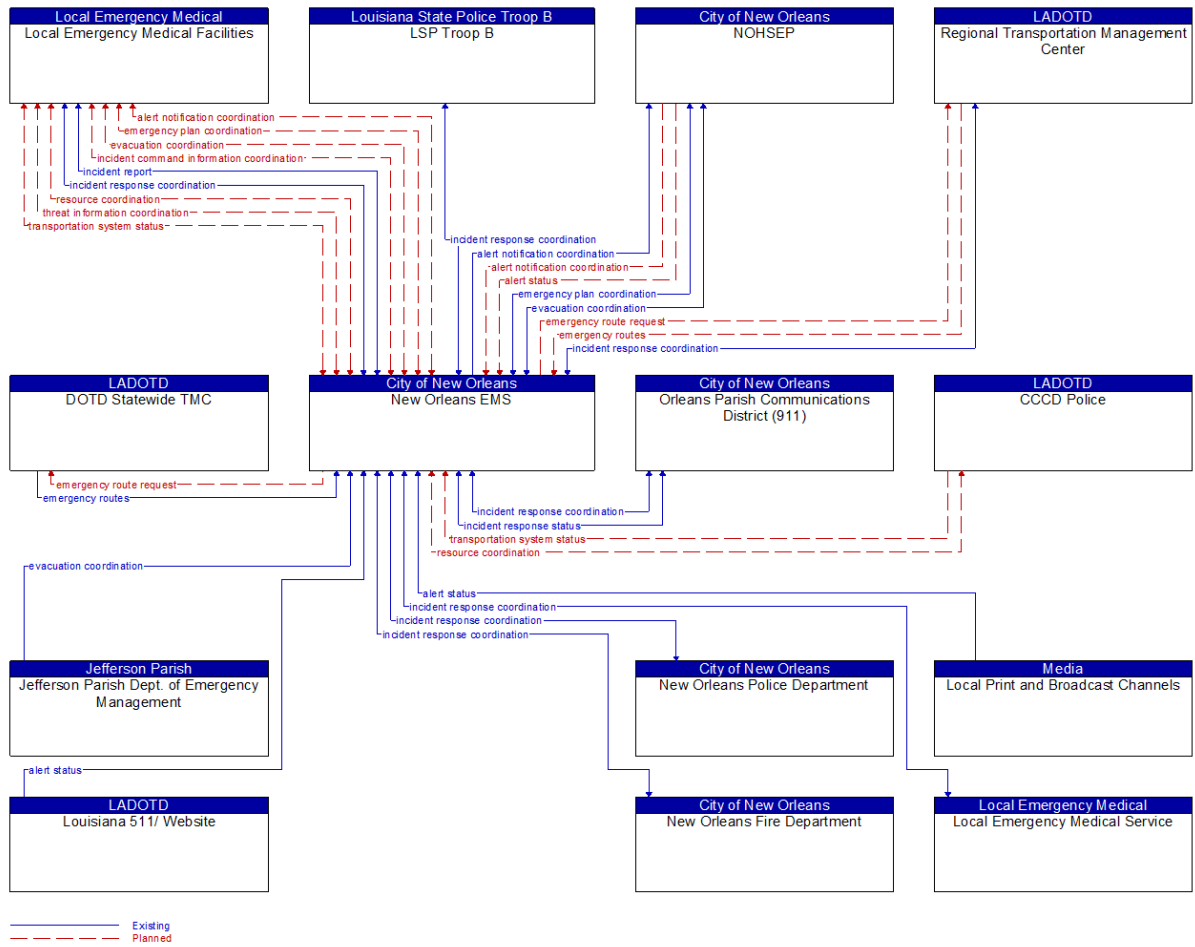


Figure 50: New Orleans EMS Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

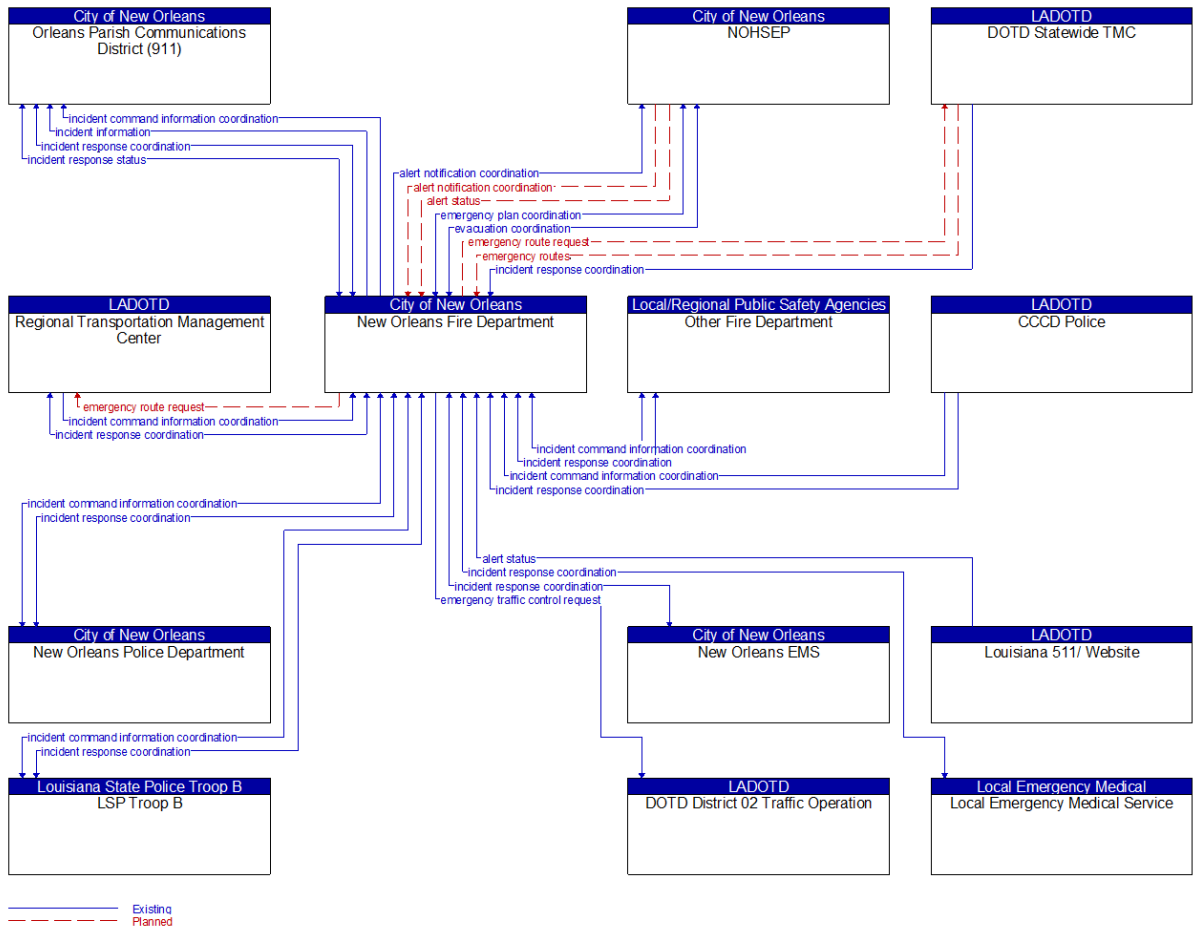


Figure 51: New Orleans Fire Department Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

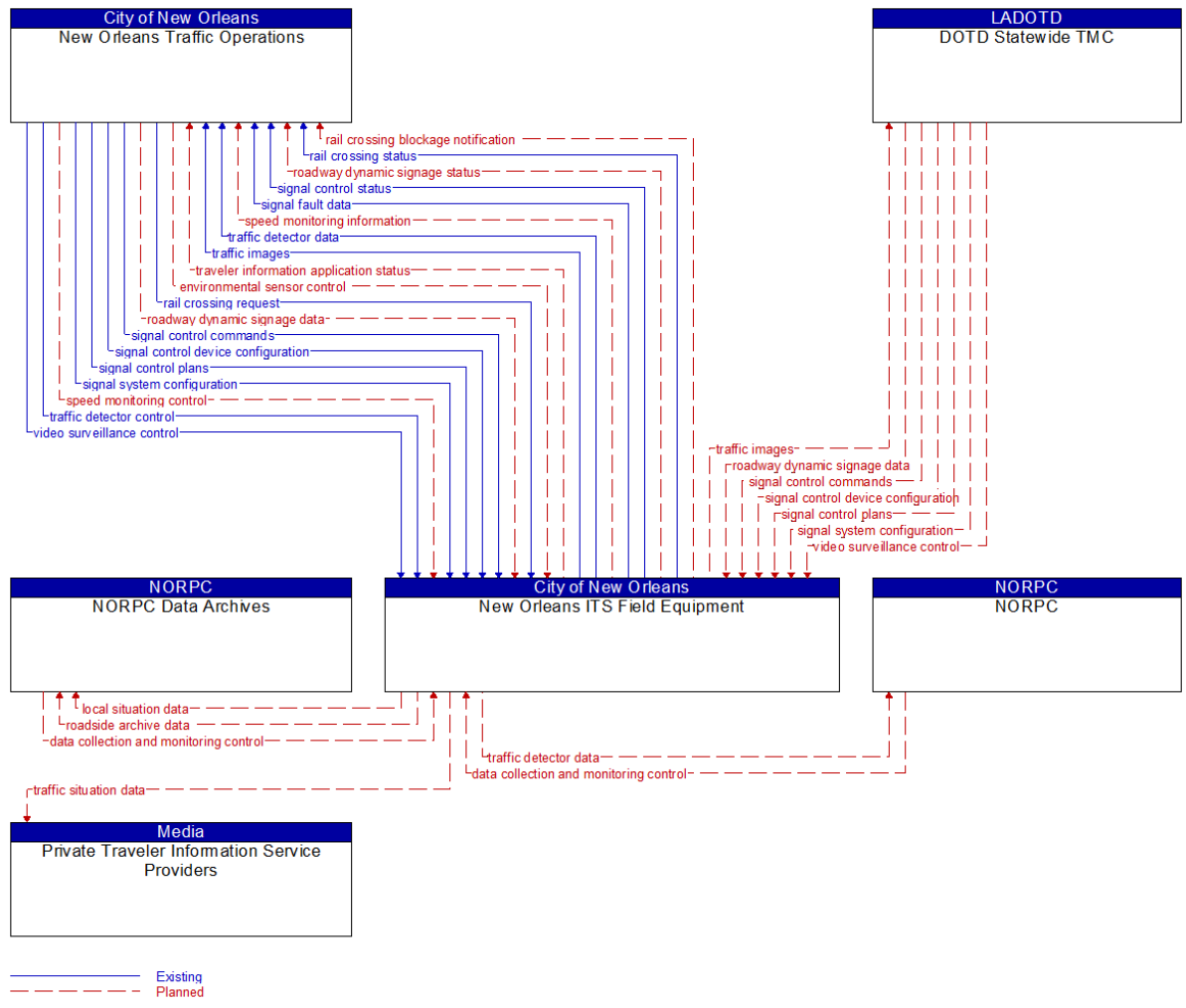


Figure 52: New Orleans ITS Field Equipment Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

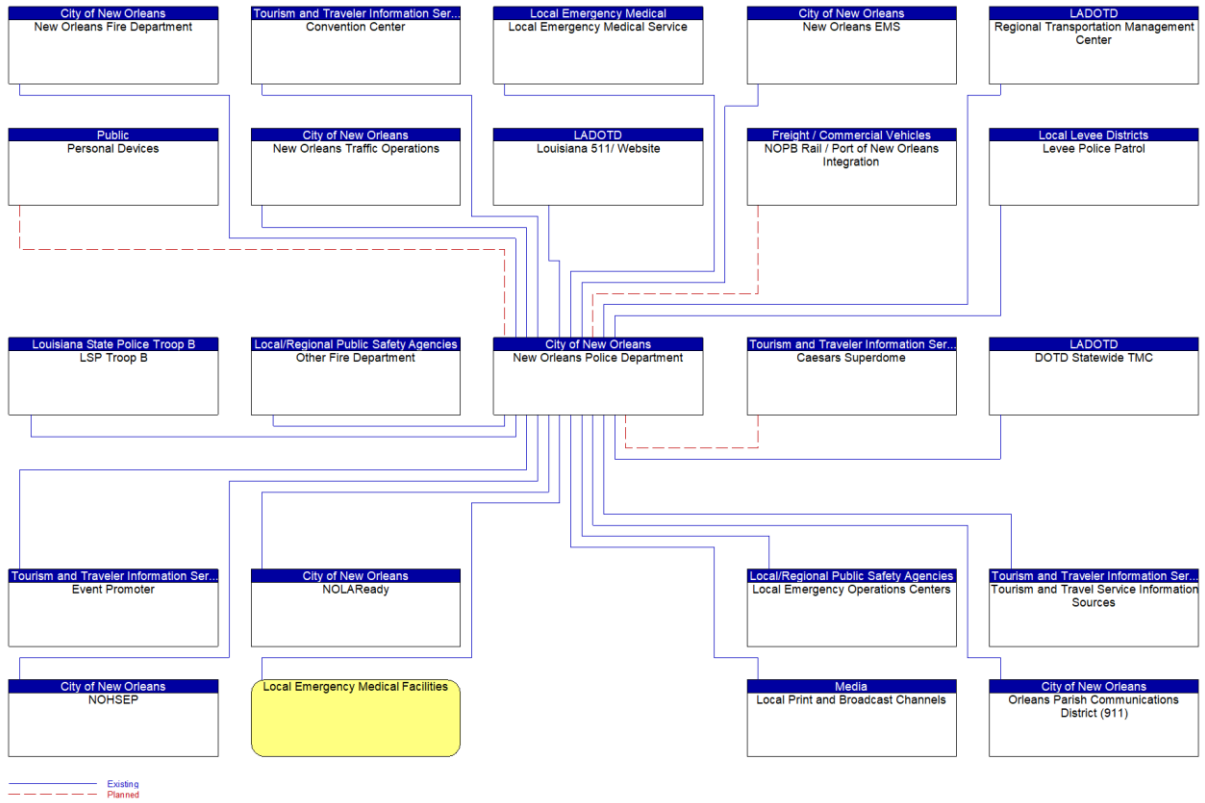


Figure 53: New Orleans Police Department Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

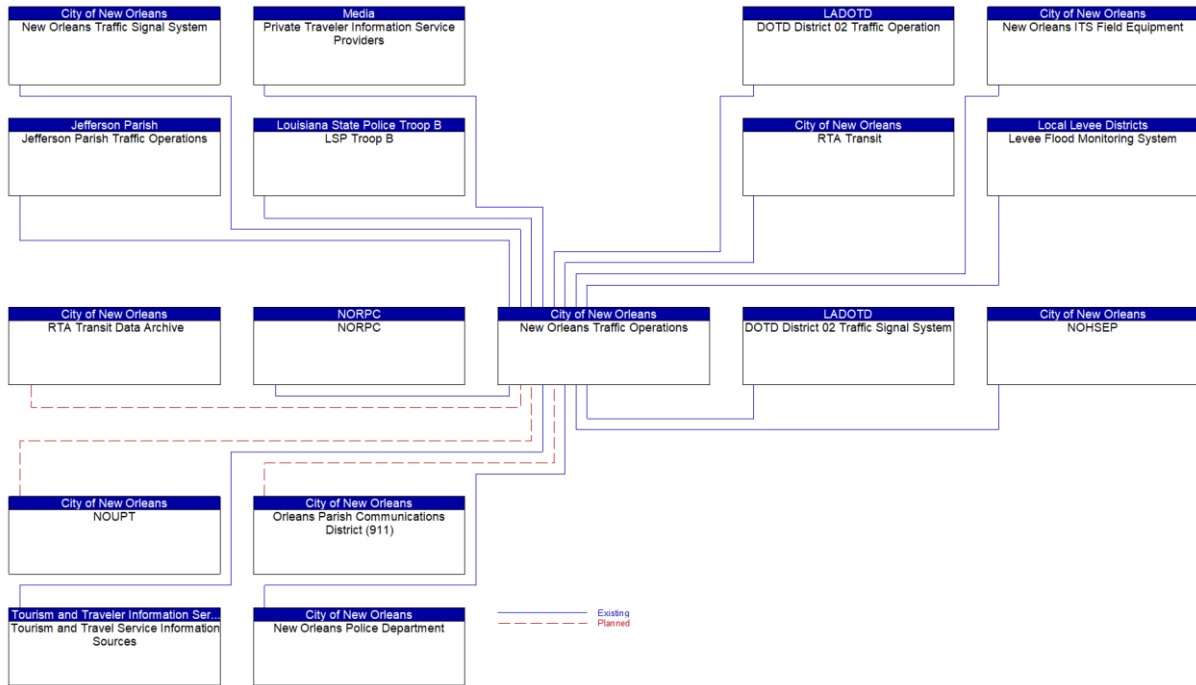


Figure 54: New Orleans Traffic Operations Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

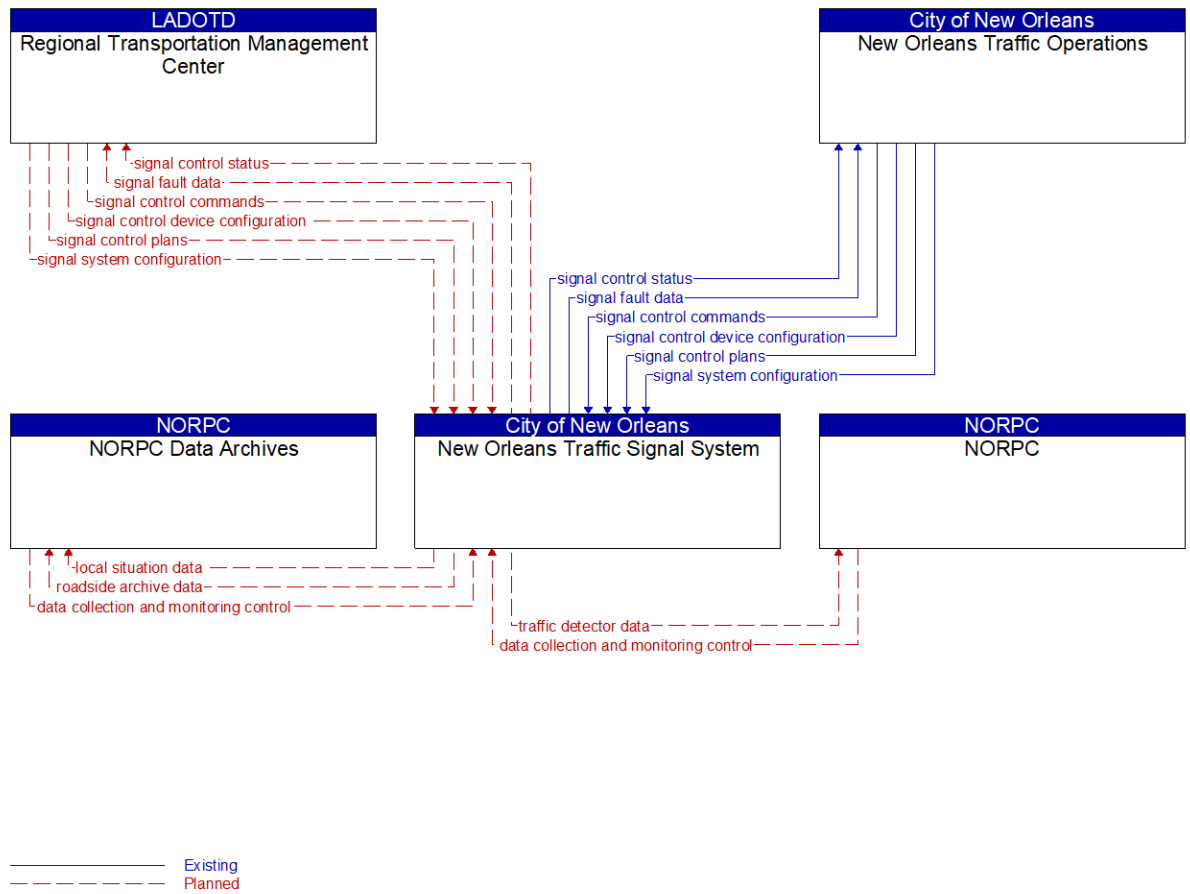


Figure 55: New Orleans Traffic Signal System Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

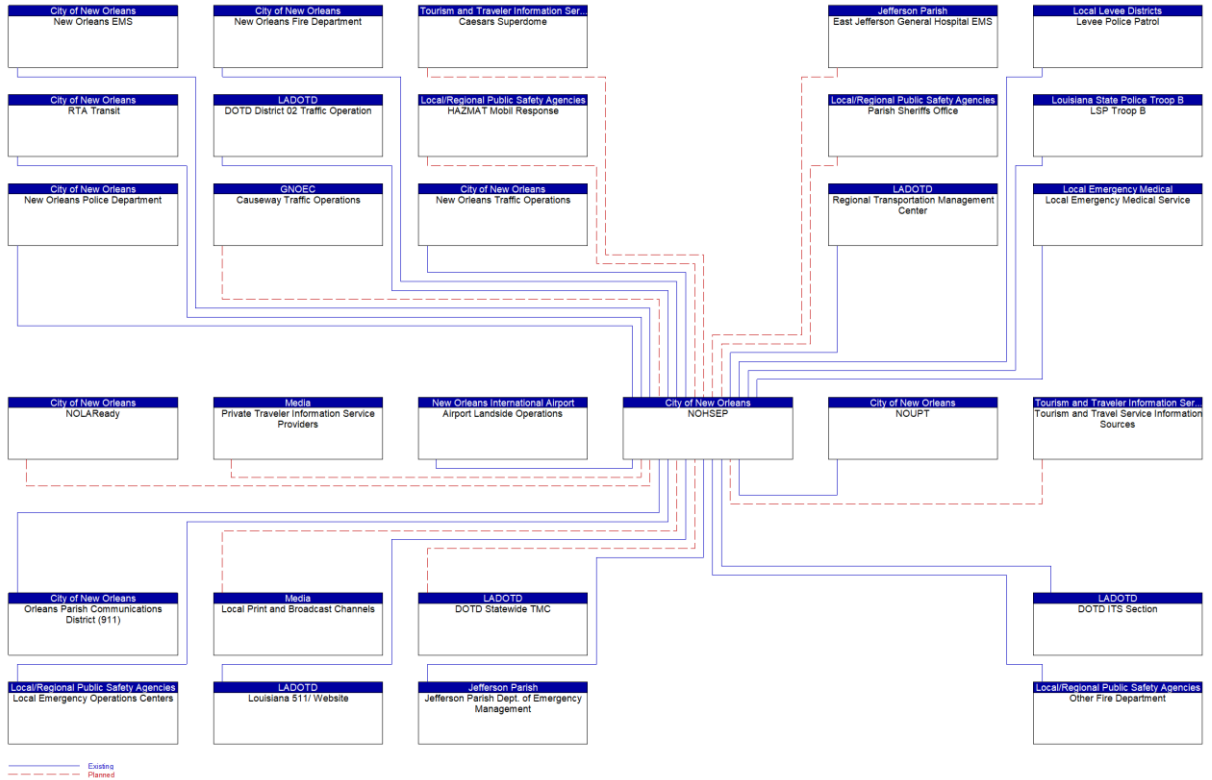


Figure 56: NOHSEP Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

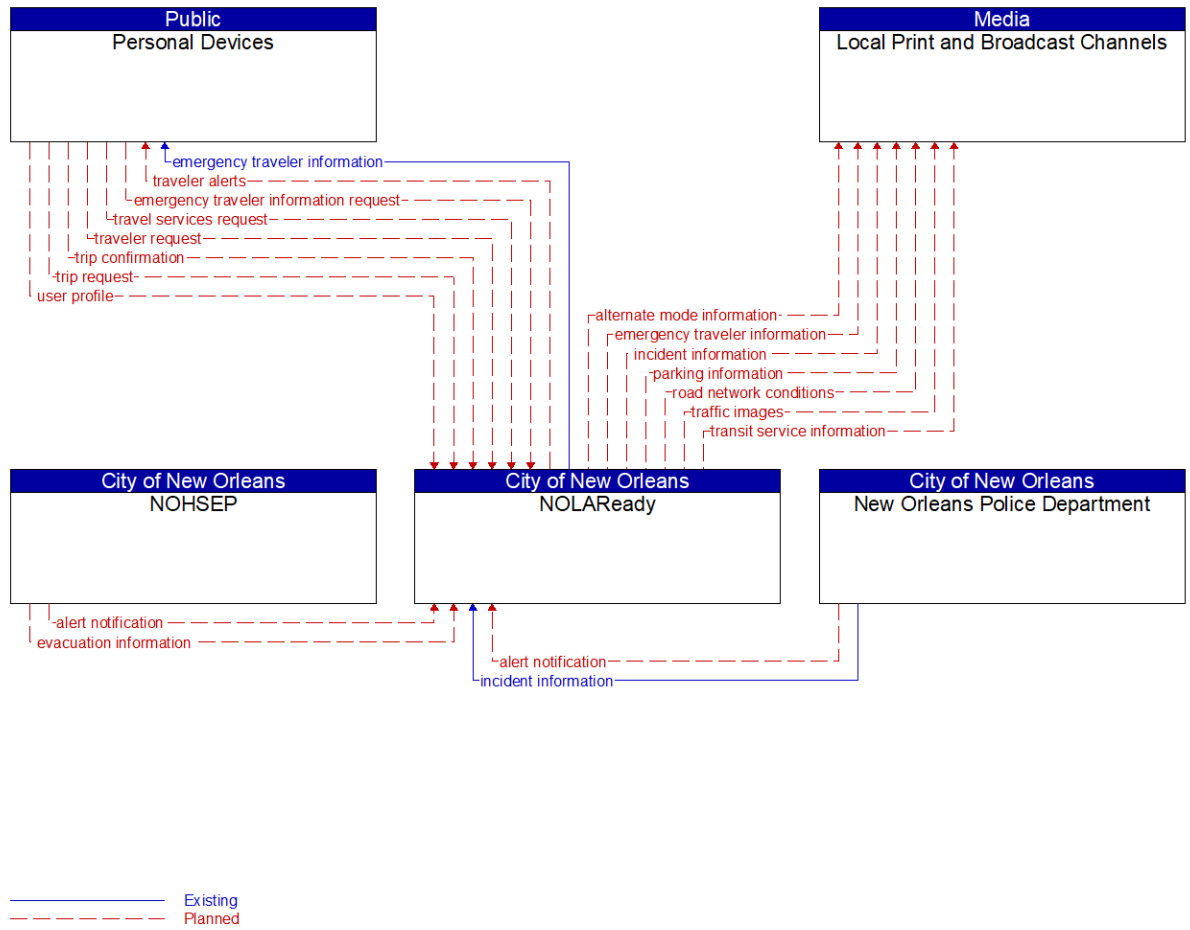


Figure 57: NOLAReady Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

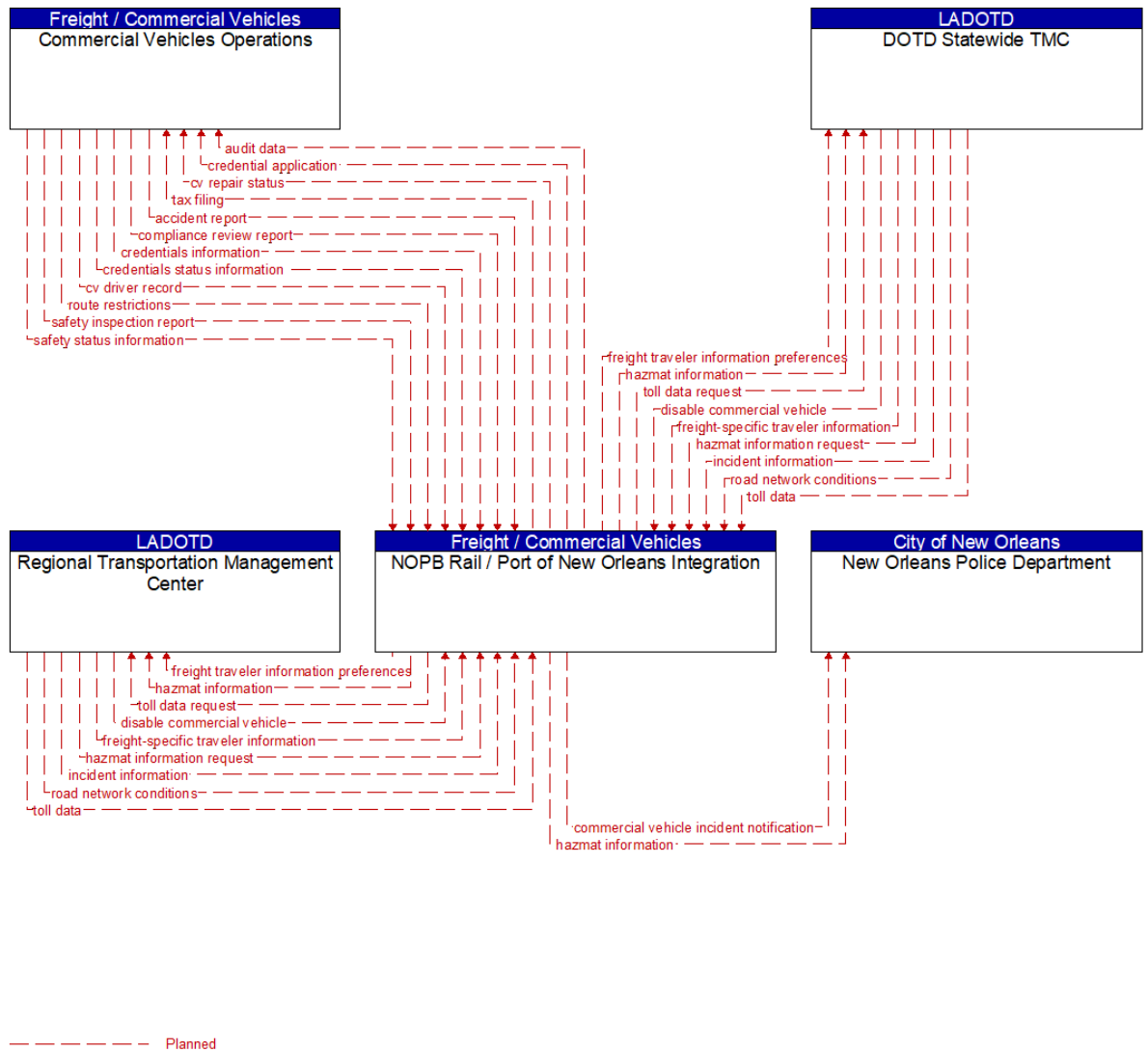


Figure 58: NOPB Rail / Port of New Orleans Integration Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

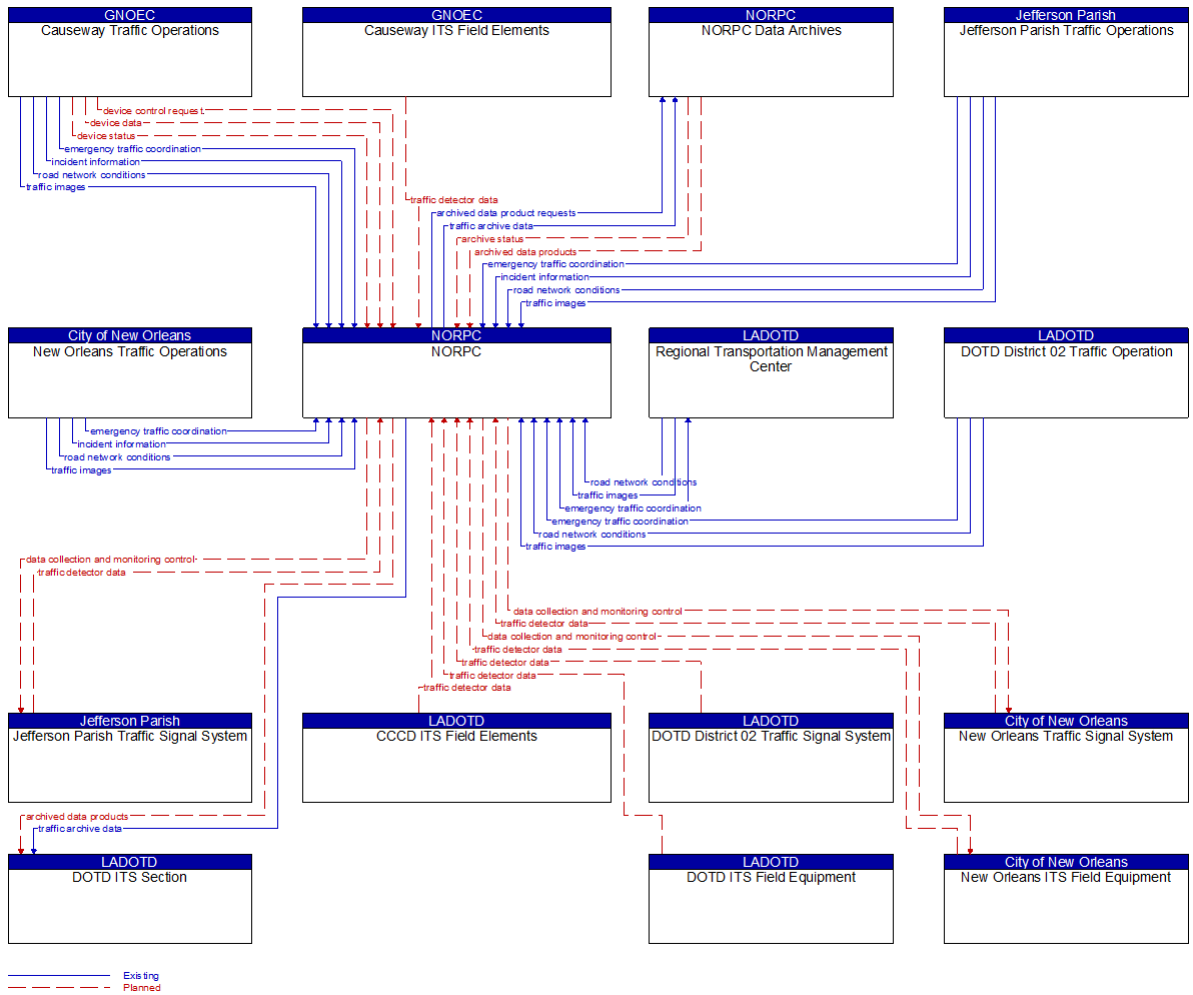


Figure 59: NORPC Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture



Figure 60: NORPC Data Archives Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

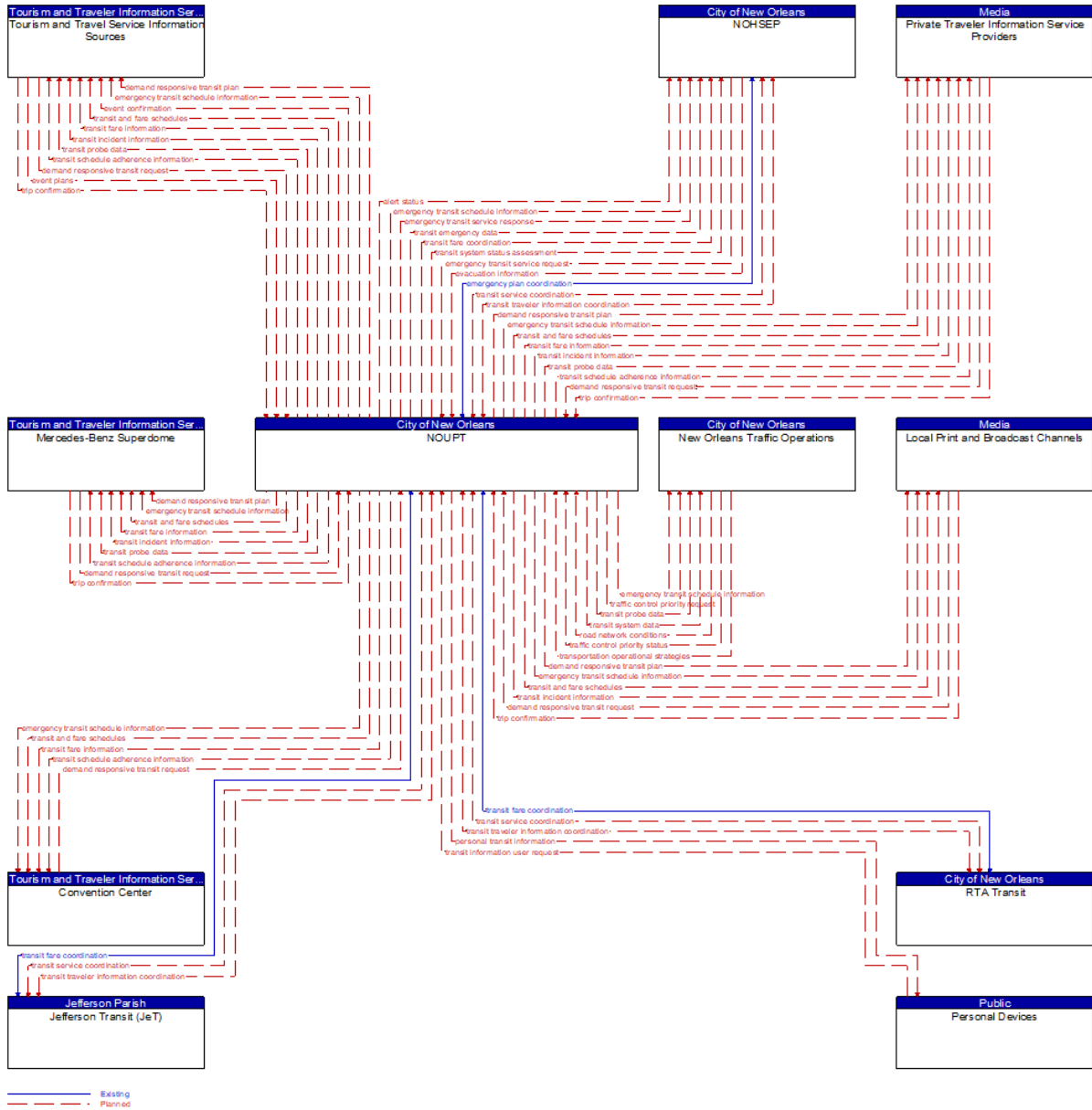


Figure 61: NOUPT Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

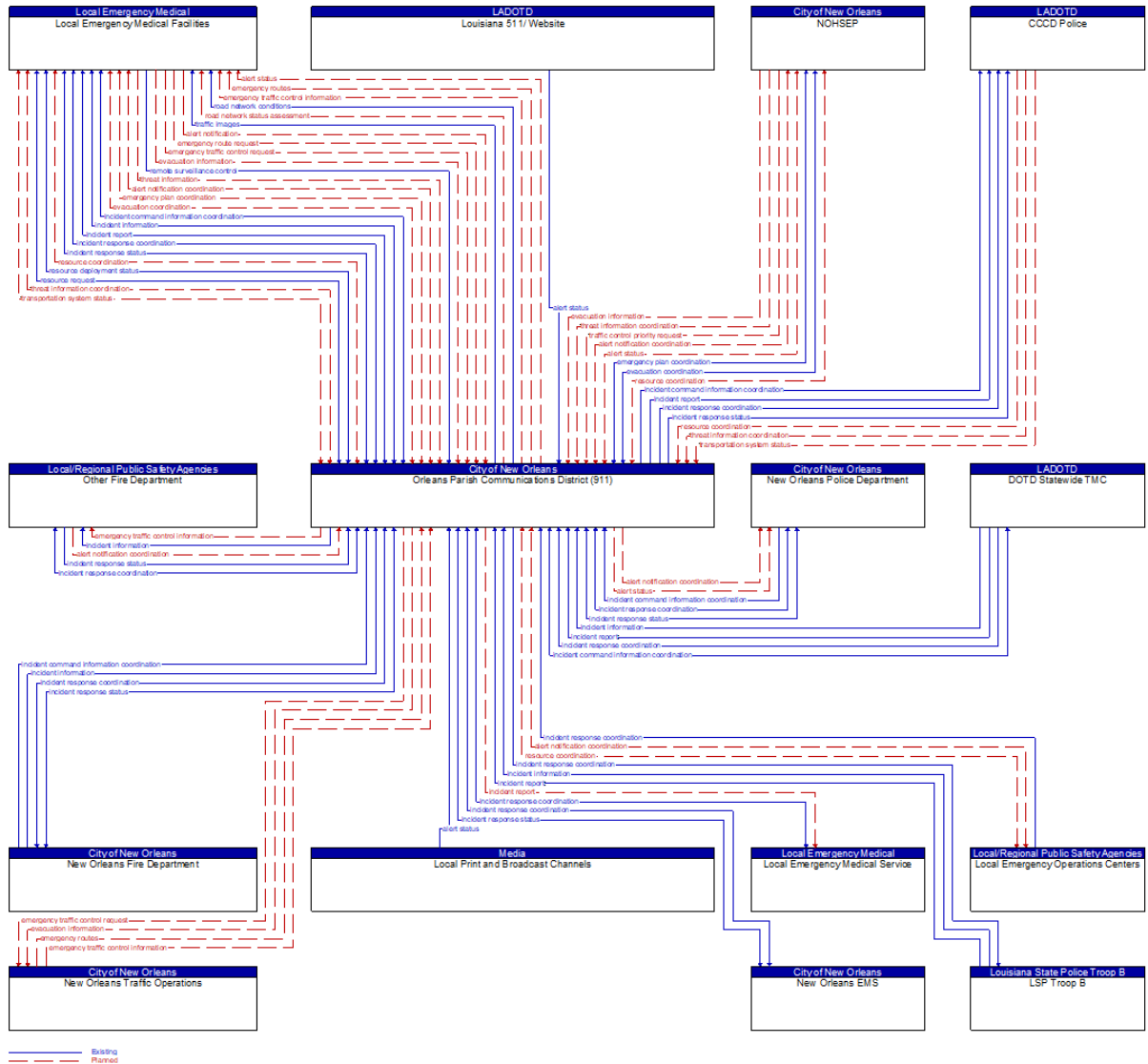


Figure 62: Orleans Parish Communications District (911) Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

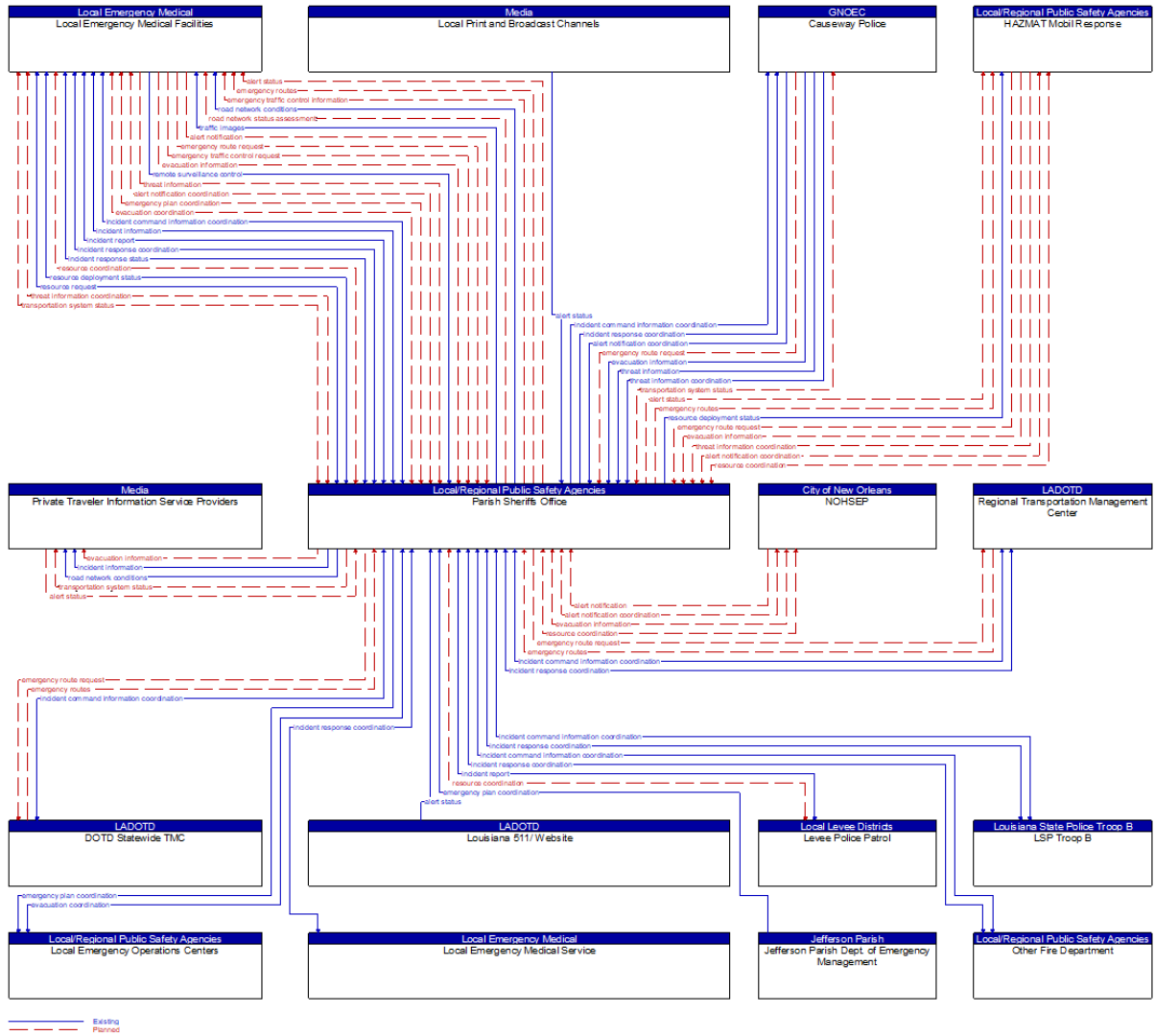


Figure 64: Parish Sheriffs Office Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

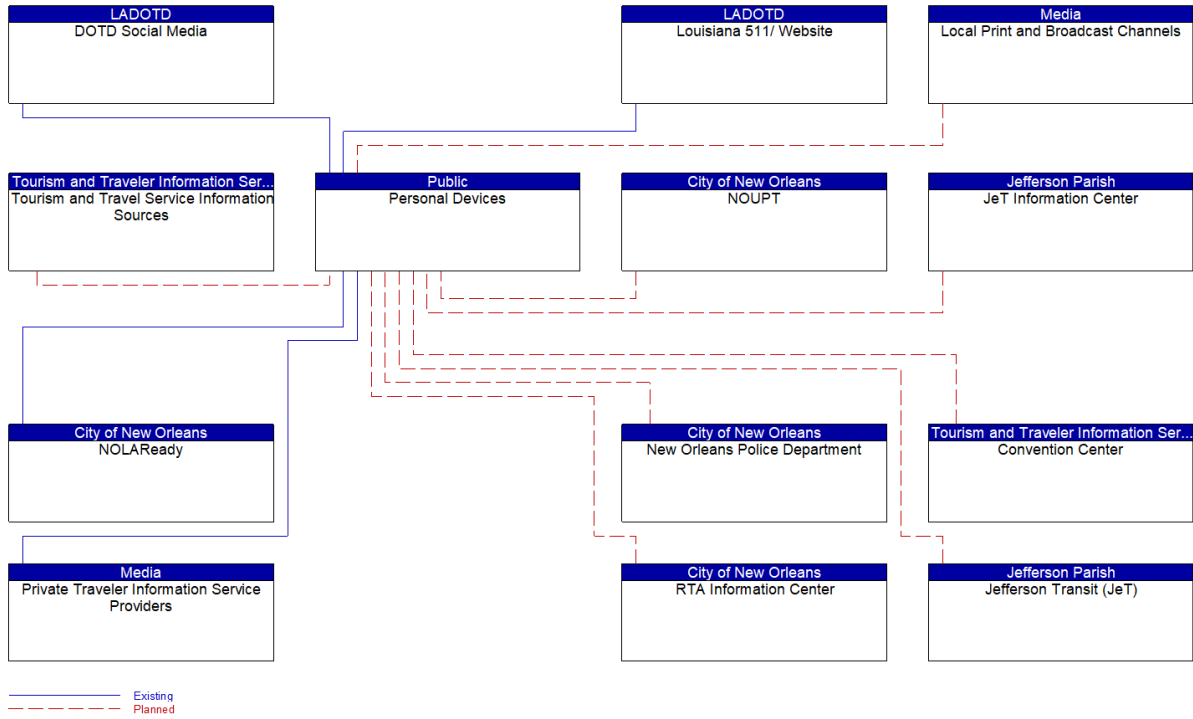


Figure 65: Personal Devices Context Diagram

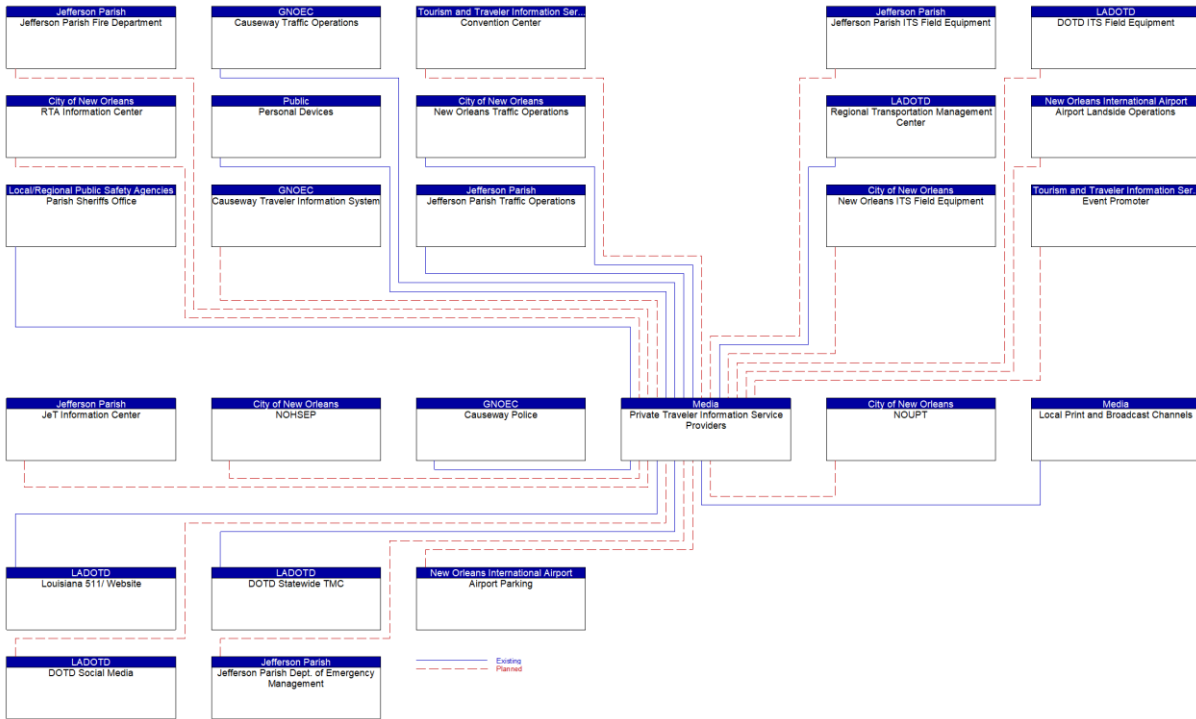


Figure 66: Private Traveler Information Service Providers Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

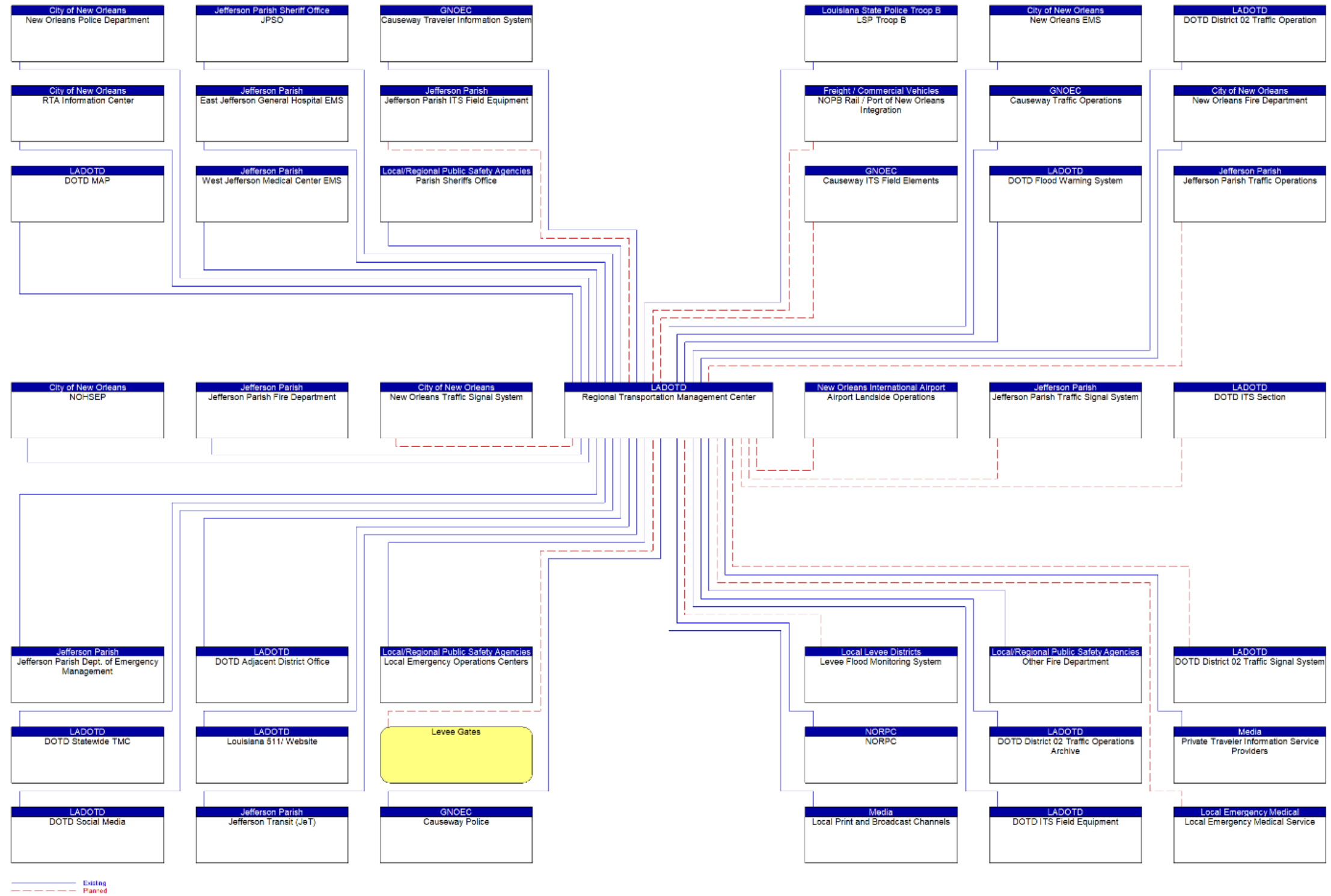


Figure 67: Regional Transportation Management Center Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

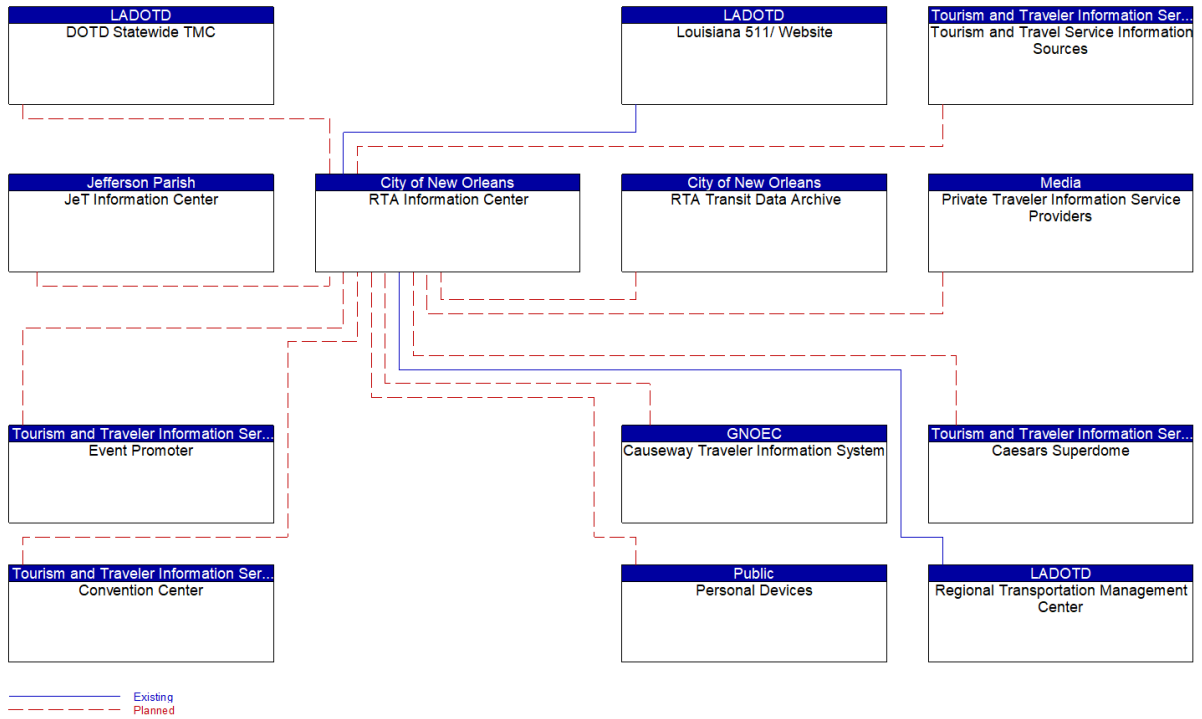


Figure 68: RTA Information Center Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

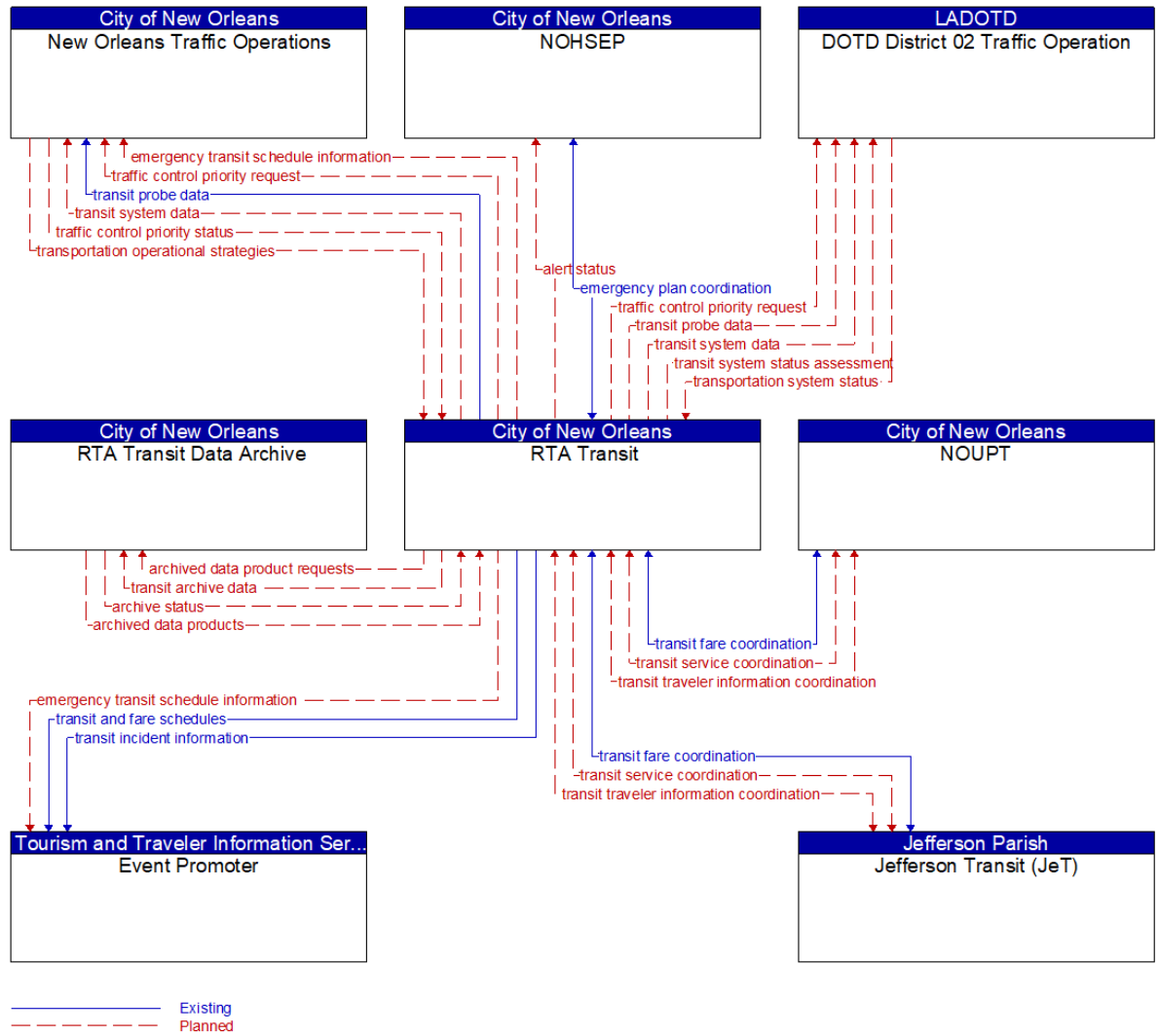


Figure 69: RTA Transit Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

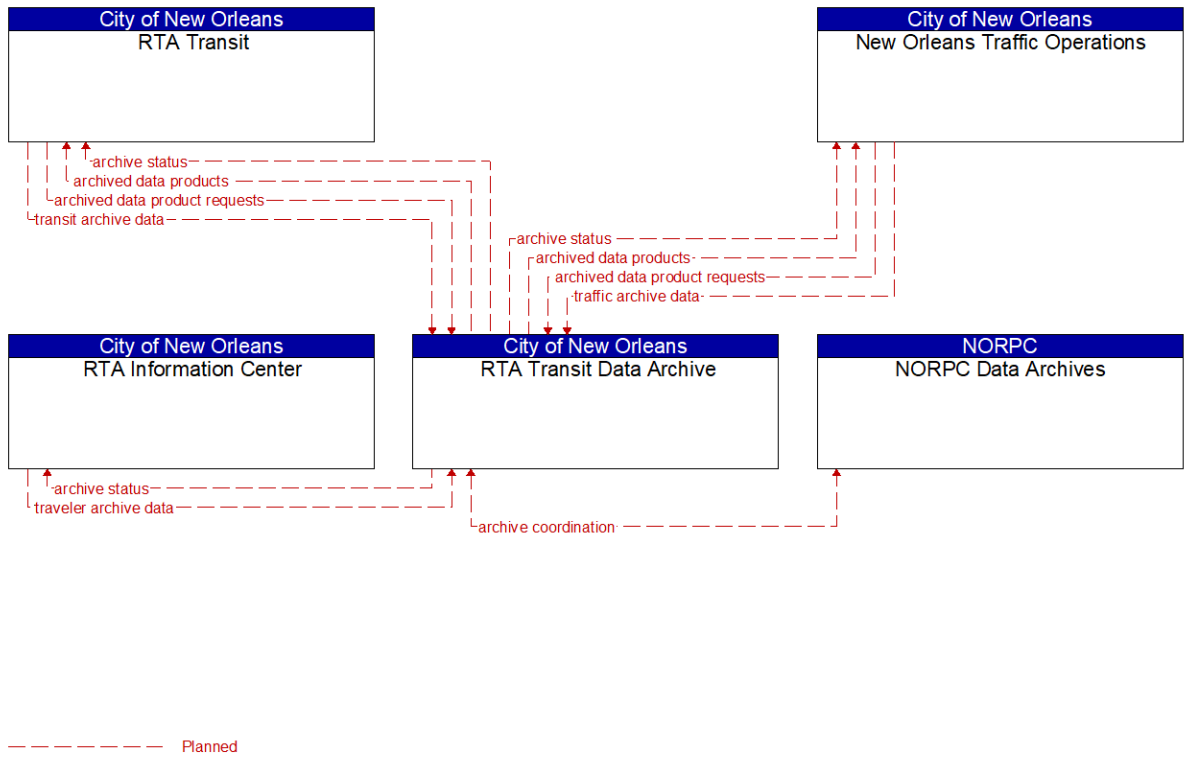


Figure 70: RTA Transit Data Archive Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

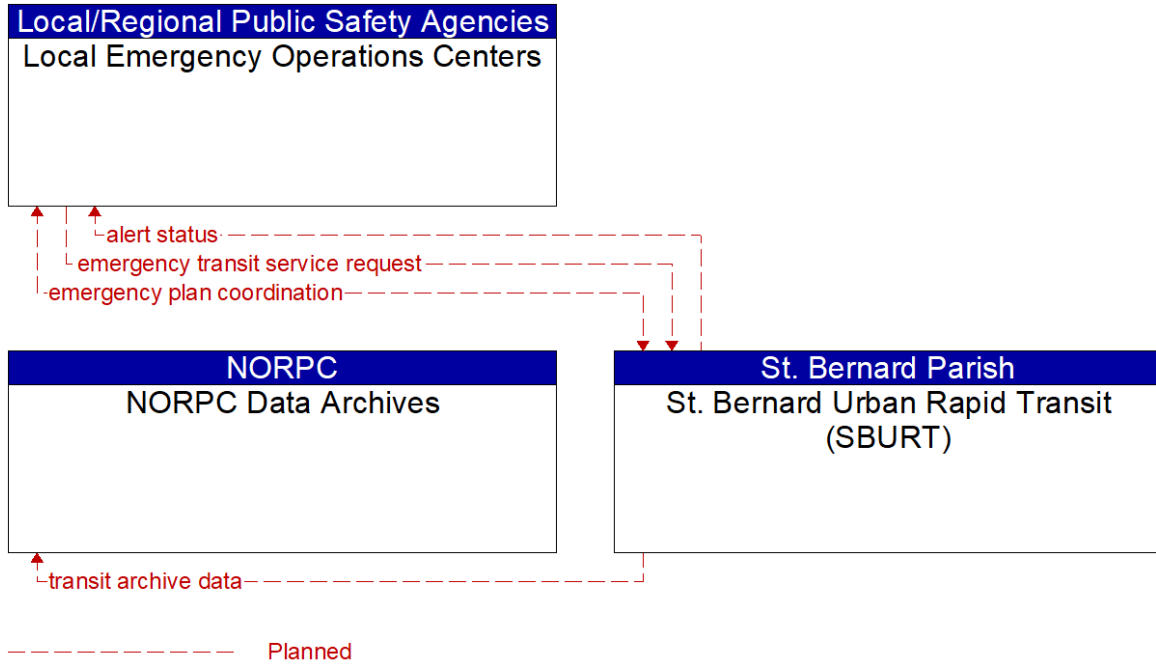


Figure 71: St. Bernard Urban Rapid Transit (SBURT) Context Diagram

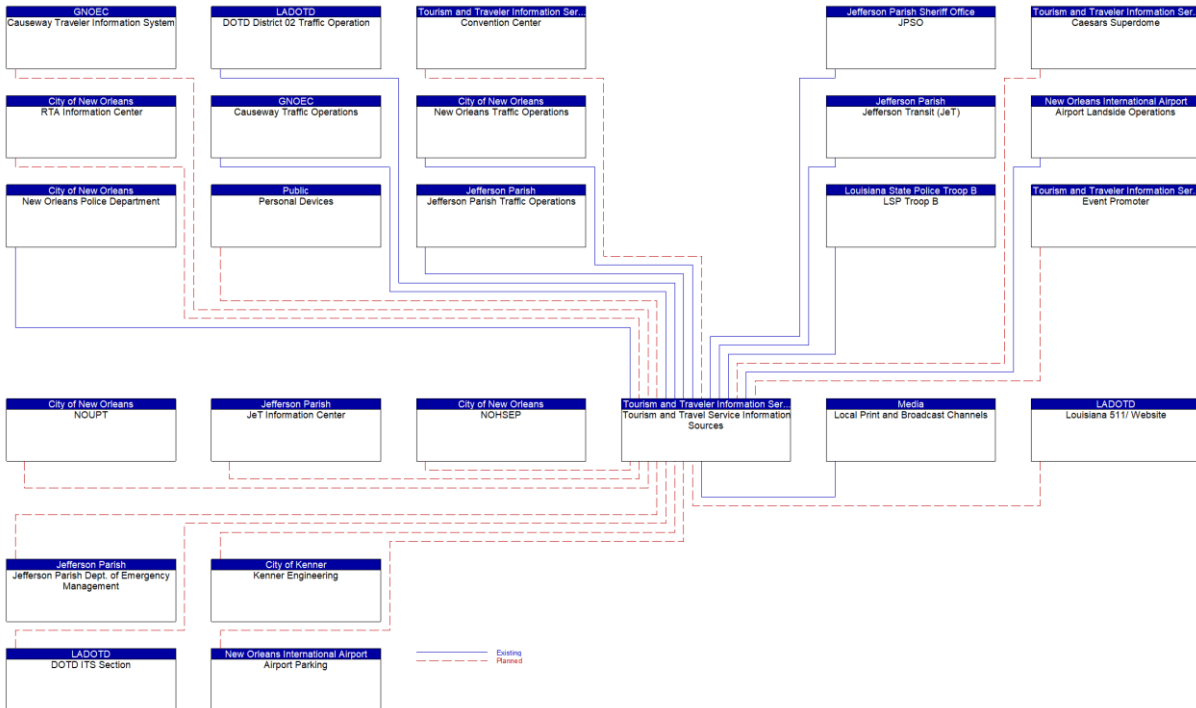


Figure 72: Tourism and Travel Service Information Sources Context Diagram



New Orleans Regional Intelligent Transportation Systems Architecture

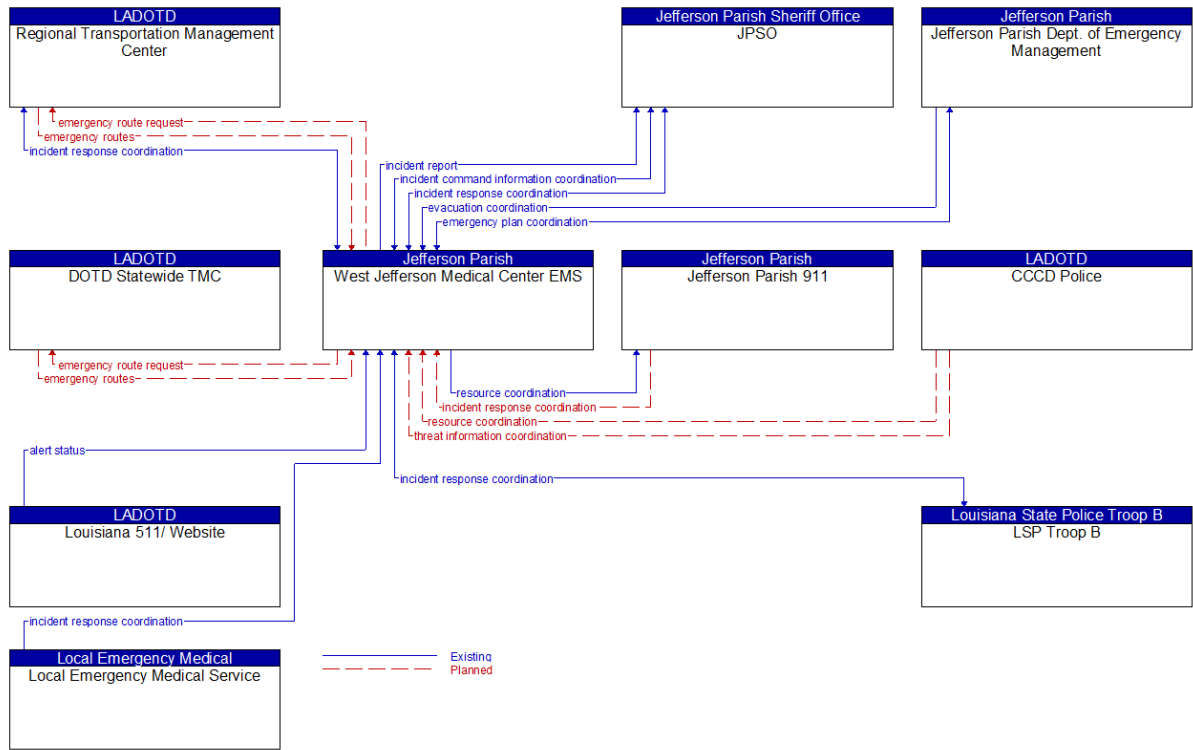


Figure 73: West Jefferson Medical Center EMS Context Diagram



A.2 Information Flow Definitions

Flow Name	Description
accident report	Report of commercial vehicle safety accident. The information may be provided as a response to a real-time query or proactively by the source. The query flow is not explicitly shown.
alert notification	Notification of a major emergency such as a natural or man-made disaster, civil emergency, or child abduction for distribution to the public. The flow identifies the alert originator, the nature of the emergency, the geographic area affected by the emergency, the effective time period, and information and instructions necessary for the public to respond to the alert. This flow may also identify specific information that should not be released to the public.
alert notification coordination	Coordination of emergency alerts to be distributed to the public. This includes notification of a major emergency such as a natural or man-made disaster, civil emergency, or child abduction for distribution to the public and status of the public notification.
alert status	Information indicating the current status of the emergency alert including identification of the traveler and driver information systems that are being used to provide the alert.
alternate mode information	Schedule information for alternate mode transportation providers such as air, ferry, and passenger-carrying heavy rail. This also includes details of incidents and other service disruptions that have occurred in the alternative mode. This also includes measures of service demand that supports assessment of their impact on the road network.
archive coordination	Catalog data, meta data, published data, and other information exchanged between archives to support data synchronization and satisfy user data requests.
archive status	Notification that data provided to an archive contains erroneous, missing, or suspicious data or verification that the data provided appears valid. If an error has been detected, the offending data and the nature of the potential problem are identified.
archived data product requests	A user-specified request for archived data products (i.e., data, meta data, or data catalogs). The request also includes information that is used to identify and authenticate the user and support electronic payment requirements, if any.
archived data products	Raw or processed data, meta data, data catalogs and other data products provided to a user system upon request. The response may also include any associated transaction information.
audit data	Information to support a tax audit.
automated lane control data	Control commands and operating parameters for automated vehicle operations, including tightly coupled platooned groups of vehicles operating in dedicated or mixed-mode lanes. This flow includes platoon parameters including maximum platoon size, target speeds and gaps, and vehicle restrictions.
barrier system control	Information used to configure and control barrier systems that are represented by gates, barriers and other automated or remotely controlled systems used to manage entry to roadways.



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Flow Name	Description
barrier system status	Current operating status of barrier systems. Barrier systems represent gates, barriers and other automated or remotely controlled systems used to manage entry to roadways. Status of the systems includes operating condition and current operational state.
broadcast traveler information	General traveler information that contains traffic and road conditions, link travel times, incidents, advisories, restrictions, vehicle requirements, work zones, transit service information, weather information, parking information, and other related traveler information.
care facility status	Information regarding facility type and capabilities, facility status, and its ability to admit new patients. The ability to admit new patients reflects the current state of the facility, anticipated demand based on coordination with other arriving ambulances, and existing queues. This status may be updated in real-time as it changes.
care facility status request	Request for information regarding care facility availability to accept the transported patient and status including information on ambulance queues or other information that may impact the care facilities ability to accept the patient in a timely fashion.
commercial vehicle incident notification	Information about a Commercial Vehicle or Freight Equipment breach, non-permitted security sensitive hazmat detected at the roadside, route deviation, or Commercial Vehicle Driver / Commercial Vehicle / Freight Equipment assignment mismatches which includes the location of the Commercial Vehicle and appropriate identities. May carry information that enables incident reporting to responders, and also includes the type of vehicle and cargo concerned.
compliance review report	Report containing results of carrier compliance review, including concomitant out-of-service notifications, carrier warnings/notifications. The information may be provided as a response to a real-time query of proactively by the source. The query flow is not explicitly shown.
credential application	Application for commercial vehicle credentials. Authorization for payment is included. It contains details about the administrative request for a Freight Vehicle registration. It also carries the acknowledgement that a payment has been placed in the bank account of the administration by the Fleet Operator. This information flow includes fleet operator request ID, vehicle characteristics, transport need (origin and destination), electronic signature and date of payment.
credentials information	Response containing full vehicle fuel tax and registration credentials information. "Response" may be provided in reaction to a real-time query or a standing request for updated information. The query flow is not explicitly shown.
credentials status information	Credentials information such as registration, licensing, insurance, check flags, and electronic screening enrollment data. A unique identifier is included. Corresponds to the credentials portion of CVISN "snapshots." The status information may be provided as a response to a real-time query or as a result of a standing request for updated information (subscription). This may also include information about non-U.S. fleets for use by U.S. authorities, and information regarding U.S. fleets made available to Mexican and Canadian authorities. The query flow is not explicitly shown.
current infrastructure restrictions	Restrictions levied on transportation asset usage based on infrastructure design, surveys, tests, or analyses. This includes standard facility design height, width, and weight restrictions, special restrictions such as spring weight restrictions, and temporary facility restrictions that are imposed during maintenance and construction.



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Flow Name	Description
cv driver record	Information typically maintained by a state driver licensing agency about a driver of a commercial vehicle including driver identification data, license data, permit data, and driving history details. The query flow is not explicitly shown.
cv repair status	Information about the completion of a repair to a commercial vehicle.
data collection and monitoring control	Information used to configure and control data collection and monitoring systems.
demand responsive transit plan	Plan regarding overall demand responsive transit schedules and deployment.
demand responsive transit request	Request for paratransit support.
device control request	Request for device control action
device data	Data from detectors, environmental sensor stations, roadside equipment, and traffic control devices, including device inventory information.
device status	Status information from devices
disable commercial vehicle	A request that a specific commercial vehicle should be safely disabled.
emergency archive data	Logged emergency information including information that characterizes identified incidents (routine highway incidents through disasters), corresponding incident response information, evacuation information, surveillance data, threat data, and resource information. Content may include a catalog of available information, the actual information to be archived, and associated meta data that describes the archived information.
emergency notification	An emergency request for assistance that is automatically initiated by a vehicle or manually initiated by a vehicle occupant or a traveler (vulnerable road user) with a personal information device. The request includes call-back number, date, time, location, pre-event vehicle heading, vehicle make, model, model year, and fuel type, and crash severity indicators. Crash severity indicators include: airbags deployed, number of impacts, crash delta velocity, principle direction of force, and rollover indication. In addition, seatbelt restraint use, number of occupants, occupant location, and intrusion may be included. For commercial vehicles, this flow may also include freight equipment type (box, flatbed, trailer, container, etc.), type of cargo (refrigerated, non-perishable, liquid, etc.), hazardous material data, quantity of cargo, and cargo permits as applicable (hazmat, special routing permissions).



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Flow Name	Description
emergency plan coordination	Information that supports coordination of emergency management plans, continuity of operations plans, emergency response and recovery plans, evacuation plans, and other emergency plans between agencies. This includes general plans that are coordinated prior to an incident and shorter duration tactical plans that are prepared during an incident.
emergency route request	Request for access routes for emergency response vehicles and equipment. This may be a request for ingress or egress routes or other emergency routes. It may also include a request for preemption/priority for the identified vehicle at all signalized intersections along the route.
emergency routes	Suggested ingress and egress routes for access to and between the scene and staging areas or other specialized emergency access routes.
emergency traffic control information	Status of a special traffic control strategy or system activation implemented in response to an emergency traffic control request, a request for emergency access routes, a request for evacuation, a request to activate closure systems, a request to employ driver information systems to support public safety objectives, or other special requests. Identifies the selected traffic control strategy and system control status.
emergency traffic control request	Special request to preempt the current traffic control strategy in effect at one or more signalized intersections or highway segments, activate traffic control and closure systems such as gates and barriers, activate safeguard systems, or use driver information systems. For example, this flow can request all signals to red-flash, request a progression of traffic control preemptions along an emergency vehicle route, request a specific evacuation traffic control plan, request activation of a road closure barrier system, or place a public safety or emergency-related message on a dynamic message sign.
emergency traffic coordination	Coordination supporting disaster response including evacuation and reentry. Includes coordination of special traffic control strategies that support efficient evacuation and reentry while protecting and optimizing movement of response vehicles and other resources responding to the emergency.
emergency transit schedule information	Information on transit schedule and service changes that adapt the service to better meet needs of responders and the general public in an emergency situation, including special service schedules supporting evacuation.
emergency transit service request	Request to modify transit service and fare schedules to address emergencies, including requests for transit services to evacuate people from and/or deploy response agency personnel to an emergency scene. The request may poll for resource availability or request pre-staging, staging, or immediate dispatch of transit resources.
emergency transit service response	Response indicating changes to transit service, fares, and/or restrictions that will be made and status of transit resources to be deployed to support emergency response and/or evacuation.
emergency traveler information	Public notification of an emergency such as a natural or man-made disaster, civil emergency, or child abduction. This flow also includes evacuation information including evacuation instructions, evacuation zones, recommended evacuation times, tailored evacuation routes and destinations, traffic and road conditions along the evacuation routes, traveler services and shelter information, and reentry times and instructions.



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Flow Name	Description
emergency traveler information request	Request for alerts, evacuation information, and other emergency information provided to the traveling public.
environmental sensor control	Data used to configure and control environmental sensors.
environmental sensor data	Current road conditions (e.g., surface temperature, subsurface temperature, moisture, icing, treatment status) and surface weather conditions (e.g., air temperature, wind speed, precipitation, visibility) as measured and reported by fixed and/or mobile environmental sensors. Operational status of the sensors is also included.
equipment maintenance request	Identification of field equipment requiring repair and known information about the associated faults.
equipment maintenance status	Current status of field equipment maintenance actions.
evacuation coordination	Coordination of information regarding a pending or in-process evacuation. Includes evacuation zones, evacuation times, evacuation routes, forecast network conditions, and reentry times.
evacuation information	Evacuation instructions and information including evacuation zones, evacuation times, and reentry times.
event confirmation	Confirmation that special event details have been received and processed.
event information	Special event information for travelers. This would include a broader array of information than the similar "event plans" that conveys only information necessary to support traffic management for the event.
event plans	Plans for major events possibly impacting traffic.
fare and price information	Current transit, parking, and toll fee schedule information.
field equipment status	Reports from field equipment (sensors, signals, signs, controllers, etc.) which indicate current operational status.
Flood Gate Status	This architecture flow represents the status of the levee flood gate. The status is either open or closed.
Flood Gate Status Request	This is the request for the status of the levee flood gate.
freight traveler information preferences	Traveler information preferences from fleet and freight management systems or commercial vehicle drivers including: area covered by fleet/driver, types of freight managed (including special restrictions), preferred routes, other travel preferences pertaining to trip costs or tolls. Also covers revised trip planning requirements for trips already underway.



New Orleans Regional Intelligent Transportation Systems Architecture

Flow Name	Description
freight-specific traveler information	Traveler information customized for freight users to indicate truck routes, permit information, truck stops, inspection stations, steep grades, high-profile vehicle advisories, etc. Information provided includes freight-related road and weather conditions, parking information, and route plans.
hazmat information	Information about a particular hazmat load including nature of the load and unloading instructions. May also include hazmat vehicle route and route update information.
hazmat information request	Request for information about a particular hazmat load.
incident command information coordination	Information that supports local management of an incident. It includes resource deployment status, hazardous material information, traffic, road, and weather conditions, evacuation advice, and other information that enables emergency or maintenance personnel in the field to implement an effective, safe incident response.
incident information	Notification of existence of incident and expected severity, location, time and nature of incident. As additional information is gathered and the incident evolves, updated incident information is provided. Incidents include any event that impacts transportation system operation ranging from routine incidents (e.g., disabled vehicle at the side of the road) through large-scale natural or human-caused disasters that involve loss of life, injuries, extensive property damage, and multi-jurisdictional response. This also includes special events, closures, and other planned events that may impact the transportation system.
incident report	Report of an identified incident including incident location, type, severity and other information necessary to initiate an appropriate incident response.
incident response coordination	Incident response procedures and current incident response status that are shared between allied response agencies to support a coordinated response to incidents. This flow provides current situation information, including a summary of incident status and its impact on the transportation system and other infrastructure, and current and planned response activities. This flow also coordinates a positive hand off of responsibility for all or part of an incident response between agencies.
incident response status	Status of the current incident response including a summary of incident status and its impact on the transportation system, traffic management strategies implemented at the site (e.g., closures, diversions, traffic signal control overrides), and current and planned response activities.
interactive traveler information	Traveler information provided in response to a traveler request. The provided information includes traffic and road conditions, advisories, incidents, restrictions, payment information, transit services, parking information, weather information, and other travel-related data updates and confirmations.
lane management information	System status of managed lanes including current operational state, violations, and logged information. This includes lane usage information including both traditional traffic flow measures and special information associated with managed lanes such as measured passenger occupancies. It also includes the operational status of the lane management equipment.
lighting system control data	Information used to configure and control roadside lighting systems.



New Orleans Regional Intelligent Transportation Systems Architecture

Flow Name	Description
lighting system status	Status of roadside lighting controls including operating condition and current operational state.
local situation data	This general flow represents the traffic, environmental, and emissions situation data that is collected from connected vehicles by an RSE, aggregated, filtered, and provided to a back-office center. It also includes data collected from ITS roadway equipment that provides current intersection and road network status for the area proximate to the RSE.
logged vehicle routes	Anticipated route information for guided vehicles, special vehicles (e.g., oversize vehicles) or groups of vehicles (e.g., governor's motorcade) that may require changes in traffic control strategy.
maint and constr archive data	Information describing road construction and maintenance activities identifying the type of activity, the work performed, and work zone information including work zone configuration and safety (e.g., a record of intrusions and vehicle speeds) information. For construction activities, this information also includes a description of the completed infrastructure, including as-built plans as applicable. Content may include a catalog of available information, the actual information to be archived, and associated meta data that describes the archived information.
maint and constr resource coordination	Request for road maintenance and construction resources that can be used in the diversion of traffic (cones, portable signs), clearance of a road hazard, repair of ancillary damage, or any other incident response.
maint and constr resource request	Request for road maintenance and construction resources that can be used in the diversion of traffic (cones, portable signs), clearance of a road hazard, repair of ancillary damage, or any other incident response. The request may poll for resource availability or request pre-staging, staging, or immediate dispatch of resources.
maint and constr resource response	Current status of maintenance and construction resources including availability and deployment status. General resource inventory information covering vehicles, equipment, materials, and people and specific resource deployment status may be included.
maint and constr work plans	Future construction and maintenance work schedules and activities including anticipated closures with anticipated impact to the roadway, alternate routes, anticipated delays, closure times, and durations.
parking information	General parking information and status, including current parking availability, parking pricing, and parking space availability information, including features like number and type of electric charging spots.
parking reservation confirmation	Confirmation for parking reservation.
parking reservation request	Reservation request for parking including special requests and needs such as disabled space access, electric vehicle charging, etc.
parking traffic information	Instructions for operation of local parking facilities to support regional traffic management objectives (e.g., which parking lot exits to use). Also, includes inputs from traffic sensors to monitor parking queues and support more effective management of parking entrances and exits.



New Orleans Regional Intelligent Transportation Systems Architecture

Flow Name	Description
payment archive data	Data indicating roadway payments including toll facility usage and pricing schedules. Content may include a catalog of available information, the actual information to be archived, and associated meta data that describes the archived information.
payment instructions	Information provided to configure and support fixed point payment operations including pricing information, user account information, and operational parameters used to control equipment that controls access, collects payment, and detects and processes violations.
payment transactions	Detailed list of transactions including violations. Each transaction includes the date/time, vehicle/customer, and transaction amount. Additional information is included to support delayed payment and violation processing.
personal transit information	General and personalized transit information for a particular fixed route, flexible route, or paratransit system.
rail crossing blockage notification	Notification that a highway-rail intersection is obstructed and supporting information.
rail crossing control data	Data required for HRI information transmitted at railroad grade crossings and within railroad operations.
rail crossing request	A request for highway-rail intersection status or a specific control request intended to modify HRI operation.
rail crossing status	Status of the highway-rail intersection equipment including both the current state or mode of operation and the current equipment condition.
remote surveillance control	The control commands used to remotely operate another center's sensors or surveillance equipment so that roadside surveillance assets can be shared by more than one agency.
resource coordination	Coordination of resource inventory information, specific resource status information, resource prioritization and reallocation between jurisdictions, and specific requests for resources and responses that service those requests.
resource deployment status	Status of resource deployment identifying the resources (vehicles, equipment, materials, and personnel) available and their current status. General resource inventory information and specific status of deployed resources may be included.
resource request	A request for resources to implement special traffic control measures, assist in clean up, verify an incident, etc. The request may poll for resource availability or request pre-staging, staging, or immediate deployment of resources. Resources may be explicitly requested or a service may be requested and the specific resource deployment may be determined by the responding agency.
reversible lane control	Control of automated reversible lane configuration and driver information systems.



New Orleans Regional Intelligent Transportation Systems Architecture

Flow Name	Description
reversible lane status	Current reversible lane status including traffic sensor and surveillance data and the operational status and mode of the reversible lane control equipment.
road network conditions	Current and forecasted traffic information, road and weather conditions, and other road network status. Either raw data, processed data, or some combination of both may be provided by this flow. Information on diversions and alternate routes, closures, and special traffic restrictions (lane/shoulder use, weight restrictions, width restrictions, HOV requirements) in effect is included.
road network environmental situation data	Aggregated environmental situation data collected from vehicles and other sources for the road network. Aggregated information would include measured air temperature, exterior light status, wiper status, sun sensor status, rain sensor status, traction control status, ALB status, and other collected vehicle system status and sensor information for the region.
road network status assessment	Assessment of damage sustained by the road network including location and extent of the damage, estimate of remaining capacity, required closures, alternate routes, necessary restrictions, and time frame for repair and recovery.
road network traffic situation data	Aggregated route usage, travel times, and other aggregated data collected from probe vehicles that can be used to estimate current traffic conditions.
road weather information	Road conditions and weather information that are made available by road maintenance operations to other transportation system operators.
roadside archive data	A broad set of data derived from roadside sensors that includes current traffic conditions, environmental conditions, and any other data that can be directly collected by roadside sensors. This data also indicates the status of the sensors and reports of any identified sensor faults.
roadway dynamic signage data	Information used to initialize, configure, and control dynamic message signs. This flow can provide message content and delivery attributes, local message store maintenance requests, control mode commands, status queries, and all other commands and associated parameters that support remote management of these devices.
roadway dynamic signage status	Current operating status of dynamic message signs.
roadway maintenance status	Summary of maintenance fleet operations affecting the road network. This includes the status of winter maintenance (snow plow schedule and current status).
route restrictions	Information about routes, road segments, and areas that do not allow the transport of security sensitive hazmat cargoes or include other restrictions (such as height or weight limits).
safety inspection report	Report containing results of commercial vehicle safety inspection. The information may be provided as a response to a real-time query or proactively by the source. The query flow is not explicitly shown.



New Orleans Regional Intelligent Transportation Systems Architecture

Flow Name	Description
safety status information	Safety information such as safety ratings, security ratings or flags, inspection summaries, and violation summaries. A unique identifier is included. Corresponds to the safety and security portion of CVISN "snapshots." The status information may be provided as a response to a real-time query or as a result of a standing request for updated information (subscription). This may also include information about non-U.S. fleets for use by U.S. authorities, and information regarding U.S. fleets made available to Mexican and Canadian authorities. The query flow is not explicitly shown.
signal control commands	Control of traffic signal controllers or field masters including clock synchronization.
signal control device configuration	Data used to configure traffic signal control equipment including local controllers and system masters.
signal control plans	Traffic signal timing parameters including minimum green time and interval durations for basic operation and cycle length, splits, offset, phase sequence, etc. for coordinated systems.
signal control status	Operational and status data of traffic signal control equipment including operating condition and current indications.
signal fault data	Faults reported by traffic signal control equipment.
signal system configuration	Data used to configure traffic signal systems including configuring control sections and mode of operation (time based or traffic responsive).
speed monitoring control	Information used to configure and control automated speed monitoring, speed warning, and speed enforcement systems.
speed monitoring information	System status including current operational state and logged information including measured speeds, warning messages displayed, and violation records.
tax filing	Commercial vehicle tax filing data. Authorization for payment is included.
threat information	Threats regarding transportation infrastructure, facilities, or systems detected by a variety of methods (sensors, surveillance, threat analysis of advisories from outside agencies, etc.
threat information coordination	Sensor, surveillance, and threat data including raw and processed data that is collected by sensor and surveillance equipment located in secure areas.
toll data	Current toll schedules for different types of vehicles as well as advanced toll payment information.
toll data request	Request made to obtain toll schedule information or pay a toll in advance. The request can be a subscription that initiates as-needed information updates as well as a one-time request for information.
toll probe data	Aggregate probe data derived from electronic toll collection operations. Data collected could include vehicle speeds and travel times for a given link or collection of links.



New Orleans Regional Intelligent Transportation Systems Architecture

Flow Name	Description
toll service change request	Request to change pricing, modify restrictions, or modify operations of a toll road facility
toll service change response	Response to toll service change requests indicating level of compliance with request.
traffic archive data	Information describing the use and vehicle composition on transportation facilities and the traffic control strategies employed. Content may include a catalog of available information, the actual information to be archived, and associated meta data that describes the archived information.
traffic control priority request	Request for signal priority at one or more intersections along a particular route.
traffic control priority status	Status of signal priority request functions at the roadside (e.g., enabled or disabled).
traffic detector control	Information used to configure and control traffic detector systems such as inductive loop detectors and machine vision sensors.
traffic detector data	Raw and/or processed traffic detector data which allows derivation of traffic flow variables (e.g., speed, volume, and density measures) and associated information (e.g., congestion, potential incidents). This flow includes the traffic data and the operational status of the traffic detectors
traffic images	High fidelity, real-time traffic images suitable for surveillance monitoring by the operator or for use in machine vision applications. This flow includes the images. Meta data that describes the images is contained in another flow.
traffic metering control	Control commands and operating parameters for ramp meters, interchange meters, mainline meters, and other systems equipment associated with roadway metering operations.
traffic metering status	Current operational status and operating parameters for ramp meters, interchange meters, mainline meters and other control equipment associated with roadway metering operations.
traffic operator data	Presentation of traffic operations data to the operator including traffic conditions, current operating status of field equipment, maintenance activity status, incident status, video images, security alerts, emergency response plan updates and other information. This data keeps the operator appraised of current road network status, provides feedback to the operator as traffic control actions are implemented, provides transportation security inputs, and supports review of historical data and preparation for future traffic operations activities.
traffic situation data	Current, aggregate traffic data collected from connected vehicles that can be used to supplement or replace information collected by roadside traffic detectors. It includes raw and/or processed reported vehicle speeds, counts, and other derived measures. Raw and/or filtered vehicle control events may also be included to support incident detection.
transit and fare schedules	Transit service information including routes, schedules, and fare information. This also includes on-demand service information.



New Orleans Regional Intelligent Transportation Systems Architecture

Flow Name	Description
transit archive data	Data used to describe and monitor transit demand, fares, operations, and system performance. Content may include a catalog of available information, the actual information to be archived, and associated meta data that describes the archived information.
transit emergency data	Initial notification of transit emergency at a transit stop or on transit vehicles and further coordination as additional details become available and the response is coordinated.
transit fare coordination	Fare and pricing information shared between local/regional transit organizations.
transit fare information	Information provided by transit management that supports fare payment transactions.
transit incident information	Information on transit incidents that impact transit services for public dissemination.
transit information user request	Request for special transit routing, real-time schedule information, and availability information.
transit probe data	Aggregate probe data derived from tracking transit vehicles. Data collected could include transit vehicle speeds and travel times for a given link or collection of links.
transit schedule adherence information	Dynamic transit schedule adherence and transit vehicle location information.
transit service coordination	Schedule coordination or AVL information shared between local/regional transit organizations. This includes coordination of connections and control parameters between transit properties as well as coordination of transit-related maintenance activities.
transit service information	Transit service information including routes, schedules, and fare information as well as dynamic transit schedule adherence and transit vehicle location information.
transit system data	Current transit system operations information indicating current transit routes and fares, the level of service on each route, and the progress of individual vehicles along their routes for use in forecasting demand and estimating current transportation network performance.
transit system status assessment	Assessment of damage sustained by the public transportation system including location and extent of the damage, current operational status including an estimate of remaining capacity and necessary restrictions, and time frame for repair and recovery.
transit traveler information coordination	Transit schedules, real-time arrival information, fare schedules, and general transit service information shared between transit organizations to support transit traveler information systems.



New Orleans Regional Intelligent Transportation Systems Architecture

Flow Name	Description
transportation operational strategies	Operational strategies for each operating agency in a transportation corridor, downtown area, or other travel-impacted area, providing an integrated operations strategy for the freeways, tollways, arterials, transit services, parking facilities, and other transportation-related facilities in the area. These strategies can include dynamic adjustments to transit fares and tolls, parking fees and restrictions, dynamic lane restriction changes, and other active demand management strategies.
transportation system status	Current status and condition of transportation infrastructure (e.g., tunnels, bridges, interchanges, TMC offices, maintenance facilities). In case of disaster or major incident, this flow provides an assessment of damage sustained by the surface transportation system including location and extent of the damage, estimate of remaining capacity and necessary restrictions, and time frame for repair and recovery.
travel services information	Travel service information and reservations for tourist attractions, lodging, dining, service stations, emergency services, and other services and businesses of interest to the traveler.
travel services request	Request for travel service information including tourist attractions, lodging, restaurants, electric vehicle charging, service stations, and emergency services. The request identifies the type of service, the area of interest, optional reservation request information, parameters that are used to prioritize or filter the returned information, and sorting preferences.
traveler alerts	Traveler information alerts reporting congestion, incidents, adverse road or weather conditions, restrictions, vehicle requirements, parking availability, transit service delays or interruptions, and other information that may impact the traveler. Relevant alerts are provided based on traveler-supplied profile information including trip characteristics and preferences.
traveler archive data	Data associated with traveler information services including service requests, facility usage, rideshare, routing, and traveler payment transaction data. Content may include a catalog of available information, the actual information to be archived, and associated meta data that describes the archived information.
traveler information application status	Application status reported by the RSE. This includes current operational state and status of the RSE and a record of traveler information distribution.
traveler request	A request for traveler information including traffic, transit, toll, parking, road weather conditions, event, and passenger rail information. The request identifies the type of information, the area of interest, parameters that are used to prioritize or filter the returned information, and sorting preferences.
trip confirmation	Acknowledgement by the driver/traveler of acceptance of a trip plan with associated personal and payment information required to confirm reservations. Conversely, this flow may also reject the proposed trip plan. Confirmations include the selected route and subsequent trip confirmation messages will be issued for route changes.
trip plan	A travel itinerary covering single or multimodal travel. The itinerary identifies a route and associated traveler information and instructions identifying recommended trip modes (including indoor and outdoor wayfinding) and transfer information, ride sharing options, and transit and parking reservation information. This flow also includes intermediate information that is provided as the trip plan is interactively created, including identification of alternatives, requests for additional information as well as amenities along the trip.



New Orleans Regional Intelligent Transportation Systems Architecture

Flow Name	Description
trip request	Request for trip planning services that identifies the trip origin, destination(s), timing, preferences, and constraints. The request may also include the requestor's location or a request for transit and parking reservations, electric charging station access, and ridesharing options associated with the trip. The trip request also covers requests to revise a previously planned trip and interim updates that are provided as the trip is interactively planned.
user profile	Information provided to register for a travel service and create a user account. The provided information includes personal identification, traveler preferences (e.g., travel mode, micro-mobility options, accessibility needs, and assistance needs), priorities for the preferences, device information, a user ID and password, and information to support payment transactions, if applicable.
vehicle signage data	In-vehicle signing data that augments regulatory, warning, and informational road signs and signals. The information provided would include static sign information (e.g., stop, curve warning, guide signs, service signs, and directional signs) and dynamic information (e.g., local traffic and road conditions, restrictions, vehicle requirements, work zones, detours, closures, advisories, and warnings).
video surveillance control	Information used to configure and control video surveillance systems.
work plan coordination	Coordination of work plan schedules and activities between maintenance and construction organizations or systems. This information includes the work plan schedules and comments and suggested changes that are exchanged as work plans are coordinated and finalized.
work plan feedback	Comments and suggested changes to proposed construction and maintenance work schedules and activities. This information influences work plan schedules so that they minimize impact to other system operations and the overall transportation system.
work zone information	Summary of maintenance and construction work zone activities affecting the road network including the nature of the maintenance or construction activity, location, impact to the roadway, expected time(s) and duration of impact, anticipated delays, alternate routes, and suggested speed limits. This information may be augmented with images that provide a visual indication of current work zone status and traffic impacts.
work zone warning device control	Data used to configure and control work zone safety monitoring and warning devices.
work zone warning status	Status of a work zone safety monitoring and warning devices. This flow documents system activations and includes additional supporting information (e.g., an image) that allows verification of the alarm.



Appendix B Communications

B.1 Communications Details

Communications standards are essential to cost-effective integration of ITS throughout the region. ITS standards are fundamental to the establishment of an open ITS environment that achieves the goal of interoperability for ITS. Standards facilitate deployment of interoperable systems at local, regional, national and international levels without impeding innovation as technology advances and new approaches evolve.

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

In ARC-IT and in this regional architecture, the relevant communications standards for a particular interface are grouped together into 'Communication Solutions' that define the set of standards that are required for the interface. The first table identifies all of the communications solutions that have been selected for this region.

Frequently, more than one communications solution will be available for a given interface. Many standards overlap in applicability and offer varying features and levels of performance and security. This provides flexibility in the design of ITS systems allowing agencies to choose the most applicable communications solution for their needs. Before systems are designed, all stakeholders involved in the applicable ITS service(s) should agree on the communications solution and any required/desired tailoring. Once a decision is made, all future systems supporting that interface should use the agreed upon communications solution.



Solution	Solution Description	Level	Standard Title
(None-Data) - Guaranteed Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Guaranteed Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Access	Internet Subnet Alternatives
(None-Data) - Guaranteed Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Guaranteed Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities, ITS Application Entity	Standard(s) need to be developed
(None-Data) - Guaranteed Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Guaranteed Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks



Solution	Solution Description	Level	Standard Title
(None-Data) - Guaranteed Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Guaranteed Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
(None-Data) - Guaranteed Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Guaranteed Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Simple Network Management Protocol (SNMP) Applications
(None-Data) - Guaranteed Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Guaranteed Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)



Solution	Solution Description	Level	Standard Title
(None-Data) - Guaranteed Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Guaranteed Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
(None-Data) - Guaranteed Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Guaranteed Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)
(None-Data) - Guaranteed Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Guaranteed Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
(None-Data) - Guaranteed Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Guaranteed Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base for the Internet Protocol (IP)
(None-Data) - Guaranteed Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Guaranteed Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
(None-Data) - Guaranteed Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Guaranteed Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	The Transport Layer Security (TLS) Protocol



Solution	Solution Description	Level	Standard Title
(None-Data) - Guaranteed Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Guaranteed Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	IP Version 6 Addressing Architecture
(None-Data) - Guaranteed Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Guaranteed Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification
(None-Data) - Guaranteed Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Guaranteed Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Protocol, Version 6



Solution	Solution Description	Level	Standard Title
(None-Data) - Guaranteed Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Guaranteed Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Transmission Control Protocol
(None-Data) - Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Access	Internet Subnet Alternatives
(None-Data) - Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities, ITS Application Entity	Standard(s) need to be developed



Solution	Solution Description	Level	Standard Title
(None-Data) - Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
(None-Data) - Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
(None-Data) - Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Simple Network Management Protocol (SNMP) Applications



Solution	Solution Description	Level	Standard Title
(None-Data) - Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
(None-Data) - Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
(None-Data) - Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
(None-Data) - Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
(None-Data) - Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base for the Internet Protocol (IP)
(None-Data) - Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile



Solution	Solution Description	Level	Standard Title
(None-Data) - Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	The Transport Layer Security (TLS) Protocol
(None-Data) - Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	IP Version 6 Addressing Architecture
(None-Data) - Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification



Solution	Solution Description	Level	Standard Title
(None-Data) - Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Protocol, Version 6
(None-Data) - Secure Internet (ITS)	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for I-I: Secure Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Transmission Control Protocol
(None-Data) - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with (None-Data) with those for I-M: Secure Wireless Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	Access	3GPP Cellular Communications Network



Solution	Solution Description	Level	Standard Title
(None-Data) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with (None-Data) with those for I-M: Secure Wireless Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Facilities, ITS Application Entity	Standard(s) need to be developed
(None-Data) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with (None-Data) with those for I-M: Secure Wireless Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks



Solution	Solution Description	Level	Standard Title
(None-Data) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with (None-Data) with those for I-M: Secure Wireless Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	<p>Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)</p>
(None-Data) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with (None-Data) with those for I-M: Secure Wireless Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	<p>Simple Network Management Protocol (SNMP) Applications</p>



Solution	Solution Description	Level	Standard Title
(None-Data) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with (None-Data) with those for I-M: Secure Wireless Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	<p>User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)</p>
(None-Data) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with (None-Data) with those for I-M: Secure Wireless Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	<p>View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)</p>



Solution	Solution Description	Level	Standard Title
(None-Data) - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with (None-Data) with those for I-M: Secure Wireless Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)
(None-Data) - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with (None-Data) with those for I-M: Secure Wireless Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
(None-Data) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with (None-Data) with those for I-M: Secure Wireless Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	Management Information Base for the Internet Protocol (IP)
(None-Data) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with (None-Data) with those for I-M: Secure Wireless Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile



Solution	Solution Description	Level	Standard Title
(None-Data) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with (None-Data) with those for I-M: Secure Wireless Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Security	The Transport Layer Security (TLS) Protocol
(None-Data) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with (None-Data) with those for I-M: Secure Wireless Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	TransNet	IP Version 6 Addressing Architecture



Solution	Solution Description	Level	Standard Title
(None-Data) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with (None-Data) with those for I-M: Secure Wireless Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification
(None-Data) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with (None-Data) with those for I-M: Secure Wireless Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	TransNet	Internet Protocol, Version 6



Solution	Solution Description	Level	Standard Title
(None-Data) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with (None-Data) with those for I-M: Secure Wireless Internet (ITS). The (None-Data) standards include an unspecified set of standards at the upper layers. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	TransNet	Transmission Control Protocol
(None-Data) - Wide Area Broadcast	<p>This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for C-X: Wide Area Broadcast. The (None-Data) standards include an unspecified set of standards at the upper layers. The C-X: Wide Area Broadcast standards include lower-layer standards that support one entity broadcasting information to all wireless devices over an area that covers at least a metropolitan area without any expectation of acknowledgement or response; security is provided by the upper-layers.</p>	Access	Satellite Broadcast Alternatives



Solution	Solution Description	Level	Standard Title
(None-Data) - Wide Area Broadcast	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for C-X: Wide Area Broadcast. The (None-Data) standards include an unspecified set of standards at the upper layers. The C-X: Wide Area Broadcast standards include lower-layer standards that support one entity broadcasting information to all wireless devices over an area that covers at least a metropolitan area without any expectation of acknowledgement or response; security is provided by the upper-layers.	Facilities, ITS Application Entity	Standard(s) need to be developed
(None-Data) - Wide Area Broadcast	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with (None-Data) with those for C-X: Wide Area Broadcast. The (None-Data) standards include an unspecified set of standards at the upper layers. The C-X: Wide Area Broadcast standards include lower-layer standards that support one entity broadcasting information to all wireless devices over an area that covers at least a metropolitan area without any expectation of acknowledgement or response; security is provided by the upper-layers.	Mgmt, Security, TransNet	Proprietary
TMC - Wide Area Broadcast	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with TMC with those for C-X: Wide Area Broadcast. The TMC standards include upper-layer standards required to support multi-modal information services to the vehicle. The C-X: Wide Area Broadcast standards include lower-layer standards that support one entity broadcasting information to all wireless devices over an area that covers at least a metropolitan area without any expectation of acknowledgement or response; security is provided by the upper-layers.	Access	Satellite Broadcast Alternatives



Solution	Solution Description	Level	Standard Title
TMC - Wide Area Broadcast	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with TMC with those for C-X: Wide Area Broadcast. The TMC standards include upper-layer standards required to support multi-modal information services to the vehicle. The C-X: Wide Area Broadcast standards include lower-layer standards that support one entity broadcasting information to all wireless devices over an area that covers at least a metropolitan area without any expectation of acknowledgement or response; security is provided by the upper-layers.	Facilities	Intelligent transport systems -- Traffic and travel information messages via traffic message coding -- Part 1: Coding protocol for Radio Data System -- Traffic Message Channel (RDS-TMC) using ALERT-C
TMC - Wide Area Broadcast	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with TMC with those for C-X: Wide Area Broadcast. The TMC standards include upper-layer standards required to support multi-modal information services to the vehicle. The C-X: Wide Area Broadcast standards include lower-layer standards that support one entity broadcasting information to all wireless devices over an area that covers at least a metropolitan area without any expectation of acknowledgement or response; security is provided by the upper-layers.	ITS Application Entity	Intelligent transport systems -- Traffic and travel information messages via traffic message coding -- Part 2: Event and information codes for Radio Data System -- Traffic Message Channel (RDS-TMC) using ALERT-C



Solution	Solution Description	Level	Standard Title
TMC - Wide Area Broadcast	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with TMC with those for C-X: Wide Area Broadcast. The TMC standards include upper-layer standards required to support multi-modal information services to the vehicle. The C-X: Wide Area Broadcast standards include lower-layer standards that support one entity broadcasting information to all wireless devices over an area that covers at least a metropolitan area without any expectation of acknowledgement or response; security is provided by the upper-layers.	ITS Application Entity	Intelligent transport systems -- Traffic and travel information messages via traffic message coding -- Part 3: Location referencing for Radio Data System -- Traffic Message Channel (RDS-TMC) using ALERT-C
TMC - Wide Area Broadcast	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with TMC with those for C-X: Wide Area Broadcast. The TMC standards include upper-layer standards required to support multi-modal information services to the vehicle. The C-X: Wide Area Broadcast standards include lower-layer standards that support one entity broadcasting information to all wireless devices over an area that covers at least a metropolitan area without any expectation of acknowledgement or response; security is provided by the upper-layers.	Mgmt, Security, TransNet	Proprietary



Solution	Solution Description	Level	Standard Title
TMC - Wide Area Broadcast	This solution is used within Australia, Canada, the E.U. and the U.S.. It combines standards associated with TMC with those for C-X: Wide Area Broadcast. The TMC standards include upper-layer standards required to support multi-modal information services to the vehicle. The C-X: Wide Area Broadcast standards include lower-layer standards that support one entity broadcasting information to all wireless devices over an area that covers at least a metropolitan area without any expectation of acknowledgement or response; security is provided by the upper-layers.	Security	Traffic and Traveller Information (TTI) -- TTI messages via traffic message coding -- Part 6: Encryption and conditional access for the Radio Data System -- Traffic Message Channel ALERT C coding
US: ADMS - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Guaranteed Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Access	Internet Subnet Alternatives
US: ADMS - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Guaranteed Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	Standard(s) need to be developed



Solution	Solution Description	Level	Standard Title
US: ADMS - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Guaranteed Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	ITS Application Entity	Standard Guide for Archiving and Retrieving ITS-Generated Data
US: ADMS - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Guaranteed Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	ITS Application Entity	Standard Practice for Metadata to Support Archived Data Management Systems
US: ADMS - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Guaranteed Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	ITS Application Entity	Standard Specification for Archiving ITS-Generated Traffic Monitoring Data



Solution	Solution Description	Level	Standard Title
US: ADMS - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Guaranteed Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
US: ADMS - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Guaranteed Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: ADMS - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Guaranteed Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Simple Network Management Protocol (SNMP) Applications



Solution	Solution Description	Level	Standard Title
US: ADMS - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Guaranteed Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
US: ADMS - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Guaranteed Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: ADMS - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Guaranteed Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: ADMS - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Guaranteed Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
US: ADMS - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Guaranteed Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base for the Internet Protocol (IP)
US: ADMS - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Guaranteed Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile



Solution	Solution Description	Level	Standard Title
US: ADMS - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Guaranteed Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	The Transport Layer Security (TLS) Protocol
US: ADMS - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Guaranteed Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	IP Version 6 Addressing Architecture
US: ADMS - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Guaranteed Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification



Solution	Solution Description	Level	Standard Title
US: ADMS - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Guaranteed Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Protocol, Version 6
US: ADMS - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Guaranteed Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Transmission Control Protocol
US: ADMS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Access	Internet Subnet Alternatives



Solution	Solution Description	Level	Standard Title
US: ADMS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	Standard(s) need to be developed
US: ADMS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	ITS Application Entity	Standard Guide for Archiving and Retrieving ITS-Generated Data
US: ADMS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	ITS Application Entity	Standard Practice for Metadata to Support Archived Data Management Systems



Solution	Solution Description	Level	Standard Title
US: ADMS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	ITS Application Entity	Standard Specification for Archiving ITS-Generated Traffic Monitoring Data
US: ADMS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
US: ADMS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: ADMS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Simple Network Management Protocol (SNMP) Applications
US: ADMS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
US: ADMS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: ADMS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)
US: ADMS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
US: ADMS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base for the Internet Protocol (IP)



Solution	Solution Description	Level	Standard Title
US: ADMS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
US: ADMS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	The Transport Layer Security (TLS) Protocol
US: ADMS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	IP Version 6 Addressing Architecture



Solution	Solution Description	Level	Standard Title
US: ADMS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification
US: ADMS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Protocol, Version 6
US: ADMS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ADMS with those for I-I: Secure Internet (ITS). The US: ADMS standards include upper-layer standards required to implement interfaces with an archived data management system. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Transmission Control Protocol



Solution	Solution Description	Level	Standard Title
US: ATIS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-I: Secure Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Access	Internet Subnet Alternatives
US: ATIS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-I: Secure Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	HTTP Semantics
US: ATIS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-I: Secure Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	HTTP/1.1



Solution	Solution Description	Level	Standard Title
US: ATIS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-I: Secure Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	Message Sets for Advanced Traveler Information System (ATIS)
US: ATIS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-I: Secure Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	Extensible Markup Language (XML) 1.0 (Fifth Edition)
US: ATIS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-I: Secure Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	ITS Application Entity	Data Dictionary for Advanced Traveler Information Systems (ATIS)



Solution	Solution Description	Level	Standard Title
US: ATIS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-I: Secure Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
US: ATIS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-I: Secure Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: ATIS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-I: Secure Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Simple Network Management Protocol (SNMP) Applications



Solution	Solution Description	Level	Standard Title
US: ATIS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-I: Secure Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
US: ATIS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-I: Secure Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: ATIS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-I: Secure Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: ATIS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-I: Secure Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
US: ATIS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-I: Secure Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base for the Internet Protocol (IP)
US: ATIS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-I: Secure Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile



Solution	Solution Description	Level	Standard Title
US: ATIS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-I: Secure Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	The Transport Layer Security (TLS) Protocol
US: ATIS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-I: Secure Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	IP Version 6 Addressing Architecture
US: ATIS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-I: Secure Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification



Solution	Solution Description	Level	Standard Title
US: ATIS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-I: Secure Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Protocol, Version 6
US: ATIS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-I: Secure Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Transmission Control Protocol
US: ATIS - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-M: Secure Wireless Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	Access	3GPP Cellular Communications Network



Solution	Solution Description	Level	Standard Title
US: ATIS - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-M: Secure Wireless Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	Facilities	HTTP Semantics
US: ATIS - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-M: Secure Wireless Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	Facilities	HTTP/1.1



Solution	Solution Description	Level	Standard Title
US: ATIS - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-M: Secure Wireless Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	Facilities	Message Sets for Advanced Traveler Information System (ATIS)
US: ATIS - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-M: Secure Wireless Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	Facilities	Extensible Markup Language (XML) 1.0 (Fifth Edition)



Solution	Solution Description	Level	Standard Title
US: ATIS - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-M: Secure Wireless Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	ITS Application Entity	Data Dictionary for Advanced Traveler Information Systems (ATIS)
US: ATIS - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-M: Secure Wireless Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks



Solution	Solution Description	Level	Standard Title
US: ATIS - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-M: Secure Wireless Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: ATIS - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-M: Secure Wireless Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	Mgmt	Simple Network Management Protocol (SNMP) Applications



Solution	Solution Description	Level	Standard Title
US: ATIS - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-M: Secure Wireless Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
US: ATIS - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-M: Secure Wireless Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: ATIS - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-M: Secure Wireless Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)
US: ATIS - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-M: Secure Wireless Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: ATIS - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-M: Secure Wireless Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	Mgmt	Management Information Base for the Internet Protocol (IP)
US: ATIS - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-M: Secure Wireless Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile



Solution	Solution Description	Level	Standard Title
US: ATIS - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-M: Secure Wireless Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	Security	The Transport Layer Security (TLS) Protocol
US: ATIS - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-M: Secure Wireless Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	TransNet	IP Version 6 Addressing Architecture



Solution	Solution Description	Level	Standard Title
US: ATIS - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-M: Secure Wireless Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification
US: ATIS - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-M: Secure Wireless Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	TransNet	Internet Protocol, Version 6



Solution	Solution Description	Level	Standard Title
US: ATIS - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for I-M: Secure Wireless Internet (ITS). The US: ATIS standards include upper-layer standards required to implement traveler information communications. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	TransNet	Transmission Control Protocol
US: ATIS - Wide Area Broadcast	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for C-X: Wide Area Broadcast. The US: ATIS standards include upper-layer standards required to implement traveler information communications. The C-X: Wide Area Broadcast standards include lower-layer standards that support one entity broadcasting information to all wireless devices over an area that covers at least a metropolitan area without any expectation of acknowledgement or response; security is provided by the upper-layers.	Access	Satellite Broadcast Alternatives



Solution	Solution Description	Level	Standard Title
US: ATIS - Wide Area Broadcast	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for C-X: Wide Area Broadcast. The US: ATIS standards include upper-layer standards required to implement traveler information communications. The C-X: Wide Area Broadcast standards include lower-layer standards that support one entity broadcasting information to all wireless devices over an area that covers at least a metropolitan area without any expectation of acknowledgement or response; security is provided by the upper-layers.	Facilities	HTTP Semantics
US: ATIS - Wide Area Broadcast	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for C-X: Wide Area Broadcast. The US: ATIS standards include upper-layer standards required to implement traveler information communications. The C-X: Wide Area Broadcast standards include lower-layer standards that support one entity broadcasting information to all wireless devices over an area that covers at least a metropolitan area without any expectation of acknowledgement or response; security is provided by the upper-layers.	Facilities	HTTP/1.1
US: ATIS - Wide Area Broadcast	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for C-X: Wide Area Broadcast. The US: ATIS standards include upper-layer standards required to implement traveler information communications. The C-X: Wide Area Broadcast standards include lower-layer standards that support one entity broadcasting information to all wireless devices over an area that covers at least a metropolitan area without any expectation of acknowledgement or response; security is provided by the upper-layers.	Facilities	Message Sets for Advanced Traveler Information System (ATIS)



Solution	Solution Description	Level	Standard Title
US: ATIS - Wide Area Broadcast	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for C-X: Wide Area Broadcast. The US: ATIS standards include upper-layer standards required to implement traveler information communications. The C-X: Wide Area Broadcast standards include lower-layer standards that support one entity broadcasting information to all wireless devices over an area that covers at least a metropolitan area without any expectation of acknowledgement or response; security is provided by the upper-layers.	Facilities	Extensible Markup Language (XML) 1.0 (Fifth Edition)
US: ATIS - Wide Area Broadcast	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for C-X: Wide Area Broadcast. The US: ATIS standards include upper-layer standards required to implement traveler information communications. The C-X: Wide Area Broadcast standards include lower-layer standards that support one entity broadcasting information to all wireless devices over an area that covers at least a metropolitan area without any expectation of acknowledgement or response; security is provided by the upper-layers.	ITS Application Entity	Data Dictionary for Advanced Traveler Information Systems (ATIS)
US: ATIS - Wide Area Broadcast	This solution is used within Canada and the U.S.. It combines standards associated with US: ATIS with those for C-X: Wide Area Broadcast. The US: ATIS standards include upper-layer standards required to implement traveler information communications. The C-X: Wide Area Broadcast standards include lower-layer standards that support one entity broadcasting information to all wireless devices over an area that covers at least a metropolitan area without any expectation of acknowledgement or response; security is provided by the upper-layers.	Mgmt, Security, TransNet	Proprietary



Solution	Solution Description	Level	Standard Title
US: CDS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: CDS with those for I-I: Secure Internet (ITS). The US: CDS standards include upper-layer standards required to manage the curb-space using CDS standards. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Access	Internet Subnet Alternatives
US: CDS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: CDS with those for I-I: Secure Internet (ITS). The US: CDS standards include upper-layer standards required to manage the curb-space using CDS standards. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	The JavaScript Object Notation (JSON) Data Interchange Format
US: CDS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: CDS with those for I-I: Secure Internet (ITS). The US: CDS standards include upper-layer standards required to manage the curb-space using CDS standards. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	HTTP Semantics



Solution	Solution Description	Level	Standard Title
US: CDS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: CDS with those for I-I: Secure Internet (ITS). The US: CDS standards include upper-layer standards required to manage the curb-space using CDS standards. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	HTTP/1.1
US: CDS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: CDS with those for I-I: Secure Internet (ITS). The US: CDS standards include upper-layer standards required to manage the curb-space using CDS standards. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	ITS Application Entity	Curb Data Specification
US: CDS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: CDS with those for I-I: Secure Internet (ITS). The US: CDS standards include upper-layer standards required to manage the curb-space using CDS standards. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks



Solution	Solution Description	Level	Standard Title
US: CDS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: CDS with those for I-I: Secure Internet (ITS). The US: CDS standards include upper-layer standards required to manage the curb-space using CDS standards. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: CDS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: CDS with those for I-I: Secure Internet (ITS). The US: CDS standards include upper-layer standards required to manage the curb-space using CDS standards. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Simple Network Management Protocol (SNMP) Applications
US: CDS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: CDS with those for I-I: Secure Internet (ITS). The US: CDS standards include upper-layer standards required to manage the curb-space using CDS standards. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)



Solution	Solution Description	Level	Standard Title
US: CDS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: CDS with those for I-I: Secure Internet (ITS). The US: CDS standards include upper-layer standards required to manage the curb-space using CDS standards. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: CDS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: CDS with those for I-I: Secure Internet (ITS). The US: CDS standards include upper-layer standards required to manage the curb-space using CDS standards. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)
US: CDS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: CDS with those for I-I: Secure Internet (ITS). The US: CDS standards include upper-layer standards required to manage the curb-space using CDS standards. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: CDS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: CDS with those for I-I: Secure Internet (ITS). The US: CDS standards include upper-layer standards required to manage the curb-space using CDS standards. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base for the Internet Protocol (IP)
US: CDS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: CDS with those for I-I: Secure Internet (ITS). The US: CDS standards include upper-layer standards required to manage the curb-space using CDS standards. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
US: CDS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: CDS with those for I-I: Secure Internet (ITS). The US: CDS standards include upper-layer standards required to manage the curb-space using CDS standards. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	The Transport Layer Security (TLS) Protocol



Solution	Solution Description	Level	Standard Title
US: CDS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: CDS with those for I-I: Secure Internet (ITS). The US: CDS standards include upper-layer standards required to manage the curb-space using CDS standards. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	IP Version 6 Addressing Architecture
US: CDS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: CDS with those for I-I: Secure Internet (ITS). The US: CDS standards include upper-layer standards required to manage the curb-space using CDS standards. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification
US: CDS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: CDS with those for I-I: Secure Internet (ITS). The US: CDS standards include upper-layer standards required to manage the curb-space using CDS standards. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Protocol, Version 6



Solution	Solution Description	Level	Standard Title
US: CDS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: CDS with those for I-I: Secure Internet (ITS). The US: CDS standards include upper-layer standards required to manage the curb-space using CDS standards. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Transmission Control Protocol
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Access	Internet Subnet Alternatives
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	Common Format and MIME Type for Comma-Separated Values (CSV) Files



Solution	Solution Description	Level	Standard Title
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	The JavaScript Object Notation (JSON) Data Interchange Format
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	HTTP Semantics
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	HTTP/1.1



Solution	Solution Description	Level	Standard Title
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	Information technology — Document Container File — Part 1: Core
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	ITS Application Entity	General Transit Feed Specification
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	ITS Application Entity	General Transit Feed Specification Realtime



Solution	Solution Description	Level	Standard Title
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Simple Network Management Protocol (SNMP) Applications



Solution	Solution Description	Level	Standard Title
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base for the Internet Protocol (IP)
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile



Solution	Solution Description	Level	Standard Title
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	The Transport Layer Security (TLS) Protocol
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	IP Version 6 Addressing Architecture
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification



Solution	Solution Description	Level	Standard Title
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Protocol, Version 6
US: GTFS - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS with those for I-I: Secure Internet (ITS). The US: GTFS standards include upper-layer standards required to implement public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Transmission Control Protocol
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Access	Internet Subnet Alternatives



Solution	Solution Description	Level	Standard Title
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	Common Format and MIME Type for Comma-Separated Values (CSV) Files
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	The JavaScript Object Notation (JSON) Data Interchange Format
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	HTTP Semantics



Solution	Solution Description	Level	Standard Title
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	HTTP/1.1
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	Information technology — Document Container File — Part 1: Core
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	ITS Application Entity	General Transit Feed Specification Realtime



Solution	Solution Description	Level	Standard Title
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Simple Network Management Protocol (SNMP) Applications



Solution	Solution Description	Level	Standard Title
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base for the Internet Protocol (IP)
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile



Solution	Solution Description	Level	Standard Title
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	The Transport Layer Security (TLS) Protocol
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	IP Version 6 Addressing Architecture
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification



Solution	Solution Description	Level	Standard Title
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Protocol, Version 6
US: GTFS real-time - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Guaranteed Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Transmission Control Protocol
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Access	Internet Subnet Alternatives



Solution	Solution Description	Level	Standard Title
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	Common Format and MIME Type for Comma-Separated Values (CSV) Files
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	The JavaScript Object Notation (JSON) Data Interchange Format
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	HTTP Semantics



Solution	Solution Description	Level	Standard Title
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	HTTP/1.1
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	Information technology — Document Container File — Part 1: Core
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	ITS Application Entity	General Transit Feed Specification Realtime



Solution	Solution Description	Level	Standard Title
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Simple Network Management Protocol (SNMP) Applications



Solution	Solution Description	Level	Standard Title
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base for the Internet Protocol (IP)
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile



Solution	Solution Description	Level	Standard Title
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	The Transport Layer Security (TLS) Protocol
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	IP Version 6 Addressing Architecture
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification



Solution	Solution Description	Level	Standard Title
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Protocol, Version 6
US: GTFS real-time - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS real-time with those for I-I: Secure Internet (ITS). The US: GTFS real-time standards include upper-layer standards required to implement real-time, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Transmission Control Protocol
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Access	Internet Subnet Alternatives



Solution	Solution Description	Level	Standard Title
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	Common Format and MIME Type for Comma-Separated Values (CSV) Files
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	The JavaScript Object Notation (JSON) Data Interchange Format
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	HTTP Semantics



Solution	Solution Description	Level	Standard Title
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	HTTP/1.1
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	Information technology — Document Container File — Part 1: Core
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	ITS Application Entity	General Transit Feed Specification



Solution	Solution Description	Level	Standard Title
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Simple Network Management Protocol (SNMP) Applications



Solution	Solution Description	Level	Standard Title
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base for the Internet Protocol (IP)
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile



Solution	Solution Description	Level	Standard Title
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	The Transport Layer Security (TLS) Protocol
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	IP Version 6 Addressing Architecture
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification



Solution	Solution Description	Level	Standard Title
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Protocol, Version 6
US: GTFS static - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: GTFS static with those for I-I: Secure Internet (ITS). The US: GTFS static standards include upper-layer standards required to implement static, public, transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Transmission Control Protocol
US: NTCIP Data Collection - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Data Collection with those for I-F: SNMPv3/TLS. The US: NTCIP Data Collection standards include upper-layer standards required to implement center-to-field communications for data collection and monitoring of traffic characteristics (e.g., non-real-time data). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Access	NTCIP SP-Ethernet



Solution	Solution Description	Level	Standard Title
US: NTCIP Data Collection - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Data Collection with those for I-F: SNMPv3/TLS. The US: NTCIP Data Collection standards include upper-layer standards required to implement center-to-field communications for data collection and monitoring of traffic characteristics (e.g., non-real-time data). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	Facilities, ITS Application Entity	NTCIP Object Definitions for Data Collection
US: NTCIP Data Collection - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Data Collection with those for I-F: SNMPv3/TLS. The US: NTCIP Data Collection standards include upper-layer standards required to implement center-to-field communications for data collection and monitoring of traffic characteristics (e.g., non-real-time data). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	Facilities, ITS Application Entity	NTCIP Object Definitions for Transportation Sensor Systems (TSS)



Solution	Solution Description	Level	Standard Title
US: NTCIP Data Collection - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Data Collection with those for I-F: SNMPv3/TLS. The US: NTCIP Data Collection standards include upper-layer standards required to implement center-to-field communications for data collection and monitoring of traffic characteristics (e.g., non-real-time data). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
US: NTCIP Data Collection - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Data Collection with those for I-F: SNMPv3/TLS. The US: NTCIP Data Collection standards include upper-layer standards required to implement center-to-field communications for data collection and monitoring of traffic characteristics (e.g., non-real-time data). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Data Collection - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Data Collection with those for I-F: SNMPv3/TLS. The US: NTCIP Data Collection standards include upper-layer standards required to implement center-to-field communications for data collection and monitoring of traffic characteristics (e.g., non-real-time data). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Simple Network Management Protocol (SNMP) Applications
US: NTCIP Data Collection - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Data Collection with those for I-F: SNMPv3/TLS. The US: NTCIP Data Collection standards include upper-layer standards required to implement center-to-field communications for data collection and monitoring of traffic characteristics (e.g., non-real-time data). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)



Solution	Solution Description	Level	Standard Title
US: NTCIP Data Collection - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Data Collection with those for I-F: SNMPv3/TLS. The US: NTCIP Data Collection standards include upper-layer standards required to implement center-to-field communications for data collection and monitoring of traffic characteristics (e.g., non-real-time data). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: NTCIP Data Collection - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Data Collection with those for I-F: SNMPv3/TLS. The US: NTCIP Data Collection standards include upper-layer standards required to implement center-to-field communications for data collection and monitoring of traffic characteristics (e.g., non-real-time data). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Data Collection - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Data Collection with those for I-F: SNMPv3/TLS. The US: NTCIP Data Collection standards include upper-layer standards required to implement center-to-field communications for data collection and monitoring of traffic characteristics (e.g., non-real-time data). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
US: NTCIP Data Collection - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Data Collection with those for I-F: SNMPv3/TLS. The US: NTCIP Data Collection standards include upper-layer standards required to implement center-to-field communications for data collection and monitoring of traffic characteristics (e.g., non-real-time data). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	Management Information Base for the Internet Protocol (IP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Data Collection - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Data Collection with those for I-F: SNMPv3/TLS. The US: NTCIP Data Collection standards include upper-layer standards required to implement center-to-field communications for data collection and monitoring of traffic characteristics (e.g., non-real-time data). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	NTCIP Global Object (GO) Definitions
US: NTCIP Data Collection - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Data Collection with those for I-F: SNMPv3/TLS. The US: NTCIP Data Collection standards include upper-layer standards required to implement center-to-field communications for data collection and monitoring of traffic characteristics (e.g., non-real-time data). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Security	Transport Layer Security (TLS) Transport Model for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Data Collection - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Data Collection with those for I-F: SNMPv3/TLS. The US: NTCIP Data Collection standards include upper-layer standards required to implement center-to-field communications for data collection and monitoring of traffic characteristics (e.g., non-real-time data). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Security	Updates to the TLS Transport Model for SNMP
US: NTCIP Data Collection - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Data Collection with those for I-F: SNMPv3/TLS. The US: NTCIP Data Collection standards include upper-layer standards required to implement center-to-field communications for data collection and monitoring of traffic characteristics (e.g., non-real-time data). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	IP Version 6 Addressing Architecture



Solution	Solution Description	Level	Standard Title
US: NTCIP Data Collection - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Data Collection with those for I-F: SNMPv3/TLS. The US: NTCIP Data Collection standards include upper-layer standards required to implement center-to-field communications for data collection and monitoring of traffic characteristics (e.g., non-real-time data). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification
US: NTCIP Data Collection - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Data Collection with those for I-F: SNMPv3/TLS. The US: NTCIP Data Collection standards include upper-layer standards required to implement center-to-field communications for data collection and monitoring of traffic characteristics (e.g., non-real-time data). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Internet Protocol, Version 6



Solution	Solution Description	Level	Standard Title
US: NTCIP Data Collection - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Data Collection with those for I-F: SNMPv3/TLS. The US: NTCIP Data Collection standards include upper-layer standards required to implement center-to-field communications for data collection and monitoring of traffic characteristics (e.g., non-real-time data). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Transmission Control Protocol
US: NTCIP Environmental Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Environmental Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Environmental Sensors standards include upper-layer standards required to implement center-to-field weather and environmental sensor communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Access	NTCIP SP-Ethernet



Solution	Solution Description	Level	Standard Title
US: NTCIP Environmental Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Environmental Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Environmental Sensors standards include upper-layer standards required to implement center-to-field weather and environmental sensor communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, ITS Application Entity	NTCIP Environmental Sensor Station Interface Standard
US: NTCIP Environmental Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Environmental Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Environmental Sensors standards include upper-layer standards required to implement center-to-field weather and environmental sensor communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks



Solution	Solution Description	Level	Standard Title
US: NTCIP Environmental Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Environmental Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Environmental Sensors standards include upper-layer standards required to implement center-to-field weather and environmental sensor communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: NTCIP Environmental Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Environmental Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Environmental Sensors standards include upper-layer standards required to implement center-to-field weather and environmental sensor communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Simple Network Management Protocol (SNMP) Applications



Solution	Solution Description	Level	Standard Title
US: NTCIP Environmental Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Environmental Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Environmental Sensors standards include upper-layer standards required to implement center-to-field weather and environmental sensor communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
US: NTCIP Environmental Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Environmental Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Environmental Sensors standards include upper-layer standards required to implement center-to-field weather and environmental sensor communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Environmental Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Environmental Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Environmental Sensors standards include upper-layer standards required to implement center-to-field weather and environmental sensor communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)
US: NTCIP Environmental Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Environmental Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Environmental Sensors standards include upper-layer standards required to implement center-to-field weather and environmental sensor communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Environmental Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Environmental Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Environmental Sensors standards include upper-layer standards required to implement center-to-field weather and environmental sensor communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	Management Information Base for the Internet Protocol (IP)
US: NTCIP Environmental Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Environmental Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Environmental Sensors standards include upper-layer standards required to implement center-to-field weather and environmental sensor communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	NTCIP Global Object (GO) Definitions



Solution	Solution Description	Level	Standard Title
US: NTCIP Environmental Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Environmental Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Environmental Sensors standards include upper-layer standards required to implement center-to-field weather and environmental sensor communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Security	Transport Layer Security (TLS) Transport Model for the Simple Network Management Protocol (SNMP)
US: NTCIP Environmental Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Environmental Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Environmental Sensors standards include upper-layer standards required to implement center-to-field weather and environmental sensor communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Security	Updates to the TLS Transport Model for SNMP



Solution	Solution Description	Level	Standard Title
US: NTCIP Environmental Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Environmental Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Environmental Sensors standards include upper-layer standards required to implement center-to-field weather and environmental sensor communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	IP Version 6 Addressing Architecture
US: NTCIP Environmental Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Environmental Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Environmental Sensors standards include upper-layer standards required to implement center-to-field weather and environmental sensor communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification



Solution	Solution Description	Level	Standard Title
US: NTCIP Environmental Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Environmental Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Environmental Sensors standards include upper-layer standards required to implement center-to-field weather and environmental sensor communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Internet Protocol, Version 6
US: NTCIP Environmental Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Environmental Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Environmental Sensors standards include upper-layer standards required to implement center-to-field weather and environmental sensor communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Transmission Control Protocol



Solution	Solution Description	Level	Standard Title
US: NTCIP Generic Device - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Generic Device with those for I-F: SNMPv3/TLS. The US: NTCIP Generic Device standards include upper-layer standards required to implement center-to-field communications for any device functionality. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	Access	NTCIP SP-Ethernet
US: NTCIP Generic Device - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Generic Device with those for I-F: SNMPv3/TLS. The US: NTCIP Generic Device standards include upper-layer standards required to implement center-to-field communications for any device functionality. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	Facilities, ITS Application Entity	NTCIP Objects for CCTV Camera Control



Solution	Solution Description	Level	Standard Title
US: NTCIP Generic Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Generic Device with those for I-F: SNMPv3/TLS. The US: NTCIP Generic Device standards include upper-layer standards required to implement center-to-field communications for any device functionality. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
US: NTCIP Generic Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Generic Device with those for I-F: SNMPv3/TLS. The US: NTCIP Generic Device standards include upper-layer standards required to implement center-to-field communications for any device functionality. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Generic Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Generic Device with those for I-F: SNMPv3/TLS. The US: NTCIP Generic Device standards include upper-layer standards required to implement center-to-field communications for any device functionality. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Simple Network Management Protocol (SNMP) Applications
US: NTCIP Generic Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Generic Device with those for I-F: SNMPv3/TLS. The US: NTCIP Generic Device standards include upper-layer standards required to implement center-to-field communications for any device functionality. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)



Solution	Solution Description	Level	Standard Title
US: NTCIP Generic Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Generic Device with those for I-F: SNMPv3/TLS. The US: NTCIP Generic Device standards include upper-layer standards required to implement center-to-field communications for any device functionality. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: NTCIP Generic Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Generic Device with those for I-F: SNMPv3/TLS. The US: NTCIP Generic Device standards include upper-layer standards required to implement center-to-field communications for any device functionality. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Generic Device - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Generic Device with those for I-F: SNMPv3/TLS. The US: NTCIP Generic Device standards include upper-layer standards required to implement center-to-field communications for any device functionality. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
US: NTCIP Generic Device - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Generic Device with those for I-F: SNMPv3/TLS. The US: NTCIP Generic Device standards include upper-layer standards required to implement center-to-field communications for any device functionality. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	Mgmt	Management Information Base for the Internet Protocol (IP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Generic Device - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Generic Device with those for I-F: SNMPv3/TLS. The US: NTCIP Generic Device standards include upper-layer standards required to implement center-to-field communications for any device functionality. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	Mgmt	NTCIP Global Object (GO) Definitions
US: NTCIP Generic Device - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Generic Device with those for I-F: SNMPv3/TLS. The US: NTCIP Generic Device standards include upper-layer standards required to implement center-to-field communications for any device functionality. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	Security	Transport Layer Security (TLS) Transport Model for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Generic Device - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Generic Device with those for I-F: SNMPv3/TLS. The US: NTCIP Generic Device standards include upper-layer standards required to implement center-to-field communications for any device functionality. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	Security	Updates to the TLS Transport Model for SNMP
US: NTCIP Generic Device - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Generic Device with those for I-F: SNMPv3/TLS. The US: NTCIP Generic Device standards include upper-layer standards required to implement center-to-field communications for any device functionality. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	TransNet	IP Version 6 Addressing Architecture



Solution	Solution Description	Level	Standard Title
US: NTCIP Generic Device - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Generic Device with those for I-F: SNMPv3/TLS. The US: NTCIP Generic Device standards include upper-layer standards required to implement center-to-field communications for any device functionality. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification
US: NTCIP Generic Device - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Generic Device with those for I-F: SNMPv3/TLS. The US: NTCIP Generic Device standards include upper-layer standards required to implement center-to-field communications for any device functionality. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	TransNet	Internet Protocol, Version 6



Solution	Solution Description	Level	Standard Title
US: NTCIP Generic Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Generic Device with those for I-F: SNMPv3/TLS. The US: NTCIP Generic Device standards include upper-layer standards required to implement center-to-field communications for any device functionality. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Transmission Control Protocol
US: NTCIP Lighting - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Lighting with those for I-F: SNMPv3/TLS. The US: NTCIP Lighting standards include upper-layer standards required to implement center-to-field communications with highway lighting systems. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Access	NTCIP SP-Ethernet



Solution	Solution Description	Level	Standard Title
US: NTCIP Lighting - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Lighting with those for I-F: SNMPv3/TLS. The US: NTCIP Lighting standards include upper-layer standards required to implement center-to-field communications with highway lighting systems. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, ITS Application Entity	NTCIP Objects for ELMS
US: NTCIP Lighting - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Lighting with those for I-F: SNMPv3/TLS. The US: NTCIP Lighting standards include upper-layer standards required to implement center-to-field communications with highway lighting systems. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks



Solution	Solution Description	Level	Standard Title
US: NTCIP Lighting - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Lighting with those for I-F: SNMPv3/TLS. The US: NTCIP Lighting standards include upper-layer standards required to implement center-to-field communications with highway lighting systems. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: NTCIP Lighting - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Lighting with those for I-F: SNMPv3/TLS. The US: NTCIP Lighting standards include upper-layer standards required to implement center-to-field communications with highway lighting systems. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Simple Network Management Protocol (SNMP) Applications



Solution	Solution Description	Level	Standard Title
US: NTCIP Lighting - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Lighting with those for I-F: SNMPv3/TLS. The US: NTCIP Lighting standards include upper-layer standards required to implement center-to-field communications with highway lighting systems. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
US: NTCIP Lighting - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Lighting with those for I-F: SNMPv3/TLS. The US: NTCIP Lighting standards include upper-layer standards required to implement center-to-field communications with highway lighting systems. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Lighting - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Lighting with those for I-F: SNMPv3/TLS. The US: NTCIP Lighting standards include upper-layer standards required to implement center-to-field communications with highway lighting systems. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)
US: NTCIP Lighting - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Lighting with those for I-F: SNMPv3/TLS. The US: NTCIP Lighting standards include upper-layer standards required to implement center-to-field communications with highway lighting systems. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Lighting - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Lighting with those for I-F: SNMPv3/TLS. The US: NTCIP Lighting standards include upper-layer standards required to implement center-to-field communications with highway lighting systems. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	Management Information Base for the Internet Protocol (IP)
US: NTCIP Lighting - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Lighting with those for I-F: SNMPv3/TLS. The US: NTCIP Lighting standards include upper-layer standards required to implement center-to-field communications with highway lighting systems. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	NTCIP Global Object (GO) Definitions



Solution	Solution Description	Level	Standard Title
US: NTCIP Lighting - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Lighting with those for I-F: SNMPv3/TLS. The US: NTCIP Lighting standards include upper-layer standards required to implement center-to-field communications with highway lighting systems. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	Security	<p>Transport Layer Security (TLS) Transport Model for the Simple Network Management Protocol (SNMP)</p>
US: NTCIP Lighting - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Lighting with those for I-F: SNMPv3/TLS. The US: NTCIP Lighting standards include upper-layer standards required to implement center-to-field communications with highway lighting systems. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	Security	<p>Updates to the TLS Transport Model for SNMP</p>



Solution	Solution Description	Level	Standard Title
US: NTCIP Lighting - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Lighting with those for I-F: SNMPv3/TLS. The US: NTCIP Lighting standards include upper-layer standards required to implement center-to-field communications with highway lighting systems. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	TransNet	IP Version 6 Addressing Architecture
US: NTCIP Lighting - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Lighting with those for I-F: SNMPv3/TLS. The US: NTCIP Lighting standards include upper-layer standards required to implement center-to-field communications with highway lighting systems. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification



Solution	Solution Description	Level	Standard Title
US: NTCIP Lighting - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Lighting with those for I-F: SNMPv3/TLS. The US: NTCIP Lighting standards include upper-layer standards required to implement center-to-field communications with highway lighting systems. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Internet Protocol, Version 6
US: NTCIP Lighting - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Lighting with those for I-F: SNMPv3/TLS. The US: NTCIP Lighting standards include upper-layer standards required to implement center-to-field communications with highway lighting systems. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Transmission Control Protocol



Solution	Solution Description	Level	Standard Title
US: NTCIP Message Sign - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Message Sign with those for I-F: SNMPv3/TLS. The US: NTCIP Message Sign standards include upper-layer standards required to implement center-to-field message sign communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Access	NTCIP SP-Ethernet
US: NTCIP Message Sign - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Message Sign with those for I-F: SNMPv3/TLS. The US: NTCIP Message Sign standards include upper-layer standards required to implement center-to-field message sign communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, ITS Application Entity	NTCIP Object Definitions for Dynamic Message Signs (DMS)



Solution	Solution Description	Level	Standard Title
US: NTCIP Message Sign - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Message Sign with those for I-F: SNMPv3/TLS. The US: NTCIP Message Sign standards include upper-layer standards required to implement center-to-field message sign communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
US: NTCIP Message Sign - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Message Sign with those for I-F: SNMPv3/TLS. The US: NTCIP Message Sign standards include upper-layer standards required to implement center-to-field message sign communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Message Sign - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Message Sign with those for I-F: SNMPv3/TLS. The US: NTCIP Message Sign standards include upper-layer standards required to implement center-to-field message sign communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Simple Network Management Protocol (SNMP) Applications
US: NTCIP Message Sign - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Message Sign with those for I-F: SNMPv3/TLS. The US: NTCIP Message Sign standards include upper-layer standards required to implement center-to-field message sign communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)



Solution	Solution Description	Level	Standard Title
US: NTCIP Message Sign - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Message Sign with those for I-F: SNMPv3/TLS. The US: NTCIP Message Sign standards include upper-layer standards required to implement center-to-field message sign communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: NTCIP Message Sign - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Message Sign with those for I-F: SNMPv3/TLS. The US: NTCIP Message Sign standards include upper-layer standards required to implement center-to-field message sign communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Message Sign - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Message Sign with those for I-F: SNMPv3/TLS. The US: NTCIP Message Sign standards include upper-layer standards required to implement center-to-field message sign communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
US: NTCIP Message Sign - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Message Sign with those for I-F: SNMPv3/TLS. The US: NTCIP Message Sign standards include upper-layer standards required to implement center-to-field message sign communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	Management Information Base for the Internet Protocol (IP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Message Sign - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Message Sign with those for I-F: SNMPv3/TLS. The US: NTCIP Message Sign standards include upper-layer standards required to implement center-to-field message sign communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	NTCIP Global Object (GO) Definitions
US: NTCIP Message Sign - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Message Sign with those for I-F: SNMPv3/TLS. The US: NTCIP Message Sign standards include upper-layer standards required to implement center-to-field message sign communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Security	Transport Layer Security (TLS) Transport Model for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Message Sign - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Message Sign with those for I-F: SNMPv3/TLS. The US: NTCIP Message Sign standards include upper-layer standards required to implement center-to-field message sign communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Security	Updates to the TLS Transport Model for SNMP
US: NTCIP Message Sign - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Message Sign with those for I-F: SNMPv3/TLS. The US: NTCIP Message Sign standards include upper-layer standards required to implement center-to-field message sign communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	IP Version 6 Addressing Architecture



Solution	Solution Description	Level	Standard Title
US: NTCIP Message Sign - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Message Sign with those for I-F: SNMPv3/TLS. The US: NTCIP Message Sign standards include upper-layer standards required to implement center-to-field message sign communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification
US: NTCIP Message Sign - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Message Sign with those for I-F: SNMPv3/TLS. The US: NTCIP Message Sign standards include upper-layer standards required to implement center-to-field message sign communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Internet Protocol, Version 6



Solution	Solution Description	Level	Standard Title
US: NTCIP Message Sign - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Message Sign with those for I-F: SNMPv3/TLS. The US: NTCIP Message Sign standards include upper-layer standards required to implement center-to-field message sign communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Transmission Control Protocol
US: NTCIP Ramp Meters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Ramp Meters with those for I-F: SNMPv3/TLS. The US: NTCIP Ramp Meters standards include upper-layer standards required to implement center-to-field ramp meter communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Access	NTCIP SP-Ethernet



Solution	Solution Description	Level	Standard Title
US: NTCIP Ramp Meters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Ramp Meters with those for I-F: SNMPv3/TLS. The US: NTCIP Ramp Meters standards include upper-layer standards required to implement center-to-field ramp meter communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, ITS Application Entity	NTCIP Object Definitions for Ramp Meter Control (RMC)
US: NTCIP Ramp Meters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Ramp Meters with those for I-F: SNMPv3/TLS. The US: NTCIP Ramp Meters standards include upper-layer standards required to implement center-to-field ramp meter communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks



Solution	Solution Description	Level	Standard Title
US: NTCIP Ramp Meters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Ramp Meters with those for I-F: SNMPv3/TLS. The US: NTCIP Ramp Meters standards include upper-layer standards required to implement center-to-field ramp meter communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: NTCIP Ramp Meters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Ramp Meters with those for I-F: SNMPv3/TLS. The US: NTCIP Ramp Meters standards include upper-layer standards required to implement center-to-field ramp meter communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Ramp Meters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Ramp Meters with those for I-F: SNMPv3/TLS. The US: NTCIP Ramp Meters standards include upper-layer standards required to implement center-to-field ramp meter communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	Management Information Base for the Internet Protocol (IP)
US: NTCIP Ramp Meters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Ramp Meters with those for I-F: SNMPv3/TLS. The US: NTCIP Ramp Meters standards include upper-layer standards required to implement center-to-field ramp meter communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	NTCIP Global Object (GO) Definitions



Solution	Solution Description	Level	Standard Title
US: NTCIP Ramp Meters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Ramp Meters with those for I-F: SNMPv3/TLS. The US: NTCIP Ramp Meters standards include upper-layer standards required to implement center-to-field ramp meter communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt, Facilities	Simple Network Management Protocol (SNMP) Applications
US: NTCIP Ramp Meters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Ramp Meters with those for I-F: SNMPv3/TLS. The US: NTCIP Ramp Meters standards include upper-layer standards required to implement center-to-field ramp meter communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt, Facilities	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)



Solution	Solution Description	Level	Standard Title
US: NTCIP Ramp Meters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Ramp Meters with those for I-F: SNMPv3/TLS. The US: NTCIP Ramp Meters standards include upper-layer standards required to implement center-to-field ramp meter communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt, Facilities	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: NTCIP Ramp Meters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Ramp Meters with those for I-F: SNMPv3/TLS. The US: NTCIP Ramp Meters standards include upper-layer standards required to implement center-to-field ramp meter communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt, Facilities	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Ramp Meters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Ramp Meters with those for I-F: SNMPv3/TLS. The US: NTCIP Ramp Meters standards include upper-layer standards required to implement center-to-field ramp meter communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Security	Transport Layer Security (TLS) Transport Model for the Simple Network Management Protocol (SNMP)
US: NTCIP Ramp Meters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Ramp Meters with those for I-F: SNMPv3/TLS. The US: NTCIP Ramp Meters standards include upper-layer standards required to implement center-to-field ramp meter communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Security	Updates to the TLS Transport Model for SNMP



Solution	Solution Description	Level	Standard Title
US: NTCIP Ramp Meters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Ramp Meters with those for I-F: SNMPv3/TLS. The US: NTCIP Ramp Meters standards include upper-layer standards required to implement center-to-field ramp meter communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	IP Version 6 Addressing Architecture
US: NTCIP Ramp Meters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Ramp Meters with those for I-F: SNMPv3/TLS. The US: NTCIP Ramp Meters standards include upper-layer standards required to implement center-to-field ramp meter communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification



Solution	Solution Description	Level	Standard Title
US: NTCIP Ramp Meters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Ramp Meters with those for I-F: SNMPv3/TLS. The US: NTCIP Ramp Meters standards include upper-layer standards required to implement center-to-field ramp meter communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Internet Protocol, Version 6
US: NTCIP Ramp Meters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Ramp Meters with those for I-F: SNMPv3/TLS. The US: NTCIP Ramp Meters standards include upper-layer standards required to implement center-to-field ramp meter communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Transmission Control Protocol



Solution	Solution Description	Level	Standard Title
US: NTCIP Signal System Masters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Signal System Masters with those for I-F: SNMPv3/TLS. The US: NTCIP Signal System Masters standards include upper-layer standards required to implement center-to-field signal-system master communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Access	NTCIP SP-Ethernet
US: NTCIP Signal System Masters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Signal System Masters with those for I-F: SNMPv3/TLS. The US: NTCIP Signal System Masters standards include upper-layer standards required to implement center-to-field signal-system master communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, ITS Application Entity	NTCIP Object Definitions for ASC



Solution	Solution Description	Level	Standard Title
US: NTCIP Signal System Masters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Signal System Masters with those for I-F: SNMPv3/TLS. The US: NTCIP Signal System Masters standards include upper-layer standards required to implement center-to-field signal-system master communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, ITS Application Entity	NTCIP Objects for Signal System Masters
US: NTCIP Signal System Masters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Signal System Masters with those for I-F: SNMPv3/TLS. The US: NTCIP Signal System Masters standards include upper-layer standards required to implement center-to-field signal-system master communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks



Solution	Solution Description	Level	Standard Title
US: NTCIP Signal System Masters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Signal System Masters with those for I-F: SNMPv3/TLS. The US: NTCIP Signal System Masters standards include upper-layer standards required to implement center-to-field signal-system master communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: NTCIP Signal System Masters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Signal System Masters with those for I-F: SNMPv3/TLS. The US: NTCIP Signal System Masters standards include upper-layer standards required to implement center-to-field signal-system master communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Simple Network Management Protocol (SNMP) Applications



Solution	Solution Description	Level	Standard Title
US: NTCIP Signal System Masters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Signal System Masters with those for I-F: SNMPv3/TLS. The US: NTCIP Signal System Masters standards include upper-layer standards required to implement center-to-field signal-system master communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
US: NTCIP Signal System Masters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Signal System Masters with those for I-F: SNMPv3/TLS. The US: NTCIP Signal System Masters standards include upper-layer standards required to implement center-to-field signal-system master communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Signal System Masters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Signal System Masters with those for I-F: SNMPv3/TLS. The US: NTCIP Signal System Masters standards include upper-layer standards required to implement center-to-field signal-system master communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)
US: NTCIP Signal System Masters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Signal System Masters with those for I-F: SNMPv3/TLS. The US: NTCIP Signal System Masters standards include upper-layer standards required to implement center-to-field signal-system master communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Signal System Masters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Signal System Masters with those for I-F: SNMPv3/TLS. The US: NTCIP Signal System Masters standards include upper-layer standards required to implement center-to-field signal-system master communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	Management Information Base for the Internet Protocol (IP)
US: NTCIP Signal System Masters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Signal System Masters with those for I-F: SNMPv3/TLS. The US: NTCIP Signal System Masters standards include upper-layer standards required to implement center-to-field signal-system master communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	NTCIP Global Object (GO) Definitions



Solution	Solution Description	Level	Standard Title
US: NTCIP Signal System Masters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Signal System Masters with those for I-F: SNMPv3/TLS. The US: NTCIP Signal System Masters standards include upper-layer standards required to implement center-to-field signal-system master communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Security	Transport Layer Security (TLS) Transport Model for the Simple Network Management Protocol (SNMP)
US: NTCIP Signal System Masters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Signal System Masters with those for I-F: SNMPv3/TLS. The US: NTCIP Signal System Masters standards include upper-layer standards required to implement center-to-field signal-system master communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Security	Updates to the TLS Transport Model for SNMP



Solution	Solution Description	Level	Standard Title
US: NTCIP Signal System Masters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Signal System Masters with those for I-F: SNMPv3/TLS. The US: NTCIP Signal System Masters standards include upper-layer standards required to implement center-to-field signal-system master communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	IP Version 6 Addressing Architecture
US: NTCIP Signal System Masters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Signal System Masters with those for I-F: SNMPv3/TLS. The US: NTCIP Signal System Masters standards include upper-layer standards required to implement center-to-field signal-system master communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification



Solution	Solution Description	Level	Standard Title
US: NTCIP Signal System Masters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Signal System Masters with those for I-F: SNMPv3/TLS. The US: NTCIP Signal System Masters standards include upper-layer standards required to implement center-to-field signal-system master communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Internet Protocol, Version 6
US: NTCIP Signal System Masters - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Signal System Masters with those for I-F: SNMPv3/TLS. The US: NTCIP Signal System Masters standards include upper-layer standards required to implement center-to-field signal-system master communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Transmission Control Protocol



Solution	Solution Description	Level	Standard Title
US: NTCIP Traffic Signal - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Traffic Signal with those for I-F: SNMPv3/TLS. The US: NTCIP Traffic Signal standards include upper-layer standards required to implement center-to-field traffic signal communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Access	NTCIP SP-Ethernet
US: NTCIP Traffic Signal - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Traffic Signal with those for I-F: SNMPv3/TLS. The US: NTCIP Traffic Signal standards include upper-layer standards required to implement center-to-field traffic signal communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, ITS Application Entity	NTCIP Object Definitions for ASC



Solution	Solution Description	Level	Standard Title
US: NTCIP Traffic Signal - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Traffic Signal with those for I-F: SNMPv3/TLS. The US: NTCIP Traffic Signal standards include upper-layer standards required to implement center-to-field traffic signal communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	Facilities, Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
US: NTCIP Traffic Signal - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Traffic Signal with those for I-F: SNMPv3/TLS. The US: NTCIP Traffic Signal standards include upper-layer standards required to implement center-to-field traffic signal communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	Facilities, Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Traffic Signal - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Traffic Signal with those for I-F: SNMPv3/TLS. The US: NTCIP Traffic Signal standards include upper-layer standards required to implement center-to-field traffic signal communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	Facilities, Mgmt	Simple Network Management Protocol (SNMP) Applications
US: NTCIP Traffic Signal - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Traffic Signal with those for I-F: SNMPv3/TLS. The US: NTCIP Traffic Signal standards include upper-layer standards required to implement center-to-field traffic signal communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	Facilities, Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)



Solution	Solution Description	Level	Standard Title
US: NTCIP Traffic Signal - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Traffic Signal with those for I-F: SNMPv3/TLS. The US: NTCIP Traffic Signal standards include upper-layer standards required to implement center-to-field traffic signal communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: NTCIP Traffic Signal - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Traffic Signal with those for I-F: SNMPv3/TLS. The US: NTCIP Traffic Signal standards include upper-layer standards required to implement center-to-field traffic signal communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Traffic Signal - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Traffic Signal with those for I-F: SNMPv3/TLS. The US: NTCIP Traffic Signal standards include upper-layer standards required to implement center-to-field traffic signal communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
US: NTCIP Traffic Signal - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Traffic Signal with those for I-F: SNMPv3/TLS. The US: NTCIP Traffic Signal standards include upper-layer standards required to implement center-to-field traffic signal communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	Management Information Base for the Internet Protocol (IP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Traffic Signal - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Traffic Signal with those for I-F: SNMPv3/TLS. The US: NTCIP Traffic Signal standards include upper-layer standards required to implement center-to-field traffic signal communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	NTCIP Global Object (GO) Definitions
US: NTCIP Traffic Signal - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Traffic Signal with those for I-F: SNMPv3/TLS. The US: NTCIP Traffic Signal standards include upper-layer standards required to implement center-to-field traffic signal communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Security	Transport Layer Security (TLS) Transport Model for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Traffic Signal - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Traffic Signal with those for I-F: SNMPv3/TLS. The US: NTCIP Traffic Signal standards include upper-layer standards required to implement center-to-field traffic signal communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Security	Updates to the TLS Transport Model for SNMP
US: NTCIP Traffic Signal - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Traffic Signal with those for I-F: SNMPv3/TLS. The US: NTCIP Traffic Signal standards include upper-layer standards required to implement center-to-field traffic signal communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	IP Version 6 Addressing Architecture



Solution	Solution Description	Level	Standard Title
US: NTCIP Traffic Signal - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Traffic Signal with those for I-F: SNMPv3/TLS. The US: NTCIP Traffic Signal standards include upper-layer standards required to implement center-to-field traffic signal communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification
US: NTCIP Traffic Signal - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Traffic Signal with those for I-F: SNMPv3/TLS. The US: NTCIP Traffic Signal standards include upper-layer standards required to implement center-to-field traffic signal communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Internet Protocol, Version 6



Solution	Solution Description	Level	Standard Title
US: NTCIP Traffic Signal - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Traffic Signal with those for I-F: SNMPv3/TLS. The US: NTCIP Traffic Signal standards include upper-layer standards required to implement center-to-field traffic signal communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	TransNet	Transmission Control Protocol
US: NTCIP Transportation Sensors - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Transportation Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Transportation Sensors standards include upper-layer standards required to implement center-to-field transportation sensors (e.g., vehicle detectors) communications (e.g., real-time). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	Access	NTCIP SP-Ethernet



Solution	Solution Description	Level	Standard Title
US: NTCIP Transportation Sensors - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Transportation Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Transportation Sensors standards include upper-layer standards required to implement center-to-field transportation sensors (e.g., vehicle detectors) communications (e.g., real-time). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	Facilities, ITS Application Entity	NTCIP Object Definitions for Transportation Sensor Systems (TSS)
US: NTCIP Transportation Sensors - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Transportation Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Transportation Sensors standards include upper-layer standards required to implement center-to-field transportation sensors (e.g., vehicle detectors) communications (e.g., real-time). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	Facilities, Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks



Solution	Solution Description	Level	Standard Title
US: NTCIP Transportation Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Transportation Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Transportation Sensors standards include upper-layer standards required to implement center-to-field transportation sensors (e.g., vehicle detectors) communications (e.g., real-time). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: NTCIP Transportation Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Transportation Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Transportation Sensors standards include upper-layer standards required to implement center-to-field transportation sensors (e.g., vehicle detectors) communications (e.g., real-time). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Simple Network Management Protocol (SNMP) Applications



Solution	Solution Description	Level	Standard Title
US: NTCIP Transportation Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Transportation Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Transportation Sensors standards include upper-layer standards required to implement center-to-field transportation sensors (e.g., vehicle detectors) communications (e.g., real-time). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
US: NTCIP Transportation Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Transportation Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Transportation Sensors standards include upper-layer standards required to implement center-to-field transportation sensors (e.g., vehicle detectors) communications (e.g., real-time). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Transportation Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Transportation Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Transportation Sensors standards include upper-layer standards required to implement center-to-field transportation sensors (e.g., vehicle detectors) communications (e.g., real-time). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)
US: NTCIP Transportation Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Transportation Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Transportation Sensors standards include upper-layer standards required to implement center-to-field transportation sensors (e.g., vehicle detectors) communications (e.g., real-time). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Transportation Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Transportation Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Transportation Sensors standards include upper-layer standards required to implement center-to-field transportation sensors (e.g., vehicle detectors) communications (e.g., real-time). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	Management Information Base for the Internet Protocol (IP)
US: NTCIP Transportation Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Transportation Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Transportation Sensors standards include upper-layer standards required to implement center-to-field transportation sensors (e.g., vehicle detectors) communications (e.g., real-time). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	NTCIP Global Object (GO) Definitions



Solution	Solution Description	Level	Standard Title
US: NTCIP Transportation Sensors - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Transportation Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Transportation Sensors standards include upper-layer standards required to implement center-to-field transportation sensors (e.g., vehicle detectors) communications (e.g., real-time). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	Security	Transport Layer Security (TLS) Transport Model for the Simple Network Management Protocol (SNMP)
US: NTCIP Transportation Sensors - SNMPv3/TLS	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Transportation Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Transportation Sensors standards include upper-layer standards required to implement center-to-field transportation sensors (e.g., vehicle detectors) communications (e.g., real-time). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.</p>	Security	Updates to the TLS Transport Model for SNMP



Solution	Solution Description	Level	Standard Title
US: NTCIP Transportation Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Transportation Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Transportation Sensors standards include upper-layer standards required to implement center-to-field transportation sensors (e.g., vehicle detectors) communications (e.g., real-time). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	IP Version 6 Addressing Architecture
US: NTCIP Transportation Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Transportation Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Transportation Sensors standards include upper-layer standards required to implement center-to-field transportation sensors (e.g., vehicle detectors) communications (e.g., real-time). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification



Solution	Solution Description	Level	Standard Title
US: NTCIP Transportation Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Transportation Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Transportation Sensors standards include upper-layer standards required to implement center-to-field transportation sensors (e.g., vehicle detectors) communications (e.g., real-time). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Internet Protocol, Version 6
US: NTCIP Transportation Sensors - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Transportation Sensors with those for I-F: SNMPv3/TLS. The US: NTCIP Transportation Sensors standards include upper-layer standards required to implement center-to-field transportation sensors (e.g., vehicle detectors) communications (e.g., real-time). The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Transmission Control Protocol



Solution	Solution Description	Level	Standard Title
US: NTCIP Video Switches - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Video Switches with those for I-F: SNMPv3/TLS. The US: NTCIP Video Switches standards include upper-layer standards required to implement center-to-field video switch communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Access	NTCIP SP-Ethernet
US: NTCIP Video Switches - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Video Switches with those for I-F: SNMPv3/TLS. The US: NTCIP Video Switches standards include upper-layer standards required to implement center-to-field video switch communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, ITS Application Entity	NTCIP Objects for CCTV Camera Control



Solution	Solution Description	Level	Standard Title
US: NTCIP Video Switches - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Video Switches with those for I-F: SNMPv3/TLS. The US: NTCIP Video Switches standards include upper-layer standards required to implement center-to-field video switch communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, ITS Application Entity	NTCIP Object Definitions for Video Switches
US: NTCIP Video Switches - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Video Switches with those for I-F: SNMPv3/TLS. The US: NTCIP Video Switches standards include upper-layer standards required to implement center-to-field video switch communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks



Solution	Solution Description	Level	Standard Title
US: NTCIP Video Switches - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Video Switches with those for I-F: SNMPv3/TLS. The US: NTCIP Video Switches standards include upper-layer standards required to implement center-to-field video switch communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: NTCIP Video Switches - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Video Switches with those for I-F: SNMPv3/TLS. The US: NTCIP Video Switches standards include upper-layer standards required to implement center-to-field video switch communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Simple Network Management Protocol (SNMP) Applications



Solution	Solution Description	Level	Standard Title
US: NTCIP Video Switches - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Video Switches with those for I-F: SNMPv3/TLS. The US: NTCIP Video Switches standards include upper-layer standards required to implement center-to-field video switch communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
US: NTCIP Video Switches - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Video Switches with those for I-F: SNMPv3/TLS. The US: NTCIP Video Switches standards include upper-layer standards required to implement center-to-field video switch communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Video Switches - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Video Switches with those for I-F: SNMPv3/TLS. The US: NTCIP Video Switches standards include upper-layer standards required to implement center-to-field video switch communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)
US: NTCIP Video Switches - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Video Switches with those for I-F: SNMPv3/TLS. The US: NTCIP Video Switches standards include upper-layer standards required to implement center-to-field video switch communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Video Switches - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Video Switches with those for I-F: SNMPv3/TLS. The US: NTCIP Video Switches standards include upper-layer standards required to implement center-to-field video switch communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	Management Information Base for the Internet Protocol (IP)
US: NTCIP Video Switches - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Video Switches with those for I-F: SNMPv3/TLS. The US: NTCIP Video Switches standards include upper-layer standards required to implement center-to-field video switch communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	NTCIP Global Object (GO) Definitions



Solution	Solution Description	Level	Standard Title
US: NTCIP Video Switches - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Video Switches with those for I-F: SNMPv3/TLS. The US: NTCIP Video Switches standards include upper-layer standards required to implement center-to-field video switch communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Security	Transport Layer Security (TLS) Transport Model for the Simple Network Management Protocol (SNMP)
US: NTCIP Video Switches - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Video Switches with those for I-F: SNMPv3/TLS. The US: NTCIP Video Switches standards include upper-layer standards required to implement center-to-field video switch communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Security	Updates to the TLS Transport Model for SNMP



Solution	Solution Description	Level	Standard Title
US: NTCIP Video Switches - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Video Switches with those for I-F: SNMPv3/TLS. The US: NTCIP Video Switches standards include upper-layer standards required to implement center-to-field video switch communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	IP Version 6 Addressing Architecture
US: NTCIP Video Switches - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Video Switches with those for I-F: SNMPv3/TLS. The US: NTCIP Video Switches standards include upper-layer standards required to implement center-to-field video switch communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification



Solution	Solution Description	Level	Standard Title
US: NTCIP Video Switches - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Video Switches with those for I-F: SNMPv3/TLS. The US: NTCIP Video Switches standards include upper-layer standards required to implement center-to-field video switch communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Internet Protocol, Version 6
US: NTCIP Video Switches - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Video Switches with those for I-F: SNMPv3/TLS. The US: NTCIP Video Switches standards include upper-layer standards required to implement center-to-field video switch communications. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Transmission Control Protocol



Solution	Solution Description	Level	Standard Title
US: NTCIP Warning Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Warning Device with those for I-F: SNMPv3/TLS. The US: NTCIP Warning Device standards include a composite of upper-layer standards that support monitoring for unsafe traffic activities and displaying warning to drivers. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Access	NTCIP SP-Ethernet
US: NTCIP Warning Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Warning Device with those for I-F: SNMPv3/TLS. The US: NTCIP Warning Device standards include a composite of upper-layer standards that support monitoring for unsafe traffic activities and displaying warning to drivers. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, ITS Application Entity	NTCIP Object Definitions for Dynamic Message Signs (DMS)



Solution	Solution Description	Level	Standard Title
US: NTCIP Warning Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Warning Device with those for I-F: SNMPv3/TLS. The US: NTCIP Warning Device standards include a composite of upper-layer standards that support monitoring for unsafe traffic activities and displaying warning to drivers. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, ITS Application Entity	NTCIP Objects for CCTV Camera Control
US: NTCIP Warning Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Warning Device with those for I-F: SNMPv3/TLS. The US: NTCIP Warning Device standards include a composite of upper-layer standards that support monitoring for unsafe traffic activities and displaying warning to drivers. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, ITS Application Entity	NTCIP Object Definitions for Transportation Sensor Systems (TSS)



Solution	Solution Description	Level	Standard Title
US: NTCIP Warning Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Warning Device with those for I-F: SNMPv3/TLS. The US: NTCIP Warning Device standards include a composite of upper-layer standards that support monitoring for unsafe traffic activities and displaying warning to drivers. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
US: NTCIP Warning Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Warning Device with those for I-F: SNMPv3/TLS. The US: NTCIP Warning Device standards include a composite of upper-layer standards that support monitoring for unsafe traffic activities and displaying warning to drivers. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Warning Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Warning Device with those for I-F: SNMPv3/TLS. The US: NTCIP Warning Device standards include a composite of upper-layer standards that support monitoring for unsafe traffic activities and displaying warning to drivers. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Simple Network Management Protocol (SNMP) Applications
US: NTCIP Warning Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Warning Device with those for I-F: SNMPv3/TLS. The US: NTCIP Warning Device standards include a composite of upper-layer standards that support monitoring for unsafe traffic activities and displaying warning to drivers. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)



Solution	Solution Description	Level	Standard Title
US: NTCIP Warning Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Warning Device with those for I-F: SNMPv3/TLS. The US: NTCIP Warning Device standards include a composite of upper-layer standards that support monitoring for unsafe traffic activities and displaying warning to drivers. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: NTCIP Warning Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Warning Device with those for I-F: SNMPv3/TLS. The US: NTCIP Warning Device standards include a composite of upper-layer standards that support monitoring for unsafe traffic activities and displaying warning to drivers. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Facilities, Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Warning Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Warning Device with those for I-F: SNMPv3/TLS. The US: NTCIP Warning Device standards include a composite of upper-layer standards that support monitoring for unsafe traffic activities and displaying warning to drivers. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
US: NTCIP Warning Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Warning Device with those for I-F: SNMPv3/TLS. The US: NTCIP Warning Device standards include a composite of upper-layer standards that support monitoring for unsafe traffic activities and displaying warning to drivers. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	Management Information Base for the Internet Protocol (IP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Warning Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Warning Device with those for I-F: SNMPv3/TLS. The US: NTCIP Warning Device standards include a composite of upper-layer standards that support monitoring for unsafe traffic activities and displaying warning to drivers. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Mgmt	NTCIP Global Object (GO) Definitions
US: NTCIP Warning Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Warning Device with those for I-F: SNMPv3/TLS. The US: NTCIP Warning Device standards include a composite of upper-layer standards that support monitoring for unsafe traffic activities and displaying warning to drivers. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Security	Transport Layer Security (TLS) Transport Model for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: NTCIP Warning Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Warning Device with those for I-F: SNMPv3/TLS. The US: NTCIP Warning Device standards include a composite of upper-layer standards that support monitoring for unsafe traffic activities and displaying warning to drivers. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	Security	Updates to the TLS Transport Model for SNMP
US: NTCIP Warning Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Warning Device with those for I-F: SNMPv3/TLS. The US: NTCIP Warning Device standards include a composite of upper-layer standards that support monitoring for unsafe traffic activities and displaying warning to drivers. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	IP Version 6 Addressing Architecture



Solution	Solution Description	Level	Standard Title
US: NTCIP Warning Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Warning Device with those for I-F: SNMPv3/TLS. The US: NTCIP Warning Device standards include a composite of upper-layer standards that support monitoring for unsafe traffic activities and displaying warning to drivers. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification
US: NTCIP Warning Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Warning Device with those for I-F: SNMPv3/TLS. The US: NTCIP Warning Device standards include a composite of upper-layer standards that support monitoring for unsafe traffic activities and displaying warning to drivers. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Internet Protocol, Version 6



Solution	Solution Description	Level	Standard Title
US: NTCIP Warning Device - SNMPv3/TLS	This solution is used within Canada and the U.S.. It combines standards associated with US: NTCIP Warning Device with those for I-F: SNMPv3/TLS. The US: NTCIP Warning Device standards include a composite of upper-layer standards that support monitoring for unsafe traffic activities and displaying warning to drivers. The I-F: SNMPv3/TLS standards include lower-layer standards that support secure center-to-field and field-to-field communications using simple network management protocol (SNMPv3); implementations are strongly encouraged to use the TLS for SNMP security option for this solution to ensure adequate security.	TransNet	Transmission Control Protocol
US: SAE J3067 (J2735 SE) - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Guaranteed Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Access	Internet Subnet Alternatives



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Guaranteed Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	Dedicated Short Range Communication (DSRC) Systems Engineering Process Guidance for J2945/x Documents and Common Design Concepts
US: SAE J3067 (J2735 SE) - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Guaranteed Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	ITS Application Entity	Candidate Improvements to Dedicated Short Range Communications (DSRC) Message Set Dictionary [SAE J2735] Using Systems Engineering Methods



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Guaranteed Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
US: SAE J3067 (J2735 SE) - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Guaranteed Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Guaranteed Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Simple Network Management Protocol (SNMP) Applications
US: SAE J3067 (J2735 SE) - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Guaranteed Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Guaranteed Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: SAE J3067 (J2735 SE) - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Guaranteed Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Guaranteed Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
US: SAE J3067 (J2735 SE) - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Guaranteed Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base for the Internet Protocol (IP)



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Guaranteed Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
US: SAE J3067 (J2735 SE) - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Guaranteed Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	The Transport Layer Security (TLS) Protocol



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Guaranteed Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	IP Version 6 Addressing Architecture
US: SAE J3067 (J2735 SE) - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Guaranteed Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Guaranteed Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Protocol, Version 6
US: SAE J3067 (J2735 SE) - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Guaranteed Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Transmission Control Protocol



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Access	Internet Subnet Alternatives
US: SAE J3067 (J2735 SE) - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	Dedicated Short Range Communication (DSRC) Systems Engineering Process Guidance for J2945/x Documents and Common Design Concepts
US: SAE J3067 (J2735 SE) - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	ITS Application Entity	Candidate Improvements to Dedicated Short Range Communications (DSRC) Message Set Dictionary [SAE J2735] Using Systems Engineering Methods



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
US: SAE J3067 (J2735 SE) - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: SAE J3067 (J2735 SE) - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Simple Network Management Protocol (SNMP) Applications



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
US: SAE J3067 (J2735 SE) - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: SAE J3067 (J2735 SE) - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
US: SAE J3067 (J2735 SE) - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base for the Internet Protocol (IP)
US: SAE J3067 (J2735 SE) - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	The Transport Layer Security (TLS) Protocol
US: SAE J3067 (J2735 SE) - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	IP Version 6 Addressing Architecture
US: SAE J3067 (J2735 SE) - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Protocol, Version 6
US: SAE J3067 (J2735 SE) - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-I: Secure Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Transmission Control Protocol



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-M: Secure Wireless Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Access	3GPP Cellular Communications Network
US: SAE J3067 (J2735 SE) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-M: Secure Wireless Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Facilities	Dedicated Short Range Communication (DSRC) Systems Engineering Process Guidance for J2945/x Documents and Common Design Concepts



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-M: Secure Wireless Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	ITS Application Entity	Candidate Improvements to Dedicated Short Range Communications (DSRC) Message Set Dictionary [SAE J2735] Using Systems Engineering Methods
US: SAE J3067 (J2735 SE) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-M: Secure Wireless Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-M: Secure Wireless Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: SAE J3067 (J2735 SE) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-M: Secure Wireless Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	Simple Network Management Protocol (SNMP) Applications



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-M: Secure Wireless Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
US: SAE J3067 (J2735 SE) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-M: Secure Wireless Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-M: Secure Wireless Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)
US: SAE J3067 (J2735 SE) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-M: Secure Wireless Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-M: Secure Wireless Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	Management Information Base for the Internet Protocol (IP)
US: SAE J3067 (J2735 SE) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-M: Secure Wireless Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-M: Secure Wireless Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Security	The Transport Layer Security (TLS) Protocol
US: SAE J3067 (J2735 SE) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-M: Secure Wireless Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	TransNet	IP Version 6 Addressing Architecture



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-M: Secure Wireless Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification
US: SAE J3067 (J2735 SE) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-M: Secure Wireless Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	TransNet	Internet Protocol, Version 6



Solution	Solution Description	Level	Standard Title
US: SAE J3067 (J2735 SE) - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: SAE J3067 (J2735 SE) with those for I-M: Secure Wireless Internet (ITS). The US: SAE J3067 (J2735 SE) standards include a proposed solution for the upper-layers to implement V2X information flows that do not yet have fully standardized messages, functionality or performance characteristics. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	TransNet	Transmission Control Protocol
US: TCIP - Guaranteed Secure Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Guaranteed Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.</p>	Access	Internet Subnet Alternatives



Solution	Solution Description	Level	Standard Title
US: TCIP - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Guaranteed Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	Extensible Markup Language (XML) 1.0 (Fifth Edition)
US: TCIP - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Guaranteed Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities, ITS Application Entity	Transit Communications Interface Profiles - TCIP Data and Dialog Definitions
US: TCIP - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Guaranteed Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks



Solution	Solution Description	Level	Standard Title
US: TCIP - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Guaranteed Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: TCIP - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Guaranteed Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Simple Network Management Protocol (SNMP) Applications
US: TCIP - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Guaranteed Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)



Solution	Solution Description	Level	Standard Title
US: TCIP - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Guaranteed Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: TCIP - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Guaranteed Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)
US: TCIP - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Guaranteed Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: TCIP - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Guaranteed Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base for the Internet Protocol (IP)
US: TCIP - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Guaranteed Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
US: TCIP - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Guaranteed Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	The Transport Layer Security (TLS) Protocol



Solution	Solution Description	Level	Standard Title
US: TCIP - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Guaranteed Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	IP Version 6 Addressing Architecture
US: TCIP - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Guaranteed Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification
US: TCIP - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Guaranteed Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Protocol, Version 6



Solution	Solution Description	Level	Standard Title
US: TCIP - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Guaranteed Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Transmission Control Protocol
US: TCIP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Access	Internet Subnet Alternatives
US: TCIP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	Extensible Markup Language (XML) 1.0 (Fifth Edition)



Solution	Solution Description	Level	Standard Title
US: TCIP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities, ITS Application Entity	Transit Communications Interface Profiles - TCIP Data and Dialog Definitions
US: TCIP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
US: TCIP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: TCIP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Simple Network Management Protocol (SNMP) Applications
US: TCIP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
US: TCIP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: TCIP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)
US: TCIP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
US: TCIP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base for the Internet Protocol (IP)



Solution	Solution Description	Level	Standard Title
US: TCIP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
US: TCIP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	The Transport Layer Security (TLS) Protocol
US: TCIP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	IP Version 6 Addressing Architecture



Solution	Solution Description	Level	Standard Title
US: TCIP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification
US: TCIP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Protocol, Version 6
US: TCIP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TCIP with those for I-I: Secure Internet (ITS). The US: TCIP standards include upper-layer standards required to implement transit-related communications. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Transmission Control Protocol



Solution	Solution Description	Level	Standard Title
US: TIDES - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TIDES with those for I-I: Secure Internet (ITS). The US: TIDES standards include upper-layer standards for archiving transit data. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Access	Internet Subnet Alternatives
US: TIDES - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TIDES with those for I-I: Secure Internet (ITS). The US: TIDES standards include upper-layer standards for archiving transit data. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	The JavaScript Object Notation (JSON) Data Interchange Format
US: TIDES - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TIDES with those for I-I: Secure Internet (ITS). The US: TIDES standards include upper-layer standards for archiving transit data. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	HTTP Semantics



Solution	Solution Description	Level	Standard Title
US: TIDES - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TIDES with those for I-I: Secure Internet (ITS). The US: TIDES standards include upper-layer standards for archiving transit data. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	HTTP/1.1
US: TIDES - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TIDES with those for I-I: Secure Internet (ITS). The US: TIDES standards include upper-layer standards for archiving transit data. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	ITS Application Entity	Transit ITS Data Exchange Specification
US: TIDES - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TIDES with those for I-I: Secure Internet (ITS). The US: TIDES standards include upper-layer standards for archiving transit data. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks



Solution	Solution Description	Level	Standard Title
US: TIDES - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TIDES with those for I-I: Secure Internet (ITS). The US: TIDES standards include upper-layer standards for archiving transit data. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: TIDES - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TIDES with those for I-I: Secure Internet (ITS). The US: TIDES standards include upper-layer standards for archiving transit data. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Simple Network Management Protocol (SNMP) Applications
US: TIDES - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TIDES with those for I-I: Secure Internet (ITS). The US: TIDES standards include upper-layer standards for archiving transit data. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)



Solution	Solution Description	Level	Standard Title
US: TIDES - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TIDES with those for I-I: Secure Internet (ITS). The US: TIDES standards include upper-layer standards for archiving transit data. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: TIDES - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TIDES with those for I-I: Secure Internet (ITS). The US: TIDES standards include upper-layer standards for archiving transit data. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)
US: TIDES - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TIDES with those for I-I: Secure Internet (ITS). The US: TIDES standards include upper-layer standards for archiving transit data. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: TIDES - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TIDES with those for I-I: Secure Internet (ITS). The US: TIDES standards include upper-layer standards for archiving transit data. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base for the Internet Protocol (IP)
US: TIDES - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TIDES with those for I-I: Secure Internet (ITS). The US: TIDES standards include upper-layer standards for archiving transit data. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
US: TIDES - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TIDES with those for I-I: Secure Internet (ITS). The US: TIDES standards include upper-layer standards for archiving transit data. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	The Transport Layer Security (TLS) Protocol



Solution	Solution Description	Level	Standard Title
US: TIDES - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TIDES with those for I-I: Secure Internet (ITS). The US: TIDES standards include upper-layer standards for archiving transit data. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	IP Version 6 Addressing Architecture
US: TIDES - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TIDES with those for I-I: Secure Internet (ITS). The US: TIDES standards include upper-layer standards for archiving transit data. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification
US: TIDES - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TIDES with those for I-I: Secure Internet (ITS). The US: TIDES standards include upper-layer standards for archiving transit data. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Protocol, Version 6



Solution	Solution Description	Level	Standard Title
US: TIDES - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TIDES with those for I-I: Secure Internet (ITS). The US: TIDES standards include upper-layer standards for archiving transit data. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Transmission Control Protocol
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	Access	Internet Subnet Alternatives
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	Facilities	HTTP Semantics



Solution	Solution Description	Level	Standard Title
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	Facilities	HTTP/1.1
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	Facilities	SOAP Version 1.2
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	Facilities	Extensible Markup Language (XML) 1.0 (Fifth Edition)



Solution	Solution Description	Level	Standard Title
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	Facilities, ITS Application Entity	Traffic Management Data Dictionary Standard for the Center-to-Center Communications: Volume 2: Design Content
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	Mgmt	Simple Network Management Protocol (SNMP) Applications
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	Mgmt	Management Information Base for the Internet Protocol (IP)



Solution	Solution Description	Level	Standard Title
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	Mgmt	Web Services Description Language (WSDL) 1.1
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	Security	The Transport Layer Security (TLS) Protocol



Solution	Solution Description	Level	Standard Title
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	TransNet	IP Version 6 Addressing Architecture
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	TransNet	Internet Protocol, Version 6



Solution	Solution Description	Level	Standard Title
US: TMDD - NTCIP Messaging	This solution is used within Canada and the U.S.. It combines standards associated with US: TMDD with those for C-C: NTCIP Messaging. The US: TMDD standards include upper-layer standards required to implement center-to-center communications with traffic management systems. The C-C: NTCIP Messaging standards include lower-layer standards that support partially secure communications between two centers as commonly used in the US.	TransNet	Transmission Control Protocol
US: TOMP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-I: Secure Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Access	Internet Subnet Alternatives
US: TOMP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-I: Secure Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	The JavaScript Object Notation (JSON) Data Interchange Format



Solution	Solution Description	Level	Standard Title
US: TOMP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-I: Secure Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	HTTP Semantics
US: TOMP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-I: Secure Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	HTTP/1.1
US: TOMP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-I: Secure Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	ITS Application Entity	Transport Operator Mobility-as-a-Service Provider



Solution	Solution Description	Level	Standard Title
US: TOMP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-I: Secure Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
US: TOMP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-I: Secure Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: TOMP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-I: Secure Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Simple Network Management Protocol (SNMP) Applications



Solution	Solution Description	Level	Standard Title
US: TOMP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-I: Secure Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
US: TOMP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-I: Secure Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: TOMP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-I: Secure Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: TOMP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-I: Secure Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
US: TOMP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-I: Secure Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base for the Internet Protocol (IP)
US: TOMP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-I: Secure Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile



Solution	Solution Description	Level	Standard Title
US: TOMP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-I: Secure Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	The Transport Layer Security (TLS) Protocol
US: TOMP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-I: Secure Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	IP Version 6 Addressing Architecture
US: TOMP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-I: Secure Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification



Solution	Solution Description	Level	Standard Title
US: TOMP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-I: Secure Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Protocol, Version 6
US: TOMP - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-I: Secure Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Transmission Control Protocol
US: TOMP - Secure Wireless Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-M: Secure Wireless Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.	Access	3GPP Cellular Communications Network



Solution	Solution Description	Level	Standard Title
US: TOMP - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-M: Secure Wireless Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Facilities	The JavaScript Object Notation (JSON) Data Interchange Format
US: TOMP - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-M: Secure Wireless Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Facilities	HTTP Semantics



Solution	Solution Description	Level	Standard Title
US: TOMP - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-M: Secure Wireless Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Facilities	HTTP/1.1
US: TOMP - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-M: Secure Wireless Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	ITS Application Entity	Transport Operator Mobility-as-a-Service Provider



Solution	Solution Description	Level	Standard Title
US: TOMP - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-M: Secure Wireless Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
US: TOMP - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-M: Secure Wireless Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: TOMP - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-M: Secure Wireless Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	Simple Network Management Protocol (SNMP) Applications
US: TOMP - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-M: Secure Wireless Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)



Solution	Solution Description	Level	Standard Title
US: TOMP - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-M: Secure Wireless Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: TOMP - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-M: Secure Wireless Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: TOMP - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-M: Secure Wireless Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
US: TOMP - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-M: Secure Wireless Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Mgmt	Management Information Base for the Internet Protocol (IP)



Solution	Solution Description	Level	Standard Title
US: TOMP - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-M: Secure Wireless Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
US: TOMP - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-M: Secure Wireless Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	Security	The Transport Layer Security (TLS) Protocol



Solution	Solution Description	Level	Standard Title
US: TOMP - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-M: Secure Wireless Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	TransNet	IP Version 6 Addressing Architecture
US: TOMP - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-M: Secure Wireless Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification



Solution	Solution Description	Level	Standard Title
US: TOMP - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-M: Secure Wireless Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	TransNet	Internet Protocol, Version 6
US: TOMP - Secure Wireless Internet (ITS)	<p>This solution is used within Canada and the U.S.. It combines standards associated with US: TOMP with those for I-M: Secure Wireless Internet (ITS). The US: TOMP standards include upper-layer standards required to share information among transport operators. The I-M: Secure Wireless Internet (ITS) standards include lower-layer standards that support secure communications between two entities, either or both of which may be mobile devices, but they must be stationary or only moving within wireless range of a single wireless access point (e.g., a parked car). Security is based on X.509 or IEEE 1609.2 certificates. A non-mobile (if any) endpoint may connect to the service provider using any Internet connection method.</p>	TransNet	Transmission Control Protocol



Solution	Solution Description	Level	Standard Title
US: WZDx - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Guaranteed Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Access	Internet Subnet Alternatives
US: WZDx - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Guaranteed Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	The JavaScript Object Notation (JSON) Data Interchange Format
US: WZDx - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Guaranteed Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	HTTP Semantics



Solution	Solution Description	Level	Standard Title
US: WZDx - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Guaranteed Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	HTTP/1.1
US: WZDx - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Guaranteed Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	ITS Application Entity	Work Zone Data Exchange
US: WZDx - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Guaranteed Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks



Solution	Solution Description	Level	Standard Title
US: WZDx - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Guaranteed Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: WZDx - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Guaranteed Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Simple Network Management Protocol (SNMP) Applications
US: WZDx - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Guaranteed Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)



Solution	Solution Description	Level	Standard Title
US: WZDx - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Guaranteed Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: WZDx - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Guaranteed Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)
US: WZDx - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Guaranteed Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: WZDx - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Guaranteed Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base for the Internet Protocol (IP)
US: WZDx - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Guaranteed Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
US: WZDx - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Guaranteed Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	The Transport Layer Security (TLS) Protocol



Solution	Solution Description	Level	Standard Title
US: WZDx - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Guaranteed Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	IP Version 6 Addressing Architecture
US: WZDx - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Guaranteed Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification
US: WZDx - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Guaranteed Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Protocol, Version 6



Solution	Solution Description	Level	Standard Title
US: WZDx - Guaranteed Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Guaranteed Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Guaranteed Secure Internet (ITS) standards include lower-layer standards that support secure communications with guaranteed delivery between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Transmission Control Protocol
US: WZDx - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Access	Internet Subnet Alternatives
US: WZDx - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	The JavaScript Object Notation (JSON) Data Interchange Format



Solution	Solution Description	Level	Standard Title
US: WZDx - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	HTTP Semantics
US: WZDx - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Facilities	HTTP/1.1
US: WZDx - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	ITS Application Entity	Work Zone Data Exchange



Solution	Solution Description	Level	Standard Title
US: WZDx - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
US: WZDx - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
US: WZDx - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Simple Network Management Protocol (SNMP) Applications



Solution	Solution Description	Level	Standard Title
US: WZDx - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
US: WZDx - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
US: WZDx - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)



Solution	Solution Description	Level	Standard Title
US: WZDx - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
US: WZDx - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Mgmt	Management Information Base for the Internet Protocol (IP)
US: WZDx - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile



Solution	Solution Description	Level	Standard Title
US: WZDx - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	Security	The Transport Layer Security (TLS) Protocol
US: WZDx - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	IP Version 6 Addressing Architecture
US: WZDx - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification



Solution	Solution Description	Level	Standard Title
US: WZDx - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Internet Protocol, Version 6
US: WZDx - Secure Internet (ITS)	This solution is used within Canada and the U.S.. It combines standards associated with US: WZDx with those for I-I: Secure Internet (ITS). The US: WZDx standards include upper-layer standards required to implement work zone information data exchanges. The I-I: Secure Internet (ITS) standards include lower-layer standards that support secure communications between ITS equipment using X.509 or IEEE 1609.2 security certificates.	TransNet	Transmission Control Protocol





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